
Cowlitz County
Department of Public Works

CONTRACT DOCUMENTS
FOR

TOWER ROAD WATER MAIN AND JUANITA WAY BOOSTER PUMP STATION PROJECT

Cowlitz County Project No. 2951

December 2024

COWLITZ COUNTY
Department of Public Works
1600-13th Avenue South
Kelso, WA 98626
Phone (360) 577-3030

BOARD OF COUNTY COMMISSIONERS

ARNE MORTENSEN	District No. 1
DENNIS P. WEBER	District No. 2
RICHARD R. DAHL	District No. 3

Cowlitz County

Department of Public Works

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Signed: 12/3/2024



Signed 12/3/2024

Responsible for all portions of the Contract Documents

COWLITZ COUNTY
Department of Public Works
1600-13th Avenue South
Kelso, Washington 98626
Phone (360) 577-3030

Approved by:

Susan Eugenis, P.E.
County Engineer

Date

Cowlitz County

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***Included as indicated but numbered independently.

CALL FOR BIDS

The Board of County Commissioners of Cowlitz County, Washington will receive sealed bids until **January 8, 2025, prior to 1:30 p.m.**, for the following work: **TOWER ROAD WATER MAIN AND JUANITA WAY BOOSTER PUMP STATION PROJECT.**

At that time all bids will be publicly opened and read in the Board's hearing room. Bids must be addressed to:

Board of County Commissioners
Attn: Clerk of the Board
207 Fourth Avenue North
Kelso, WA 98626

Work performed under this contract consists of the following:

Installation of approximately 2,400 lineal feet of eight-inch ductile iron water main, traffic control, clearing and grubbing, roadway surveying, service connections, pressure reducing station, booster pump station, electrical upgrades and site and asphalt restoration.

It is highly recommended that all interested bidders attend the on-site pre-bid meeting and walk-through of the project on **Wednesday, December 17, 2024**, commencing promptly at 10:00 a.m., to inspect the existing site and discuss the construction and bidding process. This meeting will begin at 1204 Spirit Lake Hwy. (Shell Gas Station).

Project bid documents (Plans, specifications, addenda, bid documents, bidders list and plan holders list) for this project are available online for inspection during the bidding period through the Builders Exchange of Washington (BXWA) website at www.bxwa.com. Click on Posted Projects, then Public Works, then Cowlitz County and then Projects Bidding. These documents are available for viewing, downloading and printing on your own equipment free of charge. This service is provided to Prime Bidders, Subcontractors, and Vendors bidding on this project. Bidders will need to "Register as a Bidder" through the BXWA in order to receive automatic e-mail notification of future addenda and to be placed on the Bidders List. Bidders should contact Builder's Exchange of Washington at (425) 258-1303 for questions regarding access or registration.

It is the sole responsibility of the Bidder to obtain Addenda, if any. Addenda information will be available on the BXWA web site at www.bxwa.com. Cowlitz County accepts no responsibility or liability and will provide no accommodation to bidders who fail to check for addenda and thereby submit inadequate or incomplete responses.

Cowlitz County will not provide paper copies of the Project bid documents for this project for bidding purposes. A copy of the plans and specifications may be reviewed at the office of the Clerk of the Board of County Commissioners.

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 amount of such bid proposal. Should the successful bidder fail to enter into such contract and furnish satisfactory performance bond within the time stated in the specifications, the bid proposal deposit shall be forfeited to Cowlitz County.

All documents received in response to this invitation to bid will become a matter of public record and subject to the Washington public disclosure act under chapter 42.56 RCW.

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

The Board reserves the right to reject any and all bids and to waive any immaterial irregularities or informalities in any bid or in the bidding.

DATED this 3rd day of December, 2024.

BOARD OF COUNTY COMMISSIONERS
OF COWLITZ COUNTY, WASHINGTON

Richard R. Dahl, Chairman

Arne Mortenson, Commissioner

Dennis P. Weber, Commissioner

ATTEST:

Kelly Grayson, Clerk of the Board

BIDDER'S CHECKLIST

(Informational only – not required to be submitted with the BID)

TOWER ROAD WATER MAIN AND JUANITA WAY BOOSTER PUMP STATION PROJECT

Name of Project

ITEMS TO BE INCLUDED WITH BID

The following checked items are required to be completed and submitted with the BID, except as noted otherwise:

Required if Checked:

- 1. PROPOSAL FORM – To be completed and signed by bidder. Provide all information pertaining to BIDDER'S organization on the first page. Fill in all unit prices and amounts for each bid item. Fill in all subtotals, sales tax and the total bid amount in the spaces provided. List the addenda in the spaces provided to indicate acknowledgement. Sign, date, and provide requested information in the spaces provided on the last page.
- 2. CERTIFICATION OF APPRENTICESHIP – In the spaces provided on the PROPOSAL FORM, provide information on the BIDDER'S Apprenticeship Programs.
- 3. NON-COLLUSION DECLARATION – required on all projects.
- 4. PROPOSAL FOR INCORPORATING RECYCLED MATERIALS INTO THE PROJECT – required on all road construction projects.
- 5. CERTIFICATION FOR FEDERAL AID CONTRACTS – required on FHWA-funded projects.
- 6. DISADVANTAGED BUSINESS ENTERPRISE UTILIZATION CERTIFICATION – required on FHWA-funded projects with a goal of greater than 0%.
- 7. DISADVANTAGED BUSINESS ENTERPRISE (DBE) WRITTEN CONFIRMATION DOCUMENT – required on FHWA-funded projects with a goal of greater than 0%. This form is required to be submitted within 48 hours after the time for delivery of the bid proposal.
- 8. DISADVANTAGED BUSINESS ENTERPRISE (DBE) BID ITEM BREAKDOWN – required on FHWA-funded projects with a goal of greater than 0%. This form is required to be submitted within 48 hours after the time for delivery of the bid proposal.
- 9. DISADVANTAGED BUSINESS ENTERPRISE (DBE) TRUCKING CREDIT FORM – required on FHWA-funded projects with a goal of greater than 0%. This form is required to be submitted within 48 hours after the time for delivery of the bid proposal.
- 10. LOCAL AGENCY SUBCONTRACTOR LISTS – To be filled in and signed by BIDDER.

- 11. CONTRACTOR'S PROJECT INFORMATION STANDARD QUESTIONNAIRE - The BIDDER shall complete this form.
- 12. BID DEPOSIT FORM - This form is to be executed by the BIDDER and the Surety Company unless bid is accompanied by cash, cashier's check, or a certified check. The amount of the deposit or bid bond shall be not less than 5% of the total amount of the bid and may be shown in dollars or on a percentage basis. Bid Bond forms other than the enclosed form may be accepted providing it has been approved by the OWNER prior to bid submittal.
- 13. E-VERIFY DECLARATION – The BIDDER shall complete and sign this form.
- 14. CERTIFICATION OF COMPLIANCE WITH WAGE PAYMENT STATUTES – The BIDDER shall complete and sign this form. This form is required to be submitted within 24 hours after the time for delivery of the bid proposal.

PROPOSAL FORM

TO: Board of County Commissioners
County Administration Building
207 Fourth Avenue North, 3rd Floor
Kelso, WA 98626

FOR: **TOWER ROAD WATER MAIN AND JUANITA WAY BOOSTER PUMP STATION PROJECT**
Name of Project

FROM:	_____	_____
	Bidder's Business Name	Mailing Address
	_____	_____
	Email Address	City, State and Zip
	_____	_____
	Name of Bidder's Representative for Bid	Telephone
	_____	_____
	Washington Registration No.	Tax I.D. No.
	_____	_____
	Employment Security Department No.	State Excise Tax Registration No.
	_____	_____
	Industrial Insurance Coverage Account No.	UBI No.

INSTRUCTIONS TO BIDDERS

1. Contract Documents. See Section 1-04.2 of the Special Provisions for a list of the "contract documents" that make up the contract. Be sure that you have a copy of the **2024** Standard Specifications for Road, Bridge, and Municipal Construction, by the Washington State Department of Transportation and the American Public Works Association, Washington State Chapter. Such specifications are sometimes referred to as the "Standard Specifications."

2. Submission of Bid. Fill out this Proposal Form completely, in accordance with Section 1-02.6 of the Standard Specifications. Enclose your Proposal Form and bid deposit in an opaque sealed

envelope addressed to:

Cowlitz County Board of County Commissioners
Attn: Clerk of the Board
County Administration Building, 3rd Floor
207 Fourth Avenue North
Kelso, WA 98626

Mark the outside of the envelope with the name of the bidder, the name of the project, and the date and time of the bid opening. It is your responsibility to make sure that your bid is physically received by the Clerk of the Board by the time set for the bid opening. Bids not so received will not be considered. Bids may not be submitted by facsimile machine.

The County's determination of when a bid was received shall be final and non-appealable.

3. Bidder Responsibility Standards. It is the intent of the Owner to award a contract to the lowest, responsible and responsive bidder for all described Work. Before award, the bidder must meet all criteria and satisfy all requirements of the following bidder-responsibility standards to be considered a responsible and a responsive bidder. The bidder may be required by the Owner to submit documentation demonstrating compliance with these standards to be qualified to be awarded a contract. The bidder must:

- a. Have a current certificate of registration as a contractor in compliance with chapter 18.27 RCW, which must have been in effect at the time of bid submittal;
- b. Have a current Washington Unified Business Identifier (UBI) number;
- c. If applicable:
 - i. Have Industrial Insurance (workers' compensation) coverage for the bidder's employees working in Washington, as required in Title 51 RCW;
 - ii. Have a Washington Employment Security Department number, as required in Title 50 RCW;
 - iii. Have a Washington Department of Revenue state excise tax registration number, as required in Title 82 RCW;
- d. Not be disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065(3).

4. Execution of Contract. The successful bidder must use the performance bond form and other forms provided by Cowlitz County to be considered both a responsible and responsive bidder.

5. Sales Tax Code. In computing and reporting sales taxes payable to the Washington State Department of Revenue on this project, the following code number shall be used: **0800**.

PROPOSAL

The undersigned bidder proposes to perform the project named above in strict compliance with the contract documents, for the following amounts:

Item No.	Approximate Quantity	ITEM	UNIT PRICE \$	AMOUNT \$
1	Force Account	Miscellaneous Construction	25,000.00	25,000.00
2	Lump Sum	Contractor Surveying		
3	Force Account	Licensed Surveying	7500.00	7500.00
4	Force Account	Record Drawings	5000.00	5000.00
5	Lump Sum	Mobilization		
6	Lump Sum	Project Temporary Traffic Control		
7	2 Acre	Clearing And Grubbing		
8	Lump Sum	Removal Of Structures And Obstruction		
9	100 ton	Crushed Surfacing Base Course		
10	4000 Ton	Crushed Surfacing Top Course		
11	325 Ton	Hma Cl. 3/8" Pg 58h-22		
12	1701 L.F.	Ductile Iron Pipe For Water Main 8 In. Diam.		
13	1 Each	Connection To Existing Main		

Item No.	Approximate Quantity	ITEM	UNIT PRICE \$	AMOUNT \$
14	Lump Sum	Abandonment Of Terminated Water Facilities		
15	Lump Sum	Trench Excavation Safety System		
16	6 Each	Gate Valve 8 In. Diam.		
17	1 Each	Air Release/Air Vacuum Valve Assembly		
18	4 Each	Hydrant Assembly		
19	14 Each	Service Connection		
20	Lump Sum	Erosion/Water Pollution Prevention		
21	2 Acre	Seeding, Fertilizing And Mulching		
22	30 L.F.	Beam Guardrail Type 1		
23	Lump Sum	Pressure Reducing Valve Station		
24	Lump Sum	Pump Station Site Work		
25	Lump Sum	Pump Station Mechanical		
26	Lump Sum	Pump Station Electrical		
27	Lump Sum	Pump Station Automatic Control		
28	Lump Sum	Pump Station Testing, Startup And Training		

Item No.	Approximate Quantity	ITEM	UNIT PRICE \$	AMOUNT \$
29	450 L.F.	Water Line Special Construction Sta 11+75 To Sta 16+25		
30	150 L.F.	Water Line Construction Sta 16+68 To 18+18		
31	Force Account	Utility Conflict Relocation	100,000.00	100,000.00

SUBTOTAL\$ _____

WASHINGTON SALES TAX (7.8%)\$ _____

TOTAL COST TO COWLITZ COUNTY\$ _____

Addenda. The bidder acknowledges receipt of the following addenda: _____, _____, _____, _____, and _____. (Insert numbers of any addenda received.)

Non-Collusion. Each bidder must submit a declaration of non-collusion completely executed with their bid. Reasonable grounds for believing that any bidder(s) have engaged, either directly or indirectly, into any agreement, participated in any collusion, or otherwise taken any action, in restraint of free competitive bidding in connection with this bid will cause rejection of all proposals which said bidder(s) has shown interest, and none of the participants to such direct or indirect actions will be considered.

The person(s) signing this bid on behalf of the bidder declare(s) under penalty of perjury under the laws of the United States and the State of Washington that this bidder has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action, in restraint of free competitive bidding in connection with this bid.

Date

Signature of Person Authorized to Bind Bidder

Bidder's Business Name

Title of Person Signing Bid

Signed in _____, Washington

Failure to return this Declaration as part of the bid proposal package will make the bid nonresponsive and ineligible for award.

NON-COLLUSION DECLARATION

I, by signing the proposal, hereby declare, under penalty of perjury under the laws of the United States that the following statements are true and correct:

1. That the undersigned person(s), firm, association or corporation has (have) not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with the project for which this proposal is submitted.
2. That by signing the signature page of this proposal, I am deemed to have signed and to have agreed to the provisions of this declaration.

NOTICE TO ALL BIDDERS

To report rigging activities call:

1-800-424-9071

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

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

DOT Form 272-036I EF
07/2011



Proposal for Incorporating Recycled Materials into the Project

In compliance with a new law that went into effect January 1, 2016 (SHB1695), the Bidder shall propose below, the total percent of construction aggregate and concrete materials to be incorporated into the Project that are recycled materials. Calculated percentages must be within the amounts allowed in Section 9-03.21(1)E, Table on Maximum Allowable Percent (By Weight) of Recycled Material, of the Standard Specifications.

Proposed total percentage: _____percent.

Note: Use of recycled materials is highly encouraged within the limits shown above, but does not constitute a Bidder Preference, and will not affect the determination of award, unless two or more lowest responsive Bid totals are exactly equal, in which case proposed recycling percentages will be used as a tie-breaker, per the APWA GSP in Section 1-03.1 of the Special Provisions. Regardless, the Bidder's stated proposed percentages will become a goal the Contractor should do its best to accomplish. Bidders will be required to report on recycled materials actually incorporated into the Project, in accordance with the APWA GSP in Section 1-06.6 of the Special Provisions.

Bidder: _____

Signature of Authorized Official: _____

Date: _____

Local Agency Certification for Federal-Aid Contracts

The prospective participant certifies by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

This certification is material representation of the fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each failure.

The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such subrecipients shall certify and disclose accordingly.

Subcontractor List *Prepared in
compliance with RCW 39.30.060 as amended*

To Be Submitted with the Bid Proposal

Project Name Tower Road Water Main and Juanita Booster Pump Station Project

Failure to list subcontractors with whom the bidder, if awarded the contract, will directly subcontract for performance of the work of structural steel installation, rebar installation, heating, ventilation and air conditioning, plumbing, as described in Chapter 18.106 RCW, and electrical, as described in Chapter 19.28 RCW or naming more than one subcontractor to perform the same work will result in your bid being non-responsive and therefore void.

Subcontractor(s) with whom the bidder will directly subcontract that are proposed to perform the work of structural steel installation, rebar installation, heating, ventilation and air conditioning, plumbing, as described in Chapter 18.106 RCW, and electrical as described in Chapter 19.28 RCW must be listed below. The work to be performed is to be listed below the subcontractor(s) name.

To the extent the Project includes one or more categories of work referenced in RCW 39.30.060, and no subcontractor is listed below to perform such work, the bidder certifies that the work will either (i) be performed by the bidder itself, or (ii) be performed by a lower tier subcontractor who will not contract directly with the bidder.

Subcontractor Name _____
 Work to be performed _____

Subcontractor Name _____
 Work to be performed _____

Subcontractor Name _____
 Work to be performed _____

Subcontractor Name _____
 Work to be performed _____

Subcontractor Name _____
 Work to be performed _____

* Bidder's are notified that it is the opinion of the enforcement agency that PVC or metal conduit, junction boxes, etc, are considered electrical equipment and therefore considered part of electrical work, even if the installation is for future use and no wiring or electrical current is connected during the project.

BID DEPOSIT FORM

TOWER ROAD WATER MAIN AND JUANITA WAY BOOSTER PUMP STATION PROJECT

Name of Project

Name of Bidder

The bidder named above hereby submits its bid deposit in the form of a certified check, cashier's check, cash or bid bond in the amount of \$_____, which amount is not less than five (5) percent of the total bid.

PROPOSAL BOND

KNOW ALL MEN BY THESE PRESENTS, That we, _____, as Principal and _____, a corporation duly organized under the laws of the state of _____, and authorized to do business in the State of Washington, as Surety, are held and firmly bound unto Cowlitz County as Obligee, in the full and penal sum of five (5) percent of the total amount of the bid proposal of said Principal for the work hereinafter described, 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 bond is such, that whereas the Principal herein is herewith submitting his or its sealed proposal for the following public works project, to wit:

Said bid and proposal, by reference thereto, being made a part hereof.

NOW, THEREFORE, if the said proposal bid by said Principal be accepted, and the contract be awarded to said Principal, and if the said Principal shall duly make and enter into and execute said contract and shall furnish bond as required by the contract documents within a period of ten (10) days from and after said award, exclusive of the day of such award, then this obligation shall be null and void, otherwise it shall be and remain in full force and effect.

SIGNED AND SEALED this _____ day of _____, 2024.

Name of Bidder

Name of Surety

Authorized Signature

Authorized Signature*

Title

Title

Date

* Attach Power of Attorney

E-VERIFY DECLARATION

TOWER ROAD WATER MAIN AND JUANITA WAY BOOSTER PUMP STATION PROJECT

Cowlitz County Project No. 2951

Firm Name: _____

The undersigned declares, under **penalty of perjury** under the laws of Washington that:

1. That the above-named firm is currently enrolled in and using the E-Verify system implemented on October 25, 2011 as outlined in Resolution No. 11-118 and will continue to use the E-Verify system for so long as work is being performed on the above named project.
2. I certify that I am duly authorized to sign this declaration on behalf of the above-named bidder/proposer.
3. I acknowledge that Cowlitz County reserves the right to require a copy of the Memorandum of Understanding between the contractor listed above and the Department of Homeland Security certifying enrollment in the E-Verify program at any time. Failure to provide the required Memorandum of Understanding within 10 days of request could lead to suspension of this contract.

Dated at _____, State of _____ on this _____ day of _____, 2024.

Signature _____

Printed Name _____

THIS PAGE MUST BE RETURNED WITH THE BID DOCUMENTS

COMPLIANCE WITH WAGE PAYMENT LAWS DECLARATION

TOWER ROAD WATER MAIN AND JUANITA WAY BOOSTER PUMP STATION PROJECT

Cowlitz County Project No. 2951

Firm Name: _____

1. The bidder hereby certifies that, within the three-year period immediately preceding the bid solicitation date December 3, 2024 the bidder is not a “willful” violator, as defined in RCW 49.48.082, of any provision of chapters 49.46, 49.48, or 49.52 RCW, as determined by a final and binding citation and notice of assessment issued by the Department of Labor and Industries or through a civil judgment entered by a court of limited or general jurisdiction.
2. I certify that I am duly authorized to sign this declaration on behalf of the above-named bidder/proposer.
3. I acknowledge that Cowlitz County is required to receive this declaration as a condition to awarding the public works contract pursuant to RCW 39.04.350.

The undersigned declares, under penalty of perjury under the laws of Washington that the foregoing is true and correct.

Dated at _____, State of ____ on this ____ day of _____, 2024.

Signature _____

Printed Name _____

THIS PAGE MUST BE RETURNED BEFORE THE PUBLIC WORKS CONTRACT CAN BE AWARDED

AGREEMENT

THIS AGREEMENT is entered into between **COWLITZ COUNTY** and _____
_____ ("Contractor") for the following
project: **TOWER ROAD WATER MAIN AND JUANITA WAY BOOSTER PUMP STATION** ("the Project").

The Parties Agree as Follows:

1. Acceptance of Bid Proposal. Cowlitz County accepts Contractor's bid proposal for the Project. Such acceptance is limited to the following items of the bid proposal:

- a. Proposal Form
- b. Non-Collusion Declaration
- c. Recycled Materials Form
- d. Subcontractor List
- e. Bid Deposit Form
- f. E-Verify Declaration
- g. Certificate of Compliance Form

2. Contractor to Accomplish Project. Contractor shall do all work and furnish all labor, materials, equipment, tools, services, and incidentals necessary to accomplish the Project in strict compliance with the contract documents.

3. Contract Amount. Cowlitz County shall pay Contractor in accordance with the contract documents, based on the unit prices and lump sums stated in the Proposal Form. The total contract amount for the Project shall not exceed \$ _____, including sales taxes.

4. Contract Documents. (a) This Agreement shall be governed by and incorporates by reference the **2024** Standard Specifications for Road, Bridge, and Municipal Construction, by the Washington State Department of Transportation and the American Public Works Association, Washington State Chapter (the "Standard Specifications"). All provisions of the Standard Specifications apply unless specifically modified herein. (b) The contract documents constitute the parties' entire and integrated agreement concerning the Project, and supersede all prior and contemporaneous negotiations, representations, or agreements, both written and oral.

5. Contractor Registration. By submitting a bid, each bidder warrants that it is currently a registered contractor in accordance with RCW 18.27. Continuous registration throughout the performance of the project is a requirement of the contract. The bidder shall promptly furnish proof of registration whenever requested.

6. Performance of Work. (a) The Contractor warrants that all work performed shall be free from defects in material and workmanship, shall conform to the contract documents, and shall be fit for

Cowlitz County's intended purposes. If the Engineer determines that the work or any portion thereof fails to conform to the foregoing warranty, the Engineer shall give the Contractor written notice thereof and the Contractor shall then take corrective action as directed by the Engineer. The purpose of the corrective action will be to remedy all nonconforming work and any damage caused by the nonconforming work. The Contractor shall begin the repair or replacement within 10 days after receiving the notice, and shall complete the work within such reasonable time as determined by the Engineer. If the Contractor fails to carry out the corrective action as required by this section, Cowlitz County may perform the corrective action with its own resources or by contract, and the Contractor shall pay all the costs thereof.

(b) If other provisions of the contract documents contain different performance requirements, the more stringent requirements shall apply.

(c) No inspection, acceptance, use, or occupancy of the work, or payment for the work, shall relieve the Contractor from its responsibilities.

(d) The Contractor warrants good title to all materials, supplies, and equipment incorporated into the work.

7. Uniformity of Equipment and Materials. Like items of equipment and materials to be incorporated into the work shall be products of one manufacturer.

8. Substitution of "Equal" Products. Unless otherwise provided, any reference in the contract documents to any product by a brand name, model, or catalog number shall be understood as establishing a standard of quality, and products equal in quality may be substituted if approved in advance by the Engineer. If the Contractor wishes to propose a substitution, it shall submit a written proposal in a form approved by the County, warranting and guaranteeing the substitute product will be, including but not limited to, at least equal to or better than the specified product in terms of quality, function, performance, compatibility and reliability, to the Engineer, whose decision shall be final. The proposal shall identify the proposed substitute product, and the Contractor shall upon request and at its expense furnish the Engineer with such detailed specifications, test results, and other data as are helpful to the Engineer. The Engineer will not consider any proposed substitution if there is inadequate time available to fully evaluate the proposal. If the Engineer approves a substitution proposed by the Contractor, it is understood that such approval is in reliance upon the Contractor's written warranty and guarantee the substitute product to be, including but not limited to, at least equal to or better than the specified product in terms of quality, function, performance, compatibility and reliability. There will be no additional compensation or extensions to the time for completion. If the installation, application or performance of the substitute product is not equal to the specified product, the Engineer may direct the Contractor to remove the substitute product and replace it with the specified product, and to remedy any damage and delay caused by the use of the substitute product, all at the Contractor's expense. The County has a right to a deductive Change Order if the substituted product proves less costly than the contractually required product.

9. Utilities. The Contractor shall comply with the provisions of RCW 19.122, Standard Specification 1-07.17, and this paragraph. The telephone number of the Cowlitz County Utilities Coordinating Council is (800) 424-5555. The Special Provisions and/or contract plans identify all underground facilities known by Cowlitz County to be located within the area of excavation required as part of the work. Locations and dimensions shown in the Special Provisions or on the plans are in accordance with available information without uncovering, measuring, or other verification. If a utility is known or suspected of having underground facilities within the area of the excavation, and that utility is not a subscriber to the Cowlitz County Utilities Coordinating Council, the Contractor shall give individual notice to that utility.

10. Prevailing Wages and E-Verify. The Contractor shall pay all fees required by the Department of Labor and Industries in connection with the administration of the prevailing wage requirements. No increase in prevailing wage rates or fringe benefits shall be grounds for any additional compensation to the Contractor.

Cowlitz County requires that all businesses which contract with the County for contracts awarded by formal competitive procedures be enrolled in the Federal E-Verify Program. The requirement extends to every subcontractor meeting the same criteria. The Prime Contractor must provide certification of enrollment with bid submittal. The Prime Contractor is responsible for verification of every applicable subcontractor. Cowlitz County reserves the right to require a copy of a Memorandum of Understanding between the Prime or any Subcontractor and Department of Homeland Security upon request at any time during the project verifying the contractor's enrollment. Failure to provide this document could result in suspension of the project.

A copy of Resolution No. 11-118 is available at the Offices of the Board of County Commissioners. Federal E-Verify Program is a web-based application that can be accessed at www.dhs.gov/everify.

11. Air Pollution Regulations. The Southwest Washington Air Pollution Control Authority has adopted regulations to control the emission of contaminants into the air by sources within the Authority's jurisdiction, which includes Cowlitz County. The Contractor shall comply with all regulations and orders of such Authority.

12. Shoring. If in the performance of this contract, the Contractor or any subcontractor excavates any trench to a depth in excess of four feet, the Contractor shall provide adequate safety systems for the trench excavation that comply with the requirements of the Washington Industrial Safety and Health Act, RCW 39.04.180, and with all regulations thereunder. The costs associated with such trench safety systems are set forth as a separate bid item on each bidder's proposal. The costs of such trench safety systems shall not be considered as incidental to any other contract item, and any attempt to include the trench safety systems as an incidental cost is prohibited.

13. Worker's Benefits. The following is added at the end of Standard Specification 1-07.10: Notwithstanding the provisions of the preceding paragraphs, Contractor shall remain at all times liable for payment of any and all premiums due under Title 50 or Title 51 RCW, or any other employee benefit act, with respect to all work performed by Contractor or any subcontractor pursuant to this contract. Contractor shall indemnify, defend and hold Cowlitz County harmless from and against any claim or demand for payment of such premiums. The Contractor's responsibilities under this section shall survive the termination or completion of the contract and/or any release of retainage with respect to the contract. These waivers by the Contractor are a material inducement to County to enter into this contract, are reflected in Contractor's compensation, and have been mutually negotiated by the parties.

**BOARD OF COUNTY COMMISSIONERS
OF COWLITZ COUNTY, WASHINGTON**

Richard R. Dahl, Chairman

Name of Contractor

Arne Mortensen, Commissioner

Signatory Authorized by Firm Bylaws
to Bind Contractor

Dennis P. Weber, Commissioner

Title

ATTEST:

Kelly Grayson, Clerk of the Board

Date

Date

Washington Contractor's Registration Number

APPROVED AS TO FORM:

Civil Deputy Prosecuting Attorney

[Executed copies shall be delivered each to County, Contractor, Surety and Insurance Company]

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that the undersigned Contractor and Surety, a corporation, organized and existing under and by virtue of the laws of the State of Washington, are jointly and severally obligated to Cowlitz County, State of Washington, in the penal sum of \$ _____, for the payment of which sum we jointly and severally bind ourselves and our heirs, executors, administrators, and assigns, and successors and assigns, firmly in accordance with the following provisions:

The Contractor has entered into or is about to enter into a contract with Cowlitz County for the following project: **TOWER ROAD WATER MAIN AND JUANITA WAY BOOSTER PUMP STATION PROJECT.**

Now, if the Contractor fully and timely performs all terms, conditions and requirements of the contract in all respects, including all warranty provisions; and pays all laborers, mechanics, subcontractors, and materialmen, and all persons who supply such person or persons, or subcontractors, with provisions and supplies for the above project; and defends and indemnifies Cowlitz County against any direct or indirect loss, damage, liability, judgments, and costs, to the extent required by the contract; then this obligation shall be void; otherwise it shall remain in full force and effect.

Provided, however, that the conditions of this obligation shall not apply to any money loaned or advanced to the Contractor or to any subcontractor or other person in the performance of any such work.

The Surety, for value received agrees that no change, extension of time, alteration or addition to the terms of the Contract, the specifications accompanying the Contract or to the work to be performed under the Contract shall in any way affect its obligation on this bond, and waives notice of any change, extension of time, alteration or addition to the terms of the Contract or the work performed. The Surety agrees that modifications and changes to the terms and conditions of the Contract that increase the total amount to be paid the Contractor shall automatically increase the obligation of the Surety on this bond and notice to Surety is not required for such increased obligation.

Any judgment against Cowlitz County that relates to or is covered by the contract or this bond shall be conclusive against the Contractor and the Surety, not only as to the amount of damages but also as to their liability if reasonable notice of the pendency of the suit has been given.

Name of Contractor

Name of Surety

Authorized Signature

Authorized Signature*

Title

Title

Date

Date

* Attach Power of Attorney

SPECIAL PROVISIONS

INTRODUCTION TO THE SPECIAL PROVISIONS

(January 4, 2024 APWA GSP, Option A)

The work on this project shall be accomplished in accordance with the *Standard Specifications for Road, Bridge and Municipal Construction*, 2024 edition, as issued by the Washington State Department of Transportation (WSDOT) and the American Public Works Association (APWA), Washington State Chapter (hereafter “Standard Specifications”). The Standard Specifications, as modified or supplemented by these Special Provisions, all of which are made a part of the Contract Documents, shall govern all of the Work.

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

The GSPs are labeled under the headers of each GSP, with the effective date of the GSP and its source. For example:

(March 8, 2013 APWA GSP)

(April 1, 2013 WSDOT GSP)

Project specific special provisions are labeled without a date as such:

*(*****)*

Also incorporated into the Contract Documents by reference are:

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

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

**- DIVISION 1 -
GENERAL REQUIREMENTS**

DESCRIPTION OF WORK

(March 13, 1995)

This contract provides for the *** Installation of approximately 2,400 lineal feet of eight-inch ductile iron water main, traffic control, clearing and grubbing, roadway surveying, service connections, pressure reducing station, booster pump station, electrical upgrades and site and asphalt restoration*** and other work, all in accordance with the attached Contract Plans, these Contract Provisions, and the Standard Specifications.

(*****)

Appendices. The following appendices are hereby provided for the Contractor's information:

- Appendix A – Technical Specifications**
- Appendix B – Construction Plans**
- Appendix C – WSDOT Permit Application**
- Appendix D – Boundary and Topographic Surveys**

1-01.3 Definitions

(January 19, 2022 APWA GSP)

Delete the heading **Completion Dates** and the three paragraphs that follow it, and replace them with the following:

Dates

Bid Opening Date

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

Award Date

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

Contract Execution Date

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

Notice to Proceed Date

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

Substantial Completion Date

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

Physical Completion Date

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

Completion Date

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

Final Acceptance Date

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

Supplement this Section with the following:

All references in the Standard Specifications or WSDOT General Special Provisions, to the terms “Department of Transportation”, “Washington State Transportation Commission”, “Commission”, “Secretary of Transportation”, “Secretary”, “Headquarters”, and “State Treasurer” shall be revised to read “Contracting Agency”.

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

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

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

Additive

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

Alternate

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

Business Day

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

Contract Bond

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

Contract Documents

See definition for "Contract".

Contract Time

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

Notice of Award

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

Notice to Proceed

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

Traffic

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

1-02 BID PROCEDURES AND CONDITIONS

1-02.1 Prequalification of Bidders

Delete this Section and replace it with the following:

1-02.1 Qualifications of Bidder

(January 24, 2011 APWA GSP)

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

1-02.2 Plans and Specifications

(June 27, 2011 APWA GSP)

Delete this section and replace it with the following:

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

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

To Prime Contractor	No. of Sets	Basis of Distribution
Reduced plans (11" x 17")	2	Furnished automatically upon award.
Contract Provisions	2	Furnished automatically upon award.
Large plans (e.g., 22" x 34")	2	Furnished only upon request.

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

1-02.5 Proposal Forms

(July 31, 2017 APWA GSP)

Delete this section and replace it with the following:

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

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

1-02.6 Preparation of Proposal

(January 4, 2024 APWA GSP 1-02.6, Option B)

Supplement the second paragraph with the following:

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

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

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

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

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

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

Add the following new section:

1-02.6(1) Recycled Materials Proposal

(January 4, 2016 APWA GSP)

The Bidder shall submit with the Bid, its proposal for incorporating recycled materials into the project, using the form provided in the Contract Provisions.

1-02.10 Withdrawing, Revising, or Supplementing Proposal

(July 23, 2015 APWA GSP)

Delete this section, and replace it with the following:

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

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

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

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

(*****)

1-02.12 Public Opening of Proposal

Section 1-02.12 is supplemented with the following:

Date Of Opening Bids

Sealed bids are to be received at the following location prior to the time specified in the CALL FOR BIDS:

Board of County Commissioners
Attn: Clerk of the Board
County Administration Building
207 Fourth Avenue North, 3rd Floor
Kelso WA 98626

1-02.13 Irregular Proposals
(January 4, 2024 APWA GSP)

Delete this section and replace it with the following:

1. A Proposal will be considered irregular and will be rejected if:
 - a. The Bidder is not prequalified when so required;
 - b. The Bidder adds provisions reserving the right to reject or accept the Award, or enter into the Contract;
 - c. A price per unit cannot be determined from the Bid Proposal;
 - d. The Proposal form is not properly executed;
 - e. The Bidder fails to submit or properly complete a subcontractor list (WSDOT Form 271-015), if applicable, as required in Section 1-02.6;
 - f. The Bidder fails to submit or properly complete a Disadvantaged Business Enterprise Certification (WSDOT Form 272-056), if applicable, as required in Section 1-02.6;
 - g. The Bidder fails to submit Written Confirmations (WSDOT Form 422-031) from each DBE firm listed on the Bidder's completed DBE Utilization Certification that they are in agreement with the bidder's DBE participation commitment, if applicable, as required in Section 1-02.6, or if the written confirmation that is submitted fails to meet the requirements of the Special Provisions;
 - h. The Bidder fails to submit DBE Good Faith Effort documentation, if applicable, as required in Section 1-02.6, or if the documentation that is submitted fails to demonstrate that a Good Faith Effort to meet the Condition of Award in accordance with Section 1-07.11;
 - i. The Bidder fails to submit a DBE Bid Item Breakdown (WSDOT Form 272-054), if applicable, as required in Section 1-02.6, or if the documentation that is submitted fails to meet the requirements of the Special Provisions;
 - j. The Bid Proposal does not constitute a definite and unqualified offer to meet the material terms of the Bid invitation.

2. A Proposal may be considered irregular and may be rejected if:
 - a. The Proposal does not include a unit price for every Bid item;
 - b. Any of the unit prices are excessively unbalanced (either above or below the amount of a reasonable Bid) to the potential detriment of the Contracting Agency;
 - c. The authorized Proposal Form furnished by the Contracting Agency is not used or is altered;
 - d. The completed Proposal form contains unauthorized additions, deletions, alternate Bids, or conditions;
 - e. Receipt of Addenda is not acknowledged;

- f. A member of a joint venture or partnership and the joint venture or partnership submit Proposals for the same project (in such an instance, both Bids may be rejected); or
- g. If Proposal form entries are not made in ink.

1-02.14 Disqualification of Bidders

(May 17, 2018 APWA GSP, Option A)

Delete this section and replace it with the following:

A Bidder will be deemed not responsible if the Bidder does not meet the mandatory bidder responsibility criteria in RCW 39.04.350(1), as amended.

The Contracting Agency will verify that the Bidder meets the mandatory bidder responsibility criteria in RCW 39.04.350(1). To assess bidder responsibility, the Contracting Agency reserves the right to request documentation as needed from the Bidder and third parties concerning the Bidder's compliance with the mandatory bidder responsibility criteria.

If the Contracting Agency determines the Bidder does not meet the mandatory bidder responsibility criteria in RCW 39.04.350(1) and is therefore not a responsible Bidder, the Contracting Agency shall notify the Bidder in writing, with the reasons for its determination. If the Bidder disagrees with this determination, it may appeal the determination within two (2) business days of the Contracting Agency's determination by presenting its appeal and any additional information to the Contracting Agency. The Contracting Agency will consider the appeal and any additional information before issuing its final determination. If the final determination affirms that the Bidder is not responsible, the Contracting Agency will not execute a contract with any other Bidder until at least two business days after the Bidder determined to be not responsible has received the Contracting Agency's final determination.

1-02.15 Pre-Award Information

(December 30, 2022 APWA GSP)

Revise this section to read:

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

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

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

1-03 AWARD AND EXECUTION OF CONTRACT

1-03.1 Consideration of Bids

(December 30, 2022 APWA GSP)

Revise the first paragraph to read:

After opening and reading proposals, the Contracting Agency will check them for correctness of extensions of the prices per unit and the total price. If a discrepancy exists between the price per unit and the extended amount of any bid item, the price per unit will control. If a minimum bid amount has been established for any item and the bidder's unit or lump sum price is less than the minimum specified amount, the Contracting Agency will unilaterally revise the unit or lump sum price, to the minimum specified amount and recalculate the extension. The total of extensions, corrected where necessary, including sales taxes where applicable and such additives and/or alternates as selected by the Contracting Agency, will be used by the Contracting Agency for award purposes and to fix the Awarded Contract Price amount and the amount of the contract bond.

1-03.1(1) Identical Bid Totals

(December 30, 2022 APWA GSP)

Revise this section to read:

After opening Bids, if two or more lowest responsive Bid totals are exactly equal, then the tie-breaker will be the Bidder with an equal lowest bid, that proposed to use the highest percentage of recycled materials in the Project, per the form submitted with the Bid Proposal. If those percentages are also exactly equal, then the tie-breaker will be determined by drawing as follows: Two or more slips of paper will be marked as follows: one marked "Winner" and the other(s) marked "unsuccessful". The slips will be folded to make the marking unseen. The slips will be placed inside a box. One authorized representative of each Bidder shall draw a slip from the box. Bidders shall draw in alphabetic order by the name of the firm as registered with the Washington State Department of Licensing. The slips shall be unfolded and the firm with the slip marked "Winner" will be determined to be the successful Bidder and eligible for Award of the Contract. Only those Bidders who submitted a Bid total that is exactly equal to the lowest responsive Bid, and with a proposed recycled materials percentage that is exactly equal to the highest proposed recycled materials amount, are eligible to draw.

1-03.3 Execution of Contract

(January 4, 2024 APWA GSP Option B)

Revise this section to read:

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

for the authorized signer and bonding agent to the Contracting Agency.

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

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

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

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

1-03.4 Contract Bond

(July 23, 2015 APWA GSP)

Delete the first paragraph and replace it with the following:

The successful bidder shall provide executed payment and performance bond(s) for the full contract amount. The bond may be a combined payment and performance bond; or be separate payment and performance bonds. In the case of separate payment and performance bonds, each shall be for the full contract amount. The bond(s) shall:

1. Be on Contracting Agency-furnished form(s);
2. Be signed by an approved surety (or sureties) that:
 - a. Is registered with the Washington State Insurance Commissioner, and
 - b. Appears on the current Authorized Insurance List in the State of Washington published by the Office of the Insurance Commissioner,
3. Guarantee that the Contractor will perform and comply with all obligations, duties, and conditions under the Contract, including but not limited to the duty and obligation to indemnify, defend, and protect the Contracting Agency against all losses and claims related directly or indirectly from any failure:
 - a. Of the Contractor (or any of the employees, subcontractors, or lower tier subcontractors of the Contractor) to faithfully perform and comply with all contract obligations, conditions, and duties, or

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

1-03.7 Judicial Review

(December 30, 2022 APWA GSP)

Revise this section to read:

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

1-04 SCOPE OF THE WORK

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

(December 30, 2022 APWA GSP)

Revise the second paragraph to read:

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

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

(*****)

Interpretation of Contract Documents. The Contractor shall provide any work or materials clearly

implied in the contract even if the contract documents do not mention it specifically. If the contract documents use words that are not defined therein but have a commonly accepted technical or trade meaning, the words shall be understood in accordance with that meaning.

1-04.4 Changes

(January 19, 2022 APWA GSP)

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

1-05 CONTROL OF WORK

1-05.1 Authority of The Engineer

Section 1-05.1 is supplemented with the following:

(*****)

Additional Directions from Engineer. If the Engineer determines that the provisions in the contract documents are not sufficiently clear to permit the Contractor to proceed with the work, the Engineer shall, either on his own or upon written request from the Contractor, furnish such additional written directions as he deems appropriate. When the Contractor makes such a request, it must do so in writing and must allow ample time to permit the Engineer to review the request and prepare any additional directions before the Contractor begins any work affected by the request. Any additional directions issued by the Engineer shall not be inconsistent with the contract documents and shall have the same force and effect as if contained in the contract documents.

1-05.3 Plans and Working Drawings

Section 1-05.3 is supplemented with the following:

Shop Drawings. The Contractor shall submit five copies of all shop drawings and samples to the Engineer for review and approval in accordance with the schedule of shop drawing submissions approved at the Pre-Construction Conference. Contractor shall check and verify all field measurements prior to submitting shop drawings to Engineer for review and approval, shop drawings shall have been checked by and stamped with the approval of the Contractor and identified as the Engineer may require. The data shown on the Shop Drawings will be complete with respect to dimensions, design criteria, material or construction and like information to enable the Engineer to review the information as required.

At the time of each submission, the Contractor shall, in writing, call the Engineer's attention to any deviations that the Shop Drawings or Samples may have from the requirements of the Contract Documents.

The Engineer will review and approve with reasonable promptness shop drawings and samples, but the Engineer's review and approval shall be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, sequences, techniques or procedures of construction or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions. The Contractor shall make any corrections required by the

Engineer and shall return the required number of corrected copies of shop drawing and resubmit new samples for review and approval. The Contractor shall direct specific attention, in writing, to revisions other than the corrections called for by the Engineer on previous submittals. The Contractor's stamp of approval on any shop drawings or samples shall constitute a representation to Owner and Engineer that Contractor has either determined and verified all quantities, dimensions, field construction criteria, materials, catalog numbers, and similar data or assumes full responsibility for doing so, and that the Contractor has reviewed or coordinated each shop drawing or sample with the requirements of the work and the Contract Documents.

Where a shop drawing or sample is required by the Specifications, no related work shall be commenced until the submittal has been reviewed and approved by the Engineer.

The Engineer's review and approval of shop drawings or samples shall not relieve the Contractor from responsibility for any deviations from the Contract Documents unless the Contractor has, in writing, called the Engineer's attention to such deviation at the time of submission and the Engineer has given written concurrence and approval to the specific deviation, nor shall any concurrence or approval by the Engineer relieve the Contractor from responsibility for errors or omissions in the shop drawings.

The following is a list of products and materials for which the Contractor shall submit shop drawings or samples. The list may not be inclusive and is subject to revision by the Engineer and Owner.

1. Booster Pump Station
2. Pressure Reducing Valve Station

1-05.4 Conformity With and Deviations from Plans and Stakes

Supplement this section with the following:

Roadway and Utility Surveys

(January 13, 2021)

Contractor Surveying – Roadway/Utilities

The Contracting Agency has provided primary survey control in the Plans.

The Contractor shall be responsible for setting, maintaining, and resetting all alignment stakes, slope stakes, and grades necessary for the construction of the water line, services, booster pump station, roadbed, drainage, surfacing, paving, channelization and pavement marking, illumination and signals, guardrails and barriers, and signing. Except for the survey control data to be furnished by the Contracting Agency, calculations, surveying, and measuring required for setting and maintaining the necessary lines and grades shall be the Contractor's responsibility.

The Contractor shall inform the Engineer when monuments are discovered that were not identified in the Plans and construction activity may disturb or damage the monuments. All monuments noted on the plans "DO NOT DISTURB" shall be protected throughout the length of the project or be replaced at the Contractor's expense.

Detailed survey records shall be maintained, including a description of the work performed on each shift, the methods utilized, and the control points used. The record shall be adequate to allow the survey to be reproduced. A copy of each day's record shall be provided to the Engineer within three working days after the end of the shift.

The meaning of words and terms used in this provision shall be as listed in "Definitions of Surveying and Associated Terms" current edition, published by the American Congress on Surveying and Mapping and the American Society of Civil Engineers.

The survey work shall include but not be limited to the following:

1. Verify the primary horizontal and vertical control furnished by the Contracting Agency, and expand into secondary control by adding stakes and hubs as well as additional survey control needed for the project. Provide descriptions of secondary control to the Contracting Agency. The description shall include coordinates and elevations of all secondary control points.
2. Establish, the centerlines of all alignments, by placing hubs, stakes, or marks on centerline or on offsets to centerline at all curve points (PCs, PTs, and PIs) and at points on the alignments spaced no further than 50 feet.
3. Establish clearing limits, placing stakes at all angle points and at intermediate points not more than 50 feet apart. The clearing and grubbing limits shall be 5 feet beyond the toe of a fill and 10 feet beyond the top of a cut unless otherwise shown in the Plans.
4. Establish grading limits, placing slope stakes at centerline increments not more than 50 feet apart. Establish offset reference to all slope stakes. If Global Positioning Satellite (GPS) Machine Controls are used to provide grade control, then slope stakes may be omitted at the discretion of the Contractor
5. Establish the horizontal and vertical location of all drainage features, placing offset stakes to all drainage structures and to pipes at a horizontal interval not greater than 25 feet.
6. Establish roadbed and surfacing elevations by placing stakes at the top of subgrade and at the top of each course of surfacing. Subgrade and surfacing stakes shall be set at horizontal intervals not greater than 50 feet in tangent sections, 25 feet in curve sections with a radius less than 300 feet, and at 10-foot intervals in intersection radii with a radius less than 10 feet. Transversely, stakes shall be placed at all locations where the roadway slope changes and at additional points such that the transverse spacing of stakes is not more than 12 feet. If GPS Machine Controls are used to provide grade control, then roadbed and surfacing stakes may be omitted at the discretion of the Contractor.
7. Establish intermediate elevation benchmarks as needed to check work throughout the project.
8. Provide references for paving pins at 25-foot intervals or provide simultaneous surveying to establish location and elevation of paving pins as they are being placed.

9. For all other types of construction included in this provision, (including but not limited to channelization and pavement marking, illumination and signals, guardrails and barriers, and signing) provide staking and layout as necessary to adequately locate, construct, and check the specific construction activity.
10. Contractor shall determine if changes are needed to the profiles or roadway sections shown in the Contract Plans in order to achieve proper smoothness and drainage where matching into existing features, such as a smooth transition from new pavement to existing pavement. The Contractor shall submit these changes to the Engineer for review and approval 10 days prior to the beginning of work.

The Contractor shall provide the Contracting Agency copies of any calculations and staking data when requested by the Engineer.

The Contractor shall ensure a surveying accuracy within the following tolerances:

	<u>Vertical</u>	<u>Horizontal</u>
Slope stakes	±0.10 feet	±0.10 feet
Subgrade grade stakes set 0.04 feet below grade	±0.01 feet	±0.5 feet (parallel to alignment) ±0.1 feet (normal to alignment)
Water Line Alignment		±0.5 feet

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

When staking alignment and stationing, the Contractor shall perform independent checks from different secondary control to ensure that the points staked are within the specified survey accuracy tolerances.

The Contractor shall calculate coordinates for the alignment. The Contracting Agency will verify these coordinates prior to issuing approval to the Contractor for commencing with the work. The Contracting Agency will require up to seven calendar days from the date the data is received.

Contract work to be performed using contractor-provided stakes shall not begin until the stakes are approved by the Contracting Agency. Such approval shall not relieve the Contractor of responsibility for the accuracy of the stakes.

Stakes shall be marked in accordance with Standard Plan A10.10. When stakes are needed that are not described in the Plans, then those stakes shall be marked, at no additional cost to the Contracting Agency as ordered by the Engineer.

Payment

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

"Contractor Surveying", lump sum.

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

(April 4, 2011)

Licensed Surveyors

The Contractor shall be responsible for reestablishing or locating legal survey markers such as GLO monuments or property corner monuments, conduct boundary surveys to determine Contracting Agency right-of-way locations, and obtain, review and analyze deeds and records as necessary to determine these boundaries. The Contracting Agency will provide "rights of entry" as needed by the Contractor to perform the work.

The Contractor shall brush out or clear and stake or mark the right-of-way lines as designated by the Engineer.

The Contractor shall inform the Engineer when monuments are discovered that were not identified in the Plans and construction activity may disturb or damage the monuments. All monuments noted on the plans "DO NOT DISTURB" shall be protected throughout the length of the project or be replaced at Contractors expense.

When required, the Contractor shall prepare and file a Record of Survey map in accordance with RCW 58.09 and provide a recorded copy to the Contracting Agency. The Contracting Agency will provide all existing base maps, existing horizontal and vertical control, and other material available with Washington State Plane Coordinate information to the Contractor. The Contracting Agency will also provide maps, plan sheets, and/or aerial photographs clearly identifying the limits of the areas to be surveyed. The Contractor shall establish Washington State Plane Coordinates on all points required in the Record of Survey and other points designated in the Contract documents.

Existing right of way documentation, existing base maps, existing horizontal and vertical control descriptions, maps, plan sheets, aerial photographs and all other available material may be viewed by prospective bidders at the office of the Project Engineer.

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.

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

Payment

Payment will be made in accordance with Section 1-09.6 for the following bid item when included in the proposal:

“Licensed Surveying”, Force Account.

For the purpose of providing a common proposal for all bidders, the Contracting Agency has entered an amount for the item "Licensed Surveying" in the bid proposal (\$7500) to become a part of the total bid by the Contractor.

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

(August 14, 2013 APWA GSP)

Delete the sixth and seventh paragraphs of this section.

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.

1-05.18 Record Drawings

This section is supplemented with the following:

The Contractor is fully responsible for maintaining as-constructed records and measurements. Any

measurements taken by the Engineer or Contracting Agency are done for their own benefit and do not relieve the Contractor from this responsibility.

Show size, material, horizontal, and vertical locations of all existing utilities encountered during construction.

CAD files (AutoCAD .DWG or .DXF) will only qualify as record drawings if they include the full and complete record of changes, are scaled correctly, fully annotated, and can be overlaid directly on the original CAD files to create a legible record set. The Engineer will be the sole determiner if the CAD files meet these criteria.

Payment

Payment will be made in accordance with Section 1-09.6 for the following bid item when included in the proposal:

“Record Drawings”, Force Account.

For the purpose of providing a common proposal for all bidders, the Contracting Agency has entered an amount for the item "Record Drawings" in the bid proposal (\$5000) to become a part of the total bid by the Contractor.

1-06 CONTROL OF MATERIAL

1-06.6 Recycled Materials

(January 4, 2016 APWA GSP)

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

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

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

1-07 LEGAL RELATIONS AND RESPONSIBILITIES TO THE PUBLIC

1-07.1 Laws To Be Observed

Section 1-07.1 is supplemented with the following:

(October 1, 2005 APWA GSP)

Supplement this section with the following:

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

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

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

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

1-07.2 State Sales Tax

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

1-07.2 State Sales Tax

(June 27, 2011 APWA GSP)

The Washington State Department of Revenue has issued special rules on the State sales tax. Sections 1-07.2(1) through 1-07.2(3) are meant to clarify those rules. The Contractor should contact the Washington State Department of Revenue for answers to questions in this area. The Contracting Agency will not adjust its payment if the Contractor bases a bid on a misunderstood tax liability.

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

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

1-07.2(1) State Sales Tax — Rule 171

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

1-07.2(2) State Sales Tax — Rule 170

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

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

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

1-07.2(3) Services

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

1-07.3(2) Merchantable Timber Requirements (April 7, 2008)

Section 1-07.3(2) is supplemented with the following:

This project contains merchantable timber.

Export Restrictions - DOT Form 410-100, Purchaser Certification for Export Restricted Timber, will be

included when the contract is sent to the Contractor for execution. The form shall be completed and signed by the Contractor. The Contractor shall send the original signed form and one copy of the signed form directly to the Washington State Department of Revenue at the address on the form. The Contractor shall send one signed copy along with the other documents required by Section 1-03.3 to the Contracting Agency with the executed contract.

State Tax Requirements - It shall be the Contractor's responsibility to pay to the State Department of Revenue all taxes on harvested timber.

1-07.6 Permits and Licenses

Section 1-07.6 is supplemented with the following:

(*****)

The Contracting Agency has submitted/obtained the below-listed permit(s) for this project. A copy of the permit(s) is attached as an appendix for informational purposes. All contacts with the permitting agency concerning the below-listed permit(s) shall be through the Engineer. The Contractor shall obtain additional permits as necessary. All costs to obtain and comply with additional permits shall be included in the applicable bid items for the work involved. Copies of these permits are required to be onsite at all times.

*** WSDOT ***

1-07.7 Load Limits

Section 1-07.7 is supplemented with the following:

(March 13, 1995)

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

1-07.9(3) Apprentice Utilization Requirements

Section 1-07.9(3) is supplemented with the following:

Apprentice Utilization

This Contract includes an Apprentice Utilization Requirement. No less than 15 percent of project Labor Hours shall be performed by Apprentices.

Definitions

For the purposes of this specification the following definitions apply:

1. Apprentice is a person enrolled in a State-approved Apprenticeship Training Program.
2. Apprentice Utilization Requirement is the Apprentice labor hours expressed as a percentage of the project Labor Hours.

3. Good Faith Effort (GFE) is used if the Contractor doesn't meet the Apprentice Utilization Requirement. It describes the Contractor's efforts to meet the Apprentice Utilization Requirement including but not necessarily limited to the specific steps as described elsewhere in this specification.
4. Labor Hours are the total hours performed by all workers receiving an hourly wage who are directly employed upon the project including hours performed by workers employed by the Contractor and all subcontractors. Labor Hours do not include hours performed by foremen, superintendents, owners, and workers who are not subject to prevailing wage requirements.
5. State-approved Apprenticeship Training Program is an apprenticeship training program approved by the Washington State Apprenticeship Council.

Electronic Reporting

The Contractor shall use the State L&I online Prevailing Wage Intent & Affidavit (PWIA) System to submit the "Apprentice Utilization Plan" and "Good Faith Effort" documentation. Reporting instructions are available in the application.

Apprentice Utilization Plan

The Contractor shall submit an "Apprentice Utilization Plan" by filling out the Apprentice Utilization Plan Form (WSDOT Form 424-004) within 30 calendar days of execution, demonstrating how and when they intend to achieve the Apprentice Utilization Requirement. The Plan shall be in sufficient detail for the Engineer to track the Contractor's progress in meeting the utilization requirements and be updated and resubmitted as the Work progresses or when ordered by the Engineer.

If the Contractor is unable to demonstrate ability to meet the Apprentice Utilization Requirement in their Apprentice Utilization Plan, they must submit GFE documentation to the State L&I online PWIA System for review and comment with their Apprentice Utilization Plan. The Contractor shall actively seek out opportunities to meet the Apprentice Utilization Requirement during the construction Work.

Contacts

The Contractor may obtain information on State-approved Apprenticeship Training Programs by contacting the Department of Labor and Industries at:

Specialty Compliance And Services Division, Apprenticeship Section, P.O. Box 44530, Olympia, WA 98504-4530 or by phone at (360) 902-5320.

Compliance

In the event that the Contractor is unable to achieve the Apprentice Utilization Requirement, the Contractor shall submit to the State L&I online PWIA System GFE documentation for review and approval. The GFE documentation shall be submitted after Substantial Completion but no later than 30 days after Physical Completion. If GFE documentation was previously submitted as part of the Apprentice Utilization Plan, it shall be updated and resubmitted after Substantial Completion but no later than 30 days after Physical Completion.

If the Contractor fails to submit GFE documentation or if the Engineer does not approve the GFE, the Contractor will be subject to disciplinary actions as allowed under WAC 468-16-180.

Good Faith Efforts

The GFE shall describe in detail why the Contractor is not or was not able to attain the Apprentice Utilization Requirement. The GFE documentation shall address one or more of the following areas:

1. Correspondence on solicitation of Apprentices from a State-approved Apprenticeship Training Program(s), and the response from the solicited State-Approved Apprenticeship Training Program(s) when there is a lack of availability of Apprentices.
2. Provide documentation that shows Contract requirements for TERO, Special Training or Disadvantage Business Enterprise requirements affect the ability to obtain Apprentice Labor Hours on the Contract.
3. Provide documentation demonstrating what efforts the Contractor has taken to require subcontractors to solicit and employ Apprentices. Documentation could be posters placed on site, emphasis in subcontracts about employing Apprentices, letters, memos or other correspondence from Contractor to subcontractor that put an emphasis on employing Apprentices.

Contractors may receive a GFE credit for graduated Apprentice hours through the end of the calendar year for all projects worked on as long as the Apprentice remains continuously employed with the same Contractor they were working for when they graduated. If an Apprentice graduates during employment on a project of significant duration, they may be counted towards a GFE credit for up to one year after their graduation or until the end of the project (whichever comes first). Determination of whether or not Contract requirements were met in good faith will be made by subtracting the hours from the journeyman total reported hours for the project and adding them to the apprentice hour total. If the new utilization percentage meets the Contract requirement, the Contractor will be reported as meeting the requirement in good faith.

Payment

All costs incurred by the Contractor for complying with this specification shall be included in the Contract prices for the Bid items of Work involved.

1-07.13 Contractor's Responsibility for Work

(*****)

1-07.13(4) Repair of Damage

Section 1-07.13(4) is revised to read:

The Contractor shall promptly repair all damage to either temporary or permanent work as directed by the Engineer. For damage qualifying for relief under Sections 1-07.13(1), 1-07.13(2) or 1-07.13(3), payment will be made in accordance with Section 1-04.4. Payment will be limited to repair of damaged work only. No payment will be made for delay or disruption of work.

(*****)

1-07.14 Responsibility for Damage

Section 1-07.14 is supplemented with the following:

Indemnification. References in Standard Specification 1-07.14 to the Contractor's "agents" shall be understood to include the Contractor's subcontractors. The Contractor's responsibilities under Standard Specification 1-07.14 shall survive the termination or completion of the contract.

Utilities and Similar Facilities

Section 1-07.17 is supplemented with the following:

(April 2, 2007)

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

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:

- **Power: Cowlitz Public Utility District
961 12th Avenue
Longview, Washington 98632
(360) 577-7546

- Gas: Cascade Natural Gas
2688 Coweeman Park Dr.
Kelso, Washington 98626
(888) 522-1130

- Nippon Dynawave Packaging Company
3401 Industrial Way
Longview, Washington 98632
(360) 425-2150

- Telephone: Lumen Technologies
4501 NE Minnehaha St, Bldg II
Vancouver, WA 98661
(564) 888-2024

- Kalama Telephone
PO Box 1068
Kalama, Washington 98625
(360) 673-2764

- Sprint Communications
2210 S. 35th Street
Tacoma, WA 98409
(360) 402-4159

Ziply Fiber
354 S. 4th St.
P.O. Box 535
Coos Bay, OR. 97420
(503) 626-3270

Water/Sewer: Cowlitz County Public Works (includes Leachate Pipeline)
1600 – 13th Avenue South
Kelso, WA 98625
(360) 577-3030

Fiber Optic: Cascade Networks
1111 11th Avenue
Longview, WA 98632-3109
(360) 414-5990

Lumen Technologies
4501 NE Minnehaha St, Bldg II
Vancouver, WA 98661
(564) 888-2024

AT&T
11241 Willows Road NE Suite 130
Redmond, WA 98052

Zayo Fiber Solutions
2101 4th Avenue, Suite 2000
Seattle, Washington 98121
(702) 755-1143

Cable: Comcast
6916 NE 40th Street
Vancouver, WA 98661
(360) 891-3204**

1-07.18 Public Liability and Property Damage Insurance

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

1-07.18 Insurance

(January 4, 2024 APWA GSP)

1-07.18(1) General Requirements

- A. The Contractor shall procure and maintain the insurance described in all subsections of section 1-07.18 of these Special Provisions, from insurers with a current A. M. Best rating of not less

than A-: VII and licensed to do business in the State of Washington. The Contracting Agency reserves the right to approve or reject the insurance provided, based on the insurer's financial condition.

- B. The Contractor shall keep this insurance in force without interruption from the commencement of the Contractor's Work through the term of the Contract and for thirty (30) days after the Physical Completion date, unless otherwise indicated below.
- C. If any insurance policy is written on a claims-made form, its retroactive date, and that of all subsequent renewals, shall be no later than the effective date of this Contract. The policy shall state that coverage is claims made and state the retroactive date. Claims-made form coverage shall be maintained by the Contractor for a minimum of 36 months following the Completion Date or earlier termination of this Contract, and the Contractor shall annually provide the Contracting Agency with proof of renewal. If renewal of the claims made form of coverage becomes unavailable, or economically prohibitive, the Contractor shall purchase an extended reporting period ("tail") or execute another form of guarantee acceptable to the Contracting Agency to assure financial responsibility for liability for services performed.
- D. The Contractor's Automobile Liability, Commercial General Liability and Excess or Umbrella Liability insurance policies shall be primary and non-contributory insurance as respects the Contracting Agency's insurance, self-insurance, or self-insured pool coverage. Any insurance, self-insurance, or self-insured pool coverage maintained by the Contracting Agency shall be excess of the Contractor's insurance and shall not contribute with it.
- E. The Contractor shall provide the Contracting Agency and all additional insureds with written notice of any policy cancellation, within two business days of their receipt of such notice.
- F. The Contractor shall not begin work under the Contract until the required insurance has been obtained and approved by the Contracting Agency
- G. Failure on the part of the Contractor to maintain the insurance as required shall constitute a material breach of contract, upon which the Contracting Agency may, after giving five business days' notice to the Contractor to correct the breach, immediately terminate the Contract or, at its discretion, procure or renew such insurance and pay any and all premiums in connection therewith, with any sums so expended to be repaid to the Contracting Agency on demand, or at the sole discretion of the Contracting Agency, offset against funds due the Contractor from the Contracting Agency.
- H. All costs for insurance shall be incidental to and included in the unit or lump sum prices of the Contract and no additional payment will be made.
- I. Under no circumstances shall a wrap-up policy be obtained, for either initiating or maintaining coverage, to satisfy insurance requirements for any policy required under this Section. A "wrap up policy" is defined as an insurance agreement or arrangement under which all the parties working on a specified or designated project are insured under one policy for liability arising out of that specified or designated project.

1-07.18(2) Additional Insured

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

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

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

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

1-07.18(3) Subcontractors

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

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

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

1-07.18(4) Verification of Coverage

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

Verification of coverage shall include:

1. An ACORD certificate or a form determined by the Contracting Agency to be equivalent.
2. Copies of all endorsements naming Contracting Agency and all other entities listed in 1-07.18(2) as additional insured(s), showing the policy number. The Contractor may submit a copy of any blanket additional insured clause from its policies instead of a separate endorsement.

3. Any other amendatory endorsements to show the coverage required herein.
4. A notation of coverage enhancements on the Certificate of Insurance shall not satisfy these requirements – actual endorsements must be submitted.

