

April 1, 2016



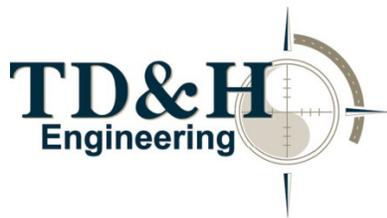
EASTERN WASHINGTON UNIVERSITY
Sewer Improvements Project

EWU Project No. AE1420

Project Specifications

ISSUED FOR DEPARTMENT OF ECOLOGY REVIEW

60% Submittal



TD&H Job No. S14-104

Certification by Engineer

DIVISION 0 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Bid Advertisement

Instructions to Bidders

Bid Proposal

Bid Bond Form 351

Certificate of Insurance

General Conditions for Washington State Facility Construction

Supplemental Conditions for Washington State Facilities Construction

Prevailing Wage Rates

For Apprentice Wage Rates, see the following website:

<https://fortress.wa.gov/lni/wagelookup/ApprenticeWageLookup.aspx>

00950 Potential Environmental Hazards; Limited Asbestos & Lead Survey Report

DIVISION 1 – GENERAL REQUIREMENTS

01 10 00 Summary
01 25 00 Substitution Procedures
01 26 00 Contract Modification Procedures
01 29 00 Payment Procedures
01 33 00 Submittal Procedures
01 40 00 Quality Requirements
01 50 00 Temporary Facilities and Controls
01 60 00 Product Requirements
01 77 00 Closeout Procedures
01 78 00 Closeout Submittals

DIVISION 3 – CONCRETE

03 10 00 Concrete Forming and Accessories
03 20 00 Concrete Reinforcing
03 30 00 Cast-in-Place Concrete
03 39 00 Concrete Curing
03 60 00 Grouting

DIVISION 31 – EARTHWORK

31 05 13	Soils for Earthwork
31 05 16	Aggregates for Earthwork
31 10 00	Site Clearing
31 23 16	Excavation
31 23 17	Trenching

DIVISION 32 – EXTERIOR IMPROVEMENTS

32 11 23	Aggregate Base Courses
32 12 16	Asphalt Paving
32 13 13	Concrete Paving
32 14 13	Precast Concrete Unit Paving
32 17 23	Pavement Markings
32 84 00	Planting Irrigation
32 92 19	Seeding
32 92 23	Sodding

DIVISION 33 – UTILITIES

33 01 30.13	Sewer Testing
33 01 30.16	TV Inspection of Sewer Pipelines
33 01 30.62	Manhole Grout Sealing
33 05 26	Identification for Utilities Piping
33 31 00	Sanitary Utility Sewer Piping
33 40 00	Sewer Monitoring Equipment

APPENDIX

ADVERTISEMENT FOR BIDS

Sealed proposals will be received for the following project:

PROJECT: Number AE1420
SEWER IMPROVEMENTS PROJECT
Eastern Washington University
Cheney, Washington 99004

TIME: 1:00
MAY X, 2016

LOCATION: Eastern Washington University
Construction and Planning Services
101 Rozell
Cheney, Washington 99004

ENGINEER: TD&H Engineering
303 E Second Ave
Spokane, Washington 99202

Prospective bidders may obtain construction drawings and specifications in electronic form from www.questcdn.com enter **Quest Project #####** in the search projects box. Please contact QuestCDN at 952-233-1632 for assistance in free membership registration.

Please direct questions regarding this project to Steve Schmedding at sschmedding@ewu.edu or (509) 359-4205.

In accordance with state law, bidders are required to have a current Washington State contractor's license at the time of submitting bids.

Bidders are encouraged to attend a **Mandatory Pre-bid Conference**, which will be held at **1:00 PM** on **Tuesday, May XX, 2016**. Bidders should meet at the Construction and Planning Services Office, Rozell Heating Plant, Eastern Washington University, 1115 Cedar Street, Cheney, Washington, followed by a tour of the work site.

Voluntary MWBE goals of 10% minority, 4% women, and 3% veteran-owned business have been established for this project. Achievement of the goals is encouraged. However, no minimum level of MWBE participation is required and such goals will not be used as a criterion for selecting contractors. EWU is an affirmative action employer.

This Bid is subject to Washington State Law, Eastern Washington University regulations, procedures and policies, as they exist or may hereafter be amended. The State of Washington, Eastern Washington University, acting through the Construction and Planning Services office, reserves the right to reject any and/or all proposals, and to waive bidding informalities.

This ad may be viewed online at <http://access.ewu.edu/facilities/business-opportunities>.

Bidders may also check with their local Plans Centers. The bidder is responsible for notifications when utilizing Plan Centers.

END OF ADVERTISEMENT FOR BIDS

**INSTRUCTIONS TO BIDDERS
FOR EASTERN WASHINGTON UNIVERSITY FACILITY CONSTRUCTION**

PART 0 – GENERAL CONDITIONS

0.01 EXPLANATION TO PROSPECTIVE BIDDERS

- A. Any prospective bidder desiring an explanation or interpretation of the solicitation, drawings, specifications, etc., must submit a request in writing to the Architect/Engineer (A/E) 4 calendar days before the bid due date. Oral explanations or instructions given before the award of a contract will not be binding. Any information given a prospective bidder concerning a solicitation will be furnished promptly to all other prospective bidders by addendum to the solicitation, if that information is necessary in submitting bids or if the lack of it would be prejudicial to other prospective bidders.
- B. In accordance with RCW 39.04.320 the Eastern Washington University requires 15% **Apprenticeship Participation** for all projects estimated to cost one million dollars or more. On applicable projects the bid advertisement and Bid Proposal form shall establish a minimum required percentage of apprentice labor hours compared to the total labor hours. Bidders may contact the Department of Labor and Industries, Specialty Compliance Services Division, Apprenticeship Section, P.O. Box 44530, Olympia, WA 98504-4530, by phone (360) 902-5320, and e-mail at thum235@lni.wa.gov, to obtain information on available apprenticeship programs.

0.02 PREVAILING WAGES

- A. The bidder shall pay the prevailing rate of wages to all workers, laborers, or mechanics employed in the performance of any part of the Work in accordance with RCW 39.12 and the rules and regulations of the Department of Labor and Industries. The schedule of prevailing wage rates for the locality or localities of the work is determined by the Industrial Statistician of the Department of Labor and Industries. It is the bidder's responsibility to verify the applicable prevailing wage rate.
- B. The current prevailing wage rates for this project can be found at the following web address (URL): **<https://fortress.wa.gov/lni/wagelookup/prvWagelookup.aspx>**. The effective date for determining the current wage rates to be used for this project will be the bid date.
- C. This project will be constructed in **Spokane County**.

0.03 PREPARATION OF BIDS – CONSTRUCTION

- A. Bids must be: (1) submitted on the bid proposal forms, or copies of forms, furnished by the Owner or the Owner's agent, and (2) signed in ink. The person signing a bid must initial each change appearing on any bid form. If the bid is made by a corporation, it shall be signed by the corporation's authorized designee. The address of the bidder shall be typed or printed on the bid form in the space provided.
- B. The bid form may require bidders to submit bid prices for one or more items on various bases, including: (1) lump sum base bid; (2) lump sum bid alternate prices; (3) unit prices; or (4) any combination of items (1) through (3) above.
- C. If the solicitation includes alternate bid items, failure to bid on the alternates may disqualify the bid. If bidding on all items is not required, bidders should insert the words "no bid" in the space provided for any item on which no price is submitted.
- D. Substitute bid proposals will not be considered unless this solicitation authorizes their submission.

0.04 BID GUARANTEE

- A. When the sum of the base bid plus all additive bid alternates is \$35,000.00 or less, bid security is not required.

When the sum of the base bid plus all additive alternates is greater than \$35,000.00, a bid guarantee in the amount of 5% of the base bid amount is required. Failure of the bidder to provide bid guarantee when required shall render the bid non-responsive.

- B. Acceptable forms of bid guarantee are: A bid bond or postal money order, or certified check or cashier's check made payable to the Washington State Treasurer.

The Owner will return bid guarantees (other than bid bond) to unsuccessful bidders as soon as practicable, but not sooner than the execution of a contract with the successful bidder. The successful bidder's bid guarantee will be returned to the successful bidder with its official notice to proceed with the work of the contract.

- C. The bidder will allow 60 days from bid opening date for acceptance of its bid by the Owner.

The bidder will return to the Owner a signed contract, insurance certificate and bond or bond waiver within 15 calendar days after receipt of the contract. If the apparent successful bidder fails to sign all contractual documents or provide the bond and insurance as required or return the documents within 15 calendar days after receipt of the contract, the Owner may terminate the award of the contract.

- D. In the event a bidder discovers an error in its bid following the bid opening, the bidder may request to withdraw its bid under the following conditions:

1. Written notification is received by the Owner within 24 hours following bid opening.
2. The bidder provides written documentation of the claimed error to the satisfaction of the Owner within 72 hours following the bid opening.

The Owner will approve or disapprove the request for withdrawal of the bid in writing. If the bidder's request for withdrawal of its bid is approved, the bidder will be released from further obligation to the Owner without penalty. If it is disapproved, the Owner may retain the bidder's bid guarantee.

0.05 ADDITIVE OR DEDUCTIVE BID ITEMS

The low bidder, for purposes of award, shall be the responsive bidder offering the low aggregate amount for the base bid item, plus additive or deductive bid alternates selected by the Owner, and within funds available for the project.

The bidder agrees to hold all bid alternate prices for sixty (60) days from date of bid opening.

0.06 ACKNOWLEDGEMENT OF ADDENDA

Bidders shall acknowledge receipt of all addenda to this solicitation by identifying the addenda numbers in the space provided for this purpose on the bid proposal form. Failure to do so may result in the bid being declared non-responsive.

0.07 SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK

The bidder acknowledges that it has taken steps necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to (1) conditions bearing upon transportation, disposal, handling, and storage of materials; (2) the availability of labor, water, electric power, and road; (3) uncertainties of weather; (4) physical conditions at the site; (5) the conformation and conditions of the ground; and (6) the character of equipment and facilities needed preliminary to and during the work. The bidder also acknowledges that it has satisfied itself as to character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including exploratory work done by the Owner, as well as from the drawings and specifications made a part of this contract. Any failure of the bidder to take the actions described and acknowledged in this paragraph will not relieve the bidder from responsibility for estimating properly the difficulty and cost of successfully performing the work.

0.08 BID AMOUNTS

- A. The bid prices shown for each item on the bid proposal shall include all labor, material, equipment, overhead and compensation to complete all of the work for that item.
- B. The actual cost of building permit (only) and the public utility hookup fees will be a direct reimbursement to the Contractor or paid directly to the permitting agency by the Owner. Fees for these permits should not be included by the Bidder in the bid amount.
- C. The Bidder agrees to hold the base bid prices for sixty (60) days from date of bid opening.

0.09 TAXES

The bid amounts shall not include Washington State Sales Tax (WSST). All other taxes imposed by law shall be included in the bid amount. The Owner will include WSST in progress payments. The Contractor shall pay the WSST to the Department of Revenue and shall furnish proof of payment to the Owner if requested.

[NOTE: Contractor must bond for contract amount plus the WSST.]

0.10 SUBMISSION OF BIDS

- A. Bid Proposals must be submitted on or before the time specified in the Advertisement for Bids.
- B. If the base bid and the sum of the additive alternates is one million dollars or more, the Bid Proposal shall comply with the following requirements:
 - 1. Pursuant to RCW 39.30.060, if the base bid and the sum of the additive alternates is one million dollars or more, the Bidder shall provide names of the Subcontractors with whom the Bidder will subcontract for performance of heating, ventilation and air conditioning (HVAC), plumbing, and electrical.
 - 2. The Bidder can name itself for the performance of the work.
 - 3. The Bidder shall not list more than one Subcontractor for each category of work identified UNLESS Subcontractors vary with bid alternates, in which case the Bidder must indicate which Subcontractor will be used for which alternate.
 - 4. Failure of the Bidder to submit as part of the bid the NAMES of such Subcontractors or to name itself to perform such work shall render the Bidder's bid nonresponsive and, therefore, void.

- C. The Bid Proposal shall be submitted in a sealed envelope addressed to the office specified in the Advertisement for Bids. The envelope shall have printed on the outside:
 - 1. The project number and description.
 - 2. The name and address of the bidder.
 - 3. Identification as Bid Proposal.
- D. Prior to the bid opening, the Owner's representative will designate the official bid clock. Any part of the bid proposal or bid modification not received prior to the times specified, per the designated bid clock, will not be considered and the bid will be returned to the bidder unopened.
- E. A bid may be withdrawn in person by a bidder's authorized representative before the opening of the bids. Bidder(s) representative will be required to show ID and sign on bid summary sheet before it will be released.
- F. People with disabilities who wish to request special accommodation, (e.g., sign language interpreters, Braille, etc.) need to contact the Owner ten (10) working days prior to the scheduled bid opening.

0.11 BID RESULTS

After the Bid Opening, Bidders may obtain bid results from Eastern Washington University Construction and Planning Services by calling (509) 359-6746.

0.12 LOW RESPONSIVE BIDDER

- A. It is the intent of the Owner to award a contract to the low responsive bidder. A bid will be considered responsive if it meets the following requirements:
 - 1. It is received at the proper time and place.
 - 2. It meets the stated requirements of the bid proposal.
 - 3. It is submitted by a licensed/registered contractor within the State of Washington at the time of bid opening and is not banned from bidding by the Department of Labor and Industries.
 - 4. It is accompanied by a bid guarantee, if required.
- B. If the Owner determines that the apparent low bidder is not responsive, the Owner will notify the bidder of its preliminary determination in writing. Within three (3) days after receipt of the preliminary determination, the bidder may withdraw its bid or request a hearing. The Owner will schedule a hearing within three (3) working days of receipt of the bidder's request. The hearing members will include the Director of Construction and Planning Services, the Construction and Planning Services (CPS) Contract Specialist and the CPS Project Manager. The Owner will issue a Final Determination after reviewing information presented at the hearing. The Owner's Final Determination is specific to this project, and will have no effect on other or future projects.

0.13 CONTRACT AWARD

- A. The Owner reserves the right to accept or reject any or all bid proposals and to waive informalities.
- B. The Owner may negotiate bid price adjustments with the low responsive bidder, including changes in the contract documents, to bring the bid within the available funding per RCW 39.04.015.
- C. The apparent low bidder, for purpose of award, shall be the responsive bidder offering the low aggregate amount for the base bid plus selected additive or deductive bid alternates and meeting all other bid submittal requirements.

- D. The Contract will only become effective when signed by the Owner. Prior to the Owner's signature, any and all costs incurred shall be the sole responsibility of the bidder.
- E. **“SUBCONTRACTOR RESPONSIBILITY CRITERIA”** In accordance with SHB 2010 amending RCW 39.04 the Contractor shall include the language of this paragraph 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. The requirements of this paragraph 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 as a contractor in compliance with chapter 18.27 RCW, which must have been in effect at the time of subcontract bid submittal.
 2. Have a current Washington Unified Business Identifier (UBI) number.
 3. Have Industrial Insurance (workers' compensation) coverage for the subcontractor's employees working in Washington, as required in Title 51 RCW.
 4. A Washington Employment Security Department number, as required in Title 50 RCW.
 5. A Washington Department of Revenue state excise tax registration number, as required in Title 82 RCW.
 6. An electrical contractor license, if required by Chapter 19.28 RCW.
 7. An elevator contractor license, if required by Chapter 70.87 RCW.
 8. Not be disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065 (3).

Project Name: Sewer Improvements Project

Project No.: AE1420

Name of Firm: _____

**STATE OF WASHINGTON
EASTERN WASHINGTON UNIVERSITY
OFFICE OF CONSTRUCTION AND PLANNING SERVICES
101 ROZELL
CHENEY, WA 99004-2464**

BID PROPOSAL

In compliance with the contract documents, the following bid proposal is submitted:

1) BASE BID (*Including Trench Excavation Safety Provisions*)

_____ \$ _____
(Please print dollar amount in space above) (do not include Washington State Sales Tax)

TRENCH EXCAVATION SAFETY PROVISIONS

\$ _____

(Included also in Base Bid)

If the bid amount contains any work which requires trenching exceeding a depth of four feet, all costs for trench safety shall be included in the Base Bid **and indicated above** for adequate trench safety systems in compliance with Chapter 39.04 RCW, 49.17 RCW and WAC 296-155-650. Bidder must include a lump sum dollar amount in blank above (even if the value is \$0.00) to be responsive.

Time for Completion

The undersigned hereby agrees to achieve substantial completion of all the work under the Base Bid (and accepted alternates) within **150** calendar days after the date of Notice to Proceed.

Subcontractor Listing – RCW 39.30.060

If the base bid and the sum of the additive alternates is one million dollars or more the bidder shall provide names of the subcontractors with whom the bidder will **directly** subcontract for performance of the following work. If the bidder intends to perform the work, the bidder must enter its name for that category of work.

The bidder shall not list more than one subcontractor for each category of work identified.

Failure of the bidder to submit the NAMES of such subcontractors or to name itself to perform such work shall render the bidder's bid nonresponsive and, therefore, void.

<u>Designated Work</u>	<u>Firm Name</u>
1. Heating Ventilation Air Conditioning (HVAC)	_____
2. Plumbing	_____
3. Electrical	_____

Eastern Washington University
Bid Proposal Form

Project Name: _____

Project No.: _____

Name of Firm: _____

Liquidated Damages

The undersigned agrees to pay the Owner as liquidated damages the sum of **\$500.00** for each consecutive calendar day that the undersigned is in default after the time to achieve substantial completion. Liquidated damages shall be deducted from the contract by change order.

Receipt of Addenda

Receipt of the following addenda is acknowledged:

Addendum Number(s): _____

Name of Firm _____ NOTE: <i>If bidder is a corporation, write State of Incorporation; if a partnership, give full names and addresses of all parties below.</i>
Signed by _____, Official Capacity _____
Print Name _____
Address _____
City _____ State _____ Zip Code _____
Date _____ Telephone _____ FAX _____
State of Washington Contractor's License No. _____
Federal Tax ID # _____ e-mail address: _____



See Instructions to Bidders

NOTE: Type or Print in Ink

PRINCIPAL (Legal name and business address)	TYPE OF ORGANIZATION (Check one) <input type="checkbox"/> INDIVIDUAL <input type="checkbox"/> PARTNERSHIP <input type="checkbox"/> JOINT VENTURE <input type="checkbox"/> CORPORATION
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SURETY(IES) (Name(s) and business address(es))	SUM AMOUNT OF BOND (Amount not to exceed) <div style="text-align: right;">DOLLARS</div>
\$	% of BID PRICE

BID IDENTIFICATION		
BID DATE	INVITATION NO.	FOR <input type="checkbox"/> MATERIALS/SUPPLIES/EQUIPMENT <input type="checkbox"/> CONSTRUCTION <input type="checkbox"/> SERVICES

WE, the Principal and Surety(ies), are firmly bound and obligated to the State of Washington in the above sum amount on conditions set forth below, for the payment of which we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally.

THE CONDITION OF THIS OBLIGATION IS SUCH that the Principal has submitted the bid identified above.

THE ABOVE OBLIGATION shall be void and of no effect if the Principal, upon acceptance of the bid identified above, within the period specified therein for acceptance (sixty (60) days if no period is specified), shall execute such further contractual documents and give bond(s) as may be required by the terms of the bid as accepted within the time specified (ten (10) days if no period is specified) after receipt of the forms by him. Furthermore, in the event of failure to execute additional contractual documents and give bond(s), the above obligation shall be null and void if the Principal pays the State of Washington for any cost of procuring the work which exceeds the amount of his bid.

IN WITNESS WHEREOF, the Principal and Surety(ies) have executed this bond and have affixed their signatures and seals on the date set forth above.

PRINCIPAL

1. NAME OF PRINCIPAL AND TITLE	PHONE NO.	SIGNATURE	L.S. (Corporate Seal)
2.			

SURETY(IES)

Surety A	NAME AND ADDRESS	LIABILITY LIMIT	L.S. (Corporate Seal)	
	1. NAME AND TITLE (Attorney in Fact)	PHONE NO.		SIGNATURE
	2. NAME AND TITLE	PHONE NO.		SIGNATURE
Surety B	NAME AND ADDRESS	LIABILITY LIMIT	L.S. (Corporate Seal)	
	1. NAME AND TITLE (Attorney in Fact)	PHONE NO.		SIGNATURE
	2. NAME AND TITLE	PHONE NO.		SIGNATURE



CERTIFICATE OF INSURANCE

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY.
THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE
COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURED (Legal name and business address)	CERTIFICATE HOLDER: STATE OF WASHINGTON	CONTRACT NUMBER
	DEPT. OF GENERAL ADMINISTRATION	DATE ISSUED:
	DIVISION OF E&A SERVICES	
	206 GENERAL ADMINISTRATION BUILDING	
	OLYMPIA, WASHINGTON 98504-1012	

PROJECT DESCRIPTION / LOCATIONS / VEHICLES / RESTRICTIONS / SPECIAL ITEMS:

This is to certify that policies of Insurance listed below have been issued to the Insured named above for the policy period indicated.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	Date Policy Effective (MM/DD/YY)	Date Policy Expires (MM/DD/YY)	ALL LIMITS IN THOUSANDS	
	GENERAL LIABILITY <input type="checkbox"/> Commercial General Liability <input type="checkbox"/> Claims Made <input type="checkbox"/> Occurrence <input type="checkbox"/> Owner's & Contractors Protection Deductible \$ _____				General Aggregate	\$ _____
					Products Comp/Ops Aggregate	\$ _____
					Personal & Advertising Injury	\$ _____
					Each Occurrence	\$ _____
					Fire Damage (Any One Fire)	\$ _____
					Medical Expense (Any One Person)	\$ _____
	AUTOMOBILE LIABILITY <input type="checkbox"/> Any Auto <input type="checkbox"/> All Owned Autos <input type="checkbox"/> Scheduled Autos <input type="checkbox"/> Hired Autos <input type="checkbox"/> Non-Owned Autos <input type="checkbox"/> Garage Liability Deductible \$ _____				CSL	\$ _____
					Bodily Injury (per person)	\$ _____
					Bodily Injury (per accident)	\$ _____
					Property Damage	\$ _____
	EXCESS LIABILITY <input type="checkbox"/> Other Than Umbrella Form				Each Occurrence	Aggregate
					\$ _____	\$ _____
	WORKERS COMPENSATION AND EMPLOYER'S LIABILITY				STATUTORY	
					\$ _____	(Each Accident)
					\$ _____	(Disease Policy Limit)
					\$ _____	(Disease-Each Employee)
	OTHER					

ADDITIONAL PROVISIONS

The State of Washington is included as additional insured as related to the above mentioned project.
Should any of the above described policies be cancelled before the expiration date thereof, the issuing Company must deliver or mail not less than a 45 days written notice to the above Certificate Holder, per RCW 48.18.290

COMPANIES AFFORDING COVERAGE		ISSUING COMPANY, AGENT OR REPRESENTATIVE	
NOTE: Attach a separate sheet to this certificate giving all the company names and their percentage of coverage, if clarification is needed,		NAME:	
Company Letter	A	ADDRESS:	
	B		
	C		
	D	Authorized Signature	
	E	Title	
		Signature Date	
		Signee Name	
		Telephone No.	

<u>Section</u>	<u>Description</u>	<u>Page</u>
PART 1 – GENERAL PROVISIONS		
1.01	Definitions.....	3
1.02	Order of Precedence.....	4
1.03	Execution and Intent.....	5
PART 2 – INSURANCE AND BONDS		
2.01	Contractor’s Liability Insurance.....	5
2.02	Coverage Limits.....	6
2.03	Insurance Coverage Certificates.....	6
2.04	Payment and Performance Bonds.....	6
2.05	Alternative Surety.....	7
2.06	Builder’s Risk.....	7
PART 3 – TIME AND SCHEDULE		
3.01	Progress and Completion.....	7
3.02	Construction Schedule.....	7
3.03	Owner’s Right to Suspend the Work for Convenience.....	8
3.04	Owner’s Right to Stop the Work for Cause.....	9
3.05	Delay.....	9
3.06	Notice to Owner of Labor Disputes.....	10
3.07	Damages for Failure to Achieve Timely Completion.....	10
PART 4 – SPECIFICATIONS, DRAWINGS, AND OTHER DOCUMENTS		
4.01	Discrepancies and Contract Document Review.....	11
4.02	Project Record.....	11
4.03	Shop Drawings.....	12
4.04	Organization of Specifications.....	13
4.05	Ownership and Use of Drawings, Specifications & other Documents.....	13
PART 5 – PERFORMANCE		
5.01	Contractor Control and Supervision.....	13
5.02	Permits, Fees and Notices.....	14
5.03	Patents and Royalties.....	14
5.04	Prevailing Wages.....	15
5.05	Hours of Labor.....	15
5.06	Nondiscrimination.....	16
5.07	Safety Precautions.....	16
5.08	Operations, Material Handling, and Storage Areas.....	18
5.09	Prior Notice of Excavation.....	19
5.10	Unforeseen Physical Conditions.....	19
5.11	Protection of Existing Structures, Equipment, Vegetation, Utilities, & Improvements.....	19
5.12	Layout of Work.....	19
5.13	Material and Equipment.....	20
5.14	Availability and Use of Utility Services.....	20
5.15	Tests and Inspections.....	20
5.16	Correction of Nonconforming Work.....	21
5.17	Clean Up.....	22
5.18	Access to Work.....	22
5.19	Other Contracts.....	23
5.20	Subcontractors and Suppliers.....	23
5.21	Warranty of Construction.....	24

PART 5 – PERFORMANCE (continued)

5.22	Indemnification.....	25
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PART 6 – PAYMENTS AND COMPLETION

6.01	Contract Sum.....	25
6.02	Schedule of Values.....	25
6.03	Application for Payment.....	25
6.04	Progress Payments.....	26
6.05	Payments Withheld.....	27
6.06	Retainage and Bond Claim Rights.....	27
6.07	Substantial Completion.....	27
6.08	Prior Occupancy.....	28
6.09	Final Completion, Acceptance, and Payment.....	28

PART 7 – CHANGES

7.01	Change in the Work.....	28
7.02	Change in the Contract Sum.....	30
7.03	Change in the Contract Time.....	36

PART 8 – CLAIMS AND DISPUTE RESOLUTION

8.01	Claims Procedure.....	38
8.02	Arbitration.....	39
8.03	Claims Audits.....	40

PART 9 – TERMINATION OF THE WORK

9.01	Termination by Owner for Cause.....	41
9.02	Termination by Owner for Convenience.....	42

PART 10 – MISCELLANEOUS PROVISIONS

10.01	Governing Law.....	43
10.02	Successors and Assigns.....	43
10.03	Meaning of Words.....	43
10.04	Rights and Remedies.....	44
10.05	Contractor Registration.....	44
10.06	Time Computations.....	44
10.07	Records Retention.....	44
10.08	Third-Party Agreements.....	44
10.09	Antitrust Assignments.....	44
10.10	Headings and Captions.....	44

PART 1 – GENERAL PROVISIONS

1.01 DEFINITIONS

- A. “Application for Payment” means a written request submitted by Contractor to A/E for payment of Work completed in accordance with the Contract Documents and approved Schedule of Values, supported by such substantiating data as Owner or A/E may require.
- B. “Architect,” “Engineer,” or “A/E” means a person or entity lawfully entitled to practice architecture or engineering, representing Owner within the limits of its delegated authority.
- C. “Change Order” means a written instrument signed by Owner and Contractor stating their agreement upon all of the following: (1) a change in the Work; (2) the amount of the adjustment in the Contract Sum, if any, and (3) the extent of the adjustment in the Contract Time, if any.
- D. “Claim” means Contractor’s exclusive remedy for resolving disputes with Owner regarding the terms of a Change Order or a request for equitable adjustment, as more fully set forth in Part 8.
- E. “Contract Award Amount” is the sum of the Base Bid and any accepted Alternates.
- F. “Contract Documents” means the Advertisement for Bids, Instructions for Bidders, completed Bid Form, General Conditions, Modifications to the General Conditions, Supplemental Conditions, Public Works Contract, other Special Forms, Drawings and Specifications, and all addenda and modifications thereof.
- G. “Contract Sum” is the total amount payable by Owner to Contractor, for performance of the Work in accordance with the Contract Documents, including all taxes imposed by law and properly chargeable to the Work, except Washington State sales tax.
- H. “Contract Time” is the number of calendar days allotted in the Contract Documents for achieving Substantial Completion of the Work.
- I. “Contractor” means the person or entity who has agreed with Owner to perform the Work in accordance with the Contract Documents.
- J. “Day(s)”: Unless otherwise specified, day(s) shall mean calendar day(s).”
- K. “Drawings” are the graphic and pictorial portions of the Contract Documents showing the design, location, and dimensions of the Work, and may include plans, elevations, sections, details, schedules, and diagrams.
- L. “Final Acceptance” means the written acceptance issued to Contractor by Owner after Contractor has completed the requirements of the Contract Documents, as more fully set forth in Section 6.09 B.
- M. “Final Completion” means that the Work is fully and finally complete in accordance with the Contract Documents, as more fully set forth in Section 6.09 A.
- N. “Force Majeure” means those acts entitling Contractor to request an equitable adjustment in the Contract Time, as more fully set forth in paragraph 3.05A.
- O. “Notice” means a written notice which has been delivered in person to the individual or a member of the firm or entity or to an officer of the corporation for which it was intended or, if delivered or sent by registered or certified mail, to the last business address known to the party giving notice.

**GENERAL CONDITIONS
FOR WASHINGTON STATE FACILITY CONSTRUCTION
Page 4 of 44**

- P. "Notice to Proceed" means a notice from Owner to Contractor that defines the date on which the Contract Time begins to run.
- Q. "Owner" means the state agency, institution, or its authorized representative with the authority to enter into, administer, and/or terminate the Work in accordance with the Contract Documents and make related determinations and findings.
- R. "Person" means a corporation, partnership, business association of any kind, trust, company, or individual.
- S. "Prior Occupancy" means Owner's use of all or parts of the Project before Substantial Completion, as more fully set forth in Section 6.08 A.
- T. "Progress Schedule" means a schedule of the Work, in a form satisfactory to Owner, as further set forth in Section 3.02.
- U. "Project" means the total construction of which the Work performed in accordance with the Contract Documents may be the whole or a part and which may include construction by Owner or by separate contractors.
- V. "Project Record" means the separate set of Drawings and Specifications as further set forth in paragraph 4.02A.
- W. "Schedule of Values" means a written breakdown allocating the total Contract Sum to each principal category of Work, in such detail as requested by Owner.
- X. "Specifications" are that portion of the Contract Documents consisting of the written requirements for materials, equipment, construction systems, standards and workmanship for the Work, and performance of related services.
- Y. "Subcontract" means a contract entered into by Subcontractor for the purpose of obtaining supplies, materials, equipment, or services of any kind for or in connection with the Work.
- Z. "Subcontractor" means any person, other than Contractor, who agrees to furnish or furnishes any supplies, materials, equipment, or services of any kind in connection with the Work.
- AA. "Substantial Completion" means that stage in the progress of the Work when the construction is sufficiently complete, as more fully set forth in Section 6.07.
- AB. "Work" means the construction and services required by the Contract Documents, and includes, but is not limited to, labor, materials, supplies, equipment, services, permits, and the manufacture and fabrication of components, performed, furnished, or provided in accordance with the Contract Documents.

1.02 ORDER OF PRECEDENCE

Any conflict or inconsistency in the Contract Documents shall be resolved by giving the documents precedence in the following order:

1. Signed Public Works Contract, including any Change Orders.
2. Supplemental Conditions.
3. Modifications to the General Conditions.
4. General Conditions.

5. Specifications. Provisions in Division 1 shall take precedence over provisions of any other Division.
6. Drawings. In case of conflict within the Drawings, large scale drawings shall take precedence over small scale drawings.
7. Signed and Completed Bid Form.
8. Instructions to Bidders.
9. Advertisement for Bids.

1.03 EXECUTION AND INTENT

Contractor Representations: Contractor makes the following representations to Owner:

1. Contract Sum reasonable: The Contract Sum is reasonable compensation for the Work and the Contract Time is adequate for the performance of the Work, as represented by the Contract Documents;
2. Contractor familiar with project: Contractor has carefully reviewed the Contract Documents, visited and examined the Project site, become familiar with the local conditions in which the Work is to be performed, and satisfied itself as to the nature, location, character, quality and quantity of the Work, the labor, materials, equipment, goods, supplies, work, services and other items to be furnished and all other requirements of the Contract Documents, as well as the surface and subsurface conditions and other matters that may be encountered at the Project site or affect performance of the Work or the cost or difficulty thereof;
3. Contractor financially capable: Contractor is financially solvent, able to pay its debts as they mature, and possesses sufficient working capital to complete the Work and perform Contractor's obligations required by the Contract Documents; and
4. Contractor can complete Work: Contractor is able to furnish the plant, tools, materials, supplies, equipment and labor required to complete the Work and perform the obligations required by the Contract Documents and has sufficient experience and competence to do so.

PART 2 – INSURANCE AND BONDS

2.01 CONTRACTOR'S LIABILITY INSURANCE

General insurance requirements: Prior to commencement of the Work, Contractor shall obtain all the insurance required by the Contract Documents and provide evidence satisfactory to Owner that such insurance has been procured. Review of the Contractor's insurance by Owner shall not relieve or decrease the liability of Contractor. Companies writing the insurance to be obtained by this part shall be licensed to do business under Chapter 48 RCW or comply with the Surplus Lines Law of the State of Washington. Contractor shall include in its bid the cost of all insurance and bond costs required to complete the base bid work and accepted alternates. Insurance carriers providing insurance in accordance with the Contract Documents shall be acceptable to Owner, and its A.M. Best rating shall be indicated on the insurance certificates.

- A. Term of insurance coverage: Contractor shall maintain the following insurance coverage during the Work and for one year after Final Acceptance. Contractor shall also maintain the following insurance coverage during the performance of any corrective Work required by Section 5.16.

**GENERAL CONDITIONS
FOR WASHINGTON STATE FACILITY CONSTRUCTION
Page 6 of 44**

1. General Liability Insurance: Commercial General Liability (CGL) on an Occurrence Form. Coverage shall include, but not be limited to:
 - a. Completed operations/products liability;
 - b. Explosion, collapse, and underground; and
 - c. Employer's liability coverage.
 2. Automobile Liability Insurance: Automobile liability
- B. Industrial Insurance compliance: Contractor shall comply with the Washington State Industrial Insurance Act and, if applicable, the Federal Longshoremen's and Harbor Workers' Act and the Jones Act.
- C. Insurance to protect for the following: All insurance coverages shall protect against claims for damages for personal and bodily injury or death, as well as claims for property damage, which may arise from operations in connection with the Work whether such operations are by Contractor or any Subcontractor.
- D. Owner as Additional Insured: All insurance coverages shall be endorsed to include Owner as an additional named insured for Work performed in accordance with the Contract Documents, and all insurance certificates shall evidence the Owner as an additional insured.

2.02 COVERAGE LIMITS

Insurance amounts: The coverage limits shall be as follows:

- A. Limits of Liability shall not be less than \$1,000,000 Combined Single Limit for Bodily Injury and Property Damage (other than Automobile Liability) Each Occurrence; Personal Injury and Advertising Liability Each Occurrence.
- B. \$2,000,000 Combined Single Limit Annual General Aggregate.
- C. \$2,000,000 Annual Aggregate for Products and Completed Operations Liability.
- D. \$1,000,000 Combined Single Limit for Automobile Bodily Injury and Property Damage Liability, Each Accident or Loss.

2.03 INSURANCE COVERAGE CERTIFICATES

- A. Certificate required: Prior to commencement of the Work, Contractor shall furnish to Owner a completed certificate of insurance coverage.
- B. List Project info: All insurance certificates shall name Owner's Project number and Project title.
- C. Cancellation provisions: All insurance certificates shall specifically require 45 Days prior notice to Owner of cancellation or any material change, except 30 Days for surplus line insurance.

2.04 PAYMENT AND PERFORMANCE BONDS

Conditions for bonds: Payment and performance bonds for 100% of the Contract Award Amount, plus state sales tax, shall be furnished for the Work, using the Payment Bond and Performance Bond form published by and available from the American Institute of Architects (AIA) – form A312. Prior to execution of a Change Order that, cumulatively with previous Change Orders, increases the Contract Award Amount by 15% or more, the Contractor shall provide either new payment and performance bonds for the

revised Contract Sum, or riders to the existing payment and performance bonds increasing the amount of the bonds. The Contractor shall likewise provide additional bonds or riders when subsequent Change Orders increase the Contract Sum by 15% or more. No payment or performance bond is required if the Contract Sum is \$35,000 or less and Contractor agrees that Owner may, in lieu of the bond, retain 50% of the Contract Sum for the period allowed by RCW 39.08.010.

2.05 ALTERNATIVE SURETY

When alternative surety required: Contractor shall promptly furnish payment and performance bonds from an alternative surety as required to protect Owner and persons supplying labor or materials required by the Contract Documents if:

- A. Owner has a reasonable objection to the surety; or
- B. Any surety fails to furnish reports on its financial condition if required by Owner.

2.06 BUILDER'S RISK

- A. Contractor to buy Property Insurance: Contractor shall purchase and maintain property insurance in the amount of the Contract Sum including all Change Orders for the Work on a replacement cost basis until Substantial Completion. For projects not involving New Building Construction, "Installation Floater" is an acceptable substitute for the Builder's Risk Insurance. The insurance shall cover the interest of Owner, Contractor, and any Subcontractors, as their interests may appear.
- B. Losses covered: Contractor property insurance shall be placed on an "all risk" basis and insure against the perils of fire and extended coverage and physical loss or damage including theft, vandalism, malicious mischief, collapse, false work, temporary buildings, debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for A/E's services and expenses required as a result of an insured loss.
- C. Waiver of subrogation rights: Owner and Contractor waive all subrogation rights against each other, any Subcontractors, A/E, A/E's subconsultants, separate contractors described in Section 5.20, if any, and any of their subcontractors, for damages caused by fire or other perils to the extent covered by property insurance obtained pursuant to this section or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by Owner as fiduciary. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

PART 3 – TIME AND SCHEDULE

3.01 PROGRESS AND COMPLETION

Contractor to meet schedule: Contractor shall diligently prosecute the Work, with adequate forces, achieve Substantial Completion within the Contract Time, and achieve Final Completion within a reasonable period thereafter.

3.02 CONSTRUCTION SCHEDULE

- A. Preliminary Progress Schedule: Unless otherwise provided in Division 1, Contractor shall, within 14 Days after issuance of the Notice to Proceed, submit a preliminary Progress Schedule. The Progress Schedule shall show the sequence in which Contractor proposes to perform the Work,

**GENERAL CONDITIONS
FOR WASHINGTON STATE FACILITY CONSTRUCTION
Page 8 of 44**

and the dates on which Contractor plans to start and finish major portions of the Work, including dates for shop drawings and other submittals, and for acquiring materials and equipment.

- B. Form of Progress Schedule: Unless otherwise provided in Division 1, the Progress Schedule shall be in the form of a bar chart, or a critical path method analysis, as specified by Owner. The preliminary Progress Schedule may be general, showing the major portions of the Work, with a more detailed Progress Schedule submitted as directed by Owner.
- C. Owner comments on Progress Schedule: Owner shall return comments on the preliminary Progress Schedule to Contractor within 14 Days of receipt. Review by Owner of Contractor's schedule does not constitute an approval or acceptance of Contractor's construction means, methods, or sequencing, or its ability to complete the Work within the Contract Time. Contractor shall revise and resubmit its schedule, as necessary. Owner may withhold a portion of progress payments until a Progress Schedule has been submitted which meets the requirements of this section.
- D. Monthly updates and compliance with Progress Schedule: Contractor shall utilize and comply with the Progress Schedule. On a monthly basis, or as otherwise directed by Owner, Contractor shall submit an updated Progress Schedule at its own expense to Owner indicating actual progress. If, in the opinion of Owner, Contractor is not in conformance with the Progress Schedule for reasons other than acts of Force Majeure as identified in Section 3.05, Contractor shall take such steps as are necessary to bring the actual completion dates of its work activities into conformance with the Progress Schedule, and if directed by Owner, Contractor shall submit a corrective action plan or revise the Progress Schedule to reconcile with the actual progress of the Work.
- E. Contractor to notify Owner of delays: Contractor shall promptly notify Owner in writing of any actual or anticipated event which is delaying or could delay achievement of any milestone or performance of any critical path activity of the Work. Contractor shall indicate the expected duration of the delay, the anticipated effect of the delay on the Progress Schedule, and the action being or to be taken to correct the problem. Provision of such notice does not relieve Contractor of its obligation to complete the Work within the Contract Time.

3.03 OWNER'S RIGHT TO SUSPEND THE WORK FOR CONVENIENCE

- A. Owner may suspend Work: Owner may, at its sole discretion, order Contractor, in writing, to suspend all or any part of the Work for up to 90 Days, or for such longer period as mutually agreed.
- B. Compliance with suspension; Owner's options: Upon receipt of a written notice suspending the Work, Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of cost of performance directly attributable to such suspension. Within a period up to 90 Days after the notice is delivered to Contractor, or within any extension of that period to which the parties shall have agreed, Owner shall either:
 - 1. Cancel the written notice suspending the Work; or
 - 2. Terminate the Work covered by the notice as provided in the termination provisions of Part 9.
- C. Resumption of Work: If a written notice suspending the Work is cancelled or the period of the notice or any extension thereof expires, Contractor shall resume Work.
- D. Equitable Adjustment for suspensions: Contractor shall be entitled to an equitable adjustment in the Contract Time, or Contract Sum, or both, for increases in the time or cost of performance

directly attributable to such suspension, provided Contractor complies with all requirements set forth in Part 7.

3.04 OWNER'S RIGHT TO STOP THE WORK FOR CAUSE

- A. Owner may stop Work for Contractor's failure to perform: If Contractor fails or refuses to perform its obligations in accordance with the Contract Documents, Owner may order Contractor, in writing, to stop the Work, or any portion thereof, until satisfactory corrective action has been taken.
- B. No Equitable Adjustment for Contractor's failure to perform: Contractor shall not be entitled to an equitable adjustment in the Contract Time or Contract Sum for any increased cost or time of performance attributable to Contractor's failure or refusal to perform or from any reasonable remedial action taken by Owner based upon such failure.

3.05 DELAY

- A. Force Majeure actions not a default; Force Majeure defined: Any delay in or failure of performance by Owner or Contractor, other than the payment of money, shall not constitute a default hereunder if and to the extent the cause for such delay or failure of performance was unforeseeable and beyond the control of the party ("Force Majeure"). Acts of Force Majeure include, but are not limited to:
 - 1. Acts of God or the public enemy;
 - 2. Acts or omissions of any government entity;
 - 3. Fire or other casualty for which Contractor is not responsible;
 - 4. Quarantine or epidemic;
 - 5. Strike or defensive lockout;
 - 6. Unusually severe weather conditions which could not have been reasonably anticipated; and
 - 7. Unusual delay in receipt of supplies or products which were ordered and expedited and for which no substitute reasonably acceptable to Owner was available.
- B. Contract Time adjustment for Force Majeure: Contractor shall be entitled to an equitable adjustment in the Contract Time for changes in the time of performance directly attributable to an act of Force Majeure, provided it makes a request for equitable adjustment according to Section 7.03. Contractor shall not be entitled to an adjustment in the Contract Sum resulting from an act of Force Majeure.
- C. Contract Time or Contract Sum adjustment if Owner at fault: Contractor shall be entitled to an equitable adjustment in Contract Time, and may be entitled to an equitable adjustment in Contract Sum, if the cost or time of Contractor's performance is changed due to the fault or negligence of Owner, provided the Contractor makes a request according to Sections 7.02 and 7.03.
- D. No Contract Time or Contract Sum adjustment if Contractor at fault: Contractor shall not be entitled to an adjustment in Contract Time or in the Contract Sum for any delay or failure of performance to the extent such delay or failure was caused by Contractor or anyone for whose acts Contractor is responsible.

- E. Contract Time adjustment only for concurrent fault: To the extent any delay or failure of performance was concurrently caused by the Owner and Contractor, Contractor shall be entitled to an adjustment in the Contract Time for that portion of the delay or failure of performance that was concurrently caused, provided it makes a request for equitable adjustment according to Section 7.03, but shall not be entitled to an adjustment in Contract Sum.
- F. Contractor to mitigate delay impacts: Contractor shall make all reasonable efforts to prevent and mitigate the effects of any delay, whether occasioned by an act of Force Majeure or otherwise.

3.06 NOTICE TO OWNER OF LABOR DISPUTES

- A. Contractor to notify Owner of labor disputes: If Contractor has knowledge that any actual or potential labor dispute is delaying or threatens to delay timely performance in accordance with the Contract Documents, Contractor shall immediately give notice, including all relevant information, to Owner.
- B. Pass through notification provisions to Subcontractors: Contractor agrees to insert a provision in its Subcontracts and to require insertion in all sub-subcontracts, that in the event timely performance of any such contract is delayed or threatened by delay by any actual or potential labor dispute, the Subcontractor or Sub-subcontractor shall immediately notify the next higher tier Subcontractor or Contractor, as the case may be, of all relevant information concerning the dispute.

3.07 DAMAGES FOR FAILURE TO ACHIEVE TIMELY COMPLETION

A. Liquidated Damages

1. Reason for Liquidated Damages: Timely performance and completion of the Work is essential to Owner and time limits stated in the Contract Documents are of the essence. Owner will incur serious and substantial damages if Substantial Completion of the Work does not occur within the Contract Time. However, it would be difficult if not impossible to determine the exact amount of such damages. Consequently, provisions for liquidated damages are included in the Contract Documents.
2. Calculation of Liquidated Damages amount: The liquidated damage amounts set forth in the Contract Documents will be assessed not as a penalty, but as liquidated damages for breach of the Contract Documents. This amount is fixed and agreed upon by and between the Contractor and Owner because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain. This amount shall be construed as the actual amount of damages sustained by the Owner, and may be retained by the Owner and deducted from periodic payments to the Contractor.
3. Contractor responsible even if Liquidated Damages assessed: Assessment of liquidated damages shall not release Contractor from any further obligations or liabilities pursuant to the Contract Documents.

B. Actual Damages

Calculation of Actual Damages: Actual damages will be assessed for failure to achieve Final Completion within the time provided. Actual damages will be calculated on the basis of direct architectural, administrative, and other related costs attributable to the Project from the date when Final Completion should have been achieved, based on the date Substantial Completion is actually achieved, to the date Final Completion is actually achieved. Owner may offset these costs against any payment due Contractor.

PART 4 – SPECIFICATIONS, DRAWINGS, AND OTHER DOCUMENTS

4.01 DISCREPANCIES AND CONTRACT DOCUMENT REVIEW

- A. Specifications and Drawings are basis of the Work: The intent of the Specifications and Drawings is to describe a complete Project to be constructed in accordance with the Contract Documents. Contractor shall furnish all labor, materials, equipment, tools, transportation, permits, and supplies, and perform the Work required in accordance with the Drawings, Specifications, and other provisions of the Contract Documents.
- B. Parts of the Contract Documents are complementary: The Contract Documents are complementary. What is required by one part of the Contract Documents shall be binding as if required by all. Anything mentioned in the Specifications and not shown on the Drawings, or shown on the Drawings and not mentioned in the Specifications, shall be of like effect as if shown or mentioned in both.
- C. Contractor to report discrepancies in Contract Documents: Contractor shall carefully study and compare the Contract Documents with each other and with information furnished by Owner. If, during the performance of the Work, Contractor finds a conflict, error, inconsistency, or omission in the Contract Documents, it shall promptly and before proceeding with the Work affected thereby, report such conflict, error, inconsistency, or omission to A/E in writing.
- D. Contractor knowledge of discrepancy in documents – responsibility: Contractor shall do no Work without applicable Drawings, Specifications, or written modifications, or Shop Drawings where required, unless instructed to do so in writing by Owner. If Contractor performs any construction activity, and it knows or reasonably should have known that any of the Contract Documents contain a conflict, error, inconsistency, or omission, Contractor shall be responsible for the performance and shall bear the cost for its correction.
- E. Contractor to perform Work implied by Contract Documents: Contractor shall provide any work or materials the provision of which is clearly implied and is within the scope of the Contract Documents even if the Contract Documents do not mention them specifically.
- F. Interpretation questions referred to A/E: Questions regarding interpretation of the requirements of the Contract Documents shall be referred to the A/E.

4.02 PROJECT RECORD

- A. Contractor to maintain Project Record Drawings and Specifications: Contractor shall legibly mark in ink on a separate set of the Drawings and Specifications all actual construction, including depths of foundations, horizontal and vertical locations of internal and underground utilities and appurtenances referenced to permanent visible and accessible surface improvements, field changes of dimensions and details, actual suppliers, manufacturers and trade names, models of installed equipment, and Change Order Proposals (COP). This separate set of Drawings and Specifications shall be the "Project Record."
- B. Update Project Record weekly and keep on site: The Project Record shall be maintained on the project site throughout the construction and shall be clearly labeled "PROJECT RECORD." The Project Record shall be updated at least weekly noting all changes and shall be available to Owner at all times.
- C. Final Project Record to A/E before Final Acceptance: Contractor shall submit the completed and finalized Project Record to A/E prior to Final Acceptance.

4.03 SHOP DRAWINGS

- A. Definition of Shop Drawings: “Shop Drawings” means documents and other information required to be submitted to A/E by Contractor pursuant to the Contract Documents, showing in detail: the proposed fabrication and assembly of structural elements; and the installation (i.e. form, fit, and attachment details) of materials and equipment. Shop Drawings include, but are not limited to, drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, samples, and similar materials furnished by Contractor to explain in detail specific portions of the Work required by the Contract Documents. For materials and equipment to be incorporated into the Work, Contractor submittal shall include the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the item. When directed, Contractor shall submit all samples at its own expense. Owner may duplicate, use, and disclose Shop Drawings provided in accordance with the Contract Documents.
- B. Approval of Shop Drawings by Contractor and A/E: Contractor shall coordinate all Shop Drawings, and review them for accuracy, completeness, and compliance with the Contract Documents and shall indicate its approval thereon as evidence of such coordination and review. Where required by law, Shop Drawings shall be stamped by an appropriate professional licensed by the state of Washington. Shop Drawings submitted to A/E without evidence of Contractor’s approval shall be returned for resubmission. Contractor shall review, approve, and submit Shop Drawings with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of Owner or separate contractors. Contractor’s submittal schedule shall allow a reasonable time for A/E review. A/E will review, approve, or take other appropriate action on the Shop Drawings. Contractor shall perform no portion of the Work requiring submittal and review of Shop Drawings until the respective submittal has been reviewed and the A/E has approved or taken other appropriate action. Owner and A/E shall respond to Shop Drawing submittals with reasonable promptness. Any Work by Contractor shall be in accordance with reviewed Shop Drawings. Submittals made by Contractor which are not required by the Contract Documents may be returned without action.
- C. Contractor not relieved of responsibility when Shop Drawings approved: Approval, or other appropriate action with regard to Shop Drawings, by Owner or A/E shall not relieve Contractor of responsibility for any errors or omissions in such Shop Drawings, nor from responsibility for compliance with the requirements of the Contract Documents. Unless specified in the Contract Documents, review by Owner or A/E shall not constitute an approval of the safety precautions employed by Contractor during construction, or constitute an approval of Contractor’s means or methods of construction. If Contractor fails to obtain approval before installation and the item or work is subsequently rejected, Contractor shall be responsible for all costs of correction.
- D. Variations between Shop Drawings and Contract Documents: If Shop Drawings show variations from the requirements of the Contract Documents, Contractor shall describe such variations in writing, separate from the Shop Drawings, at the time it submits the Shop Drawings containing such variations. If A/E approves any such variation, an appropriate Change Order will be issued. If the variation is minor and does not involve an adjustment in the Contract Sum or Contract Time, a Change Order need not be issued; however, the modification shall be recorded upon the Project Record.
- E. Contractor to submit 5 copies of Shop Drawings: Unless otherwise provided in Division 1, Contractor shall submit to A/E for approval 5 copies of all Shop Drawings. Unless otherwise indicated, 3 sets of all Shop Drawings shall be retained by A/E and 2 sets shall be returned to Contractor.

4.04 ORGANIZATION OF SPECIFICATIONS

Specification organization by trade: Specifications are prepared in sections which conform generally with trade practices. These sections are for Owner and Contractor convenience and shall not control Contractor in dividing the Work among the Subcontractors or in establishing the extent of the Work to be performed by any trade.

4.05 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS, AND OTHER DOCUMENTS

- A. A/E, not Contractor, owns Copyright of Drawings and Specifications: The Drawings, Specifications, and other documents prepared by A/E are instruments of A/E's service through which the Work to be executed by Contractor is described. Neither Contractor nor any Subcontractor shall own or claim a copyright in the Drawings, Specifications, and other documents prepared by A/E, and A/E shall be deemed the author of them and will, along with any rights of Owner, retain all common law, statutory, and other reserved rights, in addition to the copyright. All copies of these documents, except Contractor's set, shall be returned or suitably accounted for to A/E, on request, upon completion of the Work.
- B. Drawings and Specifications to be used only for this Project: The Drawings, Specifications, and other documents prepared by the A/E, and copies thereof furnished to Contractor, are for use solely with respect to this Project. They are not to be used by Contractor or any Subcontractor on other projects or for additions to this Project outside the scope of the Work without the specific written consent of Owner and A/E. Contractor and Subcontractors are granted a limited license to use and reproduce applicable portions of the Drawings, Specifications, and other documents prepared by A/E appropriate to and for use in the execution of their Work.
- C. Shop Drawing license granted to Owner: Contractor and all Subcontractors grant a non-exclusive license to Owner, without additional cost or royalty, to use for its own purposes (including reproduction) all Shop Drawings, together with the information and diagrams contained therein, prepared by Contractor or any Subcontractor. In providing Shop Drawings, Contractor and all Subcontractors warrant that they have authority to grant to Owner a license to use the Shop Drawings, and that such license is not in violation of any copyright or other intellectual property right. Contractor agrees to defend and indemnify Owner pursuant to the indemnity provisions in Section 5.03 and 5.22 from any violations of copyright or other intellectual property rights arising out of Owner's use of the Shop Drawings hereunder, or to secure for Owner, at Contractor's own cost, licenses in conformity with this section.
- D. Shop Drawings to be used only for this Project: The Shop Drawings and other submittals prepared by Contractor, Subcontractors of any tier, or its or their equipment or material suppliers, and copies thereof furnished to Contractor, are for use solely with respect to this Project. They are not to be used by Contractor or any Subcontractor of any tier, or material or equipment supplier, on other projects or for additions to this Project outside the scope of the Work without the specific written consent of Owner. The Contractor, Subcontractors of any tier, and material or equipment suppliers are granted a limited license to use and reproduce applicable portions of the Shop Drawings and other submittals appropriate to and for use in the execution of their Work under the Contract Documents.

PART 5 – PERFORMANCE

5.01 CONTRACTOR CONTROL AND SUPERVISION

- A. Contractor responsible for Means and Methods of construction: Contractor shall supervise and direct the Work, using its best skill and attention, and shall perform the Work in a skillful manner. Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, and procedures and for coordinating all portions of the Work, unless the

**GENERAL CONDITIONS
FOR WASHINGTON STATE FACILITY CONSTRUCTION
Page 14 of 44**

Contract Documents give other specific instructions concerning these matters. Contractor shall disclose its means and methods of construction when requested by Owner.