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

1-07.18(5) Coverages and Limits

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

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

1-07.18(5)A Commercial General Liability

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

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

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

Such policy must provide the following minimum limits:

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

1-07.18(5)B Automobile Liability

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

Such policy must provide the following minimum limit:

\$1,000,000 Combined single limit each accident

1-07.18(5)C Workers' Compensation

The Contractor shall comply with Workers' Compensation coverage as required by the Industrial Insurance laws of the State of Washington.

1-07.18(5)K Professional Liability

(December 30, 2022 APWA GSP)

The Contractor and/or its subcontractor(s) and/or its design consultant providing construction management, value engineering, or any other design-related non-construction professional services shall provide evidence of Professional Liability insurance covering professional errors and omissions.

Such policy shall provide the following minimum limits:

\$1,000,000 per claim and annual aggregate

If the scope of such design-related professional services includes work related to pollution conditions, the Professional Liability insurance shall include coverage for Environmental Professional Liability.

If insurance is on a claims-made form, its retroactive date, and that of all subsequent renewals, shall be no later than the effective date of this Contract.

1-07.23 Public Convenience And Safety

1-07.23(1) Construction Under Traffic

The second paragraph of Section 1-07.23(1) is supplemented with the following:

(*****)

The Contractor shall limit the total delay to the public, to a maximum of *** 20 *** minutes, during travel through the project. If the delay becomes greater than *** 20 *** minutes, the Contractor shall immediately begin to take action to cease the operations that are causing the delays. If the *** 20 *** minute delay limit has been exceeded, as determined by the Engineer, the Contractor shall provide to the Engineer, a written proposal to revise his work operations to meet the *** 20 *** minute limit. This proposal shall be approved by the Engineer prior to resuming any work requiring traffic control.

1-07.24 Rights of Way

(July 23, 2015 APWA GSP)

Delete this section and replace it with the following:

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

Generally, the Contracting Agency will have obtained, prior to bid opening, all rights of way and

easements, both permanent and temporary, necessary for carrying out the work. Exceptions to this are noted in the Bid Documents or will be brought to the Contractor's attention by a duly issued Addendum.

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

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

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

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

1-08 PROSECUTION AND PROGRESS

Add the following new section:

1-08.0 Preliminary Matters

(May 25, 2006 APWA GSP)

Add the following new section:

1-08.0(1) Preconstruction Conference

(October 10, 2008 APWA GSP)

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

preconstruction conference will be:

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

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

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

Add the following new section:

1-08.0(2) Hours of Work

(December 8, 2014 APWA GSP)

Except in the case of emergency or unless otherwise approved by the Engineer, the normal working hours for the Contract shall be any consecutive 8-hour period between 7:00 a.m. and 6:00 p.m. Monday through Friday, exclusive of a lunch break. If the Contractor desires different than the normal working hours stated above, the request must be submitted in writing prior to the preconstruction conference, subject to the provisions below. The working hours for the Contract shall be established at or prior to the preconstruction conference.

All working hours and days are also subject to local permit and ordinance conditions (such as noise ordinances).

If the Contractor wishes to deviate from the established working hours, the Contractor shall submit a written request to the Engineer for consideration. This request shall state what hours are being requested, and why. Requests shall be submitted for review no later than 10 am prior to the day(s) the Contractor is requesting to change the hours.

If the Contracting Agency approves such a deviation, such approval may be subject to certain other conditions, which will be detailed in writing. For example:

1. On non-Federal aid projects, requiring the Contractor to reimburse the Contracting Agency for the costs in excess of straight-time costs for Contracting Agency representatives who worked during such times. (The Engineer may require designated representatives to be present during the work. Representatives who may be deemed necessary by the Engineer include but are not limited to: survey crews; personnel from the Contracting Agency's material testing lab;

- inspectors; and other Contracting Agency employees or third party consultants when, in the opinion of the Engineer, such work necessitates their presence.)
2. Considering the work performed on Saturdays, Sundays, and holidays as working days with regard to the contract time.
 3. Considering multiple work shifts as multiple working days with respect to contract time even though the multiple shifts occur in a single 24-hour period.
 4. If a 4-10 work schedule is requested and approved the non-working day for the week will be charged as a working day.
 5. If Davis Bacon wage rates apply to this Contract, all requirements must be met and recorded properly on certified payroll.

1-08.0(3) Reimbursement for Overtime Work of Contracting Agency Employees

(May 25, 2006 APWA GSP;

Where the Contractor elects to work on a Saturday, Sunday, or holiday, or longer than an 8-hour work shift on a regular working day, as defined in the Standard Specifications, such work shall be considered as overtime work. On all such overtime work an inspector will be present, and a survey crew may be required at the discretion of the Engineer. In such case, the Contracting Agency may deduct from amounts due or to become due to the Contractor for the costs in excess of the straight-time costs for employees of the Contracting Agency required to work overtime hours.

The Contractor by these specifications does hereby authorize the Engineer to deduct such costs from the amount due or to become due to the Contractor.

1-08.1 Subcontracting

Section 1-08.1 is supplemented with the following:

(*****)

The Contractor shall ensure that each subcontractor (in any tier) agrees in writing to: (a) perform its work in strict compliance with these contract documents; and (b) defend, indemnify, and hold harmless Cowlitz County (and its officials, employees, and agents) from claims and liabilities arising from the subcontractor's acts and omissions, to the same extent provided in Standard Specification 1-07.14 for the Contractor. Upon request, the Contractor will promptly provide the Engineer with a copy of any subcontract.

The Contractor shall include the language of this section in each of its first tier subcontracts, and shall require each of its subcontractors to include the same language of this section in each of their subcontracts, adjusting only as necessary the terms used for the contracting parties. Upon request of the Owner, the Contractor shall promptly provide documentation to the Owner demonstrating that the subcontractor meets the subcontractor responsibility criteria below. The requirements of this section apply to all subcontractors regardless of tier.

At the time of subcontract execution, the Contractor shall verify that each of its first tier subcontractors meets the following bidder responsibility criteria:

1. Have a current certificate of registration in compliance with chapter 18.27 RCW, which must have been in effect at the time of subcontract bid submittal;
2. Have a current Washington Unified Business Identifier (UBI) number;
3. If applicable, have:
 - a. Have Industrial Insurance (workers' compensation) coverage for the subcontractor's employees working in Washington, as required in Title 51 RCW;
 - b. A Washington Employment Security Department number, as required in Title 50 RCW;
 - c. A Washington Department of Revenue state excise tax registration number, as required in Title 82 RCW;
 - d. An electrical contractor license, if required by Chapter 19.28 RCW;
 - e. An elevator contractor license, if required by Chapter 70.87 RCW.
4. Not be disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065 (3).

1-08.4 Prosecution of Work

Delete this section and replace it with the following:

1-08.4 Notice to Proceed and Prosecution of Work

(July 23, 2015 APWA GSP)

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

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

Section 1-08.5 is supplemented with the following:

(March 13, 1995)

This project shall be physically completed within *** 220 *** working days.

1-08.9 Liquidated Damages

(March 3, 2021 APWA GSP, Option B – cannot be used on Federal Aid Projects)

Revise the second and third paragraphs to read:

Accordingly, the Contractor agrees:

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

Liquidated Damages Formula

$$LD=0.15C/T$$

Where:

- LD = liquidated damages per working day (rounded to the nearest dollar)
- C = original Contract amount
- T = original time for Physical Completion

When the Contract Work has progressed to Substantial Completion as defined in the Contract, the Engineer may determine the Contract Work is Substantially Complete. The Engineer will notify the Contractor in writing of the Substantial Completion Date. For overruns in Contract time occurring after the date so established, the formula for liquidated damages shown above will not apply. For overruns in Contract time occurring after the Substantial Completion Date, liquidated damages shall be assessed on the basis of direct engineering and related costs assignable to the project until the actual Physical Completion Date of all the Contract Work. The Contractor shall complete the remaining Work as promptly as possible. Upon request by the Project Engineer, the Contractor shall furnish a written schedule for completing the physical Work on the Contract.

1-09 MEASUREMENT AND PAYMENT

1-09.6 Force Account

(December 30, 2022 APWA GSP)

Supplement this section with the following:

The Contracting Agency has estimated and included in the Proposal, dollar amounts for all items to be paid per force account, only to provide a common proposal for Bidders. All such dollar amounts are to

become a part of Contractor's total bid. However, the Contracting Agency does not warrant expressly or by implication, that the actual amount of work will correspond with those estimates. Payment will be made on the basis of the amount of work actually authorized by the Engineer.

1-09.9 Payments

(December 30, 2022 APWA GSP)

Section 1-09.9 is revised to read:

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

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

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

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

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

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

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

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

Progress payments for work performed shall not be evidence of acceptable performance or an admission by the Contracting Agency that any work has been satisfactorily completed. The determination of payments under the contract will be final in accordance with Section 1-05.1. Failure to perform obligations under the Contract by the Contractor may be decreed by the Contracting Agency to be adequate reason for withholding any payments until compliance is achieved.

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

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

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

(March 13, 2012 APWA GSP)

Supplement this section with the following:

Lump sum item breakdowns are not required when the bid price for the lump sum item is less than \$20,000.

Section 1-09.9 is supplemented with the following:

(*****)

Partial Payments. Partial payments shall be made once each month, based on estimates prepared by

the Engineer. The Contractor shall prepare a document detailing work and labor performed and material furnished during each calendar month, and shall deliver the document to the Engineer by the fifth day of the following month. The documentation shall be in a format prescribed by the Engineer. If the Contractor's documentation is timely submitted, the County Auditor will issue a warrant payable to the Contractor on the last working day of the month, based on the estimate prepared by the Engineer.

1-09.11(3) Time Limitation and Jurisdiction
(December 30, 2022 APWA GSP)

Revise this section to read:

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

1-09.13(3)A Arbitration General
(January 19, 2022 APWA GSP)

Revise the third paragraph to read:

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

1-10 TEMPORARY TRAFFIC CONTROL
1-10.2 Traffic Control Management

Section 1-10.2 is supplemented with the following:

(November 2, 2022)

Work Zone Safety Contingency

Enhancements to improve the effectiveness of the accepted traffic control plans to increase the safety of the work zones shall be discussed on a weekly basis between the Contractor and the Contracting Agency. Enhancements shall be mutually agreed upon by the Contractor and Engineer prior to

performing any Work to implement the enhancement.

Enhancements do not include the use of Uniformed Police Officers or WSP, address changes to the allowed work hour restrictions, or changes to the staging plans in the Contract (if applicable). If allowed by the Engineer, these items will be addressed in accordance with Section 1-04.4.

The Contractor shall be solely responsible for submitting any traffic control plan revision to implement the enhancement in accordance with Section 1-10.2(2).

General

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

(October 3, 2022)

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

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

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

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

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

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

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

1-10.3 Traffic Control Labor, Procedures, and Devices

1-10.3(3)A Construction Signs

(*****)

The first paragraph of Section 1-10.3(3)A is revised to read as follows:

All signs required by the approved traffic control plan(s) as well as any other appropriate signs prescribed by the Engineer shall be furnished by the Contractor. The Contractor shall provide the posts or supports and erect and maintain the signs in a clean, neat, and presentable condition until the necessity for them has ceased. When the need for these signs has ceased, the Contractor, upon approval of the Engineer, shall remove all signs, posts, and supports from the project and they shall remain the property of the Contractor. There shall be no intermixing of signs with non-fluorescent orange reflective sign sheeting and signs with fluorescent orange reflective sign sheeting on the same signpost.

The third paragraph of Section 1-10.3(3)A is supplemented with the following:

The Contractor shall furnish, install, and remove all construction signs and all cones, barricades, flashers, and other traffic control devices of a temporary and portable nature. The Contractor shall maintain all signs and other traffic control devices.

"MOTORCYCLES USE EXTREME CAUTION" signs per W21-1701 of the WSDOT Sign Fabrication Manual shall be supplied by the Contractor if there will be grooved pavement, abrupt lane edges, steel plates or gravel-or-earth surfaced roadways within the project limits. The Contractor shall include the signs in the Traffic Control Plan and install the signs in advance of the work zone and maintain the signs for as long as the above conditions are present. These signs are in addition to any other signs stating the condition of the roadway. MOTORCYCLES USE EXTREME CAUTION" signs shall be considered Class B signs.

The seventh paragraph of Section 1-10.3(3)A is revised to read as follows:

Signs, posts, or supports that are lost, stolen, damaged, destroyed, or which the Engineer deems to be unacceptable while their use is required on the project, shall be replaced by the Contractor without additional compensation.

1-10.4 Measurement (1-10.4(3))

1-10.4(3) Reinstating Unit Items With Lump Sum Traffic Control

Section 1-10.4(3) is supplemented with the following:

(November 2, 2022)

The bid proposal contains the item "Project Temporary Traffic Control," lump sum. The provisions of

Section 1-10.4(1), Section 1-10.4(3), and Section 1-10.5(3) shall apply.

BID ITEMS

BID ITEM 1: MISCELLANEOUS CONSTRUCTION

This bid item shall be accomplished in accordance with the Plans and Standard Specification Section 1-09.6, except as modified below.

1-09.6 Force Account

Insert the following paragraph before the first paragraph of Section 1-09.6, which begins "The terms of the contract or of a change order may call...":

The Miscellaneous Construction bid item has been included for any additional work directed by the Engineer that is not required by the original contract. The amount indicated in the proposal for this bid item is to provide a common bid amount. The actual amount paid under this bid item may vary from no payment to the full amount of the bid item.

Add the following to Section 1-09.6:

In lieu of the preceding prescribed method of determining payment for force account work, payment may be made at unit prices or lump sum prices agreed to by the Engineer and the Contractor, prior to beginning the Miscellaneous Construction work.

BID ITEM 2: CONTRACTOR SURVEYING

BID ITEM 3: LICENSED SURVEYING

BID ITEM 4: RECORD DRAWINGS

These bid items shall be accomplished in accordance with the Plans, Standard Specification Section 1-05.4 and the Special Provisions for Section 1-05.4 along with Section 1-05.18. The amount indicated in the proposal for bid items 3 and 4 are to provide a common bid amount. The actual amount paid under each bid item may vary from no payment to the full amount of the bid item.

BID ITEM 5: MOBILIZATION

This bid item shall be accomplished in accordance with the Plans and Standard Specification Section 1-09.7.

BID ITEM 6: PROJECT TEMPORARY TRAFFIC CONTROL

These bid items shall be accomplished in accordance with the Plans and Standard Specification Sections 1-07 and 1-10 and the Special Provisions for Section 1-10.

BID ITEM 7: CLEARING AND GRUBBING

This bid item shall be accomplished in accordance with the Plans and Standard Specification Section 2-01 except as modified below:

2-01.1 Description

Delete paragraph one of Section 2-01.1, which begins "The Contractor shall clear..." and replace with the following:

(*****)

The Contractor shall clear, grub, and clean the entire limits of clearing within the project area, unless otherwise noted or specified. The Contractor shall also clear, grub and clean areas designated to receive fill materials, as specified herein. Existing trees outside the limits of clearing and specific improvements marked on the plans as remaining shall be protected from damage.

Delete paragraph two of Section 2-01.1 which begins "Clearing" means removing and..." and replace with the following:

(*****)

"Clearing" means removing and disposing of all unwanted material from the surface, as determined by the Engineer, such as trees, brush, vines, down timber, lumber, concrete, miscellaneous trash, and other.

No waste site has been provided by the County for this project.

2-01.5 Payment

Add the following to the third paragraph of Section 2-01.5 which begins "the unit Contract price per acre...":

(*****)

It has been calculated that there are approximately 2 acres of Clearing and Grubbing required for this project. This value has been provided for the purposes of bidding only. No adjustment to this lump sum bid item will be made.

BID ITEM 8: REMOVAL OF STRUCTURES AND OBSTRUCTIONS

This bid item shall be accomplished in accordance with the Plans and Standard Specification Section 2-02, except as modified below:

2-02.1 Description

Add the following to Section 2-02.1:

(*****)

Removal of Structures and Obstructions shall consist of the following work:

- 1. **As Detailed on the plans**

2-02.5 Payment

Add the following to Section 2-02.5:

(*****)

The lump sum contract price shall be full pay for excavating, loading, hauling, placing, or otherwise disposing of all items of this bid item designated for removal, salvage, or abandonment.

The contract price shall also include all backfilling as is necessary to bring the voids left by the removal of the items specified above to match the elevation of the sub-grade or surrounding grade.

It has been calculated that there are approximately 1000 square yards of existing asphalt concrete pavement located within the project limits that are designated for removal in the Removal of Structure and Obstruction bid item. This value has been provided for the purposes of bidding only. No cost adjustment to the lump sum bid item for Removal of Structure and Obstruction will be made.

BID ITEM 9: CRUSHED SURFACING BASE COURSE

BID ITEM 10: CRUSHED SURFACING TOP COURSE

These bid items shall be accomplished in accordance with the Plans and Standard Specification Section 4-04, except as modified below.

(*****)

4-04.3(4) Placing and Spreading

Delete item 2 of Section 4-04.3(4), which begins "Road Mix Method. Each..." and replace with the following:

2. **Road Mix Method.** The road mix method of mixing crushed surfacing base course and top course will not be allowed.
3. **Placement on Construction Geotextile.** Crushed surfacing base and top course to be placed on construction geotextile shall not be dumped directly onto geotextile. Crushed surfacing base and top course shall be dumped on previously placed materials then spread over the geotextile and compacted as required by the Plans.

(*****)

Delete the second paragraph under item **2 Road Mix Method** of Section 4-04.3(4), which begins "The following nominal depth..." and replace with the following:

The following nominal depth of compacted material shall not be exceeded in any one course without the approval of the Engineer:

Crushed Surfacing	0.50-foot
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4-04.3(5) Shaping and Compaction

Add the following to Section 4-04.3(5):

(*****)

The top surface of the compacted materials shall not deviate from the design grade in excess of the following:

Crushed Surfacing Base/Top Course: + or – 0.02 foot.

Payment

“Crushed Surfacing Base Course/Top Course”, per ton.

The unit contract price per ton shall be full pay for furnishing, processing, hauling, placing, and compacting the Base/Top Course. This bid item is not subject to Section 1-04.6 and shall be paid for only the amount placed per ton per truck tickets.

BID ITEM 11: HMA CLASS 3/8 Inch PG 58H-22

These bid items shall be accomplished in accordance with the Plans, the following APWA GSP for Section 5-04, as modified by Cowlitz County, and the subsequently following WSDOT GSP for Asphalt Cost Price Adjustment (include if WSDOT GSP is included). Cowlitz County modifications to the APWA GSP are shown as underlined text for additions and as strikethrough text for deletions.

5-04 Hot Mix Asphalt

(January 31, 2023 APWA GSP)

Delete Section 5-04, Hot Mix Asphalt, and replace it with the following:

5-04.1 Description

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

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

5-04.2 Materials

Materials shall meet the requirements of the following sections:

Asphalt Binder	9-02.1(4)
Cationic Emulsified Asphalt	9-02.1(6)
Anti-Stripping Additive	9-02.4
HMA Additive	9-02.5
Aggregates	9-03.8

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

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

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

The Contractor may use up to 20 percent RAP by total weight of HMA with no additional sampling or testing of the RAP.

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

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

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

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

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

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

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

5-04.2(1)A Vacant

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

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

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

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

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

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

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

Mix designs for HMA accepted by Nonstatistical evaluation shall:

- Be designed for ***\$1\$ million equivalent single axle loads (ESALs).
- Have the aggregate structure and asphalt binder content determined in accordance with WSDOT Standard Operating Procedure 732 and meet the requirements of Sections 9-03.8(2), except that Hamburg testing for ruts and stripping are at the discretion of the Engineer, and 9-03.8(6).
- Have anti-strip requirements, if any, for the proposed mix design determined in accordance with AASHTO T 283 or T 324 or based on historic anti-strip and aggregate source compatibility from previous WSDOT lab testing.

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

Commercial Evaluation Mix Design. Approval of a mix design for "Commercial Evaluation" will be based on a review of the Contractor's submittal of WSDOT Form 350-042 (for commercial mixes, AASHTO T 324 evaluation is not required) or a Mix Design from the current WSDOT QPL or from one of the

processes allowed by this section. Testing of the HMA by the Contracting Agency for mix design approval is not required.

For the Bid Item Commercial HMA, the Contractor shall select a class of HMA and design level of ESALs appropriate for the required use.

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

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

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

5-04.3 Construction Requirements

5-04.3(1) Weather Limitations

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

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

Minimum Surface Temperature for Paving

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

5-04.3(2) Paving Under Traffic

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

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

reopening to traffic.

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

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

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

5-04.3(3) Equipment

5-04.3(3)A Mixing Plant

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

1. **Equipment for Preparation of Asphalt Binder** – Tanks for the storage of asphalt binder shall be equipped to heat and hold the material at the required temperatures. The heating shall be accomplished by steam coils, electricity, or other approved means so that no flame shall be in contact with the storage tank. The circulating system for the asphalt binder shall be designed to ensure proper and continuous circulation during the operating period. A valve for the purpose of sampling the asphalt binder shall be placed in either the storage tank or in the supply line to the mixer.
2. **Thermometric Equipment** – An armored thermometer, capable of detecting temperature ranges expected in the HMA mix, shall be fixed in the asphalt binder feed line at a location near the charging valve at the mixer unit. The thermometer location shall be convenient and safe for access by Inspectors. The plant shall also be equipped with an approved dial-scale thermometer, a mercury actuated thermometer, an electric pyrometer, or another approved thermometric instrument placed at the discharge chute of the drier to automatically register or indicate the temperature of the heated aggregates. This device shall be in full view of the plant operator.
3. **Heating of Asphalt Binder** – The temperature of the asphalt binder shall not exceed the maximum recommended by the asphalt binder manufacturer nor shall it be below the minimum temperature required to maintain the asphalt binder in a homogeneous state. The asphalt binder shall be heated in a manner that will avoid local variations in heating. The heating method shall provide a continuous supply of asphalt binder to the mixer at a uniform average temperature with no individual variations exceeding 25°F. Also, when a WMA additive is included in the asphalt binder, the temperature of the asphalt binder shall not exceed the maximum recommended by the manufacturer of the WMA additive.

4. **Sampling and Testing of Mineral Materials** – The HMA plant shall be equipped with a mechanical sampler for the sampling of the mineral materials. The mechanical sampler shall meet the requirements of Section 1-05.6 for the crushing and screening operation. The Contractor shall provide for the setup and operation of the field-testing facilities of the Contracting Agency as provided for in Section 3-01.2(2).
5. **Sampling HMA** – The HMA plant shall provide for sampling HMA by one of the following methods:
 - a. A mechanical sampling device attached to the HMA plant.
 - b. Platforms or devices to enable sampling from the hauling vehicle without entering the hauling vehicle.

5-04.3(3)B Hauling Equipment

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

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

5-04.3(3)C Pavers

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

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

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

When specified in the Contract, reference lines for vertical control will be required. Lines shall be placed on both outer edges of the Traveled Way of each Roadway. Horizontal control utilizing the reference

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

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

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

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

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

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

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

To be approved for use, an MTV:

1. Shall be self-propelled vehicle, separate from the hauling vehicle or paver.
2. Shall not be connected to the hauling vehicle or paver.
3. May accept HMA directly from the haul vehicle or pick up HMA from a windrow.
4. Shall mix the HMA after delivery by the hauling equipment and prior to placement into the paving machine.
5. Shall mix the HMA sufficiently to obtain a uniform temperature throughout the mixture.

To be approved for use, an MTD:

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

5-04.3(3)E Rollers

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

5-04.3(4) Preparation of Existing Paved Surfaces

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

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

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

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

A tack coat of asphalt shall be applied to all paved surfaces on which any course of HMA is to be placed or abutted. Tack coat shall be uniformly applied to cover the existing pavement with a thin film of residual asphalt free of streaks and bare spots at a rate between 0.02 and 0.10 gallons per square yard of retained asphalt. The rate of application shall be approved by the Engineer. A heavy application of tack coat shall be applied to all joints. For Roadways open to traffic, the application of tack coat shall be

limited to surfaces that will be paved during the same working shift. The spreading equipment shall be equipped with a thermometer to indicate the temperature of the tack coat material.

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

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

5-04.3(4)A Crack Sealing

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

5-04.3(4)B Vacant

5-04.3(4)C Pavement Repair

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

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

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

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

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

Aggregates and RAP shall be stockpiled according to the requirements of Section 3-02. Sufficient storage space shall be provided for each size of aggregate and RAP. Materials shall be removed from stockpile(s) in a manner to ensure minimal segregation when being moved to the HMA plant for processing into the final mixture. Different aggregate sizes shall be kept separated until they have been delivered to the

HMA plant.

5-04.3(5)A Vacant

5-04.3(6) Mixing

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

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

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

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

5-04.3(7) Spreading and Finishing

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

HMA Class 1"	0.35 feet
HMA Class ¾" and HMA Class ½"	
wearing course	0.30 feet
other courses	0.35 feet
HMA Class ⅜"	0.17 feet

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

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

The internal temperature of the HMA mixture as measured immediately behind the paver screed should not be less than the minimum Compaction Temperature listed in the Mix Design Submittal Form or that listed in the WSDOT Mix Design Verification Report, whichever is greater.

All underground utilities testing shall be completed, and the installation of the underground utilities shall be accepted by the utility owner prior to placing HMA. All fill and crushed surfacing materials under the HMA pavement shall be placed, compacted and tested according to the Contract Documents prior to placing HMA. The HMA mixture shall be laid upon the prepared surface, spread, and struck off to the grade and elevation established.

The finish surface of the compacted HMA shall not deviate from the design grade in excess of the following:

Specified Depth	Max. Allowable Deviation At any point	Ave. Depth Deviation for entire project
Single lift 0.08 – 0.17'	-0.045'	-0.015'
Multi lift 0.00 – 0.25'	-0.03'	-0.01'
0.26 – 0.50'	-0.045'	-0.015'
0.51 – 0.75'	-0.06'	-0.02'
over 0.75'	-0.075'	-0.025'

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

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

5-04.3(9) HMA Mixture Acceptance

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

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

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

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

HMA Tolerances and Adjustments

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

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

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

For Aggregates in the mixture:

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

Aggregate Percent Passing	Non-Statistical Evaluation	Commercial Evaluation
1", 3/4", 1/2", and 3/8" sieves	+/- 6%	+/- 8%
No. 4 sieve	+/-6%	+/- 8%
No. 8 Sieve	+/- 6%	+/-8%
No. 200 sieve	+/- 2.0%	+/- 3.0%

- b. Second, adjust the preliminary upper and lower acceptance limits determined from step (a) the minimum amount necessary so that none of the aggregate properties are outside the control points in Section 9-03.8(6). The resulting values will be the upper and lower acceptance limits for aggregates, as well as the USL and LSL required in Section 1-06.2(2)D2.

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

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

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

5-04.3(9)A Vacant

5-04.3(9)B Vacant

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

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

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

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

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

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

Sampling and testing for total project quantities less than 400 tons is at the discretion of the engineer.

For a total project quantity less than 800 tons but more than 400 tons, a minimum of one acceptance test shall be performed:

- i. If test results are found to be within specification requirements, additional testing will be at the Engineer's discretion.
- ii. If test results are found not to be within specification requirements, additional testing as needed to determine a CPF shall be performed.

5-04.3(9)C2 Mixture Nonstatistical Evaluation Sampling

Samples for acceptance testing shall be obtained by the Contractor when ordered by the Engineer. The Contractor shall sample the HMA mixture in the presence of the Engineer and in accordance with AASH-TO T 168. A minimum of three samples should be taken for each class of HMA placed on a project. If used in a structural application, at least one of the three samples shall be tested.

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

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

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

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

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

Testing for compliance of asphalt binder content will be by WSDOT FOP for AASHTO T 308.

Testing for compliance of gradation will be by FOP for WAQTC T 27/T 11.

5-04.3(9)C4 Mixture Nonstatistical Evaluation – Pay Factors

For each lot of material falling outside the tolerance limits in 5-04.3(9), the Contracting Agency will determine a CPF using the following price adjustment factors:

Table of Price Adjustment Factors	
Constituent	Factor “f”
All aggregate passing: 1½", 1", ¾", ½", ⅜" and No. 4 sieves	2
All aggregate passing No. 8 sieve	15
All aggregate passing No. 200 sieve	20
Asphalt binder	40
Air Voids (V_a) (where applicable)	20

Each lot of HMA produced under Nonstatistical Evaluation and having all constituents falling within the tolerance limits of the job mix formula shall be accepted at the unit Contract price with no further evaluation. When one or more constituents fall outside the nonstatistical tolerance limits in the Job Mix Formula shown in Table of Price Adjustment Factors, the lot shall be evaluated in accordance with Section 1-06.2 to determine the appropriate CPF. The nonstatistical tolerance limits will be used in the calculation of the CPF and the maximum CPF shall be 1.00. When less than three sublots exist, backup samples of the existing sublots or samples from the Roadway shall be tested to provide a minimum of three sets of results for evaluation.

5-04.3(9)C5 Vacant

5-04.3(9)C6 Mixture Nonstatistical Evaluation – Price Adjustments

For each lot of HMA mix produced under Nonstatistical Evaluation when the calculated CPF is less than 1.00, a Nonconforming Mix Factor (NCMF) will be determined. The NCMF equals the algebraic difference of CPF minus 1.00 multiplied by 60 percent. The total job mix compliance price adjustment will be calculated as the product of the NCMF, the quantity of HMA in the lot in tons, and the unit Contract price per ton of mix.

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

5-04.3(9)C7 Mixture Nonstatistical Evaluation - Retests

The Contractor may request a subplot be retested. To request a retest, the Contractor shall submit a written request within 7 calendar days after the specific test results have been received. A split of the original acceptance sample will be retested. The split of the sample will not be tested with the same tester that ran the original acceptance test. The sample will be tested for a complete gradation analysis, asphalt binder content, and, at the option of the agency, V_a . The results of the retest will be used for the acceptance of the HMA in place of the original subplot sample test results. The cost of testing will be deducted from any monies due or that may come due the Contractor under the Contract at the rate of \$500 per sample.

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

If sampled and tested, HMA produced under Commercial Evaluation and having all constituents falling within the tolerance limits of the job mix formula shall be accepted at the unit Contract price with no further evaluation. When one or more constituents fall outside the commercial tolerance limits in the Job Mix Formula shown in 5-04.3(9), the lot shall be evaluated in accordance with Section 1-06.2 to determine the appropriate CPF. The commercial tolerance limits will be used in the calculation of the CPF and the maximum CPF shall be 1.00. When less than three sublots exist, backup samples of the existing sublots or samples from the street shall be tested to provide a minimum of three sets of results for evaluation.

For each lot of HMA mix produced and tested under Commercial Evaluation when the calculated CPF is less than 1.00, a Nonconforming Mix Factor (NCMF) will be determined. The NCMF equals the algebraic difference of CPF minus 1.00 multiplied by 60 percent. The Job Mix Compliance Price Adjustment will be calculated as the product of the NCMF, the quantity of HMA in the lot in tons, and the unit Contract price per ton of mix.

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

5-04.3(10) HMA Compaction Acceptance

HMA mixture accepted by nonstatistical evaluation that is used in traffic lanes, including lanes for intersections, ramps, truck climbing, weaving, and speed change, and having a specified compacted course thickness greater than 0.10-foot, shall be compacted to a specified level of relative density. The specified level of relative density shall be a CPF of not less than 0.75 when evaluated in accordance with

Section 1-06.2, using a LSL of 92.0 (minimum of 92 percent of the maximum density). The maximum density shall be determined by WSDOT FOP for AASHTO T 729. The specified level of density attained will be determined by the evaluation of the density of the pavement. The density of the pavement shall be determined in accordance with WSDOT FOP for WAQTC TM 8, except that gauge correlation will be at the discretion of the Engineer, when using the nuclear density gauge and WSDOT SOP 736 when using cores to determine density.

Tests for the determination of the pavement density will be taken in accordance with the required procedures for measurement by a nuclear density gauge or Roadway cores after completion of the finish rolling.

If the Contracting Agency uses a nuclear density gauge to determine density the test procedures FOP for WAQTC TM 8 and WSDOT SOP T 729 will be used on the day the mix is placed and prior to opening to traffic.

Roadway cores for density may be obtained by either the Contracting Agency or the Contractor in accordance with WSDOT SOP 734. The core diameter shall be 4-inches minimum, unless otherwise approved by the Engineer. Roadway cores will be tested by the Contracting Agency in accordance with WSDOT FOP for AASHTO T 166.

If the Contract includes the Bid item "Roadway Core", the cores shall be obtained by the Contractor in the presence of the Engineer on the same day the mix is placed and at locations designated by the Engineer. If the Contract does not include the Bid item "Roadway Core", the Contracting Agency will obtain the cores.

For a lot in progress with a CPF less than 0.75, a new lot will begin at the Contractor's request after the Engineer is satisfied that material conforming to the Specifications can be produced.

HMA mixture accepted by commercial evaluation and HMA constructed under conditions other than those listed above shall be compacted on the basis of a test point evaluation of the compaction train. The test point evaluation shall be performed in accordance with instructions from the Engineer. The number of passes with an approved compaction train, required to attain the maximum test point density, shall be used on all subsequent paving.

HMA for preleveling shall be thoroughly compacted. HMA that is used for preleveling wheel rutting shall be compacted with a pneumatic tire roller unless otherwise approved by the Engineer.

Test Results

For a subplot that has been tested with a nuclear density gauge that did not meet the minimum of 92 percent of the reference maximum density in a compaction lot with a CPF below 1.00 and thus subject to a price reduction or rejection, the Contractor may request that a core be used for determination of the relative density of the subplot. The relative density of the core will replace the relative density determined by the nuclear density gauge for the subplot and will be used for calculation of the CPF and acceptance of HMA compaction lot.

When cores are taken by the Contracting Agency at the request of the Contractor, they shall be

requested by noon of the next workday after the test results for the subplot have been provided or made available to the Contractor. Core locations shall be outside of wheel paths and as determined by the Engineer. Traffic control shall be provided by the Contractor as requested by the Engineer. Failure by the Contractor to provide the requested traffic control will result in forfeiture of the request for cores. When the CPF for the lot based on the results of the HMA cores is less than 1.00, the cost for the coring will be deducted from any monies due or that may become due the Contractor under the Contract at the rate of \$200 per core and the Contractor shall pay for the cost of the traffic control.

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

Compaction shall take place when the mixture is in the proper condition so that no undue displacement, cracking, or shoving occurs. Areas inaccessible to large compaction equipment shall be compacted by other mechanical means. Any HMA that becomes loose, broken, contaminated, shows an excess or deficiency of asphalt, or is in any way defective, shall be removed and replaced with new hot mix that shall be immediately compacted to conform to the surrounding area.

Separate breakdown and finish rollers are required. The type of rollers to be used and their relative position in the compaction sequence shall generally be the Contractor's option, provided the specified densities are attained. Unless the Engineer has approved otherwise, rollers shall only be operated in the static mode when the internal temperature of the mix is less than 175°F. Regardless of mix temperature, a roller shall not be operated in a mode that results in checking or cracking of the mat. Rollers shall only be operated in static mode on bridge decks. Approaches shall be compacted with vibratory plates or a small roller if determined necessary by the Engineer.

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

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

5-04.3(10)C Vacant

5-04.3(10)D HMA Nonstatistical Compaction

5-04.3(10)D1 HMA Nonstatistical Compaction - Lots and Sublots

HMA compaction which is accepted by nonstatistical evaluation will be based on acceptance testing performed by the Contracting Agency dividing the project into compaction lots.

A lot is represented by randomly selected samples of the same mix design that will be tested for acceptance. A lot is defined as the total quantity of material or work produced for each Job Mix Formula placed. Only one lot per JMF is expected. A subplot shall be equal to one day's production or 400 tons, whichever is less except that the final subplot will be a minimum of 200 tons and may be increased to 800 tons. Testing for compaction will be at the rate of 5 tests per subplot per WSDOT T 738.

The subplot locations within each density lot will be determined by the Engineer. For a lot in progress with a CPF less than 0.75, a new lot will begin at the Contractor's request after the Engineer is satisfied that material conforming to the Specifications can be produced.

HMA mixture accepted by commercial evaluation and HMA constructed under conditions other than those listed above shall be compacted on the basis of a test point evaluation of the compaction train. The test point evaluation shall be performed in accordance with instructions from the Engineer. The number of passes with an approved compaction train, required to attain the maximum test point density, shall be used on all subsequent paving.

HMA for preleveling shall be thoroughly compacted. HMA that is used to prelevel wheel ruts shall be compacted with a pneumatic tire roller unless otherwise approved by the Engineer.

5-04.3(10)D2 HMA Compaction Nonstatistical Evaluation – Acceptance Testing

The location of the HMA compaction acceptance tests will be randomly selected by the Engineer from within each subplot, with one test per subplot.

5-04.3(10)D3 HMA Nonstatistical Compaction – Price Adjustments

For each compaction lot with one or two sublots, having all sublots attain a relative density that is 92 percent of the reference maximum density the HMA shall be accepted at the unit Contract price with no further evaluation. When a subplot does not attain a relative density that is 92 percent of the reference maximum density, the lot shall be evaluated in accordance with Section 1-06.2 to determine the appropriate CPF. The maximum CPF shall be 1.00, however, lots with a calculated CPF in excess of 1.00 will be used to offset lots with CPF values below 1.00 but greater than 0.90. Lots with CPF lower than 0.90 will be evaluated for compliance per 5-04.3(11). Additional testing by either a nuclear moisture-density gauge or cores will be completed as required to provide a minimum of three tests for evaluation.

For compaction below the required 92%, a Non-Conforming Compaction Factor (NCCF) will be determined. The NCCF equals the algebraic difference of CPF minus 1.00 multiplied by 40 percent. The Compaction Price Adjustment will be calculated as the product of CPF, the quantity of HMA in the compaction control lot in tons, and the unit Contract price per ton of mix.

5-04.3(11) Reject Work

5-04.3(11)A Reject Work General

Work that is defective or does not conform to Contract requirements shall be rejected. The Contractor may propose, in writing, alternatives to removal and replacement of rejected material. Acceptability of such alternative proposals will be determined at the sole discretion of the Engineer. HMA that has been rejected is subject to the requirements in Section 1-06.2(2) and this specification, and the Contractor shall submit a corrective action proposal to the Engineer for approval.

5-04.3(11)B Rejection by Contractor

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

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

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

No payment will be made for the rejected materials or the removal of the materials unless the Contractor requests that the rejected material be tested. If the Contractor elects to have the rejected material tested, a minimum of three representative samples will be obtained and tested. Acceptance of rejected material will be based on conformance with the nonstatistical acceptance Specification. If the CPF for the rejected material is less than 0.75, no payment will be made for the rejected material; in addition, the cost of sampling and testing shall be borne by the Contractor. If the CPF is greater than or equal to 0.75, the cost of sampling and testing will be borne by the Contracting Agency. If the material is rejected before placement and the CPF is greater than or equal to 0.75, compensation for the rejected material will be at a CPF of 0.75. If rejection occurs after placement and the CPF is greater than or equal to 0.75, compensation for the rejected material will be at the calculated CPF with an addition of 25 percent of the unit Contract price added for the cost of removal and disposal.

5-04.3(11)D Rejection - A Partial Sublot

In addition to the random acceptance sampling and testing, the Engineer may also isolate from a normal sublot any material that is suspected of being defective in relative density, gradation or asphalt binder content. Such isolated material will not include an original sample location. A minimum of three random samples of the suspect material will be obtained and tested. The material will then be statistically evaluated as an independent lot in accordance with Section 1-06.2(2).

5-04.3(11)E Rejection - An Entire Sublot

An entire sublot that is suspected of being defective may be rejected. When a sublot is rejected a minimum of two additional random samples from this sublot will be obtained. These additional samples and the original sublot will be evaluated as an independent lot in accordance with Section 1-06.2(2).

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

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

1. When the CPF of a lot in progress drops below 1.00 and the Contractor is taking no corrective action, or
2. When the Pay Factor (PF) for any constituent of a lot in progress drops below 0.95 and the Contractor is taking no corrective action, or
3. When either the PF for any constituent or the CPF of a lot in progress is less than 0.75.

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

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

5-04.3(12) Joints

5-04.3(12)A HMA Joints

5-04.3(12)A1 Transverse Joints

The Contractor shall conduct operations such that the placing of the top or wearing course is a continuous operation or as close to continuous as possible. Unscheduled transverse joints will be allowed, and the roller may pass over the unprotected end of the freshly laid mixture only when the placement of the course must be discontinued for such a length of time that the mixture will cool below compaction temperature. When the Work is resumed, the previously compacted mixture shall be cut

back to produce a slightly beveled edge for the full thickness of the course.

A temporary wedge of HMA constructed on a 20H:1V shall be constructed where a transverse joint as a result of paving or planing is open to traffic. The HMA in the temporary wedge shall be separated from the permanent HMA by strips of heavy wrapping paper or other methods approved by the Engineer. The wrapping paper shall be removed and the joint trimmed to a slightly beveled edge for the full thickness of the course prior to resumption of paving.

The material that is cut away shall be wasted and new mix shall be laid against the cut. Rollers or tamping irons shall be used to seal the joint.

The HMA overlay shall be feathered to produce a smooth riding connection to the existing pavement.

HMA utilized in the construction of the feathered connections shall be modified by eliminating the coarse aggregate from the mix at the Contractor's plant or the commercial source or by raking the joint on the roadway, to the satisfaction of the Engineer.

5-04.3(12)A2 Longitudinal Joints

The longitudinal joint in any one course shall be offset from the course immediately below by not more than 6 inches nor less than 2 inches. All longitudinal joints constructed in the wearing course shall be located at a lane line or an edge line of the Traveled Way. A notched wedge joint shall be constructed along all longitudinal joints in the wearing surface of new HMA unless otherwise approved by the Engineer. The notched wedge joint shall have a vertical edge of not less than the maximum aggregate size or more than $\frac{1}{2}$ of the compacted lift thickness and then taper down on a slope not steeper than 4H:1V. The sloped portion of the HMA notched wedge joint shall be uniformly compacted.

5-04.3(12)B Bridge Paving Joint Seals

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

5-04.3(13) Surface Smoothness

The completed surface of all courses shall be of uniform texture, smooth, uniform as to crown and grade, and free from defects of all kinds. The completed surface of the wearing course shall not vary more than $\frac{1}{8}$ inch from the lower edge of a 10-foot straightedge placed on the surface parallel to the centerline. The transverse slope of the completed surface of the wearing course shall vary not more than $\frac{1}{4}$ inch in 10 feet from the rate of transverse slope shown in the Plans.

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

1. Removal of material from high places by grinding with an approved grinding machine, or
2. Removal and replacement of the wearing course of HMA, or
3. By other method approved by the Engineer.

Correction of defects shall be carried out until there are no deviations anywhere greater than the allowable tolerances.

Deviations in excess of the above tolerances that result from a low place in the HMA and deviations resulting from a high place where corrective action, in the opinion of the Engineer, will not produce satisfactory results will be accepted with a price adjustment. The Engineer shall deduct from monies due or that may become due to the Contractor the sum of \$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 utility appurtenances such as manhole covers and valve boxes are located in the traveled way, the utility appurtenances shall be adjusted to the finished grade prior to paving. This requirement may be waived when requested by the Contractor, at the discretion of the Engineer or when the adjustment details provided in the project plan or specifications call for utility appurtenance adjustments after the completion of paving.

Utility appurtenance adjustment discussions will be included in the Pre-Paving and Pre-Planing Briefing (5-04.3(14)B3). Submit a written request to waive this requirement to the Engineer prior to the start of paving.

5-04.3(14) Planing Bituminous Pavement

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

Where planing an existing pavement is specified in the Contract, the Contractor must remove existing surfacing material and to reshape the surface to remove irregularities. The finished product must be a prepared surface acceptable for receiving an HMA overlay.

Use the cold milling method for planing unless otherwise specified in the Contract. Do not use the planer on the final wearing course of new HMA.

Conduct planing operations in a manner that does not tear, break, burn, or otherwise damage the surface which is to remain. The finished planed surface must be slightly grooved or roughened and must be free from gouges, deep grooves, ridges, or other imperfections. The Contractor must repair any damage to the surface by the Contractor's planing equipment, using an Engineer approved method.

Repair or replace any metal castings and other surface improvements damaged by planing, as determined by the Engineer.

A tapered wedge cut must be planed longitudinally along curb lines sufficient to provide a minimum of 4 inches of curb reveal after placement and compaction of the final wearing course. The dimensions of the wedge must be as shown on the Drawings or as specified by the Engineer.

A tapered wedge cut must also be made at transitions to adjoining pavement surfaces (meet lines) where butt joints are shown on the Drawings. Cut butt joints in a straight line with vertical faces 2 inches or more in height, producing a smooth transition to the existing adjoining pavement.

After planing is complete, planed surfaces must be swept, cleaned, and if required by the Contract, patched and preleveled.

The Engineer may direct additional depth planing. Before performing this additional depth planing, the Contractor must conduct a hidden metal in pavement detection survey as specified in Section 5-04.3(14)A.

5-04.3(14)A Pre-Planing Metal Detection Check

Before starting planing of pavements, and before any additional depth planing required by the Engineer, the Contractor must conduct a physical survey of existing pavement to be planed with equipment that can identify hidden metal objects.

Should such metal be identified, promptly notify the Engineer.

See Section 1-07.16(1) regarding the protection of survey monumentation that may be hidden in pavement.

The Contractor is solely responsible for any damage to equipment resulting from the Contractor's failure to conduct a pre-planing metal detection survey, or from the Contractor's failure to notify the Engineer of any hidden metal that is detected.

5-04.3(14)B Paving and Planing Under Traffic

5-04.3(14)B1 General

In addition, the requirements of Section 1-07.23 and the traffic controls required in Section 1-10, and unless the Contract specifies otherwise or the Engineer approves, the Contractor must comply with the following:

1. Intersections:
 - a. Keep intersections open to traffic at all times, except when paving or planing operations through an intersection requires closure. Such closure must be kept to the minimum time required to place and compact the HMA mixture, or plane as appropriate. For paving, schedule such closure to individual lanes or portions thereof that allows the traffic volumes and schedule of traffic volumes required in the approved traffic control plan. Schedule work so that adjacent intersections are not impacted at the same time and comply with the traffic control restrictions required by the Traffic Engineer. Each individual intersection closure or partial closure must be addressed in the traffic control plan, which must be submitted to and accepted by the Engineer, see Section 1-10.2(2).
 - b. When planing or paving and related construction must occur in an intersection, consider scheduling and sequencing such work into quarters of the intersection, or half or more of an intersection with side street detours. Be prepared to sequence the work to individual lanes or portions thereof.
 - c. Should closure of the intersection in its entirety be necessary, and no trolley service is impacted, keep such closure to the minimum time required to place and compact the HMA mixture, plane, remove asphalt, tack coat, and as needed.
 - d. Any work in an intersection requires advance warning in both signage and a number of

Working Days advance notice as determined by the Engineer, to alert traffic and emergency services of the intersection closure or partial closure.

- e. Allow new compacted HMA asphalt to cool to ambient temperature before any traffic is allowed on it. Traffic is not allowed on newly placed asphalt until approval has been obtained from the Engineer.
2. Temporary centerline marking, post-paving temporary marking, temporary stop bars, and maintaining temporary pavement marking must comply with Section 8-23.
3. Permanent pavement marking must comply with Section 8-22.

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

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

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

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

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

1. A copy of the accepted traffic control plan, see Section 1-10.2(2), detailing each day's traffic control as it relates to the specific requirements of that day's planing and paving. Briefly describe the sequencing of traffic control consistent with the proposed planing and paving sequence, and scheduling of placement of temporary pavement markings and channelizing devices after each day's planing, and paving.
2. A copy of each intersection's traffic control plan.
3. Haul routes from supplier facilities, and locations of temporary parking and staging areas, including return routes. Describe the complete round trip as it relates to the sequencing of paving operations.
4. Names and locations of HMA supplier facilities to be used.

5. List of all equipment to be used for paving.
6. List of personnel and associated job classification assigned to each piece of paving equipment.
7. Description (geometric or narrative) of the scheduled sequence of planing and of paving and intended area of planing and of paving for each day's work, must include the directions of proposed planing and of proposed paving, sequence of adjacent lane paving, sequence of skipped lane paving, intersection planing and paving scheduling and sequencing, and proposed notifications and coordinations to be timely made. The plan must show HMA joints relative to the final pavement marking lane lines.
8. Names, job titles, and contact information for field, office, and plant supervisory personnel.
9. A copy of the approved Mix Designs.
10. Tonnage of HMA to be placed each day.
11. Approximate times and days for starting and ending daily operations.

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

At least 2 Working Days before the first paving operation and the first planing operation, or as scheduled by the Engineer for future paving and planing operations to ensure the Contractor has adequately prepared for notifying and coordinating as required in the Contract, the Contractor must be prepared to discuss that day's operations as they relate to other entities and to public safety and convenience, including driveway and business access, garbage truck operations, transit operations and working around energized overhead wires, school and nursing home and hospital and other accesses, other Contractors who may be operating in the area, pedestrian and bicycle traffic, and emergency services. The Contractor, and Subcontractors that may be part of that day's operations, must meet with the Engineer and discuss the proposed operation as it relates to the submitted planing plan and paving plan, approved traffic control plan, and public convenience and safety. Such discussion includes, but is not limited to:

1. General for both the Paving and Planing:
 - a. The actual times of starting and ending daily operations.
 - b. In intersections, how to break up the intersection, and address traffic control and signalization for that operation, including use of peace officers.
 - c. The sequencing and scheduling of paving operations and of planing operations, as applicable, as it relates to traffic control, public convenience and safety, and other Contractors who may operate in the Project limits.
 - d. Notifications required of Contractor activities and coordinating with other entities and the public as necessary. This includes notification of the public of areas where parking will be prohibited during planing or paving operations, including any necessary "TEMPORARY NO

PARKING” signs.

- e. Description of the sequencing of installation and types of temporary pavement markings as it relates to planning and paving.
 - f. Description of the sequencing of installation of, and the removal of, temporary pavement patch material around exposed castings and as may be needed.
 - g. Description of procedures and equipment to identify hidden metal in the pavement, such as survey monumentation, monitoring wells, streetcar rail, and castings, before planing as per Section 5-04.3(14)B2.
 - h. Description of how flaggers will be coordinated with the planing, paving, and related operations.
 - i. Description of sequencing of traffic controls for the process of rigid pavement base repairs.
 - j. Other items the Engineer deems necessary to address.
2. Paving – additional topics:
- a. When to start applying tack and coordinating with paving.
 - b. Types of equipment and numbers of each type of equipment to be used. If more pieces of equipment than personnel are proposed, describe the sequencing of the personnel operating the types of equipment. Discuss the continuance of operator personnel for each type of equipment as it relates to meeting Specification requirements.
 - c. Number of JMFs to be placed, and if more than one JMF is used, how the Contractor will ensure different JMFs are distinguished, how pavers and how MTVs are distinguished, and how pavers and MTVs are cleaned so that one JMF does not adversely influence the other JMF.
 - d. Description of contingency plans for that day’s operations such as equipment breakdown, rain out, and supplier shutdown of operations.
 - e. Number of sublots to be placed, sequencing of density testing, and other sampling and testing.

5-04.3(15) Sealing Pavement Surfaces

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

5-04.3(16) HMA Road Approaches

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

accordance with Section 5-04.

5-04.3(17) Protection of Monuments

Monuments that are within cases shall be adjusted as described in the Special Provisions for the bid item Adjusting Valve Boxes/Monument Cases. In areas where pavement planing will occur, the planing shall come to within 0.5 feet of the monument. If the monument has no case, it shall be protected and covered as necessary throughout the planing and paving operations. The new pavement shall match the grade of the existing pavement surface surrounding the monument.

In locations where pavement planing will not occur and survey monuments have no existing casing, the Contractor shall cover the monument with material that will protect the monument from damage. The Contractor shall pave over the protected monument, leaving a 3-inch diameter hole in the paving mat centered over the monument. After paving operations are complete, the Contractor shall coat the sides of the hole and underlying pavement with tack coat. No tack coat shall cover the monument itself.

5-04.4 Measurement

HMA Cl. 3/8" PG 58H-22, will be measured by the ton in accordance with Section 1-09.2, with no deduction being made for the weight of asphalt binder, mineral filler, or any other component of the mixture. If the Contractor elects to remove and replace mix as allowed by Section 5-04.3(11), the material removed will not be measured.

No specific unit of measurement will apply to the calculated item of asphalt cost price adjustment.

5-04.5 Payment

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

"HMA Cl. 3/8" PG 58H-22", per ton.

The unit Contract price per ton for "HMA Cl. 3/8" PG 58H-22", 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. The cost of asphalt for tack coat, preparation of existing surfaces, protection of monuments, temporary striping and removal of existing buttons and all other costs in connection with performing the work in accordance with these requirements shall be included in the unit cost for the HMA bid item of this contract.

BID ITEM 12: DUCTILE IRON PIPE FOR WATER MAIN 8 IN DIAM

These bid items shall be accomplished in accordance with the Plans and Standard Specification Section 7-09. Any CDF encasement for utility crossings shall be included in this bid item.

BID ITEM 13: CONNECTION TO EXISTING MAIN

These bid items shall be accomplished in accordance with the Plans and Standard Specification Section 7-09.

BID ITEM 14: ABANDONMENT OF TERMINATED WATER FACILITIES

These bid items shall be accomplished in accordance with the Plans and Standard Specification Section 7-09.

BID ITEM 15: TRENCH EXCAVATION SAFETY SYSTEM

These bid items shall be accomplished in accordance with the Plans and Standard Specification Section 7-09.

BID ITEM 16: GATE VALVE 8 IN DIAM

These bid items shall be accomplished in accordance with the Plans and Standard Specification Section 7-12.

BID ITEM 17: AIR RELEASE/AIR VACUUM VALVE ASSEMBLY

These bid items shall be accomplished in accordance with Plans and Standard Specifications Section 7-12.

BID ITEM 18: HYDRANT ASSEMBLY

These bid items shall be accomplished in accordance with the Plans and Standard Specification Section 7-14. Except the hydrant spool (pipe connecting the hydrant to the main) shall be included in the hydrant assembly unit cost.

BID ITEM 19: SERVICE CONNECTION

These bid items shall be accomplished in accordance with the Plans and Standard Specification Section 7-15. Except the service connection shall include abandonment and/or reconnection to existing service lines as identified.

BID ITEM 20: EROSION/WATER POLLUTION PREVENTION

These bid items shall be accomplished in accordance with the Plans and Standard Specification Section 8-01.

BID ITEM 21: SEEDING, FERTILIZING, AND MULCHING

These bid items shall be accomplished in accordance with the Plans and Standard Specification Section 8-02, except as modified below:

8-02.3 Construction Requirements

8-02.3(9)B Seeding, Fertilizing and Mulching (Use on projects within WSDOT R/W)

Section 8-02.3(9)B is supplemented with the following:

Seed Mix: Grass seed, of the following composition, proportion, and quality shall be applied at the rate of ****80**** pounds of pure live seed per acre on all areas requiring permanent seeding within the project

limits.

Kind and Variety of Seed in Mixture	Pounds Pure Live Seed (PLS) Per Acre
<i>Deschampsia elongata</i> Slender Hairgrass	0.32
<i>Elymus glaucus</i> Blue Wildrye	34.43
<i>Festuca idahonesis</i> Idaho Fescue	5.61
<i>Festuca ovina</i> Sheep Fescue	0.93
<i>Hordeum brachyantherum</i> Meadow Barley	29.71
<i>Koeler cristata</i> Prairie Junegrass	0.27
<i>Lolium multiflorum</i> Annual Ryegrass	8.73
Total Pounds PLS Per Acre	80.00

Seeds shall be certified “Weed Free”, indicating there are not noxious or nuisance weeds in the seed.

Fertilizing

Sufficient quantities of fertilizer shall be applied to supply the following amounts of nutrients:

- Total Nitrogen as N - 135 pounds per acre.
- Available Phosphoric Acid as P₂O₅ - 60 pounds per acre.
- Soluble Potash as K₂O - 60 pounds per acre.

90 pounds of nitrogen applied per acre shall be derived from isobutylidene diurea (IBDU), cyclo-di-urea (CDU), or a time release, polyurethane coated source with a minimum release time of 6 months. The remainder may be derived from any source.

The fertilizer formulation and application rate shall be approved by the Engineer before use.

Mulching

Wood Cellulose Fiber mulch shall be hydraulically applied at a rate of 2,000 pounds per acre to produce

100% soil coverage.

BID ITEM 22: BEAM GUARDRAIL TYPE 1

These bid items shall be accomplished in accordance with the Plans and Standard Specification Section 8-11, except as modified below.

8-11 GUARDRAIL

8-11.2 Materials

Add the following to Section 8-11.2:

(*****)

Beam Guardrail Flared and Non-Flared Terminals shall be listed on the WSDOT Qualified Product List. Terminals shall have a TL-2 rating when so specified on the Plans. Otherwise, TL-2 terminals will not be allowed.

8-11.3(1D) Removing Guardrail and Guardrail Anchor

Add the following to Section 8-11.3(1D):

(*****)

All guardrail and associated posts, anchors, and terminal sections, as determined salvageable by the Engineer, shall be removed by the Contractor and delivered to the Cowlitz County Central Shop located at **2215 Talley Way, Kelso, Washington 98626 . All guardrail determined to be non-salvageable by the Engineer shall become property of the Contractor to be disposed of off-site in accordance with Section 2-03.3(7)C.

8-11.4 Measurement

Delete paragraph one of Section 8-11.4, which begins, "Measurement of beam guardrail..." and replace with the following:

(*****)

Measurement of beam guardrail and beam guardrail with long posts will be by the linear foot measured along the line of completed guardrail from end to end including Design F end sections for connection to concrete barrier, but excluding transition and terminal sections as are covered by other bid items of this contract.

Delete paragraph six of Section 8-11.4, which begins, "Measurement of removal of guardrail will be..." and replace with the following:

(*****)

Measurement of removal of guardrail will be by the linear foot measured along the line of guardrail removed including transition sections, expansion sections, guardrail anchors, and terminal sections.

Add the following to paragraph seven of Section 8-11.4, which begins, "Measurement of removal of guardrail anchors will be...":

(*****)

Guardrail anchors that are within the limits of removal of guardrail will not be measured, as they are included in the bid item for removal of guardrail.

8-11.5 Payment

(*****)

Delete the fifth sentence of the first paragraph of Section 8-11.5, which begins, “The unit contract price per linear foot...” and replace with the following:

The unit contract price per linear foot for “Beam Guardrail Type__1__”, shall include all CRT posts and installation of the guardrail to the posts as specified and indicated on the plans.

(*****)

BID ITEM 23: PRESSURE REDUCING VALVE STATION

This bid item shall be accomplished in accordance with the plans and specifications and the Technical Specifications (Tech Specs).

Lump sum price shown shall cover the complete cost of providing all work and equipment necessary to construct the PRV Station and vault as identified on the plans, details and specifications at the intersection of SR 504 and Tower Road.

BID ITEM 24: PUMP STATION SITE WORK

This bid item shall be accomplished in accordance with the plans and specifications and the Technical Specifications (Tech Specs).

Lump sum price shown shall cover the complete cost of providing all site work relating to construction of improvements as shown on the Plans and specified herein. Work includes, but is not limited to: pump station structure excavation, backfill, and compaction; site grading and gravel restoration; temporary construction fencing; temporary erosion and sedimentation control; check valve, vault, site piping, connection to existing system; disposal of excess material; control of water; landscaping; trenching; excavation; removal of unsuitable materials; select bedding; backfill; appurtenances; dewatering; restoration for underground utilities; bollards, 18” storm pipe and all other work necessary for a complete installation of all site work and underground utilities.

BID ITEM 25: PUMP STATION MECHANICAL

This bid item shall be accomplished in accordance with the plans and specifications and the Technical Specifications (Tech Specs).

Lump sum price shown shall cover the complete cost of providing all labor, materials, and equipment necessary for the mechanical work shown on the Juanita Way BPS Plans, and detailed in the contract specifications, including all mechanical work (including pipe, gate valves, check valves, fittings, sump pump) and equipment not listed in the other bid items.

BID ITEM 26: PUMP STATION ELECTRICAL

This bid item shall be accomplished in accordance with the plans and specifications and the Technical Specifications (Tech Specs).

The lump sum price shown shall cover the complete cost of providing all labor, materials, and equipment necessary for the electrical work shown on the Plans and detailed in the contract specifications.

BID ITEM 27: PUMP STATION AUTOMATIC CONTROL

This bid item shall be accomplished in accordance with the plans and specifications and the Technical Specifications (Tech Specs).

Lump sum price shown shall cover the complete cost of providing all labor, materials, and equipment necessary for the automatic control system as shown on the Plans and detailed in the contract specifications.

BID ITEM 28: PUMP STATION TESTING, STARTUP AND TRAINING

This bid item shall be accomplished in accordance with the plans and specifications and the Technical Specifications (Tech Specs).

Lump sum price shown shall cover the complete cost of providing all labor and materials necessary for testing and startup of the project as shown on the Plans and detailed in the contract specifications. Payment shall be lump sum. Partial payment of up to 50 percent of the total bid item cost is allowed no earlier than first Contractor initiated testing date. Final 50 percent of payment shall not be paid until testing of the station is complete, and the pump station is completely operational, and staff trained as determined by the Owner and Engineer. Minimum cost for this bid item shall be \$5,000.

BID ITEM 29: WATER LINE SPECIAL CONSTRUCTION STA 11+75 TO STA 16+25

This bid item shall be accomplished in accordance with the plans and specifications and the Technical Specifications (Tech Specs).

Unit price shown shall cover the complete cost of providing all labor and materials necessary for installation of the 8-inch water line between Sta 11+75 to Sta 16+25 in accordance with the Plans and Standard Specifications Section 7-09. Contractor shall use special construction methods within this area to protect existing tree roots over 3-inches in diameter. This may include hand digging, water jetting, use of smaller excavation equipment, trenchless construction, boring, or similar installation methods. Payment shall be unit price per lineal feet of pipe installed and tested.

BID ITEM 30: WATER LINE CONSTRUCTION STA 16+68 TO 18+18

This bid item shall be accomplished in accordance with the plans and specifications and the Technical Specifications (Tech Specs).

Unit price shown shall cover the complete cost of providing all labor and materials necessary

for installation of the 8-inch water line between Sta 16+68 to Sta 18+18 in accordance with the Plans and Standard Specifications Section 7-09. Unit price shall include existing utility line coordination, utility potholing, existing utility pipe support as necessary, CDF, HDPE pipe casing, backfill, pipe bedding, HDPE pipe, HDPE fittings, and restoration. Contractor shall use special construction methods within this area to protect existing utilities as required. This may include hand digging, use of smaller excavation equipment, trenchless construction, boring, or similar installation methods. Payment shall be unit price per lineal feet of pipe installed and tested.

BID ITEM 31 – UTILITY CONFLICT RELOCATION

This bid item shall be accomplished in accordance with the plans and specifications and the Technical Specifications (Tech Specs).

Payments for changes amounting to \$50,000 or less when resolving utility conflicts other than those shown in the Plans may be made under the this bid item. At the Owner’s discretion, additional work or payments may be authorized to resolve utility conflicts encountered during the construction of improvements. Monies in this bid item may be used to cover the cost to resolve said conditions. At the discretion of the Owner, the procedure for Minor Changes may be used in lieu of the more formal procedure as outlined General Conditions.

Payments will be determined in accordance with Section 1-09.4. For the purpose of providing a common Proposal for all Bidders, the Contracting Agency has entered an amount for this item in the Proposal to become a part of the Bid by the Contractor.