- B. Competent Superintendent required: Performance of the Work shall be directly supervised by a competent superintendent who has authority to act for Contractor. The superintendent must be satisfactory to the Owner and shall not be changed without the prior written consent of Owner. Owner may require Contractor to remove the superintendent from the Work or Project site, if Owner reasonably deems the superintendent incompetent, careless, or otherwise objectionable, provided Owner has first notified Contractor in writing and allowed a reasonable period for transition.
- C. Contractor responsible for acts and omissions of self and agents: Contractor shall be responsible to Owner for acts and omissions of Contractor, Subcontractors, and their employees and agents.
- D. Contractor to employ competent and disciplined workforce: Contractor shall enforce strict discipline and good order among all of the Contractor's employees and other persons performing the Work. Contractor shall not permit employment of persons not skilled in tasks assigned to them. Contractor's employees shall at all times conduct business in a manner which assures fair, equal, and nondiscriminatory treatment of all persons. Owner may, by written notice, request Contractor to remove from the Work or Project site any employee Owner reasonably deems incompetent, careless, or otherwise objectionable.
- E. Contractor to keep project documents on site: Contractor shall keep on the Project site a copy of the Drawings, Specifications, addenda, reviewed Shop Drawings, and permits and permit drawings.
- F. Contractor to comply with ethical standards: Contractor shall ensure that its owner(s) and employees, and those of its Subcontractors, comply with the Ethics in Public Service Act RCW 42.52, which, among other things, prohibits state employees from having an economic interest in any public works contract that was made by, or supervised by, that employee. Contractor shall remove, at its sole cost and expense, any of its, or its Subcontractors' employees, if they are in violation of this act.

5.02 PERMITS, FEES, AND NOTICES

- A. Contractor to obtain and pay for permits: Unless otherwise provided in the Contract Documents, Contractor shall pay for and obtain all permits, licenses, and inspections necessary for proper execution and completion of the Work. Prior to Final Acceptance, the approved, signed permits shall be delivered to Owner.
- B. Allowances for permit fees: If allowances for permits or utility fees are called for in the Contract Documents and set forth in Contractor's bid, and the actual costs of those permits or fees differ from the allowances in the Contract Documents, the difference shall be adjusted by Change Order.
- C. Contractor to comply with all applicable laws: Contractor shall comply with and give notices required by all federal, state, and local laws, ordinances, rules, regulations, and lawful orders of public authorities applicable to performance of the Work.

5.03 PATENTS AND ROYALTIES

Payment, indemnification, and notice: Contractor is responsible for, and shall pay, all royalties and license fees. Contractor shall defend, indemnify, and hold Owner harmless from any costs, expenses, and liabilities arising out of the infringement by Contractor of any patent, copyright, or other intellectual property right used in the Work; however, provided that Contractor gives prompt notice, Contractor shall not be responsible for such defense or indemnity when a particular design, process, or product of a

particular manufacturer or manufacturers is required by the Contract Documents. If Contractor has reason to believe that use of the required design, process, or product constitutes an infringement of a patent or copyright, it shall promptly notify Owner of such potential infringement.

5.04 PREVAILING WAGES

- A. Contractor to pay Prevailing Wages: Contractor shall pay the prevailing rate of wages to all workers, laborers, or mechanics employed in the performance of any part of the Work in accordance with RCW 39.12 and the rules and regulations of the Department of Labor and Industries. The schedule of prevailing wage rates for the locality or localities of the Work, is determined by the Industrial Statistician of the Department of Labor and Industries. It is the Contractor's responsibility to verify the applicable prevailing wage rate.
- B. Statement of Intent to Pay Prevailing Wages: Before payment is made by the Owner to the Contractor for any work performed by the Contractor and subcontractors whose work is included in the application for payment, the Contractor shall submit, or shall have previously submitted to the Owner for the Project, a Statement of Intent to Pay Prevailing Wages, approved by the Department of Labor and Industries, certifying the rate of hourly wage paid and to be paid each classification of laborers, workers, or mechanics employed upon the Work by Contractor and Subcontractors. Such rates of hourly wage shall not be less than the prevailing wage rate.
- C. Affidavit of Wages Paid: Prior to release of retainage, the Contractor shall submit to the Owner an Affidavit of Wages Paid, approved by the Department of Labor and Industries, for the Contractor and every subcontractor, of any tier, that performed work on the Project.
- D. Disputes: Disputes regarding prevailing wage rates shall be referred for arbitration to the Director of the Department of Labor and Industries. The arbitration decision shall be final and conclusive and binding on all parties involved in the dispute as provided for by RCW 39.12.060.
- E. Statement with pay application; Post Statements of Intent at job site: Each Application for Payment submitted by Contractor shall state that prevailing wages have been paid in accordance with the prefiled statement(s) of intent, as approved. Copies of the approved intent statement(s) shall be posted on the job site with the address and telephone number of the Industrial Statistician of the Department of Labor and Industries where a complaint or inquiry concerning prevailing wages may be made.
- F. Contractor to pay for Statements of Intent and Affidavits: In compliance with chapter 296-127 WAC, Contractor shall pay to the Department of Labor and Industries the currently established fee(s) for each statement of intent and/or affidavit of wages paid submitted to the Department of Labor and Industries for certification.
- G. Certified Payrolls: Consistent with WAC 296-127-320, the Contractor and any subcontractor shall submit a certified copy of payroll records if requested.

5.05 HOURS OF LABOR

- A. Overtime: Contractor shall comply with all applicable provisions of RCW 49.28 and they are incorporated herein by reference. Pursuant to that statute, no laborer, worker, or mechanic employed by Contractor, any Subcontractor, or any other person performing or contracting to do the whole or any part of the Work, shall be permitted or required to work more than eight hours in any one calendar day, provided, that in cases of extraordinary emergency, such as danger to life or property, the hours of work may be extended, but in such cases the rate of pay for time employed in excess of eight hours of each calendar day shall be not less than one and one-half times the rate allowed for this same amount of time during eight hours of service.

**GENERAL CONDITIONS
FOR WASHINGTON STATE FACILITY CONSTRUCTION
Page 16 of 44**

- B. 4-10 Agreements: Notwithstanding the preceding paragraph, RCW 49.28 permits a contractor or subcontractor in any public works contract subject to those provisions, to enter into an agreement with its employees in which the employees work up to ten hours in a calendar day. No such agreement may provide that the employees work ten-hour days for more than four calendar days a week. Any such agreement is subject to approval by the employees. The overtime provisions of RCW 49.28 shall not apply to the hours, up to forty hours per week, worked pursuant to any such agreement.

5.06 NONDISCRIMINATION

- A. Discrimination prohibited by applicable laws: Discrimination in all phases of employment is prohibited by, among other laws and regulations, Title VII of the Civil Rights Act of 1964, the Vietnam Era Veterans Readjustment Act of 1974, Sections 503 and 504 of the Vocational Rehabilitation Act of 1973, the Equal Employment Act of 1972, the Age Discrimination Act of 1967, the Americans with Disabilities Act of 1990, the Civil Rights Act of 1991, Presidential Executive Order 11246, Executive Order 11375, the Washington State Law Against Discrimination, RCW 49.60, and Gubernatorial Executive Order 85-09. These laws and regulations establish minimum requirements for affirmative action and fair employment practices which Contractor must meet.

- B. During performance of the Work:

1. Protected Classes: Contractor shall not discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, age, marital status, or the presence of any physical, sensory, or mental disability, Vietnam era veteran status, or disabled veteran status, nor commit any other unfair practices as defined in RCW 49.60.
2. Advertisements to state nondiscrimination: Contractor shall, in all solicitations or advertisements for employees placed by or for it, state that all qualified applicants will be considered for employment, without regard to race, creed, color, national origin, sex, age, marital status, or the presence of any physical, sensory, or mental disability.
3. Contractor to notify unions and others of nondiscrimination: Contractor shall send to each labor union, employment agency, or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice advising the labor union, employment agency, or workers' representative of Contractor's obligations according to the Contract Documents and RCW 49.60.
4. Owner and State access to Contractor records: Contractor shall permit access to its books, records, and accounts, and to its premises by Owner, and by the Washington State Human Rights Commission, for the purpose of investigation to ascertain compliance with this section of the Contract Documents.
5. Pass through provisions to Subcontractors: Contractor shall include the provisions of this section in every Subcontract.

5.07 SAFETY PRECAUTIONS

- A. Contractor responsible for safety: Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Work.
- B. Contractor safety responsibilities: In carrying out its responsibilities according to the Contract Documents, Contractor shall protect the lives and health of employees performing the Work and other persons who may be affected by the Work; prevent damage to materials, supplies, and equipment whether on site or stored off-site; and prevent damage to other property at the site or adjacent thereto. Contractor shall comply with all applicable laws, ordinances, rules, regulations,

**GENERAL CONDITIONS
FOR WASHINGTON STATE FACILITY CONSTRUCTION
Page 17 of 44**

and orders of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury, or loss; shall erect and maintain all necessary safeguards for such safety and protection; and shall notify owners of adjacent property and utilities when prosecution of the Work may affect them.

- C. Contractor to maintain safety records: Contractor shall maintain an accurate record of exposure data on all incidents relating to the Work resulting in death, traumatic injury, occupational disease, or damage to property, materials, supplies, or equipment. Contractor shall immediately report any such incident to Owner. Owner shall, at all times, have a right of access to all records of exposure.
- D. Contractor to provide HazMat training: Contractor shall provide all persons working on the Project site with information and training on hazardous chemicals in their work at the time of their initial assignment, and whenever a new hazard is introduced into their work area.
1. Information. At a minimum, Contractor shall inform persons working on the Project site of:
 - a. WAC: The requirements of chapter 296-62 WAC, General Occupational Health Standards;
 - b. Presence of hazardous chemicals: Any operations in their work area where hazardous chemicals are present; and
 - c. Hazard communications program: The location and availability of written hazard communication programs, including the required list(s) of hazardous chemicals and material safety data sheets required by chapter 296-62 WAC.
 2. Training. At a minimum, Contractor shall provide training for persons working on the Project site which includes:
 - a. Detecting hazardous chemicals: Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (such as monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.);
 - b. Hazards of chemicals: The physical and health hazards of the chemicals in the work area;
 - c. Protection from hazards: The measures such persons can take to protect themselves from these hazards, including specific procedures Contractor, or its Subcontractors, or others have implemented to protect those on the Project site from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used; and
 - d. Hazard communications program: The details of the hazard communications program developed by Contractor, or its Subcontractors, including an explanation of the labeling system and the material safety data sheet, and how employees can obtain and use the appropriate hazard information.
- E. Hazardous, toxic or harmful substances: Contractor's responsibility for hazardous, toxic, or harmful substances shall include the following duties:
1. Illegal use of dangerous substances: Contractor shall not keep, use, dispose, transport, generate, or sell on or about the Project site, any substances now or hereafter designated as, or which are subject to regulation as, hazardous, toxic, dangerous, or

**GENERAL CONDITIONS
FOR WASHINGTON STATE FACILITY CONSTRUCTION
Page 18 of 44**

harmful by any federal, state or local law, regulation, statute or ordinance (hereinafter collectively referred to as "hazardous substances"), in violation of any such law, regulation, statute, or ordinance, but in no case shall any such hazardous substance be stored more than 90 Days on the Project site.

2. Contractor notifications of spills, failures, inspections, and fines: Contractor shall promptly notify Owner of all spills or releases of any hazardous substances which are otherwise required to be reported to any regulatory agency and pay the cost of cleanup. Contractor shall promptly notify Owner of all failures to comply with any federal, state, or local law, regulation, or ordinance; all inspections of the Project site by any regulatory entity concerning the same; all regulatory orders or fines; and all responses or interim cleanup actions taken by or proposed to be taken by any government entity or private party on the Project site.
- F. Public safety and traffic: All Work shall be performed with due regard for the safety of the public. Contractor shall perform the Work so as to cause a minimum of interruption of vehicular traffic or inconvenience to pedestrians. All arrangements to care for such traffic shall be Contractor's responsibilities. All expenses involved in the maintenance of traffic by way of detours shall be borne by Contractor.
- G. Contractor to act in an emergency: In an emergency affecting the safety of life or the Work or of adjoining property, Contractor is permitted to act, at its discretion, to prevent such threatened loss or injury, and Contractor shall so act if so authorized or instructed.
- H. No duty of safety by Owner or A/E: Nothing provided in this section shall be construed as imposing any duty upon Owner or A/E with regard to, or as constituting any express or implied assumption of control or responsibility over, Project site safety, or over any other safety conditions relating to employees or agents of Contractor or any of its Subcontractors, or the public.

5.08 OPERATIONS, MATERIAL HANDLING, AND STORAGE AREAS

- A. Limited storage areas: Contractor shall confine all operations, including storage of materials, to Owner-approved areas.
- B. Temporary buildings and utilities at Contractor expense: Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be provided by Contractor only with the consent of Owner and without expense to Owner. The temporary buildings and utilities shall be removed by Contractor at its expense upon completion of the Work.
- C. Roads and vehicle loads: Contractor shall use only established roadways or temporary roadways authorized by Owner. When materials are transported in prosecuting the Work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by federal, state, or local law or regulation.
- D. Ownership and reporting by Contractor of demolished materials: Ownership and control of all materials or facility components to be demolished or removed from the Project site by Contractor shall immediately vest in Contractor upon severance of the component from the facility or severance of the material from the Project site. Contractor shall be responsible for compliance with all laws governing the storage and ultimate disposal. Contractor shall provide Owner with a copy of all manifests and receipts evidencing proper disposal when required by Owner or applicable law.
- E. Contractor responsible for care of materials and equipment on-site: Contractor shall be responsible for the proper care and protection of its materials and equipment delivered to the Project site. Materials and equipment may be stored on the premises subject to approval of

Owner. When Contractor uses any portion of the Project site as a shop, Contractor shall be responsible for any repairs, patching, or cleaning arising from such use.

- F. Contractor responsible for loss of materials and equipment: Contractor shall protect and be responsible for any damage or loss to the Work, or to the materials or equipment until the date of Substantial Completion, and shall repair or replace without cost to Owner any damage or loss that may occur, except damages or loss caused by the acts or omissions of Owner. Contractor shall also protect and be responsible for any damage or loss to the Work, or to the materials or equipment, after the date of Substantial Completion, and shall repair or replace without cost to Owner any such damage or loss that might occur, to the extent such damages or loss are caused by the acts or omissions of Contractor, or any Subcontractor.

5.09 PRIOR NOTICE OF EXCAVATION

- A. Excavation defined; Use of locator services: "Excavation" means an operation in which earth, rock, or other material on or below the ground is moved or otherwise displaced by any means, except the tilling of soil less than 12 inches in depth for agricultural purposes, or road ditch maintenance that does not change the original road grade or ditch flow line. Before commencing any excavation, Contractor shall provide notice of the scheduled commencement of excavation to all owners of underground facilities or utilities, through locator services.

5.10 UNFORESEEN PHYSICAL CONDITIONS

- A. Notice requirement for concealed or unknown conditions: If Contractor encounters conditions at the site which are subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents, or unknown physical conditions of an unusual nature which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then Contractor shall give written notice to Owner promptly and in no event later than 7 Days after the first observance of the conditions. Conditions shall not be disturbed prior to such notice.
- B. Adjustment in Contract Time and Contract Sum: If such conditions differ materially and cause a change in Contractor's cost of, or time required for, performance of any part of the Work, the Contractor may be entitled to an equitable adjustment in the Contract Time or Contract Sum, or both, provided it makes a request therefore as provided in Part 7.

5.11 PROTECTION OF EXISTING STRUCTURES, EQUIPMENT, VEGETATION, UTILITIES AND IMPROVEMENTS

- A. Contractor to protect and repair property: Contractor shall protect from damage all existing structures, equipment, improvements, utilities, and vegetation: at or near the Project site; and on adjacent property of a third party, the locations of which are made known to or should be known by Contractor. Contractor shall repair any damage, including that to the property of a third party, resulting from failure to comply with the requirements of the Contract Documents or failure to exercise reasonable care in performing the Work. If Contractor fails or refuses to repair the damage promptly, Owner may have the necessary work performed and charge the cost to Contractor.
- B. Tree and vegetation protection: Contractor shall only remove trees when specifically authorized to do so, and shall protect vegetation that will remain in place.

5.12 LAYOUT OF WORK

- A. Advanced planning of the Work: Contractor shall plan and lay out the Work in advance of operations so as to coordinate all work without delay or revision.

- B. Layout responsibilities: Contractor shall lay out the Work from Owner-established baselines and bench marks indicated on the Drawings, and shall be responsible for all field measurements in connection with the layout. Contractor shall furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the Work. Contractor shall be responsible for executing the Work to the lines and grades that may be established. Contractor shall be responsible for maintaining or restoring all stakes and other marks established.

5.13 MATERIAL AND EQUIPMENT

- A. Contractor to provide new and equivalent equipment and materials: All equipment, material, and articles incorporated into the Work shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in the Contract Documents. References in the Specifications to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard quality and shall not be construed as limiting competition. Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of A/E, is equal to that named in the specifications, unless otherwise specifically provided in the Contract Documents.
- B. Contractor responsible for fitting parts together: Contractor shall do all cutting, fitting, or patching that may be required to make its several parts fit together properly, or receive or be received by work of others set forth in, or reasonably implied by, the Contract Documents. Contractor shall not endanger any work by cutting, excavating, or otherwise altering the Work and shall not cut or alter the work of any other contractor unless approved in advance by Owner.
- C. Owner may reject defective Work: Should any of the Work be found defective, or in any way not in accordance with the Contract Documents, this work, in whatever stage of completion, may be rejected by Owner.

5.14 AVAILABILITY AND USE OF UTILITY SERVICES

- A. Owner to provide and charge for utilities: Owner shall make all reasonable utilities available to Contractor from existing outlets and supplies, as specified in the Contract Documents. Unless otherwise provided in the Contract Documents, the utility service consumed shall be charged to or paid for by Contractor at prevailing rates charged to Owner or, where the utility is produced by Owner, at reasonable rates determined by Owner. Contractor will carefully conserve any utilities furnished.
- B. Contractor to install temporary connections and meters: Contractor shall, at its expense and in a skillful manner satisfactory to Owner, install and maintain all necessary temporary connections and distribution lines, together with appropriate protective devices, and all meters required to measure the amount of each utility used for the purpose of determining charges. Prior to the date of Final Acceptance, Contractor shall remove all temporary connections, distribution lines, meters, and associated equipment and materials.

5.15 TESTS AND INSPECTION

- A. Contractor to provide for all testing and inspection of Work: Contractor shall maintain an adequate testing and inspection program and perform such tests and inspections as are necessary or required to ensure that the Work conforms to the requirements of the Contract Documents. Contractor shall be responsible for inspection and quality surveillance of all its Work and all Work performed by any Subcontractor. Unless otherwise provided, Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. Contractor shall give Owner timely notice of when and

where tests and inspections are to be made. Contractor shall maintain complete inspection records and make them available to Owner.

- B. Owner may conduct tests and inspections: Owner may, at any reasonable time, conduct such inspections and tests as it deems necessary to ensure that the Work is in accordance with the Contract Documents. Owner shall promptly notify Contractor if an inspection or test reveals that the Work is not in accordance with the Contract Documents. Unless the subject items are expressly accepted by Owner, such Owner inspection and tests are for the sole benefit of Owner and do not:
1. Constitute or imply acceptance;
 2. Relieve Contractor of responsibility for providing adequate quality control measures;
 3. Relieve Contractor of responsibility for risk of loss or damage to the Work, materials, or equipment;
 4. Relieve Contractor of its responsibility to comply with the requirements of the Contract Documents; or
 5. Impair Owner's right to reject defective or nonconforming items, or to avail itself of any other remedy to which it may be entitled.
- C. Inspections or inspectors do not modify Contract Documents: Neither observations by an inspector retained by Owner, the presence or absence of such inspector on the site, nor inspections, tests, or approvals by others, shall relieve Contractor from any requirement of the Contract Documents, nor is any such inspector authorized to change any term or condition of the Contract Documents.
- D. Contractor responsibilities on inspections: Contractor shall promptly furnish, without additional charge, all facilities, labor, material and equipment reasonably needed for performing such safe and convenient inspections and tests as may be required by Owner. Owner may charge Contractor any additional cost of inspection or testing when Work is not ready at the time specified by Contractor for inspection or testing, or when prior rejection makes reinspection or retest necessary. Owner shall perform its inspections and tests in a manner that will cause no undue delay in the Work.

5.16 CORRECTION OF NONCONFORMING WORK

- A. Work covered by Contractor without inspection: If a portion of the Work is covered contrary to the requirements in the Contract Documents, it must, if required in writing by Owner, be uncovered for Owner's observation and be replaced at the Contractor's expense and without change in the Contract Time.
- B. Payment provisions for uncovering covered Work: If, at any time prior to Final Completion, Owner desires to examine the Work, or any portion of it, which has been covered, Owner may request to see such Work and it shall be uncovered by Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an adjustment in the Contract Sum for the costs of uncovering and replacement, and, if completion of the Work is thereby delayed, an adjustment in the Contract Time, provided it makes such a request as provided in Part 7. If such Work is not in accordance with the Contract Documents, the Contractor shall pay the costs of examination and reconstruction.
- C. Contractor to correct and pay for non-conforming Work: Contractor shall promptly correct Work found by Owner not to conform to the requirements of the Contract Documents, whether observed before or after Substantial Completion and whether or not fabricated, installed, or

**GENERAL CONDITIONS
FOR WASHINGTON STATE FACILITY CONSTRUCTION
Page 22 of 44**

completed. Contractor shall bear all costs of correcting such nonconforming Work, including additional testing and inspections.

- D. Contractor's compliance with warranty provisions: If, within one year after the date of Substantial Completion of the Work or designated portion thereof, or within one year after the date for commencement of any system warranties established under Section 6.08, or within the terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, Contractor shall correct it promptly after receipt of written notice from Owner to do so. Owner shall give such notice promptly after discovery of the condition. This period of one year shall be extended, with respect to portions of Work first performed after Substantial Completion, by the period of time between Substantial Completion and the actual performance of the Work. Contractor's duty to correct with respect to Work repaired or replaced shall run for one year from the date of repair or replacement. Obligations under this paragraph shall survive Final Acceptance.
- E. Contractor to remove non-conforming Work: Contractor shall remove from the Project site portions of the Work which are not in accordance with the requirements of the Contract Documents and are neither corrected by Contractor nor accepted by Owner.
- F. Owner may charge Contractor for non-conforming Work: If Contractor fails to correct nonconforming Work within a reasonable time after written notice to do so, Owner may replace, correct, or remove the nonconforming Work and charge the cost thereof to the Contractor.
- G. Contractor to pay for damaged Work during correction: Contractor shall bear the cost of correcting destroyed or damaged Work, whether completed or partially completed, caused by Contractor's correction or removal of Work which is not in accordance with the requirements of the Contract Documents.
- H. No Period of limitation on other requirements: Nothing contained in this section shall be construed to establish a period of limitation with respect to other obligations which Contractor might have according to the Contract Documents. Establishment of the time period of one year as described in Section 5.16D relates only to the specific obligation of Contractor to correct the Work, and has no relationship to the time within which the Contractor's obligation to comply with the Contract Documents may be sought to be enforced, including the time within which such proceedings may be commenced.
- I. Owner may accept non-conforming Work and charge Contractor: If Owner prefers to accept Work which is not in accordance with the requirements of the Contract Documents, Owner may do so instead of requiring its removal and correction, in which case the Contract Sum may be reduced as appropriate and equitable.

5.17 CLEAN UP

Contractor to keep site clean and leave it clean: Contractor shall at all times keep the Project site, including hauling routes, infrastructures, utilities, and storage areas, free from accumulations of waste materials. Before completing the Work, Contractor shall remove from the premises its rubbish, tools, scaffolding, equipment, and materials. Upon completing the Work, Contractor shall leave the Project site in a clean, neat, and orderly condition satisfactory to Owner. If Contractor fails to clean up as provided herein, and after reasonable notice from Owner, Owner may do so and the cost thereof shall be charged to Contractor.

5.18 ACCESS TO WORK

Owner and A/E access to Work site: Contractor shall provide Owner and A/E access to the Work in progress wherever located.

5.19 OTHER CONTRACTS

Owner may award other contracts; Contractor to cooperate: Owner may undertake or award other contracts for additional work at or near the Project site. Contractor shall reasonably cooperate with the other contractors and with Owner's employees and shall carefully adapt scheduling and perform the Work in accordance with these Contract Documents to reasonably accommodate the other work.

5.20 SUBCONTRACTORS AND SUPPLIERS

A. Subcontractor Responsibility: The Contractor shall include the language of this paragraph 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 paragraph 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 as a contractor 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. 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).
5. On a project subject to the apprenticeship utilization requirements in RCW 39.04.320, not have been found out of compliance by the Washington state apprenticeship and training council for working apprentices out of ratio, without appropriate supervision, or outside their approved work processes as outlined in their standards of apprenticeship under chapter 49.04 RCW for the one-year period immediately preceding the date of the Owner's first advertisement of the project.

B. Provide names of Subcontractors and use qualified firms: Before submitting the first Application for Payment, Contractor shall furnish in writing to Owner the names, addresses, and telephone numbers of all Subcontractors, as well as suppliers providing materials in excess of \$2,500. Contractor shall utilize Subcontractors and suppliers which are experienced and qualified, and meet the requirements of the Contract Documents, if any. Contractor shall not utilize any Subcontractor or supplier to whom the Owner has a reasonable objection, and shall obtain Owner's written consent before making any substitutions or additions.

**GENERAL CONDITIONS
FOR WASHINGTON STATE FACILITY CONSTRUCTION
Page 24 of 44**

- C. Subcontracts in writing and pass through provision: All Subcontracts must be in writing. By appropriate written agreement, Contractor shall require each Subcontractor, so far as applicable to the Work to be performed by the Subcontractor, to be bound to Contractor by terms of the Contract Documents, and to assume toward Contractor all the obligations and responsibilities which Contractor assumes toward Owner in accordance with the Contract Documents. Each Subcontract shall preserve and protect the rights of Owner in accordance with the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights. Where appropriate, Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. However, nothing in this paragraph shall be construed to alter the contractual relations between Contractor and its Subcontractors with respect to insurance or bonds.
- D. Coordination of Subcontractors; Contractor responsible for Work: Contractor shall schedule, supervise, and coordinate the operations of all Subcontractors. No Subcontracting of any of the Work shall relieve Contractor from its responsibility for the performance of the Work in accordance with the Contract Documents or any other obligations of the Contract Documents.
- E. Automatic assignment of subcontracts: Each subcontract agreement for a portion of the Work is hereby assigned by Contractor to Owner provided that:
1. Effective only after termination and Owner approval: The assignment is effective only after termination by Owner for cause pursuant to Section 9.01 and only for those Subcontracts which Owner accepts by notifying the Subcontractor in writing; and
 2. Owner assumes Contractor's responsibilities: After the assignment is effective, Owner will assume all future duties and obligations toward the Subcontractor which Contractor assumed in the Subcontract.
 3. Impact of bond: The assignment is subject to the prior rights of the surety, if any, obligated under any bond provided in accordance with the Contract Documents.

5.21 WARRANTY OF CONSTRUCTION

- A. Contractor warranty of Work: In addition to any special warranties provided elsewhere in the Contract Documents, Contractor warrants that all Work conforms to the requirements of the Contract Documents and is free of any defect in equipment, material, or design furnished, or workmanship performed by Contractor.
- B. Contractor responsibilities: With respect to all warranties, express or implied, for Work performed or materials furnished according to the Contract Documents, Contractor shall:
1. Obtain warranties: Obtain all warranties that would be given in normal commercial practice;
 2. Warranties for benefit of Owner: Require all warranties to be executed, in writing, for the benefit of Owner;
 3. Enforcement of warranties: Enforce all warranties for the benefit of Owner, if directed by Owner; and
 4. Contractor responsibility for subcontractor warranties: Be responsible to enforce any subcontractor's, manufacturer's, or supplier's warranties should they extend beyond the period specified in the Contract Documents.
- C. Warranties beyond Final Acceptance: The obligations under this section shall survive Final Acceptance.