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: 1/8/2025

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Cowlitz	Asbestos Abatement Workers	Journey Level	\$59.48	6Z	1M	
Cowlitz	Boilermakers	Journey Level	\$76.89	5N	1C	
Cowlitz	Brick Mason	Brick Finisher	\$48.08	5A	1B	
Cowlitz	Brick Mason	Caulker-Pointer-Cleaner	\$74.09	5A	1B	
Cowlitz	Brick Mason	Journey Level	\$74.09	5A	1B	
Cowlitz	Building Service Employees	Janitor	\$16.66			1
Cowlitz	Building Service Employees	Shampooer	\$16.66			1
Cowlitz	Building Service Employees	Waxer	\$16.66			1
Cowlitz	Building Service Employees	Window Cleaner	\$16.66			1
Cowlitz	Cabinet Makers (In Shop)	Journey Level	\$16.66			1
Cowlitz	Carpenters	Acoustical Worker	\$67.80	15J	11U	9L
Cowlitz	Carpenters	Bridge & Highway Carpenter	\$69.08	15J	11U	9L
Cowlitz	Carpenters	Floor Layer And Floor Finishers	\$67.97	15J	11U	9L
Cowlitz	Carpenters	General Carpenter	\$67.80	15J	11U	9L
Cowlitz	Carpenters	Scaffold/Shoring Erecting & Dismantling	\$67.70	7E	4X	8N
Cowlitz	Carpenters	Stationary Power Saw	\$67.97	15J	11U	9L
Cowlitz	Cement Masons	Application of all Composition Mastic	\$77.30	15J	4U	
Cowlitz	Cement Masons	Application of all Epoxy Material	\$76.78	15J	4U	
Cowlitz	Cement Masons	Application of all Plastic Material	\$77.30	15J	4U	
Cowlitz	Cement Masons	Application of Sealing Compound	\$76.78	15J	4U	
Cowlitz	Cement Masons	Application of Underlayment	\$77.30	15J	4U	
Cowlitz	Cement Masons	Building General	\$76.78	15J	4U	
Cowlitz	Cement Masons	Composition or Kalman Floors	\$77.30	15J	4U	
Cowlitz	Cement Masons	Concrete Paving	\$76.78	15J	4U	
Cowlitz	Cement Masons	Curb & Gutter Machine	\$77.30	15J	4U	
Cowlitz	Cement Masons	Curb & Gutter, Sidewalks	\$76.78	15J	4U	
Cowlitz	Cement Masons	Curing Concrete	\$76.78	15J	4U	
Cowlitz	Cement Masons	Finish Colored Concrete	\$77.30	15J	4U	
Cowlitz	Cement Masons	Floor Grinding	\$77.30	15J	4U	
Cowlitz	Cement Masons	Floor Grinding/Polisher	\$76.78	15J	4U	
Cowlitz	Cement Masons	Green Concrete Saw, self-powered	\$77.30	15J	4U	
Cowlitz	Cement Masons	Grouting of all Plates	\$76.78	15J	4U	
Cowlitz	Cement Masons	Grouting of all Tilt-up Panels	\$76.78	15J	4U	
Cowlitz	Cement Masons	Gunite Nozzleman	\$77.30	15J	4U	
Cowlitz	Cement Masons	Hand Powered Grinder	\$77.30	15J	4U	
Cowlitz	Cement Masons	Journey Level	\$76.78	15J	4U	
Cowlitz	Cement Masons	Patching Concrete	\$76.78	15J	4U	
Cowlitz	Cement Masons	Pneumatic Power Tools	\$77.30	15J	4U	
Cowlitz	Cement Masons	Power Chipping & Brushing	\$77.30	15J	4U	
Cowlitz	Cement Masons	Sand Blasting Architectural Finish	\$77.30	15J	4U	
Cowlitz	Cement Masons	Screed & Rodding Machine	\$77.30	15J	4U	

Journey Level Wages

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Cowlitz	Cement Masons	Spackling or Skim Coat Concrete	\$76.78	15J	4U	
Cowlitz	Cement Masons	Troweling Machine Operator	\$77.30	15J	4U	
Cowlitz	Cement Masons	Troweling Machine Operator on Colored Slabs	\$77.30	15J	4U	
Cowlitz	Cement Masons	Tunnel Workers	\$77.30	15J	4U	
Cowlitz	Divers & Tenders	Assistant Tender	\$75.35	15J	11T	9I
Cowlitz	Divers & Tenders	Bell/Vehicle or Submersible Operator Not Under Pr	\$124.92	15J	11T	9I
Cowlitz	Divers & Tenders	Dive Master	\$94.29	15J	11T	9I
Cowlitz	Divers & Tenders	Dive Supervisor	\$94.29	15J	11T	9I
Cowlitz	Divers & Tenders	Diver Diving	\$124.92	15J	11T	9I
Cowlitz	Divers & Tenders	Diver Tender	\$80.92	15J	11T	9I
Cowlitz	Divers & Tenders	Divers Including Stand-By Diver	\$89.29	15J	11T	9I
Cowlitz	Divers & Tenders	Manifold Operator	\$85.92	15J	11T	9I
Cowlitz	Divers & Tenders	Manifold Operator Mixed Gas	\$90.92	15J	11T	9I
Cowlitz	Divers & Tenders	ROV Operator	\$80.92	15J	11T	9I
Cowlitz	Divers & Tenders	ROV Tender/Technician	\$75.35	15J	11T	9I
Cowlitz	Dredge Workers	Assistant Engineer	\$70.01	5D	1N	8D
Cowlitz	Dredge Workers	Assistant Mate (deckhand)	\$64.65	5D	1N	8D
Cowlitz	Dredge Workers	Boatman (licensed)	\$70.01	5D	1N	8D
Cowlitz	Dredge Workers	Fill Equipment Operator	\$67.35	5D	1N	8D
Cowlitz	Dredge Workers	Fireman	\$68.52	5D	1N	8D
Cowlitz	Dredge Workers	Leverman (hydraulic & Clamshell)	\$73.17	5D	1N	8D
Cowlitz	Dredge Workers	Mate	\$70.01	5D	1N	8D
Cowlitz	Dredge Workers	Oiler	\$64.65	5D	1N	8D
Cowlitz	Dredge Workers	Tenderman (boatman Attending Dredge Plant)	\$68.52	5D	1N	8D
Cowlitz	Dredge Workers	Welder	\$70.01	5D	1N	8D
Cowlitz	Drywall Applicator	Journey Level	\$67.80	5A	1B	
Cowlitz	Drywall Tapers	Journey Level	\$63.70	7E	1E	
Cowlitz	Electrical Fixture Maintenance Worl	Journey Level	\$25.23			1
Cowlitz	Electricians - Inside	Journey Level	\$91.09	5A	1B	
Cowlitz	Electricians - Inside	Journeyman, Welder	\$97.32	5A	1B	
Cowlitz	Electricians - Motor Shop	Craftsman	\$16.66			1
Cowlitz	Electricians - Motor Shop	Journey Level	\$16.66			1
Cowlitz	Electricians - Powerline Constructic	Cable Splicer	\$97.76	5A	4D	
Cowlitz	Electricians - Powerline Constructic	Certified Line Welder	\$89.71	5A	4D	
Cowlitz	Electricians - Powerline Constructic	Groundperson	\$56.79	5A	4D	
Cowlitz	Electricians - Powerline Constructic	Heavy Line Equipment Operator	\$89.71	5A	4D	
Cowlitz	Electricians - Powerline Constructic	Journey Level Lineperson	\$89.71	5A	4D	
Cowlitz	Electricians - Powerline Constructic	Line Equipment Operator	\$77.13	5A	4D	
Cowlitz	Electricians - Powerline Constructic	Meter Installer	\$56.79	5A	4D	8W
Cowlitz	Electricians - Powerline Constructic	Pole Sprayer	\$89.71	5A	4D	
Cowlitz	Electricians - Powerline Constructic	Powderperson	\$66.84	5A	4D	
Cowlitz	Electronic Technicians	Journey Level	\$74.89	5A	1B	
Cowlitz	Elevator Constructors	Mechanic	\$111.71	5N	4A	
Cowlitz	Elevator Constructors	Mechanic In Charge	\$120.87	5N	4A	
Cowlitz	Fabricated Precast Concrete Produ	Journey Level	\$16.66			1
Cowlitz	Fabricated Precast Concrete Produ	Journey Level - In-Factory Work Only	\$16.66			1
Cowlitz	Fence Erectors	Fence Erector	\$54.63	6Z	1M	8S
Cowlitz	Fence Erectors	Fence Laborer	\$54.63	6Z	1M	8S
Cowlitz	Flaggers	Journey Level	\$54.63	6Z	1M	8S
Cowlitz	Glaziers	Journey Level	\$75.22	7I	11K	
Cowlitz	Heat & Frost Insulators And Asbesto	Mechanic	\$85.39	5N	1F	
Cowlitz	Heating Equipment Mechanics	Journey Level	\$99.92	7F	1E	
Cowlitz	Hod Carriers & Mason Tenders	Journey Level	\$62.10	5D	1B	
Cowlitz	Industrial Power Vacuum Cleaner	Journey Level	\$16.66			1

Journey Level Wages

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Cowlitz	Inland Boatmen	Boat Operator	\$61.41	5B	1K	
Cowlitz	Inland Boatmen	Cook	\$56.48	5B	1K	
Cowlitz	Inland Boatmen	Deckhand	\$57.48	5B	1K	
Cowlitz	Inland Boatmen	Deckhand Engineer	\$58.81	5B	1K	
Cowlitz	Inland Boatmen	Launch Operator	\$58.89	5B	1K	
Cowlitz	Inland Boatmen	Mate	\$57.31	5B	1K	
Cowlitz	Inspection/Cleaning/Sealing Of Sev	Cleaner Operator, Foamer Operator	\$16.66			1
Cowlitz	Inspection/Cleaning/Sealing Of Sev	Grout Truck Operator	\$16.66			1
Cowlitz	Inspection/Cleaning/Sealing Of Sev	Head Operator	\$16.66			1
Cowlitz	Inspection/Cleaning/Sealing Of Sev	Technician	\$16.66			1
Cowlitz	Inspection/Cleaning/Sealing Of Sev	Tv Truck Operator	\$16.66			1
Cowlitz	Insulation Applicators	Journey Level	\$67.97	15J	11U	9L
Cowlitz	Ironworkers	Journey Level	\$81.13	15K	11N	
Cowlitz	Laborers	Anchor Machines	\$59.48	6Z	1M	
Cowlitz	Laborers	Application (Including Pot Power Tender For Same)	\$58.86	6Z	1M	
Cowlitz	Laborers	Asbestos Removal	\$59.48	6Z	1M	
Cowlitz	Laborers	Asphalt Plant Laborers	\$58.04	6Z	1M	
Cowlitz	Laborers	Asphalt Raker	\$60.00	6Z	1M	
Cowlitz	Laborers	Asphalt Spreaders	\$58.04	6Z	1M	
Cowlitz	Laborers	Ballast Regulators	\$59.48	6Z	1M	
Cowlitz	Laborers	Batch Weighman	\$58.04	6Z	1M	
Cowlitz	Laborers	Bit Grinder	\$59.48	6Z	1M	
Cowlitz	Laborers	Brick Pavers (Dry)	\$58.04	6Z	1M	
Cowlitz	Laborers	Broomers	\$58.04	6Z	1M	
Cowlitz	Laborers	Brush (Power Saw)	\$58.86	6Z	1M	
Cowlitz	Laborers	Brush Burners And Cutters	\$58.04	6Z	1M	
Cowlitz	Laborers	Burners	\$58.86	6Z	1M	
Cowlitz	Laborers	Car And Truck Loaders	\$58.04	6Z	1M	
Cowlitz	Laborers	Carpenter Tender	\$58.04	6Z	1M	
Cowlitz	Laborers	Change-house Man Or Dry Shack Man	\$58.04	6Z	1M	
Cowlitz	Laborers	Chipping Guns	\$58.86	6Z	1M	
Cowlitz	Laborers	Choker Setters	\$58.04	6Z	1M	
Cowlitz	Laborers	Choker Splicer	\$58.86	6Z	1M	
Cowlitz	Laborers	Chuck Tender	\$58.86	6Z	1M	
Cowlitz	Laborers	Clary Power Spreader And Similar Types	\$58.86	6Z	1M	
Cowlitz	Laborers	Clean Up Laborers	\$58.04	6Z	1M	
Cowlitz	Laborers	Clean-up Nozzleman-Green-Cutter (Concrete Rock)	\$58.86	6Z	1M	
Cowlitz	Laborers	Concrete Crew, Bull Gang	\$58.86	6Z	1M	
Cowlitz	Laborers	Concrete Laborers	\$58.86	6Z	1M	
Cowlitz	Laborers	Concrete Nozzlemen	\$60.00	6Z	1M	
Cowlitz	Laborers	Concrete Power Buggyman	\$58.86	6Z	1M	
Cowlitz	Laborers	Concrete Saw Operator	\$59.48	6Z	1M	
Cowlitz	Laborers	Concrete Saw Operator (Walls)	\$60.00	6Z	1M	
Cowlitz	Laborers	Confined Space / Hole Watch	\$54.63	6Z	1M	8S
Cowlitz	Laborers	Crusher Feeder	\$58.86	6Z	1M	
Cowlitz	Laborers	Curing, Concrete	\$58.04	6Z	1M	
Cowlitz	Laborers	Demolition And Wrecking Charred Materials	\$58.86	6Z	1M	
Cowlitz	Laborers	Demolition, Wrecking And Moving Laborers	\$58.04	6Z	1M	
Cowlitz	Laborers	Drill Doctor	\$59.48	6Z	1M	
Cowlitz	Laborers	Drill Operators, Air Tracks, Cat Drills, Wagon Drills,	\$60.00	6Z	1M	
Cowlitz	Laborers	Dry Pack Machine	\$58.86	6Z	1M	
Cowlitz	Laborers	Dry Stack Walls	\$58.04	6Z	1M	
Cowlitz	Laborers	Dumpers, Road Oiling Crew	\$58.04	6Z	1M	
Cowlitz	Laborers	Dumpmen (for Grading Crew)	\$58.04	6Z	1M	

Journey Level Wages

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Cowlitz	Laborers	Elevator Feeders	\$58.04	6Z	1M	
Cowlitz	Laborers	Erosion Control Specialist	\$58.04	6Z	1M	
Cowlitz	Laborers	Final Clean-up	\$54.63	6Z	1M	8S
Cowlitz	Laborers	Fine Graders	\$58.04	6Z	1M	
Cowlitz	Laborers	Fire Watch	\$54.63	6Z	1M	8S
Cowlitz	Laborers	Form Strippers (Not Swinging Stages)	\$58.04	6Z	1M	
Cowlitz	Laborers	General Laborer	\$58.04	6Z	1M	
Cowlitz	Laborers	Grade Checker	\$60.00	6Z	1M	
Cowlitz	Laborers	Guard Rail, Median Rail, Reference Post Guide Pos	\$58.04	6Z	1M	
Cowlitz	Laborers	Gunitite Nozzleman	\$60.00	6Z	1M	
Cowlitz	Laborers	Gunitite Nozzleman Tender	\$58.86	6Z	1M	
Cowlitz	Laborers	Gunitite or Sand Blasting Pot Tender	\$58.86	6Z	1M	
Cowlitz	Laborers	Hand Placed Sand Blasting (Wet)	\$58.86	6Z	1M	
Cowlitz	Laborers	Handlers Or Mixers Of All Materials Of An Irritating	\$58.86	6Z	1M	
Cowlitz	Laborers	Hazardous Waste Worker	\$59.48	6Z	1M	
Cowlitz	Laborers	High Scalers, Strippers & Drillers (covers work in sv	\$60.00	6Z	1M	
Cowlitz	Laborers	Laser Beam	\$60.00	6Z	1M	
Cowlitz	Laborers	Laser Beam (Pipe Laying) - Applicable When Emplo	\$60.00	6Z	1M	
Cowlitz	Laborers	Laser Beam (Tunnel) - Applicable When Employee ,	\$60.00	6Z	1M	
Cowlitz	Laborers	Lead Abatement	\$59.48	6Z	1M	
Cowlitz	Laborers	Leverman Or Aggregate Spreaders (Flaherty And Si	\$58.04	6Z	1M	
Cowlitz	Laborers	Loading Spotters	\$58.04	6Z	1M	
Cowlitz	Laborers	Loop Installation	\$60.00	6Z	1M	
Cowlitz	Laborers	Manhole Building	\$59.48	6Z	1M	
Cowlitz	Laborers	Material Yard Man	\$58.04	6Z	1M	
Cowlitz	Laborers	Miner - Tunnel	\$60.00	6Z	1M	
Cowlitz	Laborers	Mold Remediation Or Removal	\$59.48	6Z	1M	
Cowlitz	Laborers	Nippers And Timbermen	\$59.48	6Z	1M	
Cowlitz	Laborers	Nuclear Plant Workers - Lead Shield, Power Saw O	\$59.48	6Z	1M	
Cowlitz	Laborers	Pilot Car	\$54.63	6Z	1M	8S
Cowlitz	Laborers	Pipe Doping & Wrapping	\$58.86	6Z	1M	
Cowlitz	Laborers	Pipe Layer All Types	\$60.00	6Z	1M	
Cowlitz	Laborers	Pittsburgh Chipper Operator Or Similar Types	\$58.04	6Z	1M	
Cowlitz	Laborers	Post Hold Digger, Air, Gas Or Electric	\$58.86	6Z	1M	
Cowlitz	Laborers	Powderman - Tunnel	\$60.00	6Z	1M	
Cowlitz	Laborers	Powderman Tender	\$58.04	6Z	1M	
Cowlitz	Laborers	Power Jacks	\$59.48	6Z	1M	
Cowlitz	Laborers	Pressure Washer	\$58.86	6Z	1M	
Cowlitz	Laborers	Railroad Track Laborers	\$58.04	6Z	1M	
Cowlitz	Laborers	Ribbon Setter, Head	\$58.86	6Z	1M	
Cowlitz	Laborers	Ribbon Setters (Including Steel Forms)	\$58.04	6Z	1M	
Cowlitz	Laborers	Rigger/Signalperson	\$58.04	6Z	1M	
Cowlitz	Laborers	Rip Rap Man (Hand Packed)	\$58.04	6Z	1M	
Cowlitz	Laborers	Rip Rap Man (Head)	\$58.86	6Z	1M	
Cowlitz	Laborers	Road Pump Tender	\$58.04	6Z	1M	
Cowlitz	Laborers	Sand Blasting (Dry)	\$59.48	6Z	1M	
Cowlitz	Laborers	Scaffold Tender	\$58.04	6Z	1M	
Cowlitz	Laborers	Sewer Labor	\$58.04	6Z	1M	
Cowlitz	Laborers	Sewer Timbermen	\$59.48	6Z	1M	
Cowlitz	Laborers	Signalman	\$58.04	6Z	1M	
Cowlitz	Laborers	Skipman	\$58.04	6Z	1M	
Cowlitz	Laborers	Slopers	\$58.04	6Z	1M	
Cowlitz	Laborers	Spraymen	\$58.04	6Z	1M	
Cowlitz	Laborers	Stake Chaser	\$58.04	6Z	1M	

Journey Level Wages

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Cowlitz	Laborers	Stake-setter	\$58.86	6Z	1M	
Cowlitz	Laborers	Stockpiler	\$58.04	6Z	1M	
Cowlitz	Laborers	Tampers	\$58.86	6Z	1M	
Cowlitz	Laborers	Tie Back Shoring	\$58.86	6Z	1M	
Cowlitz	Laborers	Timber Faller And Bucker (Hand Labor)	\$58.04	6Z	1M	
Cowlitz	Laborers	Tool Operators - Jackhammer	\$58.86	6Z	1M	
Cowlitz	Laborers	Tool Operators - Paving Breakers	\$58.86	6Z	1M	
Cowlitz	Laborers	Toolroom Man (At Job Site)	\$58.04	6Z	1M	
Cowlitz	Laborers	Track Liners	\$59.48	6Z	1M	
Cowlitz	Laborers	Traffic Control Laborer	\$58.04	6Z	1M	
Cowlitz	Laborers	Traffic Control Supervisor	\$58.86	6Z	1M	
Cowlitz	Laborers	Traffic Control Supervisor	\$58.86	6Z	1M	
Cowlitz	Laborers	Tugger Operator	\$59.48	6Z	1M	
Cowlitz	Laborers	Tunnel Bullgang (Above Ground)	\$60.00	6Z	1M	
Cowlitz	Laborers	Tunnel Chuck Tenders	\$60.00	6Z	1M	
Cowlitz	Laborers	Tunnel Motorman - Dinky Locomotive	\$60.00	6Z	1M	
Cowlitz	Laborers	Tunnel Muckers, Brakemen	\$60.00	6Z	1M	
Cowlitz	Laborers	Tunnel Shield Operator	\$60.00	6Z	1M	
Cowlitz	Laborers	Vibrating Screed	\$60.00	6Z	1M	
Cowlitz	Laborers	Vibrators (All Types)	\$60.00	6Z	1M	
Cowlitz	Laborers	Water Blaster	\$59.48	6Z	1M	
Cowlitz	Laborers	Weight-Man-Crusher (Aggregate When Used)	\$58.04	6Z	1M	
Cowlitz	Laborers	Welder	\$59.48	6Z	1M	
Cowlitz	Laborers - Underground Sewer & Water	General Laborer and Topman	\$60.00	6Z	1M	
Cowlitz	Landscape Construction	Landscape Operator	\$65.93	7B	4G	8U
Cowlitz	Landscape Construction	Landscaping or Planting Laborer	\$46.95	6Z	1M	8T
Cowlitz	Landscape Maintenance	Groundskeeper	\$16.66			1
Cowlitz	Lathers	Journey Level	\$67.80	5A	1B	
Cowlitz	Marble Setters	Journey Level	\$75.09	5A	1B	
Cowlitz	Metal Fabrication (In Shop)	Fitter	\$25.33	7S	1B	
Cowlitz	Metal Fabrication (In Shop)	Machine Operator	\$25.33	7S	1B	
Cowlitz	Metal Fabrication (In Shop)	Welder	\$25.33	7S	1B	
Cowlitz	Millwright	Journey Level	\$80.28	5A	1B	
Cowlitz	Modular Buildings	Journey Level	\$16.66			1
Cowlitz	Painters	Bridge Painter	\$60.44	7E	11L	
Cowlitz	Painters	Commercial Painter	\$51.86	7E	11L	
Cowlitz	Painters	Industrial Painter	\$53.93	7E	11L	9F
Cowlitz	Pile Driver	Journey Level	\$69.08	15J	11U	9L
Cowlitz	Plasterers	Journey Level	\$64.24	5H	1E	
Cowlitz	Playground & Park Equipment Installation	Journey Level	\$16.66			1
Cowlitz	Plumbers & Pipefitters	Journey Level	\$90.87	5A	1G	
Cowlitz	Power Equipment Operators	Air Filtration Equipment(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Asphalt Plant (any Type) (assistant Engineer Required)	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Asphalt, Burner & Reconditioner (any Type), (asst T)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Asphalt, Extrusion Machine Operator(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Asphalt, Paver (screed Man Required)(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Asphalt, Pugmill (any Type)(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Asphalt, Raker(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Asphalt, Roller (any Asphalt Mix)(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Asphalt, Roto-mill, Pavement Profiler Under 8 Ft Lateral	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Asphalt, Roto-mill, Pavement Profiler, 8 Ft Lateral	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Asphalt, Roto-mill, Pavement Profiler, Groundman	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Asphalt, Screed(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Asphalt, Truck Mounted Spreader, With Screed(group	\$62.71	7B	4G	8U

Journey Level Wages

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Cowlitz	Power Equipment Operators	Auger Oiler(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Auto Grader Or trimmer" (grade Checker Required)	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Back Filling Machine (assistant To Engineer Required)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Backhoe, Robotic, Track And Wheel Type Up To And Including 12000 Lbs	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Band Wagons (in Conjunction With Whell Excavator)	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Bell Man (any Type Of Communication)(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Blade Any Type(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Blade, Robotic(group 2)	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Boatman(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Boatman, Licensed(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Bobcat, Skid Steer (< 1yd)(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Boom Type Lifting Device, 5 Ton Capacity Or Less(group 4)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Boring Machine (asst To Engineer Required)(group 5)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Broom Self-propelled, Construction Job Site(group 4)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Bulldozer Operator, 20,000 Lbs Or Less, Or 100 Hp Or Less	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Bulldozer Operator, Over 20,000 Lbs And More Than 100 Hp	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Bulldozer Over 70,000 Lbs Up To And Including 120,000 Lbs	\$70.50	7B	4G	8U
Cowlitz	Power Equipment Operators	Bulldozer Over 120,000 Lbs And Above(group 2)	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Bulldozer Robotic Equipment(group 2)	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Cable-plow (any Type)(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Cableway 25 Ton & Over(group 2)	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Cableway Up To 25 Ton(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Canal Trimmer (grade Oiler Required)(group 2)	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Cat Drill (john Henry)(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Cement Pump(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Challenger(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Chip Spreading Machine(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Chippers (asst To Engineer If Required)(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Churn Drill & Earth Boring Machine(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Combination Heavy Duty Mechanic-welder, When I	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Compactor Self Propelled Without Blade(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Compactor With Blade Self Propelled(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Compactor, Multi-engine(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Compactor, Robotic(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Compressor (any Power) 1,250 Cu Ft And Over Total Capacity	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Compressor Operator (any Power) Under 1,250 Cu Ft	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete Batch Plant And/or Wet Mix (3 Units Or More)	\$73.56	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete Batch Plant And/or Wet Mix Operator (1 & 2 Units)	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete Batch Plant Quality Control(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete Breaker (assistant To Engineer Required)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete Canal Line, Assistant To Engineer Required	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete Curing Machine (riding Type)(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete Diamond Head Profiler(group 2)	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete Paving Road Mixer(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete Planer(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete Saw(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete, Automatic Slip Form Paver (asst To Engineer)	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete, Combination Mixer & Compressor Operator	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete, Curb Machine Mechanical Berm, Curb And	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete, Finishing Machine(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete, Grout Plant(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete, Grouting Machine(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete, Joint Machine(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete, Mixer Mobile(group 4)	\$67.17	7B	4G	8U

Journey Level Wages

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Cowlitz	Power Equipment Operators	Concrete, Mixer Single Drum Any Capacity(group 5	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete, Paving Machine 8' And Less (asst To Engi	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete, Placing Boom(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete, Pump Truck(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete, Pump(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete, Pumpcrete Operator (any Type)(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete, Reinforced Tank Banding Machine (asst`	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete, Slip Form Pumps, Power Driven Hydrauli	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete, Spreader(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete, Telebelt(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Concrete, Treated Base Roller Operator, Oiling(gro	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Conveyor Operator Or Assistant(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Conveyored Material Hauler(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Bridge Locomotive, Gantry And Overhead(g	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Carry Deck(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Chicago Boom & Similar Types(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Floating (derrick Barge) 30 Ton But Less Tha	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Floating 150 Ton But Less Than 250 Ton (as:	\$73.56	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Floating 250 Ton And Over (asst To Engineer	\$75.72	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Floating Clamshell 3 Cu. Yds. & Over (firem.	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Floating Clamshell, Dragline Etc. Operator l	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Hydraulic 200 Ton Through 399 Ton (group :	\$73.56	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Hydraulic 50 Ton Through 89 Ton With Luffir	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Hydraulic 50 Ton Through 89 Tons(group 3)	\$70.50	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Hydraulic 90 Ton Through 199 Ton With Luff	\$73.56	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Hydraulic 90 Ton Through 199 Ton(group 2)	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Hydraulic Crane 200 Ton Through 300 Ton V	\$75.72	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Hydraulic Crane 400 Ton And Over(group 1)	\$77.88	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Hydraulic Crane Over 300 Ton Through 399	\$77.88	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Hydraulic Under 50 Ton(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Lattice Boom 200 Ton Through 299 Ton, Wit	\$75.72	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Lattice Boom 300 Ton Through 399 Ton(groi	\$75.72	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Lattice Boom 300 Ton Through 399 Ton, Wit	\$77.88	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Lattice Boom 50 Ton Through 89 Ton With 1	\$70.50	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Lattice Boom 50 Ton Through 89 Ton With O	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Lattice Boom 90 Ton Through 199 Ton With	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Lattice Boom Under 50 Ton(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Lattice Boom, 200 Ton Through 299 Ton Wit	\$73.56	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Lattice Boom, 90 Ton Through 199 Ton With	\$73.56	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Shovel, Dragline Or Clamshell 3 Cu. Yds. Bu	\$70.50	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Tower Crane With 175' Tower Or Less And V	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Tower Crane With Over 175' Tower Or Over :	\$73.56	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Tugger(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Whirley 90 Ton And Over (group 1)	\$73.56	7B	4G	8U
Cowlitz	Power Equipment Operators	Crane, Whirley Under 90 Ton(group 2)	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Crusher Feederman(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Crusher Oiler(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Crusher Plant(group 2)	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Deckhand(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Derrick Operator Under 100 Ton (two Operators Re	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Diesel-electric Engineer (plant Or Floating)(group 4	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Directional Drill Over 20,000 Lbs Pullback(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Drill Assistant(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Drill Cat Operator(group 4)	\$67.17	7B	4G	8U

Journey Level Wages

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Cowlitz	Power Equipment Operators	Drill Directional Type Less Than 20,000 Lbs Pullbac	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Drill Doctor And/or (bit Grinder)(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Drill Mud Mixer(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Drill Oscillator(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Drill, Directinal Locator(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Driller, Percussion, Diamond, Core, Cable, Rotary	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Elevating Grader Operator, Tractor Towed Requirin	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Elevating Loader Operator (any Type)(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Elevator To Move Personnel Or Materials(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Excavator Over 80,000 Lbs Through 130,000 Lbs(g	\$70.50	7B	4G	8U
Cowlitz	Power Equipment Operators	Excavator Operator, Over 20,000 Lbs Through 80,C	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Excavator Operator, Over 130,000 Lbs(group 2)	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Fireman(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Floating, Crane 350 Ton And Over (asst To Enginee	\$77.88	7B	4G	8U
Cowlitz	Power Equipment Operators	Fork Lift(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Fork Lift, Over 10 Ton Or Robotic(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Generator Operator(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Grade Checker(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Grade Setter / Layout From Plans(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Grade-all(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Guardrail Machines, I.e. Punch, Auger, Etc.(group 4	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Guardrail Punch Oiler(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Hammer Operator (pile Driver)(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Heavy Duty Repairman Assistant(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Heavy Equipment Robotics Operator Or Mechanic(	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Helicopter Hoist(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Helicopter Radioman (ground)(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Helicopter When Used In Erecting Workcrane(group	\$73.56	7B	4G	8U
Cowlitz	Power Equipment Operators	Hoist Operator, Single Drum(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Hoist, 2 Drums Or More(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Hoist, Stiff Leg, Guy Derrick Or Similar Type, 50 Ton	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Hydraulic Backhoe Track Type Up To And Including	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Hydraulic Backhoe Wheel Type (any Make)(group 5	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Hydraulic Pipe Press(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Hydro Axe (loader Mounted Or Similar Type)(group	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Hydrographic Seeder Machine Straw, Pulp Or Seed	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Hydrostatic Pump Operator(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Internal Full Slab Vibrator Operator(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Jack Operator, Elevating Barges, Barge Operator, S	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Laser Screed(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Lattice Boom Crane 400 Ton And Over(group 1)	\$77.88	7B	4G	8U
Cowlitz	Power Equipment Operators	Lime Spreader, Construction Job Site(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Loaders Operator, Front End & Overhead, 25,000 L	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Loaders, 120,000 Lbs And Above(group 2)	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Loaders, 60,000 Lbs And Less Than 120,000 Lbs(gr	\$70.50	7B	4G	8U
Cowlitz	Power Equipment Operators	Loaders, Rubber-tire Type, Less Than 25,000 Lbs(g	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Log Skidders(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Master Environmental Maintenance Mechanic(grou	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Material Handler(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Mechanic, Heavy Duty(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Mixer Box (c.t.b., Dry Batch, Etc.)(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Oiler(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Parts Man (tool Room)(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Pavement Grinder And Or Grooving Machine (riding	\$65.93	7B	4G	8U

Journey Level Wages

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Cowlitz	Power Equipment Operators	Pile Driver Operator (not Crane Type) (asst To Engr	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Pipe Bending, Cleaning, Doping And Wrapping Mac	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Pipe, Cast In Place Pipe Laying Machine(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Plant Oiler(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Pump (any Power)(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Pump Operator, More Than 5 Pumps (any Size)(gro	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Rail, Ballast Compactor, Regulator Or Tamper Mac	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Rail, Ballast Tamper Multi-purpose(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Rail, Brakeman, Switchman, Motorman(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Rail, Car Mover(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Rail, Clip Applicator(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Rail, High Rail Self Loader Truck(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Rail, Lo-railer(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Rail, Locomotive, 40 Ton And Over (asst To Enginee	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Rail, Shuttle Car Operator(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Rail, Speedswing(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Rail, Switchman(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Rail, Tamping Machine, Mechanical, Self-propelled	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Rail, Track Liner(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Remote Controlled Earth Moving Equipment(group	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Rigger(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Roller Grading (not Asphalt)(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Rubber-tired Dozers And Pushers(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Scraper All Types(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Service Oiler (greaser)(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Shovel, Dragline, Clamshell, 5 Yards And Over(gro	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Side-boom(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Skip Loader, Drag Box(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Stump Grinder (loader Mounted Or Similar Type)(gr	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Surface Heater And Planer(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Sweeper Self-propelled, Construction Job Site(gro	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Tar Pot Fireman (power Agitated) Or Not(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Tractor Rubber-tired, 50 Hp Flywheel & Under(grou	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Tractor, Rubber-tired Over 50 Hp Flywheel(group 4	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Trenching Machine 3 Ft Depth And Deeper (asst To	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Trenching Machine Operator, Maximum Digging Ca	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Truck Crane Oiler-driver(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Truck, All Terrain Or Track Type(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Truck, Barrel Type(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Truck, Boom(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Truck, Off-road Trucks, Articulated And Non-articul	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Truck, Offroad Trucks, Articulated And Non-articul	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Truck, Vacuum(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Truck, Water(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Tub Grinder(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Tunnel Boring Machine Mechanic(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Tunnel Boring Machine(group 1)	\$73.56	7B	4G	8U
Cowlitz	Power Equipment Operators	Tunnel Segment Plant(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Tunnel Separation Plant(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Tunnel Shaef Loader(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Tunnel, Locomotive, Dinkey(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators	Tunnel, Micro Boring Tunnel Machine(group 1)	\$73.56	7B	4G	8U
Cowlitz	Power Equipment Operators	Tunnel, Mucking Machine(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Tunnel, Power Jumbo Setting Slip Forms, Etc.(grou	\$65.93	7B	4G	8U

Journey Level Wages

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Cowlitz	Power Equipment Operators	Tunnel, Shield Operator(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Ultra High Pressure Water Jet Cutting Tool System (	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Underwater Equipment, Remote Or Otherwise(gro	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Vacuum Blasting Machine Operator(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Water Pulls, Water Wagon(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Welder's Assistant(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Welder; Heavy Duty, Certified Or Not(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators	Welding Machine(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators	Wheel Excavation Any Size (grade Oiler Required)(ε	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators	Wire Mat Or Brooming Machine(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Air Filtration Equipment(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Asphalt Plant (any Type) (assistant Engineer Requir	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Asphalt, Burner & Reconditioner (any Type), (asst T	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Asphalt, Extrusion Machine Operator(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Asphalt, Paver (screed Man Required)(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Asphalt, Pugmill (any Type)(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Asphalt, Raker(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Asphalt, Roller (any Asphalt Mix)(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Asphalt, Roto-mill, Pavement Profiler Under 8 Ft La	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Asphalt, Roto-mill, Pavement Profiler, 8 Ft Lateral C	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Asphalt, Roto-mill, Pavement Profiler, Groundman	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Asphalt, Screed(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Asphalt, Truck Mounted Spreader, With Screed(gro	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Auger Oiler(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Auto Grader Or trimmer" (grade Checker Required)	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Back Filling Machine (assistant To Engineer Requir	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Backhoe, Robotic, Track And Wheel Type Up To Anc	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Band Wagons (in Conjunction With Whell Excavator)	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Bell Man (any Type Of Communication)(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Blade Any Type(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Blade, Robotic(group 2)	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Boatman(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Boatman, Licensed(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Bobcat, Skid Steer (< 1yd)(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Boom Type Lifting Device, 5 Ton Capacity Or Less(g	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Boring Machine (asst To Engineer Required)(group	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Broom Self-propelled, Construction Job Site(group	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Bulldozer Operator, 20,000 Lbs Or Less, Or 100 Ho	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Bulldozer Operator, Over 20,000 Lbs And More Th	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Bulldozer Over 70,000 Lbs Up To And Including 12	\$70.50	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Bulldozer Over 120,000 Lbs And Above(group 2)	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Bulldozer Robotic Equipment(group 2)	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Cable-plow (any Type)(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Cableway 25 Ton & Over(group 2)	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Cableway Up To 25 Ton(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Canal Trimmer (grade Oiler Required)(group 2)	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Cat Drill (john Henry)(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Cement Pump(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Challenger(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Chip Spreading Machine(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Chippers (asst To Engineer If Required)(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Churn Drill & Earth Boring Machine(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Combination Heavy Duty Mechanic-welder, When I	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Compactor Self Propelled Without Blade(group 5)	\$65.93	7B	4G	8U

Journey Level Wages

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Cowlitz	Power Equipment Operators- Undei	Compactor With Blade Self Propelled(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Compactor, Multi-engine(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Compactor, Robotic(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Compressor (any Power) 1,250 Cu Ft And Over Tot	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Compressor Operator (any Power) Under 1,250 Cu	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete Batch Plant And/or Wet Mix (3 Units Or M	\$73.56	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete Batch Plant And/or Wet Mix Operator (1 &	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete Batch Plant Quality Control(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete Breaker (assistant To Engineer Required)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete Canal Line, Assistant To Engineer Require	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete Curing Machine (riding Type)(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete Diamond Head Profiler(group 2)	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete Paving Road Mixer(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete Planer(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete Saw(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete, Automatic Slip Form Paver (asst To Engir	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete, Combination Mixer & Compressor Operc	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete, Curb Machine Mechanical Berm, Curb A	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete, Finishing Machine(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete, Grout Plant(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete, Grouting Machine(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete, Joint Machine(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete, Mixer Mobile(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete, Mixer Single Drum Any Capacity(group 5	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete, Paving Machine 8' And Less (asst To Engi	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete, Placing Boom(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete, Pump Truck(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete, Pump(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete, Pumpcrete Operator (any Type)(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete, Reinforced Tank Banding Machine (asst `	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete, Slip Form Pumps, Power Driven Hydrauli	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete, Spreader(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete, Telebelt(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Concrete, Treated Base Roller Operator, Oiling(gro	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Conveyor Operator Or Assistant(group 6)	\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Conveyored Material Hauler(group 5)	\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Crane, Bridge Locomotive, Gantry And Overhead(gi	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Crane, Carry Deck(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Crane, Chicago Boom & Similar Types(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Crane, Floating (derrick Barge) 30 Ton But Less Tha	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Crane, Floating 150 Ton But Less Than 250 Ton (as:	\$73.56	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Crane, Floating 250 Ton And Over (asst To Engineer	\$75.72	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Crane, Floating Clamshell 3 Cu. Yds. & Over (firem.	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Crane, Floating Clamshell, Dragline Etc. Operator l	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Crane, Hydraulic 200 Ton Through 399 Ton (group :	\$73.56	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Crane, Hydraulic 50 Ton Through 89 Ton With Luffir	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Crane, Hydraulic 50 Ton Through 89 Tons(group 3)	\$70.50	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Crane, Hydraulic 90 Ton Through 199 Ton With Luff	\$73.56	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Crane, Hydraulic 90 Ton Through 199 Ton(group 2)	\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Crane, Hydraulic Crane 200 Ton Through 300 Ton V	\$75.72	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Crane, Hydraulic Crane 400 Ton And Over(group 1)	\$77.88	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Crane, Hydraulic Crane Over 300 Ton Through 399	\$77.88	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Crane, Hydraulic Under 50 Ton(group 4)	\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei	Crane, Lattice Boom 200 Ton Through 299 Ton, Wit	\$75.72	7B	4G	8U

Journey Level Wages

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Cowlitz	Power Equipment Operators- Undei Crane, Lattice Boom 300 Ton Through 399 Ton(gro		\$75.72	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Crane, Lattice Boom 300 Ton Through 399 Ton, Wit		\$77.88	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Crane, Lattice Boom 50 Ton Through 89 Ton With 1		\$70.50	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Crane, Lattice Boom 50 Ton Through 89 Ton With O		\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Crane, Lattice Boom 90 Ton Through 199 Ton With		\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Crane, Lattice Boom Under 50 Ton(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Crane, Lattice Boom, 200 Ton Through 299 Ton Wit		\$73.56	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Crane, Lattice Boom, 90 Ton Through 199 Ton With		\$73.56	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Crane, Shovel, Dragline Or Clamshell 3 Cu. Yds. Bl		\$70.50	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Crane, Tower Crane With 175' Tower Or Less And V		\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Crane, Tower Crane With Over 175' Tower Or Over :		\$73.56	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Crane, Tugger(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Crane, Whirley 90 Ton And Over (group 1)		\$73.56	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Crane, Whirley Under 90 Ton(group 2)		\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Crusher Feederman(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Crusher Oiler(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Crusher Plant(group 2)		\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Deckhand(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Derrick Operator Under 100 Ton (two Operators Re		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Diesel-electric Engineer (plant Or Floating)(group 4		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Directional Drill Over 20,000 Lbs Pullback(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Drill Assistant(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Drill Cat Operator(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Drill Directional Type Less Than 20,000 Lbs Pullbac		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Drill Doctor And/or (bit Grinder)(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Drill Mud Mixer(group 5)		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Drill Oscillator(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Drill, Directinal Locator(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Driller, Percussion, Diamond, Core, Cable, Rotary i		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Elevating Grader Operator, Tractor Towed Requirin		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Elevating Loader Operator (any Type)(group 5)		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Elevator To Move Personnel Or Materials(group 5)		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Excavator Over 80,000 Lbs Through 130,000 Lbs(g		\$70.50	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Excavator Operator, Over 20,000 Lbs Through 80,C		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Excavator Operator, Over 130,000 Lbs(group 2)		\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Fireman(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Floating, Crane 350 Ton And Over (asst To Engineer		\$77.88	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Fork Lift(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Fork Lift, Over 10 Ton Or Robotic(group 5)		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Generator Operator(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Grade Checker(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Grade Setter / Layout From Plans(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Grade-all(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Guardrail Machines, I.e. Punch, Auger, Etc.(group 4		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Guardrail Punch Oiler(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Hammer Operator (pile Driver)(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Heavy Duty Repairman Assistant(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Heavy Equipment Robotics Operator Or Mechanic(		\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Helicopter Hoist(group 5)		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Helicopter Radioman (ground)(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Helicopter When Used In Erecting Workcrane(grou		\$73.56	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Hoist Operator, Single Drum(group 5)		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Hoist, 2 Drums Or More(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Hoist, Stiff Leg, Guy Derrick Or Similar Type, 50 Ton		\$67.17	7B	4G	8U

Journey Level Wages

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Cowlitz	Power Equipment Operators- Undei Hydraulic Backhoe Track Type Up To And Including		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Hydraulic Backhoe Wheel Type (any Make)(group 5		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Hydraulic Pipe Press(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Hydro Axe (loader Mounted Or Similar Type)(group		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Hydrographic Seeder Machine Straw, Pulp Or Seed		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Hydrostatic Pump Operator(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Internal Full Slab Vibrator Operator(group 5)		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Jack Operator, Elevating Barges, Barge Operator, S		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Laser Screed(group 5)		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Lattice Boom Crane 400 Ton And Over(group 1)		\$77.88	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Lime Spreader, Construction Job Site(group 5)		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Loaders Operator, Front End & Overhead, 25,000 L		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Loaders, 120,000 Lbs And Above(group 2)		\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Loaders, 60,000 Lbs And Less Than 120,000 Lbs(gr		\$70.50	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Loaders, Rubber-tire Type, Less Than 25,000 Lbs(g		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Log Skidders(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Master Environmental Maintenance Mechanic(grou		\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Material Handler(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Mechanic, Heavy Duty(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Mixer Box (c.t.b., Dry Batch, Etc.)(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Oiler(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Parts Man (tool Room)(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Pavement Grinder And Or Grooving Machine (riding		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Pile Driver Operator (not Crane Type) (asst To Engir		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Pipe Bending, Cleaning, Doping And Wrapping Mac		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Pipe, Cast In Place Pipe Laying Machine(group 5)		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Plant Oiler(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Pump (any Power)(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Pump Operator, More Than 5 Pumps (any Size)(gro		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Rail, Ballast Compactor, Regulator Or Tamper Mac		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Rail, Ballast Tamper Multi-purpose(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Rail, Brakeman, Switchman, Motorman(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Rail, Car Mover(group 5)		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Rail, Clip Applicator(group 5)		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Rail, High Rail Self Loader Truck(group 5)		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Rail, Lo-railer(group 5)		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Rail, Locomotive, 40 Ton And Over (asst To Enginee		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Rail, Shuttle Car Operator(group 5)		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Rail, Speedswing(group 5)		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Rail, Switchman(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Rail, Tamping Machine, Mechanical, Self-propelled		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Rail, Track Liner(group 5)		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Remote Controlled Earth Moving Equipment(group		\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Rigger(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Roller Grading (not Asphalt)(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Rubber-tired Dozers And Pushers(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Scraper All Types(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Service Oiler (greaser)(group 5)		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Shovel, Dragline, Clamshell, 5 Yards And Over(grou		\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Side-boom(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Skip Loader, Drag Box(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Stump Grinder (loader Mounted Or Similar Type)(gr		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Surface Heater And Planer(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Sweeper Self-propelled, Construction Job Site(grou		\$65.93	7B	4G	8U

Journey Level Wages

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Cowlitz	Power Equipment Operators- Undei Tar Pot Fireman (power Agitated) Or Not(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Tractor Rubber-tired, 50 Hp Flywheel & Under(grou		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Tractor, Rubber-tired Over 50 Hp Flywheel(group 4		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Trenching Machine 3 Ft Depth And Deeper (asst To		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Trenching Machine Operator, Maximum Digging Ca		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Truck Crane Oiler-driver(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Truck, All Terrain Or Track Type(group 5)		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Truck, Barrel Type(group 5)		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Truck, Boom(group 5)		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Truck, Off-road Trucks, Articulated And Non-articul		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Truck, Offraod Trucks, Articulated And Non-articul		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Truck, Vacuum(group 5)		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Truck, Water(group 5)		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Tub Grinder(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Tunnel Boring Machine Mechanic(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Tunnel Boring Machine(group 1)		\$73.56	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Tunnel Segment Plant(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Tunnel Separation Plant(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Tunnel Shaef Loader(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Tunnel, Locomotive, Dinkey(group 5)		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Tunnel, Micro Boring Tunnel Machine(group 1)		\$73.56	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Tunnel, Mucking Machine(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Tunnel, Power Jumbo Setting Slip Forms, Etc.(grou		\$65.93	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Tunnel, Shield Operator(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Ultra High Pressure Water Jet Cutting Tool System (		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Underwater Equipment, Remote Or Otherwise(grou		\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Vacuum Blasting Machine Operator(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Water Pulls, Water Wagon(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Welder's Assistant(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Welder; Heavy Duty, Certified Or Not(group 4)		\$67.17	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Welding Machine(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Wheel Excavation Any Size (grade Oiler Required)(ε		\$71.65	7B	4G	8U
Cowlitz	Power Equipment Operators- Undei Wire Mat Or Brooming Machine(group 6)		\$62.71	7B	4G	8U
Cowlitz	Power Line Clearance Tree Trimmer Journey Level In Charge		\$61.73	5A	4A	
Cowlitz	Power Line Clearance Tree Trimmer Spray Person		\$58.44	5A	4A	
Cowlitz	Power Line Clearance Tree Trimmer Tree Equipment Operator		\$61.73	5A	4A	
Cowlitz	Power Line Clearance Tree Trimmer Tree Trimmer		\$55.14	5A	4A	
Cowlitz	Power Line Clearance Tree Trimmer Tree Trimmer Groundperson		\$41.68	5A	4A	
Cowlitz	Refrigeration & Air Conditioning Me Journey Level		\$90.96	5A	1G	
Cowlitz	Residential Brick Mason	Journey Level	\$23.02			1
Cowlitz	Residential Carpenters	Journey Level	\$26.70			1
Cowlitz	Residential Cement Masons	Journey Level	\$16.66			1
Cowlitz	Residential Drywall Applicators	Journey Level	\$36.07			1
Cowlitz	Residential Drywall Tapers	Journey Level	\$16.66			1
Cowlitz	Residential Electricians	Journey Level	\$30.53			1
Cowlitz	Residential Glaziers	Journey Level	\$42.76			1
Cowlitz	Residential Insulation Applicators	Journey Level	\$28.53			1
Cowlitz	Residential Laborers	Journey Level	\$46.95	6Z	1M	8T
Cowlitz	Residential Marble Setters	Journey Level	\$23.02			1
Cowlitz	Residential Painters	Journey Level	\$51.86	7E	11L	
Cowlitz	Residential Plumbers & Pipefitters	Journey Level	\$51.05			1
Cowlitz	Residential Refrigeration & Air Conc	Journey Level	\$99.92	7F	1E	
Cowlitz	Residential Sheet Metal Workers	Journey Level	\$99.92	7F	1E	
Cowlitz	Residential Soft Floor Layers	Journey Level	\$61.44	7E	11Q	

Journey Level Wages

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Cowlitz	Residential Sprinkler Fitters (Fire Pr	Journey Level	\$41.11			1
Cowlitz	Residential Stone Masons	Journey Level	\$23.02			1
Cowlitz	Residential Terrazzo Workers	Journey Level	\$16.66			1
Cowlitz	Residential Terrazzo/Tile Finishers	Journey Level	\$36.64			1
Cowlitz	Residential Tile Setters	Journey Level	\$16.66			1
Cowlitz	Roofers	Journey Level	\$64.45	5A	3H	
Cowlitz	Roofers	Using Irritable Bituminous Materials	\$67.45	5A	3H	
Cowlitz	Sheet Metal Workers	Journey Level (Field or Shop)	\$99.92	7F	1E	
Cowlitz	Shipbuilding & Ship Repair	New Construction Heat & Frost Insulator	\$85.39	5N	1F	
Cowlitz	Shipbuilding & Ship Repair	Ship Repair Heat & Frost Insulator	\$85.39	5N	1F	
Cowlitz	Sign Makers & Installers (Electrical)	Journey Level	\$16.88			1
Cowlitz	Sign Makers & Installers (Non-Elect	Journey Level	\$16.66			1
Cowlitz	Soft Floor Layers	Journey Level	\$63.29	15J	4C	
Cowlitz	Solar Controls For Windows	Journey Level	\$16.66			1
Cowlitz	Sprinkler Fitters (Fire Protection)	Journey Level	\$75.30	7J	1R	
Cowlitz	Stage Rigging Mechanics (Non Struc	Journey Level	\$16.66			1
Cowlitz	Stone Masons	Journey Level	\$74.09	5A	1B	
Cowlitz	Street And Parking Lot Sweeper Wo	Journey Level	\$16.66			1
Cowlitz	Surveyors	Chain Person	\$62.71	7B	1B	9H
Cowlitz	Surveyors	Instrument Person	\$65.93	7B	1B	9H
Cowlitz	Surveyors	Party Chief	\$71.65	7B	1B	9H
Cowlitz	Telecommunication Technicians	Journey Level	\$74.89	5A	1B	
Cowlitz	Telephone Line Construction - Outs	Cable Splicer	\$41.35	5A	2B	
Cowlitz	Telephone Line Construction - Outs	Hole Digger/Ground Person	\$27.31	5A	2B	
Cowlitz	Telephone Line Construction - Outs	Telephone Equipment Operator (Light)	\$34.53	5A	2B	
Cowlitz	Telephone Line Construction - Outs	Telephone Lineperson	\$39.07	5A	2B	
Cowlitz	Terrazzo Workers	Journey Level	\$64.27	5A	1B	
Cowlitz	Tile Setters	Journey Level	\$64.27	5A	1B	
Cowlitz	Tile, Marble & Terrazzo Finishers	Finishers	\$47.95	5A	1B	
Cowlitz	Traffic Control Stripers	Journey Level	\$88.42	15N	1K	
Cowlitz	Truck Drivers	Asphalt Mix Over 10 Yards	\$49.39	5A	1B	
Cowlitz	Truck Drivers	Asphalt Mix To 10 Yards	\$49.24	5A	1B	
Cowlitz	Truck Drivers	Dump Truck	\$49.24	5A	1B	
Cowlitz	Truck Drivers	Dump Truck And Trailer	\$49.39	5A	1B	
Cowlitz	Truck Drivers	Other Trucks	\$49.39	5A	1B	
Cowlitz	Truck Drivers - Ready Mix	Transit Mix 5 cubic yards and under	\$49.24	5A	1B	
Cowlitz	Truck Drivers - Ready Mix	Transit Mix over 11 cubic yards up to 15 cubic yards	\$49.85	5A	1B	
Cowlitz	Truck Drivers - Ready Mix	Transit Mix over 5 cubic yards up to 7 cubic yards	\$49.39	5A	1B	
Cowlitz	Truck Drivers - Ready Mix	Transit Mix Over 7 cubic yards up to 11 cubic yards	\$49.54	5A	1B	
Cowlitz	Well Drillers & Irrigation Pump Insta	Irrigation Pump Installer	\$16.66			1
Cowlitz	Well Drillers & Irrigation Pump Insta	Oiler	\$16.66			1
Cowlitz	Well Drillers & Irrigation Pump Insta	Well Driller	\$17.97			1

Washington State Department of Labor and Industries
Policy Statement
(Regarding the Production of "Standard" or "Non-standard" Items)

Below is the department's (State L&I's) list of criteria to be used in determining whether a prefabricated item is "standard" or "non-standard". For items not appearing on WSDOT's predetermined list, these criteria shall be used by the Contractor (and the Contractor's subcontractors, agents to subcontractors, suppliers, manufacturers, and fabricators) to determine coverage under RCW 39.12. The production, in the State of Washington, of non-standard items is covered by RCW 39.12, and the production of standard items is not. The production of any item outside the State of Washington is not covered by RCW 39.12.

1. Is the item fabricated for a public works project? If not, it is not subject to RCW 39.12. If it is, go to question 2.
2. Is the item fabricated on the public works jobsite? If it is, the work is covered under RCW 39.12. If not, go to question 3.
3. Is the item fabricated in an assembly/fabrication plant set up for, and dedicated primarily to, the public works project? If it is, the work is covered by RCW 39.12. If not, go to question 4.
4. Does the item require any assembly, cutting, modification or other fabrication by the supplier? If not, the work is not covered by RCW 39.12. If yes, go to question 5.
5. Is the prefabricated item intended for the public works project typically an inventory item which could reasonably be sold on the general market? If not, the work is covered by RCW 39.12. If yes, go to question 6.
6. Does the specific prefabricated item, generally defined as standard, have any unusual characteristics such as shape, type of material, strength requirements, finish, etc? If yes, the work is covered under RCW 39.12.

Any firm with questions regarding the policy, WSDOT's Predetermined List, or for determinations of covered and non-covered workers shall be directed to State L&I at (360) 902-5330.

**WSDOT's
Predetermined List for
Suppliers - Manufactures - Fabricator**

Below is a list of potentially prefabricated items, originally furnished by WSDOT to Washington State Department of Labor and Industries, that may be considered non-standard and therefore covered by the prevailing wage law, RCW 39.12. Items marked with an X in the "YES" column should be considered to be non-standard and therefore covered by RCW 39.12. Items marked with an X in the "NO" column should be considered to be standard and therefore not covered. Of course, exceptions to this general list may occur, and in that case shall be evaluated according to the criteria described in State and L&I's policy statement.

ITEM DESCRIPTION	YES	NO
1. Metal rectangular frames, solid metal covers, herringbone grates, and bi-directional vaned grates for Catch Basin Types 1, 1L, 1P, and 2 and Concrete Inlets. See Std. Plans		X
2. Metal circular frames (rings) and covers, circular grates, and prefabricated ladders for Manhole Types 1, 2, and 3, Drywell Types 1, 2, and 3 and Catch Basin Type 2. See Std. Plans		X
3. Prefabricated steel grate supports and welded grates, metal frames and dual vaned grates, and Type 1, 2, and 3 structural tubing grates for Drop Inlets. See Std. Plans.		X
4. Concrete Pipe - Plain Concrete pipe and reinforced concrete pipe Class 2 to 5 sizes smaller than 60 inch diameter.		X
5. Concrete Pipe - Plain Concrete pipe and reinforced concrete pipe Class 2 to 5 sizes larger than 60 inch diameter.		X
6. Corrugated Steel Pipe - Steel lock seam corrugated pipe for culverts and storm sewers, sizes 30 inch to 120 inches in diameter. May also be treated, 1 thru 5.		X
7. Corrugated Aluminum Pipe - Aluminum lock seam corrugated pipe for culverts and storm sewers, sizes 30 inch to 120 inches in diameter. May also be treated, #5.		X

ITEM DESCRIPTION	YES	NO
8. Anchor Bolts & Nuts - Anchor Bolts and Nuts, for mounting sign structures, luminaries and other items, shall be made from commercial bolt stock. See Contract Plans and Std. Plans for size and material type.		X
9. Aluminum Pedestrian Handrail - Pedestrian handrail conforming to the type and material specifications set forth in the contract plans. Welding of aluminum shall be in accordance with Section 9-28.14(3).	X	
10. Major Structural Steel Fabrication - Fabrication of major steel items such as trusses, beams, girders, etc., for bridges.	X	
11. Minor Structural Steel Fabrication - Fabrication of minor steel Items such as special hangers, brackets, access doors for structures, access ladders for irrigation boxes, bridge expansion joint systems, etc., involving welding, cutting, punching and/or boring of holes. See Contact Plans for item description and shop drawings.	X	
12. Aluminum Bridge Railing Type BP - Metal bridge railing conforming to the type and material specifications set forth in the Contract Plans. Welding of aluminum shall be in accordance with Section 9-28.14(3).		X
13. Concrete Piling--Precast-Prestressed concrete piling for use as 55 and 70 ton concrete piling. Concrete to conform to Section 9-19.1 of Std. Spec..	X	
14. Precast Manhole Types 1, 2, and 3 with cones, adjustment sections and flat top slabs. See Std. Plans.		X
15. Precast Drywell Types 1, 2, and with cones and adjustment Sections. See Std. Plans.		X
16. Precast Catch Basin - Catch Basin type 1, 1L, 1P, and 2 With adjustment sections. See Std. Plans.		X

ITEM DESCRIPTION	YES	NO
17. Precast Concrete Inlet - with adjustment sections, See Std. Plans		X
18. Precast Drop Inlet Type 1 and 2 with metal grate supports. See Std. Plans.		X
19. Precast Grate Inlet Type 2 with extension and top units. See Std. Plans		X
20. Metal frames, vaned grates, and hoods for Combination Inlets. See Std. Plans		X
21. Precast Concrete Utility Vaults - Precast Concrete utility vaults of various sizes. Used for in ground storage of utility facilities and controls. See Contract Plans for size and construction requirements. Shop drawings are to be provided for approval prior to casting		X
22. Vault Risers - For use with Valve Vaults and Utilities X Vaults.		X
23. Valve Vault - For use with underground utilities. See Contract Plans for details.		X
24. Precast Concrete Barrier - Precast Concrete Barrier for use as new barrier or may also be used as Temporary Concrete Barrier. Only new state approved barrier may be used as permanent barrier.		X
25. Reinforced Earth Wall Panels – Reinforced Earth Wall Panels in size and shape as shown in the Plans. Fabrication plant has annual approval for methods and materials to be used. See Shop Drawing. Fabrication at other locations may be approved, after facilities inspection, contact HQ. Lab.	X	
26. Precast Concrete Walls - Precast Concrete Walls - tilt-up wall panel in size and shape as shown in Plans. Fabrication plant has annual approval for methods and materials to be used	X	

ITEM DESCRIPTION	YES	NO
27. Precast Railroad Crossings - Concrete Crossing Structure Slabs.	X	
28. 12, 18 and 26 inch Standard Precast Prestressed Girder – Standard Precast Prestressed Girder for use in structures. Fabricator plant has annual approval of methods and materials to be used. Shop Drawing to be provided for approval prior to casting girders. See Std. Spec. Section 6-02.3(25)A	X	
29. Prestressed Concrete Girder Series 4-14 - Prestressed Concrete Girders for use in structures. Fabricator plant has annual approval of methods and materials to be used. Shop Drawing to be provided for approval prior to casting girders. See Std. Spec. Section 6-02.3(25)A	X	
30. Prestressed Tri-Beam Girder - Prestressed Tri-Beam Girders for use in structures. Fabricator plant has annual approval of methods and materials to be used. Shop Drawing to be provided for approval prior to casting girders. See Std. Spec. Section 6-02.3(25)A	X	
31. Prestressed Precast Hollow-Core Slab – Precast Prestressed Hollow-core slab for use in structures. Fabricator plant has annual approval of methods and materials to be used. Shop Drawing to be provided for approval prior to casting girders. See Std. Spec. Section 6-02.3(25)A.	X	
32. Prestressed-Bulb Tee Girder - Bulb Tee Prestressed Girder for use in structures. Fabricator plant has annual approval of methods and materials to be used. Shop Drawing to be provided for approval prior to casting girders. See Std. Spec. Section 6-02.3(25)A	X	
33. Monument Case and Cover See Std. Plan.		X

ITEM DESCRIPTION	YES	NO
34. Cantilever Sign Structure - Cantilever Sign Structure fabricated from steel tubing meeting AASHTO-M-183. See Std. Plans, and Contract Plans for details. The steel structure shall be galvanized after fabrication in accordance with AASHTO-M-111.	X	
35. Mono-tube Sign Structures - Mono-tube Sign Bridge fabricated to details shown in the Plans. Shop drawings for approval are required prior to fabrication.	X	
36. Steel Sign Bridges - Steel Sign Bridges fabricated from steel tubing meeting AASHTO-M-138 for Aluminum Alloys. See Std. Plans, and Contract Plans for details. The steel structure shall be galvanized after fabrication in accordance with AASHTO-M-111.	X	
37. Steel Sign Post - Fabricated Steel Sign Posts as detailed in Std Plans. Shop drawings for approval are to be provided prior to fabrication		X
38. Light Standard-Prestressed - Spun, prestressed, hollow concrete poles.	X	
39. Light Standards - Lighting Standards for use on highway illumination systems, poles to be fabricated to conform with methods and materials as specified on Std. Plans. See Special Provisions for pre-approved drawings.	X	
40. Traffic Signal Standards - Traffic Signal Standards for use on highway and/or street signal systems. Standards to be fabricated to conform with methods and material as specified on Std. Plans. See Special Provisions for pre-approved drawings	X	
41. Precast Concrete Sloped Mountable Curb (Single and DualFaced) See Std. Plans.		X

ITEM DESCRIPTION	YES	NO
42. Traffic Signs - Prior to approval of a Fabricator of Traffic Signs, the sources of the following materials must be submitted and approved for reflective sheeting, legend material, and aluminum sheeting. NOTE: *** Fabrication inspection required. Only signs tagged "Fabrication Approved" by WSDOT Sign Fabrication Inspector to be installed	X	X
	Custom Message	Std Signing Message
43. Cutting & bending reinforcing steel		X
44. Guardrail components	X	X
	Custom End Sec	Standard Sec
45. Aggregates/Concrete mixes	Covered by WAC 296-127-018	
46. Asphalt	Covered by WAC 296-127-018	
47. Fiber fabrics		X
48. Electrical wiring/components		X
49. treated or untreated timber pile		X
50. Girder pads (elastomeric bearing)	X	
51. Standard Dimension lumber		X
52. Irrigation components		X

ITEM DESCRIPTION	YES	NO
53. Fencing materials		X
54. Guide Posts		X
55. Traffic Buttons		X
56. Epoxy		X
57. Cribbing		X
58. Water distribution materials		X
59. Steel "H" piles		X
60. Steel pipe for concrete pile casings		X
61. Steel pile tips, standard		X
62. Steel pile tips, custom	X	

Prefabricated items specifically produced for public works projects that are prefabricated in a county other than the county wherein the public works project is to be completed, the wage for the offsite prefabrication shall be the applicable prevailing wage for the county in which the actual prefabrication takes place.

It is the manufacturer of the prefabricated product to verify that the correct county wage rates are applied to work they perform.

See RCW [39.12.010](#)

(The definition of "locality" in RCW [39.12.010](#)(2) contains the phrase "wherein the physical work is being performed." The department interprets this phrase to mean the actual work site.

WSDOT's List of State Occupations not applicable to Heavy and Highway Construction Projects

This project is subject to the state hourly minimum rates for wages and fringe benefits in the contract provisions, as provided by the state Department of Labor and Industries.

The following list of occupations, is comprised of those occupations that are not normally used in the construction of heavy and highway projects.

When considering job classifications for use and / or payment when bidding on, or building heavy and highway construction projects for, or administered by WSDOT, these Occupations will be excepted from the included "Washington State Prevailing Wage Rates For Public Work Contracts" documents.

- Building Service Employees
- Electrical Fixture Maintenance Workers
- Electricians - Motor Shop
- Heating Equipment Mechanics
- Industrial Engine and Machine Mechanics
- Industrial Power Vacuum Cleaners
- Inspection, Cleaning, Sealing of Water Systems by Remote Control
- Laborers - Underground Sewer & Water
- Machinists (Hydroelectric Site Work)
- Modular Buildings
- Playground & Park Equipment Installers
- Power Equipment Operators - Underground Sewer & Water
- Residential *** ALL ASSOCIATED RATES ***
- Sign Makers and Installers (Non-Electrical)
- Sign Makers and Installers (Electrical)
- Stage Rigging Mechanics (Non Structural)

The following occupations may be used only as outlined in the preceding text concerning "WSDOT's list for Suppliers - Manufacturers - Fabricators"

- Fabricated Precast Concrete Products
- Metal Fabrication (In Shop)

Definitions for the Scope of Work for prevailing wages may be found at the Washington State Department of Labor and Industries web site and in WAC Chapter 296-127.

**Washington State Department of Labor and Industries
Policy Statements
(Regarding Production and Delivery of Gravel, Concrete, Asphalt, etc.)**

WAC 296-127-018 Agency filings affecting this section

Coverage and exemptions of workers involved in the production and delivery of gravel, concrete, asphalt, or similar materials.

(1) The materials covered under this section include but are not limited to: Sand, gravel, crushed rock, concrete, asphalt, or other similar materials.

(2) All workers, regardless of by whom employed, are subject to the provisions of chapter 39.12 RCW when they perform any or all of the following functions:

(a) They deliver or discharge any of the above-listed materials to a public works project site:

(i) At one or more point(s) directly upon the location where the material will be incorporated into the project; or

(ii) At multiple points at the project; or

(iii) Adjacent to the location and coordinated with the incorporation of those materials.

(b) They wait at or near a public works project site to perform any tasks subject to this section of the rule.

(c) They remove any materials from a public works construction site pursuant to contract requirements or specifications (e.g., excavated materials, materials from demolished structures, clean-up materials, etc.).

(d) They work in a materials production facility (e.g., batch plant, borrow pit, rock quarry, etc.) which is established for a public works project for the specific, but not necessarily exclusive, purpose of supplying materials for the project.

(e) They deliver concrete to a public works site regardless of the method of incorporation.

(f) They assist or participate in the incorporation of any materials into the public works project.

(3) All travel time that relates to the work covered under subsection (2) of this section requires the payment of prevailing wages. Travel time includes time spent waiting to load, loading, transporting, waiting to unload, and delivering materials. Travel time would include all time spent in travel in support of a public works project whether the vehicle is empty or full. For example, travel time spent returning to a supply source to obtain another load of material for use on a public works site or returning to the public works site to obtain another load of excavated material is time spent in travel that is subject to prevailing wage. Travel to a supply source, including travel from a public works site, to obtain materials for use on a private project would not be travel subject to the prevailing wage.

(4) Workers are not subject to the provisions of chapter 39.12 RCW when they deliver materials to a stockpile.

(a) A "stockpile" is defined as materials delivered to a pile located away from the site of incorporation such that the stockpiled materials must be physically moved from the stockpile and transported to another location on the project site in order to be incorporated into the project.

(b) A stockpile does not include any of the functions described in subsection (2)(a) through (f) of this section; nor does a stockpile include materials delivered or distributed to multiple locations upon the project site; nor does a stockpile include materials dumped at the place of incorporation, or adjacent to the location and coordinated with the incorporation.

(5) The applicable prevailing wage rate shall be determined by the locality in which the work is performed. Workers subject to subsection (2)(d) of this section, who produce such materials at an off-site facility shall be paid the applicable prevailing wage rates for the county in which the off-site facility is located. Workers subject to subsection (2) of this section, who deliver such materials to a public works project site shall be paid the applicable prevailing wage rates for the county in which the public works project is located.

[Statutory Authority: Chapter 39.12 RCW, RCW 43.22.051 and 43.22.270. 08-24-101, § 296-127-018, filed 12/2/08, effective 1/2/09. Statutory Authority: Chapters 39.04 and 39.12 RCW and RCW 43.22.270. 92-01-104 and 92-08-101, § 296-127-018, filed 12/18/91 and 4/1/92, effective 8/31/92.]

Benefit Code Key – Effective 8/31/2024 thru 3/4/2025

Overtime Codes

Overtime calculations are based on the hourly rate actually paid to the worker. On public works projects, the hourly rate must be not less than the prevailing rate of wage minus the hourly rate of the cost of fringe benefits actually provided for the worker.

1. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.
 - B. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.
 - C. The first two (2) hours after eight (8) regular hours Monday through Friday and the first ten (10) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other overtime hours and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.
 - D. The first two (2) hours before or after a five-eight (8) hour workweek day or a four-ten (10) hour workweek day and the first eight (8) hours worked the next day after either workweek shall be paid at one and one-half times the hourly rate of wage. All additional hours worked and all worked on Sundays and holidays shall be paid at double the hourly rate of wage.
 - E. The first two (2) hours after eight (8) regular hours Monday through Friday and the first eight (8) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other hours worked Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.
 - F. The first two (2) hours after eight (8) regular hours Monday through Friday and the first ten (10) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other overtime hours worked, except Labor Day, shall be paid at double the hourly rate of wage. All hours worked on Labor Day shall be paid at three times the hourly rate of wage.
 - G. The first ten (10) hours worked on Saturdays and the first ten (10) hours worked on a fifth calendar weekday in a four-ten hour schedule, shall be paid at one and one-half times the hourly rate of wage. All hours worked in excess of ten (10) hours per day Monday through Saturday and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.
 - H. All hours worked on Saturdays (except makeup days if work is lost due to inclement weather conditions or equipment breakdown) shall be paid at one and one-half times the hourly rate of wage. All hours worked Monday through Saturday over twelve (12) hours and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.
 - I. All hours worked on Sundays and holidays shall also be paid at double the hourly rate of wage.
 - J. The first two (2) hours after eight (8) regular hours Monday through Friday and the first ten (10) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked over ten (10) hours Monday through Saturday, Sundays and holidays shall be paid at double the hourly rate of wage.
 - K. All hours worked on Saturdays and Sundays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid at double the hourly rate of wage.
 - M. All hours worked on Saturdays (except makeup days if work is lost due to inclement weather conditions) shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

Overtime Codes Continued

- 1. N. All hours worked on Saturdays (except makeup days) shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.
- O. The first ten (10) hours worked on Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays, holidays and after twelve (12) hours, Monday through Friday and after ten (10) hours on Saturday shall be paid at double the hourly rate of wage.
- P. All hours worked on Saturdays (except makeup days if circumstances warrant) and Sundays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid at double the hourly rate of wage.
- Q. The first two (2) hours after eight (8) regular hours Monday through Friday and up to ten (10) hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked in excess of ten (10) hours per day Monday through Saturday and all hours worked on Sundays and holidays (except Christmas day) shall be paid at double the hourly rate of wage. All hours worked on Christmas day shall be paid at two and one-half times the hourly rate of wage.
- R. All hours worked on Sundays and holidays shall be paid at two times the hourly rate of wage.
- U. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays (except Labor Day) shall be paid at two times the hourly rate of wage. All hours worked on Labor Day shall be paid at three times the hourly rate of wage.
- V. All hours worked on Sundays and holidays (except Thanksgiving Day and Christmas day) shall be paid at one and one-half times the hourly rate of wage. All hours worked on Thanksgiving Day and Christmas day shall be paid at double the hourly rate of wage.
- W. All hours worked on Saturdays and Sundays (except make-up days due to conditions beyond the control of the employer) shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid at double the hourly rate of wage.
- X. The first four (4) hours after eight (8) regular hours Monday through Friday and the first twelve (12) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked over twelve (12) hours Monday through Saturday, Sundays and holidays shall be paid at double the hourly rate of wage. When holiday falls on Saturday or Sunday, the day before Saturday, Friday, and the day after Sunday, Monday, shall be considered the holiday and all work performed shall be paid at double the hourly rate of wage.
- Y. All hours worked outside the hours of 5:00 am and 5:00 pm (or such other hours as may be agreed upon by any employer and the employee) and all hours worked in excess of eight (8) hours per day (10 hours per day for a 4 x 10 workweek) and on Saturdays and holidays (except labor day) shall be paid at one and one-half times the hourly rate of wage. (except for employees who are absent from work without prior approval on a scheduled workday during the workweek shall be paid at the straight-time rate until they have worked 8 hours in a day (10 in a 4 x 10 workweek) or 40 hours during that workweek.) All hours worked Monday through Saturday over twelve (12) hours and all hours worked on Sundays and Labor Day shall be paid at double the hourly rate of wage.
- Z. All hours worked on Saturdays and Sundays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid the straight time rate of pay in addition to holiday pay.

Overtime Codes Continued

2. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.
- B. All hours worked on holidays shall be paid at one and one-half times the hourly rate of wage.
 - F. The first eight (8) hours worked on holidays shall be paid at the straight hourly rate of wage in addition to the holiday pay. All hours worked in excess of eight (8) hours on holidays shall be paid at double the hourly rate of wage.
 - M. This code appears to be missing. All hours worked on Saturdays, Sundays and holidays shall be paid at double the hourly rate of wage.
 - R. All hours worked on Sundays and holidays and all hours worked over sixty (60) in one week shall be paid at double the hourly rate of wage.
 - U. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked over 12 hours in a day or on Sundays and holidays shall be paid at double the hourly rate of wage.
3. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.
- F. All hours worked on Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sunday shall be paid at two times the hourly rate of wage. All hours worked on paid holidays shall be paid at two and one-half times the hourly rate of wage including holiday pay.
 - H. All work performed on Sundays between March 16th and October 14th and all Holidays shall be compensated for at two (2) times the regular rate of pay. Work performed on Sundays between October 15th and March 15th shall be compensated at one and one half (1-1/2) times the regular rate of pay.
 - J. All hours worked between the hours of 10:00 pm and 5:00 am, Monday through Friday, and all hours worked on Saturdays shall be paid at a one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.
 - K. Work performed in excess of eight (8) hours of straight time per day, or ten (10) hours of straight time per day when four ten (10) hour shifts are established, or forty (40) hours of straight time per week, Monday through Friday, or outside the normal 5 am to 6pm shift, and all work on Saturdays shall be paid at one and one-half times the hourly rate of wage. All work performed after 6:00 pm Saturday to 5:00 am Monday and Holidays, and all hours worked in excess of twelve (12) hours in a single shift shall be paid at double the hourly rate of wage.

After an employee has worked eight (8) hours at an applicable overtime rate, all additional hours shall be at the applicable overtime rate until such time as the employee has had a break of eight (8) hours or more. When an employee returns to work without at least eight (8) hours time off since their previous shift, all such time shall be a continuation of shift and paid at the applicable overtime rate until he/she shall have the eight (8) hours rest period.

Overtime Codes Continued

4. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.

- A. All hours worked in excess of eight (8) hours per day or forty (40) hours per week shall be paid at double the hourly rate of wage. All hours worked on Saturdays, Sundays and holidays shall be paid at double the hourly rate of wage
- C. On Monday through Friday, the first four (4) hours of overtime after eight (8) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay, unless a four (4) day ten (10) hour workweek has been established. On a four (4) day ten (10) hour workweek scheduled Monday through Thursday, or Tuesday through Friday, the first two (2) hours of overtime after ten (10) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay. On Saturday, the first twelve (12) hours of work shall be paid at one and one half (1-1/2) times the straight time rate of pay, except that if the job is down on Monday through Friday due to weather conditions or other conditions outside the control of the employer, the first ten (10) hours on Saturday may be worked at the straight time rate of pay. All hours worked over twelve (12) hours in a day and all hours worked on Sunday and Holidays shall be paid at two (2) times the straight time rate of pay.
- D. All hours worked in excess of eight (8) hours per day or forty (40) hours per week shall be paid at double the hourly rate of wage. All hours worked on Saturday, Sundays and holidays shall be paid at double the hourly rate of pay. Rates include all members of the assigned crew.

EXCEPTION:

On all multipole structures and steel transmission lines, switching stations, regulating, capacitor stations, generating plants, industrial plants, associated installations and substations, except those substations whose primary function is to feed a distribution system, will be paid overtime under the following rates:

The first two (2) hours after eight (8) regular hours Monday through Friday of overtime on a regular workday, shall be paid at one and one-half times the hourly rate of wage. All hours in excess of ten (10) hours will be at two (2) times the hourly rate of wage. The first eight (8) hours worked on Saturday will be paid at one and one-half (1-1/2) times the hourly rate of wage. All hours worked in excess of eight (8) hours on Saturday, and all hours worked on Sundays and holidays will be at the double the hourly rate of wage.

All overtime eligible hours performed on the above described work that is energized, shall be paid at the double the hourly rate of wage.

- E. The first two (2) hours after eight (8) regular hours Monday through Friday and the first eight (8) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other hours worked Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

On a four-day, ten-hour weekly schedule, either Monday thru Thursday or Tuesday thru Friday schedule, all hours worked after ten shall be paid at double the hourly rate of wage. The Monday or Friday not utilized in the normal four-day, ten hour work week, and Saturday shall be paid at one and one half (1½) times the regular shift rate for the first eight (8) hours. All other hours worked Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.
- G. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked Monday through Saturday over twelve (12) hours and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.
- I. The First eight (8) hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked in excess of eight (8) per day on Saturdays shall be paid at double the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

Overtime Codes Continued

4. J. The first eight (8) hours worked on a Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked in excess of eight (8) hours on a Saturday shall be paid at double the hourly rate of wage. All hours worked over twelve (12) in a day, and all hours worked on Sundays and Holidays shall be paid at double the hourly rate of wage.
- K. All hours worked on a Saturday shall be paid at one and one-half times the hourly rate of wage, so long as Saturday is the sixth consecutive day worked. All hours worked over twelve (12) in a day Monday through Saturday, and all hours worked on Sundays and Holidays shall be paid at double the hourly rate of wage.
- L. The first twelve (12) hours worked on a Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked on a Saturday in excess of twelve (12) hours shall be paid at double the hourly rate of pay. All hours worked over twelve (12) in a day Monday through Friday, and all hours worked on Sundays shall be paid at double the hourly rate of wage. All hours worked on a holiday shall be paid at one and one-half times the hourly rate of wage, except that all hours worked on Labor Day shall be paid at double the hourly rate of pay.
- S. On a four (4) day ten (10) hour workweek scheduled Monday through Thursday, or Tuesday through Friday, work performed in excess of (10) hours shall be paid at one and one half (1-1/2) times the hourly rate of pay. On Monday through Friday, work performed outside the normal work hours of 6:00 a.m. and 6:00 p.m. shall be paid at one and one-half (1-1/2) times the straight time rate, (except for special shifts or multiple shift operations).
- All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All work performed on Sundays and holidays shall be paid at double the hourly rate of wage. When an employee returns to work without at least eight (8) hours time off since their previous shift, all such time shall be a continuation of shift and paid at the applicable overtime rate until such time as the employee has had a break of eight (8) hours.
- Multiple Shift Operations: When the first shift of a multiple shift (a two or three shift) operation is started at the basic straight time rate or at a specific overtime rate, all shifts of that day's operation shall be completed at that rate. Special Shifts: The Special Shift Premium is the basic hourly rate of pay plus \$2.00 an hour. When due to conditions beyond the control of the employer or when an owner (not acting as the contractor), a government agency or the contract specifications require more than four (4) hours of a special shift can only be performed outside the normal 6am to 6pm shift then the special shift premium will be applied to the basic straight time for the entire shift. When an employee works on a special shift, they shall be paid the special shift premium for each hour worked unless they are in overtime or double-time status. (For example, the special shift premium does not waive the overtime requirements for work performed on Saturday or Sunday).
- U. The first four (4) hours after eight (8) regular hours Monday through Friday and the first twelve (12) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. (Except on makeup days if work is lost due to inclement weather, then the first eight (8) hours on Saturday may be paid the regular rate.) All hours worked over twelve (12) hours Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

Overtime Codes Continued

4. X. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage. Work performed outside the normal shift of 6 am to 6pm shall be paid at one and one-half the straight time rate, (except for special shifts or three shift operations). All work performed on Sundays and holidays shall be paid at double the hourly rate of wage. Shifts may be established when considered necessary by the Employer.

The Employer may establish shifts consisting of eight (8) or ten (10) hours of work (subject to WAC 296-127-022), that shall constitute a normal forty (40) hour work week. The Employer can change from a 5-eight to a 4-ten hour schedule or back to the other. All hours of work on these shifts shall be paid for at the straight time hourly rate. Work performed in excess of eight hours (or ten hours per day (subject to WAC 296-127-022) shall be paid at one and one-half the straight time rate.

When due to conditions beyond the control of the Employer, or when contract specifications require that work can only be performed outside the regular day shift, then by mutual agreement a special shift may be worked at the straight time rate, eight (8) hours work for eight (8) hours pay. The starting time shall be arranged to fit such conditions of work.

When an employee returns to work without at a break of eight (8) hours since their previous shift, all such time shall be a continuation of shift and paid at the applicable overtime rate until such time as the employee has had a break of eight (8) hours.

Overtime Codes Continued

11. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.

B After an employee has worked eight (8) hours, all additional hours worked shall be paid at the applicable overtime rate until such time as the employee has had a break of eight (8) hours or more.

C The first two (2) hours after eight (8) regular hours Monday through Friday and the first eight (8) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other overtime hours worked, except Labor Day, and all hours on Sunday shall be paid at double the hourly rate of wage. All hours worked on Labor Day shall be paid at three times the hourly rate of wage. All non-overtime and non-holiday hours worked between 4:00 pm and 5:00 am, Monday through Friday, shall be paid at a premium rate of 15% over the hourly rate of wage.

D. All hours worked on Saturdays and holidays shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays shall be paid at double the hourly rate of wage.

After an employee has worked eight (8) hours, all additional hours worked shall be paid at the applicable overtime rate until such time as the employee has had a break of eight (8) hours or more.

E. The first two (2) hours after eight (8) regular hours Monday through Friday, the first ten (10) hours on Saturday, and the first ten (10) hours worked on Holidays shall be paid at one and one-half times the hourly rate of wage. All hours worked over ten (10) hours Monday through Saturday, and Sundays shall be paid at double the hourly rate of wage.

After an employee has worked eight (8) hours, all additional hours worked shall be paid at the applicable overtime rate until such time as the employee has had a break of eight (8) hours or more.

Overtime Codes Continued

11. F. The first two (2) hours after eight (8) regular hours Monday through Friday and the first eight (8) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other hours worked Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.
- On a four-day, ten-hour weekly schedule, either Monday thru Thursday or Tuesday thru Friday schedule, all hours worked after ten shall be paid at double the hourly rate of wage. The Monday or Friday not utilized in the normal four-day, ten hour work week, and Saturday shall be paid at one-half times the hourly rate of wage for the first eight (8) hours. All other hours worked Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.
- G. Work performed in excess of eight (8) hours of straight time per day, or ten (10) hours of straight time per day when four ten (10) hour shifts are established, or forty (40) hours of straight time per week, Monday through Friday, or outside the normal 5 am to 6pm shift, and all work on Saturdays shall be paid at one and one-half times the hourly rate of wage.
- All work performed after 6:00 pm Saturday to 5:00 am Monday and Holidays, and all hours worked in excess of twelve (12) hours in a single shift shall be paid at double the hourly rate of wage.
- After an employee has worked eight (8) hours at an applicable overtime rate, all additional hours shall be at the applicable overtime rate until such time as the employee has had a break of nine (9) hours or more. When an employee returns to work without at least nine (9) hours time off since their previous shift, all such time shall be a continuation of shift and paid at the applicable overtime rate until he/she shall have the nine (9) hours rest period.
- H. Work performed in excess of eight (8) hours of straight time per day, or ten (10) hours of straight time per day when four ten (10) hour shifts are established, or forty (40) hours of straight time per week, Monday through Friday, or outside the normal 5 am to 6pm shift, and all work on Saturdays shall be paid at one and one-half times the hourly rate of wage.
- All work performed after 6:00 pm Saturday to 5:00 am Monday and Holidays, and all hours worked in excess of twelve (12) hours in a single shift shall be paid at double the hourly rate of wage.
- After an employee has worked eight (8) hours at an applicable overtime rate, all additional hours shall be at the applicable overtime rate until such time as the employee has had a break of ten (10) hours or more. When an employee returns to work without at least ten (10) hours time off since their previous shift, all such time shall be a continuation of shift and paid at the applicable overtime rate until he/she shall have the ten (10) hours rest period.
- J. All hours worked on holidays shall be paid at double the hourly rate of wage.
- K. On Monday through Friday hours worked outside 4:00 am and 5:00 pm, and the first two (2) hours after eight (8) hours worked shall be paid at one and one-half times the hourly rate. All hours worked over 10 hours per day Monday through Friday, and all hours worked on Saturdays, Sundays, and Holidays worked shall be paid at double the hourly rate of wage.
- L. An employee working outside 5:00 am and 5:00 pm shall receive an additional two dollar (\$2.00) per hour for all hours worked that shift. All hours worked on holidays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid at one and one-half times the hourly rate of wage.

Overtime Codes Continued

11. M. On Monday through Friday, the first four (4) hours of overtime after eight (8) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay, unless a four (4) day ten (10) hour workweek has been established. On a four (4) day ten (10) hour workweek scheduled Monday through Thursday, or Tuesday through Friday, the first two (2) hours of overtime after ten (10) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay.
- Work performed outside the normal work hours of 5:00 a.m. and 6:00 p.m. shall be paid at one and one-half (1-1/2) times the straight time rate, (except for special shifts or multiple shift operations). When the first shift of a multiple shift (a two or three shift) operation is started at the basic straight time rate or at a specific overtime rate, all shifts of that day's operation shall be completed at that rate. When due to conditions beyond the control of the Employer or when contract specifications require that work can only be performed outside the regular day shift of 5:00 am to 6:00 pm, then a special shift may be worked at the straight time rate, plus the shift pay premium when applicable. The starting time of work will be arranged to fit such conditions of work. Such shift shall consist of eight (8) hours work for eight (8) hours pay or ten (10) hours work for ten (10) hours pay for four ten shifts.
- On Saturday, the first twelve (12) hours of work shall be paid at one and one half (1-1/2) times the straight time rate of pay. All work performed after 6:00 pm Saturday to 5:00 am Monday, all work performed over twelve (12) hours, and all work performed on holidays shall be paid at double the straight time rate of pay.
- Shift Pay Premium: In an addition to any overtime already required, all hours worked between the hours of 6:00 pm and 5:00 am shall receive an additional two dollars (\$2.00) per hour.
- N. All work performed over twelve hours in a shift and all work performed on Sundays and Holidays shall be paid at double the straight time rate.
- Any time worked over eight (8) hours on Saturday shall be paid double the straight time rate, except employees assigned to work six 10-hour shifts per week shall be paid double the straight time rate for any time worked on Saturday over 10 hours.
- O. All work performed on Saturdays, Sundays, and Holidays shall be paid at one and one half (1-1/2) times the straight time rate of pay.

Overtime Codes Continued

11. P. Work performed in excess of ten (10) hours of straight time per day when four ten (10) hour shifts are established and all work on Saturdays, except for make-up days shall be paid at time and one-half (1 ½) the straight time rate.
- Work performed outside the normal work hours of 5:00 a.m. and 6:00 p.m. shall be paid at one and one-half (1-1/2) times the straight time rate, (except for special shifts or multiple shift operations). When the first shift of multiple shift (a two or three shift) operation is started at the basic straight time rate or at a specific overtime rate, all shifts of that day's operation shall be completed at that rate. When due to conditions beyond the control of the Employer or when contract specifications require that work can only be performed outside the regular day shift of 5:00 a.m. to 6:00 p.m., then a special shift may be worked at the straight time rate, plus the shift pay premium when applicable. The starting time of work will be arranged to fit such conditions of work. Such shifts shall consist of eight (8) hours work for eight (8) hours pay or ten (10) hours work for ten (10) hours pay for four ten-hour shifts.
- In the event the job is down due to weather conditions, then Saturday may, be worked as a voluntary make-up day at the straight time rate. However, Saturday shall not be utilized as a make-up day when a holiday falls on Friday. All work performed on Sundays and holidays and work in excess of twelve (12) hours per day shall be paid at double (2x) the straight time rate of pay.
- After an employee has worked eight (8) hours at an applicable overtime rate, all additional hours shall be at the applicable overtime rate until such time as the employee has had a break of eight (8) hours.
- When an employee returns to work without a break of eight (8) hours since their previous shift, all such time shall be a continuation of shift and paid at the applicable overtime rate until such time as the employee has had a break of eight (8) hours.
- Q. All hours worked between the hours of 6:00 pm and 6:00 am, Monday through Saturday, shall be paid at a premium rate of 35% over the hourly rate of wage. Work performed on Sundays shall be paid at double time. All hours worked on holidays shall be paid at double the hourly rate of wage.
- R. On Monday through Saturday hours worked outside 6:00 am and 7:00 pm, and all hours after eight (8) hours worked shall be paid at one and one-half times the hourly rate. All hours worked on Sundays and Holidays shall be paid at double the hourly rate of wage.
- When a holiday falls on a Saturday, the Friday before shall be the observed holiday. When a holiday falls on a Sunday, the following Monday shall be the observed holiday.
- S. The first ten (10) hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. In the event the job is down due to weather conditions, or other conditions beyond the control of the Employer, then Saturday may be worked at the straight time rate, for the first eight (8) hours, or the first ten (10) hours when a four day ten hour workweek has been established.
- All hours worked Monday through Saturday over twelve (12) hours and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.
- When an employee returns to work without a break of eight (8) hours since their previous shift, all such time shall be a continuation of shift and paid at the applicable overtime rate until such time as the employee has had a break of eight (8) hours.

Benefit Code Key – Effective 8/31/2024 thru 3/4/2025

11. T. On Monday through Friday, the first four (4) hours of overtime after eight (8) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay, unless a four (4) day ten (10) hour workweek has been established. On a four (4) day ten (10) hour workweek scheduled Monday through Thursday, or Tuesday through Friday, the first two (2) hours of overtime after ten (10) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay.
- On Saturday, the first twelve (12) hours of work shall be paid at one and one half (1-1/2) times the straight time rate of pay, except that if the job is down on Monday through Friday due to weather conditions or other conditions outside the control of the employer, the first ten (10) hours on Saturday may be worked at the straight time rate of pay.
- All hours worked over twelve (12) hours in a day and all hours worked on Sunday and Holidays shall be paid at two (2) times the straight time rate of pay.
- U. On Monday through Friday, the first four (4) hours of overtime after eight (8) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay, unless a four (4) day ten (10) hour workweek has been established. On a four (4) day ten (10) hour workweek scheduled Monday through Thursday, or Tuesday through Friday, the first two (2) hours of overtime after ten (10) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay.
- On Saturday, the first twelve (12) hours of work shall be paid at one and one half (1-1/2) times the straight time rate of pay, except that if the job is down on Monday through Friday due to weather conditions or other conditions outside the control of the employer, the first ten (10) hours on Saturday may be worked at the straight time rate of pay.
- All hours worked over twelve (12) hours in a day and all hours worked on Sunday and Holidays shall be paid at two (2) times the straight time rate of pay.
- If, due to conditions beyond the control of the Employer or when contract specifications require that work can only be performed outside the regular day shift, then a Special Shift may be worked, Monday through Friday, at the straight-time rate. The starting time of work for the Special Shift will be arranged to fit such conditions of work. Such Special Shift shall consist of eight (8) hours of work for eight (8) hours of pay or ten (10) hours of work for ten(10) hours of pay on a four-ten workday schedule.

Holiday Codes

5. A. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, and Christmas Day (7).
- B. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, the day before Christmas, and Christmas Day (8).
- C. Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (8).
- D. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8).
- H. Holidays: New Year's Day, Memorial Day, Independence Day, Thanksgiving Day, the Day after Thanksgiving Day, And Christmas (6).

Holiday Codes Continued

- 5. I. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day (6).
- K. Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday After Thanksgiving Day, The Day Before Christmas, And Christmas Day (9).
- L. Holidays: New Year's Day, Martin Luther King Jr. Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, And Christmas Day (8).
- N. Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, The Friday After Thanksgiving Day, And Christmas Day (9).
- P. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday And Saturday After Thanksgiving Day, The Day Before Christmas, And Christmas Day (9). If A Holiday Falls On Sunday, The Following Monday Shall Be Considered As A Holiday.
- Q. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day (6).
- R. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Day After Thanksgiving Day, One-Half Day Before Christmas Day, And Christmas Day. (7 1/2).
- S. Paid Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, And Christmas Day (7).
- Z. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (8).

Holiday Codes Continued

- 6. G. Paid Holidays: New Year's Day, Martin Luther King Jr. Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and Christmas Eve Day (11).
- H. Paid Holidays: New Year's Day, New Year's Eve Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday After Thanksgiving Day, Christmas Day, The Day After Christmas, And A Floating Holiday (10).
- T. Paid Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, The Friday After Thanksgiving Day, The Last Working Day Before Christmas Day, And Christmas Day (9).
- Z. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, And Christmas Day (7). If a holiday falls on Saturday, the preceding Friday shall be considered as the holiday. If a holiday falls on Sunday, the following Monday shall be considered as the holiday.

Holiday Codes Continued

7. A. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8). Any Holiday Which Falls On A Sunday Shall Be Observed As A Holiday On The Following Monday. If any of the listed holidays falls on a Saturday, the preceding Friday shall be a regular work day.
- B. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- C. Holidays: New Year's Day, Martin Luther King Jr. Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- D. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (8). Unpaid Holidays: President's Day. Any paid holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any paid holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- E. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (7). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- F. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, the last working day before Christmas day and Christmas day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

Holiday Codes Continued

7. G. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day (6). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday.
- H. Holidays: New Year's Day, Martin Luther King Jr. Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, the Last Working Day before Christmas Day and Christmas Day (9). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- I. Holidays: New Year's Day, President's Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day, The Friday After Thanksgiving Day, The Day Before Christmas Day And Christmas Day (9). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- J. Holidays: New Year's Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day and Christmas Day (6). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

Holiday Codes Continued

7. K. Holidays: New Year's Day, Memorial Day, Independence Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- L. Holidays: New Year's Day, Memorial Day, Labor Day, Independence Day, Thanksgiving Day, the Last Work Day before Christmas Day, And Christmas Day (7). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- N. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (7). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. When Christmas falls on a Saturday, the preceding Friday shall be observed as a holiday.
- P. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, And Christmas Day (7). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday.
- Q. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, the Last Working Day before Christmas Day and Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. If any of the listed holidays falls on a Saturday, the preceding Friday shall be a regular work day.
- S. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, Christmas Day, the Day after Christmas, and A Floating Holiday (9). If any of the listed holidays falls on a Sunday, the day observed by the Nation shall be considered a holiday and compensated accordingly.
- V. Holidays: New Year's Day, President's Birthday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, the day before or after Christmas, and the day before or after New Year's Day. If any of the above listed holidays falls on a Sunday, the day observed by the Nation shall be considered a holiday and compensated accordingly.
- W. Holidays: New Year's Day, Day After New Year's, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Eve Day, Christmas Day, the day after Christmas, the day before New Year's Day, and a Floating Holiday.
- X. Holidays: New Year's Day, Day before or after New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and the day before or after Christmas day. If a holiday falls on a Saturday or on a Friday that is the normal day off, then the holiday will be taken on the last normal workday. If the holiday falls on a Monday that is the normal day off or on a Sunday, then the holiday will be taken on the next normal workday.
- Y. Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, and Christmas Day. (8) If the holiday falls on a Sunday, then the day observed by the federal government shall be considered a holiday and compensated accordingly.
- Z. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, Christmas Eve, and Christmas Day (9). Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday. Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday.

Holiday Codes Continued

15. G. New Year's Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, The Friday After Thanksgiving Day, the last scheduled workday before Christmas, and Christmas Day (9). If any of the listed holidays falls on a Sunday, the day observed by the Nation shall be considered a holiday and compensated accordingly.
- H. Holidays: New Year's Day, Martin Luther King Jr. Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, the Last Working Day before Christmas Day and Christmas Day (9). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- I. Holidays: New Year's Day, President's Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day, The Friday After Thanksgiving Day, The Day Before Christmas Day And Christmas Day (9). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- J. Holidays: New Year's Day, Martin Luther King Jr. Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, and Christmas Day (9). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. If any of the listed holidays falls on a Saturday, the preceding Friday shall be a regular work day.
- K. Holidays: New Year's Day, Memorial Day, Independence Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- L. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the Friday after Thanksgiving Day, and Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. If any of the listed holidays falls on a Saturday, the preceding Friday shall be a regular work day.
- M. Holidays: New Year's Day, Martin Luther King Jr. Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Eve Day and Christmas Day (9). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. If any of the listed holidays falls on a Saturday, the preceding Friday shall be a regular work day.
- N. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the Friday after Thanksgiving Day, and Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday.
- O. Holidays: New Year's Day, Martin Luther King Jr. Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, the day before Christmas day, and Christmas Day (10). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday.

Benefit Code Key – Effective 8/31/2024 thru 3/4/2025

Note Codes

8. D. Workers working with supplied air on hazmat projects receive an additional \$1.00 per hour.
- L. Workers on hazmat projects receive additional hourly premiums as follows -Level A: \$0.75, Level B: \$0.50, And Level C: \$0.25.
- M. Workers on hazmat projects receive additional hourly premiums as follows: Levels A & B: \$1.00, Levels C & D: \$0.50.
- N. Workers on hazmat projects receive additional hourly premiums as follows -Level A: \$1.00, Level B: \$0.75, Level C: \$0.50, And Level D: \$0.25.
- S. Effective August 31, 2012 – A Traffic Control Supervisor shall be present on the project whenever flagging or spotting or other traffic control labor is being utilized. Flaggers and Spotters shall be posted where shown on approved Traffic Control Plans or where directed by the Engineer. All flaggers and spotters shall possess a current flagging card issued by the State of Washington, Oregon, Montana, or Idaho. This classification is only effective on or after August 31, 2012.
- T. Effective August 31, 2012 – A Traffic Control Laborer performs the setup, maintenance and removal of all temporary traffic control devices and construction signs necessary to control vehicular, bicycle, and pedestrian traffic during construction operations. Flaggers and Spotters shall be posted where shown on approved Traffic Control Plans or where directed by the Engineer. All flaggers and spotters shall possess a current flagging card issued by the State of Washington, Oregon, Montana, or Idaho. This classification is only effective on or after August 31, 2012.
- U. Workers on hazmat projects receive additional hourly premiums as follows – Class A Suit: \$2.00, Class B Suit: \$1.50, And Class C Suit: \$1.00. Workers performing underground work receive an additional \$0.40 per hour for any and all work performed underground, including operating, servicing and repairing of equipment. The premium for underground work shall be paid for the entire shift worked. Workers who work suspended by a rope or cable receive an additional \$0.50 per hour. The premium for work suspended shall be paid for the entire shift worked. Workers who do “pioneer” work (break open a cut, build road, etc.) more than one hundred fifty (150) feet above grade elevation receive an additional \$0.50 per hour.
8. V. In addition to the hourly wage and fringe benefits, the following depth and enclosure premiums shall be paid. The premiums are to be calculated for the maximum depth and distance into an enclosure that a diver reaches in a day. The premiums are to be paid one time for the day and are not used in calculating overtime pay.
- Depth premiums apply to depths of fifty feet or more. Over 50' to 100' - \$2.00 per foot for each foot over 50 feet. Over 101' to 150' - \$3.00 per foot for each foot over 101 feet. Over 151' to 220' - \$4.00 per foot for each foot over 220 feet. Over 221' - \$5.00 per foot for each foot over 221 feet.
- Enclosure premiums apply when divers enter enclosures (such as pipes or tunnels) where there is no vertical ascent and is measured by the distance travelled from the entrance. 25' to 300' - \$1.00 per foot from entrance. 300' to 600' - \$1.50 per foot beginning at 300'. Over 600' - \$2.00 per foot beginning at 600'.
- W. Meter Installers work on single phase 120/240V self-contained residential meters. The Lineman/Groundmen rates would apply to meters not fitting this description.

Note Codes Continued

- X. Workers on hazmat projects receive additional hourly premiums as follows - Class A Suit: \$2.00, Class B Suit: \$1.50, Class C Suit: \$1.00, and Class D Suit: \$0.50. Special Shift Premium: Basic hourly rate plus \$2.00 per hour.

When due to conditions beyond the control of the Employer or when an owner (not acting as the contractor), a government agency or the contract specifications requires that work can only be performed outside the normal 5 am to 6pm shift, then the special shift premium will be applied to the basic hourly rate. When an employee works on a special shift, they shall be paid a special shift premium for each hour worked unless they are in OT or Double-time status. (For example, the special shift premium does not waive the overtime requirements for work performed on Saturday or Sunday.)

- Y. Tide Work: When employees are called out between the hours of 6:00 p.m. and 6:00 a.m. to work on tide work (work located in the tide plane) all time worked shall be at one and one-half times the hourly rate of pay.

Swinging Stage/Boatswains Chair: Employees working on a swinging state or boatswains chair or under conditions that require them to be tied off to allow their hands to be free shall receive seventy-five cents (\$0.75) per hour above the classification rate.

- Z. Workers working with supplied air on hazmat projects receive an additional \$1.00 per hour.

Special Shift Premium: Basic hourly rate plus \$2.00 per hour. When due to conditions beyond the control of the Employer or when an owner (not acting as a contractor), a government agency or the contract specifications require that more than (4) hours of a special shift can only be performed outside the normal 6 am to 6pm shift, then the special shift premium will be applied to the basic straight time for the entire shift. When an employee works on a special shift, they will be paid a special shift premium for each hour worked unless they are in overtime or double-time status. (For example, the special shift premium does not waive the overtime requirements for work performed on Saturday or Sunday.)

Note Codes Continued

9. A. Workers working with supplied air on hazmat projects receive an additional \$1.00 per hour.

Special Shift Premium: Basic hourly rate plus \$2.00 per hour. When due to conditions beyond the control of the Employer or when an owner (not acting as the contractor), a government agency or the contract specifications require that more than four (4) hours of a special shift can only be performed outside the normal 6 am to 6pm shift, then the special shift premium will be applied to the basic straight time for the entire shift. When an employee works on a special shift, they shall be paid a special shift premium for each hour worked unless they are in overtime or double-time status. (For example, the special shift premium does not waive the overtime requirements for work performed on Saturday or Sunday.)

Certified Crane Operator Premium: Crane operators requiring certifications shall be paid \$0.50 per hour above their classification rate.

Boom Pay Premium: All cranes including tower shall be paid as follows based on boom length:

- (A) – 130’ to 199’ – \$0.50 per hour over their classification rate.
- (B) – 200’ to 299’ – \$0.80 per hour over their classification rate.
- (C) – 300’ and over – \$1.00 per hour over their classification rate.

Note Codes Continued

9. B. The highest pressure registered on the gauge for an accumulated time of more than fifteen (15) minutes during the shift shall be used in determining the scale paid.

Tide Work: When employees are called out between the hours of 6:00 p.m. and 6:00 a.m. to work on tide work (work located in the tide plane) all time worked shall be at one and one-half times the hourly rate of pay. Swinging Stage/Boatswains Chair: Employees working on a swinging stage or boatswains chair or under conditions that require them to be tied off to allow their hands to be free shall receive seventy-five cents (\$0.75) per hour above the classification rate.

- C. Tide Work: When employees are called out between the hours of 6:00 p.m. and 6:00 a.m. to work on tide work (work located in the tide plane) all time worked shall be at one and one-half times the hourly rate of pay. Swinging Stage/Boatswains Chair: Employees working on a swinging stage or boatswains chair or under conditions that require them to be tied off to allow their hands to be free shall receive seventy-five cents (\$0.75) per hour above the classification rate.

Effective August 31, 2012 – A Traffic Control Supervisor shall be present on the project whenever flagging or spotting or other traffic control labor is being utilized. A Traffic Control Laborer performs the setup, maintenance and removal of all temporary traffic control devices and construction signs necessary to control vehicular, bicycle, and pedestrian traffic during construction operations. Flaggers and Spotters shall be posted where shown on approved Traffic Control Plans or where directed by the Engineer. All flaggers and spotters shall possess a current flagging card issued by the State of Washington, Oregon, Montana, or Idaho. These classifications are only effective on or after August 31, 2012.

- D. Industrial Painter wages are required for painting within industrial facilities such as treatment plants, pipelines, towers, dams, bridges, power generation facilities and manufacturing facilities such as chemical plants, etc., or anywhere abrasive blasting is necessary to prepare surfaces, or hazardous materials encapsulation is required.
- E. Heavy Construction includes construction, repair, alteration or additions to the production, fabrication or manufacturing portions of industrial or manufacturing plants, hydroelectric or nuclear power plants and atomic reactor construction. Workers on hazmat projects receive additional hourly premiums as follows -Level A: \$1.00, Level B: \$0.75, Level C: \$0.50, And Level D: \$0.25.
- F. Industrial Painter wages are required for painting within industrial facilities such as treatment plants, pipelines, towers, dams, power generation facilities and manufacturing facilities such as chemical plants, etc., or anywhere abrasive blasting is necessary to prepare surfaces, or hazardous materials encapsulation is required.
- H. One (1) person crew shall consist of a Party Chief. (Total Station or similar one (1) person survey system). Two (2) person survey party shall consist of a least a Party Chief and a Chain Person. Three (3) person survey party shall consist of at least a Party Chief, an Instrument Person, and a Chain Person.

Benefit Code Key – Effective 8/31/2024 thru 3/4/2025

9. I. In addition to the hourly wage and fringe benefits, the following depth and enclosure premiums shall be paid. The premiums are to be calculated for the maximum depth and distance into an enclosure that a diver reaches in a day. The premiums are to be paid one time for the day and are not used in calculating overtime pay.

Depth premiums apply to depths of fifty feet or more. Over 50' to 100' - \$2.00 per foot for each foot over 50 feet. Over 101' to 150' - \$3.00 per foot for each foot over 101 feet. Over 151' to 220' - \$4.00 per foot for each foot over 220 feet. Over 221' - \$5.00 per foot for each foot over 221 feet.

Enclosure premiums apply when divers enter enclosures (such as pipes or tunnels) where there is no vertical ascent and is measured by the distance travelled from the entrance. 25' to 300' - \$1.00 per foot from entrance. 300' to 600' - \$1.50 per foot beginning at 300'. Over 600' - \$2.00 per foot beginning at 600'.

Employees may be required to perform any combination of work within the Diving team/crew, (with the exception of dive Supervisor) provided they are paid at the highest rate at which he/she has worked for the shift.

- L. Workers on hazmat projects receive additional hourly premiums as follows -Level A: \$0.75, Level B: \$0.50, And Level C: \$0.25.

Tide Work: When employees are called out between the hours of 6:00 p.m. and 6:00 a.m. to work on tide work (work located in the tide plane) all time worked shall be at one and one-half times the hourly rate of pay.

Swinging Stage/Boatswains Chair: Employees working on a swinging stage or boatswains chair or under conditions that require them to be tied off to allow their hands to be free shall receive seventy-five cents (\$0.75) per hour above the classification rate.

APPENDICES

The following appendices are hereby provided and are made a part of the Contract Documents. The Contractor shall perform all work in accordance with the plans and specifications subject to the requirements and conditions contained within the Appendices.

Appendix A – Technical Specifications

Appendix B – Construction Plans

Appendix C – Permit Application

Appendix D – WSDOT Boundary and Topographic Surveys

APPENDIX A

Technical Specifications

Technical Specifications

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Division 1

General

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.

1.10.16 Definitions

[CSI 01 42 16]

Approximate: Generally, as shown or described, but has not been verified, or may require adjustment. No level of accuracy is implied or should be assumed.

Or Equal (Or Approved Equal): An alternate product, assembly, or method that the Owner’s Representative has reviewed based on information provided by the Contractor and determined to provide functional equivalence, or better, than that specified. Such determination does not relieve the Contractor from responsibility should the product, assembly, or method fail to perform as needed.

Owner’s Representative: Person(s) authorized by the Owner to observe the work, administer the contract, approve tests, make decisions, and otherwise act as an agent of the Owner. The terms Engineer, Owner’s Observer, Owner’s Inspector, and Owner are generally interchangeable with the term Owner’s Representative.

Proposed: The word refers to work that is part of the Contract, to be performed by the Contractor. The word “proposed” does not need to show up to indicate work by the Contractor. Unless work is specifically noted to be performed by others, all work is to be performed by the Contractor.

1.11.00 Summary of Work

[CSI 01 11 00]

Project includes installation of approximately 2,400 lineal feet of eight-inch ductile iron water main, traffic control, clearing and grubbing, contractor surveying, service connections, pressure reducing station, booster pump station, electrical upgrades and site and asphalt restoration.

1.11.02 Reuse of Documents

[CSI 01 11 30]

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

[CSI 01 31 26]

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.
4. Computer Aided Design (CAD) files may be made available to the Contractor upon request, but only at the discretion of the Engineer. This includes AutoCAD™, Civil3D™, or other similar file types. If CAD files are provided, no level of accuracy is implied or should be assumed unless the Engineer expressly states a level of accuracy. CAD files by nature include extraneous information used to develop the drawings but are not part of the final design. Any use of CAD files is solely at the Contractor's risk and neither the Engineer nor the Owner take responsibility for interpretations by the Contractor, missing information, or inaccurate information.

1.13 Permits and Licenses

[CSI 01 41 26]

The Owner will pay all costs for (unless stated otherwise) and secure the following permits:

- Permits still in process, or not yet applied for:
 - WSDOT Right-of-Way Permit

The Contractor shall acquire and pay all costs for all other necessary permits which may include:

- Right-of Way or Street Use Permit

- Haul Route Permit
- Electrical Permit
- Mechanical Permit
- Transportation Permit

A copy of permits the Owner has acquired 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. Permits the Owner will acquire after the bid opening will be made available when received by the Owner.

1.14 Work Restrictions

[CSI 01 14 00]

1.14.19 Use of Site

[CSI 01 14 19]

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

Building construction limits may be occupied throughout the duration of the contract.

Utility construction limits may be occupied throughout the duration of the contract.

Landscaping construction limits have been defined to provide additional working area for backfilling, grading, compacting, and landscaping construction activities that are to be performed in conjunction with the project.

The Contractor shall provide, maintain, and adjust erosion control fencing, surface covering, and sediment traps for storm-water runoff as shown on the plans prior to beginning any work activities within this area.

1.20 PRICE AND PAYMENT PROCEDURES

[CSI 01 20 00]

1.21.29 Quantity Allowances

[CSI 01 21 29]

If more or fewer materials are needed when the construction quantity is within plus or minus 25 percent of the bid quantity, costs for restocking of unused materials, or handling and delivery costs on additional materials shall be incidental to the bid price and no additional payment will be made.

The following bid items are not subject to a renegotiation of price. A change in quantity, including zero quantity, shall not be cause for unit price adjustment to these or other related bid items. Payment will be made only for actual quantity incurred.

- Crushed Surfacing Base or Top Course

- Service Connections
- HMA

1.21.55 Cost Increases for Materials

[CSI 01 21 55]

The Owner may adjust the contract price for materials if approved contract time extensions move the substantial completion date into the next calendar year. The Contractor must provide adequate documentation, acceptable to the Owner, that prices have changed from the time Notice to Proceed is given and the time that the materials are ordered. A cost increase will only be allowed for raw materials that are not practical to purchase early and stockpile such as concrete; asphalt; rock; landscaping plantings; and pipe or conduit runs of the same size and wall thickness over 5000 lf.

1.25.00 Substitution Procedures

[CSI 1 25 00]

Any product or construction method that, in the opinion of the Owner, does not meet these specifications will be considered a substitution. Substitutions must be approved prior to incorporation into the project. The Owner has the right to reject any request for substitution. Incomplete requests will not be reviewed.

Requests shall include an explanation of why the request is being made along with drawings, details, specifications, and samples sufficient to allow the Owner to evaluate the proposed substitute. Requests shall include any change necessary in construction methods with a detailed description and related drawings of the proposed methods. Provide an itemized comparison of each proposed substitution with the specified product or method. If the Contractor believes there are no variations from the bid documents, include a statement to that fact in the request for substitution.

In making a request for a substitution, the Contractor represents that they have investigated the proposed product or method and has determined that it provides equal or superior form and function to the product specified. The Contractor shall coordinate incorporation 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 and time related to substitutions. The Owner reserves the right to charge the Contractor for the Owner's time required for incorporating the substitution into the work which may include but not be limited to observation, requests for information, and commissioning.

No guarantee is made that product model numbers included in the specifications or on the plans are current at the time of bidding. The bidder shall provide pricing in their proposal for current versions of discontinued models. If the bidder is uncertain of the correct replacement model, or feels there is a price discrepancy, the bidder shall request a substitution following the requirements of section 1.25.13.10 Substitutions Prior to Bid Opening. Requests for price increases after award will not be accepted.

1.25.13.10 Substitutions Prior to Bid Opening

[CSI 1 25 13 10]

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. Approval of substitutions will be only by addendum. The bidder shall include in their proposal all costs for any modifications required to adopt the substitute.

1.25.13.15 Substitutions After Contract Execution

[CSI 1 25 13 15]

After contract execution, the Owner will consider requests for a substitution of products or methods in place of those specified. Submit electronically, or two hard copies of each request for a substitution. Submit requests early enough for the Owner to review the request without affecting the schedule. The Owner will review with reasonable promptness and will provide a response within 15 working days after receipt of all information required for the review, unless the complexity of the proposed substitution requires, in the Owner's sole opinion, additional review time.

If the Owner approves a request for substitution, and the Contractor subsequently requests an alternate substitution for the same or similar work, the Owner reserves the right to charge the Contractor for the costs required to review the alternate substitution.

1.30 ADMINISTRATIVE

[CSI 01 30 00]

1.31 Project Management and Coordination

[CSI 01 31 00]

1.31.01 Contractor's Responsibility

[CSI 01 31 01]

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 the 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 discretion of the Owner.

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 Starting and Adjusting section 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 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 is responsible for managing, coordinating, and overseeing its subcontractors, suppliers, manufacturers' representatives, or any other persons performing Work. The Contractor shall designate and have a competent person, familiar with the project and work being performed, on site at all times when work is being performed.

1.31.19 Progress Meetings

[CSI 01 31 19 23]

The Contractor shall schedule and hold regular on-site progress meetings at least every two weeks 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.

Contractor to provide an agenda covering the following items at a minimum, as applicable.

1. Review minutes of previous meetings.
2. Review of work progress.
3. Field observations, problems, and decisions.
4. Identification of problems that impede planned schedule.
5. Review of submittals schedule and status of submittals.
6. Review of off-site fabrication and delivery schedules.
7. Maintenance of progress schedule.
8. Corrective measures to regain projected schedules.
9. Planned progress during succeeding work period.
10. Coordination of projected progress.
11. Discussion of upcoming required inspections/approvals.
12. Maintenance of quality and work standards.
13. Effect of proposed changes on progress schedule and coordination.
14. Safety issues relating to work.

15. Other business relating to work.

1.32.13 Scheduling of Work

[CSI 01 32 13]

Refer also to the Completion Time section under the Instructions (or Information) to Bidders. The Proposal describes the times for Substantial Completion and Physical Completion.

Where the plans or specifications mention notification periods in hours or days, these time periods are assumed to be working days unless specifically stated otherwise. For example, a requirement of 48-hours notification for work desired to be performed at 1:00 pm Monday requires notification be provided no later than 1:00 pm the preceding Thursday.

1.32.16 Construction Progress Schedule

[CSI 01 32 16]

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 in-line with the previous schedule, the Contractor shall inform the Owner with each pay estimate. Non-working day requests shall also be submitted by the Contractor with each monthly pay estimate. Owner may delay monthly progress payments if Contractor fails to submit updated schedule and non-working day requests.

1.32.29 Periodic Work Observation

[CSI 01 32 29]

The Owner may elect to have an observer 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 observer to address neither means and methods issues nor direct safety issues. The Owner's observer does not have the authority to stop work if unsafe conditions are observed.

1.33 Submittals

[CSI 01 33 00]

1.33.23 Shop Drawings, Product Data, and Samples

[CSI 01 33 23]

Submittals are required for all items installed on this contract. Address submittals to:

Cowlitz County Public Works
1600 – 13th Avenue S.
Kelso, WA 98626
360-577-3030

Attn: Gary Gonser and Chris Andrews
Email: gonserg@cowlitzwa.gov and andrewsc@cowlitzwa.gov

And

RH2 Engineering, Inc.
1201 Pacific Ave S, Suite 1750
Tacoma, WA 98402

Attn: __David Matz PE__

Email: _dmatz@RH2.com_

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

Electronic submittal via email is acceptable, however the Contractor shall 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 shall contain sufficient information on each item to determine if it complies with the contract requirements. Submittal cutsheets and datasheets shall be annotated by the Contractor to 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 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 by 11-inch, 11-inch by 17-inch, or 22-inch by 34-inch sheets and shall contain the following information:

- Project Name as it appears on the Document Cover.
- Prime Contractor and Applicable Subcontractor.
- RH2 Engineering.
- Owner's Name (Cowlitz County).
- Applicable Specification and Drawings Reference.
- A stamp or statement 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 respond. (Engineer may elect to respond using the Engineer's standard forms.)

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 20 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:

1. Drawings, dimensions, and weights.
2. Catalog information.
3. Model number, including descriptions for option and accessory codes.
4. Manufacturer's specifications.
5. Special handling instructions.
6. Maintenance requirements.
7. Wiring and control diagrams.
8. List of contract exceptions.

For integrated or package systems (see also 1.61.31), the components, shop drawings, instructions, and other elements may be submitted and reviewed individually. But the initial submittal must include the complete proposed system, and the final submittal must also be for the complete system clearly indicating all changes made during the submittal process.

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 submittal with the requirements of the work and of the contract documents.

The Owner will pay the costs and provide review services for a first and second review of each submittal item. Additional reviews shall be paid by Contractor by deducting up to \$200 for each hour of review time from the next scheduled payment.

For follow-up submittals, the Engineer will review only those items noted for revision in the preceding review. If the Contractor has modified the submittal in any other way, such modifications must be clearly identified both on a cover transmittal and within the submittal itself.

The Contractor is responsible for identifying the shop drawings and submittals required for this project. Specific submittal requirements may be 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.

1.40 QUALITY REQUIREMENTS

[CSI 01 40 00]

1.42.19 Reference Standards

[CSI 01 42 19]

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

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

- Cowlitz County Municipal Code
- IBC International Building Code
- UPC Uniform Plumbing Code
- IMC International Mechanical Code
- IFC International Fire Code
- NEC National Electrical Code
- AWWA American Water Works Association
- ANSI American National Standards Institute
- ASA American Standards Association
- ASTM American Society for Testing and Materials
- WSEC Washington State Energy Code

1.43.20 Warranty

[CSI 01 43 20]

The Contractor shall warrant all work and products for a period of one (1) year following the warranty start date except for those components and listed warrantees below.

The warranty start date is the date the Owner accepts the completed project by resolution.

Warranty does not cover damage due to misuse by the Owner or conditions outside of the Owner or Contractor's control or exceptional events (force majeure) including war, strikes, floods (water exceeding normal high water mark), rainfall in excess of 100 year storm event, fire, earthquakes, high winds (over 85 mph for 3 seconds peak gust), freezes below 10 degrees Fahrenheit (Western Washington), freezes below minus 10 degrees Fahrenheit (Eastern Washington), governmental restrictions, vandalism, utility power failures, or utility power surges (unless due to Contractor provided surge suppressor failure). 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 11.11.13 Packaged pump station
- Division 17.05 and 17.90.1 Telemetry systems

1.45.16 Field Quality Control Procedures

[CSI 01 45 16]

Unless otherwise noted on the plans or within these specifications, provide 48-hour notice to the Owner and appropriate reviewing agency for all inspections required. 48-hour notice is defined as two 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.

- Soils and crushed rock compaction
- Asphalt materials and compaction
- Pressure testing
- Water quality testing

1.50 TEMPORARY FACILITIES AND CONTROLS

[CSI 01 50 00]

1.51 Temporary Utilities

[CSI 01 51 00]

Provide 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. In addition, the Contractor shall arrange for the transfer of electrical and water accounts to the Owner's name.

The Contractor shall make all arrangements for the required construction power. Power is available at some locations on the construction site. The Contractor is responsible for reviewing what is available and providing what is required.

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.

1.51.36 Temporary Domestic Water System

[CSI 01 51 36]

Locations of many of the existing watermains are not known. Locations of existing watermains shown on the plans are obtained from available records and discussions with local individuals, but are not expected or intended to be an accurate representation of location. Existing watermains are shown only to provide the contractor an understanding of the overall existing water system function.

1.52.00 Construction Facilities

[CSI 01 52 00]

Construct and locate all field offices, all necessary gates and barricades, fences, handrails, guard rails, and securities required by this contract, or by laws and regulations. Provide shelters and dry facilities for the workers as required. 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. Provide first aid kits and equipment as required by law.

1.52.20 Locks and Keys

[CSI 01 52 20]

Contractor may provide temporary locks at their discretion. Contractor shall provide Owner with two construction key(s) for all temporary locks. Owner may “double lock” any padlocks at their discretion.

The Owner will provide permanent padlocks.

1.54 Construction Aids

[CSI 01 54 00]

The Contractor or product manufacturer may include work, materials, or components to aid in shipping, storage, installation, or other work for their convenience. Such items shall be removed prior to final project acceptance if they may interfere with the operation or maintenance of permanent work. Some examples include, but are not limited to:

- Lifting eyes: Remove only if a safety concern, obstruction, or directed by Owner.
- Picking holes: Plug holes of buried and exterior items, or if safety concern.
- Intermediate or shipping bracing: Remove and dispose.
- Protective shipping adhesives, coatings, or covers: Remove and clean residue.

1.55.26 Traffic Control

[CSI 01 55 26]

Any traffic control activities required during construction shall be consistent with the Uniform Traffic Control Manual, latest edition and applicable local codes. The Contractor shall limit delay of traffic to 4 minutes.

If flaggers are used, orientation meetings per WAC 296-155-305 of the Standard Specifications 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.

1.60 PRODUCT REQUIREMENTS

[CSI 01 60 00]

1.61.31 Integrated (or Package) Products

[CSI 01 61 31]

Products specified as integrated or packaged must be administered with a single point of responsibility from a producer who regularly furnishes such products and is qualified to address and resolve issues during submittals, fabrication, installation, commissioning, and operation. These responsibilities will not be transferred to any other party without written approval by the Engineer. Products that fall under this category may include but are not limited to the following (when specified as packaged or integrated).

- Pump stations

1.70 EXECUTION AND CLOSEOUT REQUIREMENTS

[CSI 01 70 00]

1.71 Examination and Preparation

[CSI 01 71 00]

1.71.23.16 Construction Surveying

[CSI 01 71 23 16]

The Contractor is responsible for surveying and staking and shall 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.

Contractor to survey the station line(s) and install pins or offset stakes every 50 feet within areas that will not be disturbed by construction. For utility work, 5-foot and 10-foot offset stakes must be provided for major components including, but not limited to: tees, valves, manholes, catch basins, changes in angle 45-degrees or more, and vaults larger than 4-foot square.

Replace all damaged survey monuments in accordance with WAC 332-120. Do not remove monuments until obtaining a permit from the WA Dept. of Natural Resources per WAC 332-120-050. Provide a copy of the application, permit, and re-monumentation report to the Owner.

1.74 Cleaning and Waste Management

[CSI 01 74 00]

1.74.13 Progress Cleaning

[CSI 01 74 13]

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.

1.74.23 Final Cleaning

[CSI 01 74 23]

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.

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 non-traffic areas back track with dozer or excavator and repair to final surface condition including necessary

hydroseed, mulch, and landscaping. Eliminate weeds within the construction area prior to project closeout.

If the contract includes projects on multiple sites, and the Contractor intends to work sequentially to each site, the Contractor shall clean up the current site prior to moving onto the next. Cleanup 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.

Buildings shall be broom clean and all foreign damage or markings removed or repaired.

Equipment shall be washed clean using appropriate methods.

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.

Remove existing equipment or materials identified in the contract documents or that interfere with the work. Dispose of all such existing equipment or materials unless the Owner requests items to be salvaged for their use. Owner has first right of salvage.

1.75 Starting and Adjusting

[CSI 01 75 00]

1.75.16 Startup Procedures

[CSI 01 75 16]

1.75.16.10 Startup

[CSI 01 71 16 10]

See the Automatic Control section for control system 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.

Startup shall not occur on a Saturday, Sunday, Monday, Friday, on an Owner recognized holiday, or the day before or after an Owner recognized holiday unless approved in advance by the Owner.

Technically qualified product 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 equipment are functioning correctly.

Authorized manufacturer's representatives shall be provided for the following items:

- Pumps and motors

1.75.16.12 Startup and Testing Coordination

[CSI 01 75 16 12]

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 placing of all improvements in service shall consist of three parts: “testing”, “startup”, and “operation”. Not less than 21 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:
 - A. Telemetry Panel Factory Demonstration Test (at panel shop)
 - B. Pumps and motors
 - C. Control system
2. Detailed schedule of procedures for startup.
3. Complete schedule of events to be accomplished during testing.
4. 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 as needed to provide 21 calendar days advance notice to reserve the Owner Representatives’ time.

The Contractor shall arrange for all materials, supplies, and labor necessary to efficiently complete the testing, startup, and operation. Measuring devices must be functional, accurate, legible, and scaled appropriately for the test. The Owner has the right to reject or require verification for any measuring device the Owner suspects in its accuracy.

At a minimum, the Contractor shall provide:

- Calibrated pressure gauge(s) (max scale of 120% to 200% of test pressure)

1.75.16.20 Testing

[CSI 01 75 16 20]

The Contractor may periodically request preliminary testing for items that must be covered or tested before other work can proceed. In these cases, do not cover up or test the work 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. All necessary equipment shall be set up and the work given a preliminary test so that defects may be discovered and repaired prior to calling out the Owner to witness the test.

Final testing consists of individual tests and checks made on equipment intended to provide proof of performance, operation, and control in the presence of the Owner. Assure proper

alignment, size, condition, capability, strength, 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 in 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 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.

Not less than five 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 at no additional cost if said representatives are identified in these specifications.

Qualified product representatives to be on site for the following equipment, at a minimum:

- Pumps and motors

Additional representatives required may be identified elsewhere in these specifications.

1.75.16.22 Scheduling of Owner Review for Testing

[CSI 01 75 16 22]

See Division 1.75.16.12 for scheduling and notification requirements.