5.22 INDEMNIFICATION

- A. Contractor to indemnify Owner: Contractor shall defend, indemnify, and hold Owner and A/E harmless from and against all claims, demands, losses, damages, or costs, including but not limited to damages arising out of bodily injury or death to persons and damage to property, caused by or resulting from:
1. Sole negligence of Contractor: The sole negligence of Contractor or any of its Subcontractors;
 2. Concurrent negligence: The concurrent negligence of Contractor, or any Subcontractor, but only to the extent of the negligence of Contractor or such Subcontractor; and
 3. Patent infringement: The use of any design, process, or equipment which constitutes an infringement of any United States patent presently issued, or violates any other proprietary interest, including copyright, trademark, and trade secret.
- B. Employee action and RCW Title 51: In any action against Owner and any other entity indemnified in accordance with this section, by any employee of Contractor, its Subcontractors, Sub-subcontractors, agents, or anyone directly or indirectly employed by any of them, the indemnification obligation of this section shall not be limited by a limit on the amount or type of damages, compensation, or benefits payable by or for Contractor or any Subcontractor under RCW Title 51, the Industrial Insurance Act, or any other employee benefit acts. In addition, Contractor waives immunity as to Owner and A/E only, in accordance with RCW Title 51.

PART 6 – PAYMENTS AND COMPLETION

6.01 CONTRACT SUM

Owner shall pay Contract Sum: Owner shall pay Contractor the Contract Sum plus state sales tax for performance of the Work, in accordance with the Contract Documents.

6.02 SCHEDULE OF VALUES

Contractor to submit Schedule of Values: Before submitting its first Application for Payment, Contractor shall submit to Owner for approval a breakdown allocating the total Contract Sum to each principal category of work, in such detail as requested by Owner (“Schedule of Values”). The approved Schedule of Values shall include appropriate amounts for demobilization, record drawings, O&M manuals, and any other requirements for Project closeout, and shall be used by Owner as the basis for progress payments. Payment for Work shall be made only for and in accordance with those items included in the Schedule of Values.

6.03 APPLICATION FOR PAYMENT

- A. Monthly Application for Payment with substantiation: At monthly intervals, unless determined otherwise by Owner, Contractor shall submit to Owner an itemized Application for Payment for Work completed in accordance with the Contract Documents and the approved Schedule of Values. Each application shall be supported by such substantiating data as Owner may require.
- B. Contractor certifies Subcontractors paid: By submitting an Application for Payment, Contractor is certifying that all Subcontractors have been paid, less earned retainage in accordance with RCW 60.28.011, as their interests appeared in the last preceding certificate of payment. By submitting an Application for Payment, Contractor is recertifying that the representations set forth in Section 1.03, are true and correct, to the best of Contractor’s knowledge, as of the date of the Application for Payment.

**GENERAL CONDITIONS
FOR WASHINGTON STATE FACILITY CONSTRUCTION
Page 26 of 44**

- C. Reconciliation of Work with Progress Schedule: At the time it submits an Application for Payment, Contractor shall analyze and reconcile, to the satisfaction of Owner, the actual progress of the Work with the Progress Schedule.
- D. Payment for material delivered to site or stored off-site: If authorized by Owner, the Application for Payment may include request for payment for material delivered to the Project site and suitably stored, or for completed preparatory work. Payment may similarly be requested for material stored off the Project site, provided Contractor complies with or furnishes satisfactory evidence of the following:
1. Suitable facility or location: The material will be placed in a facility or location that is structurally sound, dry, lighted and suitable for the materials to be stored;
 2. Facility or location within 10 miles of Project: The facility or location is located within a 10-mile radius of the Project. Other locations may be utilized, if approved in writing, by Owner;
 3. Facility or location exclusive to Project's materials: Only materials for the Project are stored within the facility or location (or a secure portion of a facility or location set aside for the Project);
 4. Insurance provided on materials in facility or location: Contractor furnishes Owner a certificate of insurance extending Contractor's insurance coverage for damage, fire, and theft to cover the full value of all materials stored, or in transit;
 5. Facility or location locked and secure: The facility or location (or secure portion thereof) is continuously under lock and key, and only Contractor's authorized personnel shall have access;
 6. Owner right of access to facility or location: Owner shall at all times have the right of access in company of Contractor;
 7. Contractor assumes total responsibility for stored materials: Contractor and its surety assume total responsibility for the stored materials; and
 8. Contractor provides documentation and Notice when materials moved to site: Contractor furnishes to Owner certified lists of materials stored, bills of lading, invoices, and other information as may be required, and shall also furnish Notice to Owner when materials are moved from storage to the Project site.

6.04 PROGRESS PAYMENTS

- A. Owner to pay within 30 Days: Owner shall make progress payments, in such amounts as Owner determines are properly due, within 30 Days after receipt of a properly executed Application for Payment. Owner shall notify Contractor in accordance with chapter 39.76 RCW if the Application for Payment does not comply with the requirements of the Contract Documents.
- B. Withholding retainage; Options for retainage: Owner shall retain 5% of the amount of each progress payment until 45 Days after Final Acceptance and receipt of all documents required by law or the Contract Documents, including, at Owner's request, consent of surety to release of the retainage. In accordance with chapter 60.28 RCW, Contractor may request that monies reserved be retained in a fund by Owner, deposited by Owner in a bank or savings and loan, or placed in escrow with a bank or trust company to be converted into bonds and securities to be held in escrow with interest to be paid to Contractor. Owner may permit Contractor to provide an appropriate bond in lieu of the retained funds.

- C. Title passes to Owner upon payment: Title to all Work and materials covered by a progress payment shall pass to Owner at the time of such payment free and clear of all liens, claims, security interests, and encumbrances. Passage of title shall not, however, relieve Contractor from any of its duties and responsibilities for the Work or materials, or waive any rights of Owner to insist on full compliance by Contractor with the Contract Documents.
- D. Interest on unpaid balances: Payments due and unpaid in accordance with the Contract Documents shall bear interest as specified in chapter 39.76 RCW.

6.05 PAYMENTS WITHHELD

- A. Owner's right to withhold payment: Owner may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any payment to such extent as may be necessary to protect Owner from loss or damage for reasons including but not limited to:
1. Non-compliant Work: Work not in accordance with the Contract Documents;
 2. Remaining Work to cost more than unpaid balance: Reasonable evidence that the Work required by the Contract Documents cannot be completed for the unpaid balance of the Contract Sum;
 3. Owner correction or completion Work: Work by Owner to correct defective Work or complete the Work in accordance with Section 5.16;
 4. Contractor's failure to perform: Contractor's failure to perform in accordance with the Contract Documents; or
 5. Contractor's negligent acts or omissions: Cost or liability that may occur to Owner as the result of Contractor's fault or negligent acts or omissions.
- B. Owner to notify Contractor of withholding for unsatisfactory performance: In any case where part or all of a payment is going to be withheld for unsatisfactory performance, Owner shall notify Contractor in accordance with chapter 39.76 RCW.

6.06 RETAINAGE AND BOND CLAIM RIGHTS

Chapters 39.08 RCW and 60.28 RCW incorporated by reference: Chapters 39.08 RCW and 60.28 RCW, concerning the rights and responsibilities of Contractor and Owner with regard to the performance and payment bonds and retainage, are made a part of the Contract Documents by reference as though fully set forth herein.

6.07 SUBSTANTIAL COMPLETION

Substantial Completion defined: Substantial Completion is the stage in the progress of the Work (or portion thereof designated and approved by Owner) when the construction is sufficiently complete, in accordance with the Contract Documents, so Owner has full and unrestricted use and benefit of the facilities (or portion thereof designated and approved by Owner) for the use for which it is intended. All Work other than incidental corrective or punch list work shall be completed. Substantial Completion shall not have been achieved if all systems and parts are not functional, if utilities are not connected and operating normally, if all required occupancy permits have not been issued, or if the Work is not accessible by normal vehicular and pedestrian traffic routes. The date Substantial Completion is achieved shall be established in writing by Owner. Contractor may request an early date of Substantial Completion which must be approved by Change Order. Owner's occupancy of the Work or designated portion thereof does not necessarily indicate that Substantial Completion has been achieved.

6.08 PRIOR OCCUPANCY

- A. Prior Occupancy defined; Restrictions: Owner may, upon written notice thereof to Contractor, take possession of or use any completed or partially completed portion of the Work ("Prior Occupancy") at any time prior to Substantial Completion. Unless otherwise agreed in writing, Prior Occupancy shall not: be deemed an acceptance of any portion of the Work; accelerate the time for any payment to Contractor; prejudice any rights of Owner provided by any insurance, bond, guaranty, or the Contract Documents; relieve Contractor of the risk of loss or any of the obligations established by the Contract Documents; establish a date for termination or partial termination of the assessment of liquidated damages; or constitute a waiver of claims.
- B. Damage; Duty to repair and warranties: Notwithstanding anything in the preceding paragraph, Owner shall be responsible for loss of or damage to the Work resulting from Prior Occupancy. Contractor's one year duty to repair any system warranties shall begin on building systems activated and used by Owner as agreed in writing by Owner and Contractor.

6.09 FINAL COMPLETION, ACCEPTANCE, AND PAYMENT

- A. Final Completion defined: Final Completion shall be achieved when the Work is fully and finally complete in accordance with the Contract Documents. The date Final Completion is achieved shall be established by Owner in writing, but in no case shall constitute Final Acceptance which is a subsequent, separate, and distinct action.
- B. Final Acceptance defined: Final Acceptance shall be achieved when the Contractor has completed the requirements of the Contract Documents. The date Final Acceptance is achieved shall be established by Owner in writing. Prior to Final Acceptance, Contractor shall, in addition to all other requirements in the Contract Documents, submit to Owner a written notice of any outstanding disputes or claims between Contractor and any of its Subcontractors, including the amounts and other details thereof. Neither Final Acceptance, nor final payment, shall release Contractor or its sureties from any obligations of these Contract Documents or the payment and performance bonds, or constitute a waiver of any claims by Owner arising from Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Final payment waives Claim rights: Acceptance of final payment by Contractor, or any Subcontractor, shall constitute a waiver and release to Owner of all claims by Contractor, or any such Subcontractor, for an increase in the Contract Sum or the Contract Time, and for every act or omission of Owner relating to or arising out of the Work, except for those Claims made in accordance with the procedures, including the time limits, set forth in Part 8.

PART 7 – CHANGES

7.01 CHANGE IN THE WORK

- A. Changes in Work, Contract Sum, and Contract Time by Change Order: Owner may, at any time and without notice to Contractor's surety, order additions, deletions, revisions, or other changes in the Work. These changes in the Work shall be incorporated into the Contract Documents through the execution of Change Orders. If any change in the Work ordered by Owner causes an increase or decrease in the Contract Sum or the Contract Time, an equitable adjustment shall be made as provided in Section 7.02 or 7.03, respectively, and such adjustment(s) shall be incorporated into a Change Order.
- B. Owner may request COP from Contractor: If Owner desires to order a change in the Work, it may request a written Change Order Proposal (COP) from Contractor. Contractor shall submit a Change Order Proposal within 14 Days of the request from Owner, or within such other period as mutually agreed. Contractor's Change Order Proposal shall be full compensation for

**GENERAL CONDITIONS
FOR WASHINGTON STATE FACILITY CONSTRUCTION
Page 29 of 44**

implementing the proposed change in the Work, including any adjustment in the Contract Sum or Contract Time, and including compensation for all delays in connection with such change in the Work and for any expense or inconvenience, disruption of schedule, or loss of efficiency or productivity occasioned by the change in the Work.

- C. COP negotiations: Upon receipt of the Change Order Proposal, or a request for equitable adjustment in the Contract Sum or Contract Time, or both, as provided in Sections 7.02 and 7.03, Owner may accept or reject the proposal, request further documentation, or negotiate acceptable terms with Contractor. Pending agreement on the terms of the Change Order, Owner may direct Contractor to proceed immediately with the Change Order Work. Contractor shall not proceed with any change in the Work until it has obtained Owner's approval. All Work done pursuant to any Owner-directed change in the Work shall be executed in accordance with the Contract Documents.
- D. Change Order as full payment and final settlement: If Owner and Contractor reach agreement on the terms of any change in the Work, including any adjustment in the Contract Sum or Contract Time, such agreement shall be incorporated in a Change Order. The Change Order shall constitute full payment and final settlement of all claims for time and for direct, indirect, and consequential costs, including costs of delays, inconvenience, disruption of schedule, or loss of efficiency or productivity, related to any Work either covered or affected by the Change Order, or related to the events giving rise to the request for equitable adjustment.
- E. Failure to agree upon terms of Change Order; Final offer and Claims: If Owner and Contractor are unable to reach agreement on the terms of any change in the Work, including any adjustment in the Contract Sum or Contract Time, Contractor may at any time in writing, request a final offer from Owner. Owner shall provide Contractor with its written response within 30 Days of Contractor's request. Owner may also provide Contractor with a final offer at any time. If Contractor rejects Owner's final offer, or the parties are otherwise unable to reach agreement, Contractor's only remedy shall be to file a Claim as provided in Part 8.
- F. Field Authorizations: The Owner may direct the Contractor to proceed with a change in the work through a written Field Authorization (also referred to as a Field Order) when the time required to price and execute a Change Order would impact the Project.

The Field Authorization shall describe and include the following:

1. The scope of work
2. An agreed upon maximum not-to-exceed amount
3. Any estimated change to the Contract Time
4. The method of final cost determination in accordance with the requirements of Part 7 of the General Conditions
5. The supporting cost data to be submitted in accordance with the requirements of Part 7 of the General Conditions

Upon satisfactory submittal by the Contractor and approval by the Owner of supporting cost data, a Change Order will be executed. The Owner will not make payment to the Contractor for Field Authorization work until that work has been incorporated into an executed Change Order.

7.02 CHANGE IN THE CONTRACT SUM

A. General Application

1. Contract Sum changes only by Change Order: The Contract Sum shall only be changed by a Change Order. Contractor shall include any request for a change in the Contract Sum in its Change Order Proposal.

2. Owner fault or negligence as basis for change in Contract Sum: If the cost of Contractor's performance is changed due to the fault or negligence of Owner, or anyone for whose acts Owner is responsible, Contractor shall be entitled to make a request for an equitable adjustment in the Contract Sum in accordance with the following procedure. No change in the Contract Sum shall be allowed to the extent: Contractor's changed cost of performance is due to the fault or negligence of Contractor, or anyone for whose acts Contractor is responsible; the change is concurrently caused by Contractor and Owner; or the change is caused by an act of Force Majeure as defined in Section 3.05.
 - (a) Notice and record keeping for equitable adjustment: A request for an equitable adjustment in the Contract Sum shall be based on written notice delivered to Owner within 7 Days of the occurrence of the event giving rise to the request. For purposes of this part, "occurrence" means when Contractor knew, or in its diligent prosecution of the Work should have known, of the event giving rise to the request. If Contractor believes it is entitled to an adjustment in the Contract Sum, Contractor shall immediately notify Owner and begin to keep and maintain complete, accurate, and specific daily records. Contractor shall give Owner access to any such records and, if requested shall promptly furnish copies of such records to Owner.

 - (b) Content of notice for equitable adjustment; Failure to comply: Contractor shall not be entitled to any adjustment in the Contract Sum for any occurrence of events or costs that occurred more than 7 Days before Contractor's written notice to Owner. The written notice shall set forth, at a minimum, a description of: the event giving rise to the request for an equitable adjustment in the Contract Sum; the nature of the impacts to Contractor and its Subcontractors of any tier, if any; and to the extent possible the amount of the adjustment in Contract Sum requested. Failure to properly give such written notice shall, to the extent Owner's interests are prejudiced, constitute a waiver of Contractor's right to an equitable adjustment.

 - (c) Contractor to provide supplemental information: Within 30 Days of the occurrence of the event giving rise to the request, unless Owner agrees in writing to allow an additional period of time to ascertain more accurate data, Contractor shall supplement the written notice provided in accordance with subparagraph a. above with additional supporting data. Such additional data shall include, at a minimum: the amount of compensation requested, itemized in accordance with the procedure set forth herein; specific facts, circumstances, and analysis that confirms not only that Contractor suffered the damages claimed, but that the damages claimed were actually a result of the act, event, or condition complained of and that the Contract Documents provide entitlement to an equitable adjustment to Contractor for such act, event, or condition; and documentation sufficiently detailed to permit an informed analysis of the request by Owner. When the request for compensation relates to a delay, or other change in Contract Time, Contractor shall demonstrate the impact on the critical path, in accordance with Section 7.03C. Failure to provide such additional information and documentation within the time allowed or within the format required shall, to the extent Owner's interests are prejudiced, constitute a waiver of Contractor's right to an equitable adjustment.

**GENERAL CONDITIONS
FOR WASHINGTON STATE FACILITY CONSTRUCTION
Page 31 of 44**

- (d) Contractor to proceed with Work as directed: Pending final resolution of any request made in accordance with this paragraph, unless otherwise agreed in writing, Contractor shall proceed diligently with performance of the Work.
 - (e) Contractor to combine requests for same event together: Any requests by Contractor for an equitable adjustment in the Contract Sum and in the Contract Time that arise out of the same event(s) shall be submitted together.
3. Methods for calculating Change Order amount: The value of any Work covered by a Change Order, or of any request for an equitable adjustment in the Contract Sum, shall be determined by one of the following methods:
- a. Fixed Price: On the basis of a fixed price as determined in paragraph 7.02B.
 - b. Unit Prices: By application of unit prices to the quantities of the items involved as determined in paragraph 7.02C.
 - c. Time and Materials: On the basis of time and material as determined in paragraph 7.02D.
4. Fixed price method is default; Owner may direct otherwise: When Owner has requested Contractor to submit a Change Order Proposal, Owner may direct Contractor as to which method in subparagraph 3 above to use when submitting its proposal. Otherwise, Contractor shall determine the value of the Work, or of a request for an equitable adjustment, on the basis of the fixed price method.

B. Change Order Pricing – Fixed Price

Procedures: When the fixed price method is used to determine the value of any Work covered by a Change Order, or of a request for an equitable adjustment in the Contract Sum, the following procedures shall apply:

- 1. Breakdown and itemization of details on COP: Contractor's Change Order Proposal, or request for adjustment in the Contract Sum, shall be accompanied by a complete itemization of the costs, including labor, material, subcontractor costs, and overhead and profit. The costs shall be itemized in the manner set forth below, and shall be submitted on breakdown sheets in a form approved by Owner.
- 2. Use of industry standards in calculating costs: All costs shall be calculated based upon appropriate industry standard methods of calculating labor, material quantities, and equipment costs.
- 3. Costs contingent on Owner's actions: If any of Contractor's pricing assumptions are contingent upon anticipated actions of Owner, Contractor shall clearly state them in the proposal or request for an equitable adjustment.
- 4. Markups on additive and deductive Work: The cost of any additive or deductive changes in the Work shall be calculated as set forth below, except that overhead and profit shall not be included on deductive changes in the Work. Where a change in the Work involves additive and deductive work by the same Contractor or Subcontractor, small tools, overhead, profit, bond and insurance markups will apply to the net difference.
- 5. Breakdown not required if change less than \$1,000: If the total cost of the change in the Work or request for equitable adjustment does not exceed \$1,000, Contractor shall not be required to submit a breakdown if the description of the change in the Work or request for equitable adjustment is sufficiently definitive for Owner to determine fair value.

**GENERAL CONDITIONS
FOR WASHINGTON STATE FACILITY CONSTRUCTION
Page 32 of 44**

6. Breakdown required if change between \$1,000 and \$2,500: If the total cost of the change in the Work or request for equitable adjustment is between \$1,000 and \$2,500, Contractor may submit a breakdown in the following level of detail if the description of the change in the Work or if the request for equitable adjustment is sufficiently definitive to permit the Owner to determine fair value:
- a. lump sum labor;
 - b. lump sum material;
 - c. lump sum equipment usage;
 - d. overhead and profit as set forth below; and
 - e. insurance and bond costs as set forth below.
7. Components of increased cost: Any request for adjustment of Contract Sum based upon the fixed price method shall include only the following items:
- a. Craft labor costs: These are the labor costs determined by multiplying the estimated or actual additional number of craft hours needed to perform the change in the Work by the hourly labor costs. Craft hours should cover direct labor, as well as indirect labor due to trade inefficiencies. The hourly costs shall be based on the following:
 - (1) Basic wages and benefits: Hourly rates and benefits as stated on the Department of Labor and Industries approved "statement of intent to pay prevailing wages" or a higher amount if approved by the Owner. Direct supervision shall be a reasonable percentage not to exceed 15% of the cost of direct labor. No supervision markup shall be allowed for a working supervisor's hours.
 - (2) Worker's insurance: Direct contributions to the state of Washington for industrial insurance; medical aid; and supplemental pension, by the class and rates established by the Department of Labor and Industries.
 - (3) Federal insurance: Direct contributions required by the Federal Insurance Compensation Act; Federal Unemployment Tax Act; and the State Unemployment Compensation Act.
 - (4) Travel allowance: Travel allowance and/or subsistence, if applicable, not exceeding those allowances established by regional labor union agreements, which are itemized and identified separately.
 - (5) Safety: Cost incurred due to the Washington Industrial Safety and Health Act, which shall be a reasonable percentage not to exceed 2% of the sum of the amounts calculated in (1), (2), and (3) above.
 - b. Material costs: This is an itemization of the quantity and cost of materials needed to perform the change in the Work. Material costs shall be developed first from actual known costs, second from supplier quotations or if these are not available, from standard industry pricing guides. Material costs shall consider all available discounts. Freight costs, express charges, or special delivery charges, shall be itemized.

**GENERAL CONDITIONS
FOR WASHINGTON STATE FACILITY CONSTRUCTION
Page 33 of 44**

c. Equipment costs: This is an itemization of the type of equipment and the estimated or actual length of time the construction equipment appropriate for the Work is or will be used on the change in the Work. Costs will be allowed for construction equipment only if used solely for the changed Work, or for additional rental costs actually incurred by the Contractor. Equipment charges shall be computed on the basis of actual invoice costs or if owned, from the current edition of one of the following sources:

- (1) Associated General Contractors Washington State Department of Transportation (AGC WSDOT) Equipment Rental Agreement current edition, on the Contract execution date.
- (2) The National Electrical Contractors Association for equipment used on electrical work.
- (3) The Mechanical Contractors Association of America for equipment used on mechanical work.

The EquipmentWatch Rental Rate Blue Book shall be used as a basis for establishing rental rates of equipment not listed in the above sources. The maximum rate for standby equipment shall not exceed that shown in the AGC WSDOT Equipment Rental Agreement, current edition on the Contract execution date.

d. Allowance for small tools, expendables & consumable supplies: Small tools consist of tools which cost \$250 or less and are normally furnished by the performing contractor. The maximum rate for small tools shall not exceed the following:

- (1) 3% for Contractor: For Contractor, 3% of direct labor costs.
- (2) 5% for Subcontractors: For Subcontractors, 5% of direct labor costs.

Expendables and consumables supplies directly associated with the change in Work must be itemized.

e. Subcontractor costs: This is defined as payments Contractor makes to Subcontractors for changed Work performed by Subcontractors of any tier. The Subcontractors' cost of Work shall be calculated and itemized in the same manner as prescribed herein for Contractor.

f. Allowance for overhead: This is defined as costs of any kind attributable to direct and indirect delay, acceleration, or impact, added to the total cost to Owner of any change in the Contract Sum. If the Contractor is compensated under Section 7.03D, the amount of such compensation shall be reduced by the amount Contractor is otherwise entitled to under this subsection (f). This allowance shall compensate Contractor for all noncraft labor, temporary construction facilities, field engineering, schedule updating, as-built drawings, home office cost, B&O taxes, office engineering, estimating costs, additional overhead because of extended time, and any other cost incidental to the change in the Work. It shall be strictly limited in all cases to a reasonable amount, mutually acceptable, or if none can be agreed upon to an amount not to exceed the rates below:

- (1). Projects less than \$3 million: For projects where the Contract Award Amount is under \$3 million, the following shall apply:

**GENERAL CONDITIONS
FOR WASHINGTON STATE FACILITY CONSTRUCTION
Page 34 of 44**

- (a) Contractor markup on Contractor Work: For Contractor, for any Work actually performed by Contractor's own forces, 16% of the first \$50,000 of the cost, and 4% of the remaining cost, if any.
 - (b) Subcontractor markup for Subcontractor Work: For each Subcontractor (including lower tier subcontractors), for any Work actually performed by its own forces, 16% of the first \$50,000 of the cost, and 4% of the remaining cost, if any.
 - (c) Contractor markup for Subcontractor Work: For Contractor, for any work performed by its Subcontractor(s) 6% of the first \$50,000 of the amount due each Subcontractor, and 4% of the remaining amount if any.
 - (d) Subcontractor markup for lower tier Subcontractor Work: For each Subcontractor, for any Work performed by its Subcontractor(s) of any lower tier, 4% of the first \$50,000 of the amount due the sub-Subcontractor, and 2% of the remaining amount if any.
 - (e) Basis of cost applicable for markup: The cost to which overhead is to be applied shall be developed in accordance with Section 7.02B 7a. – e.
- (2). Projects more than \$3 million: For projects where the Contract Award Amount is equal to or exceeds \$3 million, the following shall apply:
- (a) Contractor markup on Contractor Work: For Contractor, for any Work actually performed by Contractor's own forces, 12% of the first \$50,000 of the cost, and 4% of the remaining cost, if any.
 - (b) Subcontractor markup for Subcontractor Work: For each Subcontractor (including lower tier subcontractors), for any Work actually performed by its own forces, 12% of the first \$50,000 of the cost, and 4% of the remaining cost, if any.
 - (c) Contractor markup for Subcontractor Work: For Contractor, for any Work performed by its Subcontractor(s), 4% of the first \$50,000 of the amount due each Subcontractor, and 2% of the remaining amount if any.
 - (d) Subcontractor markup for lower tier Subcontractor Work: For each Subcontractor, for any Work performed by its Subcontractor(s) of any lower tier, 4% of the first \$50,000 of the amount due the sub-Subcontractor, and 2% of the remaining amount if any.
 - (e) Basis of cost applicable for markup: The cost to which overhead is to be applied shall be developed in accordance with Section 7.02B 7a. – e.
- g. Allowance for profit: Allowance for profit is an amount to be added to the cost of any change in contract sum, but not to the cost of change in Contract Time for which contractor has been compensated pursuant to the conditions set forth in Section 7.03. It shall be limited to a reasonable amount, mutually acceptable, or if none can be agreed upon, to an amount not to exceed the rates below:
- (1) Contractor / Subcontractor markup for self-performed Work: For Contractor or Subcontractor of any tier for work performed by their forces, 6% of the cost developed in accordance with Section 7.02B 7a. – e.

**GENERAL CONDITIONS
FOR WASHINGTON STATE FACILITY CONSTRUCTION
Page 35 of 44**

- (2) Contractor / Subcontractor markup for Work performed at lower tier: For Contractor or Subcontractor of any tier for work performed by a subcontractor of a lower tier, 4% of the subcontract cost developed in accordance with Section 7.02B 7a. – h.

- h. Insurance and bond premiums: Cost of change in insurance or bond premium: This is defined as:
 - (1) Contractor's liability insurance: The cost of any changes in Contractor's liability insurance arising directly from execution of the Change Order; and
 - (2) Payment and Performance Bond: The cost of the additional premium for Contractor's bond arising directly from the changed Work.

The cost of any change in insurance or bond premium shall be added after overhead and allowance for profit are calculated in accordance with subparagraph f. and g above.

C. Change Order Pricing – Unit Prices

- 1. Content of Owner authorization: Whenever Owner authorizes Contractor to perform Work on a unit-price basis, Owner's authorization shall clearly state:
 - a. Scope: Scope of work to be performed;
 - b. Reimbursement basis: Type of reimbursement including pre-agreed rates for material quantities; and
 - c. Reimbursement limit: Cost limit of reimbursement.
- 2. Contractor responsibilities: Contractor shall:
 - a. Cooperate with Owner and assist in monitoring the Work being performed. As requested by Owner, Contractor shall identify workers assigned to the Change Order Work and areas in which they are working;
 - b. Leave access as appropriate for quantity measurement; and
 - c. Not exceed any cost limit(s) without Owner's prior written approval.
- 3. Cost breakdown consistent with Fixed Price requirements: Contractor shall submit costs in accordance with paragraph 7.02B and satisfy the following requirements:
 - a. Unit prices must include overhead, profit, bond and insurance premiums: Unit prices shall include reimbursement for all direct and indirect costs of the Work, including overhead, profit, bond, and insurance costs; and
 - b. Owner verification of quantities: Quantities must be supported by field measurement statements signed by Owner.