The Contractor shall provide notification two working days and two working hours (to confirm readiness) of the scheduled test(s) 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 will 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. If testing requires downtime in order to perform repairs due to failed test, the Contractor shall pay the Owner in the amount of \$200 per hour per Owner Representative on site (minimum of \$400 per scheduled visit) for downtime lasting longer than 2-hours required to complete repairs to verify the complete construction is ready for startup and operation. This amount will be deducted from the appropriate bid item that relates to the finished construction and documented by the Owner at their discretion. The Contractor must have all systems pre-tested prior to calling the Owner for formal testing.

Schedule shall include control system testing starting on Mondays or Tuesdays so that the remainder of the week can be used to identify the stability of the control system for the SCADA system, pump station, or treatment plant. Control system testing shall not start on a Thursday, Friday, or the day before an Owner recognized holiday.

1.75.16.32 Pump Testing

[CSI 01 75 16 32 or 33 08 00]

See the applicable pump sections of these specifications for pump testing requirements.

1.75.16.40 Electrical and Control Systems Testing

[CSI 01 75 16 40 or 25 08 00 or 26 08 00]

See also the applicable electrical sections for electrical system testing.

See also the applicable automation sections for automatic control system testing.

The following is a list of components that shall be tested prior to project completion. This list is intended as a general guide and is not necessarily complete:

- Pressure sensors and alarms
- Flow sensors and alarms
- Temperature sensors and alarms
- Smoke alarms
- Intrusion sensors and alarms
- Motion sensors
- Photovoltaic sensors
- HVAC controls
- Local control
- Automatic control
- Variable speed drives

1.78 Closeout Submittals

[CSI 01 78 00]

1.78.23 Operation and Maintenance Data

[CSI 01 78 23]

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

See also the Automatic Controls section for additional requirements for automatic control systems manuals. Detailed requirements for specific equipment and systems may also be included in their respective specification sections.

Remove and preserve all tags and instructions that come packaged with or attached to equipment. Deliver all such documents to the Owner bound in a three-ring binder or with the O&M Manual. Insert documents in sleeves if they cannot be punched. Scan all such documents to Adobe PDF format and provide with the O&M Manual.

Prior to the receipt of payment for more than 90 percent of the work, deliver to the Owner acceptable manufacturer's instructions covering equipment and systems O&M procedures, for coatings furnished under this contract, and any additional items indicated by the Owner.

At a minimum, provide O&M information for the following:

- Pumps
- Motors

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

Products

- A. 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 USB flash drive or DVDs utilized in the manufacturer's instruction program.

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.

[CSI 01 78 39]

Prior to receiving final payment for the work, deliver a complete set of “As-Constructed” records (also called as-built, or record plans) to the Owner. The Owner has sole discretion to determine if the records provided are legibly and accurately presented and may request revisions, which shall be provided by the Contractor at no additional cost. Records shall be made as follows or as approved by the Owner:

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

Records shall be provided in PDF format.

Provide “as-constructed” 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.

See also electrical plan requirements in Division 16.05.

1.79 Demonstration and Training

[CSI 01 79 00]

1.79.10 Training

[CSI 01 79 10]

See the Automatic Control section for automatic control systems 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 days as a startup.

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

1.80 PERFORMANCE REQUIREMENTS

[CSI 01 80 00]

1.81 Facility Performance Requirements

[CSI 01 81 00]1.81.50 Materials in Contact with Domestic Water

[CSI 01 81 50]

All devices, components, and materials substantially in contact with potable water shall be certified by NSF International to comply with NSF/ANSI 61 (leachable materials) and NSF/ANSI 372 (lead content). Certification of compliance shall be supplied in writing at the time of the submittal process. See exceptions in WAC 246-290-220(1).

Division 2

Sitework

2.00 GENERAL

[CSI 32 00 00]

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

2.05 Common Work for Exterior Improvements

[CSI 32 05 00]

This division covers the work 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:

- General Fill
- Structural Fill
- Pipe Bedding
- Trench Backfill
- Crushed Surfacing
- Paving
- Hydroseed

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

2.08 Special Inspections for Earth Work

[CSI 31 08 20]

Part 3 – Execution

Field Quality Control

Special inspections including visual, probing of subgrade, and compaction effort (nuclear densometer or probe) are required for the following locations:

- Trench backfill crossing roads and parking areas (visual, probe and nuclear densometer testing)
- Road and parking area fill and native subgrade (visual, probe, and nuclear densometer testing if found necessary by the Owner)
- Crushed surfacing under roads, parking areas, and structures (visual, probe, and nuclear densometer testing)

- Native (and fill if any) subgrade of vaults, footings, foundations, and floors (visual and probe)
- Finished excavation of detention pond prior to seeding (visual and probe)
- Pond berm native subgrade, fill placement, and compaction (visual, probe and nuclear densometer testing)
- Roadway embankment cut native subgrade (visual and probe)
- Roadway fill embankment subgrade (visual, probe and nuclear densometer testing at various lifts)

Areas where fill (either native or non-native) is being placed shall be tested for compaction compliance by a special inspector. The Owner will pay for the initial testing. If tests indicate failure of compaction requirements, the Contractor shall pay for subsequent tests until tests indicate compliance with the specifications. Areas of native undisturbed subgrade shall be visually inspected by the Owner prior to placement of any material overtop. Contractor shall coordinate with the Owner a minimum of two (2) full working days prior to inspection being needed.

The Contractor shall fully cooperate with the special inspector, including providing safe access to the testing areas. No extra compensation will be provided for cooperation with and facilitation of inspections.

Utility Trench Testing

Testing will occur at the following locations at a minimum:

- One test within 30 feet of start.
- One test every 300 feet or at road intersections, whichever comes first.
- One test whenever soil conditions change, per the direction of the Owner.

The Contractor shall schedule with Owner for visual and probe review of earthwork activity. Contractor shall schedule with Owner and special inspection agency for nuclear densometer testing. Deliver test results to the Owner and to the roadway jurisdiction if different than the Owner.

2.10 SITE PREPARATION

2.10.2 Clearing and Grubbing

[CSI 31 11 00]

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 (Washington) of the Standard Specifications.

Protect trees and tree roots, structures and foundations, utilities, fences, and all other existing improvements not being removed regardless if shown to be protected on the Plans.

Remove and relocate permanent improvements that are within the construction limits, such as mailboxes and traffic signs. Locate mailboxes to preserve mail service 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 on the Plans. Where the Contractor is allowed to clear areas to facilitate construction but is not required to, restore any areas disturbed by construction to existing or better condition including matching surface restoration with seed, sod, or plantings as shown in adjacent areas required to be modified by the Plans. Restoration shall be completed at no additional cost to the Owner.

2.11 Earthwork Materials

2.11.2 General Fill

[CSI 31 23 23.51]

Part 1 – General

Summary

All fill not specifically defined as another type shall be “General Fill”.

References

Section 9-03.14(3) Common Borrow of the Standard Specifications. (Washington)

Part 2 – Products

Components

General fill shall be soil free of organics, debris, and other deleterious materials, with no individual particles having a maximum dimension larger than 5 inches. 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 general fill.

Part 3 – Execution

Installation/Construction

Compact general fill in uniform layers not exceeding 12 inches in loose thickness and to at least 90 percent maximum dry density based on the ASTM D-1557 (modified) test procedure or 95 percent maximum dry density based on the ASTM D-698 (standard) test procedure.

2.11.3 Structural Fill

[CSI 31 23 23.52]

Part 1 – General

Summary

All fill placed below 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. Take particular care to maintain the integrity of the design by using structural fill where shown.

References

Where free draining material for structural fill is required as indicated on the Plans or needed to maintain compaction in adverse weather conditions, it shall conform with Section 9-03.14(1), “Gravel Borrow” of the Standard Specifications.

Structural fill for foundation subgrades, or where free drainage is not required through the structural fill shall conform with 9-03.14(2) “Select Borrow” of the Standard Specifications.

Part 2 – Products

Components

When structural fill will be used around pipes, 100-percent of the material shall pass a 1-inch sieve.

Structural fill shall be soil free of organics, debris, and other deleterious materials. The Owner will 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 or 98 percent of its maximum dry density based on the ASTM D-698 (standard) test procedure.

2.11.6 Gravel Backfill for Drains

[CSI 31 23 23.55]

Part 1 – General

Summary

All fill placed around drain pipes in a trench shall be “Gravel Backfill for Drains” to provide drainage for stormwater runoff.

References

Gravel backfill for drains shall conform with Section 9-03.12(4) of the Standard Specifications.

2.11.7 Gravel Base Course

[CSI 32 11 23.10]

Part 1 – General

Summary

All fill placed directly under and against paving, foundations, and structures 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 or 9-03.9(3) Crushed Surfacing Base Course of the Standard Specifications.

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

2.11.8 Gravel Top Course

[CSI 32 11 23.11]

Part 1 – General

Summary

Gravel travelled surfaces shown on the Plans shall be “Gravel Top Course”. Gravel top course may also be required directly under paving by the road jurisdiction or if shown on the plans.

References

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

2.11.11 Pea Gravel

[CSI 33 05 09 52 or 32 11 51]

Part 1 – General

Summary

Granular material used for filling annular spaces between carrier pipe and casing shall be “Pea Gravel”.

Part 2 – Products

Materials

Pea Gravel shall be clean, free-draining, durable uncrushed rock, meeting the following grading requirements:

Sieve Size	Percent Passing
3/8”	85-100
#4	10-30
#8	0-10
#16	0-5
#200	<1

2.11.20 Geotextile Fabric

[CSI 31 32 19.16 or 31 34 19.16]

Part 1 – General

Delivery, Storage, and Handling

Ship, store, place, overlap, and secure fabric based on manufacturer requirements.

Part 2 – Products

Materials

Chose geotextile fabric to meet the requirements based on place and purpose of use.

Geotextile fabric called out on the Plans to separate drain rock or French drains from surrounding soils shall be equal to Tencate Mirafi 140N.

Geotextile fabric called out for separation of soils shall be equal to Tencate Mirafi 140N.

Geotextile fabric placed between quarry spalls and fill to separate soil fines shall be equal to Tencate Mirafi 160N.

Geotextile fabric called out to drain behind a wall without the use of drain rock shall be equal to Tencate Mirafi G100W.

Geotextile fabric for embankment stabilization shall be equal to Mirafi Miramat TM8.

Geotextile fabric placed below crushed rock in road subgrade shall be equal to Tencate Mirafi 500X

Other locations may require a specialized geotextile fabric and if so shall either be identified in the Plans or geotechnical report.

2.12 Road Surfacing

[CSI 32 10 00]

2.12.2 Cement Concrete Pavement

[CSI 32 13 13]

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 road agency's standards.

Adjust manhole covers, valve covers, survey markers, and other existing surface features to the finished grade of the new surfacing in conformance with the local road agency standards. Otherwise, set as follows:

- Storm sewer grates: 0.10 foot below finished grade.
- Valve boxes, manhole covers, survey markers: 0.00 to 0.01 foot below finished grade.

2.12.10 Pavement Marking/Striping

[CSI 32.17.23]

Part 1 – General

References

Install pavement marking in accordance with 8-22 of the Standard Specifications and any Owner standards more stringent than the Standard Specifications.

Part 3 – Execution

Repair/Restoration

Replace pavement marking damaged or removed during construction. Cost is incidental to the contract unless a pay item is provided.

Installation/Construction

Provide markings on all new pavement per the local traffic agency's requirements.

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

2.20 EARTH MOVING

[CSI 31 20 00]

2.23 Excavation

[CSI 31 23 16]

Part 1 – General

Summary

Excavate as necessary to construct the improvements shown.

Part 2 – Products

Materials

Remove all excavated material from the project site unless approved as backfill by the Owner. Approval of material as backfill will be made the moment before placement of the material as backfill. Weather conditions may make previously excavated material unsuitable for backfill requiring the material to be removed from the project site.

Part 3 – Execution

Installation/Construction

Excavation includes 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. Excavation includes utility excavation, structural excavation, and grading excavation.

Perform utility excavation to the depths necessary to complete the utility work shown.

Perform structural excavation to the limits shown and established by the Owner. Extend the base of the excavation laterally a minimum of 2 feet beyond the structure unless specified otherwise on Plans.

Examination

The Owner will evaluate the base of the excavation 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

Perform excavation required by the Owner that is beyond the depth shown, per the direction of the Owner. The Contractor will be reimbursed for additional excavation by force account if not specified.

2.25.3 Temporary Erosion and Sedimentation Control

[CSI 01 57 13.13]

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 daily and maintain the systems as necessary to prevent off-site damage.

Part 2 – Products

Materials

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

Part 3 – Execution

Installation/Construction

All TESC 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, grading work, or other work that could result in off-site stormwater or material flows. TESC systems must remain in place throughout the duration of the

construction activities. The systems may be relocated to complete construction 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.

Install systems such as mulch, plastic sheeting and hydroseed as soon as clearing, grading and excavation are complete if sites are 1-acre or less. For sites larger than 1-acre, complete temporary and/or final surface restoration as clearing, grading and excavation progresses so that no more than ½-acre is exposed at any one time. Take care and diligence to minimize erosion exposure and provide TESC measures as shown on the Plans and required by construction practice.

Install stabilized construction entrances and wash pads at the beginning of construction activities and maintain for the duration of the project. Keep wash pads clean to prevent the transport of sediment onto adjoining roads.

Install earth berms as necessary to prevent surface water migration into excavations or off the project site. Route surface water intercepted by earth berms to an approved stormwater conveyance system. Ensure that the concentration of surface water at the earth berm does not erode the adjoining or downstream properties. Remove sediment deposited against the earth berm so surface water can flow freely. Do not remove the earth berm before the stabilization of the surface downhill from the berm.

2.25.5 Filter Fabric Fence

[CSI 01 57 13 or 01 57 23]

Part 2 – Products

Materials

Filter fabric per section 8-01.3(9)A2 and section 9-33.2(1), Table 6, of the WSDOT Standard Specifications.

Part 3 – Execution

Installation/Construction

Install a filter fabric fence to allow the collection and passage of surface water through the fabric before discharge off site. When joints are necessary, splice filter fabric together at a support post with a minimum overlap of six inches. Secure both ends of the fabric to the post. Install the filter fabric fence following the contours of the existing grade where feasible. Drive the fence posts securely into the ground a minimum of 30-inches and spaced apart at a maximum of six feet. Fasten a wire mesh support fence securely to the uphill side of the posts using heavy-duty wire staples at least one inch long, tie wires, or wire rings. Extend the wire into the trench a minimum of four inches and not more than 36 inches above the existing surface. Excavate an 8-inch by 12-inch trench on the uphill side of the fence for securely burying the lower edge of the fabric fence. Extend at least 20 inches of the filter fabric fence continuously into the trench. Extend the filter fabric fence 36-inches above the existing grade. Secure the filter fabric placed in the trench with backfill material of three-quarter inch washed

rock. Place the backfill material in the trench and on either side of the fence as shown on the construction Plans.

Field Quality Control

Inspect the filter fabric fence immediately after each rainfall and at least once daily during periods of prolonged rainfall. Repair or replace sections of the filter fabric fence that are not filtering surface water. The filter fabric fence may be removed after the threat of off-site contamination has passed.

2.30 SITE IMPROVEMENTS

[CSI 32 30 00]

2.31 Fencing and Gates

[CSI 32 31 00]

2.31.1 Common Work for Fencing

[CSI 32 31 05]

Part 1 – General

Related Sections

- Division 1.52.20 Locks and Keys

Part 3 – Execution

Preparation

Clear the area along the fence path, remove surface irregularities and grade earth smooth and continuous prior to fence installation.

2.31.2 Temporary Construction Security Fence

[CSI 01 56 26]

Part 1 – General

Related Sections

- Division 10.14.7 Signage

Part 2 – Products

Materials

Provide warning signage at the site entrance for the duration of the project. Sign(s) to be no smaller than 2-foot square with language of (or similar) “Construction Site, No Trespassing”.

Provide high-visibility construction fencing around the site when not on site. Support construction fencing to resist wind damage but make an access section easily removable for Owner’s personnel.

Part 3 – Execution

Installation/Construction

Provide a 6-foot tall temporary construction fence surrounding the construction site. Space

fence posts at a maximum of 12 feet on center. Maintain fence during construction and secure fence after each workday. Install posts securely directly into the ground or set in temporary concrete base blocks. Attach chain link securely to the fence posts. The construction fence may be used in combination with the permanent fence provided that the fence is continuous around the site perimeter.

Clearing limit identification fencing shall not be considered a Temporary Construction Security Fence.

2.50 EXCAVATION SUPPORT AND PROTECTION

[CSI 31 50 00]

2.90.11 Hydroseed

[CSI 32 92 19.16]

Part 1 – General

Related Sections

Scheduling

Apply hydroseed within the optimum seeding windows whenever possible. Hydroseed may be used for temporary erosion control only with the approval of the Owner. Time construction practices 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 2-inches thick until 75 percent grass cover is established.

Maintenance

Provide temporary irrigation, mulch or plastic sheeting (plastic sheeting for short term protection only, 7 days maximum) to hydroseeded areas as required for establishment and to protect the seed from construction activities 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. Mulch or tackifier product used shall be installed per manufacturer's instructions.

Areas that have seed applied by hand shall have a minimum 2-inch thick layer of compost-based mulch or 1-inch layer of 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 slopes and less, Bonded Fiber Matrix (BFM) or Mechanically Bonded Fiber Matrix (MBFM) products may be used in lieu of 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 Mix

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)

Ditch/Pond Seed Mix			
Name	Proportion by Weight	% Purity	% 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	% Purity	% Germination
Redtop or Oregon Bentgrass	20%	92%	85%
Red fescue	70%	98%	90%
White Dutch Clover	10%	98%	90%

Part 3 – Execution

Preparation

Install 2-inches of import topsoil over areas that will be seeded.

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 shall be hydroseeded, except ditches and swales may have seed applied by hand. Apply seed prior to installing erosion control blankets.

Field Quality Control

These specifications are the minimum requirements for the anticipated conditions. The Contractor is responsible 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.

Provide a temporary irrigation system until growth is established if hydroseeding is applied between April 1st and October 1st in Western Washington or Oregon, or for any work at any time in Eastern Washington. Remove temporary irrigation systems when no longer required.

Division 3

Concrete

3.00 GENERAL

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

3.05 Common Work for Concrete

[CSI 03 05 00]

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 C150
- Coarse aggregate - ASTM C33
- Fine aggregate - ASTM C33
- Admixtures - ASTM C494
- Air-entraining admixtures – ASTM C260
- Fly Ash – ASTM C618
- Admixture and products in contact with potable water – NSF 61

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

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.

Finishes

Coat all aluminum in contact with concrete as specified in Division 9.

Part 3 - Execution

Inspection

See Statement of Special Inspections on the Drawings for special inspection requirements. Provide two (2) full working day 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 shall be performed per section 1905.6 of the IBC and per the requirements noted herein. The Owner will provide and pay all costs of concrete testing. The Engineer shall be furnished with copies of all inspection reports and test results.

Cylinders used for concrete strength tests shall be 6 by 12. Four by 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 by 12 cylinders.

When 4 by 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 C1231.

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

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.

3.31 Structural Concrete

[CSI 03 31 13]

Part 1 - General

Summary

All concrete shown in the contract documents including below-grade structures, ringwalls, and all other concrete items not specifically called out otherwise

Performance Requirements

28-day compressive strength – 4,500 psi minimum

3-day compressive strength – 4,000 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. Use water reducers as required to achieve slump.

Part 2 - Products

Mixes

Water/cement ratio - 0.40 maximum

Nominal maximum aggregate size – ¾-inch (AASHTO Grading No. 67)

Entrained air ratio – 3.5 percent minimum to 6.5 percent maximum

3.31.30 Thrust Blocks, Driveways, Curb, Gutter, Sidewalks, Equipment Pads, and Fence Posts

[CSI 03 31 13.10]

Part 1 - General

Summary

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

Performance Requirements

28-day compressive strength – 4,500 psi minimum

Part 2 - Products

Mixes

Water/cement ratio - 0.45 maximum

Nominal maximum aggregate size – ¾-inch (AASHTO Grading No. 67)

Entrained air ratio – 3.5 percent minimum to 6.5 percent maximum

3.40 PRE-CAST CONCRETE

[CSI 03 40 00]

3.48 Pre-Cast Concrete Specialties

[CSI 03 48 00]

3.48.50 Utility Structures

[CSI 03 48 50, 33 05 61, 33 05 63]

Part 1 - General

Design Requirements

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

Pre-cast vaults shall conform to ACI 318 and be constructed to the equivalent dimensions and functional characteristics of the specific product identified on the Plans.

Unless shown otherwise on the plans, round structures larger than 30-inch inside diameter, or rectangular structures with longest interior side 30-inches or longer, that utilize riser sections, shall be cast with an integral keyway for interlocking the riser sections.

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-93 traffic loading.

Part 2 - Products

Materials

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.

All precast structures that consist of sections (base, riser, lid, etc.) shall have the joints sealed with rubber gaskets or mastic, of a material appropriate for the installation.

Part 3 - Execution

Cleaning

Fill picking holes with grout flush to the structure surface, including those in vault lids. Cut, remove, and grind smooth shipping lifting hooks on the vault interior, unless directed otherwise by the Engineer.

Division 8

Openings

8.00 GENERAL

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

8.05 Common Work for Openings

[CSI 08 05 00]

Part 1 - General

Summary

This division covers furnishing all labor, materials, and equipment necessary for providing all interior and exterior doors, frames, and windows.

Submittals

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

- Hatches

8.30 SPECIALTY DOORS

[CSI 08 30 00]

8.31 Access Doors and Panels

[CSI 08 31 00]

8.31.20 Vault Hatches

[CSI 08 31 20]

Part 1 - General

Summary

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

Related Sections

1.52.20 Locks and Keys

Performance Requirements

Access doors located in roadway or within wheel paths of driveways shall be rated for HS-20 Continuous and Deliberate Traffic. Hatch shall be designed for an average traffic speed of 30 mph.

Submittals

Provide manufacturer’s statement of load rating.

For aluminum frames to be cast in concrete, provide submittal for frame coating.

Locate gutter drain outlet location and routing of drain line to its intended location.

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

Hatches shall be equal to USF Fabrications, Bilco, Halliday or 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 with cover. An unkeyed 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 or building sump or 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, expansion spring, 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.

Access hatches in areas that receive regular vehicle traffic shall be provided with welded clips and hold down bolts to secure the hatch to the frame.

Part 3 - Execution

Installation

Installation shall be in accordance with manufacturer's instructions.

Hatch gutter drain shall be connected to 2.5-inch or larger Schedule 40 PVC pipe and routed to daylight or storm drain unless shown otherwise on the plans.

Field Quality Control

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

Division 11

Equipment

11.00 GENERAL

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

11.05 Common Work for Equipment

[CSI 11 05 00]

Part 1 - General

Related Sections

- Division 1.81.30 Seismic Restraint Requirements

Submittals

Provide submittal information to the Owner for the following items:

- Packaged Pump Station (Precision Pumping Systems or approved equal)

11.1.1 Scope of Work

Part 1 – General

Packaged Pump Station

The Packaged Pump Station supplier shall provide a potable booster pump station complete with pump, piping, sensors, Variable Frequency Drives, programmable logic controller (PLC), UL 508A listed control panel, and all appurtenances necessary for a complete and functioning pumping system.

The pump station—including the pump control panel—shall be designed and manufactured within the confines of a UL 508A, UL QCZJ, & ISO 9001:2015 certified facility. Electrical connection, by purchaser, shall consist of a single conduit from owners disconnect to the pump station main disconnect.

Factory Testing

The pump station manufacturer shall conduct and document a complete factory dynamic test of the pump station prior to shipment. Pump stations shall be tested throughout the entire operating range at the net discharge pressure called for in the technical specifications. Individual pump pressure, flow, RPMs, volts, amps, KW, and power factor shall be documented for verification by the Owners' Representative prior to delivery upon request.

- Hydrostatic Testing. The packaged pump station shall undergo hydrostatic testing that meets ANSI/HI specifications and standards.
- Vibration Testing. The packaged pump station shall undergo vibration testing that meets ANSI/HI 9.6.4—Vibration Measurement and Allowable Values—specifications and standards.
- Flow Testing. The packaged pump station shall undergo Hydraulic Performance Acceptance testing that meets ANSI/HI 14.6 specifications and standards.

- Wet Test. The entire pump station shall be completely wet tested at the manufacturing facility prior to shipping.

Onsite Pump Station Start-up

Technical start-up shall be furnished by the Packaged Pump Station Manufacturer or a qualified service agent. Location and mounting details shall be furnished by the Packaged Pump Station Manufacturer.

Electrical connection, by purchaser, shall consist of a single conduit from owners disconnect to the pump station main disconnect. Additional purchaser responsibility shall include confirming correct motor rotation and securing local inspection/approval.

Technical start-up procedures by the pump station technician shall include the following:

- Station start-up and pressurization.
- Pressure, flow, and programming adjustments.
- Monitoring of complete operational cycle when possible.
- Testing of all alarms and fault conditions.
- Customer training and the presentation of the station operation and maintenance manual.

Warranty

The Manufacturer shall warrant the original buyer that the packaged pump station shall be free from defects in material and workmanship for a period of twelve (12) months from the date of placing the Equipment in operation. The Manufacturer shall provide a 25-year rust-through corrosion warranty on the piping and skid base.

Submittals

Submittals shall be well organized, labeled, and presented in a professional manner. Sloppy or poorly presented submittals shall be rejected. The pump station manufacturer shall submit the following items as part of a complete submittal package:

- Shop Drawings, including 3D models of the proposed pump station. The manufacturer shall also provide digital models that can be viewable from any angle.
- Electrical Schematics
- Control Panel Layout Drawing
- Installation List of 10 similar pumping systems which have been in operation for a minimum of 3 years.
- Manufacturers complete packaged pump system UL category QCZJ file number.
- Technical data sheets for all major system components, including:
 - a. Complete operating instructions, including HMI screenshots with detailed instructions on adjust system parameters and settings.
 - b. Control Panel Components: VFD, PLC, Touchscreen Interface, Panel

Enclosure, & UL 508A Certification

- c. Powder Coating Data
- d. Galvanizing Data
- e. Valves
- f. Instrumentation

Operations and Maintenance Manual

An electronic operation and maintenance manual shall be furnished at the time of start-up and initial training. The owner shall also receive training specific to the pump station. Operation and maintenance instructions shall contain the following as a minimum:

- Complete operating instructions, including HMI screenshots with detailed instructions on adjust system parameters and settings.
- Service and Maintenance instructions.
- Equipment and driver nameplate data.
- Electrical schematics.
- Factory start-up and test data, including pump curves.

11.1.2 Manufacturer Qualifications

A. Single Source Responsibility

The entire pumpstation and the control panel shall be designed, assembled, programmed, and tested by a single manufacturer.

B. Certifications

The Manufacturer shall be a UL QCZJ Listed Packaged Pump Station Manufacturer, a UL 508A Listed Control Panel Manufacturer, and an ISO 9001:2015 Certified Manufacturer. The Manufacturer shall provide a Certification signed by the owners providing free phone technical support for the lifetime of the product.

C. Manufacturer Personnel

The Manufacturer shall employ service personnel who are trained and certified in every aspect of service that may be required at the pump station. It shall not be acceptable for the control panel to be designed, manufactured, programmed, or tested by any entity other than the Packaged Pump Manufacturer.

D. Approved Manufacturer

Precision Pumping Systems, pricing to be provided by Whitney Equipment

To be considered an equal manufacturer, proposed manufacturers shall meet the above conditions, shall receive approval no less than 5 days prior to bid date, and shall submit the following:

- 1) Shop drawings of Mechanical system
- 2) Theory of Operation

- 3) Installation List of 10 similar pumping systems which have been in operation for a minimum of 3 years.
- 4) Process & Instrumentation Diagram
- 5) Electrical Schematics
- 6) Control Panel Layout Drawing
- 7) Technical data sheets for all major system components, including:
 - a. UL QCZJ Certification, UL 508A Certification, and ISO 9001:2015 Certification
 - b. Pump performance curves and datasheets
 - c. Control Panel Components: VFD, PLC, Touchscreen Interface, Panel Enclosure
 - d. Powder coating or Hot Dipped Galvanizing
 - e. Valves
 - f. Filtration
 - g. Instrumentation
 - h. Pump Station Enclosure

11.1.3 Reference Standards

- A. NEMA – National Electrical Manufacturers Association
- B. NEC – National Electrical Code
- C. UL – Underwriters Laboratories, Inc.
- D. AWWA – American Water Works Association
- E. ANSI – American National Standards Institute
- F. ANSI/HI – American National Standards Institute/Hydraulic Institute
- G. ASTM – American Society of Testing & Materials

Part 2 - Products

11.2.0 Pumps and Motors

Vertical Multi-Stage Pump

- Construction. The pump casing shall be of deep drawn, laser welded AISI 304L stainless steel (optional cast iron) and shall be capable of withstanding maximum working pressures of 360 psi or 580 psi. Number based on pump staging and flange selection. Piping connections shall be in-line (optional top/bottom) and shall be compatible with ANSI raised face flanges (optional NPT or Victaulic).
- Impellers shall be of enclosed design and constructed of AISI 316L or AISI 304L stainless steel. Impellers shall provide internal thrust balance in each stage. Each stage shall have a bowl with attached diffuser and be constructed of AISI 304L or 316L

stainless steel. The seal housing shall be of concave design and shall hold the seal faces below the topmost part of the pump casing. The pump shall have shaft sleeves made of Tungsten Carbide and ceramic bearings. Shaft height shall be set with a standard spacer. The mechanical seal shall be of the following components: Rotary Face: Carbon; Rotary Stationary Face: Silicon Carbide; Elastomer: Viton.

- Pump Testing. Each pump shall be hydrostatically tested by the manufacturer in accordance with Hydraulic Institute Standards at a minimum of 1.5 times the operating pressure. Production performance testing will be conducted by the manufacturer on each pump unit. Head at three operating points (70% of BEP, BEP and 120% of BEP) will be measured to verify performance.
- Manufacturer: Vertical Multi-stage Pumps shall be manufactured by Goulds, Grundfos, or approved equal.
- Pump shall be NSF-61 Rated.
- Motors:
 - a. The pump drive motor shall be NEMA standard design. TC frame suitable for vertical mounting and close coupled to the pump unit.
 - b. Motors shall be of standard manufacturers catalog design and must not use special bearings as a thrust handling device.
 - c. Motor shall be Premium Efficient, TEFC, with a 1.15 service factor.

11.2.1 Mechanical System

General Requirements

- System manifold and appurtenances shall be engineered such that each joint is a union, with all fittings and pipe sections removable without cutting or welding. All piping, fittings, and valves shall have roll-formed grooved connections, with grooved flange adapters provided where connecting to flanged equipment.
- For ease of maintenance and replacement, each mechanical component, including all fittings and spools, shall include unique part numbers and shall be of a standardized design per ISO 9001:2015.
- Threaded connections in the piping network are not acceptable.
- No piping shall be welded to the skid base.

Piping, Fittings, and Connections

- All piping, fittings, and pipe supports shall be constructed of ASTM A53-B STEEL, Schedule 40, rated ANSI #150.
- Manifolds shall be grooved, or cope welded per AWWA standards. Threaded connections in the piping network are not acceptable. Grooved pipe connections shall be used where indicated in the drawings. All welded flanges shall be Class D forged stainless-steel slip-on or welded neck type. All welded fittings shall be seamless, conforming to ASTM Specification A234, with pressure rating not less than 150 PSI.

- All process piping shall be coated both internally and externally with NSF-61 rated thermosetting epoxy powder coating, with a thickness of no less than 10 mils.

Pressure Tank

- The pump station shall include a 20 Gallon Pre-Pressurized Diaphragm-type well tank in the station enclosure.

Station Base

- The system base frame shall be structurally engineered to provide rigid support for the entire pumping system equipment, including but not limited to pumps & motors, manifold, valves, control panel, and station enclosure. The base frame shall enable the entire pump station to withstand all stresses related to transportation, installation, and operation as carried out by qualified personnel.
- The base frame shall be press-brake formed and fabricated ASTM A36 Steel plate with a minimum thickness of 3/8 inch. The legs of the frame shall be press-brake formed with a minimum riser height of 5 inches and shall include lifting eyes for site offloading and installation, as well as a bent flange with 3/8-inch bolt holes for on-site anchoring to a concrete pad. The frame shall be structurally reinforced with 3/8-inch-thick ASTM A36 Steel Flat Bar skip-welded to the underside of the frame.
- The frame deck shall include an integral access hatch and level sensing equipment access cap.
- After all fabrication has been completed, the entire base frame shall be grit-blasted to bare steel and HOT-DIP GALVANIZED per ASTM-123 Standards. No welding shall be performed after the base frame is galvanized.
- Open rail type structural support systems shall not be accepted.
- Proposed alternate systems with base frame coatings that are not warrantied for 25 years shall not be accepted.

11.2.2 Pump Station Enclosure

- A. The pump station enclosure shall be constructed of marine grade aluminum, with interior and exterior surfaces coated in thermosetting epoxy powder coating with a minimum thickness of 3 mils. The enclosure shall be suitable for outdoor use, providing protection from wind-blown rain and dust, as well as preventing ice formation.
- B. The enclosure shall consist of a frame built out of structural folded aluminum, built to readily accept foil faced insulation. The aluminum panels shall be mounted to the enclosure frame with pan head Torx tamper resistant stainless-steel screws.
- C. Enclosure shall consist of 2 hinged, lockable entry doors, with SCE-41 Grade Neoprene gasketing with aggressive rubber-based adhesive. The enclosure shall have a removable roof; it shall be sloped to prevent moisture build-up, and it shall include a brake-press formed drip-edge, aluminum flashing, and SCE-41 Grade Neoprene gasket with aggressive rubber-based adhesive.

11.2.3 Valves

A. Butterfly Isolation Valves – Wafer Type

Provide isolation valves as shown on the drawing. Valves shall be butterfly type with Wafer connections, Cast Iron Body, Ductile Iron Disc, EPDM Seat, 400 SS Valve Stem, and Hand-wheel Gear-Operators with 10-position indicator. Valves shall be NSF-61 Rated.

B. Check Valves – Grooved, Split-disc

Valves shall be of the dual disc type, grooved style with torsion spring induced closure. The body shall be of one-piece construction incorporating a vulcanized synthetic seal. Seal design shall include a raised sealing bead for positive seating at both high and low pressures. The disc shall fully overlap the synthetic seal, preventing pressure indentations. Opening and closing of the valve shall utilize a lift and pivot action to prevent seal wear and ensure long seal life.

The valve body shall be constructed of ductile iron. The disc shall be constructed in cast bronze. The pivot pins and stop pins shall be Type 316 stainless steel. The torsion spring shall be Type 316 stainless steel. The seal shall be Buna-N. Check Valves shall be Series #8800G as manufactured by Val-Matic or approved equal.

The valve shall be rated for NSF-61.

C. Air Relief Valves

Air relief valves shall continuously discharge entrapped air in the system and shall be constructed of a cast iron body with stainless steel float and trim. The discharge shall be piped to the floor drain. Air relief valves shall be manufactured by Val-Matic or approved equal. Air relief valves shall be NSF-61 Rated.

11.2.4 Instrumentation

A. Pressure/Suction Gauges

Pressure gauges shall be located on the suction and discharge manifolds. They shall be No-Shok and liquid filled with a 304 stainless steel case and bezel. Gauges shall be 2.5" diameter, with a 1/4" NPT pressure sensing connection. Pressure gauge shall be NSF-61 rated.

B. Pressure Transmitters

The station shall have pressure transmitters located as shown in the technical drawing. The pressure transmitters shall provide noise free, linear output that is proportional to pressure. Transmitter shall be solid-state, strain gauge type with integral voltage regulation and output accuracy not less than 0.4%. Transmitter shall be constructed of stainless steel and rated for the pump station discharge pressure called out in the technical specifications. Transmitter shall have a 4-digit LED alphanumeric display. The pressure transmitter shall be manufactured by IFM and be NSF-61 rated or approved equal.

C. Electromagnetic Flow Meter

1. The pump station shall have a flow meter installed as shown on the technical

drawing, installed according to manufacturer's recommendations.

2. The flow meter shall be NSF-61 rated for potable water applications.
3. The flow meter shall be electromagnetic design comprising of two major components, a primary head and a signal converter. The primary meter head shall incorporate a straight-thru flow design with no moving parts or pressure loss.
4. The flow meter signal converter shall produce two separate signals, pulse and 4-20ma, in linear proportion to flow rate. Flow data, including flow rates and flow totals, shall be accessible via the door-mounted PLC touchscreen interface.
5. The meter shall be fully tested during the pump station full run performance testing while at the factory prior to shipment. The magnetic flow meter on the pump station shall be calibrated against a master meter.
6. The flow meter shall be Badger Meter M2000 series or equal

11.2.5 Motor Control Panel

A. General Requirements

1. The Motor Control Panel shall incorporate all circuits and necessary protections required to operate the pump station, including motors, controls, and heating and ventilation circuits. All wiring shall conform to NEC and UL 508A standards for safety.
2. The control panel shall be designed, built, tested, and UL 508A listed by the pump station manufacturer. The control panel shall be UL labeled as an "Enclosed Industrial Control Panel". The pump control panel shall be completely manufactured, tested, and programmed prior to delivery to the job site.
3. Electrical connection, by purchaser, shall consist of a single conduit from owners disconnect to the pump station main disconnect.
4. The control panel shall be installed inside the pump station enclosure. Control panels mounted outside of the pump station enclosure shall not be accepted.
5. The following shall be permanently affixed to the inside of the control panel enclosure:
 - a. A full-color, diagrammatic wiring schematic.
 - b. Pump and motor nameplate information.
 - c. Factory calibrated control setpoints.

B. Panel Construction – NEMA 12

The pumping station electrical controls, including variable frequency drives and operator interface, shall be housed in a NEMA 12 enclosure.

1. The enclosure shall be fabricated from carbon steel, 12 gauge minimum, coated inside and out with ANSI-61 gray powder coating.
2. All internal components of the enclosure shall be mounted on a removable sub-panel, which shall be powder coated white. Mounting screws for components

shall not be tapped into the enclosure wall.

3. The electrical panel doors shall be removable and interchangeable, with concealed hinges and integral latches. Door gasket seals shall be oil-resistant and shall be sufficient to protect interior components from weather and dust.
4. All external operating devices shall be dustproof and weatherproof.
5. No pressure gauges, pressure switches, water activated devices, or water lines of any sort shall be installed in the control panel.
6. MCP Temperature Regulation
 - a. The cooling system shall be sized for local maximum ambient conditions, plus component cooling requirements. Cooling should be designed such that the internal panel temperature does not exceed 104F.
 - b. Cooling shall be via NEMA 12 filter fans. Two sets of spare filters shall be provided.

C. Service Rated Main Disconnect

A three-pole, main station disconnect shall be contained within the control enclosure. The main disconnect shall be non-fused and isolate all power to the control enclosure. The main disconnect shall have an operating handle mounted in the enclosure door, mechanically interlocked to prevent entry while disconnect is in the ON position.

D. Control Transformer

The control transformer shall provide 120-volt power to the pump station controls. The control transformer shall be protected on the primary side with appropriately sized fuses. The secondary side shall be protected by a group of supplementary miniature circuit breakers.

The following circuit breakers shall be provided for customer use:

- (1) 15 Amp, single-pole circuit breaker for customer SCADA communications panel.
- (1) 20 Amp, single-pole circuit breaker for customer vault sump pump.

E. Voltage Monitor

The control panel shall include an industrial three phase line voltage monitor. It shall protect the system against voltage unbalance, high/low voltage, phase loss, faulty power, incorrect sequencing, and rapid short cycling. It shall include a fully programmable LED backlit display. It shall be ICM Controls model ICM455 or approved equal.

F. Surge Protection

The control panel shall include an industrial grade surge protective device with individual thermally fused and protected MOVs. The surge protector shall provide 50kA per phase protection and shall be UL Listed 1449 for Type 1 SPD applications.

G. Secondary Control Circuit Breakers

Single-pole secondary distribution breakers with appropriate ratings shall supply power to each pump starter coil circuit, and control system.

H. Door-Mounted Pilot Devices

1. General Requirements

All devices shall be IP66 rated, providing complete protection from dust, as well as complete protection from high pressure water jets from any direction.

2. Motor Selector Switches

An HOA switch shall be provided for each motor circuit. Switches shall be modular, 3-position maintained, illuminated with green light, and include chrome metal bezel.

3. Speed Potentiometer

A speed potentiometer shall be provided for manual speed control of VFD driven motors. Potentiometer shall be a modular knob-type with chrome metal bezel and rated 5 kOhm.

4. Pilot Lights

System status indicating lights shall be provided, with a red light to indicate system faults and a green light to indicate when a pump is running. Lights shall be 22mm diameter and equipped with a light diffusing lens.

I. Variable Frequency Drives (VFDs)

1. Provide a dedicated VFD for all Motors.

2. Provide a Line Reactor per VFD in the system.

3. Variable Frequency Drive(s) shall be mounted inside the control panel enclosure, with each VFD isolated from main input power by use of a contactor to protect the VFD from power outside of tolerances.

4. The variable frequency drive shall be IGBT based with selectable carrier frequency up to 15 KHZ. The VFD shall include terminals for incoming power, motor output power and control terminals. All VFDs shall include an RS485 port built-in to the VFD for dedicated communication to the PLC.

5. The VFD shall generate a sine-coded, variable voltage/ frequency, three phase output for optimum speed control. The VFD shall incorporate power loss ride-through for a minimum of 2 seconds. VFD protective features shall include current limit, auto restart, short circuit protection, electronic motor overload protection, and ground fault protection. The VFD shall have a push button programming display for easy access to operation parameters. The VFD shall be protected on the primary side by a breaker of the appropriate amperage.

a. Overload capacity: 120% rated output current for one minute.

b. Voltage fluctuation: +10%, -15%.

- c. Sine wave, PWM, with full range, and automatic torque boost.
 - d. Frequency control range: 0 to 500 Hz.
 - e. Frequency accuracy: digital, 0.01 Hz, analog, .1%. Motor overload protection, instantaneous over current of 180% of rated output current.
 - f. Over voltage at 820vdc if 460v input.
 - g. Under voltage shall be user adjustable.
 - h. Momentary power loss: up to 2 second ride through.
 - i. Electronic ground fault.
 - j. Led capacitor charge indicator.
 - k. Input phase loss alarm.
 - l. Ambient temperature ranges 0 to 40 degrees c.
 - m. Humidity of 95% non- condensing allowed.
6. Manufacturer: ABB ACQ580 Series with ISO 9001 certification or pre-approved equal.

11.2.6 Pump System Controller

A. General Requirements

1. Non-Proprietary, Open-Source Programming

To better facilitate owner access to system servicing, the control system shall be non-proprietary and open source. Proprietary control systems shall not be accepted.

2. Dual Language HMI Interface

To ensure that the control system warnings and parameters can be safely understood by a wide range of operators, the interface shall have a user-selectable English or Spanish Interface.

3. Controller User Guide

The pump station manufacturer shall supply an owner's manual in digital form that includes graphic images of all touch screens, complete with explanations of all settings and modes.

B. Programmable Logic Controller (PLC)

1. PLC shall consist of a central processor with built-in dual port Ethernet and USB connection. Processor shall be capable of expanding up to 4 I/O expansion modules and include the following features:

- a. High-speed counter with 100 kHz maximum input frequency
- b. Pulse output with 100 kHz maximum output frequency
- c. Supply Power shall be 24V DC with a maximum 35A inrush current.
- d. Environmental Ratings

1. Class 1, Division 2 Hazardous Location
2. Operating Temperature: -25 to 65 degrees Celsius
3. 10 – 95% Relative Humidity
- e. Program storage
 1. Serial Flash Memory using embedded SD Card Slot
 2. RAM Backup via lithium battery capable of up to 4 years battery life.
- f. Communications Interface
 1. 1- USB Mini-B USB Standard 2.0
 2. 2 Ethernet Ports with RJ45 Connector
 3. Protocols
 - a) Modbus TCP
 - b) Modbus RTU
 - c) Ethernet/IP
 - d) BACnet
2. Manufacturer/Series
 - a. IDEC MicroSmart FC6A Plus
- C. Operator Interface
 1. General Requirements
 - a. The touchscreen shall allow operator access to all system settings and monitoring data.
 - b. The operator interface shall be a Color TFT LCD touchscreen.
 - c. The touchscreen shall be mounted to the motor control panel door.
 - d. A VFD control keypad is not an acceptable substitution for the digital operator interface.
 - e. The operator interface shall allow the user to adjust the system parameters & settings to the PLC program locally without requiring any additional equipment such as a laptop computer.
 - f. System must be capable of programming VFD's via touchscreen (for 3-phase systems only)
 2. Hardware Features
 - a. High Resolution Display with 640 x 480 pixels, with a minimum screen diagonal length of 7.0".
 - b. Backlight with 100,000 hours
 - c. Supply Power shall be 24V DC with maximum 30A maximum inrush current.

- d. Environmental Ratings
 - 1) NEMA 4X
 - 2) Class 1, Division 2 Hazardous Location
 - 3) Operating Temperature: -20 to 60 degrees Celsius
 - 4) 10 to 90% Relative Humidity, non-condensing

- e. Communications Interface:
 - 1) 1 Mini-B USB Standard 2.0
 - 2) 1 Ethernet Port with RJ-45 Connector
 - 3) RS232C or RS485

- f. Program Memory Storage
 - 1) 2GB SD Memory Card

3. Manufacturer/Series: IDEC High Performance Series or Pre-Approved Equal.

D. Monitoring Functions

1. System Dashboard

- a. Pressure, flow, and level status.
- b. Pump status, including lead pump designation, VFD frequency, torque, kw and current draw.
- c. Alarm conditions, with the ability to manually reset alarms.
- d. Current values of all system sensors, including pressure and flow.
- e. User selectable language icon.

2. Fault Log

The controller shall have a system fault log that displays the precise times of fault occurrences and recoveries, as well as message indicating the fault type. The fault log shall include a fault diagnosis utility that provides possible causes of and solutions to all system faults and warnings.

3. Trend Log

Trend graphing screen capable of detailing pressure, flow, and current data. Graphing function shall give the option to graph and plot a point at user adjustable intervals. All data shall be capable of being downloaded to a USB drive and accessible over Ethernet through FTP server. The trend log shall be .csv format.

4. Advance I/O diagnostics

HMI display must include utility screen that displays the status of all digital and analog inputs/outputs, including device tag name (i.e., pump #1 auto). This function must be accomplished without opening the control panel.

E. Control Functions

1. The LCD color touchscreen must be capable of alternating between English and Spanish during operation by an end-user accessible button located within an operator screen. The system diagnostic utility must be capable of being displayed in both English and Spanish.
2. Control system must be capable of adding industry standard components without program modifications. Including but not limited to:
 - a. Additional main pumps up to three
3. Pressure Settings
Pressure transmitter calibration, discharge pressure setpoint, and high/low pressure alarm/fault conditions.
4. Flow Settings
Low and high flow alarm conditions, flow meter sensor calibration settings, and total gallons pumped with user reset button and time/date stamp of last reset. In addition, a non-resettable flow totalizer.
5. Pump Settings
Pump detail screens showing total run hours of each pump since last reset and any modes, options, or functions specific to that pump. Must include troubleshooting utility as a visual display of pump permissive.
6. Remote Start/Stop Signal Relay
The PLC shall be able to start and stop the system based on a remote signal relay.
7. Pre-programmed Start-Up Routines
 - a. The PLC shall be programmed with various start-up routines that limit and/or delay the starting and acceleration of the pump—ensuring that excessive velocity and pressure do not damage the distribution system.
 - b. The program shall include individual routines for initial start-up, mainline fill, re-start after a power outage, and re-start after a system fault.
 - c. The operator shall be able to adjust the timing of the routines via the operator interface.
8. Password Protection
 - a. Unique user selectable password.
9. Loading and Saving System Default Settings
The system shall allow the operator to Load Factory Default PLC settings, Save New Operator settings, and Load previously saved Operator PLC settings.
10. The PLC shall allow the operator to change the system date and time.
11. Scheduler
 - a. 7 days per week scheduler.

- b. Multiple run times per day and speed/flow rate.
- c. User assignable device scheduler consisting of 3 unique daily schedules for each applicable device.
- d. Devices included but not limited to:
 - 1) Main pumps
 - 2) Jockey/PM pump
 - 3) Fill pump
 - 4) Master valve
 - 5) Fill valve

12. System Protections

- a. Controls shall shut down the pump station in the event of the alarm conditions described in this section, as well as otherwise indicated. The system controls shall attempt to restart the system after alarm shutdown or loss of power. After a user-adjustable number of attempts to re-pressurize the system, the controls shall go into hard shut down and remain so until manually reset.
- b. Low Flow Shutdown. The PLC shall automatically shut down the system if there is no, or too little flow, based on signals received from a flow switch. The low flow shutdown shall have a user adjustable time delay.
- c. High Pressure Shutdown. In addition to the pressure data received from the pressure transmitter, the PLC shall automatically shut down the system based on signals from a high-pressure switch.
- d. Electrical Fault Shutdowns. Incoming power high, low, and imbalance limits. Shut-down and restart time delays shall be user-adjustable.
- e. Analog Transmitter Failure. Input levels of all connected transmitters and meters shall be monitored for failures.
- f. Motor starter failure. Circuit breaker and/or motor overload contacts shall be monitored to indicate a motor failure.

F. Communications

1. Web-Based Remote Monitoring and Control

- a. The pump station control panel shall include a web-based remote control and monitoring system.
- b. Remote Monitoring must be capable of alternating between English and Spanish during operation by an end-user.
- c. Remote monitoring and control system shall be non-proprietary and not require a 3rd Party Application.
- d. The pump station shall be capable of being remotely monitored from any device with a web browser, such as a PC, tablet, or smart phone.

- e. Monitoring of pump station shall be seamless to the user via a web browser that shall be started by simply clicking on a hyperlink. Software shall not be required to be installed or configured on the user's computer.
- f. The web page shall include full graphic representation of the pump station and its features and shall be capable of remotely changing all operating parameters of the pump station.
- g. The pump station shall automatically send email or text alerts regarding warnings and faults and specify the station and specific fault/alarm.
- h. The pump station manufacturer shall supply all required communication hardware except computer and computer accessories, including all necessary direct burial cable and antennas.
- i. A cellular modem shall be mounted and wired inside control panel enclosure.
- j. The connection shall be capable of communicating to the pump station over cellular modem, high speed Ethernet, or fiber optic cable.

11.12.10 Sump Pump

[CSI 22 14 29.16]

Part 1 - General

Performance Requirements

Minimum performance of 10 gpm at 5-foot lift.

Part 2 - Products

Manufacturers

Sump pump: equal to **Myers MS Series** sump pump.

Materials

Provide a sump pump with corrosion resistant material motor housing and an oil-filled motor with thermal overload protection. Solids handling up to 1/4-inch solids. Dual ball-bearing motor and double lip shaft seal. Case iron volute case. Sump pump shall be controlled by integral float switch.

Division 15

Mechanical

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

[CSI 33 05 00]

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.

References

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

Submittals

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

- Ductile iron pipe
- HDPE pipe and fittings
- Ductile iron fittings
- Control valves
- Fire hydrants
- Flow meters
- Pressure gauges
- Other mechanical components listed in this division or required by the Engineer

Part 2 – Products

Materials

All valves, meters, hydrants, 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.

Part 3 - Execution

Field Quality Control

Pressure gauges used for testing and commissioning shall be in good working order and scaled appropriately for the test. Scale range shall not exceed 200% of the test pressure. For example, for a 250 psi test, the gauge scale shall not exceed 500 psi. The Owner has the right to reject any gauges that are suspect in their accuracy.

If any components that have been approved by the Owner are not rated for the specified system test pressure, remove or isolate those components during pressure testing in a method acceptable to the Owner. Said components must still be pressure tested in their permanent configuration at their individual test pressure rating.

Cleaning

Potable Water Systems

After preliminary purging of the system, chlorinate entire potable water system in accordance with AWWA C651 for flushing and disinfecting water mains, and in accordance with all other pertinent rules and regulations. Operate each valve during chlorination period to provide contact. Retention time shall be 24 hours minimum, or 48 hours if the water temperature is less than 41° F. Total retention time shall not exceed 3 days after which the chlorinated water shall be immediately flushed out.

Upon completion of disinfection, thoroughly flush the entire potable water system at a velocity of 3 feet per second, allowing four complete exchanges of contents. Do not discharge chlorinated material to storm or surface water systems without thoroughly neutralizing the chlorine residual remaining in the water in accordance with AWWA C655 for field dechlorination.

For pipe and fittings that cannot be disinfected as described above, such as those used for final connections to live systems, swab with 200 ppm chlorine solution or immerse in a 50 ppm chlorine solution.

After final flushing and before the water pipe is connected to or placed in service, the Contractor shall request that the Owner arrange to have samples collected for bacteriological testing. At least one sample will be collected from each branch of the pipe. A copy of the test results shall be delivered to the Contractor for review. The Contractor shall not connect the water pipe to the existing distribution system prior to acceptance of the bacteriological test by the Engineer.

The Owner will pay the laboratory fee for the initial bacteriological test. The Contractor will pay for future testing if the initial test results are unsatisfactory.

15.10 BURIED PIPE INSTALLATION

[CSI 33 05 05]

Part 1 – General

Site Conditions

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

Part 3 - Execution

Preparation

Stringing of pipes in advance of pipelaying may occur but may not create a traffic hazard or block access to roads, driveways, or private property without approval from the local traffic authority and affected property owners. Pipe shall not be strung out more than two weeks in advance of installation. Any pipe or materials that will not be installed for two weeks must be stockpiled at a site procured by the Contractor or as provided in this contract.

Pothole ahead of pipe-laying a sufficient distance at located 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.

Provide the results of potholing to the Owner no less than two working days in advance of utility installation. Provide a written record of size, materials, and locations for found utilities to an accuracy of 0.5 foot horizontal and 0.1 foot vertical. Failure to record locations clearly and legibly will result in non-payment.

Installation

Install pipes to the depth shown on the trench detail, unless superseded by depth shown on the profile. Unless specified otherwise, install pipe to the following tolerances:

- Pressure pipes: 0.5 feet horizontal, 0.2 feet vertical. Regardless of vertical tolerance, do not create new high points not otherwise shown on the plans.
- Gravity pipes: 0.5 feet horizontal, 0.03 feet vertical. Regardless of vertical tolerance, do not lay pipe with reverse slope.

All non-metallic pipe, including service and air valve lines, shall include a tracer wire taped every 5 feet to the top of the pipe. Loop tracer wire to the surface in accessible locations such as valve boxes, meter vaults, or other surface access. If no access is available for more than 1,500 feet, provide a valve box specifically for the tracer wire. Wire shall be solid UF, 12AWG minimum for 2,000 foot runs and less, or 10AWG for runs longer than 2,000 feet.

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

[CSI 33 05 05]

15.11.11 Pressure Pipe Installation

[CSI 33 05 05]

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.

Scheduling

Connections to live mains shall be made only after contacting the Owner 48 hours prior (not including weekends or holidays). Connections to live mains may only be performed on Tuesdays, Wednesdays, or Thursdays unless permission is obtained otherwise from the Owner. Connections shall not be performed on Owner recognized holidays.

Service to customers shall not be interrupted for more than 8 hours and must occur between the hours of 8:00 AM and 5:00 PM. The Owner will notify customers no less than 24-hours in advance of service interruption. If, in the opinion of the Owner, the Contractor has not adequately scheduled the work to occur within these timeframes, the Owner may cancel the service interruption. No time or monetary compensation will be provided for such cancellation.

If a service interruption extends beyond these timeframes and, in the opinion of the Owner, the extended service interruption was caused by the Contractor's failure to properly schedule or perform the work, the Owner has the right to charge liquidated damages in the amount of one-half working day for each occurrence.

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.

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 Owner.

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.

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

Trenches shall be excavated to a sufficient width to allow for pipe installation, compaction equipment, and shoring when necessary. Maximum trench width shall not exceed 36-inch plus OD for 4-inch and larger pipe, or 24-inch plus OD for 3-inch 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 8-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 directly above the pipe. Compact trench backfill in lifts not exceeding 18-inches loose-thickness.

Flanged Joint Assembly

1. Bolt holes of flanges shall straddle the horizontal and vertical centerlines of the pipe. Clean flanges by wire brushing before assembling. Clean flange bolts and nuts by wire brushing; lubricate bolts with graphite or oil.
2. Insert the nuts and bolts (or studs), finger tighten, and progressively tighten diametrically opposite bolts uniformly around the flange to the proper tension. Bolts shall have minimum of two threads showing beyond the nut.
3. Tighten joints carefully to prevent strain upon valves, pumps, and other equipment.
4. If flanges leak under pressure testing, loosen or remove the nuts and bolts, reset or replace the gasket, reinstall or re-tighten the bolts and nuts, and retest the joints. Replace the gasket if damaged.

Field Quality Control

Make no permanent connections to the existing water system until the new water main has been tested and approved by the Owner. No temporary connections of the untested, unapproved new water main to the existing water system shall be made without the installation of a double check valve assembly between the new water main and the existing water system. The Contractor shall verify the size, material, and location of the existing main at the connection point prior to installing the new water main.

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

15.11.50 Trench Patching

[CSI 32 01 17]

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 Plans. Trench patches shall be installed no later than the second Friday following excavation for trenches parallel to the road, and no later than two days following excavation for trenches crossing the road and across intersections.

On trenches parallel to the roadway, provide and maintain crushed surfacing base course to a smooth and level grade with the existing pavement until final patching is complete.

On trenches crossing the roadway or intersections, provide and maintain asphalt hot or cold

mix until final patching is complete.

Maintenance

Crushed surfacing used for temporary patching 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.

15.13 Above Grade Mechanical Installation

15.13.02 Exposed Piping Installation

[CSI 40 05 05]

Part 1 – General

Summary

This section is for exposed major pressure pipe systems such as booster stations, lift stations, treatment facilities, control valve vaults, etc. Testing of minor service plumbing systems shall follow the IPC/UPC.

Part 3 - Execution

Installation

When systems include drain ports that operate automatically, provide ancillary drainage plumbing. Route pilot, air valve, pump seal, and other drains to the structure drain using schedule 40 PVC with diameter equal to the device drain outlet diameter, but no smaller than ½-inch. Copper pipe may be used only with Owner approval. Multiple drain lines may be connected together if approved by the Owner. Secure to fixed structures or large pipe using pipe clamps or plastic zip ties. Do not install drain pipe where it will be a tripping hazard or interfere with normal maintenance. Slope downwards to termination. Terminate the outlet two times the drain pipe diameter above the drain grate or funnel and cover end with #24 stainless or aluminum screen. Install a union near the start of each drain pipe to allow disassembly without cutting.

Preparation

Provide all personnel and equipment required and complete all tests required to demonstrate the integrity of the finished installation for the approval of the Owner and all agencies having jurisdiction.

Secure the pipe and fittings to prevent movement under pressure. Furnish and install temporary blocking where permanent blocking is not required and remove it after testing.

All pumps, gauges, plugs, saddles, corporation stops, miscellaneous hose and piping, and other equipment necessary for performing the test shall be furnished and operated by the Contractor. Gauges used in the test may be required by the Owner to be certified for accuracy

at a laboratory.

Tests/Inspection

Hydrostatic Pressure Testing

Test all water systems and appurtenances with a hydrostatic test pressure equal to that specified under Division 1.81.40 of these Specifications. If not stated, the hydrostatic testing pressure shall be 150 psi over working pressure or 250 psi, whichever is greater. The Owner has the right to require more stringent test criteria than stated in this specification or in the pressure rating section if the Owner determines that field conditions warrant such measures.

Pump suction cans (aka barrels) for can-mounted pumps shall be hydrostatically pressure tested prior to installation on the job site.

Fill the piping systems with water and allowed to stand under pressure for a minimum of 24 hours to allow air to escape and allow the lining of the pipe to absorb water. The Owner will furnish the water necessary to fill the pipelines for testing purposes at a time of day when sufficient quantities of water are available for normal system operation. The Contractor is responsible for the proper disposal of any waste, including water.

Visible leakage is unacceptable and shall be corrected. Should the test section fail to meet the specified pressure test successfully, the Contractor shall locate and repair the defects and then retest the pipeline at his own expense.

Prior to calling out the Owner to witness the pressure test, the Contractor shall have all equipment completely set up and ready for operation and shall have successfully performed the test to assure that the pipe is in a satisfactory condition. The Owner shall witness the test. If the test does not pass inspection for any reason, additional trips required to witness another test shall be done at the Contractor's expense.

Before applying the specified test pressure, expel air completely from the system.

The test shall be accomplished by pumping the piping system up to the required pressure; stop the pump for a minimum of 15 minutes up to a maximum of 60 minutes as directed by the Owner, and then pump the system up to the test pressure again. During the test, the section being tested will be observed to detect any visible leakage. A clean container shall be used for holding water for pumping pressure on the system being tested. This makeup water shall be sterilized by the addition of chlorine to a concentration of 50 mg/l (ppm).

Sections to be tested shall be isolated and pumped to test pressure. Test pressure shall be sustained for a minimum of 60 minutes with no loss in pressure throughout the test duration with Owner present and on site throughout test duration. If test results show drop of pressure, Contractor shall repair leaks and retest until testing is passed in presence of Owner. Owner shall bleed off pressure from pump to piping connection once test is passed to verify system piping was tested.

15.18 Buried Piping Inspection and Testing

[CSI 33 05 05]

15.18.02 Buried Pressure Pipe Inspection and Testing

[CSI 33 05 05, 33 05 05.31]

Part 3 - Execution

Preparation

Provide all required personnel and equipment and complete all tests required to demonstrate the integrity of the finished installation for the approval of the Owner and all agencies having jurisdiction.

Backfill the pipeline trench sufficiently to prevent movement of the pipe under pressure. All thrust blocks shall be in place and sufficiently cured to reach design strength before testing. Furnish, install, and remove temporary blocking where permanent blocking is not required and remove it after testing.

All pumps, gauges, plugs, saddles, corporation stops, miscellaneous hose and piping, and other equipment necessary for performing the test shall be furnished and operated by the Contractor. Gauges used in the test may be required to be certified for accuracy at a laboratory by the Owner. Gauge range shall not exceed 200-percent of the test pressure.

Tests/Inspection

Water Main Flushing

The existing water supply cannot provide sufficient flow capacity to flush the main at 2.5 feet per second. The Contractor shall supply the source of water for proper flushing or shall pig the main. All tanks, trucks, and equipment shall be disinfected per Department of Health publication for Truck Transportation (latest version) DOH 331-063.

The pipeline, valves and other components not already flushed by polypig shall be flushed or swept clean. Flushing shall allow four complete exchanges of water and remove any obvious debris.

The following blow off or hydrant sizes are the minimum required for flushing with a supply pressure of 40 psi minimum and no more than 20 feet of hose is used, unless stated otherwise.

Main Diameter	Flow at 2.5 fps	Blowoff and Backflow Device Diameter	Hydrant Ports <= 20' Hose	Hydrant Ports 21' – 100' Hose
8"	400 gpm	(1) 2"	(1) 2.5"	(2) 2.5"
12"	900 gpm	(2) 2" or (1) 3"	(2) 2.5" or (1) 4"	(1) 4"
16"	1,600 gpm	(4) 2", or (2) 3" or (1) 4"	(1) 4"	(1) 2.5" and (1) 4"

Hydrostatic Pressure Testing

Cover any exposed pressurized PVC or HDPE pipe to protect from direct sunlight if the air temperature is above 70°F.

Test all pipelines and appurtenances under a hydrostatic test pressure equal to that specified under Division 1.81.40 of these Specifications. If not stated, the hydrostatic testing pressure shall be 150 psi over working pressure or 250 psi, whichever is greater, measured at the low point of the test section. The Owner has the right to require more stringent test criteria than

stated in this Specification or in the pressure rating section if it is determined that field conditions warrant such measures.

An acceptable test of pipe and fittings buried under or adjacent to concrete slabs or other structures must be performed prior to construction of the structure.

The Owner will furnish the water necessary to fill the pipelines and for testing at a time of day when sufficient quantities of water are available for normal system operation.

Fill the pipelines with water and allow to stand under pressure for a minimum of 24 hours to allow air to escape and allow the lining of the pipe to absorb water. The Contractor is responsible for the proper disposal of any waste, including water.

Fittings and sections of pipe that cannot be pressure tested, such as connections to the existing system, shall be left exposed for a visual inspection under system pressure. Any visible leakage shall be corrected by the Contractor to the satisfaction of the Owner regardless of the allowable leakage specified herein. Should the test section fail to meet the specified pressure test successfully, the Contractor shall locate and repair the defects and then retest the pipeline at their expense.

Prior to calling out the Owner to witness the pressure test, the Contractor shall have all equipment completely set up, ready for operation, and have successfully performed the test to assure that the pipe is in a satisfactory condition. The Owner shall witness the test; if the test does not pass inspection for any reason, additional trips required to witness another test shall be done at the Contractor's expense.

Before applying the specified test pressure, air shall be expelled completely from the pipe, valves, and appurtenances.

The test shall be accomplished by pumping the main up to the required pressure; stop the pump for a minimum of 15 minutes up to a maximum of 60 minutes as directed by the Engineer, and then pump the main up to the test pressure again. During the test, the section being tested shall be observed for visible leakage. A clean container shall be used for holding water for pumping pressure on the main being tested. This makeup water shall be sterilized by the addition of chlorine to a concentration of 50 mg/l (ppm).

Sections to be tested shall normally be limited to 1,500 feet. The Owner may require that the first section of pipe, not less than 1,000 feet in length, installed by each of the Contractor's crews be tested in order to qualify the crew and/or the material. Pipe laying shall not continue more than an additional 1,000 feet until the first section has been tested successfully.

The quantity of water required to restore the initial hydrostatic pressure shall be accurately determined by either: 1) pumping from an open container of suitable size such that accurate volume measurement can be made by the Owner; or 2) by pumping through a positive displacement water meter with a sweep unit hand registering one gallon per revolution. The meter shall be approved by the Owner.

For the test to be considered acceptable, the quantity of water lost from the main shall not exceed the number of gallons per hour as listed in the following table.

Allowable Leakage per 1,000 feet of pipeline* - gph
Nominal Pipe Diameter* - Inches

psi	6"	8"	10"	12"	16"	20"	24"
450	0.86	1.15	1.43	1.72	2.29	2.87	3.44
400	0.81	1.08	1.35	1.62	2.16	2.70	3.24
350	0.76	1.01	1.26	1.52	2.02	2.53	3.03
275	0.67	0.90	1.12	1.34	1.79	2.24	2.69
250	0.64	0.85	1.07	1.28	1.71	2.14	2.56
225	0.61	0.81	1.01	1.22	1.62	2.03	2.43
200	0.57	0.76	0.96	1.15	1.53	1.91	2.29

*If the pipeline being tested contains sections of various diameters, the allowable leakage will be the sum of the computed leakage for each size or, for those diameters of pressures not listed, will be calculated with the formula stated in Section 7-09.3(23) of the Standard Specifications.

A loss of pressure exceeding 1.5-percent of test pressure within 15-minutes will also constitute failure.

15.18.03 Valve Testing

Part 3 - Execution

Testing

All valves shall be pressure tested. Do not exceed the rated working pressure of the valve when operating the valve. Bleed off test pressure prior to operating. Check all valve bonnet fasteners for tightness.

Pre-Installation

All buried valves shall be pressure tested outside the trench. Gate valves shall be tested on one side of the closed seat. Butterfly and eccentric valves must be tested on both sides of the closed seat.

All buried butterfly and eccentric valves shall be pressure tested outside the trench on both sides of the closed seat.

Valve clusters shall be pre-assembled and tested as a unit. Provide end plugs, blind flanges, assembly kits, and all appurtenances necessary for pressure testing. Valve testing shall use the following procedure.

1. Close the valve.
2. Install plug or flange (with test port).
3. Connect test apparatus and pump.
4. Pressurize to test pressure. 250 psi for gate valves, 150 psi for butterfly and eccentric valves, or manufacturer's listed test pressure if less.

5. There shall be zero drop in pressure or visible leakage for one minute. This includes leaking through the shaft packing.
6. If test fails, check for defects, correct, and retest. Valves that do not pass testing will be replaced by the Contractor at no additional cost to the Owner.

Post-Installation

Test all valves for water tightness under differential working pressure. To perform this test, pressurize pipe section with valve in place, close valve and relieve pressure on seat side of the valve. The valve shall not pass water during a 5-minute test period.

Operate all valves at least once from closed-to-open-to-closed positions while valve is under working (not test) pressure.

15.20 PIPE AND FITTINGS

15.21 Common Work for Pipe and Fittings

[CSI 33 05 00 or 40 05]

Part 2 - Products

Components

Under no circumstance shall the fasteners be of lesser strength or higher corrosive potential than the materials being connected. If 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 two threads extend beyond the face of the nut. Non-submerged flange bolts to be ASTM A307 Grade A, zinc plated.

For submerged conditions, connection bolts shall be Nitronic 60 steel. Nuts and washers shall be Stainless Steel, minimum grade 304 in raw domestic or treated domestic water and minimum grade 316 in treatment processes and sewage applications. Minimum grade 317 for acidic transport. Bolts and nuts shall meet ASTM F593 and F594. Stainless steel shall not be used where in contact with chlorine or chlorine solutions. Stainless steel bolts may be used in lieu of Nitronic but must be assembled using appropriate lubricant or tape. For installations in domestic water, lubricant, or tape must be approved for domestic water service. Cobas Stainless Steel Thread Sealing Tape or approved equal.

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 unless directed otherwise by the Owner.

Part 3 - Execution

Construction

All piping and related equipment to be joined 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.

Steel and stainless steel threads shall be protected against galling using steel thread sealing tape equal to Cobas steel thread sealing tape. Tape shall be specific to the steel type used.

15.21.03 Pipe for Casings

[CSI 33 05 09.53]

Part 1 - General

Submittals

Submittal must show the casing runner is appropriate for the type and size of casing and carrier pipes on this project.

Part 2 - Products

Materials

Casing pipe for structural conditions such as jacking or boring shall be welded steel as shown on the plans.

Casing pipe for conditions other than jacking or boring, when shown on the plans, or directed by the Owner, or due to proximity of potable water to non-potable water (sanitary sewer, irrigation, raw water) to be no thinner than SDR 25 (165 psi) PVC (C900 or C905); 3/16" wall steel; CL 50 Ductile Iron; or DR 13.5 (160 psi) HDPE. Inside diameter to be no less than that shown on the plans, and as necessary for clearance of pipe bells, runners, and exterior restraints.

Casing end-seals shall comply with the following conditions:

- Buried conditions where soil moisture is noticeable shall be slip-on type (PSI model DU, Calpico model C, GPT Link-Seal, or equal) or a split style that is sealable (Calpico model W or equal).
- Buried conditions where soil is dry may be the same as for moist soil conditions or may be split-style (Calpico model V, PSI model KO, or equal). Split-type must locate the split on the springline of the pipe, oriented with upper overlapping lower, and sealed at the split with polyvinyl tape or butyl adhesive after installation.
- Exposed conditions may use the above styles, but material must be UV resistant. EPDM, Butyl, coal-tar fiberglass, or rubber with UV resistant additives are acceptable. Nitrile (NBR, Buna-N), neoprene, natural rubber, and SBR (Buna-S) are not acceptable. Wrap exposed end seals with 1/4" stainless steel wire mesh to prevent damage by animals.

Casing runners must be manufactured products (PSI, Calpico, or approved equal), not blocks and straps, and shall comply with the following conditions.

- For metal carrier pipe, runners must not have metal contact with the pipe, they must be rubber lined or fusion epoxy coated. Runner skids must be non-metallic.
- Casing runners are not required for carrier pipes 6-inch and smaller that have slip (glued) joints and not bells, or fusion welded HDPE, unless shown otherwise on the

plans.

- Number and spacing of runners as shown on the plans, but no less than as recommended by the manufacturer. At a minimum, spacing no farther than 8 feet apart, a runner no farther than 3 feet from each end of the casing, and a runner no farther than 2 feet from each carrier pipe joint.

15.22 Metal Pipe and Fittings

15.22.02 Ductile Iron Pipe and Fittings

[CSI 33 05 19 or 40 05 19]

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 1.81.40 unless listed as more stringent below.

The pipe thickness shall not be less than that of Class _52_ pipe for non-flanged pipe.

The pipe thickness for fire hydrant runs shall not be less than Class 52.

Flanged joints shall conform to ANSI Standard B16.1 and be of the class shown on the plans.

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.

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 where ductile iron is called out on the plans. Ductile iron fittings shall be short-body, cement-lined, and for the pressure rating noted in Division 1.81.40. 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 Styrene Butadiene Rubber (SBR, Buna-S), neoprene, nitrile rubber (NBR, Buna-N), chlorinated butyl, or cloth-inserted rubber. Gaskets shall be full-face. Gaskets shall be a minimum 1/8-inch thick.

Do not use SBR, nitrile, or neoprene in fittings used for air transport in wastewater treatment systems.

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

Finishes

For above grade and exposed pipes, including those inside structures, prepare surfaces and coat the exterior per Division 9.91.13.13.

Part 3 - Execution

Installation

Install ductile iron water mains in accordance with AWWA C600. Provide tools and equipment, including any special tools required for installing each 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.

15.22.04 Stainless Steel Pipe and Fittings

[CSI 33 05 23 or 40 05 23]

Part 1 - General

Design Requirements

Welding shall withstand the hydrostatic testing pressure as stated in Division 1.81 without leakage.

The pipe wall thickness shall be as required by Division 1.81 and the following table.

Pipe Wall Thickness (inches)
Nominal Pipe Diameter

Working Pressure	1"	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	24"	30"
0 - 100 psi	0.109 ⁽¹⁾	0.109 ⁽¹⁾	0.120 ⁽¹⁾	0.120 ⁽¹⁾	0.134 ⁽¹⁾	0.148 ⁽¹⁾	0.165 ⁽¹⁾	0.180 ⁽¹⁾	0.188 ⁽¹⁾	0.188 ⁽¹⁾	0.188 ⁽¹⁾	0.250	0.312 ⁽¹⁾
101 - 200 psi	0.133 ⁽²⁾	0.154 ⁽²⁾	0.216 ⁽²⁾	0.237 ⁽²⁾	0.280 ⁽²⁾	0.322 ⁽²⁾	0.365 ⁽²⁾	0.375 ⁽²⁾	0.375	0.375	0.375	0.375	0.375
201 - 400 psi	0.179 ⁽³⁾	0.218 ⁽³⁾	0.300 ⁽³⁾	0.337 ⁽³⁾	0.432 ⁽³⁾	0.500 ⁽³⁾	0.500 ⁽³⁾	0.500 ⁽³⁾	0.500	0.500	0.500	0.500	0.625

⁽¹⁾ Per Schedule 10s; ⁽²⁾ Per Schedule 40s; ⁽³⁾ Per Schedule 80s

Part 2 - Products

Materials

All stainless-steel pipe and fittings shown on the Plans in direct bury applications shall meet ASTM A312, Type 304L or 316L, Welded. All heat tints and chromium depleted layers caused by welding shall be removed by pickling prior to on-site delivery.

Above-ground stainless steel piping and fittings shall meet ASTM A778 and A774 respectively, welded. ASTM A312 is also acceptable. Piping systems shall be pickled after welding and prior to on-site delivery. Fittings shall be beveled plain-end for welding, mechanical joint connection, or flange as shown on the Plans.

Part 3 - Execution

Installation

Welding of pipe shall be per ASME Welding Code.

Passivate field welds per Division 5.05.

15.22.07 Corrugated Metal Pipe

[CSI 33 05 27]

Part 1 - General

Submittals

Provide documentation showing the pipe and appurtenances meets the AASHTO and / or ASTM ratings called for in the WSDOT Standard Specifications.

Part 2 - Products

Materials

Pipe and appurtenances for culverts shall comply with WSDOT 7-02 Culverts. Materials may be zinc coated or aluminum coated steel (WSDOT 9-05.4) or aluminum (WSDOT 9-05.5). Metal pipe thickness as shown on the Culvert Pipe Schedule in WSDOT 7-02.

Pipe and appurtenance for storm drains shall comply with WSDOT 7-04 Storm Sewers. Materials may be zinc coated or aluminum coated steel (WSDOT 9-05.10) 02420 or aluminum (WSDOT 9-05.11). Metal pipe thickness as shown on the Storm Sewer Pipe Schedule in WSDOT 7-04 Storm Sewers unless stated otherwise on the plans. Storm piping shall be joined with couplings with sealed gaskets.

Corrugated polyethylene pipe is allowed for culverts and storm drains, see Division 15.23.10 of these specifications.

Part 3 - Execution

Installation

Installation shall comply with WSDOT 7-02 for culverts and WSDOT 7-04 for storm sewers unless shown otherwise on the plans.

15.22.08 Brass/Bronze Pipe and Fittings

[CSI 33 05 12 or 40 05 12]

Part 1 - General

References

Brass to be low-lead content in compliance with NSF/ANSI 372 to have no more than 0.25 percent lead content.

Brass nipples: ASTM B687

Brass fittings: ANSI/ASME B16.15 (threaded) Class 125 lb. (up to 200 psi water), 250 lb. (up to 400 psi water); B16.18 (soldered).

Part 2 - Products

Materials

Brass pipe, nipples, and fittings to have threaded ends.

15.22.09 Ductile Iron True Restrained Joint Pipe and Fittings

[CSI 33 05 05.18, 33 05 09.33, 33 05 19.11]

Part 1 - General

Related Sections

- Division 15.22.02 Ductile Iron Pipe and Fittings

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 1.81.40 unless listed as more stringent below.

The pipe thickness shall not be less than that of Class _52_ pipe.

Submittals

Submit layout drawings of all restrained sections. Manufacturer shall determine the correct number of restrained pipes based on plan callouts. Pipe lengths shown on the plans are measured between the centers of fittings. Manufacturer shall fabricate pipe lengths to account for this method of measurement. Under no circumstances shall restrained pipe lengths be less than that called out on the plans or details.

Submit for review adapters for fittings or valves that are not available with the TRJ system.

Part 2 - Products

Manufactured Units

Ductile iron fabricated restrained joint pipe (aka True Restrained Joint) shall be manufactured in accordance with requirements of ANSI/AWWA C151/A21.51. TRJ shall be a spigot bead-lock system. Use a flexible TRJ system except where specifically identified otherwise.

Flexible System: Joints that retain deflection flexibility after assembly. TR-Flex (US Pipe, McWane Ductile), American Flex-Ring, or approved equal.

Fittings and Valves

Fittings and valves may use the same TRJ system as the push-on pipe or may use an external gripper-tooth restraint system (EBAA Mega-Lug or approved equal).

Finishes

For above grade and exposed pipes, including those inside structures, prepare surfaces and coat the exterior per specification Division 9.91.13.13.

Part 3 - Execution

Installation

Provide tools and equipment, including any special tools required for installing each type of joint used.

Short lengths of TRJ pipe supplied by the manufacturer shall be used whenever possible to provide the proper spacing of valves, tees, or special fittings. After a restrained section has been assembled, the joints shall be extended to their full length prior to backfilling. The preferred method for TRJ pipe installation is to place the fitting or valve first, then lay TRJ pipe away from the fitting or valve. Any cuts necessary to close gaps shall be made on the adjoining standard push-on joint pipe, not on the restrained sections. Alternate methods for installation must be approved by the Owner. "Field Kits" will not be allowed unless prior approval is given by the Owner.

15.23 Non-Metal Pipe and Fittings

15.23.02 High Density Polyethylene (HDPE) Pipe and Fittings

[CSI 33 05 33.23]

Part 1 - General

This specification covers the material (pipe and fittings), joining methods and general installation practice for high density polyethylene pipe (HDPE) piping systems for water as indicated on the Plans.

Submittals

The Contractor shall list a minimum of two successful projects in which butt fusion welding of HDPE pipe was constructed and installed under their supervision with the HDPE submittal.

Provide training certificates for personnel performing pipe fusion. Fusion shall be completed by someone trained by the Welding Equipment manufacturer for Butt fusion and electrofusion.

Details of fittings and specials such as elbows, tees, outlets, connections, test bulkheads, nozzles or other special items where shown on the Plans. All connections to jointed gasketed pipe materials, valves or fire hydrants must be restrained and supported independently to withstand the pressure transients, soil settlement, and external loading conditions.

Project Conditions

The proposed construction area for this project presents certain field conditions and factors

that must be adequately planned for both during the bid and during construction to ensure the success of this project. Some factors the Contractor shall consider include, but are not limited to, the following.

Access to the construction areas is limited and it is recommended that the Contractor visit the site prior to supplying a bid.

The Contractor shall devise a plan for the installation method of the HDPE pipe giving consideration to aforementioned conditions/factors and any other potential conditions/factors that may arise during construction. The Contractor shall submit this plan to the Project Engineer prior to commencing construction. This plan shall detail the following:

- Construction Equipment and Materials – Describe the construction equipment and materials to be used to construct the improvements. Indicate how and where they will be mobilized on site. Describe how they will be demobilized.

Part 2 - Products

Materials

Pipe supplied under this specification shall have a minimum inside diameter of 8 inches. The Standard Dimension Ratio (SDR) shall be SDR-9.

Pipe and fittings shall have a pressure rating of 250 psi.

All material shall be manufactured from a PE 4710 resin listed with the Plastic Pipe Institute (PPI) as TR-4. The resin material shall meet the specifications of ASTM D 3350 with a minimum cell classification of 445474C. HDPE pipe and fittings shall contain no recycled compounds except that generated in the manufacturer's own plant from resin of the same specification from the same raw material. HDPE products shall be homogeneous throughout and free of visible cracks, holes, foreign inclusions, voids, or other injurious defects.

The polyethylene compound shall be suitably protected against degradation by ultraviolet light by means of carbon black of not less than 2-percent. The manufacture of the HDPE resin shall certify the cell classification indicated.

Pipe sizes 3-inches and larger shall have a manufacturing standard of ASTM F 714, while pipe smaller than 3-inches shall be manufactured to the dimensional requirements listed in ASTM D 3035.

Dimensions and tolerances shall be as specified in AWWA C901 (3-inch and smaller) or AWWA C906 (4-inch to 63-inch).

If pipe will carry potable water the piping and fittings shall meet NSF-61.

Connections to Ductile Iron

Connections of HDPE to ductile iron shall be with an HDPE stub-end fitting and slip-on ductile iron metal flange installed at the ends of the HDPE pipe that will be connected to the ductile iron pipe. Stub-end fittings shall be installed using the thermal butt fusion welding method. Stub-end fittings shall have the same pressure rating as the HDPE pipe. Metal flanges shall have the same bolt pattern and pressure rating as the ductile iron fitting to which they will be connected.

HDPE Fittings

Fittings made of HDPE as called out on the Plans shall be made from the same materials as the pipe and welded and constructed as described in this section. Fittings shall meet the working and hydrostatic testing pressures of 250 psi.

Molded fittings shall comply with the requirements of ASTM D 3261

Socket fittings shall meet ASTM D 2683.

Mechanical Fittings

The use of mechanical coupling and saddles shall be approved by the owner or engineer prior to installation. Mechanical Fittings shall be designed for use and compatible with HDPE pipe, including SS stiffeners when required by manufacturer.

Pipeline Locating Materials

Detectable Marker Tape- Plastic marker tape shall be 5 Mil minimum thickness with a solid aluminum core of 0.35 Mil minimum thickness and a minimum width of 2-inches. The background of the tape shall be colored based on pipe service with black lettering continuously printed. Marker tape shall have a minimum 35 lbs. per inch tensile strength. The installation of the tape shall be at 18 inches below finish grade.

Tracer Wire- All HDPE pipe 4-inch and greater shall be installed with an extra high-strength, copper clad steel tracer wire including 45 Mil HDPE jacket that has a minimum average break load of at least 1,150 lbs. The jacket shall be colored based on pipe service, with blue for potable water or green for sewer. Tracer wire gauge shall be 12 AWG, 10 AWG, or 8 AWG depending upon application and installation procedure. This wire shall be continuous and brought up in the valve boxes at the ends of each line segment with splices made only by methods per the equipment manufacturer's recommendation. All miscellaneous splicing components shall be furnished and installed by the Contractor.

Part 3 - Execution

Shipping and Handling

HDPE pipe shall be packaged in a manner designed to deliver the pipe to the project neatly, intact, and without physical damage. The transportation carrier shall use the appropriate method and intermittent checks to verify the pipe is properly supported, stacked and restrained during transport such that the pipe is not nicked, gouged, or physically damaged.

HDPE pipe shall be stored on clean, level ground to prevent undue scratching or gouging of the pipe. If the pipe must be stacked for storage, such stacking shall be done in accordance with the pipe manufacturer's recommendations. The handling of the pipe shall be done in such a manner that the pipe is not allowed to drag over sharp objects. Contractor shall not damage it by chokers or lifting equipment.

Fused segments of pipe shall be handled to avoid damage to the pipe. When lifting fused sections of pipe, chains, or cable type chokers must be avoided. Nylon slings are preferred. Spreader bars are recommended when lifting long fused sections. Care must be exercised to avoid cutting or gouging the pipe.

All pipe and fittings shall be subjected to visual inspection at time of delivery and before they

are installed or lowered into the trench to be laid. Defective, damaged, or unsound pipe will be rejected. Cuts, punctures, or gouges that penetrate or reduce the wall thickness by 10-percent or more are not acceptable and must be removed and discarded.

Fusion Equipment Requirements

Butt fusion equipment must be in satisfactory working order and the hydraulic system must be leak free. Heater plates shall be free from scrapes, gouges, and have a consistent clean coated surface. The pressure gage and thermometer should be checked for accuracy. When requested by the owner, records showing a maintenance service/inspection within 6 months prior to use for this project shall be provided.

Rental Butt Fusion Equipment must be maintained by a McElroy Authorized Service and Repair Center with at least one McElroy Certified Master Mechanic on staff and inspected within 6 months prior to arrival at jobsite will be provided.

Electrofusion Processors shall be maintained and calibrated per manufacturer's requirements and recommendations.

Construction

Sections of HDPE pipe shall be joined above-ground on the job site into a continuous length by the thermal butt fusion-welding method in strict accordance with the manufacturer's requirements. Socket fusion, extrusion welding or hot gas welding shall not be used. No pipe or fittings shall be joined by thermal butt fusion by any Contractor unless they are adequately trained and qualified in the techniques involved.

Thermal butt fusion welding shall be 100 percent efficient offering joint weld strength equal to or greater than the strength of the pipe. Flanges, unions, grooved-couplers, and transition fittings may be used to mechanically connect HDPE pipe without butt fusion. Refer to the manufacturer's recommendations.

Field Quality Control

The Contractor shall lay the HDPE pipe on the existing ground surface in a manner that will not damage, degrade, crack, scratch, or deform the pipe in any manner. The Contractor will continuously monitor the longitudinal pulling forces during pipe installation and shall limit the longitudinal pull on the pipe so as not to exceed 80 percent of the specified minimum yield strength of the pipe. The Contractor shall provide adequate protection to the pipe during installation to prevent damage from tensile or other forces.

Maintain the integrity of the pipe, existing utilities, and adjoining properties during installation.

15.30 VALVES

15.31 Common Work for Valves

[CSI 40 05 51 or 33 14 19]

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.

Part 2 – Products

Components

If shear pins are installed with any valve, the manufacturer shall certify the shear pin(s) to fail between 95 to 99 percent of the operator shaft failure torque. Provide concrete supports for operators where required, as shown on the Plans.

Buried valves shall be equipped with an AWWA 2-inch wrench nut with a minimum of 10 turns required to close the valve, unless otherwise noted on the Plans. Exposed valves shall be equipped with lever actuator for valves 3 inches and smaller, or handwheel actuator for valves 4 inches and larger, unless otherwise noted on 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-inches and 30-inches 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

[CSI 40 05 61.23]

Part 1 – General

Design Requirements

All gate valves for water lines 3-inches to 48-inches shall be of the resilient, wedge-type, 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. Valve opening direction shall be counter-clockwise. Valves shall be rated for 250 psi working pressure.

Part 2 – Products

Components

The wedge shall be fully encapsulated with vulcanized SBR rubber or EPDM. Ends as shown on the plans. All exterior valve body bolting (bonnet, stuffing box, gear box) shall use Cor-Ten, 304 (18-8) SS, or 316 SS bolts and nuts. Buried valves shall have a non-rising stem (NRS). Non-buried valves on fire protection systems shall have outside stem and yoke (OS&Y). Other valves as shown on the plans.

Unless shown otherwise on the plans, buried valves 14-inches and larger shall be installed horizontally with enclosed right angle (bevel) gear actuator and valves 20-inches and larger shall be equipped with 2-inch gate valve bypass system. Confirm configuration with the Owner prior to ordering.

Part 3 - Execution

Field Quality Control

Where buried valves will be installed in a horizontal orientation and for buried valves 16-inch and larger in any orientation, operate the valve over the full range of travel in both directions prior to installation in the presence of the Owner to verify gate travels smoothly and without binding. Service or replace valves that do not travel smoothly.

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.

15.32.03 Butterfly Valves Class 150

[CSI 40 05 64.16]

Part 1 – General

Design Requirements

Butterfly valves shall be tight-closing rubber seat type with a minimum 150 psi working pressure rating. Valves 3-inch and larger must meet full requirements of AWWA Standard C504. Valves smaller than 3-inch shall be high performance valves specifically designed for shutoff and throttling control of liquids and gas. Valve components shall withstand an operator input torque of 300 foot-pounds without damage.

Part 2 – Products

Manufacturers

- M&H 4500
- Dezurik BAW
- Mueller LineSeal III

- Pratt Groundhog (buried) or In-Plant (above grade flanged or wafer).

Manufactured Units

Three-inch and larger valve bodies shall be cast iron ASTM A-126 Class B or ductile iron. Provide valve disc constructed of cast iron ASTM A48 Class 40, cast iron ASTM A126 Class C, or ductile iron ASTM 536 Grade 65-45-12. The disc seating edge shall be solid stainless steel. Sprayed mating seat surfaces are not acceptable. Valves smaller than 3-inch shall have 316 stainless steel body and disc and shall be lug style. The seat shall be of acrylonitrile-butadiene or EPDM for water; or as appropriate for other services. Valve bearings shall be sleeve-type and corrosion-resistant. Valve bearings shall be of traveling nut type and shall open left.

Supply valves with the valve operator on the side of the valve shown on the Plans.

Provide fusion bonded epoxy or two-part liquid epoxy coating to all internal and external surfaces.

Part 3 – Execution

Installation

Install per manufacturer's instructions. When installing on thick wall pipe such as HDPE or C900 PVC, verify if there are any interferences with the valve disc and the pipe wall. If the disc does not operate freely, install valve spacers to provide clearance. Beveling the interior of the pipe will only be allowed if approved by the Engineer.

All butterfly valves shall be test operated prior to burial in the presence of the Owner's representative to prove full open and closing capability. Testing procedure: Close the valve prior to applying test pressure. Do not operate the valve under test pressure. Bleed off pressure to below the working pressure rating prior to operating the valve.

15.32.07 Gate Valves – Small Diameter

[CSI 40 05 61.13]

Part 2 – Products

Manufactured Units

Gate valves 2 inches and smaller for steel or brass pipe shall be Crane No. 438 or equal with non-rising stem, screwed bonnet, solid wedge disc, bronze construction and threaded ends.

Gate valves 2 inches and smaller for copper piping shall be Crane No. 1320 or equal with stem, screwed bonnet, solid wedge disc, bronze construction and solder or screw ends.

15.33 Check Valves

15.33.02 Swing Check Valves

[CSI 40 05 65.23]

Part 1 – General

Design Requirements

The swing check valve shall function to permit flow in only one direction. The valve shall

close tightly, without slamming, when the pressure on the discharge side exceeds the pressure on the inlet side. All swing check valves shall conform with AWWA C508 and the following specifications.

The valve shall be constructed to withstand the pressures stated in Division 1.81.40. Flanges shall be drilled to ANSI B16.1, Class 125# or as specified in the Plans.

Operating pressure range is 40 psi (low) to 90 psi (high). The manufacturer shall certify that the check valve will seal completely within the operational range.

Part 2 – Products

Manufacturers

The valve shall be equal to Golden Anderson Fig. 220-DS/US swing check valve or M&H Model 159 Swing Check Valve. Valve swing arm shall be weighted. Swing arm shall be oriented as shown on the plans. If not shown, swing arm shall be located to be free to move without restriction.

Manufactured Units

The swing check valve body shall be constructed with heavy cast iron or cast steel and have a bronze or stainless-steel seat ring, rubber clapper facing, a non-corrosive shaft and external counterweight attachment. See Plans for which side of the valve to locate the counterweight.

A limit switch shall be included and mounted to the valve body for remote indication of valve position.

The valve disc shall be constructed of cast iron or cast steel and shall be suspended from a non-corrosive shaft. The valve shall allow the equivalent flow area of the adjoining pipe. The shaft shall pass through a stiffing box and be connected to the swing arm in the outside of the valve.

Finishes

The interior and exterior of the valve body, bonnet and seal plate shall be coated with fusion-bonded epoxy meeting AWWA C-550 (latest revision). Interior coating shall be a minimum dry film thickness of 7 Mils, not including primer. Exterior coating shall be a minimum dry film thickness of 5 Mils, not including primer. Alternatively, exterior may be coated per Division 9.90.

15.34 Pilot-Operated Control Valves

15.34.01 Common Work for Pilot-Operated Control Valves

[CSI 40 05 65.05, 40 05 67.05]

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 Owner's attention during the submittal process.

Performance Requirements

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 1.81.40, 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) and/or solenoid valve(s) as appropriate for the valve function. Pilot controls shall be selected appropriately for the system operational pressure range. Double chamber valves shall be used where independent operating pressure or absolute speed control is required. Double chamber valves shall also be used where line pressure is insufficient to operate the pilot system and a second pressure source is available. All pump control valves shall be double chamber. Valves to be globe or angle style with flanged or threaded ends as shown on the Plans.

Components

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

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

Field Quality Control

The valve manufacturer's representative shall inspect the installation prior to operating or field testing. A field test shall be conducted and/or supervised by the valve manufacturer's representative after the piping and controls have been installed. Upon completion of installation and testing, manufacturer's representative shall provide written certification that equipment is fully warranted installed.

15.34.40 Pressure Reducing Valves – Pilot-Operated Control

[CSI 40 05 67.36]

Part 2 – Products

Manufacturers

The valve shall be equal to Cla-Val Model 90-01.

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.

The downstream pressure setpoint shall be 60 psi. The normal valve pressure differential is 30 psi.

15.35 Air Valves

[CSI 40 05 78]

15.35.02 Air Valves – Clean Water

15.35.02.01 Combination Air and Vacuum Valves – Clean Water

[CSI 40 05 78.19]

Part 2 – Products

Manufacturers

Combination air and vacuum valves shall be equal to APCO 140C series.

Manufactured Units

Provide air valve's body and cover fabricated from cast iron. Provide internal parts, including float, seat, needle, linkage, level pins, retaining rings and screws fabricated from either stainless steel or bronze. Size as shown on the Plans.

Part 3 – Execution

Installation

If not detailed on the Plans, valves shall be attached to water main via tap, brass pipe, and an isolation ball valve and fittings as necessary. Outlet shall be provided with a brass male by female threaded return bend to direct air away from any mechanical or electrical components.

15.35.02.02 Air Release Valve – Clean Water

[CSI 40 05 78.11]

Part 2 – Products

Manufacturers

Air release valve shall be equal to APCO Model No. 50.

Manufactured Units

Provide air valve's body and cover fabricated from cast iron. Provide internal parts, including float, seat, needle, linkage, level pins, retaining rings and screws fabricated from either stainless steel or bronze. Size as shown on the Plans.

Part 3 – Execution

Installation

If not detailed on the Plans, valves shall be attached to water main via tap, brass pipe, and an isolation ball valve and fittings as necessary. Outlet shall be provided with a brass male by female threaded return bend to direct air away from any mechanical or electrical components.

15.40.03 Pipe, Valve, and Conduit Supports

[CSI 40 05 07]

Part 1 - General

Summary

This section includes providing pipe supports, hangers, guides, and anchors.

Related Sections

- Division 1.81.30 Seismic Restraint
- Division 5.05.23 Bolts and other Connectors

References

Pipe supports furnished under this section shall comply in all respects with the requirements of the following standards.

- ANSI/ASME B31.1 Power Piping
- ANSI/MSS SP-58 Pipe Hangers and Supports - Materials, Design and
Manufacture
- ANSI/MSS SP-69 Pipe Hangers and Supports - Selection and Application

Performance Standards

Piping systems, including connections to equipment, shall be properly supported to prevent deflection and stresses. Supports shall comply with ANSI/ASME B31.1, except as otherwise indicated.

Size hanger rods, supports, clamps, anchors, brackets, and guides in accordance with ANSI/MSS SP 58 and SP 69.

Support plumbing drainage and vents in accordance with the Uniform Plumbing Code.

Submittals

Pipe Hanger/Support Design Calculations

Shop drawings of engineered pipe hangers/supports, including details of concrete inserts. Drawings shall include location plan showing location of the hanger/support in relation to the structure and/or equipment.

Part 2 – Products

Manufacturers

Pipe supports, hangers, guides, and anchors shall be Anvil, Unistrut, Tolco, Standon, or equal.

Flange supports shall be equal to Standon Adjustable Model S89 Flange Support. Pipe supports shall be equal to Standon Adjustable Model S92 Pipe Support. Both flange and pipe supports shall be equal to those manufactured by Material Resources, Hillsboro, Oregon.

Components

Provide and install all equipment necessary for complete support systems including, but not limited to, base, riser pipe, anchor bolts, hanger rod, support cradle or clamp, and fasteners.

Except as otherwise noted, pipe support components shall comply with the types in ANSI/MSS SP-58.

Engineered Supports: Pipe hangers, supports for piping and conduits (raceways), and all spring support assemblies shall be completely engineered.

Freestanding Piping: Freestanding pipe connections to equipment, including chemical feeders and pumps, shall be firmly attached to fabricated steel frames made of angles, channels or I-beams anchored to the structure. Exterior, freestanding overhead piping shall be supported on fabricated pipe stands, consisting of pipe columns anchored to concrete footings, with horizontal, welded steel angles, and U-bolts or clamps installed to secure piping.

Finishes

Unless otherwise noted, all fabricated pipe supports, other than stainless steel or non-ferrous supports, shall be blast-cleaned after fabrication and hot-dip galvanized in accordance with ASTM 123. Other than stainless steel and non-ferrous supports, supports shall be coated in accordance with Division 9.90.

Part 3 - Execution

Installation

Piping shall be rigidly anchored to walls, slabs, and ceilings by means of suitable pipe supports, wall brackets, or pipe hangers.

Pipe supports, hangers, brackets, anchors, guides, and inserts shall be installed in accordance with the manufacturer's installation instructions and ANSI/ASME B31.1. All concrete inserts for pipe hangers and supports shall be coordinated with the formwork.

Stand-on Pipe Support: Adjust support, secure to pipe and secure to floor as recommended by the manufacturer.

Riser Supports: Risers shall be supported on each floor with riser clamps and lugs, independent of the connected horizontal piping.

Support Spacing: Pipe supports shall be placed to meet the following maximum spacing, unless otherwise noted or shown on the Plans: maximum vertical support spacing of 5 feet, and maximum horizontal support spacing of 10 feet. Support shall be provided at horizontal bends, base of risers (vertical bends), floor penetrations, connections to pumps, blowers, and other equipment, valves and appurtenances. Support spacing shall meet the local plumbing code where applicable. Support spacing may be increased from that noted above provided adequate calculations are provided supporting the change.

Support Anchorage: Concrete anchors shall be as specified in Division 3, Concrete Anchors. All channel strut type supports shall have a minimum of 2 anchors per support.

Suspend pipe hangers from hanger rods, secure with double nuts.

Securely anchor plastic pipe, valves and headers to prevent movement during operation of valves. Anchor plastic pipe between expansion loops and direction changes to prevent axial movement through anchors.

Provide ductile iron elbows or tees supported from floors with base fittings. Support base fittings with metal supports, or when indicated on the Plans, concrete piers.

Do not use chains, plumbers' straps, wire, or similar devices for suspending, supporting or restraining pipes.

Install riser clamps at floor penetrations and where indicated on the Plans.

Field Quality Control

Pipe supports and hangers shall be positioned in such a way as to produce an orderly, neat piping system. All hanger rods shall be vertical, without offsets. Hangers shall be adjusted to line up groups of pipes at the proper grade for drainage and venting, as close to ceilings or roofs as possible, without interference with other work.

Properly support, suspend or anchor exposed pipe, fittings, valves and appurtenances to prevent sagging, overstressing or movement of piping and to prevent thrusts or loads on or against connected pumps, blowers or other equipment.

15.40.08 Valve Box – Cast Iron

[CSI 33 05 81.23]

Part 2 - Products

Components

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

- Valve box
- Lid with recessed handle
- Dust pan
- Debris plug
- 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.

15.40.09 Valve Box with Integral Valve Stem Extension

[CSI 33 05 81.24]

Part 2 - Products

Manufacturers

Valve box shall be equal to American Flow Control's Trench Adapter.

Components

The stem assembly shall be of a telescoping design that allows for variable adjustment length. The material shall be galvanized steel square tubing. The stem assembly shall have a built-in device that keeps the stem assembly from disengaging at its fully extended length. The extension stem must be torque tested to 1,000-foot pounds.

Valve boxes shall be a complete unit composed of the following:

- Valve box
- Lid with recessed handle
- Extension operator
- Riser section
- Base section

All moving parts of the extension stem shall be enclosed in housing to prevent contact with the soil. The valve box assembly shall be adjustable to accommodate variable trench depths.

The entire assembly shall be made of cast (or ductile) iron and minimum ¼-inch heavy wall high-density polyethylene. All components shall be joined with a permanent locking design. The valve box top section shall be adaptable to fit inside a standard valve box upper section.

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

[CSI 33 05 09.34]

Part 1 - General

Summary

This specification is for wedge-action (tooth) 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 maximum testing and operational

pressures. Restraints shall be designed specifically for the material and purpose of the pipe and joint. Provide the quantity of restraints required for fully restraining all working and testing forces.

Submittals

Provide manufacturer's information describing applicability and performance ratings.

Quality Assurance

The Contractor is responsible for verifying compatibility of the pipe and restraint system proposed in their bid.

Part 2 - Products

Manufacturers

Mechanical Joints: EBAA Iron "Mega-Lug", Romac "Romagrip", or approved equals.

Push-on Joints: US Pipe Field-Lok 350 (ductile iron), Ransom ReiberLok (PVC), EBAA Iron 1900 (PVC), 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.

Finishes

Restraints in all buried applications, and in exposed areas when not being field coated, shall be coated at the factory with fusion bonded polyester based coating (e.g. Romac Romabond, EBAA Mega-bond, Ford Armorguard E-Coat) or approved equal.

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 bolted restraint does not come with break-off head bolts, a torque wrench must be used. 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.

Initial setting of wedges may use any commonly used hand tools until the wedge touches the pipe surface. Impact tools are not allowed for wedge engagement and final torquing.

Installation of restrained joint push-on pipe that will be deflected must be installed per the manufacturer's instructions. In general, this requires the pipe to be inserted into the bell at a

straight alignment, but not pushed home. The pipe can then be deflected. If the manufacturer's instructions provide differing, or additional instructions, those instructions shall be followed.

Bedding material must sands and/or angular gravels for proper soil-to-pipe adhesion and shall not be a clay, 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 are 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.

15.50 FLOW METERS

[CSI 33 19 00 or 40 71 00]

15.50.05 Common Work for Flow Meters

[CSI 33 19 05 or 40 71 05]

Part 1 - General

Design Criteria

Materials, coatings, and components shall be appropriate for the fluid being measured. Meters will be installed inside a _structure/vault_ with an anticipated ambient temperature range between 40- and 110-degrees Fahrenheit.

Submittals

Meter shall fit in the space provided on the Plans. Meters that do not fit in the space provided must be approved by the Engineer for acceptance along with the Contractor's proposed modifications to accommodate the meter.

Provide information on meter assembly, available and selected options, readout head, remote transmitter, coatings, and dimensions of all equipment.

Part 2 - Products

Components

Each meter shall be equipped with an indicator-totalizer device.

- Flow Meter with Digital readout head per Division 15.51.4

Part 3 - Execution

Installation

Install the meter in strict accordance with the manufacturer's recommendation.

Testing

If a meter approved by the Owner is not rated for the system test pressure, a temporary spool, flange(s), or cap(s) must be installed in place of the meter. A visual leak test will be performed under working pressure with the meter in place.

The Contractor shall prove correct meter and transmitter performance. Should performance

not be acceptable, adjust or replace the unit at the Contractor's expense.

15.51 Flow Meter Readout Head

[CSI 33 09 01, 33 19 90 or 40 71 90]

15.51.04 Digital Read Head

[CSI 33 09 01.33, 33 19 93 or 40 71 93]

Part 2 - Products

Components

The totalizer shall read in units of hundreds of gallons.

Readout in gallons per minute (gpm) for instantaneous flow.

Provide an enclosure with window, that does not negate the enclosure NEMA rating, for viewing the flow rate and totalizing counter on an LCD readout. The readout shall display flow rate in gallons per minute, totalized gallons, and an empty pipe indicator.

The meter electronics shall be directly mounted on the meter. The display shall be user scalable for GPM, CFS, or MGD, and shall be password protected. All software shall be battery powered with a battery that has a 10-year service life.

The meter, electronics shall be RFI shielded to prevent interference from adjacent high noise electrical equipment such as variable frequency drives, electromagnetic starters, transformers or transfer switches.

Flow Meters

15.53.03 Electromagnetic Flow Meters

[CSI 33 19 23 or 40 71 13.13]

Part 1 - General

Related Sections

- 15.51.05 Digital Read Head with Electronic Output

Design Requirements

Provide an electromagnetic flow metering system suitable for measuring and transmitting flow rate in a full-flowing pipe. The meter shall be suitable for either horizontal or vertical mounting. The system shall operate within the accuracy required over an ambient temperature range of -10 to +120 degrees Fahrenheit and a process temperature range of +15 to +120 degrees Fahrenheit. Meter and electronics shall be rated for Class 1 Division 2 service.

Performance Requirements

The flow meter system shall be microprocessor based, utilizing a DC bipolar pulsed coil that automatically re-zeroes after each pulse cycle. System accuracy shall be ± 1 percent of actual flow rate over a fluid velocity range of 1 to 30 feet per second (fps), and within 0.01 fps for velocities less than 1 fps. Repeatability shall be 0.1 percent of full scale or better. System accuracy shall be traceable to NIST using prototype meters of the same configuration.

Part 2 - Products

Manufacturers

The flow meter shall be Endress and Hauser Proline Promag W 400, Siemens Sitrans model FM MAG 5100W, ABB Watermaster, or approved equal.

Manufactured Units

The meter tube and coil shall be mounted on the pipe between ANSI B16 pipe flanges and rated for working and test pressures as indicated in Division 1.81.40. The meter tube shall be 304 or 316 stainless steel. The meter and cable connection(s) shall be capable of complete submergence without damage. The meter shall include integral grounding electrodes, or 316 stainless steel or Hastelloy C grounding rings for installation at the inlet. The manufacturer shall verify that the grounding system is appropriate for the proposed use. All wetted parts shall be 316 stainless steel.

When grounding rings are used, select gaskets with an inside diameter large enough that the gasket cannot wrap over the exposed edge of the grounding ring, blocking it from the process fluid.

Finishes

The meter liner shall completely encapsulate all wetted areas except for electrodes. The liner shall be certified by the manufacturer as appropriate for the proposed use. The liner shall be Endress & Hauser: Hard Rubber, Polyurethane, PTFE (drinking water / wastewater).

The meter supplier shall review the liner material specified and confirm that it is appropriate for this project fluid and process. Provide submittal information that the liner material is fully compatible with the liquid it is carrying.

15.60 PRESSURE MEASUREMENT

[CSI 40 73 00]

15.60.01 Common Work for Pressure Measurement

[CSI 40 73 05]

Part 1 – General

Related Sections

- Division 17 - Electronic Pressure and Level Devices

Design Requirements

Pressure and level measurement devices shall be scaled and rated for the application.

Part 3 – Execution

Installation

All devices shall be installed to be field serviceable without taking the facility out of service. Readouts shall be positioned to be easily read from a standing position and central to the room, unless otherwise allowed by the Engineer.

15.61 Pressure Gauges

[CSI 40 73 13]

Part 1 – General

References

- ASME B40.100 (B40.1 Analog, B40.7 Digital)

Performance Requirements

Analog: Grade 2A (± 0.5 percent of span) unless stated otherwise in the Products section.

Digital: Grade 2A (± 0.5 percent of span) or AR (± 1 percent of reading) unless stated otherwise in the Products section.

Submittals

Provide catalog sheets showing dimensions, pressure range, accuracy and optional accessories.

Part 2 – Products

Manufacturers

Marsh, 3D Instruments, or approved equal.

Materials

Provide gauges per the table below. Gauges completely suitable for measuring potable water with wetted parts of brass, bronze, or stainless steel.

Location	Suction Header	Discharge Header
Full Scale	0-60 psi	0-300 psi
Normal Operating Range	20-40 psi	50-70 psi
Analog or Digital	Analog	Analog
Surface or Stem Mount	Surface	Surface
Connection Size	0.25" or 0.5"	0.25" or 0.5"
Accuracy Grade	See Perf. Req'ts	See Perf. Req'ts
Glycerin fill or Dry	Glycerin	Glycerin
Face Size 2.5" or 4.5"	4.5"	4.5"

For pressure gauges used in applications other than clean water, provide a diaphragm protector suitable for the contact fluid. Diaphragm equal to Marsh 13040, stainless steel with flushing port.

Accessories

Unless shown otherwise on the Plans, provide a block and bleed valve for each pressure gauge. Transcat 600/700 series, stainless steel, or approved equal. Do not use in chlorine rooms or chlorination systems.

Part 3 - Execution

Installation

Install gauges where shown on the Plans. Support gauges adequately. Tighten only with the connection hex nut, do not twist the case.

Field Quality Control

Where a new gauge is connected directly to the plumbing of a pressure transmitter, the gauge must read within its accuracy grade compared to the transmitter, unless the transmitter is proven faulty.

If the Engineer suspects any gauge is inaccurate, provide a calibrated gauge for comparison, or other method of verification acceptable to the Engineer.

Replace or calibrate gauges that do not meet the accuracy requirements.

Division 16

Electrical

16.00 GENERAL

The Contractor shall provide all labor, material, tools, equipment and services required to complete the furnishing, installation, wiring, connection, calibration, adjustment, testing and operation of all electrical equipment, devices and components as indicated and implied by the plans and specifications.

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

The Contractor shall reference Division 1.25 regarding substitutes and “or-equals”.

16.05 Common Work for Electrical

[CSI 26 05 00]

Part 1 - General

Summary

Plans are diagrammatic and indicate general arrangements of systems and equipment, except when specifically, dimensioned or detailed. The intention of the plans is to show size, capacity, approximated location, direction and general relationship of one work phase to another, but not exact detail or arrangement.

Regulatory Requirements

The Contractor shall coordinate and provide all permits, licenses, approvals, inspections by the authority having jurisdiction and other arrangements for work on this project and all fees shall be paid for by the Contractor. The Contractor shall include these fees in the bid price.

Related Sections

See the following sections for items that may be provided and/or installed with other electrical equipment.

- Division 11.2.0 Pump motors
- Division 15.51 Flow meter transmitters
- Division 17 Automatic Control

Codes and Standards

Provide all electrical work in accordance with latest edition of National Electrical Code, National Electrical Safety Code, Washington State Electrical Code, and local ordinances. If any conflict occurs between government adopted code rules and these specifications, the codes are to govern. All electrical products shall bear a label from a certified testing laboratory recognized by the State of Washington. Recognized labels in the State of Washington are UL, ETL, and CSA-US.

Definitions

Dry Locations: All those indoor areas which do not fall within the definitions below for wet,

damp, or corrosive locations and which are not otherwise designated on the Plans.

Wet Locations: All locations exposed to the weather, whether under a roof or not, unless otherwise designated on the Plans.

Damp Locations: 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.

The words “plans” and “drawings” are used interchangeably in this specification and in all cases shall be interpreted to mean “Plans”.

The word “provide” shall be interpreted to mean furnish and install.

Design Requirements

Unless otherwise noted, provide enclosures as follows:

1. Indoors Unclassified Locations: NEMA Type 12
2. Outdoors and/or Wet Locations: NEMA Type 4X

Submittals

Provide submittals of each item specified in this division to engineer for approval in accordance with Division 1 of these specifications. Submittals for instrumentation panels shall include at a minimum: a wiring diagram or connection schematic, and an interconnection diagram.

Wiring Diagram or Connection Schematic

1. Include all devices in a system and show their physical relationship to each other including terminals and interconnecting wiring in assembly. This diagram shall be in a form showing interconnecting wiring only by terminal designations (wireless diagram).

Interconnection Diagram

1. Show all external connections between terminals of equipment and outside points, such as motors and auxiliary devices. Show references to all connection diagrams which interface to the interconnection diagrams. Interconnection diagrams shall be of the continuous line type. Show bundled wires on a single line with the direction of entry/exit of the individual wires clearly shown. Identify all devices and equipment. Show terminal blocks as actually installed and identified in the equipment complete with individual terminal identification. All jumpers, shielding and grounding termination details not shown on the equipment connection diagrams shall be shown on the interconnection diagrams. Show spare wires and cables.

Provide submittal information for the following items:

1. Utility Meter Enclosure
2. Service Disconnect
3. Generator Receptacle Disconnect
4. Generator Receptacle
5. Manual Transfer Switch

6. Underground Marking Tape
7. Grounding Equipment
8. Circuit Breakers
9. Conduit and Fittings
10. Wire and Cables
11. Receptacles
12. Other Electrical Components listed in this Division and/or required by the Engineer.

Construction Power

See Division 1.51

Part 2 - Products

Source Quality Control

Provide adequate space and fit for the electrical installation, including, but not limited to, determination of access-ways and doorways, shipping sections, wall and floor space, and space occupied by mechanical equipment. Provide electrical equipment that fits in the areas shown on the Plans. All equipment shall be readily accessible for maintenance, shall have electrical clearances in accordance with National Electric Code (NEC) and shall be installed in locations which will provide adequate cooling.

Do not use equipment exceeding dimensions indicated or equipment or arrangements that reduce required clearances or exceed specified maximum dimensions unless approved by the Owner.

Identification of Listed Products

Electrical equipment and materials shall be listed for the purpose for which they are to be used, by an independent testing laboratory. When a product is not available with a testing laboratory listing for the purpose for which it is to serve, the inspection authority may require the product to undergo a special inspection at the manufacturer's place of assembly. All costs and expenses incurred for such inspections shall be included in the original contract price.

Materials

Use equipment, materials and wiring methods suitable for the types of locations in which they will be located, as defined in Definitions above.

All materials and equipment specified herein shall, within the scope of UL Examination Services, be approved by the Underwriter's Laboratories for the purpose for which they are used and shall bear the UL label.

Components

Fasteners for securing equipment to walls, floors, and the like shall be either hot-dip galvanized after fabrication or stainless steel. Provide stainless steel fasteners in corrosive locations. When fastening to existing walls, floors, and the like, provide capsule anchors, not expansion shields. Size capsule anchors to meet load requirements. Minimum size capsule anchor bolt is $\frac{3}{8}$ -inch.

Accessories

Wire Identification

1. Identify each wire or cable at each termination and in each pull-box using numbered and lettered wire markers. All electrically common conductors shall have the same number. Each electrically different conductor shall be uniquely numbered. Identify panelboard circuits using the panelboard identification and circuit number. Identify other circuits as approved by the Engineer. Identify each wire or cable in each pull-box with plastic sleeves having permanent markings. Conductors between terminals of different numbers shall have both terminal numbers shown at each conductor end. The terminal number closest to the end of the wire shall be the same as the terminal number.

Finishes

Refer to each electrical equipment section of these specifications for painting requirements of equipment enclosures.

Part 3 - Execution

Installation

General

1. Complete the wiring, connection, adjustment, calibration, testing and operation of mechanical equipment having electrical motors and/or built-in or furnished electrical components in accordance with electrical code, UL listing requirements and manufacturer's instructions. Install electrical components that are furnished with mechanical equipment.
2. Provide the size, type and rating of motor control devices, equipment and wiring necessary to match the ratings of motors furnished with mechanical equipment.
3. Complete the procurement, installation, wiring, connection, calibration, adjustment, testing and operation of all electrical devices, components accessories and equipment which is not shown or specified but which is nonetheless required to make the systems shown and specified properly functional.

Workmanship

1. Assign a qualified representative who shall supervise the electrical construction work from beginning to completion and final acceptance.
2. Provide all labor using qualified craftsmen, who have had experience on similar projects.
3. Ensure that all equipment and materials fit properly in their installations.

Field Services

1. Provide field services of qualified technicians to supervise and check out the installation of the equipment, to supervise and check out interconnecting wiring, to conduct start-up and operation of the equipment, and to correct any problems which occur during testing and start-up.

Installing Equipment

1. Provide the required inserts, bolts and anchors, and securely attach all equipment and materials to their supports.
2. Install all floor-mounted equipment on 3½-inch high reinforced concrete pads.
3. Install all equipment and junction boxes to permit easy access for normal maintenance.

Cutting, Drilling, and Welding

1. Provide any cutting, drilling, and welding that is required for the electrical construction work.
2. Structural members shall not be cut or drilled, except when approved by the Engineer. Use a core drill wherever it is necessary to drill through concrete or masonry. Perform patch work with the same materials as the surrounding area and finish to match.

Metal Panels

1. Mount all metal panels, which are mounted on, or abutting concrete walls in damp locations or any outside walls ¼-inch from the wall and paint the back side of the panels with a high build epoxy primer with the exception of stainless-steel panels. Film thickness shall be 10 Mils minimum.

Seismic Requirements

1. See Division 1.81.30

Load Balance

1. Balance electrical load between phases as nearly as possible on panelboards and other equipment where balancing is required.
2. When loads must be reconnected to different circuits to balance phase loads, maintain accurate record of changes made, and provide circuit directory that lists final circuit arrangement.

Field Quality Control

Minor Deviations

1. The electrical plans are diagrammatic in nature and the location of devices, fixtures, and equipment is approximate unless dimensioned. Based on this, the right is reserved by the owner to provide for minor adjustments and deviations from the locations shown on the Plans without any extra cost. Deviations from the Plans and/or specifications required by code shall also be done, subsequent to Owner's approval, without extra cost.
2. Plans indicate the general location and number of the electrical equipment items. When raceway, boxes, and ground connections are shown, they are shown diagrammatically only and indicate the general character and approximate location. Layout does not necessarily show the total number of raceways or boxes for the circuits required. Furnish, install, and place in satisfactory condition all raceways, boxes, conductors, and connections, and all of the materials required for the electrical systems shown or noted in the contract documents complete, fully operational, and fully tested upon the completion of the project.

Project Record Plans

1. A set of Plans shall be maintained at the job site showing any deviations in the electrical systems from the original design. A set of electrical Plans, marked in red to indicate the routing of concealed conduit runs and any deviations from the original design, shall be submitted to the Owner for review prior to final acceptance.
2. After testing and acceptance of the project the Contractor shall furnish in the O&M manuals an accurate connection schematic and interconnection diagram for every service entrance panel and instrumentation panel provided this project.

Cleanup and Equipment Protection

Equipment Protection

1. Always exercise care after installation of equipment, control panels, etc., to keep out foreign matter, dust debris, and moisture. Use protective sheet metal covers, canvas, heat lamps, etc., as needed to ensure equipment protection.

Cleaning Equipment

1. Thoroughly clean all soiled surfaces of installed equipment and materials upon completion of the project. Clean out and vacuum all construction debris from the bottom of all equipment enclosures.

Painting

1. Repaint any electrical equipment or materials scratched or marred in shipment or installation, using paint furnished by the equipment manufacturer.

Final Cleanup

1. Upon completion of the electrical work, remove all surplus materials, rubbish, and debris that accumulated during the construction work. Leave the entire area neat, clean and acceptable to the Owner.
2. Lamps and fluorescent tubes shall be cleaned, and defective units replaced at the time of final acceptance.

16.10 ELECTRICAL SITE WORK

16.10.1 Common Work for Electrical Site Work

[CSI 33 71 19]

Part 1 – General

Summary

The work included in this section consists of furnishing and installing conduit, fittings, handholes, pull vaults, warning tape, cables, wires, and related items, complete as specified herein and as indicated on the Plans for a complete and functional underground electrical system. Special vaults, grounding, trench backfill requirements may be specified with the particular equipment or electrical system involved.

Related Sections

Wire and cable per Section 16.60.

Raceways and conduit per Section 16.70.

Design Requirements

Materials and equipment shall conform to the respective specifications and standards; and to be the specifications herein. Electrical rating shall be as indicated on Plans.

Part 3 – Execution

Construction

Provide all excavation, trenching, backfill, and surface restoration required for the electrical work.

Excavate to depths as required by Code, particular installation, or as shown on the Plans. Trench width and length as required by the installation or as shown. Trench bottom shall be free of debris and graded smooth. Where trench bottom is rock or rocky or contains debris larger than 1 inch or material with sharp edges, over excavate 3 inches and fill with 3 inches of sand. Separation between new electrical utilities and other utilities shall be 12 inches horizontal and 6 inches vertical minimum, except gas line separation shall be 12 inches both vertical and horizontal. Cross concrete or asphalt only after surface material has been saw cut to required width and removed.

Backfill around raceways shall be 3-inches of pea gravel or sand for systems of 600 volt or less. Provide red marker tape over raceways below grade. Place backfill material to obtain a minimum degree of compaction of 95 percent of maximum density at optimum moisture content. Moisten backfill material as required to obtain proper compaction. Do not use broken pavement, concrete, sod, roots or debris for backfill.

16.10.2 Underground Marking Tape (Detectable Type)

[CSI 33 05 97.23]

Part 2 – Products

Manufacturers

Tape shall be Brady “Detectable Identoline – Buried Underground Tape”, or equal.

Materials

Underground marking tape shall be for location and early warning protection of buried power and communication lines. Tape shall be detectable by a pipe/cable locator or metal detector from above the undisturbed ground. Tape shall be nominally 2 inches wide with a type B721 aluminum foil core laminated between two layers of 5 Mil thickness polyester plastic. The plastic color shall be red for electrical lines and orange for telephone lines.

Part 3 – Execution

Installation

Unless noted otherwise on Plans, install approved underground marking tape 12 inches above and directly over the conduit or raceway in all trenches.

16.15 Grounding and Bonding for Electrical Systems

[CSI 26 05 26]

Part 1 - General

References

Service and equipment grounding shall be per Article 250 of the NEC.

Performance Requirements

Verify that a low-resistance ground path is provided for all circuits so an accidental contact to ground of any live conductor will instantly trip the circuit.

Part 2 - Products

Components

The grounding systems shall consist of the ground rods, grounding conductors, ground bus, ground fittings and clamps, and bonding conductors to water piping and structural steel as shown on the Plans.

System components shall be as allowed in the NEC unless specified otherwise below:

1. Ground Rods: Ground rods shall be cone pointed copper clad Grade 40 HS steel rods conforming to ASTM B228. The welded copper encased steel rod shall have a conductivity of not less than 27 percent of pure copper.
2. Ground Conductors: Buried conductors shall be medium-hard drawn bare copper; other conductors shall be soft drawn copper. Sizes over No. 6 AWG shall be stranded. Coat all ground connections except the exothermic welds with electrical joint compound, non-petroleum type, UL listed for copper and aluminum applications.
3. Ground Rod Boxes: Boxes shall be a 9-inch diameter precast concrete unit with hot-dip galvanized traffic cover. Boxes shall be 12-inches deep minimum. Covers shall be embossed with the wording "Ground Rod".

Part 3 - Execution

General Grounding Installation

When available a UFER ground per latest edition of NEC shall be provided as the primary means to ground the electrical system.

Ground electrical service neutral at service entrance equipment to supplementary grounding electrodes.

Ground each separately derived system neutral to nearest effectively grounded building structural steel member or separate grounding electrode.

Provide a ground rod box for each ground rod to permit ready access to facilitate testing.

Provide a ground wire in every conduit carrying a circuit of over 110 volts to ground.

Make embedded or buried ground connections, taps and splices with exothermic welds. Coat ground connections.

Motor Grounding Installation

Extend equipment ground bus via grounding conductor installed in motor feeder raceway. Connect to motor frame.

When using nonmetallic flexible tubing install an equipment grounding conductor connected at both ends to noncurrent-carrying grounding bus.

Vault and Handhole Grounding

Exposed noncurrent-carrying metal parts of equipment, conductor supports or racks, conduits, and other metal appurtenances, including any metal cover and its supporting ring, shall be bonded together and connected to a common ground. The size of the grounding means shall be as prescribed in the NEC. Where the grounding means is exposed, the grounding conductor shall be not smaller than #8 AWG copper.

Ground Connections

Above grade ground connections shall be exothermic weld, mechanical, or compression-type connectors; or brazing.

Below grade ground connections shall be exothermic weld.

Install all ground connections in strict accordance with connector manufacturer's recommendations and methods.

Testing

Following completion of the grounding electrode system, if installed, measure ground resistance at each ground rod using the three-rod method. Submit results to engineer prior to final acceptance by the Owner.

Perform testing per NETA Standard ATS paragraph 7.13. Testing methods shall conform to NETA Standard ATS using the three-electrode method for large systems. Conduct tests only after a period of not less than 48 hours of dry weather.

Furnish to the Engineer a test report with recorded data of each ground rod location. See Division 16.95.4.

16.20 UTILITY SERVICE

16.21 Electrical Service

[CSI 26 21 00]

Part 1 – General

Description of Work

Work consists of installation of new 100-amp, 480-volt, 3-phase underground service, pole-mounted transformer and service entrance equipment.

Scheduling Work with the Utility Company

The Contractor shall be fully and completely responsible for all scheduling and coordination with the utility company. The Contractor shall coordinate and schedule power outages, power service for operation and construction, and power service as may be required prior to

Certification of Occupancy.

The Contractor shall make all necessary applications for service with the utility and shall notify the Owner in writing of any obligations that the Owner must fulfill for service to be started, installed, or modified.

Contractor/Utility Interface Responsibilities

The electrical utility providing service to these facilities is Cowlitz PUD.

During design, contact was made with Customer Service Representative, Clint Kiser, who can be contacted by telephoning (360) 501-9520. The division of responsibilities stated below has been determined by coordination with the serving utility. The Contractor shall comply with all utility company standards and requirements.

All utility charges for and related to the final permanent service to the facility will be paid by the Owner, directly to the utility company and not be included in the Contractor's bid price.

Contractor shall notify the Owner of any changes to the responsibilities between the electrical utility and the Contractor as outlined in these specifications prior to submitting a bid. Any change(s) in responsibilities not brought to the attention of the Owner prior to bidding will not be cause for additional payment.

The Contractor shall notify the Owner (in writing) of any obligations or forms that the Owner is responsible to provide for service.

The Contractor shall:

Install new raceway and mule tape for secondary service from the utility distribution pole location to the proposed utility meter including trenching, backfill, and restoration. Terminate conduit and mule tape at the utility meter.

Install conduit sweep and cap off conduit at base of utility distribution pole.

Install the Service Entrance Disconnect Switch, Manual Transfer Switch, Generator Receptacle Disconnect Switch, and Generator Receptacle as shown on the Plans.

Install utility meter enclosure and raceway for utility revenue metering as shown on the Plans.

The Contractor shall meet all the standard requirements for working in the right-of-way which includes a utility representative on site during work within the right-of-way. The Contractor shall be responsible for paying all cost for the representative to be on site.