D. Change Order Pricing – Time-and-Material Prices

- 1. Content of Owner authorization: Whenever Owner authorizes Contractor to perform Work on a time-and-material basis, Owner's authorization shall clearly state:
 - a. Scope: Scope of Work to be performed;

**GENERAL CONDITIONS
FOR WASHINGTON STATE FACILITY CONSTRUCTION
Page 36 of 44**

- b. Reimbursement basis: Type of reimbursement including pre-agreed rates, if any, for material quantities or labor; and
 - c. Reimbursement limit: Cost limit of reimbursement.
2. Contractor responsibilities: Contractor shall:
- a. Identify workers assigned: Cooperate with Owner and assist in monitoring the Work being performed. As requested by Owner, identify workers assigned to the Change Order Work and areas in which they are working;
 - b. Provide daily timesheets: Identify on daily time sheets all labor performed in accordance with this authorization. Submit copies of daily time sheets within 2 working days for Owner's review.
 - c. Allow Owner to measure quantities: Leave access as appropriate for quantity measurement;
 - d. Perform Work efficiently: Perform all Work in accordance with this section as efficiently as possible; and
 - e. Not exceed Owner's cost limit: Not exceed any cost limit(s) without Owner's prior written approval.
3. Cost breakdown consistent with Fixed Price requirements: Contractor shall submit costs in accordance with paragraph 7.02B and additional verification supported by:
- a. Timesheets: Labor detailed on daily time sheets; and
 - b. Invoices: Invoices for material.

7.03 CHANGE IN THE CONTRACT TIME

- A. COP requests for Contract Time: The Contract Time shall only be changed by a Change Order. Contractor shall include any request for a change in the Contract Time in its Change Order Proposal.
- B. Time extension permitted if not Contractor's fault: If the time of Contractor's performance is changed due to an act of Force Majeure, or due to the fault or negligence of Owner or anyone for whose acts Owner is responsible, Contractor shall be entitled to make a request for an equitable adjustment in the Contract Time in accordance with the following procedure. No adjustment in the Contract Time shall be allowed to the extent Contractor's changed time of performance is due to the fault or negligence of Contractor, or anyone for whose acts Contractor is responsible.
- 1. Notice and record keeping for Contract Time request: A request for an equitable adjustment in the Contract Time shall be based on written notice delivered within 7 Days of the occurrence of the event giving rise to the request. If Contractor believes it is entitled to adjustment of Contract Time, Contractor shall immediately notify Owner and begin to keep and maintain complete, accurate, and specific daily records. Contractor shall give Owner access to any such record and if requested, shall promptly furnish copies of such record to Owner.
 - 2. Timing and content of Contractor's Notice: Contractor shall not be entitled to an adjustment in the Contract Time for any events that occurred more than 7 Days before Contractor's written notice to Owner. The written notice shall set forth, at a minimum, a description of: the event giving rise to the request for an equitable adjustment in the

**GENERAL CONDITIONS
FOR WASHINGTON STATE FACILITY CONSTRUCTION
Page 37 of 44**

Contract Time; the nature of the impacts to Contractor and its Subcontractors of any tier, if any; and to the extent possible the amount of the adjustment in Contract Time requested. Failure to properly give such written notice shall, to the extent Owner's interests are prejudiced, constitute a waiver of Contractor's right to an equitable adjustment.

3. Contractor to provide supplemental information: Within 30 Days of the occurrence of the event giving rise to the request, unless Owner agrees in writing to allow an additional period of time to ascertain more accurate data, Contractor shall supplement the written notice provided in accordance with subparagraph 7.03B.2 with additional supporting data. Such additional data shall include, at a minimum: the amount of delay claimed, itemized in accordance with the procedure set forth herein; specific facts, circumstances, and analysis that confirms not only that Contractor suffered the delay claimed, but that the delay claimed was actually a result of the act, event, or condition complained of, and that the Contract Documents provide entitlement to an equitable adjustment in Contract Time for such act, event, or condition; and supporting documentation sufficiently detailed to permit an informed analysis of the request by Owner. Failure to provide such additional information and documentation within the time allowed or within the format required shall, to the extent Owner's interests are prejudiced, constitute a waiver of Contractor's right to an equitable adjustment.
 4. Contractor to proceed with Work as directed: Pending final resolution of any request in accordance with this paragraph, unless otherwise agreed in writing, Contractor shall proceed diligently with performance of the Work.
- C. Contractor to demonstrate impact on critical path of schedule: Any change in the Contract Time covered by a Change Order, or based on a request for an equitable adjustment in the Contract Time, shall be limited to the change in the critical path of Contractor's schedule attributable to the change of Work or event(s) giving rise to the request for equitable adjustment. Any Change Order Proposal or request for an adjustment in the Contract Time shall demonstrate the impact on the critical path of the schedule. Contractor shall be responsible for showing clearly on the Progress Schedule that the change or event: had a specific impact on the critical path, and except in case of concurrent delay, was the sole cause of such impact; and could not have been avoided by resequencing of the Work or other reasonable alternatives.
- D. Cost of change in Contract Time: Contractor may request compensation for the cost of a change in Contract Time in accordance with this paragraph, 7.03D, subject to the following conditions:
1. Must be solely fault of Owner or A/E: The change in Contract Time shall solely be caused by the fault or negligence of Owner or A/E;
 2. Procedures: Contractor shall follow the procedure set forth in paragraph 7.03B;
 3. Demonstrate impact on critical path: Contractor shall establish the extent of the change in Contract Time in accordance with paragraph 7.03C; and
 4. Limitations on daily costs: The daily cost of any change in Contract Time shall be limited to the items below, less the amount of any change in the Contract Sum the Contractor may otherwise be entitled to pursuant to Section 7.02B 7f for any change in the Work that contributed to this change in Contract Time:
 - a. Non-productive supervision or labor: cost of nonproductive field supervision or labor extended because of delay;
 - b. Weekly meetings and indirect activities: cost of weekly meetings or similar indirect activities extended because of the delay;

- c. Temporary facilities or equipment rental: cost of temporary facilities or equipment rental extended because of the delay;
- d. Insurance premiums: cost of insurance extended because of the delay;
- e. Overhead: general and administrative overhead in an amount to be agreed upon, but not to exceed 3% of the Contract Award Amount divided by the originally specified Contract Time for each Day of the delay.

PART 8 – CLAIMS AND DISPUTE RESOLUTION

8.01 CLAIMS PROCEDURE

- A. Claim is Contractor's remedy: If the parties fail to reach agreement on the terms of any Change Order for Owner-directed Work as provided in Section 7.01, or on the resolution of any request for an equitable adjustment in the Contract Sum as provided in Section 7.02 or the Contract Time as provided in Section 7.03, Contractor's only remedy shall be to file a Claim with Owner as provided in this section.
- B. Claim filing deadline for Contractor: Contractor shall file its Claim within 120 Days from Owner's final offer made in accordance with paragraph 7.01E, or by the date of Final Acceptance, whichever occurs first.
- C. Claim must cover all costs and be documented: The Claim shall be deemed to cover all changes in cost and time (including direct, indirect, impact, and consequential) to which Contractor may be entitled. It shall be fully substantiated and documented. At a minimum, the Claim shall contain the following information:
 - 1. Factual statement of Claim: A detailed factual statement of the Claim for additional compensation and time, if any, providing all necessary dates, locations, and items of Work affected by the Claim;
 - 2. Dates: The date on which facts arose which gave rise to the Claim;
 - 3. Owner and A/E employee's knowledgeable about Claim: The name of each employee of Owner or A/E knowledgeable about the Claim;
 - 4. Support from Contract Documents: The specific provisions of the Contract Documents which support the Claim;
 - 5. Identification of other supporting information: The identification of any documents and the substance of any oral communications that support the Claim;
 - 6. Copies of supporting documentation: Copies of any identified documents, other than the Contract Documents, that support the Claim;
 - 7. Details on Claim for Contract Time: If an adjustment in the Contract Time is sought: the specific days and dates for which it is sought; the specific reasons Contractor believes an extension in the Contract Time should be granted; and Contractor's analysis of its Progress Schedule to demonstrate the reason for the extension in Contract Time;
 - 8. Details on Claim for adjustment of Contract Sum: If an adjustment in the Contract Sum is sought, the exact amount sought and a breakdown of that amount into the categories set forth in, and in the detail as required by Section 7.02; and

**GENERAL CONDITIONS
FOR WASHINGTON STATE FACILITY CONSTRUCTION
Page 39 of 44**

9. Statement certifying Claim: A statement certifying, under penalty of perjury, that the Claim is made in good faith, that the supporting cost and pricing data are true and accurate to the best of Contractor's knowledge and belief, that the Claim is fully supported by the accompanying data, and that the amount requested accurately reflects the adjustment in the Contract Sum or Contract Time for which Contractor believes Owner is liable.
- D. Owner's response to Claim filed: After Contractor has submitted a fully documented Claim that complies with all applicable provisions of Parts 7 and 8, Owner shall respond, in writing, to Contractor as follows:
1. Response time for Claim less than \$50,000: If the Claim amount is less than \$50,000, with a decision within 60 Days from the date the Claim is received; or
 2. Response time for Claim of \$50,000 or more: If the Claim amount is \$50,000 or more, with a decision within 60 Days from the date the Claim is received, or with notice to Contractor of the date by which it will render its decision. Owner will then respond with a written decision in such additional time.
- E. Owner's review of Claim and finality of decision: To assist in the review of Contractor's Claim, Owner may visit the Project site, or request additional information, in order to fully evaluate the issues raised by the Claim. Contractor shall proceed with performance of the Work pending final resolution of any Claim. Owner's written decision as set forth above shall be final and conclusive as to all matters set forth in the Claim, unless Contractor follows the procedure set forth in Section 8.02.
- F. Waiver of Contractor rights for failure to comply with this Section: Any Claim of the Contractor against the Owner for damages, additional compensation, or additional time, shall be conclusively deemed to have been waived by the Contractor unless made in accordance with the requirements of this Section.

8.02 ARBITRATION

- A. Timing of Contractor's demand for arbitration: If Contractor disagrees with Owner's decision rendered in accordance with paragraph 8.01D, Contractor shall provide Owner with a written demand for arbitration. No demand for arbitration of any such Claim shall be made later than 30 Days after the date of Owner's decision on such Claim; failure to demand arbitration within said 30 Day period shall result in Owner's decision being final and binding upon Contractor and its Subcontractors.
- B. Filing of Notice for arbitration: Notice of the demand for arbitration shall be filed with the American Arbitration Association (AAA), with a copy provided to Owner. The parties shall negotiate or mediate under the Voluntary Construction Mediation Rules of the AAA, or mutually acceptable service, before seeking arbitration in accordance with the Construction Industry Arbitration Rules of AAA as follows:
1. Claims less than \$30,000: Disputes involving \$30,000 or less shall be conducted in accordance with the Northwest Region Expedited Commercial Arbitration Rules; or
 2. Claims greater than \$30,000: Disputes over \$30,000 shall be conducted in accordance with the Construction Industry Arbitration Rules of the AAA, unless the parties agree to use the expedited rules.
- C. Arbitration is forum for resolving Claims: All Claims arising out of the Work shall be resolved by arbitration. The judgment upon the arbitration award may be entered, or review of the award may

occur, in the superior court having jurisdiction thereof. No independent legal action relating to or arising from the Work shall be maintained.

- D. Owner may combine Claims into same arbitration: Claims between Owner and Contractor, Contractor and its Subcontractors, Contractor and A/E, and Owner and A/E shall, upon demand by Owner, be submitted in the same arbitration or mediation.
- E. Settlement outside of arbitration to be documented in Change Order: If the parties resolve the Claim prior to arbitration judgment, the terms of the resolution shall be incorporated in a Change Order. The Change Order shall constitute full payment and final settlement of the Claim, including all claims for time and for direct, indirect, or consequential costs, including costs of delays, inconvenience, disruption of schedule, or loss of efficiency or productivity.

8.03 CLAIMS AUDITS

- A. Owner may audit Claims: All Claims filed against Owner shall be subject to audit at any time following the filing of the Claim. Failure of Contractor, or Subcontractors of any tier, to maintain and retain sufficient records to allow Owner to verify all or a portion of the Claim or to permit Owner access to the books and records of Contractor, or Subcontractors of any tier, shall constitute a waiver of the Claim and shall bar any recovery.
- B. Contractor to make documents available: In support of Owner audit of any Claim, Contractor shall, upon request, promptly make available to Owner the following documents:
 - 1. Daily time sheets and supervisor's daily reports;
 - 2. Collective bargaining agreements;
 - 3. Insurance, welfare, and benefits records;
 - 4. Payroll registers;
 - 5. Earnings records;
 - 6. Payroll tax forms;
 - 7. Material invoices, requisitions, and delivery confirmations;
 - 8. Material cost distribution worksheet;
 - 9. Equipment records (list of company equipment, rates, etc.);
 - 10. Vendors', rental agencies', Subcontractors', and agents' invoices;
 - 11. Contracts between Contractor and each of its Subcontractors, and all lower-tier Subcontractor contracts and supplier contracts;
 - 12. Subcontractors' and agents' payment certificates;
 - 13. Cancelled checks (payroll and vendors);
 - 14. Job cost report, including monthly totals;
 - 15. Job payroll ledger;
 - 16. Planned resource loading schedules and summaries;

17. General ledger;
 18. Cash disbursements journal;
 19. Financial statements for all years reflecting the operations on the Work. In addition, the Owner may require, if it deems it appropriate, additional financial statements for 3 years preceding execution of the Work;
 20. Depreciation records on all company equipment whether these records are maintained by the company involved, its accountant, or others;
 21. If a source other than depreciation records is used to develop costs for Contractor's internal purposes in establishing the actual cost of owning and operating equipment, all such other source documents;
 22. All nonprivileged documents which relate to each and every Claim together with all documents which support the amount of any adjustment in Contract Sum or Contract Time sought by each Claim;
 23. Work sheets or software used to prepare the Claim establishing the cost components for items of the Claim including but not limited to labor, benefits and insurance, materials, equipment, Subcontractors, all documents which establish the time periods, individuals involved, the hours for the individuals, and the rates for the individuals; and
 24. Work sheets, software, and all other documents used by Contractor to prepare its bid.
- C. Contractor to provide facilities for audit and shall cooperate: The audit may be performed by employees of Owner or a representative of Owner. Contractor, and its Subcontractors, shall provide adequate facilities acceptable to Owner, for the audit during normal business hours. Contractor, and all Subcontractors, shall make a good faith effort to cooperate with Owner's auditors.

PART 9 – TERMINATION OF THE WORK

9.01 TERMINATION BY OWNER FOR CAUSE

- A. 7 Day Notice to Terminate for Cause: Owner may, upon 7 Days written notice to Contractor and to its surety, terminate (without prejudice to any right or remedy of Owner) the Work, or any part of it, for cause upon the occurrence of any one or more of the following events:
1. Contractor fails to prosecute Work: Contractor fails to prosecute the Work or any portion thereof with sufficient diligence to ensure Substantial Completion of the Work within the Contract Time;
 2. Contractor bankrupt: Contractor is adjudged bankrupt, makes a general assignment for the benefit of its creditors, or a receiver is appointed on account of its insolvency;
 3. Contractor fails to correct Work: Contractor fails in a material way to replace or correct Work not in conformance with the Contract Documents;
 4. Contractor fails to supply workers or materials: Contractor repeatedly fails to supply skilled workers or proper materials or equipment;
 5. Contractor failure to pay Subcontractors or labor: Contractor repeatedly fails to make prompt payment due to Subcontractors or for labor;

**GENERAL CONDITIONS
FOR WASHINGTON STATE FACILITY CONSTRUCTION
Page 42 of 44**

6. Contractor violates laws: Contractor materially disregards or fails to comply with laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction; or
 7. Contractor in material breach of Contract: Contractor is otherwise in material breach of any provision of the Contract Documents.
- B. Owner's actions upon termination: Upon termination, Owner may at its option:
1. Take possession of Project site: Take possession of the Project site and take possession of or use all materials, equipment, tools, and construction equipment and machinery thereon owned by Contractor to maintain the orderly progress of, and to finish, the Work;
 2. Accept assignment of Subcontracts: Accept assignment of subcontracts pursuant to Section 5.20; and
 3. Finish the Work: Finish the Work by whatever other reasonable method it deems expedient.
- C. Surety's role: Owner's rights and duties upon termination are subject to the prior rights and duties of the surety, if any, obligated under any bond provided in accordance with the Contract Documents.
- D. Contractor's required actions: When Owner terminates the Work in accordance with this section, Contractor shall take the actions set forth in paragraph 9.02B, and shall not be entitled to receive further payment until the Work is accepted.
- E. Contractor to pay for unfinished Work: If the unpaid balance of the Contract Sum exceeds the cost of finishing the Work, including compensation for A/E's services and expenses made necessary thereby and any other extra costs or damages incurred by Owner in completing the Work, or as a result of Contractor's actions, such excess shall be paid to Contractor. If such costs exceed the unpaid balance, Contractor shall pay the difference to Owner. These obligations for payment shall survive termination.
- F. Contractor and Surety still responsible for Work performed: Termination of the Work in accordance with this section shall not relieve Contractor or its surety of any responsibilities for Work performed.
- G. Conversion of "Termination for Cause" to "Termination for Convenience": If Owner terminates Contractor for cause and it is later determined that none of the circumstances set forth in paragraph 9.01A exist, then such termination shall be deemed a termination for convenience pursuant to Section 9.02.

9.02 TERMINATION BY OWNER FOR CONVENIENCE

- A. Owner Notice of Termination for Convenience: Owner may, upon written notice, terminate (without prejudice to any right or remedy of Owner) the Work, or any part of it, for the convenience of Owner.
- B. Contractor response to termination Notice: Unless Owner directs otherwise, after receipt of a written notice of termination for either cause or convenience, Contractor shall promptly:
1. Cease Work: Stop performing Work on the date and as specified in the notice of termination;

2. No further orders or Subcontracts: Place no further orders or subcontracts for materials, equipment, services or facilities, except as may be necessary for completion of such portion of the Work as is not terminated;
 3. Cancel orders and Subcontracts: Cancel all orders and subcontracts, upon terms acceptable to Owner, to the extent that they relate to the performance of Work terminated;
 4. Assign orders and Subcontracts to Owner: Assign to Owner all of the right, title, and interest of Contractor in all orders and subcontracts;
 5. Take action to protect the Work: Take such action as may be necessary or as directed by Owner to preserve and protect the Work, Project site, and any other property related to this Project in the possession of Contractor in which Owner has an interest; and
 6. Continue performance not terminated: Continue performance only to the extent not terminated
- C. Terms of adjustment in Contract Sum if Contract terminated: If Owner terminates the Work or any portion thereof for convenience, Contractor shall be entitled to make a request for an equitable adjustment for its reasonable direct costs incurred prior to the effective date of the termination, plus reasonable allowance for overhead and profit on Work performed prior to termination, plus the reasonable administrative costs of the termination, but shall not be entitled to any other costs or damages, whatsoever, provided however, the total sum payable upon termination shall not exceed the Contract Sum reduced by prior payments. Contractor shall be required to make its request in accordance with the provisions of Part 7.
- D. Owner to determine whether to adjust Contract Time: If Owner terminates the Work or any portion thereof for convenience, the Contract Time shall be adjusted as determined by Owner.

PART 10 – MISCELLANEOUS PROVISIONS

10.01 GOVERNING LAW

Applicable law and venue: The Contract Documents and the rights of the parties herein shall be governed by the laws of the state of Washington. Venue shall be in the county in which Owner's principal place of business is located, unless otherwise specified.

10.02 SUCCESSORS AND ASSIGNS

Bound to successors; Assignment of Contract: Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to the other party hereto and to partners, successors, assigns, and legal representatives of such other party in respect to covenants, agreements, and obligations contained in the Contract Documents. Neither party shall assign the Work without written consent of the other, except that Contractor may assign the Work for security purposes, to a bank or lending institution authorized to do business in the state of Washington. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations set forth in the Contract Documents.

10.03 MEANING OF WORDS

Meaning of words used in Specifications: Unless otherwise stated in the Contract Documents, words which have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings. Reference to standard specifications, manuals, or codes of any technical society, organization, or association, or to the code of any governmental authority,

whether such reference be specific or by implication, shall be to the latest standard specification, manual, or code in effect on the date for submission of bids, except as may be otherwise specifically stated. Wherever in these Drawings and Specifications an article, device, or piece of equipment is referred to in the singular manner, such reference shall apply to as many such articles as are shown on the drawings, or required to complete the installation.

10.04 RIGHTS AND REMEDIES

No waiver of rights: No action or failure to act by Owner or A/E shall constitute a waiver of a right or duty afforded them under the Contract Documents, nor shall action or failure to act constitute approval or an acquiescence in a breach therein, except as may be specifically agreed in writing.

10.05 CONTRACTOR REGISTRATION

Contractor must be registered or licensed: Pursuant to RCW 39.06, Contractor shall be registered or licensed as required by the laws of the State of Washington, including but not limited to RCW 18.27.

10.06 TIME COMPUTATIONS

Computing time: When computing any period of time, the day of the event from which the period of time begins shall not be counted. The last day is counted unless it falls on a weekend or legal holiday, in which event the period runs until the end of the next day that is not a weekend or holiday. When the period of time allowed is less than 7 days, intermediate Saturdays, Sundays, and legal holidays are excluded from the computation.

10.07 RECORDS RETENTION

Six year records retention period: The wage, payroll, and cost records of Contractor, and its Subcontractors, and all records subject to audit in accordance with Section 8.03, shall be retained for a period of not less than 6 years after the date of Final Acceptance.

10.08 THIRD-PARTY AGREEMENTS

No third party relationships created: The Contract Documents shall not be construed to create a contractual relationship of any kind between: A/E and Contractor; Owner and any Subcontractor; or any persons other than Owner and Contractor.

10.09 ANTITRUST ASSIGNMENT

Contractor assigns overcharge amounts to Owner: Owner and Contractor recognize that in actual economic practice, overcharges resulting from antitrust violations are in fact usually borne by the purchaser. Therefore, Contractor hereby assigns to Owner any and all claims for such overcharges as to goods, materials, and equipment purchased in connection with the Work performed in accordance with the Contract Documents, except as to overcharges which result from antitrust violations commencing after the Contract Sum is established and which are not passed on to Owner under a Change Order. Contractor shall put a similar clause in its Subcontracts, and require a similar clause in its sub-Subcontracts, such that all claims for such overcharges on the Work are passed to Owner by Contractor.

10.10 HEADINGS AND CAPTIONS

Headings for convenience only: All headings and captions used in these General Conditions are only for convenience of reference, and shall not be used in any way in connection with the meaning, effect, interpretation, construction, or enforcement of the General Conditions, and do not define the limit or describe the scope or intent of any provision of these General Conditions.

**SUPPLEMENTAL CONDITIONS
FOR WASHINGTON STATE FACILITIES CONSTRUCTION**
(Paragraphs keyed to the State's General Conditions)

2.02 Replaces Section 2.02 – COVERAGE LIMITS INSURANCE COVERAGE CERTIFICATES

A. Insurance Coverage Certificates

The Contractor shall furnish acceptable proof of insurance coverage on the state of Washington Certificate of Insurance form SF500A, dated 07/02/92 or ACORD form.

B. Required Coverages

1. For a contract less than \$100,000.00, the coverage required is:

- a. Comprehensive General Liability Insurance – The Contractor shall at all times during the term of this contract, at its cost and expense, carry and maintain general public liability insurance, including contractual liability, against claims for bodily injury, personal injury, death or property damage occurring or arising out of services provided under this contract. This insurance shall cover claims caused by any act, omission, or negligence of the Contractor or its officers, agents, representatives, assigns or servants. The limits of liability insurance, which may be increased as deemed necessary by the contracting parties, shall be:

Each Occurrence	\$1,000,000.00
General Aggregate Limits (other than products – commercial operations)	\$1,000,000.00
Products – Commercial Operations Limit	\$1,000,000.00
Personal and Advertising Injury Limit	\$1,000,000.00
Fire Damage Limit (any one fire)	\$50,000.00
Medical Expense Limit (any one person)	\$5,000.00

- b. If the contract is for underground utility work, then the Contractor shall provide proof of insurance for that above in the form of Explosion, Collapse and Underground (XCU) coverage.
- c. Employers Liability on an occurrence basis in an amount not less than \$1,000,000.00 per occurrence.
2. For contracts over \$100,000.00 but less than \$5,000,000.00 the contractor shall obtain the coverage limits as listed for contracts below \$100,000.00 and General Aggregate and Products – Commercial Operations Limit of not less than \$2,000,000.00.

3. Coverage for Comprehensive General Bodily Injury Liability Insurance for a contract over \$5,000,000.00 is:

Each Occurrence	\$2,000,000.00
General Aggregate Limits (other than products – commercial operations)	\$4,000,000.00
Products – Commercial Operations limit	\$4,000,000.00
Personal and Advertising Injury Limit	\$2,000,000.00
Fire Damage Limit (any one fire)	\$50,000.00
Medical Expense Limit (any one Person)	\$5,000.00

4. For all Contracts – Automobile Liability: in the event that services delivered pursuant to this contract involve the use of vehicles or the transportation of clients, automobile liability insurance shall be required. If Contractor-owned personal vehicles are used, a Business Automobile Policy covering at a minimum Code 2 “owned autos only” must be secured. If Contractor employee’s vehicles are used, the Contractor must also include under the Business Automobile Policy Code 9, coverage for non-owned autos. The minimum limits for automobile liability is: \$1,000,000.00 per occurrence, using a combined single limit for bodily injury and property damage.

5. For Contracts for Hazardous Substance Removal (Asbestos Abatement, PCB Abatement, etc.)

- a. In addition to providing insurance coverage for the project as outlined above, the Contractor shall provide Pollution Liability insurance for the hazardous substance removal as follows:

<u>EACH OCCURRENCE</u>	<u>AGGREGATE</u>
\$500,000.00	\$1,000,000.00

or \$1,000,000.00 each occurrence/aggregate bodily injury and property damage combined single limit.

- 1) Insurance certificate must state that the insurer is covering hazardous substance removal.
- 2) Should this insurance be secured on a “claims made” basis, the coverage must be continuously maintained for one year following the project’s “final completion” through official completion of the project, plus one year following.

For Contracts where hazardous substance removal is a subcomponent of contracted work, the general contractor shall provide to the Owner a certificate of insurance for coverage as defined in 5a. above. The State of Washington must be listed as an additional insured. This certificate of insurance must be provided to the Owner prior to commencing work.

3.02 Replaces Section 3.02 B – CONSTRUCTION SCHEDULE

B. The Progress Schedule shall be in the form of a Critical Path Method (CPM) logic network or, with the approval of the Owner, a bar chart schedule may be submitted. The scheduling of construction is the responsibility of the Contractor and is included in the contract to assure adequate planning and execution of the work. The schedule will be used to evaluate progress of the work for payment based on the Schedule of Values. The schedule shall show the Contractor's planned order and interdependence of activities, and sequence of work. As a minimum the schedule shall include:

- Date of Notice to Proceed;
- Activities (resources, durations, individual responsible for activity, early starts, late starts, early finishes, late finishes, etc.);
- Utility Shutdowns;
- Interrelationships and dependence of activities;
- Planned vs. actual status for each activity;
- Substantial completion;
- Punch list;
- Final inspection;
- Final completion, and
- Float time

The Schedule Duration shall be based on the Contract Time of Completion listed on the Bid Proposal form. The Owner shall not be obligated to accept any Early Completion Schedule suggested by the Contractor. The Contract Time for Completion shall establish the Schedule Completion Date.

If the Contractor feels that the work can be completed in less than the Specified Contract Time, then the Surplus Time shall be considered Project Float. This Float time shall be shown on the Project Schedule. It shall be available to accommodate changes in the work and unforeseen conditions.

Neither the Contractor nor the Owner have exclusive right to this Float Time. It belongs to the project.