The Utility Company shall:

Install new utility distribution pole, primary line extension, and pole mounted transformers including excavation and restoration.

Install new secondary conductors from the utility distribution pole to the utility meter including all conductors and cable terminations. Trench, backfill, and restoration shall be provided by the Contractor.

Terminate conductors at the utility meter.

Install a utility revenue meter in the proposed main revenue metering enclosure installed by the Contractor.

Project Conditions

Before submitting a bid, the Contractor shall become familiar with all the electrical service requirements that may affect the execution of their work.

Standards and Codes

Work involving service installation shall be done in accordance with the service utilities standards and the NEC.

Service equipment shall be listed and labeled by UL as “suitable for use as service equipment”.

16.21.2 Electrical Utility Meter Enclosure

[CSI 26 27 13]

Manufacturers

Meter enclosure shall be a Circle AW or equal and as required to meet the requirement of the serving utility. Installation shall be in vandal proof NEMA 3R enclosure with a lockable hinged door. Meter shall include a metal vandal screen that can be purchased from serving utility.

Materials

Contractor shall coordinate with Cowlitz PUD on the type of metering required and shall provide all labor and material necessary to meet Cowlitz PUD requirements.

16.21.4 Circuit Breaker Service Disconnect Switch

[CSI 26 28 16.13]

Design

The switch shall be heavy duty type, shall be quick-make, quick break, and shall be horsepower rated. The switch shall have blades as required to open all ungrounded conductors. The disconnect shall have a minimum available fault current withstand rating of 42,000 amperes unless noted otherwise on the Plans.

Service equipment shall meet the requirements of the serving utility and shall be suitable for use as service equipment. Service entrance disconnect shall be furnished with a UL service entrance label.

Manufacturers

Materials, equipment, and accessories specified in this section for the service disconnect switch shall be products of:

- Eaton (Cutler Hammer)
- General Electric
- Schneider Electric (Square D)
- Siemens
- Or approved equal

Materials

The switch shall be pad-lockable in both the OFF or ON position.

The enclosure shall be NEMA 4X SS rated unless noted otherwise on the Plans. The enclosure shall have interlocking cover to prevent opening door when switch is closed. The interlock shall include a defeating scheme. The enclosure shall be pad-lockable.

Circuit breakers shall be molded case thermal-magnetic type and meet molded case circuit breaker specifications covered in Division 16.55.16.

16.21.6 Manual Transfer Switch

[CS 26 36 13]

Part 1 - General

Design

Switch shall be heavy duty safety switch, double throw type, non-fused manually operated, NEMA 3R enclosure, 600-volt, 3 phase, 100 ampere rated.

Part 2 – Products

Manufacturers

Materials, equipment, and accessories specified in this section for the manual transfer switch shall be products of:

- Eaton (Cutler Hammer)
- General Electric
- Schneider Electric (Square D)
- Siemens
- Or approved equal

Part 3 - Execution

Ground Electrode System

The grounded conductor and ground bus shall be connected to the grounding electrode system, via the grounding electrode conductor as indicated on system one-line diagram.

The system shall be as indicated in Article 250-66 of the NEC.

See Division 16.15 for additional grounding requirements and specifications.

Underground Secondary Service

Install in accordance with Plans and Division 16.10.

16.30 BASIC PANEL EQUIPMENT AND DEVICES

16.31 Operating and Indicating Devices

[CSI 26 09 00, 40 78 00]

Part 1 - General

Operating and indicating devices minimum rating shall be NEMA 13. Operator devices mounted in outdoor panels, corrosive areas or where exposed to moisture shall be NEMA 4X.

16.35 Control Panel Accessories

16.35.1 Terminal Blocks

[CSI 26 05 83 or 26 27 26]

Part 2 – Products

Manufactured Units

Terminal blocks shall be one-piece, molded, plastic blocks with screw-type terminals and barriers rated for 600 volts. Terminals shall be double-sided and supplied with removable covers to prevent accidental contact with live circuits. Terminals shall have permanent, legible identification, clearly visible with the protection cover removed.

Part 3 – Execution

Installation

All wires between panel-mounted equipment and other equipment shall be terminated at terminal blocks. Switches shall be terminated at the terminal blocks with crimp-type, pre-insulated, ring-tongue lugs. Lugs shall be of the appropriate size for their terminal block screws and for the number and size of the wires terminated. All wires shall be labeled with the circuit number and common function.

16.35.2 Nameplates

[CSI 26 05 53, 10 14 23]

Part 2 – Products

Manufactured Units

Standard nameplates shall be made of $\frac{1}{16}$ -inch thick machine engraved laminated phenolic having black letters not less than $\frac{3}{16}$ -inch high on white background. One-inch high lettering shall be used for the large nameplates required for the control panels.

Part 3 – Execution

Installation

Nameplates shall be provided on all electrical devices including but not limited to motor control equipment, MCC cubicles, control stations, junction boxes, panels, motors, instruments, switches, indicating lights, meters, and all electrical equipment enclosures. Each control panel shall have a nameplate designating the equipment and its identifying number and size or rating. Data shall be as shown on the Plans and reviewed via the submittal process.

Nameplates shall have name, number and/or function as is applicable for clear identification. Provide one large nameplate for each control panel identifying the equipment as indicated on the Plans.

Nameplates on steel panels shall be secured with stainless steel drive screws. Where it is proposed that nameplates will be secured with pressure sensitive tape or bonding cement, the process and samples shall be submitted to the Engineer for acceptance.

Nameplates shall be provided for identifying all operator interface (lights, switches, etc.) and other devices that are located outside or inside the panels.

Nameplates shall be provided for identifying all relays and devices that are located inside the panels.

Special Functions

Provide warning nameplates on all panels and equipment, which contain multiple power sources. Lettering shall be white on red background.

16.50 PANELBOARDS

[CSI 26 24 00]

16.55 Switches and Protective Devices

[CSI 26 28 00]

16.55.1 Common Work for Switches and Protective Devices

[CSI 26 28 05]

Part 1 - General

Design Requirements

Overcurrent devices shall be NEMA rated.

Part 3 – Execution

Installation

Overcurrent protection devices and safety switches shall be centered 60 inches above the finished floor unless noted otherwise on the Plans.

16.55.16 Molded Case Circuit Breakers

[CSI 26 28 16.14]

Part 1 - General

Design Requirements

Breakers shall have the interrupting rating and trip rating indicated on the Plans. All breakers shall be calibrated for operation in an ambient temperature of 40 degrees Celsius.

Part 2 - Products

Manufactured Units

Molded case circuit breakers shall be quick-make and quick-break type with wiping type

contacts. Each breaker shall be provided with arc chutes and individual trip mechanisms on each pole consisting of both thermal and magnetic trip elements. Two and three pole breakers shall be common trip. Molded case circuit breakers shall be trip-free. Each breaker shall have trip indication independent of the “ON” or “OFF” positions.

16.55.18 Disconnect Switches

[CSI 26 28 16.17]

Part 1 - General

Design Requirements

Furnish and install disconnect switches conforming to NEMA KS 1, type HD, sized for the ampere and voltage as shown on the Plans and as required by the NEC and nameplate requirements of the equipment served.

Part 2 - Products

Manufactured Units

The switches shall be 600-volt type and horsepower rated. Auxiliary contacts shall be provided as indicated on the Plans.

Part 3 – Execution

Installation

Provide additional disconnects if required by Code.

16.60 CONDUCTORS

16.61 Low Voltage Wire and Cable

[CSI 26 05 19]

Part 1 - General

Design Requirements

This section is for power and control conductors for 600 volts or less.

All conductors shall be copper. Wire or cable not shown on the Plans or specified, but required, shall be of the type and size required for the application and in conformance with the applicable code.

Part 2 - Products

Materials

Conductors

1. Solid and stranded copper wire shall be 600-volt Type THW, THWN, or THHW, Class B stranding, sizes #14 AWG, #12 AWG, and #10 AWG only. Use of THHN insulation shall not be allowed. Aluminum conductors shall not be allowed.
2. Stranded copper wire shall be 600-volt Type XHHW, Class B stranding, sizes #8 AWG and larger. Aluminum conductors shall not be allowed.

Splices

1. For Lighting Systems and Power Outlets: Wire nuts shall be twist-on type insulated connectors utilizing an outer insulating cover and a means for connecting and holding the conductors firmly.
2. All Equipment: Crimp type connectors shall be insulated type, suitable for the size and material of the wires and the number of wires to be spliced and for use with either solid or stranded conductors.
3. Division 16 Equipment and Power Conductors: Bolted pressure connectors shall be suitable for the size and material of the conductors to be spliced.
4. All Equipment: Epoxy splice kits shall include epoxy resin, hardener, mold, and shall be suitable for use in wet and hazardous locations.

Terminations

1. Crimp type terminals shall be self-insulating sleeve type, with ring or rectangular type tongue, suitable for the size and material of the wire to be terminated, and for use with either solid or stranded conductors.
2. Terminal lugs shall be split bolt or bolted split sleeve type in which the bolt or set screw does not bear directly on the conductor.
3. Wire Markers shall be plastic sleeve type. Wire numbers shall be permanently imprinted on the markers.

Finishes

Color Coding: Provide color coding for all circuit conductors. Insulation color shall be white for neutrals and green for grounding conductors. An isolated ground conductor shall be identified with an orange tracer in the green body. Ungrounded conductor colors shall be as follows:

1. 120/208 Volt, 3 Phase: Red, black and blue.
2. 277/480 Volt, 3 Phase: Yellow, brown and orange.
3. 120/240 Volt, 1 Phase: Red and black.

Part 3 – Execution

Location (Installation) Schedule

Provide the following conductors for the following applications:

1. Use stranded copper conductors for all power and control circuits unless noted otherwise on plans or below. Size as noted on the Plans.
2. Contractor may use solid copper conductors for lighting and receptacle circuits using screw-type terminals. Size as noted on the Plans.
3. Size #14 AWG wire or smaller shall not be allowed on power circuits.

Installation

Conductor Splices

1. Splices: Install all conductors without splices unless necessary for installation, as determined by the Engineer. Splices when permitted shall be completed using an approved splice kit intended for the type of conductor and the application. The splice shall be in accordance with the splice kit manufacturer's instructions.
2. Underground Splices: All underground outdoor splices when approved by Engineer shall be completed in an accessible pullbox or handhole using an approved watertight epoxy resin splice kit rated for the application up to 600 volts. Splices will not be allowed to be direct buried.

Conductor Identification

1. Except for interior lighting and receptacle circuits, identify each wire or cable at each termination and in each pullbox, junction box, handhole, and manhole using numbered and lettered wire markers. All electrically common conductors shall have the same number. Each electrically different conductor shall be uniquely numbered. Identify panelboard circuits using the panelboard identification and circuit number. Identify other circuits as shown in the circuit schedule as favorably by the Engineer.
2. Conductors between terminals of different numbers shall have both terminal numbers shown at each conductor end. The terminal number closest to the end of the wire shall be the same as the terminal number.

Testing

Insulation Resistance Tests: For all circuits 150 volts to ground or more and for all motor circuits over ½ horsepower, test cables per NETA Paragraph 7.3.1. The insulation resistance shall be 20 megohms or more. Submit results to Engineer for review.

16.63 Signal Cable

[CSI 27 15 00]

Part 2 - Products

Materials

Twisted Shielded Pairs (TSP)

1. Cable shall conform to IEEE 383, UL 13, and UL 83 and shall be type PLTC cable suitable for direct burial. Each TSP shall consist of two #16 AWG, 7-strand copper conductors per ASTM B8 with 15 Mils PVC insulation and individual conductor jacket of nylon. Conductors shall be twisted with 2-inch or shorter lay, with 100 percent foil shielding and tinned copper drain wires. The cable shall have an overall PVC jacket with a thickness of 35 Mils. The insulation system shall be rated at 90 degrees Celsius and for operation at 600 volts.

Part 3 - Execution

Installation

Cable Installation

1. Cables shall be continuous from initiation to termination without splices.
2. Cable shielding shall be grounded at one end of the cable only. Bonding shall be to a single ground point only. Bonding from cable to cable in multiple run installations shall not be permitted.
3. Install instrumentation cables in separate raceway systems with voltages not to exceed 30 volts DC.

Conductor Identification

1. Except for interior lighting and receptacle circuits, identify each wire or cable at each termination and in each pullbox, junction box, handhole, and manhole using numbered and lettered wire markers. All electrically common conductors shall have the same number. Each electrically different conductor shall be uniquely numbered. Identify panelboard circuits using the panelboard identification and circuit number. Identify other circuits as shown in the circuit schedule as determined by the Engineer.
2. Conductors between terminals of different numbers shall have both terminal numbers shown at each conductor end. The terminal number closest to the end of the wire shall be the same as the terminal number.

Testing

Insulation Resistance Tests: Perform insulation resistance on all circuits. Make these tests before any equipment has been connected. Test the insulation with a 500 Vdc insulation resistance tester with a scale reading 100 mega ohms. The insulation resistance shall be 20 mega ohms or more. Submit results to Engineer for review.

16.70 RACEWAYS, BOXES, AND FITTINGS

[CSI 26 05 33]

16.71 Raceways

[CSI 26 05 33.23]

Part 1 – General

Design Requirements

Conduit sizes not noted on Plans shall be in accordance with NEC requirements for the quantities and sizes of wire installed therein.

Grounding of the raceway, junction boxes, fittings and any other boxes is the responsibility of the Contractor. Ground conductors, bushings, connections, clamps and other materials as needed to ground the raceway system is the responsibility of the Contractor. All raceways shall be grounded in accordance with the NEC.

Part 2 – Products

Components

Conduit and Fittings

1. Galvanized Rigid Steel (GRS): Rigid conduit shall be steel, hot dipped galvanized inside and out. The GRS must meet USA Standards Institute C80-1 Underwriters Laboratories Standard UL6 and carry a UL label. Use cast threaded hub fittings and junction boxes for all rigid conduit except in locations not permitted by the NEC.
2. PVC Coated Rigid Steel Conduit (PVC-GRS): PVC coated conduit shall meet the GRS standard above plus have a 40 Mil PVC factory applied PVC coating.
3. Nonmetallic Conduit: Nonmetallic Conduit shall be rigid PVC, Schedule 40 (PVC-40) or 80 (PVC-80). PVC conduit installed above grade shall be Schedule 80 extra heavy wall 90 degree Celsius. UL listed for aboveground use and UV resistant. Conduit shall be gray in color. Fittings shall be of the same material as the raceway and installed with solvent per the Manufacturer's instructions.
4. Flexible Metal Conduit (Flex-LT): Flexible conduit shall be interlocking single strip, hot dipped galvanized and shall have a polyvinyl chloride jacket extruded over the outside to form a flexible watertight raceway. Flexible conduit shall be American Brass Company Sealtite Type VA, General Electric Type UA or equal.

Conduit and Cable Supports

1. Conduit Supports: Hot dipped galvanized framing channel shall be used to support groups of conduit. Individual conduit supports shall be one-hole galvanized malleable iron pipe straps used with galvanized clamp backs and nesting backs where required. Conduit support for PVC or PVC coated rigid steel shall be one-hole PVC or epoxy coated clamps or PVC conduit wall hangers.

Conduit Sealants

1. Moisture Barrier Types: Sealant shall be a non-toxic, non-shrink, non-hardening, putty type hand applied material providing an effective barrier under submerged conditions.
2. Fire Retardant Types: Fire stop material shall be a reusable, non-toxic, asbestos-free, expanding, putty type material with a 3-hour rating in accordance with UL 1479. Provide products indicated by the manufacturer to be suitable for the type and size of penetration.

Part 3 - Installation

Raceway Applications

Galvanized Rigid Steel (GRS) conduit shall be used in all locations unless noted otherwise below or on the Plans.

ABOVE GRADE CONDUITS (non-corrosive areas) shall be:

1. GRS for power and control wiring.
2. GRS for instrumentation and telecommunications wiring.
3. GRS for motor leads from VFDs.

ABOVE GRADE CONDUITS (wet or corrosive areas, NFPA 70 hazardous areas) shall be:

1. PVC-GRS for power and control wiring.
2. PVC-GRS for instrumentation and telecommunications wiring.
3. PVC-GRS for motor leads from VFDs.

BELOW GRADE CONDUITS shall be:

1. PVC-40 for power and control wiring.
 - a) Sweeps and risers for transition of PVC from below grade to above grade shall be PVC-GRS.
2. PVC-GRS for instrumentation and telecommunications wiring.
3. PVC-GRS for motor leads from VFDs.

CONCRETE-ENCASED CONDUITS shall be:

1. PVC-40 for power and control wiring
 - a) Sweeps and risers for transition of PVC from below grade to above grade shall be PVC-GRS.
2. PVC-40 for instrumentation and telecommunications wiring.
 - a) Sweeps and risers for transition of PVC from concrete-encasement to above grade shall be PVC-GRS.
3. PVC-GRS for motor leads from VFDs.

ALL CONNECTIONS TO VIBRATING EQUIPMENT OR MOTORS shall be:

1. Liquidtight flexible metallic conduit for indoor, non-corrosive areas and all motor leads from VFDs.
2. Connection to equipment outdoors or in corrosive areas shall be with non-metallic liquidtight flexible conduit (except for motor leads from VFDs shall be flexible metallic.)

Installation

All conduits shall be concealed in the floor, walls, ceiling slab, or beneath the floor slab. Surface mounted conduit will not be accepted unless noted otherwise on the construction Plans.

Size of Raceways:

1. Raceway sizes as shown on the Plans, if not shown on the Plans, then size in accordance with NFPA 70.
2. Unless specifically indicated otherwise, the minimum raceway size shall be:
 - a) Conduit: $\frac{3}{4}$ -inch

All raceways shall contain a separate grounding conductor.

Spare conduits shall contain one $\frac{3}{16}$ -inch diameter nylon pull rope.

Conduit routing is shown diagrammatic on the Plans. Contractor is responsible for routing the conduits in a neat manner, parallel and perpendicular to walls and ceilings.

Location of conduit ends are shown approximately. Contractor is responsible for ending conduits in location that will not conflict with electrical equipment. Route conduit ends to facilitate ease of equipment maintenance. Conduits extending from the floor to a device shall be located as close as possible to avoid creating a hazard.

Conduit shall not be routed on exterior of structures except as specifically indicated on the Plans.

Where water cannot drain to openings, provide drain fittings in the low spots of the conduit run.

Securely fasten raceways at intervals and locations required by NEC, or the type of raceway employed.

Provide all required openings in walls, floors and ceilings for conduit penetration.

1. Do not install one (1) inch and larger raceways in or through structural members (beams, slabs, etc.) unless approved by Engineer.
2. New Construction: Avoid cutting openings, where possible, by setting sleeves or frames in masonry and concrete, and by requesting openings in advance.
3. Existing Construction: Core drill openings in masonry and concrete. Avoid structural members and rebar.

Conduit encasement or embedment in the earth shall be separated from the earth by at least 3-inches of concrete unless otherwise shown on the Plans. Plastic conduit spacers shall be located five feet on centers. The spacers shall be secured to the conduits by wire ties. The conduits shall be watertight.

Analog signal conduits shall be separated from power or control conduits. The separation shall be a minimum of 12-inches for metallic conduits and 24-inches for nonmetallic conduits.

Install explosion-proof seal-offs in hazardous areas shown on the Plans and as required by the NEC.

Plastic raceway joints shall be solvent cemented in accordance with recommendations of raceway manufacturer.

All conduit openings not encased in a panel shall be sealed with duct seal.

16.72 Boxes and Enclosures

16.72.2 Outlet and Junction Boxes

[CSI 26 05 33.16]

Part 1 – General

Design Requirements

In wet or corrosive areas, all junction boxes shall be NEMA 4X.

Outlet boxes and switch boxes shall be designed for mounting flush wiring devices.

Outlet boxes shall not be less than 4-inch square and 1½-inch deep. Wall boxes shall withstand a vertical downward force of 50 pounds for five minutes.

Part 2 – Products

Materials

Use cast boxes with threaded hubs for all rigid and intermediate conduits. All boxes shall be of proper size to accommodate devices, connectors, and number of wires present in the box. Boxes shall be readily accessible.

Cast box bodies and cover shall be cast with a minimum wall thickness of ⅛-inch at every point, and not less than ¼-inch at tapped holes for rigid conduit. Bosses are not acceptable. Mounting lugs shall be provided at the back or bottom corners of the body. Covers shall be secured to the box body with No. 6 or larger brass or bronze flathead screws. Boxes shall be provided with neoprene cover gaskets. Outlet boxes shall be of the FS types. Boxes shall conform to FS W-C-586C and UL 514.

Finishes

Where only cast aluminum is available for certain types of fixture boxes, an epoxy finish shall be provided.

16.75 Wiring Devices

[CSI 26 27 26]

16.75.1 Common Work for Wiring Devices

[CSI 26 27 26]

Part 3 - Execution

Installation

Wiring Devices

1. Position of Outlets: All outlets shall be centered with regard to building lines, furring and trim, symmetrically arranged in the room or outside the structure. Device outlets shall be set plumb and shall extend flush to the finished surface of the wall, ceiling or floor without projecting beyond the same.
2. Unless otherwise noted, wall mounted outlet devices shall generally be 24-inches above the floor, 18 inches in architecturally treated areas, above process piping near process valve boards. Switches shall be 48 inches above the finished floor unless otherwise noted.

Installation of Wall Plates

1. Exterior and/or Wet Locations: Install plates with gaskets on wiring devices in such a manner as to provide a rain tight weatherproof installation. For receptacle devices, these plates shall maintain the weatherproof rating with an attachment plug inserted and be rated extra-duty. Cover type shall match box type.

Testing

After installation of receptacles, circuits shall be energized, and each receptacle tested for proper ground continuity, reversed polarity, and/or open neutral condition.

GFI receptacles shall be tested with the circuits energized. Devices shall be tested with a portable GFI receptacle tester capable of circulating 7.5 milliamperes of current, when plugged in, between the “hot” line and “ground” to produce tripping of the receptacle. Resetting and tripping shall be checked at least twice at each GFI receptacle.

16.75.2 Receptacles

[CSI 26 27 19]

Part 1 – General

Design Requirements

Receptacles shall be heavy duty, high abuse, grounding type conforming to NEMA configurations, NEMA WD1 and UL 514 Standards.

Part 2 – Products

Materials

Duplex Receptacles

1. Outdoor Areas: Receptacles shall be duplex, 20 amp, NEMA 5-20R, and shall accept NEMA 5-15P and 5-20P plugs. Color shall be brown. Receptacles shall be weather-resistant. Provide outdoor receptacles with cast aluminum weatherproof lift covers, Hubbell WP26E, Intermatic WP1010MXD, TayMac MX3200, or equal.

GFI Receptacles

1. Device shall be rated 20 amp, 2-pole, 3-wire, 120-volt, conforming to NEMA WD1.10 configuration. Device shall have a test and reset push buttons. GFI device shall be Hubbell 5362 or equal. Color shall be brown.

16.95 Testing

[CSI 26 08 00]

16.95.1 Common Work for Testing

[CSI 26 08 05]

Part 1 - General

Submittals

Test reports shall be submitted to the Engineer prior to final acceptance in accordance with Division 1.33 of these specifications.

Scheduling and Coordination

The Contractor shall inform the Engineer in advance of testing in accordance with the requirements listed in Division 1 of these specifications.

Prior to scheduling the testing, the Contractor shall have satisfied themselves that the project area is properly cleaned up; all patching and painting deemed necessary properly completed; and all systems, equipment and controls are functioning as intended.

Part 2 - Products

Source Quality Control

Submit reports of factory tests and adjustments performed by equipment manufacturers to the Engineer prior to field testing and adjustment of equipment. These reports shall identify the equipment and show dates, results of test, measured values and final adjustment settings. Provide factory tests and adjustments for equipment where factory tests are specified in the equipment specifications. The Engineer may inspect the fabricated equipment at the factory before shipment to job site. Provide the Engineer with sufficient prior notice so that an inspection can be arranged at the factory.

Part 3 – Execution

Site Testing

Test all circuits for continuity, freedom from ground, and proper operation during progress of the work.

Insulation Resistance, Continuity, and Rotation: Perform routine insulation resistance, continuity and rotation tests for all distribution and utilization equipment prior and in addition to tests performed by the testing laboratory specified herein.

Conduct special test as required for service and/or system ground.

Arc Flash Study, Protection Device Coordination, and Short Circuit Analysis

[CSI 26 05 73.13, 26 05 73.16, 26 05 73.19]

Provide the services of a recognized independent testing laboratory or coordination analysis consultant for the proper system coordination of the protective devices furnished on this project. Submit the name and the qualifications of the laboratory or consultant for review by the Engineer; qualifications must include professional registration of proposed personnel as electrical engineers.

The protective device on the line side closest to the fault or abnormal conditions shall isolate the problem portion of the system and minimize damage in that portion. The rest of the system shall be maintained in normal service. The coordination shall be in conformance with the recommendations of latest IEEE Standard 242.

Provide an Arc Flash Hazard Study for the electrical distribution system shown on the Plans. The intent of the Arc Flash Hazard Study is to determine hazards that exist at each major piece of electrical equipment shown on the one-line diagrams. This includes switchgear, switchboards, panelboards, motor control centers, generators, transfer switches, and transformers. The study will include creation of Arc Flash Hazard Warning Labels listing all items as required in NFPA 70E-2018. These labels serve as a guide to assist technicians and others in the selection of proper Personal Protective Equipment when working around exposed and energized conductors. The electrical contractor will install the labels. The arc flash hazard study shall consider all operating scenarios during normal conditions alternate operations, emergency power conditions, and any other operations, which could result in maximum arc flash hazard. The label shall list the maximum incidental energy calculated and the scenario number and description on the label.

Submit the analysis that shall include arc flash, impedance, and short circuit calculations, list of any assumptions made and the analysis, the recommended settings of the protective devices, and the system time/current characteristic curves. The submittal shall be completed and submitted in conjunction with the circuit breaker submittal to allow time for review and re-submittal, if necessary, before the implementation of final settings and adjustments by the testing laboratory.

Field Quality Control

General

1. Conduct final test in the presence of Owner and/or their authorized representative. Contractor shall provide all testing instrumentation and labor required to demonstrate satisfactory operation of systems, equipment and controls.

Operational Tests

1. Operational test all circuits to demonstrate that the circuits and equipment have been properly installed, adjusted and are ready for full-time service. Demonstrate the proper functioning of circuits in all modes of operation, and including alarm conditions, and demonstrate satisfactory interfacing with the data acquisition and alarm systems.

16.95.3 Conductor Test Report

[CSI 26 08 13]

Conductor Test Report													Page 1 of 1			
PROJECT:						OWNER:										
Contractor Co. Name:						Phone Number:										
Tested by:						Test Date:										
Race-way	V	C	Operating Load Voltage						Insulation Resistance - OHMS							
Label																
(1)	(2)	(3)	V A B	VC B	VC A	VA N	VB N	VC N	A-B	B-C	C-A	A-G	B-G	C-G		
A																
B																
C																
D																
E																
F																
G																

1. Refer to raceway and wire schedule and one-line diagram for description of feeder identified by label shown on this report
2. Visual Inspection – Check when completed
3. Continuity Test – Check when completed

16.95.4 Ground Electrode Resistance Test Report

[CSI 26 08 15]

Ground Electrode Resistance Test Report	
PROJECT:	OWNER:
Contractor Co. Name:	Phone Number:
Tested by:	Test Date:
Test Meter Type:	
Test Distance-D:	
Soil Conditions:	
Measured Resistance:	
DESCRIPTION OF TEST PROCEDURE, CONDITIONS, RESULTS:	

Division 17

Automatic Control

17.00 GENERAL

This division covers all work necessary for furnishing, installing, adjusting, testing, documenting, and starting-up the Instrumentation and Control (I&C) and Telemetry System. Computer-based telemetry system will provide remote alarm presentation, and data logging activities at the Owner's headquarters location.

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

These specifications are an integral part of the contract documents for the I&C and Telemetry portion of this contract. The written descriptions of system performance contained herein are given to assist the Contractor in interpreting the contract plans but are not intended to be all-inclusive. The Contractor shall be aware that all automatic control systems do not require the same components and accessories for complete system operation. Therefore, these specifications do not include all accessories and appurtenances required for a complete system. The Contractor shall, however, provide all accessories and appurtenances to result in a completely operational system as required to meet the functional requirements of these documents. Where specific equipment specifications are given, they are used to represent the level of quality required by these documents.

17.05 Common Work for Automatic Control

[CSI 40 60 05]

Part 1 - General

Summary

The work under this division covers construction specifically described in these specifications. Project Plans will be provided for this project. All work incidental and necessary to the completion of the project described herein shall be completed under the bid item listed in the bid proposal, and no other compensation will be allowed. The work generally consists of the following:

- Detailed system layout and design for the particular equipment bid in accordance with these functional specifications.
- Furnishing of I&C equipment including delivery, storage, software, programming, installation, testing, startup, and documentation.
- Providing operator maintenance manuals for all equipment and devices provided by this Contract.
- Providing system training to the operators of the proposed equipment.

Related Sections

- Division 16 Electrical

References

The project Plans are based on Instrument Society of America (ISA) standards numbers S5.1, S5.2, S5.3, and S5.4. The Contractor is encouraged to be familiar with these standards since the project plans do not contain wiring or ladder diagrams, but are based on the functional requirements of the ISA format.

All equipment and materials shall conform to the latest revised editions of applicable standards published by the following organizations:

- American National Standards Institute (ANSI).
- Institute of Electrical and Electronic Engineers (IEEE).
- National Electrical Manufacturers Association (NEMA).
- Underwriters' Laboratories (U/L).
- Instrument Society of America (ISA)

All equipment and materials, and the design, construction, installation, and application thereof shall comply with all applicable provisions of the National Electrical Code (NEC), the Occupational Safety and Health Act (OSHA), and any applicable Federal, State, and local ordinances, rules and regulations. All materials and equipment specified herein shall be within the scope of Underwriter's Laboratory (UL) examination services, be approved by the UL for the purpose for which they are used and shall bear the UL label.

All control panels shall bear a label by UL or by an approved testing authority for the completed assembled panel.

Definitions

Contractor: The Contractor, as distinct from the Control System Integrator, shall install panels and other materials furnished by the Control System Integrator and provide all materials and work necessary and thereby, satisfy all requirements that are within the scope of this section.

Control System Integrator: A single firm preselected by the Owner and subcontracted by the Contractor, who shall design and furnish the system, provide Mission Control Panel, assemble and test the control panel equipment, and program computers, and other instrument components and provide start-up and training services. The Control System Integrator for this contract shall be: Advanced Electrical Technologies (AET).

Submittals

All submittals shall be complete, neat, orderly and indexed. Partial submittals will not be accepted. Submittal information shall be provided to the Owner for the following items:

- Mission Control Panel, "MCP"
- Operation and Maintenance Manuals per Division 1.79.2 and Division 17.94
- Full size nameplate wording schedules, in lettering style proposed for use.

In addition to the requirements of Division 1.33, the Contractor shall develop and submit the following information provided by the Control System Integrator.

Hardware Submittals

Before any components are fabricated, and/or integrated into assemblies, or shipped to the site, the Contractor shall prepare a complete hardware submittal. The Engineer shall require five (5) sets, including fully detailed shop drawing, catalog cuts, wiring connections, and such other descriptive matter and documentation as may be required to fully describe the equipment and to demonstrate its conformity to these Specifications. The decision of the Engineer, upon the acceptability of any submittal, shall be final. Catalog information shall be submitted for all components and equipment, regardless of whether or not it is of the same manufacture as that listed in the Specifications.

System Plan Submittals

Following approval of the hardware submittal, the Control System Integrator shall prepare complete system interconnect wiring diagrams and panel layout plans for approval.

Plans

The Control System Integrator shall develop all shop drawings required for design, fabrication, assembly and installation of the control system. Shop drawings shall include all plans required in manufacture of specialized components and for assembly and installation of them.

Plans shall be prepared with a CAD program capable of exporting to AutoCAD format, and printed on 11-inch by 17-inch media. Plans shall have borders and title blocks identifying the project system, revisions to the plans, and type of plan. Each revision of a plan shall carry a date and brief description of the revisions. Diagrams shall carry a date and brief description of the revisions. Diagrams shall carry a uniform and coordinated set of wire numbers and terminal block numbers in compliance with panel work wiring. Additionally, one set of electronic .DWG files shall be provided to the Owner.

Elementary Diagrams

The Contractor shall provide elementary diagrams for all discrete loops. Loop diagrams shall be prepared in compliance with ISA S5.4 and shall be provided for all analog loops. Elementary diagrams and loop diagrams shall show circuits and devices of a system. These diagrams shall be arranged to emphasize device elements and their functions as an aid to understanding the operation of a system and maintaining or troubleshooting that system. Elementary and loop diagrams shall also show wire numbers, wire color codes, signal polarities, and terminal block numbers.

Panel Fabrication and Arrangements Plans

The Contractor shall provide arrangement plans of all panel front- and internal-mounted instruments, switches, devices, and equipment indicated. All panel mounting details shall be shown. Outer dimensions of all panels shall be included on the plan. Deviations from approved arrangements require approval prior to installation.

Arrangement plans shall be drawn to scale using standard Architectural or Engineering scales.

Site Conditions

Specified instrumentation and control equipment shall be modified, if necessary, to make it suitable for operation in the ambient conditions specified in Division 16.

Warranty

In addition to any other warranties required by the specifications, the entire PLC system will be warranted against defects in materials, workmanship, and software functions for a period of one (1) calendar year following the successful completion of the Functional Acceptance Test (FAT). The Contractor or designated service organization will be available on 24-hour notice to correct any system problems without charge to the Owner during the warranty period. In addition, the Contractor will provide four 2-day site visits during the warranty period to perform inspection and calibration of the equipment or other work at the request of the Owner.

Part 2 – Products

Accessories

Provide all accessories required to furnish a complete control system that meets the requirements of the Plans and Specifications.

Source Quality Control

Material shall be new, free from defects, and of the quality specified. All equipment and materials utilized in the system shall be the products of Manufacturers with at least five (5) years of experience in the manufacture of similar equipment. Similar items in the system shall be the products of the same Manufacturer. All equipment shall be of industrial grade and of standard construction, shall be capable of long, reliable, trouble-free service, and shall be specifically intended for control and monitoring of operation of motor-driven pumps and equipment. All equipment shall be of modular design to facilitate interchangeability of parts and to assure ease of servicing.

Part 3 - Execution

Installers

Installation shall be performed by the workers who are skilled and experienced in the installation of I&C and Telemetry systems.

Installation

Installation and testing procedures shall be as specified in these and subsequent sections of this division.

The control system shall be installed in accordance with the installation plans and instructions prepared by the Control System Integrator.

Installation shall include all elements and components of control system and all conduit and interconnecting wiring between all elements, components, sensors, and valve operators.

Equipment shall be located so that it is readily accessible for operation and maintenance.

Field Equipment

Equipment shall be provided as specified on the Plans such that ports and adjustments are accessible for in-place testing and calibration. Where possible, equipment shall be located between 48 inches and 60 inches, unless specified otherwise on the Plans, above the floor or a permanent work platform. Instrumentation equipment shall be mounted for unobstructed

access, but mounting shall not obstruct walkways. Equipment shall be mounted where shock or vibration will not impair its operation. Support systems shall not be attached to handrails, process piping or mechanical equipment except for measuring elements and valve positioners. Instruments and cabinets supported directly by concrete or concrete block walls shall be spaced out not less than $\frac{5}{8}$ -inch by framing channel between instrument and wall.

Steel used for support of equipment shall be hot-dip galvanized after fabrication. Support systems including panels shall be designed in accordance with the Seismic Restraint and Anchorage section of Division 1.81 of these specifications and to prevent deformation greater than $\frac{1}{8}$ -inch under the attached equipment load and an external load of 200 pounds in any direction.

Electrical Power Connection

Electric power wiring and equipment shall be in compliance with Division 16. Power disconnect switches shall be provided within sight of equipment and shall be labeled to indicate opened and closed positions and specific equipment served. "Within sight of" is defined as having a clear unobstructed view from the equipment served and within 50 feet of the equipment served. Disconnect switches shall be mounted between 36 inches and 72 inches above the floor or permanent work platform. Where equipment location is such that the above requirements cannot be met by a single disconnect switch, two switches, one at the equipment and one at the work platform, shall be provided.

Signal Connection

Electrical signal connections to equipment shall be made on terminal blocks or by locking plug and receptacle assemblies. Jacketed flexible conduit shall be used between equipment and rigid raceway systems except that flexible cable assemblies may be used where plug and receptacle assemblies are provided and the installation is not subject to mechanical damage in normal use. The length of flexible conduit or cord assemblies shall not exceed 2 feet. Flexible cable, receptacle and plug assemblies shall be used only where specified.

17.06 Control System Integrator

[CSI 40 61 13]

Part 1 - General

Division of Responsibility

All instrumentation and industrial electronic systems shall be provided under the supervision of a single Control System Integrator, chosen by the Owner, which is regularly engaged in the design and installation of such systems of similar scope and complexity. The Control Systems Integrator shall be enjoined by the Contractor as a Subcontractor. The assignment of specific responsibilities herein to the Control System Integrator shall not, in any way and under any conditions, diminish the Contractor's full and complete responsibility for all work performed and all materials installed under the contract. The contract between the Contractor and the Control System Integrator shall specifically require that the Control System Integrator conform to and meet all requirements specified in the contract documents.

The assignment of a Control System Integrator that is an equipment supplier shall not be acceptable.

Control System Integrator's Responsibility

The Control System Integrator shall be solely and completely responsible for the final design and assembly of the entire control system. Responsibilities include:

- The design of all interconnecting wiring of control equipment including remote control panels, packaged equipment panels, mechanical equipment with control components, etc.
- Coordinate with the Contractor for specific requirements and locations of raceway penetrations and field wiring in control panels.
- The Control System Integrator shall supply the Contractor with all necessary detailed installation plans and/or written instruction for installation of all control components and sensing devices for proper system operation.
- Provide installation assistance.
- Program and configure the Mission Control Panel.
- MTU and Human Machine Interface (HMI) programming at the Owners Headquarters.
- Provide Startup and Training Services.

General and Electrical Contractor's Responsibilities

The General and Electrical Contractor shall be responsible for the following equipment and services:

- Review of the Control System Integrator's submittals and wiring diagrams for coordination with space requirements, raceway requirements of field wiring, etc.
- Supply the Integrator with submittals of equipment related to the control system that the Integrator must include in their submittals and integrate. Such as motors, packaged control panels that the Integrator does not build, etc.
- Installation of the control panels provided by the Control System Integrator.
- Installation of the interconnecting wiring in accordance with these documents and the Control System Integrators wiring diagrams.
- Installation of I&C and Telemetry System components in accordance with these documents and plans or instructions of the Control System Integrator.

Part 3 – Execution

Installers

The Control System shall be designed, constructed, programmed and commissioned by full time employees with a minimum of 5 years of experience (minimum of 1 year with Integrator).

The Control System Integrator shall be: Advanced Electrical Technologies (AET)

Approval of Personnel and Alternatives

The Contractor and the selected Control System Integrator shall anticipate that the Owner may withhold approval of the selected Integrator or employee if, in the opinion of the Owner,

the Control System Integrator or employee does not have the experience, capability or an acceptable performance and execution record of similar projects in the past.

Neither the Contractor or Control System Integrator or employee not approved by the Owner, shall be entitled to an extension of time or to any claim for damages because of extra and unanticipated costs, hindrances, delays or complications caused by or resulting from the Owner not approving any Control System Integrator or employee for whatever reason.

17.08 System Description

[CSI 40 61 96]

Part 1 – General

Summary

The I&C and Telemetry system functions required are specified on the Plans and in subsequent sections of this Division.

Design and Performance Requirements

The system shall be designed to provide the control capabilities and functions indicated and implied by the Plans and these Specifications and to provide trouble-free operation with minimum maintenance. The system shall readily enable manual operation of any and all functions in the event of failure of any one component.

The control system shall be designed and assembled by the Control System Integrator to provide:

- Monitoring of operation of motor driven pumps, equipment, and processes.
- Monitoring of pressures and flows, as indicated and implied by the Plans and Specifications.
- The capabilities indicated and implied by the Plans and Specifications.

The I&C and Telemetry System shall be designed and assembled by the Control System Integrator to be an integrated system composed completely of components which are specifically designed and used for and in conjunction with control and operation of motor-driven pumps and process control equipment. The Control System Integrator shall supply all interfacing equipment, appurtenances and accessories and all such devices that may be required for proper interfacing as part of the control system.

Project Conditions

The control system for the Juanita Way Booster Pump Station shall be a Mission Control Panel, “MCP” linked to the existing Master Telemetry Unit (MTU) via cellular communications. The MTU is located at the Owner’s Headquarters with a computer based Human Machine Interface (HMI).

MCP sites included in this project are:

1. Juanita Way BPS

Part 2 – Products

Manufacturers

The manufacturer shall be Mission Communications, LLC.

Components

The I&C and Telemetry System shall include the instruments, control devices, Remote Telemetry Unit, Human Machine Interface, input and output devices, sensors, interfacing devices, cabinets, enclosures and other components indicated and implied by the Plans and Specifications.

The following is a list of the Control Panels to be provided by the Control System Integrator:

- Mission Control Panel, “MCP”

Part 3 – Execution

Preparation

The Control System Integrator shall be responsible for the coordination and integration of control system with the motor control and other related equipment. The Control System Integrator shall communicate directly with the Manufacturer(s) and Supplier(s) of all related equipment to determine all details of the equipment, which may influence or affect the control system. The Control System Integrator shall determine all requirements for and shall cause integration of the control system into a unified operating system. The Control System Integrator shall define all requirements for all interfacing equipment and shall supply all appurtenances, accessories and all such devices, which may be required for proper interfacing as part of the control system.

The Control System Integrator shall be responsible to obtain submittal information on equipment supplied by other disciplines and to integrate them into the control system to form a complete working package as outlined by the contract documents.

Installation

The system shall be completely assembled in the shop by the Control System Integrator. All components and equipment shall be prewired to the maximum extent possible.

All Process Control shall be done within the control panels unless specifically listed on the Plans as other.

17.10 PANELS

[CSI 40 67 00]

17.12 Equipment Panels

[CSI 40 67 16, 40 67 19]

Part 1 – General

References

Panels shall meet the requirements of UL-508 for water systems and UL-913 for sewer systems. All panels shall bear the appropriate label. The provider of the panels shall be a

UL-508A certified facility. All field modifications shall be in conformance with UL-508 or UL-913.

Design Requirements

Control equipment panels shall be enclosures conforming to the requirements of the National Electrical Manufacturers Association (NEMA) and shall be NEMA 12 for indoor use and NEMA 4X for outdoor use.

Part 2 – Products

Components

- Enclosure shall be constructed of stainless steel.
- Minimal metal thickness shall be 14-gauge.
- All doors shall be rubber-gasketed with continuous hinge and key locking latch mechanism.
- Wherever practical, enclosures shall be a manufactured item.
- All doors shall be provided with quick-release latches to secure cover.
- Panels shall be sized to adequately dissipate heat generated by equipment mounted in or on the panel.
- Enclosure shall include a backpan.
- The enclosure shall be oversized to accommodate future racks and auxiliary devices as required.
- All outdoor enclosures shall be provided with a control panel heater and ventilation fan and filter with built-in thermostat to provide adequate climate control.

Fabrication

Panels should be completely fabricated, and instruments installed and wired in the manufacturer's factory (where possible). All wiring shall be completed and tested prior to shipment. All external connections shall be by way of numbered terminal blocks. Panel cutouts for instruments and devices shall be cut, punched or drilled and smoothly finished with rounded edges.

17.20 PANEL COMPONENTS

[CSI 40 78 00]

Part 1 - General

Design Requirements

All components shall be suitable for installation inside the I&C and Telemetry system panel enclosure.

17.22 Wire and Cable

[CSI 40 67 33]

17.22.2 Wiring

[CSI 40 67 33]

Part 1 - General

References

All electrical wiring shall be in accordance with the NEC.

Design Requirements

Wires shall be 600-volt class, PVC insulated, stranded copper and shall be the sizes required for the current to be carried but not less than No. 14 AWG conductor size.

Wires for signal circuits shall be twisted shielded pairs not smaller than No. 18 AWG.

Part 3 – Execution

Installation

All power wiring shall be supported on a sheet metal raceway or enclosed in a plastic wiring duct. Wiring for signal circuits shall be separated at least 6-inch from any power wiring.

17.22.3 Cables

[CSI 40 67 33]

Part 1 - General

Design Requirements

Cables and connectors shall be industry standard, shielded, and shall be provided to connect all peripherals and equipment.

17.40 REMOTE COMMUNICATION DEVICES

17.41 Remote Communications Systems

Part 1 – General

Performance Requirements

All components shall be suitable for installation in the environment where installed.

Part 2 – Products

Radio Communication Equipment

1. One (1) MISSION Model MyDro 850, no substitutions. Provide RTU in Large NEMA 4X Enclosure (PN M852L). MISSION RTU shall be installed on outdoor equipment pedestal as shown on the Plans. RTU shall include 120 VAC to 12 VAC transformer and standard universal-mount antenna kit.
2. One (1) MISSION 8-channel Digital Input Expansion Module P/N OP653
3. One (1) MISSION 7-channel Analog Input Expansion Module P/N OP465

Part 3 – Execution

Installation

All communications equipment shall be installed as per plans, specifications and product installation instructions. All radio equipment will be configured by the Control System Integrator. All devices shall be installed as recommended by the manufacturer.

17.90 TESTING, STARTUP, AND TRAINING

17.90.1 Common Work for Testing, Startup, and Training

[CSI 40 61 21, 40 61 26, 40 80 00]

Part 1 – General

Summary

Total system hardware start-up is the responsibility of the Control System Integrator.

Maintenance

The Control System Integrator shall be solely and completely responsible for all hardware maintenance of the system from time of start-up to the date of acceptance, by formal action of the Owner, of all work under the contract. The Control System Integrator shall perform all such work required or considered to be required by the Owner to cause and maintain proper operation of the system and to properly maintain the system.

Warranty

The Contractor shall cause the Control System Integrator to make any and all repairs, replacements, modifications and adjustments required to eliminate any and all defects in design, materials and workmanship which are disclosed within the one year guarantee period. The Control System Integrator shall begin all repairs, replacements, modifications and adjustments within twenty-four (24) hours of notification by telephone by the Owner and shall complete such repairs, replacements, modifications and adjustments within forty-eight (48) hours of notification. Should the Control System Integrator fail to begin the work within 24 hours or complete the work within 48 hours, the Owner may proceed to undertake or complete the work. In such event, the Contractor and his surety shall be liable for all costs incurred by the Owner.

Part 3 – Execution

Field Quality Control

Equipment Manufacturer's Support

1. The Control System Integrator shall pay for services of equipment manufacturer's field service representative(s) to:
 - a. Inspect equipment covered by these Specifications.
 - b. Supervise adjustments and installation checks.
 - c. Conduct start-up of equipment and perform operational checks.
 - d. Provide Owner with a written statement that manufacturer's equipment has been

installed properly, started up and is ready for operation by Owner's personnel.

Repairs

The Control System Integrator shall correct all deficiencies and defects and make any and all repairs, replacements, modifications, and adjustments as malfunctions or failures occur.

The Contractor and the Control System Integrator shall anticipate that the Owner may delay acceptance of all work under the contract if, in the judgment of the Owner, malfunctions or failures in operation of the control system repeatedly occur after start-up. Both the Contractor and the Control System Integrator shall not be entitled to an extension of time or to any claim for damages because of hindrances, delays or complications caused by or resulting from delay by the Owner in accepting the work because of malfunctions or failures in operation of the control system.

17.91 Tests and Inspections

[CSI 40 61 21, 40 80 13]

Part 1 - General

Summary

Materials, equipment, and construction included under this specification shall be inspected in accordance with the specifications. Testing shall be performed by the Control System Integrator in accordance with Division 16, and this and subsequent sections of this division. Testing shall be required to determine if installed equipment and system(s) will operate in the manner in which they are intended to operate. The decision of the Owner upon the acceptability of the test procedures and conformance shall be final. The work will not be accepted until all testing has been satisfactorily performed.

Scheduling

The Contractor shall prepare field test procedures to demonstrate conformance of the complete system to this specification. The Contractor shall submit the detailed test procedures within four weeks after the notice to proceed for the Engineer's review and approval.

The Contractor shall furnish all labor, materials, tools, equipment, instruments and services necessary to perform all specific functional testing of all installed equipment and systems at no additional cost.

The Control System Integrator and Contractor shall submit to the Engineer a detailed field testing schedule identifying each day that the Control System Integrator will need to be on site for field testing of equipment. A preliminary schedule shall be submitted to the Engineer for review 60 days before testing. A final schedule shall be submitted to the Engineer for review 30 days before testing.

Part 3 – Execution

Field Quality Control

Following installation by the Contractor, the Control System Integrator will verify the correctness of the interconnecting wiring and energize all control equipment in the field. Each point at the controller(s) shall be checked for proper functional operation through communication with the central computer.

Field Tests

The Control System Integrator in conjunction with the Contractor shall conduct field tests of all panels and instrumentation in the presence of the Engineer after installation of the equipment at the site. Testing shall be conducted by physically actuating signaling devices, installing temporary jumpers, or artificially imposing signals on the field wiring. This shall be done to establish proper operation of the field devices, the integrity of the field wiring, and the proper connection of field devices to the panels. The Contractor and Control System Integrator shall coordinate with the Engineer to provide for as complete testing of the control system as is practical prior to placing the equipment on line for actual control and monitoring. The Contractor and Control System Integrator shall make corrections or repairs to the wiring and/or devices as necessary to provide proper operation of the system.

After the initial testing is complete, commissioning shall be accomplished by the Control Systems Integrator and Contractor, with the Owner and Engineer present. Commissioning shall include operation and verification of all control components and features of the entire control system. Each function shall be demonstrated to the satisfaction of the Owner.

Repairs

Should any part of the system fail during the test, the test shall be rescheduled and repeated to the satisfaction of the Owner after repairs.

17.92 Startup

[CSI 40 80 15]

Part 1 – General

Summary

All testing, startup and operation shall not be cause for claims for delay by the Contractor, and all expenses accruing therefrom shall be deemed to be incidental to this contract. The Contractor shall make arrangement for all materials, supplies and labor necessary to efficiently complete the testing, startup and operation.

Startup shall consist of testing, by a simulated operation, all operational equipment and controls. The purpose of these tests 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.

Scheduling

Factory representatives of all major units shall be present for the startup phase. The test shall continue until it is demonstrated that all functions of controls and machinery are correct.

Part 3 - Execution

Field Quality Control

When the installation of the Control System is substantially complete, the Contractor shall commence with calibration and field testing. Testing shall determine that all system components connect up correctly to each other so that the system works as designed. Refer to section 17.91 for field testing requirements.

All components of the control system shall be calibrated by the Control System Integrator after completion of installation. Each component shall be adjusted to be within the Manufacturer's required range and for the specific application.

Components that cannot be properly calibrated or that are found to exceed the Manufacturer's specified range or accuracy shall be removed and replaced at no additional cost to the Owner.

The control system shall be placed into operation by the Control Systems Integrator.

The Control System Integrator shall calibrate all instruments, indicators, recorders, loops, etc. and shall provide a five-point calibration test results sheet for each calibrated instrument supplied by the Control System Integrator. The five-point calibration shall include one point at: Minimum input range value, Maximum input range value, Midrange input value, no other point less than 25 percent of span to any other point. Test forms shall identify each instrument tested, input conditions vs. output signal results in tabulated form, and shall be submitted to the Engineer prior to final commissioning.

Repairs

All deficiencies observed during the start-up will be corrected by the Contractor.

17.93 Training

[CSI 40 61 26]

Part 1 – General

Submittals

Submit index of all training offered by PLC system equipment manufacturers including operation and maintenance.

The Control System Integrator shall prepare and assemble specific instruction materials for each training session and shall supply such materials to the Owner at least 2 weeks prior to the time of the training.

Part 3 – Execution

Hands-On Training

The Control System Integrator shall conduct specifically organized training sessions in operation and maintenance of the control system for personnel employed by the Owner. The training sessions shall be conducted to educate and train the personnel in maintenance and operation of all components of the control system. Training shall include, but not be limited to, the following:

1. Preventative maintenance procedures
2. Trouble-shooting
3. Calibration
4. Testing
5. Replacement of components

At least two separate training sessions, each at least 4 hours in duration, shall be conducted at

the facility after start-up of the system.

17.94 Documentation

17.94.2 Operations and Maintenance Manuals

[CSI 40 80 23]

Part 1 – General

Summary

Two types of operation and maintenance manuals (O&M) will be required for the contract:

1. General manuals for use by the Water Department staff for daily operation, maintenance and troubleshooting.
2. Technical manuals for use by trained electronics technicians for technical and “board level” maintenance and repair.

Submittals

Prior to the receipt of payment for more than 50 percent of the work, the Contractor shall deliver to the Owner five sets of acceptable manufacturer's operating and maintenance instructions covering each piece of mechanical and electrical equipment, or equipment assembly, furnished under this contract. Each set of instructions shall be bound into multiple volumes; each volume to be complete with and index and bound in a suitable hard-cover binder. Manuals shall be assembled and indexed so that information on each piece of equipment can be readily found. Any additional operating and maintenance instructions from the Control Systems Programmer will be submitted separately.

Quality Assurance

Manuals shall be purposefully made for this installation, and general manuals which are vague or have limited applicability will not be accepted. The manuals shall be written in a non-technical format suitable for reading by water system operators with no previous automatic control equipment experience. The decision of the Owner on the acceptability of the manual shall be final.

Part 2 – Products

Materials

The Control System Integrator shall prepare and assemble detailed operation and maintenance manuals in accordance with the project general requirements. The manuals shall include, but not be limited to, the following:

1. Name, location and phone number of nearest supplier and spare part warehouse.
2. Step by step operating procedures.
3. Narrative of overall system performance and operation.
4. Listing of all equipment setpoints.
5. Preventative maintenance procedures
6. Trouble-shooting of master and remote equipment.

7. Calibration
8. Testing
9. Replacement of components
10. System schematics / shop drawings
11. As-built elementary and one-line diagrams
12. Catalog data and complete parts list for all equipment and control devices
13. Listing of recommended spare parts.
14. Listing of recommended maintenance tools and equipment.
15. Warranties.
16. Disassembly and reassembly instructions.
17. Program documentation printout with tag numbers and descriptive comments.
18. Backup program on flash drive.

All plans shall be provided on hard copy and in electronic form on disk. Electronic drawing files shall be provided in AutoCAD .DWG format with all “xrefs” bound. If “xrefs” are not bound, all “xref”.DWG files shall be provided unlinked with instructions to reestablish the links. Files shall be in AutoCAD 2010 or later format.

Division 18

Measurement and Payment

18.0 GENERAL

It is the intention of these specifications that performance of work under bid items shall result in complete construction, in proper operating condition, of improvements identified in these written specifications and accompanying plans. Work and material not specifically listed herein but required according to the plans and specifications and general practice shall be included in Contractor's bid price in the most closely applicable bid item.

If a minimum bid amount has been established for any item and the bidder's entry is less than the minimum specified amount, the Owner will unilaterally revise the price to the minimum specified amount and recalculate the total. The recalculated total will be used by the Owner for award purposes and to fix the contract price amount and the amount of the contract bond.

If a maximum or fixed bid amount has been established for any item and the bidder's entry exceeds the maximum or fixed specified amount, the Owner will reduce the bid item price to the maximum or fixed specified amount and relocate the offsetting amounts to bid items of the Owner's choosing.

Bid Item 23 – PRV Station

Lump sum price shown shall cover the complete cost of providing all work and equipment necessary to construct the PRV Station and vault as identified on the plans, details and specifications at the intersection of SR 504 and Tower Road.

Bid Item 24 – Pump Station Site Work

Lump sum price shown shall cover the complete cost of providing all site work relating to construction of improvements as shown on the Plans and specified herein. Work includes, but is not limited to: pump station structure excavation, backfill, and compaction; site grading and gravel restoration; temporary construction fencing; temporary erosion and sedimentation control; check valve, vault, site piping, connection to existing system; disposal of excess material; control of water; landscaping; trenching; excavation; removal of unsuitable materials; select bedding; backfill; appurtenances; dewatering; restoration for underground utilities; bollards, 18" storm pipe and all other work necessary for a complete installation of all site work and underground utilities.

Bid Item 25 – Pump Station Mechanical

Lump sum price shown shall cover the complete cost of providing all labor, materials, and equipment necessary for the mechanical work shown on the Juanita Way BPS Plans, and detailed in the contract specifications, including all mechanical work (including pipe, gate valves, check valves, fittings, sump pump) and equipment not listed in the other bid items.

Bid Item 26 - Pump Station Electrical

The lump sum price shown shall cover the complete cost of providing all labor, materials, and equipment necessary for the electrical work shown on the Plans and detailed in the contract specifications.

Bid Item 27 – Pump Station Automatic Control

Lump sum price shown shall cover the complete cost of providing all labor, materials, and equipment necessary for the automatic control system as shown on the Plans, and detailed in

the contract specifications.

Bid Item 28 - Pump Station Testing, Startup and Training

Lump sum price shown shall cover the complete cost of providing all labor and materials necessary for testing and startup of the project as shown on the Plans, and detailed in the contract specifications. Payment shall be lump sum. Partial payment of up to 50 percent of the total bid item cost is allowed no earlier than first Contractor initiated testing date. Final 50 percent of payment shall not be paid until testing of the station is complete, and the pump station is completely operational, and staff trained as determined by the Owner and Engineer. Minimum cost for this bid item shall be \$5,000.

Bid Item 29 – Water Line Special Construction STA 11+75 to STA 16+25

Unit price shown shall cover the complete cost of providing all labor and materials necessary for installation of the 8-inch water line between Sta 11+75 to Sta 16+25 in accordance with the Plans and Standard Specifications Section 7-09. Contractor shall use special construction methods within this area to protect existing tree roots over 3-inches in diameter. This may include hand digging, water jetting, use of smaller excavation equipment, trenchless construction, boring, or similar installation methods. Payment shall be unit price per lineal feet of pipe installed and tested.

Bid Item 30 – Water Line Construction STA 16+68 to 18+18

Unit price shown shall cover the complete cost of providing all labor and materials necessary for installation of the 8-inch water line between Sta 16+68 to Sta 18+18 in accordance with the Plans and Standard Specifications Section 7-09. Unit price shall include existing utility line coordination, utility potholing, existing utility pipe support as necessary, CDF, HDPE pipe casing, backfill, pipe bedding, HDPE pipe, HDPE fittings, and restoration. Contractor shall use special construction methods within this area to protect existing utilities as required. This may include hand digging, use of smaller excavation equipment, trenchless construction, boring, or similar installation methods. Payment shall be unit price per lineal feet of pipe installed and tested.

Bid Item 31 – Utility Conflict Relocation

Payments for changes amounting to \$50,000 or less when resolving utility conflicts other than those shown in the Plans may be made under the this bid item. At the Owner's discretion, additional work or payments may be authorized to resolve utility conflicts encountered during the construction of improvements. Monies in this bid item may be used to cover the cost to resolve said conditions. At the discretion of the Owner, the procedure for Minor Changes may be used in lieu of the more formal procedure as outlined General Conditions.

Payments will be determined in accordance with Section 1-09.4. For the purpose of providing a common Proposal for all Bidders, the Contracting Agency has entered an amount for this item in the Proposal to become a part of the Bid by the Contractor.

Appendix B

Construction Plans

Appendix C

WSDOT Permit Application



Southwest Region
11018 Northeast 51st Circle
Vancouver, WA 98682-6686
360-905-2000 / FAX: 360-905-2222
TTY: 1-800-833-6388
www.wsdot.wa.gov

September 19, 2024

Christopher Andrews
Cowlitz County Public Works
1600 13th Avenue South
Kelso, WA 98626-2851

Re: SR 504, MP 1.72 – 1.99
Franchise UF-SW-2024-011

Dear Mr. Andrews:

Enclosed is Franchise No. UF-SW-2024-011, which grants permission to construct, operate and maintain a buried water main within State right of way on SR 504 in Cowlitz County.

In accordance with the Special Provisions, the Utility shall notify Melissa Griswold, by phone at (360) 905-2181, by cell phone at (360) 787-3306, by email at melissa.griswold@wsdot.wa.gov, or in writing to the above address to set up a pre-construction meeting. ***The Utility may be charged for any work done in the Right of Way without prior notification.***

Cowlitz County Public Works will also provide this office with the name and telephone number of their representative who shall be present at all times should work be performed by other than their own forces (General Provision No. 4).

Cowlitz County Public Works shall give the contractor one copy of this franchise and also inform the contractors/subcontractors to carefully read and follow all General and Special Provisions as indicated within the approved franchise. ***There will be a copy of this franchise on the job site at all times. If the contractor cannot produce a copy, he/she will be asked to leave the right of way.***

The work authorized by this franchise will require inspection to be performed by the Department.

Please contact me at (360) 904-3210 if you have any questions regarding this matter.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Dennis Noyes', written over a light blue horizontal line.

Dennis Noyes
SW Region Utilities Engineer

DN:mg



Utility Company: Cowlitz County Public Works			
Permit/Franchise Number UF-SW-2024-011		Expiration 09/2025	Charge Code* Group
Date Received 07/17/24	Reviewed By DN	Region Address Southwest: 11018 NE 51st Circle, Vancouver, WA 98682	
Application Type Franchise	Category, Impact to R/W Category 3 - Low Impact	Fees* \$150	Access Control Managed – M

In accepting this Franchise Amendment No. _____ to _____, Utility agrees that the General Provisions to the original Franchise shall be replaced in their entirety with the General Provisions as included with this Amendment. All other terms and conditions of the original franchise shall remain in full force and effect.

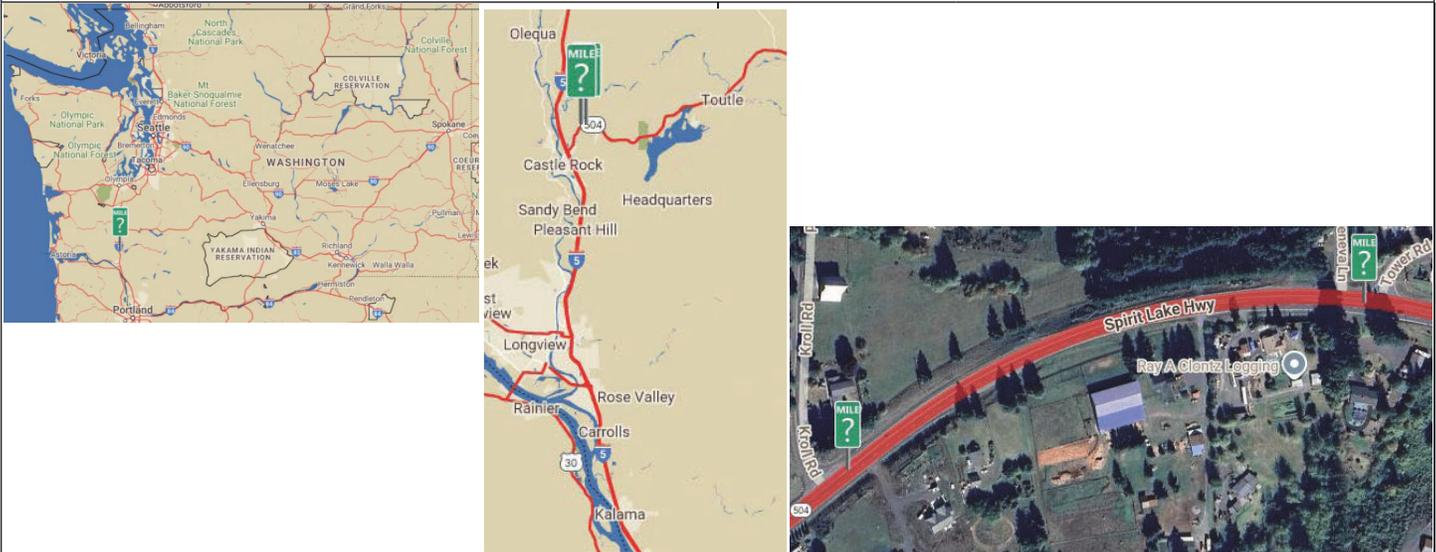
* The fees required under WAC 468-34 and RCW 47.44 are paid by the Utility to cover the basic administrative expenses incidental to the processing of this application. The applicant promises to pay any additional costs for all work associated with the review, processing and inspection for the proposed installation. Checks or money orders are to be made payable to "Washington State Department of Transportation".

Exhibits

The above-noted Permit, Franchise or Franchise Amendment is subject to the terms and conditions stated in the General Provisions, as well as all the Exhibits.

Exhibit A: Special Provisions for Permits and Franchises	Page(s) 1 - 5 of 5
Exhibit B: Utility Facility Description (UFD)	Page(s) 1 of 1
Exhibit C: Plan Sheets/Maps	Page(s) 1 - 7 of 7
Exhibit D:	Page(s)
Exhibit E:	Page(s)
Exhibit F:	Page(s)
Exhibit G:	Page(s)
Exhibit H:	Page(s)

Vicinity Maps State Route: 504 ML Begin Milepost: 1.72 [Link](#) End Milepost: 1.99 [Link](#)



Departmental Approval

WSDOT Authorized Signatory Dennis Noyes <small>Digitally signed by Dennis Noyes Date: 2024.09.19 11:37:08 -07'00'</small>	Printed Name and Job Title Dennis Noyes, SW Region Utilities Engineer	Date Issued 09/19/24
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Utility Accommodation Application (Permit or Franchise)

Utility Contact Information (Applicant)			
Utility Company Cowlitz County Public Works		Utility Contact Name Christopher Andrews	
Email andrewsc@cowlitzwa.gov		Phone (Office/Cell/Voicemail) 360-577-3030	
Location (www.snagmp.com)			
State Route 504	Milepost Begin 1.72	Milepost End 1.99	County Cowlitz
Installation		Submit the Following Documentation:	
Please Check One <input type="checkbox"/> Power <input type="checkbox"/> Sewer <input checked="" type="checkbox"/> Water <input type="checkbox"/> Telecommunication <input type="checkbox"/> Gas <input type="checkbox"/> Other _____		Please Check All That Apply <input checked="" type="checkbox"/> Buried <input type="checkbox"/> Aerial <input type="checkbox"/> Surface Feature (Pole, ped, vault) <input type="checkbox"/> Attached to a bridge/structure	
		Utility Facility Description (UFD) Plan Sheets For Additional Documents Applicable to your work, see Submitting a Utility Accommodation Application Webpage (Link)	
Describe Installation Type (Briefly explain)			
Install 8" DI water main located approximately 50' to 80' left of SR 504 centerline from milepost 1.72 (Kroll Road) to milepost 1.99 (Tower Road). Remove vegetation and re-seed; provide driveway cuts and repair; re-connect existing service lines; install fire hydrant			
Anticipated Construction Start Date: February 2025		Project Duration: 12 weeks	
Billing Information*			
Contact Name Christopher Andrews			
Street 1600 13th Avenue South			
City Kelso		State WA	Zip + 4 98626-2851
Phone (Office/Cell/Voicemail) 360-577-3030		Email andrewsc@cowlitzwa.gov	
Statewide Vendor Number 91-6001310		Applicant Reference Work Order (optional)	
Utility Authorized Signatory			
Signature 		Printed Name & Title/Owner Christopher Andrews - Senior Engineer	Date 7-17-24
The Authorized Signature indicates the General Provisions , as provided, have been read and are agreed to by the Utility. The Utility understands, based on the proposed installation, applicable special provisions will be provided at issuance of your Permit or Franchise. * WSDOT has the authority to invoice the Utility for all work associated with the review, processing and inspection of the proposed installation. The applicant promises to pay any additional costs, in addition to the fees, incurred by WSDOT in accordance with WAC 468-34 and RCW 47.44 .			
Supplemental Contact Information of Authorized Agent if NOT the Utility			
Company Name		Contact Name	
Email		Phone (Office/Cell/Voicemail)	



Applicable provisions are denoted by (✓)

- 1. All Work related to this Utility application must be authorized in advance by the following Washington State Department of Transportation (WSDOT) Representative(s):

Name: Dennis Noyes
Title: Utilities Engineer
Street: 11018 NE 51st Circle
City: Vancouver
State: WA Zip: 98682-6686
Phone: 360-905-2061 Cell: 360-904-3210
Email/Fax: dennis.noyes@wsdot.wa.gov

Name: Melissa Griswold
Title: Utilities Inspector
Street: 11018 NE 51st Circle
City: Vancouver
State: WA Zip: 98682-6686
Phone: 360-905-2181 Cell: 360-787-3306
Email/Fax: melissa.griswold@wsdot.wa.gov

- 2. The Utility must complete the following requirements prior to authorization by WSDOT to perform Work:

- a. The Utility shall notify in writing the identified WSDOT Representative(s) at least three (3) working days (Monday through Friday excluding any holidays).
b. A pre-construction conference shall be held with all pertinent representatives, as identified by the Utility, and agreed to by WSDOT. The Utility shall give five (5) working days (Monday through Friday excluding any holidays) notice to WSDOT's Representative(s) (prior to the pre-construction conference).

- 3. Work within the state-owned highway right of way shall be restricted to daylight hours. No Work shall be allowed on Saturday, Sunday, or holidays, without prior approval by WSDOT.

- 4. The Utility shall not disturb, remove, or destroy any existing Survey Monument before obtaining a Permit from the Washington State Department of Natural Resources (RCW 58.24.040). During the Work, upon discovery, unauthorized damage, or unauthorized alteration of a monument or right of way marker, the Utility shall cease Work in that area and immediately notify the WSDOT Representative listed in Special Provision Number 1, or the Region Right-of-Way and Survey Manager listed below.

Name:
Phone:
Email:

The Utility agrees to pay all WSDOT costs to perform monument or right of way marker work, as provided in this provision, in accordance with General Provision 2.

5. In the event that during the course of this project an inadvertent discovery of historical/archeological objects, human remains, or a bone/bones of uncertain origin is made, the Utility shall immediately cease operations and contact WSDOT Representative in Special Provision 1 and WSDOT Archaeologist:

Name: _____

Phone: _____

Email: _____

Determination of necessary follow-up actions or the ability to continue work shall be at the sole discretion of the WSDOT.

6. Construction of this facility will not be permitted from the shoulders, traffic lanes, and/or ramps of SR _____. All construction access will be from adjacent roadways.

BOND AND INSURANCE COVERAGE

7. The Utility has provided bond coverage for the Work under this Permit or Franchise by furnishing a blanket surety bond held by WSDOT at the WSDOT Headquarters Utilities in Olympia, WA.

8. The Utility or its contractor shall provide an individual surety bond to WSDOT in the amount of \$ _____, written by a surety company authorized to do business in the State of Washington, or shall set up a WSDOT approved escrow account prior to the start of construction to cover the Work under this Permit or Franchise. The surety bond or escrow account shall remain in force for a period of one (1) year after the written notice of completion of the Work (as provided in General Provision 11), except that when the Work impacts the paved highway (open cuts, bores or damage to the highway surface), the Utility shall be required to maintain the surety bond or escrow account for a period of two (2) years after the notice of completion.

9. When the Utility chooses to perform the Work with other than its own forces and requires its contractor to provide a surety bond to WSDOT before performing any Work to ensure compliance with all of the terms and conditions of this Permit or Franchise, the bond shall be in the amount of \$ _____, written by a surety company authorized to do business in the State of Washington and shall remain in force until all Work under this Permit or Franchise has been completed, and the Utility's contractor has restored any affected WSDOT property and right of way to the satisfaction of WSDOT.

10. The Utility shall have sufficient insurance coverage when performing any Work within state-owned highway right of way, as follows:

- (a) Commercial General Liability covering the risks of bodily injury (including death), property damage, and personal injury, including coverage for contractual liability, with a limit of not less than \$3 million per occurrence and in the aggregate.
- (b) Business Automobile Liability (owned, hired, or non-owned) covering the risks of bodily injury (including death) and property damage, including coverage for contractual liability, with a limit of not less than \$1 million per accident.
- (c) Employers Liability covering the risks of Utility's employees' bodily injury by accident or disease, with limits of not less than \$1 million per accident for bodily injury by accident and \$1 million per employee for bodily injury by disease.

Such insurance policies or related certificates of insurance shall name the Washington State Department of Transportation as an additional insured on all general liability, automobile liability, employers' liability, and excess policies. A forty-five (45) calendar day written notice shall be given to WSDOT prior to termination of or any material change to the policy(ies) as such relate(s) to this Permit or Franchise. The Utility shall provide proof of insurance upon request to the WSDOT Representative(s) identified in Special Provision 1.

11. If the Utility is a city or county, they shall have sufficient insurance coverage through a Risk Pool or is self-insured, to comply with the insurance terms and conditions of this Permit or Franchise. The city or county shall provide proof of insurance upon request to the WSDOT Representative(s) identified in Special Provision 1.

UNDERGROUND FACILITIES

12. Deactivated facilities left within the state owned right of way shall remain owned by the Utility, who shall continue to bear any and all responsibility for any future costs or impacts related to the Deactivated facilities if required by WSDOT in its sole discretion.

- 13. For underground facilities, markers shall be placed at both ends of a crossing, and at all changes in offset distance from right of way line or centerline of the highway and placed approximately every 500 feet for longitudinal installations. Marker information as a minimum shall include owner name, pipeline or cable identification and station, and telephone number or other means to contact a local office. Markers must follow WSDOT's Standard Specifications for Road, Bridge, and Municipal Construction Manual M 41-10, Division 9 (9-17 Flexible Guideposts), not create a safety hazard, and all markers shall be placed and maintained so as to minimize interference with WSDOT maintenance operations. It is the Utility's responsibility to maintain its markers. Maintenance of markers includes but is not limited to update of Utility's name (if changed) or Utility's successors' or assigns' contact information, and replacement of damaged or missing markers.
- 14. All underground facilities shall include a component by which the utility can be located with conventional methods, provided that for all installations in trenches, the Utility shall install detector tape approximately 12 inches above the underground facility. The tape shall conform to the standards of the American Public Works Association Uniform Color Code.
- 15. Utility facilities or casings for facilities crossing under highways surfaced with oil, asphalt concrete pavement, or cement concrete pavement shall be by trenchless construction, using the appropriate equipment to jack, bore, or auger the facility through the highway prism with a minimum depth of 5 feet along any point from the top of facility to the lowest point of the finished highway grade, at a minimum of 3.5 feet depth from bottom of ditch/toe of slope to top of facility or casing.
- 16. If PVC or HDPE casings are utilized for crossings, they shall be greater than Schedule 80 or equivalent or as approved by WSDOT.
- 17. Casing requirements (WAC 468-34-210) for utilities are specified individually or in whole on the attached exhibits. Any variances to these casing requirements must be approved by WSDOT, in writing prior to installation.
- 18. Pipeline installation shall meet the provisions of chapter 480-93 WAC, Gas Companies- Safety, and amendments thereto.
- 19. Open trenching (cutting a trench for direct placement of a utility that does not include cutting an existing paved highway surface) will only be allowed at the locations identified on the plan sheets and/or listed on Exhibit(s) _____, with restoration to be performed as noted on the attached "Open Trench Detail", Exhibit _____.
- 20. Open cuts (cutting a trench for direct placement of a utility that does include cutting the existing paved highway surface) of the highway are a variance to WSDOT policy, requiring justification (Open Cut Variance Request) and approval by WSDOT prior to the Work beginning. Open cuts are only allowed at approved locations identified on the plan sheets and/or listed on Exhibit(s) _____, with restoration to be performed as noted on the attached "Open Cut Detail," Exhibit _____.
- 21. If determined necessary by WSDOT Representative, any or all of the excavated material shall be removed and replaced with suitable material as specified by WSDOT. It is the Utility's responsibility to obtain any necessary permits or comply with applicable requirements to haul or dispose of any excavated material.
- 22. If determined by the Washington State Department of Labor and Industries and/or WSDOT Representative that extra Shoring (beyond that specified in Section 7-08.3(1)B of WSDOT's Standard Specifications for Road, Bridge, and Municipal Construction) is necessary for the safety of the workers or the protection of the highway pavement, the trenching or excavation work shall be stopped and no Work in the trench or excavation area will be allowed until satisfactory modifications are made.
- 23. All trenches, boring or jacking pits, etc., shall be backfilled as soon as possible. If left open during nonworking hours, they shall be protected to the satisfaction of WSDOT. Methods of protection shall be submitted a minimum of fourteen (14) calendar days in advance for approval by WSDOT prior to use.

AERIAL/ABOVEGROUND FACILITIES

- 24. All facilities on joint use poles shall be relocated at the time the pole owner either moves or removes its poles. (The pole owner is the Permit or Franchise holder under which the poles were installed and is responsible for ensuring the removal of the pole.)

25. Neutral conductors associated with circuits of 0 to 22 Kilovolts, where the neutral is considered to be 0-750 Volts, shall have a minimum clearance of 24 feet Vertical Clearance as indicated in WAC 468-34-290, 20 feet provided the facility is grounded at each pole at each end of the crossing.
26. The Utility agrees to underground the aboveground facilities covered by this Franchise in Scenic Classes "A" and "B", as defined on the attached Exhibit(s) _____, either at the time of major construction of the facility, for that portion of facility to be reconstructed, or prior to expiration of this Franchise.
27. The Utility agrees to underground the aboveground facilities covered by this Franchise in Scenic Classes "A," "AX," "B," and/or "BX," as defined on the attached Exhibit(s) _____, at the time the pole owner undergrounds its facility. The existing aboveground facility may remain or be relocated as aboveground in Scenic Classes "AX" or "BX," if acceptable to WSDOT.
28. The Utility agrees to underground or relocate the existing aboveground facilities covered by this Franchise in Scenic Classes "A," "AX," "B," and/or "BX," as defined on the attached Exhibit(s) _____, to a location acceptable to WSDOT either at the time of reconstruction, for the portion of line to be reconstructed, or prior to the expiration of this Franchise. The existing aboveground facility may remain or be relocated as aboveground in Scenic Classes "AX" or "BX," if acceptable to WSDOT.

MAINTENANCE

29. No routine maintenance of the facility authorized by this Permit or Franchise will be allowed within the limited access area.
30. Maintenance access of this facility will not be permitted from the shoulders, thru-traffic lanes, and/or ramps of _____, and all service to this facility will be accessed from _____.
31. The Utility will notify WSDOT representative(s), listed in Special Provision 1, three (3) working days (Monday through Friday excluding any holidays) prior to any scheduled maintenance work to be performed in the state-owned highway right of way.

Southwest Region Additional Provisions

- 32. All vehicles and equipment that are not essential for the Work shall not be parked on the shoulders or thru-traffic lanes and/or ramps of SR 504.
- 33. In the event of a lane closure the contractor **SHALL** call the Traffic Management Center (TMC) at **360-759-1300** to let them know the location, start, and finish time of the lane closure.
- 34. The responsibility of the Utility for proper performance, safe conduct, and adequate policing and supervision of the Work shall not be lessened or otherwise affected by WSDOT's approval of plans, specifications, or work, or by the WSDOT representative's presence at the work site.
- 35. The Utility acknowledges that SR _____ is scheduled for future construction. All work shall be coordinated with the Project Engineer's Office responsible for this project and all work shall be completed no later than _____. Relocation and/or adjustment of this facility at the time of construction will be at the expense of the Utility.
- 36. The Utility shall notify the WSDOT Representative upon completion of project for final inspection / review.
- 37. All facilities in joint use conduits shall relocate together at such time as the conduit owner moves their conduit or WSDOT deems relocation necessary. The conduit owner is responsible to remove the conduit or conduits in their entirety. (The conduit owner is the Permit or Franchise holder under which the conduits were installed).
- 38. During working hours, all open trenches shall be marked by warning signs, barricades, and flashing beacons. If necessary, flaggers shall be employed for the purpose of protecting the traveling public.
- 39. The highway shoulders, where disturbed, shall be resurfaced in kind with crushed surfacing top course at **12-inch** minimum compacted depth, or as directed by WSDOT's representative. The surface of the finished shoulder shall slope down from the edge of pavement at the rate of 5% unless otherwise directed. Any restored shoulders shall not have any sections less than 2 feet wide.
- 40. The Utility shall use hot mix asphalt for all roadway pavement restoration. WSDOT will not allow the use of cold mix for any roadway patching longer than 24 hours.
- 41. The Utility shall not place any new poles within the right-of-way.
- 42. The term "to maintain" as noted in General Provision #17 includes but is not limited to keeping the area around any and all utility owned components (i.e., guy anchors and guy wires) mowed no less than four feet away to allow State maintenance crews visibility of any and all utility owned appurtenances within the WSDOT right of way.
- 43. The Utility shall utilize the approved Traffic Control Plan (Exhibit "D") provided.
- 44. **CALL BEFORE YOU DIG:** Utility Notification Center, **811**. It is the Utility's responsibility to contact the one call center pursuant to RCW 19.122. Any locations or dimensions provided for existing facilities on plan sheets provided by WSDOT are in accordance with available information obtained without uncovering, measuring, or other verification.
- 45. Clean up and application of tacking agent or hydro seeding in accordance with manufacturers recommended requirements shall occur as soon as practical following the installation. A seed mix is available for use on this project. County specific Weed Control Plans shall take precedence over WSDOT's provided seed mixes if they are available. The recommended seeding application window is Sept. 15 – Nov. 15. The applicant shall be held responsible for re-vegetation of the disturbed areas to pre-construction conditions. In areas where adjacent owners have maintained the highway rights of way, as yards or similar, re-vegetation shall be completed in a manner that produces pre-construction conditions.

NO.	DATE	DESCRIPTION

DESIGNED BY J. F. COOPER	SCALE SHOWN
DRAWN BY M. G. BARNETT	
CHECKED BY 	



GENERAL NOTES

- EXISTING UTILITIES HAVE NOT BEEN POHOLED TO IDENTIFY DEPTHS. CONTRACTORS SHALL VERIFY DEPTHS AND LOCATIONS PRIOR TO CONSTRUCTION. CONTRACTORS SHALL PROTECT ALL CRITICAL UTILITY CROSSINGS AND CONNECTION LOCATIONS PRIOR TO PURCHASE OR INSTALLATION OF ANY PIPE OR FITTINGS.
- WATER MAIN SHALL BE DESIGNED, PRESSURE TESTED, AND PROTECTED TO REMAIN ABOVE FLOOD PLANE. ALL MAINS BEING BURIED INTO SERVICE.
- WATER MAIN SHALL BE 48" DIA. 150 LB. CLASS 50 PIPE WITH ALL FITTINGS RESTRAINED.
- REFER TO COWLITZ COUNTY STANDARD DETAILS FOR GENERAL AND STREET CONSTRUCTION NOTES. ALL PAVEMENT RESTORATION SHALL BE PER APPLICABLE COUNTY STANDARDS.
- PROVIDE 100% FC CONTROL PER MUTCO STANDARDS AND SPECIFICATIONS.
- CONTRACTOR TO COORDINATE WITH COWLITZ COUNTY TO HAVE UTILITY POLES TEMPORARILY SUPPORTED AS REQUIRED TO PREVENT DAMAGE DURING TRENCH EXCAVATION.
- CONTRACTOR TO EXCAVATE LAUNCHING AND RECEIVING FITS WITHIN THE LIMITS SHOWN—ADDITIONAL SPACE IS REQUIRED.
- CONTRACTOR SHALL COORDINATE WITH THE COUNTY TO PROTECT EXISTING TREES AND ADJUST WATER MAIN ALIGNMENT IF NECESSARY. TREE REMOVAL AND REPLACEMENT IN ACCORDANCE WITH WSDOT REQUIREMENTS.
- CLEAR 5 FEET MINIMUM ON EACH SIDE OF THE PROPOSED PIPE TO ALLOW FOR TREE ROOTS AND TO BE RESTORED BY DISTURBED AREAS. TREE ROOTS TO BE RESTORED BY SEEDING. SEE DETAIL ON DWG. NO. D03.
- ALL WORKS SHALL REMAIN WITHIN THE RIGHT OF WAY AND EASEMENT.

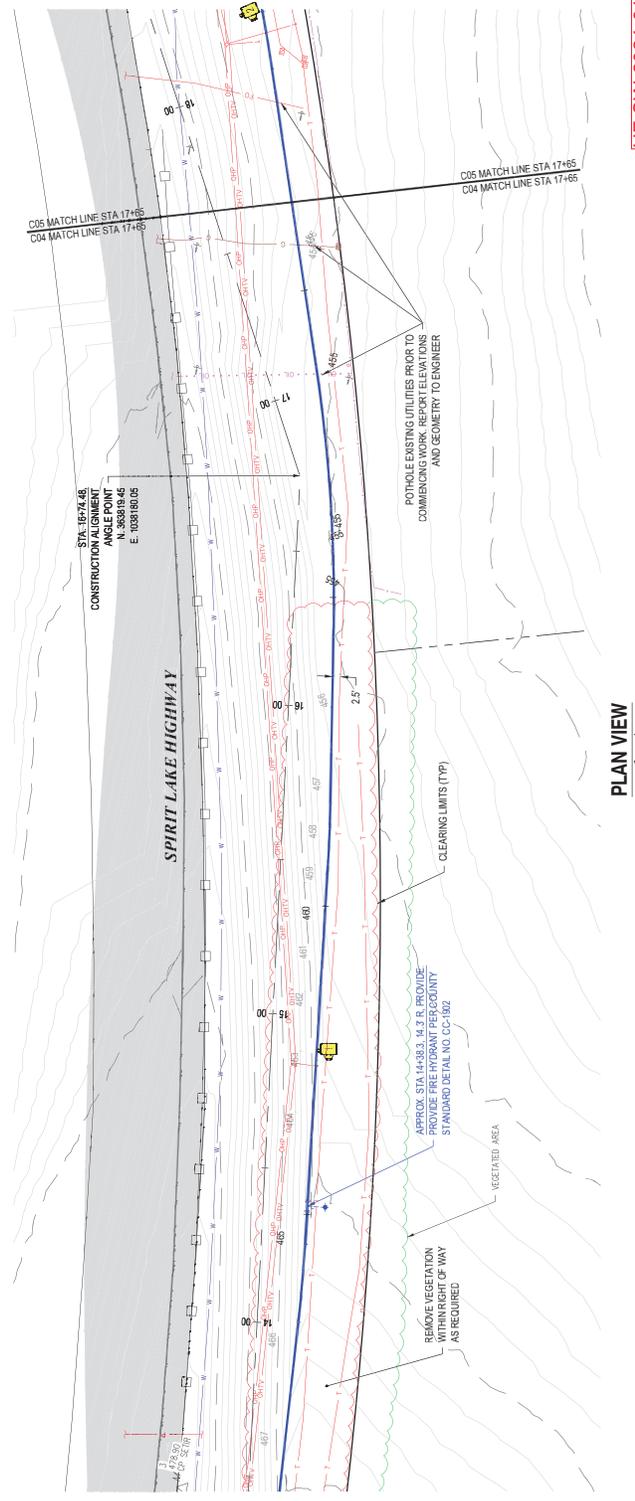
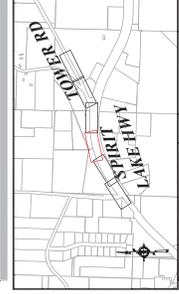


SITE PHOTO 41



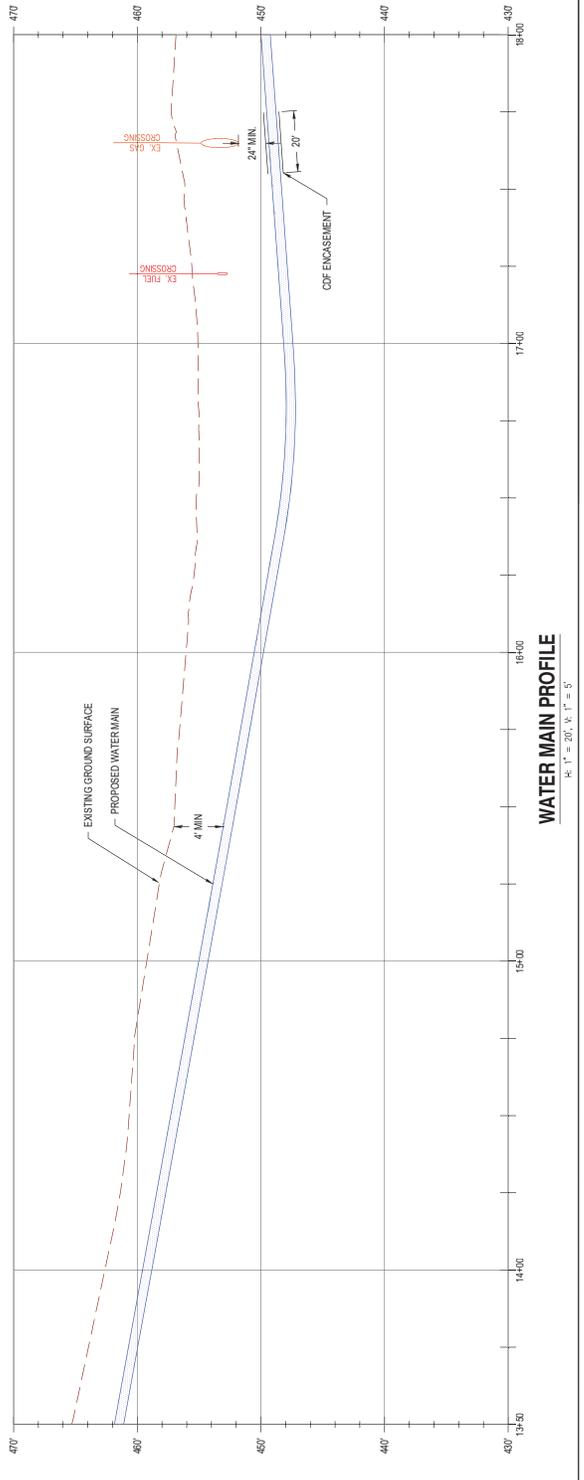
SITE PHOTO 42

VICINITY MAP



PLAN VIEW
1" = 20'

UF-SW-2024-011
Exhibit "C"
Sheet 5 of 7



WATER MAIN PROFILE
H. 1" = 20', V. 1" = 5'



WATER MAIN PLAN AND PROFILE 3

COWLITZ COUNTY

TOUTLE WATER SYSTEM IMPROVEMENTS



NO.	DATE	DESCRIPTION	BY	REVIEW

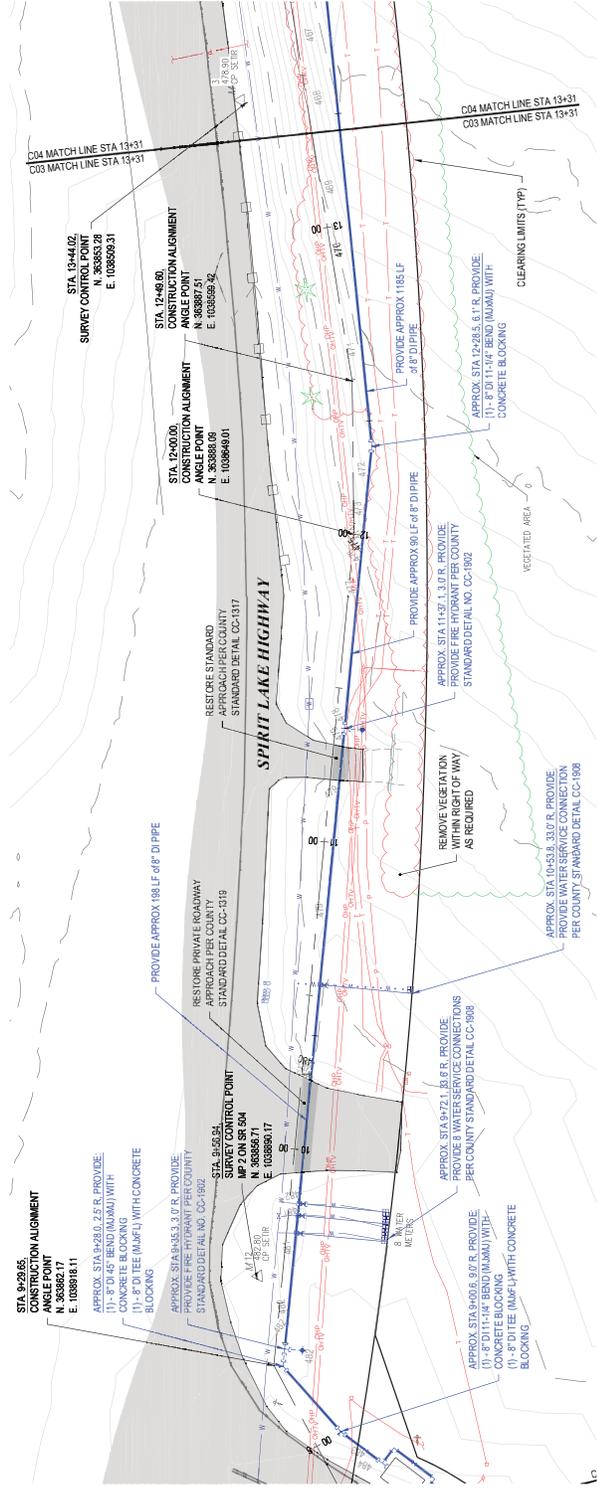
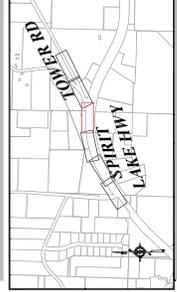
PROJECT NO.	22-0177
DATE	JUN 10, 2024
PROJECT NAME	TWSP-P-WATERP-DWS
SCALE	AS SHOWN
DATE PLOTTED	JUN 10, 2024
PROJECT	
DATE	
BY	
REVIEW	



GENERAL NOTES

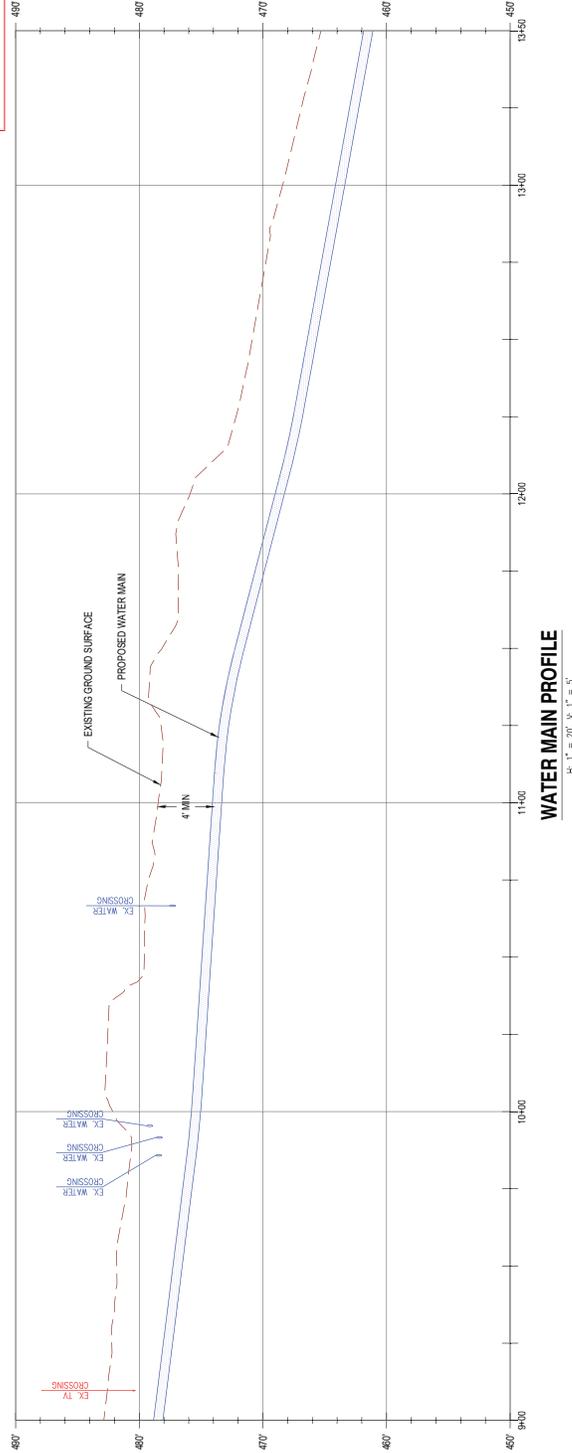
- EXISTING UTILITIES HAVE NOT BEEN IDENTIFIED TO DEPTH. SHOWN ARE APPROXIMATE LOCATIONS. CONTRACTOR SHALL POTENTIALLY PURCHASE OR INSTALLATION OF ANY PIPE OR FITTINGS.
- WATER MAIN SHALL BE DISINFECTED, PRESSURE TESTED, AND BEING PUT INTO SERVICE. PERIODICAL TESTING PRIOR TO BEING PUT INTO SERVICE.
- WATER MAIN SHALL BE AWWA C151 CLASS 52 DI PIPE WITH ALL FITTINGS RESTRAINED.
- REFER TO COWLITZ COUNTY STANDARD DETAILS FOR GENERAL AND STREET CONSTRUCTION NOTES. ALL PAVEMENT RESTORATION SHALL BE PER APPLICABLE COUNTY STANDARDS.
- CONTRACTOR TO PROVIDE ALL NECESSARY WORKS AND UTILITY POLES TEMPORARILY SUPPORTED AS REQUIRED TO PREVENT DAMAGE DURING TRENCH EXCAVATION.
- CONTRACTOR TO COORDINATE WITH COWLITZ TO HAVE UTILITY POLES TEMPORARILY SUPPORTED AS REQUIRED TO PREVENT DAMAGE DURING TRENCH EXCAVATION.
- CONTRACTOR TO EXCAVATE LAUNCHING AND RECEIVING FITS WITHIN THE LIMITS SHOWN. ADDITIONAL SPACE IS REQUIRED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF SEASIDE.
- SEPARATION BETWEEN THE PROPOSED WATER MAIN AND AN EXISTING SEWER MAIN CANNOT BE ACHIEVED.
- AVOID EXISTING TREES AND ADJUST WATER MAIN ALIGNMENT IF NECESSARY. TREE REMOVAL AND REPLACEMENT IN ACCORDANCE WITH WSDOT REQUIREMENTS.
- CLEAR FEEDED AREAS ON EACH SIDE OF THE PROPOSED PIPE.
- DISTURBED AREAS OUTSIDE OF PAVEMENT TO BE RESTORED BY SEEDING. SEE DETAIL ON DWG NO. 003.
- ALL WORKS SHALL REMAIN WITHIN THE RIGHT OF WAY AND EASEMENT.

VICINITY MAP



PLAN VIEW
1" = 20'

UF-SW-2024-011
Exhibit "C"
Sheet 6 of 7



WATER MAIN PROFILE
H: 1" = 20', V: 1" = 5'

NO.	DATE	DESCRIPTION

SCALE SHOWN	
DRAWN BY	F. J. COLLIER
CHECKED BY	
DATE	

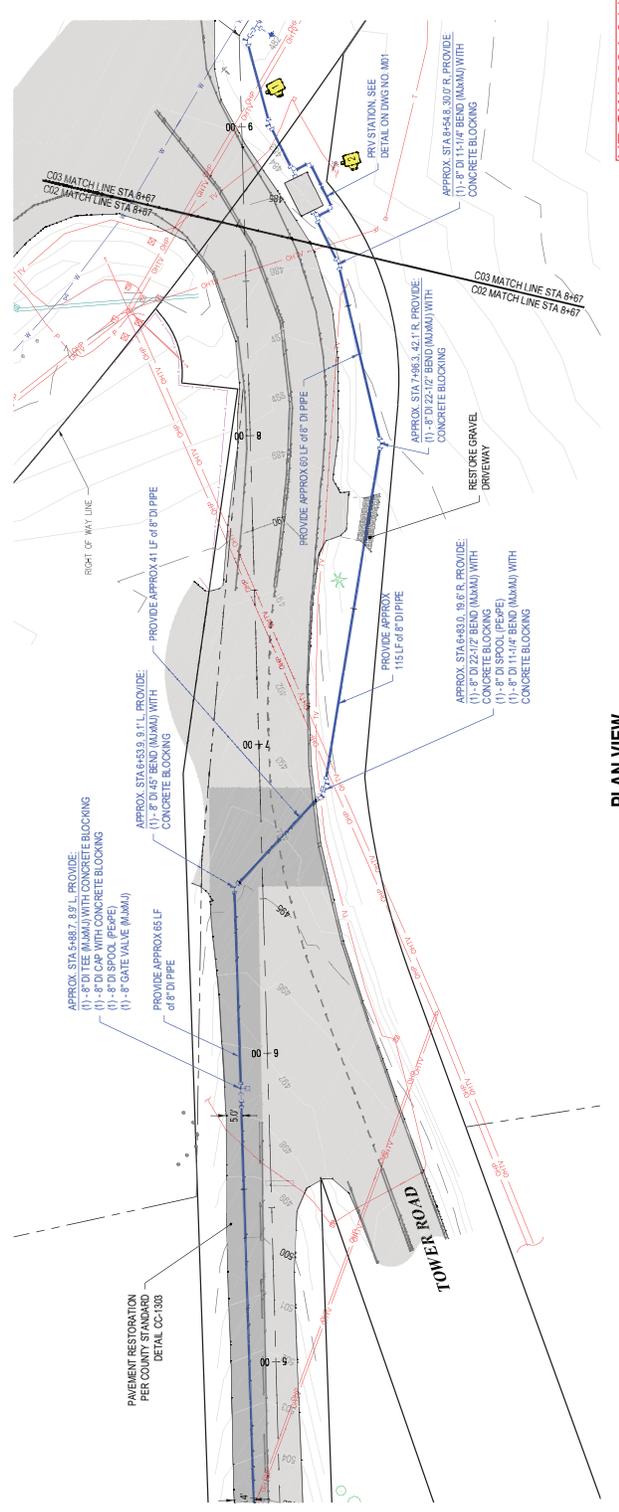
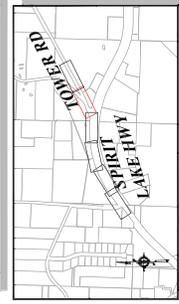


GENERAL NOTES

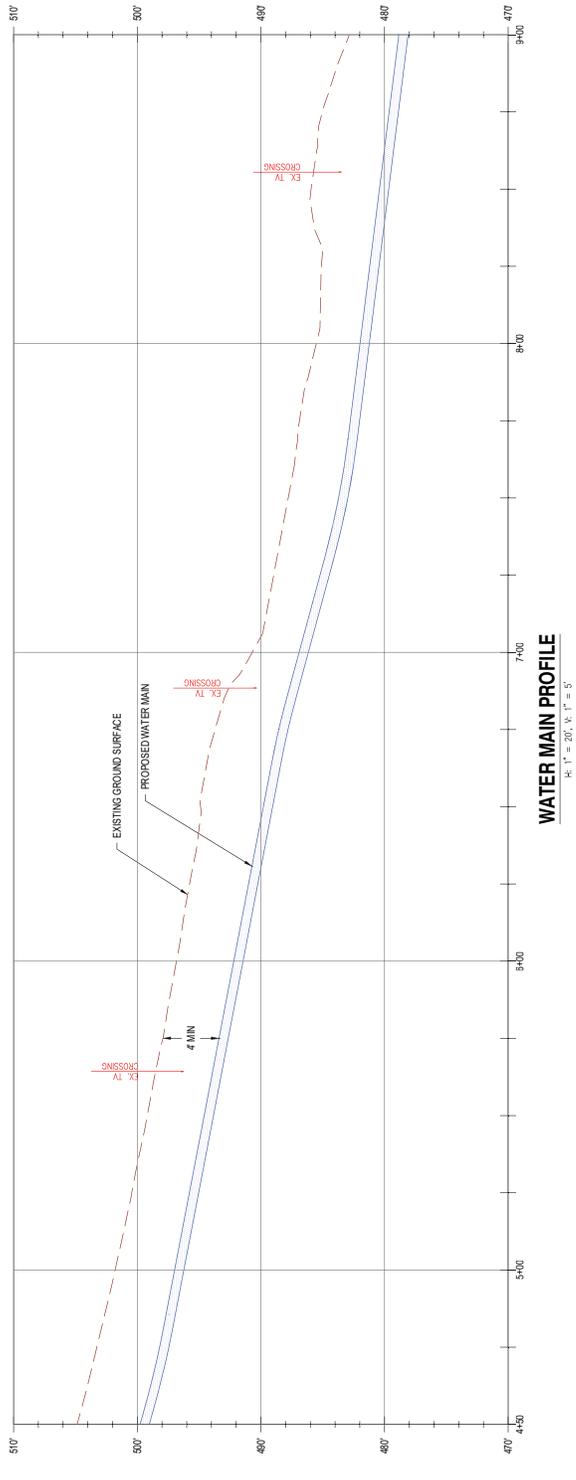
- EXISTING UTILITIES HAVE NOT BEEN PLOTTED TO DENSITY LOCATION. MATERIAL SIZE OR GEOMETRY. UTILITY LOCATIONS ARE SHOWN AS APPROXIMATE. VERIFY ALL UTILITY CROSSINGS AND CONNECTION LOCATIONS PRIOR TO PURCHASE OR INSTALLATION OF ANY PIPE OR FITTINGS.
- WATER MAINS SHALL BE DISINFECTED, PRESSURE TESTED, FLUSHED, AND PASS BACTERIOLOGICAL TESTING PRIOR TO BEING PUT INTO SERVICE.
- CONTRACTOR SHALL PROVIDE A MINIMUM C15 CLASS 30 DI PIPE WITH FITTINGS RESTRAINED.
- REFER TO COWLITZ COUNTY STANDARD DETAILS FOR GENERAL AND STREET CONSTRUCTION NOTES. ALL PAVEMENT RESTORATION SHALL BE PER APPLICABLE COUNTY STANDARDS.
- PROVIDE TRAFFIC CONTROL PER MUTCD STANDARDS AND COUNTY APPROVED TRAFFIC CONTROL PLAN.
- UTILITY POLES, TELEPHONE AND CABLES SHALL BE PROTECTED TO PREVENT DAMAGE DURING TRENCH EXCAVATION.
- CONTRACTOR TO EXCAVATE, LAUNCHING AND RECEIVING FITS WITHIN THE LIMITS SHOWN. ADDITIONAL SPACE IS REQUIRED. THE CONTRACTOR SHALL COORDINATE WITH THE COUNTY. CEMENT CONCREMENT IS REQUIRED WHERE 10 FEET OF EXISTING WATER MAIN CANNOT BE EXCAVED. WATER MAIN AND EXISTING SEWER MAIN CANNOT BE EXCAVED.
- AVOID EXISTING TREES AND ADJUST WATER MAIN ALIGNMENT IF NECESSARY. TREE REMOVAL AND REPLACEMENT IN ACCORDANCE WITH WSOT REQUIREMENTS.
- CLEAR 5 FEET MINIMUM ON EACH SIDE OF THE PROPOSED PIPE IN VEGETATED AREAS.
- DISTURBED AREAS OUTSIDE OF PAVEMENT TO BE RESTORED BY THE CONTRACTOR TO ORIGINAL CONDITION.
- ALL WORKS SHALL REMAIN WITHIN THE RIGHT OF WAY AND EASEMENT.



VICINITY MAP



UJ-SW-2024-011
Exhibit "C"
Sheet 7 of 7





This Permit or Franchise is issued pursuant to the terms of RCW 47.32, RCW 47.44, and WAC 468-34, and amendments thereto. Renewal of a Franchise must be by application prior to expiration of this Franchise as required by RCW 47.44.020(3).

1. A copy of this Permit or Franchise must be on the job site, protected from the elements, at all times during any construction authorized by this Permit or Franchise.
2. The Utility agrees to pay the reasonable costs for investigating, handling, and granting the Permit or Franchise, including, but not limited to basic overhead charges and for providing an inspector during construction and/or maintenance of the Utility's facilities. Further, the Utility agrees that it shall be responsible for and pay WSDOT's expended direct and indirect costs associated with applicable provisions of the Permit or Franchise. WSDOT will assign a reimbursable account to the Utility as a means of invoicing the Utility for the costs associated with this Permit or Franchise.
 - (a) WSDOT will assign a reimbursable account to the Utility as a means of invoicing the Utility for the costs associated with this Permit or Franchise.
 - (b) WSDOT will invoice the Utility and the Utility agrees to pay WSDOT within thirty (30) calendar days of receipt of an invoice.
 - (c) The Utility agrees that it shall be responsible to maintain any bond or surety documentation with WSDOT according to WAC 468-34.
3. Upon approval of this Permit or Franchise, the Utility shall diligently proceed with the Work and comply with all General and Special Provisions herein. Construction of facilities proposed under this Permit or Franchise shall begin within one (1) year and must be completed within three (3) years from date of WSDOT approval. "Work" under this Permit or Franchise shall mean construction, operation, and maintenance of the Utility's facilities as authorized herein.
4. The Utility shall notify WSDOT Representative in Special Provision 1 of the name, address, and telephone number of its contractor when Work outlined herein is going to be performed with other than its own forces. When the Utility uses a contractor, an authorized representative of the Utility shall be present at all times unless otherwise agreed to by WSDOT Representative. A list of authorized representatives shall be submitted prior to the construction start date. (Authorized representatives are defined as persons having signatory authority for the Utility and or the authority to control the Work as needed for any issues identified by WSDOT.)
5. The Utility agrees to schedule and perform its Work in such a manner as not to delay WSDOT's contractor's work when WSDOT has a contractor performing work in the vicinity of the Utility's Work.
6. All contact between WSDOT and the Utility's contractor shall be through the Utility representative. Where the Utility chooses to perform the Work with its own forces, it may elect to appoint one of its own employees engaged in the Work as its representative. The Utility, at its own expense, shall adequately police and supervise all Work performed by itself, its contractor, subcontractor, agent, and/or others, so as not to endanger or injure any person or property.
7. In the event any milepost, fence, or guardrail is located within the limits of the Utility's Work and will be disturbed during Utility Work, the Utility shall submit a plan indicating impacts to these highway facilities to WSDOT's Representative for approval prior to Utility Work. Utility agrees to carefully remove these highway facilities prior to Utility Work and reset or replace these highway facilities after the Utility Work, to WSDOT's sole satisfaction and at the sole cost of the Utility. The Utility agrees that all highway signs and traffic control devices shall not be removed or disturbed during Utility Work.
8. The Utility agrees that all Work shall be done to the satisfaction of WSDOT. All material and workmanship shall conform to WSDOT's Standard Specifications for Road, Bridge, and Municipal Construction, current edition, and amendments thereto, and shall be subject to WSDOT inspection. All WSDOT acceptance and inspections are solely for the benefit of WSDOT and not for the benefit of the Utility, the Utility's contractor (if any), or any third party. The Utility agrees that it shall pay all WSDOT inspection costs in accordance with General Provision 2. The Utility shall perform in a timely manner all Utility work, to avoid highway project impacts or delays and in such manner as will cause the least disruption of traffic or interference with WSDOT's continued operation and/or maintenance of the highway.

9. The Utility shall comply with the Manual on Uniform Traffic Control Devices for Streets and Highways (Federal Highway Administration) and the State of Washington modifications thereto (chapter 468-95 WAC) while it performs the Work. If WSDOT requires, the Utility shall submit a signing and traffic control plan to WSDOT's Representative for approval prior to construction or maintenance Work. No lane closures shall be allowed except as approved by WSDOT's representative. Approvals may cause revision of Special Provisions of this Permit or Franchise, including hours of operation.
10. This Permit or Franchise may not be amended or modified without WSDOT's prior review and approval. Upon completion of the Work, the Utility shall provide a written notice of completion of the Work to WSDOT's Representative within ten (10) calendar days of the completion of the Work so that WSDOT may make its final inspection. Further, the Utility shall provide the Region Utilities Engineer with detailed as-built drawing within ninety (90) calendar days of Work completion, if the originally approved Permit or Franchise construction plans have been revised during the course of construction or upon request from the Region Utilities Engineer.
11. If WSDOT, at its sole discretion, shall determine that any or all of the Utility's facilities must be modified, removed from, or relocated within the state-owned highway right of way as necessary, incidental, or convenient for the construction, alteration, improvement, repair, relocation, or maintenance of the state highway, or for the safety of the traveling public, the Utility, its successors and assigns, shall, at its sole cost and expense, upon written notice by WSDOT, modify, relocate, or remove any or all of its facilities within or from the state-owned highway right of way as required by WSDOT. The Utility shall perform in a timely manner all facility modifications, relocations, and/or removals as WSDOT directs, to avoid highway project impacts or delays and in such manner as will cause the least disruption of traffic or interference with WSDOT's continued operation and/or maintenance of the highway. The Utility agrees it shall be solely responsible for any claims, damages, or any other associated project costs that are a result of the Utility's failure to modify, remove and/or relocate its facilities in timely manner as directed by WSDOT.
12. Should the Utility fail or refuse to comply with WSDOT's direction, pursuant to General Provision 11, to modify, remove, or relocate any Utility facility, WSDOT may undertake and perform any modification, removal, or relocation of the Utility facility that WSDOT, in its sole discretion, deems necessary. The Utility agrees to pay all of WSDOT's costs for performing this work, in accordance with General Provision 2.
13. If WSDOT determines in good faith that emergency maintenance work on the Utility's facility is needed to (a) protect any aspect of the state highway right of way, or (b) secure the safety of the traveling public due to a failure of the Utility's facility, WSDOT may perform the necessary work without the Utility's prior approval, and the Utility agrees to pay WSDOT's expended costs and expenses for performing the work in accordance with General Provision 2. WSDOT will notify the Utility of the emergency work performed as soon as practicable.
14. WSDOT may amend, revoke, or cancel this Permit or Franchise at any time by giving written notice to the Utility. If the Permit or Franchise is amended, the Utility will have thirty (30) calendar days to modify the facility as the Permit or Franchise amendment(s) require. If the facility modifications cannot be made within thirty (30) calendar days, the Utility shall respond to WSDOT, in writing, as to when the facility modifications can be made. If the Permit or Franchise is revoked or canceled, the Utility shall immediately remove all facilities from the right of way. Any facilities remaining upon the right of way thirty (30) calendar days after written notice of Permit or Franchise revocation or cancellation may be removed by WSDOT at the expense of the Utility. The Utility agrees to pay WSDOT's expended costs and expenses for performing the work in accordance with General Provision 2.
15. Should the Utility breach any of the conditions and requirements of this Permit or Franchise, or should the Utility fail to proceed with due diligence and in good faith with the Work as authorized by this Permit or Franchise, WSDOT may cancel or revoke the Permit or Franchise upon thirty (30) calendar days written notice to the Utility.
16. The Utility shall not excavate or place any obstacle within the state-owned highway right of way in such a manner as to interfere with WSDOT's construction, operation, and maintenance of the state-owned highway right of way or the public's travel thereon without first receiving WSDOT's written authorization.
17. The Utility agrees to maintain, at its sole expense, its facilities authorized by this Permit or Franchise in a condition satisfactory to WSDOT.
18. The Utility agrees that it is financially responsible to WSDOT for all necessary expenses incurred in inspecting the construction and restoring the highway pavement or related transportation equipment or facilities to a permanent condition suitable for travel as determined by WSDOT, as well as financially responsible to WSDOT for trenching work not completed and for compensating WSDOT for the loss of useful pavement life caused by trenching as required by RCW 47.44.020.

19. Upon completion of all Work, the Utility shall immediately remove all rubbish and debris from the state-owned highway right of way, leaving the state-owned highway right of way in a neat, presentable, and safe condition to WSDOT's satisfaction. Any clean up, or any necessary slope treatment, surface restoration, or protection of the state-owned right of way, not done within one (1) week (seven consecutive days) of Work completion, unless otherwise negotiated in writing, will be done by WSDOT at the expense of the Utility. The Utility agrees to pay WSDOT's expended costs and expenses for performing the work in accordance with General Provision 2.
20. For the benefit and safety of the traveling public, the Utility voluntarily agrees to permit WSDOT to attach and maintain upon any Utility facility under this Permit or Franchise any required traffic control devices, such as traffic signals, luminaires, and overhead suspended signs, when the use of such devices or attachments does not interfere with the use for which the facility was constructed. WSDOT shall bear the cost of attachment and maintenance of such traffic control devices, including the expended cost of any extra Utility infrastructure construction beyond what is necessary for the Utility's facility; such extra cost to be jointly determined by WSDOT and the Utility. WSDOT shall not share in the Utility facilities' cost of installation, operation, or maintenance of any of the facilities installed under this Permit or Franchise.
21. The Utility shall comply with WSDOT's Temporary Erosion and Sediment Control Manual (M 3103.01) and any revisions thereto, for erosion control and/or to mitigate any erosion occurring as a result of the Work. If the Utility Work performed under this Permit alters, modifies, changes, or interferes in any way with the drainage of the state-owned highway right of way, the Utility shall, at its own expense, make all corrections and/or provisions WSDOT requires to fix and restore the state-owned right of way drainage to its original condition and function prior to the Utility's Work. Any flows from the Utility shall not exceed the flows discharging to WSDOT drainage prior to the new work. Any flows discharged to state-owned highway right of way shall meet the requirements for quantity and water quality according to the current version Highway Runoff Manual (M 31-16). Should the Utility not make the required drainage restoration, WSDOT reserves the right to make such changes as necessary to restore the original drainage function at the sole cost of the Utility, and the Utility agrees to pay WSDOT's expended costs and expenses for performing the work in accordance with Stormwater Discharge General Provision 2.
22. The Utility shall be responsible for securing all necessary permits, including but not limited to, federal, state, and local regulatory, tribal, environmental, archeological, and railroad permits and permits from the Washington State Department of Ecology, the Washington State Department of Fish and Wildlife, and/or the U.S. Army Corps of Engineers prior to beginning the Work authorized by this Permit or Franchise. The Utility shall be responsible for mitigation measures where wetlands have been disturbed and agrees that it is responsible for any fines imposed for noncompliance with the permit(s) conditions or for failure to obtain the required permits. In addition, the Utility, on behalf of itself and its contractors, officers, officials, employees, and agents, agrees to indemnify, hold harmless, and defend, at its sole cost and expense, WSDOT and its officers, officials, employees, and agents from any and all fines, costs, claims, judgments, and/or awards of damages (to regulatory agencies, persons, and/or property), arising out of, or in any way resulting from, the Utility's failure to (1) obtain any required permit for the Utility Work or (2) comply with permit conditions. Further, the Utility shall be responsible for compliance with all federal, state, and local laws, regulations.
23. For any of the Utility's Work that requires permit coverage under the "CONSTRUCTION STORMWATER GENERAL PERMIT – National Pollutant Discharge Elimination System and State Waste Discharge General Permit for Stormwater Discharges Associated with Construction Activity" (Construction Stormwater General Permit), the Utility shall obtain said permit coverage and shall comply with all requirements of the Construction Stormwater General Permit. Upon WSDOT's request, the Utility shall provide a copy of the Construction Stormwater General Permit. In addition, the Utility, on behalf of itself and its contractors, officers, officials, employees, and agents, agrees to indemnify, hold harmless, and defend, at its sole cost and expense, WSDOT and its officers, officials, employees, and agents from any and all fines, costs, claims, judgments, and/or awards of damages (to regulatory agencies, persons, and/or property), arising out of, or in any way resulting from, the Utility's failure to (1) obtain coverage under the Construction Stormwater General Permit for Utility Work or (2) comply with the Construction Stormwater General Permit requirements.

24. This Permit or Franchise does not authorize the Utility, or its employees, contractors, or agents, any right to cut, spray, retard, remove, destroy, disfigure, or in any way modify the physical condition of any vegetative material located on the state-owned highway right of way. Should the Utility anticipate that its Work will alter the appearance of the state-owned highway right of way vegetation, the Utility shall notify WSDOT Representative to obtain WSDOT's prior written approval of the Utility's proposed work. If WSDOT permits the Utility to modify the state-owned highway right of way vegetation, it agrees that any vegetation cutting and/or trimming activities shall be conducted in such a manner that the state-owned highway right of way vegetation appearance will not be damaged. Should the Utility damage the appearance of the state-owned highway right of way vegetation without WSDOT's prior written approval, the Utility is subject to penalties provided for in RCWs 47.40.070, 47.40.080, and 4.24.630, as applicable.
25. The Utility hereby certifies that its facilities described in this Permit or Franchise are (1) in compliance with the Control Zone Guidelines, or (2) for a franchise consolidation or renewal, a mitigation plan has been submitted and approved for any existing Location I or Location II utility objects to be corrected in accordance with the Control Zone Guidelines, pursuant to Chapter 9 of WSDOT's Utilities Manual (M 22-87) and any revisions thereto.
26. The Utility shall not assign or transfer this Permit or Franchise without WSDOT's prior written approval. The Utility understands that any assignment or transfer requires the assignee or transferee to have the means to assume all obligations, duties, and liabilities of the terms and conditions of this Permit or Franchise, and the Utility will advise the assignee or transferee of its obligation to apply for an updated or replacement Permit or Franchise. If WSDOT does not approve the assignment or transfer, this Permit or Franchise shall automatically terminate, and the facility occupying state-owned highway right of way shall be subject to the terms of RCW 47.44.060.
27. The Utility, its successors and assigns, shall indemnify, defend at its sole cost and expense, and hold harmless the State of Washington, its officers and employees, from all claims, demands, damages (both to persons and/or property), expenses, regulatory fines, and/or suits that (1) arise out of or are incident to any acts or omissions of the Utility, its agents, contractors, and/or employees, in the use of the state-owned highway right of way as authorized by the terms and conditions of this Permit or Franchise, or (2) are caused by the breach of any of the terms or conditions of this Permit or Franchise by the Utility, its successors and assigns, and its contractors, agents, and/or employees. The Utility, its successors and assigns, shall not be required to indemnify, defend, or hold harmless the State of Washington, its officers and/or employees, if the claim, suit, or action for damages (both to persons and/or property) is caused by the acts or omissions of the State of Washington, its officers and/or employees; provided that, if such claims, suits, or actions result from the concurrent negligence of (a) the State of Washington, its officers and/or employees, and (b) the Utility, its agents, contractors, and/or employees, or involves those actions covered by RCW 4.24.115, the indemnity provisions provided herein shall be valid and enforceable only to the extent of the acts or omissions of the Utility, its agents, contractors, and/or employees.
28. The Utility agrees that its obligations under this Permit or Franchise extend to any claim, demand, and/or cause of action brought by, or on behalf of, any of its employees or agents while performing Work under this Permit or Franchise while located on state-owned highway right of way. For this purpose, the Utility, by MUTUAL NEGOTIATION, hereby waives, with respect to the State of Washington only, any immunity that would otherwise be available to it against such claims under the Industrial Insurance provisions in chapter 51.12 RCW.
29. The indemnification and waiver provided for in General Provisions 27 and 28 shall survive the termination of this Permit or Franchise.
30. Any action for damages against the State of Washington, its agents, contractors, and/or employees, arising out of damages to a utility or other facility located on state-owned highway right of way, shall be subject to the provisions and limitations of RCW 47.44.150.
31. This Permit or Franchise shall not be deemed or held to be an exclusive one and shall not prohibit WSDOT from granting rights of like or other nature to other public or private utilities, nor shall it prevent WSDOT from using any of the state-owned highway right of way or other properties for transportation purposes, or affect WSDOT's right to full supervision and control over all or any part of the state-owned highway right of way or properties, none of which is hereby surrendered. Further, WSDOT reserves the exclusive right to require that all utility facilities be subject to joint trenching and occupancy.
32. The Utility shall completely remove all Deactivated Facilities (as defined in WSDOT Utilities Manual M 22-87), unless agreed upon in writing by WSDOT, indicated in Special Provision 12. Any Deactivated facilities left within the state owned right of way shall remain owned by the Utility, who shall continue to bear all responsibility for any future costs incurred by WSDOT including for removal of the Deactivated facilities.

- 33. The Utility agrees that, in the event any construction and/or maintenance of the highway facility becomes necessary within the proximity of the utility installation, it is expressly understood that, upon request from WSDOT's Representative, the Utility will promptly identify and locate by suitable field markings (including test hole/pot hole), any and all of its underground facilities so that WSDOT or its contractor can be fully apprised at all times of their precise locations.
- 34. During non-working hours equipment and materials shall not be located or stored within the work zone clear zone (WZCZ) area. Minimum WZCZ distances will be measured from the edge of the traveled way (the portion of the roadway intended for the movement of vehicles, exclusive of shoulders and lanes for parking, turning, and storage for turning) and will be determined as follows:

Minimum Work Zone Clear Zone Distance

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

Appendix D

Boundary and Topographic Surveys

**ATTENTION PROPERTY OWNERS
AND
CONTRACTORS**



**CALL BEFORE
YOU DIG
1-800-424-5555**

The Cowlitz County Utility Coordination Council is comprised of local utilities whose common purpose is to help prevent accidents and damages to their underground facilities. ONE TELEPHONE CALL, 1-800-424-5555, two (2) working days prior to digging will relay a message to these utilities. On the next page is a listing of utilities and entities belonging to the Council.

Forty-eight (48) hours' notice (excluding weekends and holidays) is requested to permit our locators to mark our facilities for you. ONE CALL answering service is available twenty-four (24) hours a day, seven (7) days a week. All calls are recorded. (EMERGENCY LINE LOCATES ARE AVAILABLE AT ALL TIMES).

RCW 19.122.010, Washington Laws, 1988, Chapter 99 on Underground Utilities states that utilities shall be assigned "...responsibilities for locating and keeping accurate records of utility locations, protecting and repairing damage to existing underground facilities, and protecting the public health and safety from interruption in utility services caused by damage to existing underground utility facilities."

Callers are asked to use white paint to show their proposed path of excavation. Each locator uses a different color paint to show their underground facility (see reverse page). Digging should be done by hand 18" on either side of marking until utility is visible, before using other equipment.

**PLAN FOR SAFETY – CALL BEFORE YOU DIG
LOCATING SERVICES ARE FREE**

Thank you,

Cowlitz County
Utility Coordination Council

THE FOLLOWING LOCAL UTILITIES, ENTITIES AND OTHERS FORM THE COWLITZ COUNTY UTILITY COORDINATION COUNCIL:

		<u>COLOR CODE</u>
POWER	P.U.D. OF COWLITZ COUNTY	RED
GAS	CASCADE NATURAL GAS NORTHWEST PIPELINE CORPORATION OLYMPIC PIPE LINE COMPANY	YELLOW
TELEPHONE	AT&T GENERAL TELEPHONE KALAMA TELEPHONE U.S. SPRINT COMMUNICATIONS CENTURY LINK VERIZON COMMUNICATIONS FRONTIER CASCADE NETWORKS	ORANGE
WATER	BEACON HILL SEWER DISTRICT CITY OF CASTLE ROCK CITY OF KALAMA CITY OF KELSO CITY OF LONGVIEW CITY OF WOODLAND COWLITZ COUNTY PUBLIC WORKS P.U.D. OF COWLITZ COUNTY	BLUE
SEWER	BEACON HILL SEWER DISTRICT CITY OF CASTLE ROCK CITY OF KALAMA CITY OF KELSO CITY OF LONGVIEW CITY OF WOODLAND COWLITZ COUNTY PUBLIC WORKS (includes leachate pipeline)	GREEN
T.V. CABLE	COMCAST WASHINGTON STATE DEPARTMENT OF TRANSPORTATION	ORANGE

(OTHER UTILITIES MAY JOIN IN THE FUTURE – PLEASE ASK THE OPERATOR)

REPORT ALL EMERGENCIES TO “911”. All other damages should be reported directly to the utilities involved.

Nicks in insulation of gas, power or telephone should be reported to utilities promptly, as failure later can cause serious injuries or damages.

END OF CONTRACT