5.02 Replace Section 5.02 B – PERMITS, FEES AND NOTICES

B. The actual cost of the general building permit (only) and the public utility hook-up fees will be a direct reimbursement to the Contractor or paid *directly to the permitting agency by the Owner*. ***Fees for these permits should not be included by the Contractor in his bid amount***

Add New Section 5.02 D – PERMITS, FEES, AND NOTICES

- D. The General Contractor Shall submit copies of each valid permit required on the project to the Owner's representative. Nothing in this part shall be construed as imposing a duty upon the Owner or A/E to secure permits.

Add New Section 5.04 H - PREVAILING WAGES

- H. For contracts entered into between September 1, 2010, and December 31, 2013 all **"Off-Site Prefabricated Non-Standard Project Specific Items"** shall be identified for all projects valued at \$1 million dollars or more as defined in EHB 2805 that amends RCW 39.04. "Off-site, prefabricated, nonstandard, project specific items" means products or items that are:
- a. Made primarily of architectural or structural precast concrete, fabricated steel, pipe and pipe systems, or sheet metal and sheet metal duct work;
 - b. Produced specifically for the public work and not considered to be regularly available shelf items;
 - c. Produced or manufactured by labor expended to assemble or modify standard items;
 - d. Produced at an off-site location outside Washington.

The information to be provided to the Department of Labor and Industries shall include:

- a. The estimated cost of the public works project;
- b. The name of the awarding agency and the project title;
- c. The contract value of the off-site, prefabricated, nonstandard, project specific items produced outside Washington, including labor and materials;
- d. The name, address and federal employer identification number of the contractor that produced the off-site, prefabricated, nonstandard, project specific items.

The contractor or subcontractor directly contracting for the off-site prefabricated items must submit this information as part of the affidavit of wages paid form filed with the Department of Labor and Industries. Contractors found to be out of compliance with the Department of Labor and Industries may be rejected as non-responsible. Subcontractors found to be out of compliance with the Department of Labor and Industries may be substituted at no additional cost to the Owner.

5.07 Replaces 5.07, Section A – SAFETY PRECAUTIONS

- A. In performing this contract, the Contractor shall provide for protecting the lives and health of employees and other persons; preventing damage to property, materials, supplies, and equipment; and avoid work interruptions. For these purposes, the Contractor shall:
1. Follow Washington Industrial Safety and Health Act (WISHA) regional directives and provide a site-specific safety program that will require an accident prevention and

hazard analysis plan for the contractor and each subcontractor on the work site. The Contractor shall submit a site-specific safety plan to the Owner's representative prior to the initial scheduled construction meeting.

2. Provide adequate safety devices and measures including, but not limited to, the appropriate safety literature, notice, training, permits, placement and use of barricades, signs, signal lights, ladders, scaffolding, staging, runways, hoist, construction elevators, shoring, temporary lighting, grounded outlets, wiring, hazardous materials, vehicles, construction processes, and equipment required by Chapter 19.27 RCW, State Building Code (Uniform Building, Electrical, Mechanical, Fire, and Plumbing Codes); Chapter 212-12 WAC, Fire Marshal Standards, Chapter 49.17 RCW, WISHA; Chapter 296-155 WAC, Safety Standards for Construction Work; Chapter 296-65 WAC; WISHA Asbestos Standard; WAC 296-62-071, Respirator Standard; WAC 296-62, General Occupation Health Standards, WAC 296-24, General Safety and Health Standards, WAC 296-24, General Safety and Health Standards, Chapter 49.70 RCW, and Right to Know Act.
3. Comply with the State Environmental Policy Act (SEPA), Clean Air Act, Shoreline Management Act, and other applicable federal, state, and local statutes and regulations dealing with the prevention of environmental pollution and the preservation of public natural resources.
4. Post all permits, notices, and/or approvals in a conspicuous location at the construction site.
5. Provide any additional measures that the Owner determines to be reasonable and necessary for ensuring a safe environment in areas open to the public. Nothing in this part shall be construed as imposing a duty upon the Owner or A/E to prescribe safety conditions relating to employees, public, or agents of the Contractors.

5.20 Replace Paragraph B – SUBCONTRACTORS AND SUPPLIERS

- B. Prior to submitting the third Application for Payment, Contractor shall furnish in writing to Owner on Owner provided form(s) the names, addresses, telephone numbers, and Tax Identification Numbers (TIN) of all subcontractors, as well as suppliers providing materials in excess of \$2,500.00. ***The Contractor shall designate all subcontractor and supplier participants which they believe to be MBE or WBE owned businesses, or have identified themselves to the Contractor as MBE or WBE, or are Washington State OMWBE certified. The Contractor shall indicate the anticipated dollar value of each MWBE subcontract.*** Contractor shall utilize subcontractors and suppliers, which are experienced and qualified, and meet the requirements of the Contract Documents, if any. Contractor shall not utilize any subcontractor or supplier to whom the Owner has a reasonable objection, and shall obtain Owner's written consent before making any substitutions or additions. The Owner may direct the Contractor, at no additional cost to the Owner, to remove and substitute any subcontractor(s) found to be out of compliance

with the “Off-Site Prefabricated Non-Standard Project Specific Items” reporting requirements more than one time as determined by the Department of Labor and Industries and as defined in EHB 2805 that amends RCW 39.04.

10.11 Add Part 10.11 – MINORITY AND WOMEN’S BUSINESS ENTERPRISES (MWBE) PARTICIPATION

In Accordance with the legislative findings and policies set forth in Chapter 39.19 RCW the state of Washington encourages participation in all of its contracts by MWBE firms certified by the Office of Minority and Women’s Business Enterprises (OMWBE). Participation may be either on a direct basis in response to this solicitation or as a subcontractor to a Bidder. Any affirmative action requirements set forth in federal regulations or statutes included or referenced in the contract documents will apply. Bidders may contact OMWBE to obtain information on certified firms for potential subcontractors/suppliers.

A. When referred to in this Contract, the terms Minority Business Enterprise (MBE) and Women’s Business Enterprise (WBE) will be as defined by OMWBE, WAC 326-02-030.

B. OMWBE has compiled a directory of certified firms. Copies of this directory may be obtained through OMWBE. For information regarding the certification process or the certification status of a particular firm, contact:

OMWBE, 406 South Water, P.O. Box 41160, Olympia, Washington 98504-1160, telephone (360) 753-9693

C. Eligible MWBEs or M/W firms

MWBE firms utilized for this project for voluntary MWBE goals may be certified by Washington State OMWBE or self identified as minority or women owned (M/W firm).

D. MWBE Voluntary Goals

The Owner has established voluntary goals for MWBE participation for this project. The voluntary goals are set forth in the Advertisement for Bids.

E. If any part of the contract, including the supply of materials and equipment, is anticipated to be subcontracted, then prior to receipt of the first payment, Contractor shall submit, pursuant to Section 5.20 A, a list of all subcontractors/suppliers it intends to use, designate whether any of the subcontractors/suppliers are MWBE firms, indicate the anticipated dollar value of each MWBE subcontract, and provide Tax Identification Number (TIN).

F. If any part of the contract, including the supply of materials and equipment is actually subcontracted during completion of the work, then prior to final acceptance or completion of the contract or as otherwise indicated in the contract documents, the Contractor shall

submit a statement of participation indicating what MWBEs were used and the dollar value of their subcontracts.

- G. The provisions of this section are not intended to replace or otherwise change the requirements of RCW 39.30.060. If said statute is applicable to this contract then the failure to comply with RCW 39.30.060 will still render a bid non-responsive.
- H. The Contractor shall maintain, for at least three years after completion of this contract, relevant records and information necessary to document the level of utilization of MWBEs and other businesses as subcontractors and suppliers in this contract, as well as any efforts the Contractor makes to increase the participation of MWBEs as listed in Section I below. The Contractor shall also maintain, for at least three years after completion of this contract, a record of all quotes, bids, estimates, or proposals submitted to the Contractor by all businesses seeking to participate as subcontractors or suppliers in this contract. The state shall have the right to inspect and copy such records. If this contract involves federal funds, Contractor shall comply with all record keeping requirements set forth in any federal rules, regulations or statutes included or referenced in the contract documents.
- I. Bidders shall advertise opportunities for subcontractors or suppliers in a manner reasonably designed to provide MWBEs capable of performing the work with timely notice of such opportunities, and all advertisements shall include a provision encouraging participation by MWBE firms. Advertising may be done through general advertisements (e.g. newspapers, journals, etc.) or by soliciting bids directly from MWBEs. Bidders shall provide MWBEs that express interest with adequate and timely information about plans, specifications, and requirements of the contract.
- J. Contractors shall not create barriers to open and fair opportunities for all businesses including MWBEs to participate in all State contracts and to obtain or compete for contracts and subcontracts as sources of supplies, equipment, construction and services. In considering offers from and doing business with subcontractors and suppliers, the Contractor shall not discriminate on the basis of race, color, creed, religion, sex, age, nationality, marital status, or the presence of any mental or physical disability in an otherwise qualified disabled person.
- K. Any violation of the mandatory requirements of this part of the contract shall be a material breach of contract for which the Contractor may be subject to a requirement of specific performance, or damages and sanctions provided by contract, by RCW 39.19.090, or by other applicable laws.

10.12 MINIMUM LEVELS OF APPRENTICESHIP PARTICIPATION

In accordance with RCW 39.04.320 the State of Washington requires 15% apprenticeship participation for projects estimated to cost one million dollars or more.

- A. Apprentice participation, under this contract, may be counted towards the required percentage (%) only if the apprentices are from an apprenticeship program registered and approved by the Washington State Apprenticeship and Training Council (RCW 49.04 and WAC 296-04).
- B. Bidders may contact the Department of Labor and Industries, Specialty Compliance Services Division, Apprenticeship Section, P.O. Box 44530, Olympia, WA 98504-4530 by phone at (360) 902-5320, and e-mail at thum235@lni.wa.gov , to obtain information on available apprenticeship programs.
- C. For each project that has apprentice requirements, the contractor shall submit a **“Statement of Apprentice/Journeyman Participation”** on forms provided by the Department of General Administration, with every request for progress payment. The Contractor shall submit consolidated and cumulative data collected by the Contractor and collected from all subcontractors by the Contractor. The data to be collected and submitted includes the following:
1. Contractor name and address
 2. Contract number
 3. Project name
 4. Contract value
 5. Reporting period “Notice to Proceed” through “Invoicing Date”
 6. Name and registration number of each apprentice
 7. Total number of apprentices and labor hours worked by them, categorized by trade or craft.
 8. Total number of journeymen and labor hours worked by them, categorized by trade or craft.
 9. Cumulative combined total of apprentice and journeymen labor hours.
 10. Total percentage of apprentice hours worked
- D. No changes to the required percentage (%) of apprentice participation shall be allowed without written approval of the Owner. In any request for the change the Contractor shall clearly demonstrate a good faith effort to comply with the requirements for apprentice participation.
- E. Any substantive violation of the mandatory requirements of this part of the contract may be a material breach of the contract by the Contractor. The Owner may withhold payment pursuant to Part 6.05, stop the work for cause pursuant to Part 3.04, and terminate the contract for cause pursuant to Part 9.01.

PREVAILING WAGE SCHEDULE

PART 1 GENERAL

1.1 Descriptions and Definitions

- A. Attached is the current Prevailing Wage Schedule for Spokane County (on-site labor) and Statewide (in-shop labor) as published by the Department of Labor and Industries.

The wage schedules published herein represent the most current schedules available to the Owner at the time of bid. The schedules are included herein as a convenience to the Contractor. As stated in the General Conditions, Section 00700 Part 5.04, "The schedule of prevailing wage rates for the locality or localities of the Work, is determined by the Industrial Statistician of the Department of Labor and Industries. It is the Contractor's responsibility to verify the applicable prevailing wage rate." Contractor to verify with L&I that the published wages are correct for the trades involved in the work of this contract.

- B. The Contractor should take note that prevailing wages apply to both on-site labor, and off-site (in-shop) fabrication or manufacture of items specifically produced for this project.

The Washington State Supreme Court ruled in Everett Concrete v. Department of Labor and Industries that workers employed in the fabrication or manufacture of items specifically produced for public works projects are covered under Chapter 39.12 RCW. The law establishes that the applicable prevailing wages which must be paid to laborers, workers and mechanics are the wages that have been established for the county in which the actual physical work is performed. Because the fabrication or manufacture is performed off-site, this may not be the same county in which the job site is located and so the off-site wages for every county in the state have been included.

The following is a list of work that may include the fabrication or manufacture of items produced specifically for a public works project. This list is not intended to include standard items that are always available and may be purchased on the general market. Questions regarding whether the production of a specific item is covered under Chapter 39.12 RCW and the applicable prevailing wage for the county in which the production work is performed should be directed to the Office of the Industrial Statistician, L&I.

Cabinet, Sash, Door and Furniture Making (Wood)
Fabricated Precast Concrete Products (Structural, Architectural and Utility concrete)
Industrial Engine and Machine Mechanics
Metal Fabrication (in-shop) - (Ironworkers, Boilermakers)
Modular Buildings (Including customized prefabricated housing)
Sheet Metal Work (Air ducts, ventilation systems, except round flex hose)
Sign Making and Installation (Electrical and non-electrical)

The absence or inaccuracy of the applicable wage rate in this section does not relieve the Contractor of the obligations to pay prevailing wages as stipulated under Chapter 39.12 RCW.

- C. Refer to General Conditions and Supplemental Conditions for additional information/requirements concerning prevailing wages.

State of Washington
 Department of Labor & Industries
 Prevailing Wage Section - Telephone 360-902-5335
 PO Box 44540, Olympia, WA 98504-4540

Washington State Prevailing Wage

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

Journey Level Prevailing Wage Rates for the Effective Date:

3/2/2016

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Spokane	Asbestos Abatement Workers	Journey Level	\$20.82		1	
Spokane	Boilermakers	Journey Level	\$64.29	5N	1C	
Spokane	Brick Mason	Journey Level	\$44.94	5A	1M	
Spokane	Building Service Employees	Janitor	\$12.74	5Q	1	
Spokane	Building Service Employees	Shampooer	\$13.25	5Q	1	
Spokane	Building Service Employees	Waxer	\$13.25	5Q	1	
Spokane	Building Service Employees	Window Cleaner	\$14.72	5Q	1	
Spokane	Cabinet Makers (In Shop)	Journey Level	\$14.30		1	
Spokane	Carpenters	Carpenters	\$40.76	5A	1B	8N
Spokane	Cement Masons	Journey Level	\$39.60	7B	1N	
Spokane	Divers & Tenders	Diver	\$86.59	5A	1B	8A
Spokane	Divers & Tenders	Diver on Standby	\$49.87	5A	1B	
Spokane	Divers & Tenders	Diver Tender	\$48.17	5A	1B	
Spokane	Divers & Tenders	Diving Master	\$58.71	5A	1B	
Spokane	Divers & Tenders	Surface RCV & ROV Operator	\$48.17	5A	1B	
Spokane	Divers & Tenders	Surface RCV & ROV Operator Tender	\$48.17	5A	1B	
Spokane	Dredge Workers	Assistant Engineer	\$56.44	5D	3F	
Spokane	Dredge Workers	Assistant Mate (Deckhand)	\$56.00	5D	3F	
Spokane	Dredge Workers	Boatmen	\$56.44	5D	3F	
Spokane	Dredge Workers	Engineer Welder	\$57.51	5D	3F	
Spokane	Dredge Workers	Leverman, Hydraulic	\$58.67	5D	3F	
Spokane	Dredge Workers	Mates	\$56.44	5D	3F	
Spokane	Dredge Workers	Oiler	\$56.00	5D	3F	
Spokane	Drywall Applicator	Journey Level	\$40.76	5A	1B	8N
Spokane	Drywall Tapers	Journey Level	\$36.10	7E	1P	
Spokane	Electrical Fixture Maintenance Workers	Journey Level	\$30.89		1	
Spokane	Electricians - Inside	Journeyman	\$47.68	7G	1E	
Spokane	Electricians - Motor Shop	Craftsman	\$15.37		1	
Spokane	Electricians - Motor Shop	Journey Level	\$14.69		1	
Spokane	Electricians - Powerline Construction	Cable Splicer	\$74.92	5A	4D	
Spokane	Electricians - Powerline Construction	Certified Line Welder	\$65.71	5A	4D	
Spokane	Electricians - Powerline Construction	Groundperson	\$44.12	5A	4D	

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Spokane	Electricians - Powerline Construction	Heavy Line Equipment Operator	\$65.71	5A	4D	
Spokane	Electricians - Powerline Construction	Journey Level Lineperson	\$65.71	5A	4D	
Spokane	Electricians - Powerline Construction	Line Equipment Operator	\$55.34	5A	4D	
Spokane	Electricians - Powerline Construction	Pole Sprayer	\$65.71	5A	4D	
Spokane	Electricians - Powerline Construction	Powderperson	\$49.16	5A	4D	
Spokane	Electronic Technicians	Journey Level	\$18.75		1	
Spokane	Elevator Constructors	Mechanic	\$85.45	7D	4A	
Spokane	Elevator Constructors	Mechanic In Charge	\$92.35	7D	4A	
Spokane	Fabricated Precast Concrete Products	Journey Level - In-Factory Work Only	\$20.23		1	
Spokane	Fence Erectors	Fence Erector	\$31.41		1	
Spokane	Flaggers	Journey Level	\$33.61	7B	1M	
Spokane	Glaziers	Journey Level	\$20.08		1	
Spokane	Heat & Frost Insulators And Asbestos Workers	Journey Level	\$24.23		1	
Spokane	Heating Equipment Mechanics	Journey Level	\$50.21	6Z	1B	
Spokane	Hod Carriers & Mason Tenders	Journey Level	\$37.54	7B	1M	
Spokane	Industrial Power Vacuum Cleaner	Journey Level	\$9.47		1	
Spokane	Inland Boatmen	Journey Level	\$9.47		1	
Spokane	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Cleaner Operator, Foamer Operator	\$9.73		1	
Spokane	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Grout Truck Operator	\$11.48		1	
Spokane	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Head Operator	\$12.78		1	
Spokane	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Technician	\$9.47		1	
Spokane	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Tv Truck Operator	\$10.53		1	
Spokane	Insulation Applicators	Journey Level	\$40.76	5A	1B	8N
Spokane	Ironworkers	Journeyman	\$56.20	7N	1O	
Spokane	Laborers	Air And Hydraulic Track Drill	\$36.25	7B	1M	
Spokane	Laborers	Asphalt Raker	\$36.25	7B	1M	
Spokane	Laborers	Asphalt Roller, Walking	\$35.49	7B	1M	
Spokane	Laborers	Brick Pavers	\$35.71	7B	1M	
Spokane	Laborers	Brush Hog Feeder	\$35.71	7B	1M	
Spokane	Laborers	Brush Machine	\$36.25	7B	1M	
Spokane	Laborers	Caisson Worker, Free Air	\$36.25	7B	1M	
Spokane	Laborers	Carpenter Tender	\$35.71	7B	1M	
Spokane	Laborers	Cement Finisher Tender	\$35.49	7B	1M	
Spokane	Laborers	Cement Handler	\$35.71	7B	1M	
Spokane	Laborers	Chain Saw Operator & Faller	\$36.25	7B	1M	
Spokane	Laborers	Clean-up Laborer	\$35.71	7B	1M	

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Spokane	Laborers	Compaction Equipment	\$35.49	7B	1M	
Spokane	Laborers	Concrete Crewman	\$35.71	7B	1M	
Spokane	Laborers	Concrete Saw, Walking	\$35.49	7B	1M	
Spokane	Laborers	Concrete Signalman	\$35.71	7B	1M	
Spokane	Laborers	Concrete Stack	\$36.25	7B	1M	
Spokane	Laborers	Confined Space Attendant	\$35.71	7B	1M	
Spokane	Laborers	Crusher Feeder	\$35.71	7B	1M	
Spokane	Laborers	Demolition	\$35.71	7B	1M	
Spokane	Laborers	Demolition Torch	\$35.49	7B	1M	
Spokane	Laborers	Dope Pot Fireman, Non-mechanical	\$35.49	7B	1M	
Spokane	Laborers	Driller Helper (when Required To Move & Position Machine)	\$35.49	7B	1M	
Spokane	Laborers	Drills With Dual Masts	\$36.53	7B	1M	
Spokane	Laborers	Dry Stack Walls	\$35.71	7B	1M	
Spokane	Laborers	Dumpman	\$35.71	7B	1M	
Spokane	Laborers	Erosion Control Laborer	\$35.71	7B	1M	
Spokane	Laborers	Final Detail Cleanup (i.e., Dusting, Vacuuming, Window Cleaning; Not Construction Debris Cleanup)	\$33.61	7B	1M	
Spokane	Laborers	Firewatch	\$35.71	7B	1M	
Spokane	Laborers	Form Cleaning Machine Feeder, Stacker	\$35.71	7B	1M	
Spokane	Laborers	Form Setter, Paving	\$35.49	7B	1M	
Spokane	Laborers	General Laborer	\$35.71	7B	1M	
Spokane	Laborers	Grade Checker	\$38.24	7B	1M	
Spokane	Laborers	Grout Machine Header Tender	\$35.71	7B	1M	
Spokane	Laborers	Guard Rail	\$35.71	7B	1M	
Spokane	Laborers	Gunite	\$36.25	7B	1M	
Spokane	Laborers	Hazardous Waste Worker (level A)	\$36.53	7B	1M	
Spokane	Laborers	Hazardous Waste Worker (level B)	\$36.25	7B	1M	
Spokane	Laborers	Hazardous Waste Worker (level C)	\$35.49	7B	1M	
Spokane	Laborers	Hazardous Waste Worker (level D)	\$35.71	7B	1M	
Spokane	Laborers	Hdpe Or Similar Liner Installer	\$35.71	7B	1M	
Spokane	Laborers	High Scaler	\$36.25	7B	1M	
Spokane	Laborers	Jackhammer Operator Miner, Class b ^{""}	\$35.49	7B	1M	
Spokane	Laborers	Laser Beam Operator	\$36.25	7B	1M	
Spokane	Laborers	Miner, Class a ^{""}	\$35.71	7B	1M	
Spokane	Laborers	Miner, Class c ^{""}	\$36.25	7B	1M	
Spokane	Laborers	Miner, Class d ^{""}	\$36.53	7B	1M	
Spokane	Laborers	Monitor Operator, Air Track Or Similar Mounting	\$36.25	7B	1M	
Spokane	Laborers	Mortar Mixer	\$36.25	7B	1M	
Spokane	Laborers	Nipper	\$35.71	7B	1M	
Spokane	Laborers	Nozzleman	\$36.25	7B	1M	
Spokane	Laborers	Nozzleman, Water (to Include Fire Hose), Air Or Steam	\$35.49	7B	1M	
Spokane	Laborers	Pavement Breaker, 90 Lbs. & Over	\$36.25	7B	1M	
Spokane	Laborers	Pavement Breaker, Under 90 Lbs.	\$35.49	7B	1M	
Spokane	Laborers	Pipelayer	\$36.25	7B	1M	
Spokane	Laborers	Pipelayer, Corrugated Metal Culvert And Multi-plate	\$35.49	7B	1M	
Spokane	Laborers	Pipewrapper	\$36.25	7B	1M	
Spokane	Laborers	Plasterer Tenders	\$36.25	7B	1M	
Spokane	Laborers	Pot Tender	\$35.49	7B	1M	
Spokane	Laborers	Powderman	\$37.90	7B	1M	

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Spokane	Laborers	Powderman Helper	\$35.49	7B	1M	
Spokane	Laborers	Power Buggy Operator	\$35.49	7B	1M	
Spokane	Laborers	Power Tool Operator, Gas, Electric, Pneumatic	\$35.49	7B	1M	
Spokane	Laborers	Railroad Equipment, Power Driven, Except Dual Mobile	\$35.49	7B	1M	
Spokane	Laborers	Railroad Power Spiker Or Puller, Dual Mobile	\$35.49	7B	1M	
Spokane	Laborers	Remote Equipment Operator	\$36.53	7B	1M	
Spokane	Laborers	Remote Equipment Operator (i.e. Compaction And Demolition)	\$35.49	7B	1M	
Spokane	Laborers	Rigger/signal Person	\$35.49	7B	1M	
Spokane	Laborers	Riprap Person	\$35.71	7B	1M	
Spokane	Laborers	Rodder & Spreader	\$35.49	7B	1M	
Spokane	Laborers	Sandblast Tailhoseman	\$35.71	7B	1M	
Spokane	Laborers	Scaffold Erector, Wood Or Steel	\$35.71	7B	1M	
Spokane	Laborers	Stake Jumper	\$35.71	7B	1M	
Spokane	Laborers	Structural Mover	\$35.71	7B	1M	
Spokane	Laborers	Tailhoseman (water Nozzle)	\$35.71	7B	1M	
Spokane	Laborers	Timber Bucker & Faller (by Hand)	\$35.71	7B	1M	
Spokane	Laborers	Track Laborer (rr)	\$35.71	7B	1M	
Spokane	Laborers	Traffic Control Laborer	\$33.61	7B	1M	8T
Spokane	Laborers	Traffic Control Supervisor	\$34.61	7B	1M	8S
Spokane	Laborers	Trencher, Shawnee	\$35.49	7B	1M	
Spokane	Laborers	Trenchless Technology Technician	\$36.25	7B	1M	
Spokane	Laborers	Truck Loader	\$35.71	7B	1M	
Spokane	Laborers	Tugger Operator	\$35.49	7B	1M	
Spokane	Laborers	Vibrators, All	\$36.25	7B	1M	
Spokane	Laborers	Wagon Drills	\$35.49	7B	1M	
Spokane	Laborers	Water Pipe Liner	\$35.49	7B	1M	
Spokane	Laborers	Welder, Electric, Manual Or Automatic (hdpe Or Similar Pipe And Liner)	\$36.53	7B	1M	
Spokane	Laborers	Well-point Person	\$35.71	7B	1M	
Spokane	Laborers	Wheelbarrow, Power Driven	\$35.49	7B	1M	
Spokane	Laborers - Underground Sewer & Water	General Laborer & Topman	\$35.71	7B	1M	
Spokane	Laborers - Underground Sewer & Water	Pipe Layer	\$36.25	7B	1M	
Spokane	Landscape Construction	Irrigation Or Lawn Sprinkler Installers	\$9.65		1	
Spokane	Landscape Construction	Landscape Equipment Operators Or Truck Drivers	\$15.22		1	
Spokane	Landscape Construction	Landscaping Or Planting Laborers	\$11.46		1	
Spokane	Lathers	Journey Level	\$40.76	5A	1B	8N
Spokane	Marble Setters	Journey Level	\$44.94	5A	1M	
Spokane	Metal Fabrication (In Shop)	Fitter	\$12.59		1	
Spokane	Metal Fabrication (In Shop)	Laborer	\$9.47		1	
Spokane	Metal Fabrication (In Shop)	Machine Operator	\$13.26		1	
Spokane	Metal Fabrication (In Shop)	Painter	\$10.27		1	
Spokane	Metal Fabrication (In Shop)	Welder	\$10.80		1	
Spokane	Millwright	Journey Level	\$56.35	5A	1B	8N
Spokane	Modular Buildings	Journey Level	\$9.47		1	
Spokane	Painters	Journey Level	\$30.72	6Z	1W	
Spokane	Pile Driver	Journey Level	\$41.80	5A	1B	8N
Spokane	Plasterers	Journey Level	\$16.79		1	

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Spokane	Playground & Park Equipment Installers	Journey Level	\$9.47		1	
Spokane	Plumbers & Pipefitters	Journey Level	\$59.35	7E	1J	
Spokane	Power Equipment Operators	A-frame Truck (2 Or More Drums)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	A-frame Truck (single Drum)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Asphalt Plant Operator	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Assistant Plant Operator, Fireman Or Pugmixer (asphalt)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Assistant Refrigeration Plant & Chiller Operator (over 1000 Ton)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	Assistant Refrigeration Plant (under 1000 Ton)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Automatic Subgrader (ditches & Trimmers)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Backfillers (cleveland & Similar)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	Backhoe & Hoe Ram (under 3/4 Yd.)	\$40.96	7B	1M	8D
Spokane	Power Equipment Operators	Backhoe (45,000 Gw & Under)	\$40.96	7B	1M	8D
Spokane	Power Equipment Operators	Backhoe (45,000 Gw To 110,000 Gw)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Backhoe (over 110,000 Gw)	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators	Backhoes & Hoe Ram (3 Yds & Over)	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators	Backhoes & Hoe Ram (3/4 Yd. To 3 Yd.)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Bagley Or Stationary Scraper	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Batch & Wet Mix Operator (multiple Units, 2 & Incl. 4)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Batch Plant & Wet Mix Operator, Single Unit (concrete)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	Batch Plant (over 4 Units)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Belt Finishing Machine	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Belt Loader (kocal Or Similar)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	Belt-crete Conveyors With Power Pack Or Similar	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	Bending Machine	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	Bit Grinders	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators	Blade (finish & Bluetop), Automatic, Cmi, Abc, Finish Athey & Huber & Similar When Used As Automatic	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators	Blade Operator (motor Patrol & Attachments)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Blower Operator (cement)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Boat Operator	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators	Bob Cat (skid Steer)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	Bolt Threading Machine	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators	Boom Cats (side)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Boring Machine (earth)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	Boring Machine (Rock Under 8 inch Bit - Quarry Master, Joy Or Similar)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	Bump Cutter (wayne, Saginaw Or Similar)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	Cableway Controller (dispatcher)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Cableway Operators	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators	Canal Lining Machine (concrete)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	Carrydeck & Boom Truck (under 25 Tons)	\$40.96	7B	1M	8D
Spokane	Power Equipment Operators	Cement Hog	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Chipper (without Crane) Cleaning & Doping Machine (pipeline)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	Clamshell, Dragline	\$42.61	7B	1M	8D
Spokane	Power Equipment Operators	Compactor (self-propelled With Blade)	\$41.24	7B	1M	8D

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Spokane	Power Equipment Operators	Compressor (2000 Cfm Or Over, 2 Or More, Gas Diesel Or Electric Power)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Compressors (under 2000 Cfm, Gas, Diesel Or Electric Power)	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators	Concrete Cleaning / Decontamination Machine Operator	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators	Concrete Pump Boon Truck	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Concrete Pumps (squeeze-crete, Flow-crete, Whitman & Similar)	\$40.80	7B	1M	8D
Spokane	Power Equipment Operators	Concrete Saw (multiple Cut)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Concrete Slip Form Paver	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Conveyor Aggregate Delivery Systems (c.a.d.)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Crane Oiler- Driver (cdl Required) & Cable Tender, Mucking Machine	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators	Cranes (25 Tons & Under), All Attachments Incl. Clamshell, Dragline	\$40.96	7B	1M	8D
Spokane	Power Equipment Operators	Cranes (25 Tons To And Including 45 Tons), All Attachments Incl. Clamshell, Dragline	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Cranes (45 Tons To 85 Tons), All Attachments Incl. Clamshell And Dragline	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators	Cranes (85 Tons & Over) And All Climbing, Overhead, Rail & Tower. All Attachments Incl.	\$42.61	7B	1M	8D
Spokane	Power Equipment Operators	Crusher Feeder	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators	Crusher, Grizzle & Screening Plant Operator	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Curb Extruder (asphalt Or Concrete)	\$40.80	7B	1M	8D
Spokane	Power Equipment Operators	Deck Engineer	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	Deck Hand	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators	Derricks & Stifflegs (65 Tons & Over)	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators	Derricks & Stifflegs (under 65 Tons)	\$40.96	7B	1M	8D
Spokane	Power Equipment Operators	Distributor Leverman	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Ditch Witch Or Similar	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Dope Pots (power Agitated)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Dozer / Tractor (up To D-6 Or Equivalent) And Traxcavator	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	Dozer / Tractors (d-6 & Equivalent & Over)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Dozer, 834 R/t & Similar	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Drill Doctor	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Driller Licensed	\$42.61	7B	1M	8D
Spokane	Power Equipment Operators	Drillers Helper	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators	Drilling Equipment (8 inch Bit & Over - Robbins, Reverse Circulation & Similar)	\$40.96	7B	1M	8D
Spokane	Power Equipment Operators	Drills (churn, Core, Calyx Or Diamond)	\$40.80	7B	1M	8D
Spokane	Power Equipment Operators	Elevating Belt (holland Type)	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators	Elevating Belt-type Loader (euclid, Barber Green & Similar)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	Elevating Grader-type Loader (dumor, Adams Or Similar)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	Elevator Hoisting Materials	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Equipment Serviceman, Greaser & Oiler	\$40.80	7B	1M	8D
Spokane	Power Equipment Operators	Fireman & Heater Tender	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators	Fork Lift Or Lumber Stacker, Hydra-life & Similar	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Generator Plant Engineers (diesel Or Electric)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	Gin Trucks (pipeline)	\$40.03	7B	1M	8D

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Spokane	Power Equipment Operators	Grade Checker	\$40.96	7B	1M	8D
Spokane	Power Equipment Operators	Gunitite Combination Mixer & Compressor	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	H.d. Mechanic	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators	H.d. Welder	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators	Heavy Equipment Robotics Operator	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators	Helicopter Pilot	\$42.61	7B	1M	8D
Spokane	Power Equipment Operators	Helper, Mechanic Or Welder, H.D	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators	Hoe Ram	\$40.96	7B	1M	8D
Spokane	Power Equipment Operators	Hoist (2 Or More Drums Or Tower Hoist)	\$40.80	7B	1M	8D
Spokane	Power Equipment Operators	Hoist, Single Drum	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Hydraulic Platform Trailers (goldhofer, Shaurerly And Similar)	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators	Hydro-seeder, Mulcher, Nozzleman	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators	Lime Batch Tank Operator (recycle Train)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Lime Brain Operator (recycle Train)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Loader (360 Degrees Revolving Koehring Scooper Or Similar)	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators	Loader Operator (front-end & Overhead, 4 Yds. Incl. 8 Yds.)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Loaders (bucket Elevators And Conveyors)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Loaders (overhead & Front-end, Over 8 Yds. To 10 Yds.)	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators	Loaders (overhead & Front-end, Under 4 Yds.. R/t)	\$40.80	7B	1M	8D
Spokane	Power Equipment Operators	Loaders (overhead And Front-end, 10 Yds. & Over)	\$42.61	7B	1M	8D
Spokane	Power Equipment Operators	Locomotive Engineer	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	Longitudinal Float	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Master Environmental Maintenance Technician	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators	Mixer (portable - Concrete)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Mixermobile	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	Mobile Crusher Operator (recycle Train)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Mucking Machine	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	Multiple Dozer Units With Single Blade	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Pavement Breaker, Hydra-hammer & Similar	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Paving (dual Drum)	\$40.96	7B	1M	8D
Spokane	Power Equipment Operators	Paving Machine (asphalt And Concrete)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Piledriving Engineers	\$40.96	7B	1M	8D
Spokane	Power Equipment Operators	Plant Oiler	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators	Posthole Auger Or Punch	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	Power Broom	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Pump (grout Or Jet)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	Pumpman	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators	Quad-track Or Similar Equipment	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Railroad Ballast Regulation Operator (self-propelled)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Railroad Power Tamper Operator (self-	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Railroad Tamper Jack Operator (self-propelled)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Railroad Track Liner Operator (self-propelled)	\$40.96	7B	1M	8D
Spokane	Power Equipment Operators	Refrigeration Plant Engineer (1000 Tons & Over)	\$40.96	7B	1M	8D
Spokane	Power Equipment Operators	Refrigeration Plant Engineer (under 1000 Ton)	\$40.80	7B	1M	8D
Spokane	Power Equipment Operators	Rollerman (finishing Asphalt Pavement)	\$41.24	7B	1M	8D

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Spokane	Power Equipment Operators	Rollers, All Types On Subgrade, Including Seal And Chip Coating (farm Type, Case, John Deere And Similar, or Compacting Vibrator), Except When Pulled B	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators	Roto Mill (pavement Grinder)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Rotomill Groundsman	\$40.80	7B	1M	8D
Spokane	Power Equipment Operators	Rubber-tired Scrapers (multiple Engine With Three Or More Scrapers)	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators	Rubber-tired Skidders (r/t With Or Without Attachments)	\$40.80	7B	1M	8D
Spokane	Power Equipment Operators	Scrapers, All, Rubber-tired	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Screed Operator	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Shovels (3 Yds. & Over)	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators	Shovels (under 3 Yds.)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Signalman (whirleys, Highline, Hammerheads Or Similar)	\$40.96	7B	1M	8D
Spokane	Power Equipment Operators	Soil Stabilizer (p & H Or Similar)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	Spray Curing Machine (concrete)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Spreader Box (self-propelled)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Spreader Machine	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	Steam Cleaner	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators	Straddle Buggy (ross & Similar On Construction Job Only)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Surface Heater & Planer Machine	\$40.80	7B	1M	8D
Spokane	Power Equipment Operators	Tractor (farm Type R/t With Attachments, Except Backhoe)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Traverse Finish Machine	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	Trenching Machines (7 Ft. Depth & Over)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Trenching Machines (under 7 Ft. Depth Capacity)	\$40.80	7B	1M	8D
Spokane	Power Equipment Operators	Tug Boat Operator	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Tugger Operator	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators	Turnhead (with Re-screening)	\$40.80	7B	1M	8D
Spokane	Power Equipment Operators	Turnhead Operator	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators	Ultra High Pressure Waterjet Cutting Tool System Operator, (30,000 Psi)	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators	Vactor Guzzler, Super Sucker	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators	Vacuum Blasting Machine Operator	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators	Vacuum Drill (reverse Circulation Drill Under 8 Bit)"	\$40.80	7B	1M	8D
Spokane	Power Equipment Operators	Welding Machine	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators	Whirleys & Hammerheads, All	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	A-frame Truck (2 Or More Drums)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	A-frame Truck (single Drum)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Asphalt Plant Operator	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Assistant Plant Operator, Fireman Or Pugmixer (asphalt)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Assistant Refrigeration Plant & Chiller Operator (over 1000 Ton)	\$40.64	7B	1M	8D

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Spokane	Power Equipment Operators- Underground Sewer & Water	Assistant Refrigeration Plant (under 1000 Ton)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Automatic Subgrader (ditches & Trimmers)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Backfillers (cleveland & Similar)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Backhoe & Hoe Ram (under 3/4 Yd.)	\$40.96	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Backhoe (45,000 Gw & Under)	\$40.96	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Backhoe (45,000 Gw To 110,000 Gw)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Backhoe (over 110,000 Gw)	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Backhoes & Hoe Ram (3 Yds & Over)	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Backhoes & Hoe Ram (3/4 Yd. To 3 Yd.)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Bagley Or Stationary Scraper	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Batch & Wet Mix Operator (multiple Units, 2 & Incl. 4)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Batch Plant & Wet Mix Operator, Single Unit (concrete)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Batch Plant (over 4 Units)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Belt Finishing Machine	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Belt Loader (kocal Or Similar)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Belt-crete Conveyors With Power Pack Or Similar	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Bending Machine	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Bit Grinders	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Blade (finish & Bluetop), Automatic, Cmi, Abc, Finish Athey & Huber & Similar When Used As Automatic	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Blade Operator (motor Patrol & Attachments)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Blower Operator (cement)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Boat Operator	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Bob Cat (skid Steer)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Bolt Threading Machine	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Boom Cats (side)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Boring Machine (earth)	\$40.64	7B	1M	8D

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Spokane	Power Equipment Operators- Underground Sewer & Water	Boring Machine (Rock Under 8 inch Bit - Quarry Master, Joy Or Similar)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Bump Cutter (wayne, Saginau Or Similar)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Cableway Controller (dispatcher)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Cableway Operators	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Canal Lining Machine (concrete)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Carrydeck & Boom Truck (under 25 Tons)	\$40.96	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Cement Hog	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Chipper (without Crane) Cleaning & Doping Machine (pipeline)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Clamshell, Dragline	\$42.61	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Compactor (self-propelled With Blade)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Compressor (2000 Cfm Or Over, 2 Or More, Gas Diesel Or Electric Power)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Compressors (under 2000 Cfm, Gas, Diesel Or Electric Power)	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Concrete Cleaning / Decontamination Machine Operator	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Concrete Pump Boon Truck	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Concrete Pumps (squeeze-crete, Flow-crete, Whitman & Similar)	\$40.80	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Concrete Saw (multiple Cut)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Concrete Slip Form Paver	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Conveyor Aggregate Delivery Systems (c.a.d.)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Crane Oiler- Driver (cdl Required) & Cable Tender, Mucking Machine	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Cranes (25 Tons & Under), All Attachments Incl. Clamshell, Dragline	\$40.96	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Cranes (25 Tons To And Including 45 Tons), All Attachments Incl. Clamshell, Dragline	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Cranes (45 Tons To 85 Tons), All Attachments Incl. Clamshell And Dragline	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Cranes (85 Tons & Over) And All Climbing, Overhead, Rail & Tower. All Attachments Incl.	\$42.61	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Crusher Feeder	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Crusher, Grizzle & Screening Plant Operator	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Curb Extruder (asphalt Or Concrete)	\$40.80	7B	1M	8D

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Spokane	Power Equipment Operators- Underground Sewer & Water	Deck Engineer	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Deck Hand	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Derricks & Stifflegs (65 Tons & Over)	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Derricks & Stifflegs (under 65 Tons)	\$40.96	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Distributor Leverman	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Ditch Witch Or Similar	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Dope Pots (power Agitated	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Dozer / Tractor (up To D-6 Or Equivalent) And Traxcavator	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Dozer / Tractors (d-6 & Equivalent & Over)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Dozer, 834 R/t & Similar	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Drill Doctor	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Driller Licensed	\$42.61	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Drillers Helper	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Drilling Equipment (8 inch Bit & Over - Robbins, Reverse Circulation & Similar)	\$40.96	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Drills (churn, Core, Calyx Or Diamond)	\$40.80	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Elevating Belt (holland Type)	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Elevating Belt-type Loader (euclid, Barber Green & Similar)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Elevating Grader-type Loader (dumor, Adams Or Similar)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Elevator Hoisting Materials	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Equipment Serviceman, Greaser & Oiler	\$40.80	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Fireman & Heater Tender	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Fork Lift Or Lumber Stacker, Hydra-life & Similar	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Generator Plant Engineers (diesel Or Electric)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Gin Trucks (pipeline)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Grade Checker	\$40.96	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Gunite Combination Mixer & Compressor	\$40.64	7B	1M	8D

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Spokane	Power Equipment Operators- Underground Sewer & Water	H.d. Mechanic	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	H.d. Welder	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Heavy Equipment Robotics Operator	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Helicopter Pilot	\$42.61	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Helper, Mechanic Or Welder, H.D	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Hoe Ram	\$40.96	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Hoist (2 Or More Drums Or Tower Hoist)	\$40.80	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Hoist, Single Drum	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Hydraulic Platform Trailers (goldhofer, Shaurerly And Similar)	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Hydro-seeder, Mulcher, Nozzleman	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Lime Batch Tank Operator (recycle Train)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Lime Brain Operator (recycle Train)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Loader (360 Degrees Revolving Koehring Scoop Or Similar)	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Loader Operator (front-end & Overhead, 4 Yds. Incl. 8 Yds.)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Loaders (bucket Elevators And Conveyors)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Loaders (overhead & Front-end, Over 8 Yds. To 10 Yds.)	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Loaders (overhead & Front-end, Under 4 Yds.. R/t)	\$40.80	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Loaders (overhead And Front-end, 10 Yds. & Over)	\$42.61	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Locomotive Engineer	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Longitudinal Float	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Master Environmental Maintenance Technician	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Mixer (portable - Concrete)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Mixermobile	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Mobile Crusher Operator (recycle Train)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Mucking Machine	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Multiple Dozer Units With Single Blade	\$41.24	7B	1M	8D

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Spokane	Power Equipment Operators- Underground Sewer & Water	Pavement Breaker, Hydra-hammer & Similar	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Paving (dual Drum)	\$40.96	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Paving Machine (asphalt And Concrete)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Piledriving Engineers	\$40.96	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Plant Oiler	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Posthole Auger Or Punch	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Power Broom	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Pump (grout Or Jet)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Pumpman	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Quad-track Or Similar Equipment	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Railroad Ballast Regulation Operator (self- propelled)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Railroad Power Tamper Operator (self- propelled)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Railroad Tamper Jack Operator (self-propelled)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Railroad Track Liner Operator (self-propelled)	\$40.96	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Refrigeration Plant Engineer (1000 Tons & Over)	\$40.96	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Refrigeration Plant Engineer (under 1000 Ton)	\$40.80	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Rollerman (finishing Asphalt Pavement)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Rollers, All Types On Subgrade, Including Seal And Chip Coating (farm Type, Case, John Deere And Similar,or Compacting Vibrator), Except When Pulled B	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Roto Mill (pavement Grinder)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Rotomill Groundsman	\$40.80	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Rubber-tired Scrapers (multiple Engine With Three Or More Scrapers)	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Rubber-tired Skidders (r/t With Or Without Attachments)	\$40.80	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Scrapers, All, Rubber-tired	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Screed Operator	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Shovels (3 Yds. & Over)	\$41.51	7B	1M	8D

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Spokane	Power Equipment Operators- Underground Sewer & Water	Shovels (under 3 Yds.)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Signalman (whirleys, Highline, Hammerheads Or Similar)	\$40.96	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Soil Stabilizer (p & H Or Similar)	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Spray Curing Machine (concrete)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Spreader Box (self-propelled)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Spreader Machine	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Steam Cleaner	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Straddle Buggy (ross & Similar On Construction Job Only)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Surface Heater & Planer Machine	\$40.80	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Tractor (farm Type R/t With Attachments, Except Backhoe)	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Traverse Finish Machine	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Trenching Machines (7 Ft. Depth & Over)	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Trenching Machines (under 7 Ft. Depth Capacity)	\$40.80	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Tug Boat Operator	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Tugger Operator	\$40.03	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Turnhead (with Re-screening)	\$40.80	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Turnhead Operator	\$40.64	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Ultra High Pressure Waterjet Cutting Tool System Operator, (30,000 Psi)	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Vactor Guzzler, Super Sucker	\$41.24	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Vacuum Blasting Machine Operator	\$41.51	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Vacuum Drill (reverse Circulation Drill Under 8 Bit")	\$40.80	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Welding Machine	\$39.71	7B	1M	8D
Spokane	Power Equipment Operators- Underground Sewer & Water	Whirleys & Hammerheads, All	\$41.51	7B	1M	8D
Spokane	Power Line Clearance Tree Trimmers	Journey Level In Charge	\$45.75	5A	4A	
Spokane	Power Line Clearance Tree Trimmers	Spray Person	\$43.38	5A	4A	
Spokane	Power Line Clearance Tree Trimmers	Tree Equipment Operator	\$45.75	5A	4A	

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Spokane	Power Line Clearance Tree Trimmers	Tree Trimmer	\$40.84	5A	4A	
Spokane	Power Line Clearance Tree Trimmers	Tree Trimmer Groundperson	\$30.74	5A	4A	
Spokane	Refrigeration & Air Conditioning Mechanics	Journey Level	\$32.22		1	
Spokane	Residential Brick Mason	Journey Level	\$20.00		1	
Spokane	Residential Carpenters	Journey Level	\$18.55		1	
Spokane	Residential Cement Masons	Journey Level	\$23.67		1	
Spokane	Residential Drywall Applicators	Journey Level	\$20.00		1	
Spokane	Residential Drywall Tapers	Journey Level	\$20.00		1	
Spokane	Residential Electricians	Journey Level	\$26.96	5I	1E	
Spokane	Residential Glaziers	Journey Level	\$17.28		1	
Spokane	Residential Insulation Applicators	Journey Level	\$9.47		1	
Spokane	Residential Laborers	Journey Level	\$16.24		1	
Spokane	Residential Marble Setters	Journey Level	\$44.94	5A	1M	
Spokane	Residential Painters	Journey Level	\$15.52		1	
Spokane	Residential Plumbers & Pipefitters	Journey Level	\$19.16		1	
Spokane	Residential Refrigeration & Air	Journey Level	\$18.74		1	
Spokane	Residential Sheet Metal Workers	Journey Level (field Or Shop)	\$50.21	6Z	1B	
Spokane	Residential Soft Floor Layers	Journey Level	\$15.00		1	
Spokane	Residential Sprinkler Fitters (Fire Protection)	Journey Level	\$10.64		1	
Spokane	Residential Stone Masons	Journey Level	\$44.94	5A	1M	
Spokane	Residential Terrazzo Workers	Journey Level	\$15.95		1	
Spokane	Residential Terrazzo/Tile Finishers	Journey Level	\$19.80		1	
Spokane	Residential Tile Setters	Journey Level	\$15.95		1	
Spokane	Roofers	Journey Level	\$36.43	5I	1R	
Spokane	Roofers	Using Irritable Bituminous Materials	\$38.43	5I	1R	
Spokane	Sheet Metal Workers	Journey Level (Field or Shop)	\$50.21	6Z	1B	
Spokane	Sign Makers & Installers (Electrical)	Journey Level	\$13.91		1	
Spokane	Sign Makers & Installers (Non-Electrical)	Sign Installer	\$19.12		1	
Spokane	Sign Makers & Installers (Non-Electrical)	Sign Maker	\$15.00		1	
Spokane	Soft Floor Layers	Journey Level	\$25.35		1	
Spokane	Solar Controls For Windows	Journey Level	\$9.47		1	
Spokane	Sprinkler Fitters (Fire Protection)	Journey Level	\$50.95	7J	1R	
Spokane	Stage Rigging Mechanics (Non	Journey Level	\$13.23		1	
Spokane	Stone Masons	Journey Level	\$44.94	5A	1M	
Spokane	Street And Parking Lot Sweeper	Journey Level	\$20.47		1	
Spokane	Surveyors	All Classifications	\$19.84	Null	1	
Spokane	Telecommunication Technicians	Journey Level	\$19.00		1	
Spokane	Telephone Line Construction -	Cable Splicer	\$37.60	5A	2B	
Spokane	Telephone Line Construction - Outside	Hole Digger/Ground Person	\$20.79	5A	2B	
Spokane	Telephone Line Construction - Outside	Installer (Repairer)	\$36.02	5A	2B	
Spokane	Telephone Line Construction - Outside	Special Aparatus Installer I	\$37.60	5A	2B	

County	Trade	Job Classification	Wage	Holiday	Overtime	Notes
Spokane	Telephone Line Construction - Outside	Special Apparatus Installer II	\$36.82	5A	2B	
Spokane	Telephone Line Construction - Outside	Telephone Equipment Operator (Heavy)	\$37.60	5A	2B	
Spokane	Telephone Line Construction - Outside	Telephone Equipment Operator (Light)	\$34.94	5A	2B	
Spokane	Telephone Line Construction - Outside	Telephone Lineperson	\$34.93	5A	2B	
Spokane	Telephone Line Construction - Outside	Television Groundperson	\$19.73	5A	2B	
Spokane	Telephone Line Construction - Outside	Television Lineperson/Installer	\$26.31	5A	2B	
Spokane	Telephone Line Construction - Outside	Television System Technician	\$31.50	5A	2B	
Spokane	Telephone Line Construction - Outside	Television Technician	\$28.23	5A	2B	
Spokane	Telephone Line Construction - Outside	Tree Trimmer	\$34.93	5A	2B	
Spokane	Terrazzo Workers	Journey Level	\$27.72		1	
Spokane	Tile Setters	Journey Level	\$27.72		1	
Spokane	Tile, Marble & Terrazzo Finishers	Journey Level	\$25.72		1	
Spokane	Traffic Control Stripers	Journey Level	\$43.73	7A	1K	
Spokane	Truck Drivers	Asphalt Mix Over 20 Yards (E.WA-690)	\$40.20	5D	1V	8M
Spokane	Truck Drivers	Asphalt Mix To 20 Yards (E. WA - 690)	\$40.07	5D	1V	8M
Spokane	Truck Drivers	Dump Truck & Trailer (E.WA-690)	\$40.20	5D	1V	8M
Spokane	Truck Drivers	Dump Truck (E.WA-690)	\$40.07	5D	1V	8M
Spokane	Truck Drivers	Other Trucks (E.WA-690)	\$39.96	5D	1V	8M
Spokane	Truck Drivers	Transit Mixer	\$37.00		1	
Spokane	Well Drillers & Irrigation Pump Installers	Irrigation Pump Installer	\$21.00		1	
Spokane	Well Drillers & Irrigation Pump Installers	Oiler	\$9.47		1	
Spokane	Well Drillers & Irrigation Pump Installers	Well Driller	\$18.00		1	

Benefit Code Key – Effective 3/2/2016 thru 8/30/2016

Overtime Codes

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

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

Overtime Codes Continued

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

Overtime Codes Continued

2. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.
- B. All hours worked on holidays shall be paid at one and one-half times the hourly rate of wage.
 - C. All hours worked on Sundays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid at two times the hourly rate of wage.
 - F. The first eight (8) hours worked on holidays shall be paid at the straight hourly rate of wage in addition to the holiday pay. All hours worked in excess of eight (8) hours on holidays shall be paid at double the hourly rate of wage.
 - G. All hours worked on Sunday shall be paid at two times the hourly rate of wage. All hours worked on paid holidays shall be paid at two and one-half times the hourly rate of wage including holiday pay.
 - H. All hours worked on Sunday shall be paid at two times the hourly rate of wage. All hours worked on holidays shall be paid at one and one-half times the hourly rate of wage.
 - O. All hours worked on Sundays and holidays shall be paid at one and one-half times the hourly rate of wage.
 - R. All hours worked on Sundays and holidays and all hours worked over sixty (60) in one week shall be paid at double the hourly rate of wage.
 - U. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked over 12 hours in a day or on Sundays and holidays shall be paid at double the hourly rate of wage.
 - W. The first two (2) hours after eight (8) regular hours Monday through Friday and the first eight (8) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other hours worked Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage. On a four-day, ten-hour weekly schedule, either Monday thru Thursday or Tuesday thru Friday schedule, all hours worked after ten shall be paid at double the hourly rate of wage. The first eight (8) hours worked on the fifth day shall be paid at one and one-half times the hourly rate of wage. All other hours worked on the fifth, sixth, and seventh days and on holidays shall be paid at double the hourly rate of wage.
3. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.
- A. Work performed in excess of eight (8) hours of straight time per day, or ten (10) hours of straight time per day when four ten (10) hour shifts are established, or forty (40) hours of straight time per week, Monday through Friday, or outside the normal shift, and all work on Saturdays shall be paid at time and one-half the straight time rate. Hours worked over twelve hours (12) in a single shift and all work performed after 6:00 pm Saturday to 6:00 am Monday and holidays shall be paid at double the straight time rate of pay. Any shift starting between the hours of 6:00 pm and midnight shall receive an additional one dollar (\$1.00) per hour for all hours worked that shift. The employer shall have the sole discretion to assign overtime work to employees. Primary consideration for overtime work shall be given to employees regularly assigned to the work to be performed on overtime situations. After an employee has worked eight (8) hours at an applicable overtime rate, all additional hours shall be at the applicable overtime rate until such time as the employee has had a break of eight (8) hours or more.
 - C. Work performed in excess of eight (8) hours of straight time per day, or ten (10) hours of straight time per day when four ten (10) hour shifts are established, or forty (40) hours of straight time per week, Monday through Friday, or outside the normal shift, and all work on Saturdays shall be paid at one and one-half times the hourly rate of wage. All work performed after 6:00 pm Saturday to 5:00 am Monday and Holidays shall be paid at double the hourly rate of wage. After an employee has worked eight (8) hours at an applicable overtime rate, all additional hours shall be at the applicable overtime rate until such time as the employee has had a break of eight (8) hours or more.

Overtime Codes Continued

3.
 - D. All hours worked between the hours of 6:00 pm and 6:00 am, Monday through Saturday, shall be paid at a premium rate of 15% over the hourly rate of wage. All other hours worked after 6:00 am on Saturdays, shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.
 - E. All hours worked Sundays and holidays shall be paid at double the hourly rate of wage. Each week, once 40 hours of straight time work is achieved, then any hours worked over 10 hours per day Monday through Saturday shall be paid at double the hourly wage rate.
 - F. All hours worked on Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sunday shall be paid at two times the hourly rate of wage. All hours worked on paid holidays shall be paid at two and one-half times the hourly rate of wage including holiday pay.
 - H. All work performed on Sundays between March 16th and October 14th and all Holidays shall be compensated for at two (2) times the regular rate of pay. Work performed on Sundays between October 15th and March 15th shall be compensated at one and one half (1-1/2) times the regular rate of pay.
 - I. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. In the event the job is down due to weather conditions during a five day work week (Monday through Friday,) or a four day-ten hour work week (Tuesday through Friday,) then Saturday may be worked as a voluntary make-up day at the straight time rate. However, Saturday shall not be utilized as a make-up day when a holiday falls on Friday. All hours worked Monday through Saturday over twelve (12) hours and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.
4. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.
 - A. All hours worked in excess of eight (8) hours per day or forty (40) hours per week shall be paid at double the hourly rate of wage. All hours worked on Saturdays, Sundays and holidays shall be paid at double the hourly rate of wage.
 - B. All hours worked over twelve (12) hours per day and all hours worked on holidays shall be paid at double the hourly rate of wage.
 - C. On Monday through Friday, the first four (4) hours of overtime after eight (8) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay, unless a four (4) day ten (10) hour workweek has been established. On a four (4) day ten (10) hour workweek scheduled Monday through Thursday, or Tuesday through Friday, the first two (2) hours of overtime after ten (10) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay. On Saturday, the first twelve (12) hours of work shall be paid at one and one half (1-1/2) times the straight time rate of pay, except that if the job is down on Monday through Friday due to weather conditions or other conditions outside the control of the employer, the first ten (10) hours on Saturday may be worked at the straight time rate of pay. All hours worked over twelve (12) hours in a day and all hours worked on Sunday and Holidays shall be paid at two (2) times the straight time rate of pay.

Overtime Codes Continued

4. D. All hours worked in excess of eight (8) hours per day or forty (40) hours per week shall be paid at double the hourly rate of wage. All hours worked on Saturday, Sundays and holidays shall be paid at double the hourly rate of pay. Rates include all members of the assigned crew.

EXCEPTION:

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

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

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

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

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

- F. All hours worked between the hours of 6:00 pm and 6:00 am, Monday through Saturday, shall be paid at a premium rate of 20% over the hourly rate of wage. All hours worked on Sundays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid at double the hourly rate of wage.

- G. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked Monday through Saturday over twelve (12) hours and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

Holiday Codes

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

Benefit Code Key – Effective 3/2/2016 thru 8/30/2016

Holiday Codes Continued

5. I. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day (6).
- J. Holidays: New Year's Day, Memorial Day, Independence Day, Thanksgiving Day, Friday after Thanksgiving Day, Christmas Eve Day, And Christmas Day (7).
- K. Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday After Thanksgiving Day, The Day Before Christmas, And Christmas Day (9).
- L. Holidays: New Year's Day, Martin Luther King Jr. Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, And Christmas Day (8).
- N. Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, The Friday After Thanksgiving Day, And Christmas Day (9).
- P. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday And Saturday After Thanksgiving Day, The Day Before Christmas, And Christmas Day (9). If A Holiday Falls On Sunday, The Following Monday Shall Be Considered As A Holiday.
- Q. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day (6).
- R. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Day After Thanksgiving Day, One-Half Day Before Christmas Day, And Christmas Day. (7 1/2).
- S. Paid Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, And Christmas Day (7).
- T. Paid Holidays: New Year's Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, The Friday After Thanksgiving Day, Christmas Day, And The Day Before Or After Christmas (9).
- Z. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (8).
6. A. Paid Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (8).
- E. Paid Holidays: New Year's Day, Day Before Or After New Year's Day, Presidents Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and a Half-Day On Christmas Eve Day. (9 1/2).
- G. Paid Holidays: New Year's Day, Martin Luther King Jr. Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and Christmas Eve Day (11).
- H. Paid Holidays: New Year's Day, New Year's Eve Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday After Thanksgiving Day, Christmas Day, The Day After Christmas, And A Floating Holiday (10).
- I. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday After Thanksgiving Day, And Christmas Day (7).

Benefit Code Key – Effective 3/2/2016 thru 8/30/2016

Holiday Codes Continued

6. T. Paid Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, The Friday After Thanksgiving Day, The Last Working Day Before Christmas Day, And Christmas Day (9).
- Z. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, And Christmas Day (7). If a holiday falls on Saturday, the preceding Friday shall be considered as the holiday. If a holiday falls on Sunday, the following Monday shall be considered as the holiday.
7. A. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8). Any Holiday Which Falls On A Sunday Shall Be Observed As A Holiday On The Following Monday. If any of the listed holidays falls on a Saturday, the preceding Friday shall be a regular work day.
- B. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- C. Holidays: New Year's Day, Martin Luther King Jr. Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- D. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (8). Unpaid Holidays: President's Day. Any paid holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any paid holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- E. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (7). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- F. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, the last working day before Christmas day and Christmas day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- G. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day (6). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday.
- H. Holidays: New Year's Day, Martin Luther King Jr. Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, the Last Working Day before Christmas Day and Christmas Day (9). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- I. Holidays: New Year's Day, President's Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day, The Friday After Thanksgiving Day, The Day Before Christmas Day And Christmas Day (9). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- J. Holidays: New Year's Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day and Christmas Day (6). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

Holiday Codes Continued

7. K. Holidays: New Year's Day, Memorial Day, Independence Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- L. Holidays: New Year's Day, Memorial Day, Labor Day, Independence Day, Thanksgiving Day, the Last Work Day before Christmas Day, And Christmas Day (7). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- M. Paid Holidays: New Year's Day, The Day after or before New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, And the Day after or before Christmas Day (10). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- N. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (7). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. When Christmas falls on a Saturday, the preceding Friday shall be observed as a holiday.
- P. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, And Christmas Day (7). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday.
- Q. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, the Last Working Day before Christmas Day and Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. If any of the listed holidays falls on a Saturday, the preceding Friday shall be a regular work day.
- R. Paid Holidays: New Year's Day, the day after or before New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and the day after or before Christmas Day (10). If any of the listed holidays fall on Saturday, the preceding Friday shall be observed as the holiday. If any of the listed holidays falls on a Sunday, the day observed by the Nation shall be considered a holiday and compensated accordingly.
- S. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, Christmas Day, the Day after Christmas, and A Floating Holiday (9). If any of the listed holidays falls on a Sunday, the day observed by the Nation shall be considered a holiday and compensated accordingly.
- T. Paid Holidays: New Year's Day, the Day after or before New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and The Day after or before Christmas Day. (10). If any of the listed holidays falls on a Sunday, the day observed by the Nation shall be considered a holiday and compensated accordingly. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

Note Codes

8. A. In addition to the hourly wage and fringe benefits, the following depth premiums apply to depths of fifty feet or more:
Over 50' To 100' -\$2.00 per Foot for Each Foot Over 50 Feet
Over 100' To 150' -\$3.00 per Foot for Each Foot Over 100 Feet
Over 150' To 220' -\$4.00 per Foot for Each Foot Over 150 Feet
Over 220' -\$5.00 per Foot for Each Foot Over 220 Feet

Note Codes Continued

8. C. In addition to the hourly wage and fringe benefits, the following depth premiums apply to depths of fifty feet or more:
Over 50' To 100' -\$1.00 per Foot for Each Foot Over 50 Feet
Over 100' To 150' -\$1.50 per Foot for Each Foot Over 100 Feet
Over 150' To 200' -\$2.00 per Foot for Each Foot Over 150 Feet
Over 200' -Divers May Name Their Own Price
- D. Workers working with supplied air on hazmat projects receive an additional \$1.00 per hour.
- L. Workers on hazmat projects receive additional hourly premiums as follows -Level A: \$0.75, Level B: \$0.50, And Level C: \$0.25.
- M. Workers on hazmat projects receive additional hourly premiums as follows: Levels A & B: \$1.00, Levels C & D: \$0.50.
- N. Workers on hazmat projects receive additional hourly premiums as follows -Level A: \$1.00, Level B: \$0.75, Level C: \$0.50, And Level D: \$0.25.
- P. Workers on hazmat projects receive additional hourly premiums as follows -Class A Suit: \$2.00, Class B Suit: \$1.50, Class C Suit: \$1.00, And Class D Suit \$0.50.
- Q. The highest pressure registered on the gauge for an accumulated time of more than fifteen (15) minutes during the shift shall be used in determining the scale paid.
- R. Effective August 31, 2012 – A Traffic Control Supervisor shall be present on the project whenever flagging or spotting or other traffic control labor is being utilized. A Traffic Control Laborer performs the setup, maintenance and removal of all temporary traffic control devices and construction signs necessary to control vehicular, bicycle, and pedestrian traffic during construction operations. Flaggers and Spotters shall be posted where shown on approved Traffic Control Plans or where directed by the Engineer. All flaggers and spotters shall possess a current flagging card issued by the State of Washington, Oregon, Montana, or Idaho. These classifications are only effective on or after August 31, 2012.
- S. Effective August 31, 2012 – A Traffic Control Supervisor shall be present on the project whenever flagging or spotting or other traffic control labor is being utilized. Flaggers and Spotters shall be posted where shown on approved Traffic Control Plans or where directed by the Engineer. All flaggers and spotters shall possess a current flagging card issued by the State of Washington, Oregon, Montana, or Idaho. This classification is only effective on or after August 31, 2012.
- T. Effective August 31, 2012 – A Traffic Control Laborer performs the setup, maintenance and removal of all temporary traffic control devices and construction signs necessary to control vehicular, bicycle, and pedestrian traffic during construction operations. Flaggers and Spotters shall be posted where shown on approved Traffic Control Plans or where directed by the Engineer. All flaggers and spotters shall possess a current flagging card issued by the State of Washington, Oregon, Montana, or Idaho. This classification is only effective on or after August 31, 2012.
- U. Workers on hazmat projects receive additional hourly premiums as follows – Class A Suit: \$2.00, Class B Suit: \$1.50, And Class C Suit: \$1.00. Workers performing underground work receive an additional \$0.40 per hour for any and all work performed underground, including operating, servicing and repairing of equipment. The premium for underground work shall be paid for the entire shift worked. Workers who work suspended by a rope or cable receive an additional \$0.50 per hour. The premium for work suspended shall be paid for the entire shift worked. Workers who do “pioneer” work (break open a cut, build road, etc.) more than one hundred fifty (150) feet above grade elevation receive an additional \$0.50 per hour.

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 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.]

SECTION 01 10 00 - SUMMARY

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Contract description.
 - 2. Work by Owner or other Work at the Site.
 - 3. Contractor's use of Site and premises.
 - 4. Work sequence.
 - 5. Owner occupancy.
 - 6. Permits.
 - 7. Specification conventions.

1.2 CONTRACT DESCRIPTION

- A. Work of the Project includes construction of sewer wastewater monitoring stations within the existing campus sewer system and the City of Cheney sewer system, alteration of existing monitoring stations, restoration of surface improvements, and other related items.
- B. Perform Work of Contract with Owner according to the General Conditions and Supplemental Conditions for Washington State Facilities Construction.

1.3 WORK BY OWNER OR OTHERS

- A. Owner will award a contract for water distribution improvements work during the performance of this Contract. This concurrent work will occur in campus-wide, but will only directly overlap with this project on G Street.
- B. Owner will award a contract for Cheney Hall stormdrain work during the performance of this Contract. This concurrent work will occur at Cheney Hall only and will directly overlap with this project for the installation of Science South monitoring station.
- C. Owner will award a contract for **Pence Union Building (PUB) remodeling work** during the performance of this Contract. This concurrent work will occur at PUB only and will directly impact the installation of the sewer monitoring equipment at the PUB.
- D. If Owner-awarded contracts interfere with each other due to work being performed at the same time or at the same Site, Owner will determine the sequence of work under all contracts according to "Work Sequence" and "Contractor's Use of Site and Premises" Articles in this Section.
- E. Coordinate Work with utilities of Owner and public or private agencies.
- F. Work under this Contract includes:
 - 1. Work as indicated on Drawings and as required by Specifications.

1.4 CONTRACTOR'S USE OF SITE AND PREMISES

- A. Limit use of Site and premises to allow:
 - 1. Owner occupancy.
 - 2. Work by Owner.
 - 3. Work by Others.
 - 4. Use of Site and premises by the public.

- B. Construction Operations: Limited to areas indicated on Drawings.
 - 1. Noisy and Disruptive Operations (such as Use of Jack Hammers and Other Noisy Equipment): Not allowed in close proximity to existing building during regular hours of operation. Coordinate and schedule such operations with Owner to minimize disruptions.

- C. Time Restrictions for Performing Interior and Exterior Work: 7:00am to 9:00pm.

- D. Utility Outages and Shutdown:
 - 1. Coordinate and schedule sewer, electrical and other utility outages with Owner.
 - 2. Outages: Allowed only at previously agreed upon times. In general, schedule outages at times when facility is not being used.
 - a. Building sewer service interruptions shall only occur during periods when the buildings are not in use.
 - b. The sewer system work that will disrupt the sewer service to Student Recreation Center and Rozell Heating Plant shall not exceed 24 hours.
 - 3. At least one week before scheduled outage, submit Outage Request Plan to Owner itemizing the dates, times, and duration of each requested outage.

- E. Construction Plan: Before start of construction, submit construction plan regarding access to Work, use of Site, and utility outages for acceptance by Owner. After acceptance of plan, construction operations shall comply with accepted plan unless deviations are accepted by Owner in writing.

1.5 WORK SEQUENCE

- A. Construct Work in phases in order to ensure compliance with the wastewater permit and in order to maintain safe and reliable operation of the existing sewer system and related components. Coordinate construction schedule and operations with Owner:
 - 1. Phase 1: Installation of monitoring stations at permitted buildings (Rozell Heating Plant, Science Building, Student Recreation Center, and Pence Union Building).
 - a. New manhole and sewer mains shall be cleaned and tested after backfilling.
 - 2. Phase 2: Installation of monitoring stations at city connections.

- B. Sequencing of Construction Plan: Before start of construction, submit construction plan regarding phasing of installation and new Work for acceptance by Owner. After acceptance of plan, construction sequencing shall comply with accepted plan unless deviations are accepted by Owner in writing.

1.6 OWNER OCCUPANCY

- A. Owner will occupy Site during entire period of construction for conduct of normal campus operations.
- B. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- C. Schedule the Work to accommodate Owner occupancy.

1.7 PERMITS

- A. Furnish or obtain **all** necessary permits, licenses and inspections for construction of Work.

1.8 SPECIFICATION CONVENTIONS

- A. These Specifications are written in imperative mood and streamlined form. This imperative language is directed to Contractor unless specifically noted otherwise. The words "shall be" are included by inference where a colon (:) is used within sentences or phrases.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 25 00 - SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Quality assurance.
- B. Product options.
- C. Product substitution procedures.

1.2 QUALITY ASSURANCE

- A. Contract is based on products and standards established in Contract Documents without consideration of proposed substitutions.
- B. Products specified define standard of quality, type, function, dimension, appearance, and performance required.
- C. Substitution Proposals: Permitted for specified products except where specified otherwise. Do not substitute products unless substitution has been accepted and approved in writing by Owner.

1.3 PRODUCT OPTIONS

- A. See Section 01 60 00 - Product Requirements.

1.4 PRODUCT SUBSTITUTION PROCEDURES

- A. Engineer will consider requests for substitutions only up to 5 days before Bids are due.
- B. Acceptable substitutions will be included in Addendum.
- C. Substitutions may be considered when a product becomes unavailable through no fault of Contractor.
- D. Document each request with complete data, substantiating compliance of proposed substitution with Contract Documents, including:
 - 1. Manufacturer's name and address, product, trade name, model, or catalog number, performance and test data, and reference standards.
 - 2. Itemized point-by-point comparison of proposed substitution with specified product, listing variations in quality, performance, and other pertinent characteristics.
 - 3. Reference to Article and Paragraph numbers in Specification Section.
 - 4. Cost data comparing proposed substitution with specified product and amount of net change to Contract Sum.
 - 5. Changes required in other Work.
 - 6. Availability of maintenance service and source of replacement parts as applicable.
 - 7. Certified test data to show compliance with performance characteristics specified.

8. Samples when applicable or requested.
 9. Other information as necessary to assist Architect/Engineer's evaluation.
- E. A request constitutes a representation that Bidder:
1. Has investigated proposed product and determined that it meets or exceeds quality level of specified product.
 2. Will provide same warranty for substitution as for specified product.
 3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
 4. Waives claims for additional costs or time extension that may subsequently become apparent.
 5. Will coordinate installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.
 6. Will reimburse Owner for review or redesign services associated with reapproval by authorities having jurisdiction.
- F. Substitutions will not be considered when they are indicated or implied on Shop Drawing or Product Data submittals without separate written request or when acceptance will require revision to Contract Documents.

1.5 INSTALLER SUBSTITUTION PROCEDURES

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 26 00 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Requirements for Changes are also included in Part 7 of the General Conditions for Washington State Facility Construction and Supplemental Conditions. This Section specifies additional detail regarding administrative and procedural requirements for handling and processing contract modifications. In the event of conflicts between this specification and Part 7, the General Conditions and Supplemental Conditions shall supersede any requirements identified herein.

1.3 INITIAL REQUIREMENTS

- A. Prior to submitting any cost proposals, the Contractor shall submit a breakdown of all applicable trade and class wage rates intended to be incorporated into this Project using a form acceptable to the Owner. As a minimum, the breakdown shall show:
 - 1. Basic wage rate (based on L&I Intent to Pay Prevailing Wages or union agreement);
 - 2. Fringe Package (based on L&I Intent to Pay Prevailing Wages or union agreement);
 - 3. FUI (Federal Unemployment Insurance);
 - 4. FICA (Federal Insurance Compensation Act);
 - 5. SUI (State Unemployment Compensation Act);
 - 6. WC (Workers Compensation);
 - 7. Medicare;
 - 8. Any other specific trade costs that affect hourly rate. If an acronym is used, also identify the full name for it.
- B. Contractor shall submit verification of the above rates if requested by the Owner.
- C. Within 30 days of the Notice to Proceed, the Contractor shall submit a list of all equipment anticipated to be used on the project and whether it is owned or to be rented, using a form acceptable to the Owner. If during the construction process additional equipment is brought to the Project site, the Contractor shall submit an updated list.

1.4 MINOR CHANGES IN THE WORK

- A. The A/E will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or Contract Time, on a form prepared by the A/E. If the contractor believes a cost is associated with the supplemental instructions, the Contractor is to provide written notice to the A/E and Owner within 7 days of receipt of the instructions.

1.5 OTHER CHANGES IN THE WORK

- A. Changes to the work can be by:
1. Change Order Proposal issued by the A/E to the Contractor on the Owner's behalf.
 2. Field Authorization issued by the A/E to the Contractor on the Owner's behalf.
 3. Request initiated by the Contractor and submitted to the A/E.
- B. Change Order Proposal (COP). The A/E will issue a detailed description of proposed Owner initiated changes in the Work on the Owner's standard COP form that may require adjustment to the Contract Sum or Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
1. COP requests issued by the A/E are for information only. Do not consider them as an instruction either to stop work in progress or to execute the proposed change.
 2. Within 14 calendar days of receipt of a proposal request, or quicker if the project schedule necessitates, the contractor shall submit an estimate of cost necessary to execute the change to the Owner who will evaluate the cost.
- C. Field Authorization (FA). The A/E may issue, on behalf of the Owner, a FA instructing the Contractor to proceed with a change or specific portion of the change in the Work or specific portion of a COP, for subsequent inclusion in a Change Order.
1. The FA will contain a complete description of the change in the Work. It also designates the method to be followed to determine change in the Contract Sum or Contract Time.
 2. The Contractor must provide a Not to Exceed (NTE) amount to be indicated on the FA.
 3. As the Work progresses, the Contractor is to monitor its costs. If the costs indicate they will exceed the NTE prior to being able to complete the work, the Contractor is to stop work and notify the Owner. A decision will be made by the Owner to stop the change at that time, or authorize an increase in the NTE amount.
 4. The Contractor is not to proceed with the work until the FA is signed by the Contractor, A/E, and Owner.
 5. Maintain detailed records of time and material documentation of work as required by each field authorization issued to the contractor.
 - a. After completion of the change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.
 - b. Include daily accounting of time spent by each person working specifically on such work, acknowledged by Owner's Site Representative, together with copies of all related purchase orders.
- D. Contractor Initiated Change Request. When latent, unforeseen, or other conditions require modifications to the Contract, the Contractor may propose changes by submitting a request for a change to the A/E.
1. Provide initial documentation describing the proposed change, reason for changes, and why the proposed change is not part of the Base Bid.
- E. Detailed Documentation of Owner or Contractor initiated Changes.
1. Support each lump sum proposal quotation, and each unit price (not previously established) with sufficient substantiating data.

2. On request, provide additional data to support time and cost computations:
 - a. Labor required.
 - b. Equipment required.
 - c. Products required.
 - 1) Recommended source of purchase and unit cost.
 - 2) Quantities required.
 - d. Taxes, insurance, and bonds.
 - e. Documented credit for work deleted from Contract.
 - f. Overhead and profit.
 - g. Justification for any change in Contract Time.
 3. Support each proposal for additional costs, and time-and-material/force account work with documentation, as required for lump-sum proposal. Include additional information:
 - a. Name of A/E or Owner's authorized agent who ordered work, and date of order.
 - b. Dates and times work was performed, and by whom.
 - c. Time record, summary of hours worked, and hourly rates paid.
 - d. Receipts and invoices for:
 - 1) Equipment used, listing dates and times of use.
 - 2) Products used and listing of quantities.
 - 3) Subcontracts.
 4. Document Requests for Substitutions.
 5. Statement as to whether overtime work is, or is not, authorized.
- F. Approval or Rejection of Proposal.
1. When change is initiated by A/E or Owner through a COP.
 - a. Contractor to submit a detailed proposal in writing. Quotation will be guaranteed for period specified in Proposal Request beginning from signing of proposal. If no period is specified, guarantee quotation for sixty (60) days from signing.
 - b. Owner reviews proposal and responds in writing as follows:
 - 1) Request for additional information.
 - 2) Proposal will be incorporated into a Change Order.
 - 3) Rejecting the proposal.
 - c. Contractor is not to proceed with work until a signed Change Order is received from the Owner.
 2. When change is initiated by Contractor.
 - a. Owner reviews and responds in writing as follows:
 - 1) Agrees with Contractor's cost proposal;
 - 2) Request for additional information;
 - 3) Rejecting the proposal.
 - b. If the Owner responds by agreeing to the Contractor's change proposal, a Change Order will be processed.
 - c. If additional information is requested by Owner, respond in writing within fifteen

(15) days of Owner's request.

1.6 CHANGE ORDER PROCEDURES

- A. Upon final agreement of costs and/or time on an Owner COP, FA or a Contractor initiated proposal, a Change Order will be processed by the Owner.
 - 1. The Contractor cannot submit an invoice for Work changes until a fully executed Change Order is completed.

END OF SECTION 01 26 00

SECTION 01 29 00 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements governing the Contractor's Applications for Payment.
- B. Requirements for Schedule of Values and Applications for Payment are also included in part 6 of the General Conditions For Washington State Facility Construction. This specification section includes additional detail regarding procedural requirements. In the event of conflicts between this specification and Part 6, the General Conditions shall supersede any requirements identified herein.
- C. Contractor shall submit all invoices and applications for payment on forms provided by the Owner, available electronically in Excel format.

1.3 SCHEDULE OF VALUES

- A. Submit a list of all Subcontractors and Material Suppliers.
- B. The Schedule of Values and the Contractor's Construction Schedule are to be developed and agreed to with the Subcontractors.
 - 1. Correlate line items in the Schedule of Values with other required administrative schedules and forms, including:
 - a. Contractor's Construction Schedule.
 - b. Application for Payment forms, including Continuation Sheets.
 - c. List of subcontractors.
 - d. Schedule of allowances (if any).
 - e. Schedule of alternates.
 - f. List of products.
 - g. List of principal suppliers and fabricators.
 - h. Schedule of submittals.
 - 2. Submit the Schedule of Values to the A/E and Owner for approval at the earliest possible date but no later than 30 days after the issuance of the Notice to Proceed, and not less than 14 days prior to the first application for payment.
- C. Use the Project Manual table of contents as a guide to format the Schedule of Values. Provide at least one line item for each listed Specification Section beginning with Division 2. Relate applicable activities of the Progress Schedule with each line item broken down separately for labor and materials. Include the following as a minimum:
 - 1. Include separate line item values for construction progress schedule and updates,

mobilization, permits/bonds/insurances, temporary facilities, supervision, survey and layout, demobilization, commissioning and equipment/systems start-up, and project closeout retainage.

- a. General Conditions and Mobilization shall not exceed 3% of the Contract amount.
 - b. Demobilization shall be not less than 1% of the Contract amount.
 - c. Project closeout retainage value, for duration between Substantial Completion and Final Acceptance shall be not less than 2% of the Contract amount. Of that amount, 1% shall be for "Punchlist Work". This amount will not be released until Final Completion is reached.
 - 1) This closeout retainage shall be in addition to the 5% retainage withheld under General Conditions item 6.04, and shall be for the purpose of protection of the Owner in the completion of any outstanding items on the Final Acceptance Punch List, and for reimbursing the Architect and their consultants for additional 'punch list' re-inspections beyond the first re-inspection; refer to Section 01 77 00 – Closeout Procedures..
 - d. Schedule preparation and updates shall not be less than 1/2% of the Contract amount.
2. Major cost items, which are not directly a cost of actual work-in-place, such as distinct temporary facilities, may be either shown as items in the Schedule of Values or included in General Conditions and Mobilization or Demobilization at the Contractor's option.
 3. Line item amounts shall be rounded off to nearest whole dollar, with total of the primary schedule of values breakdown equal to the Contract Sum.
 4. Provide at least one line item for each Specification Section, and at least one line item for each pertinent item within each specification section.
 5. No line item of the Schedule of Values shall be greater than \$30,000 unless approved by Owner.
 6. Break down items of work that include both labor and material into those respective components.
 7. Provide breakdown by construction phasing or area of work.
 8. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment, purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site. Include requirements for insurance and bonded warehousing, if required.
 - b. Include separate line item cost for shop drawing preparation.
 9. Unit Cost Allowances: Show the line-item value of unit-cost allowances (if any) as a product of the unit cost, multiplied by the measured quantity. Estimate quantities from the best indication in the Contract Documents.
 10. Margins of Cost: Show line items for indirect costs and margins on actual costs only when such items are listed individually in Applications for Payment. Each item in the Schedule of Values and Applications for Payment shall be complete. Include the total cost and proportionate share of general overhead and profit margin for each item.
- D. Identify work, if any, to be performed by minority-owned business enterprises (MBE) and women-owned business enterprises (WBE).

E. Identification: Include the following Project identification on the Schedule of Values:

1. Project name and location.
2. Name of Architect.
3. Owner's Project Number.
4. Contractor's name and address.
5. Date of submittal.

F. Listing: Arrange the Schedule of Values in tabular form with separate columns indicating the following for each item listed:

1. Related Specification Section.
2. Description of Work.
3. Name of subcontractor or manufacturer/supplier (as applicable).
4. Dollar value.
5. Percentage of Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.

G. Schedule of Values Updating: Update and resubmit Schedule of Values prior to the next Application for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum. Add a new line item for each Change Order, and provide a breakdown of several line items for large or complicated Change Orders.

1.4 APPLICATIONS FOR PAYMENT

A. General:

1. Submit itemized payment request as required in General Conditions together with Schedule of Values and other submittals as listed herein.
2. Except as otherwise indicated, sequence of progress payments is to be regular, and each must be consistent with previous applications and payments; it is recognized that certain applications involve extra requirements, including initial application, application at times of Substantial Completion, and final payment application.
3. Contractor shall not "project" work completed beyond the date of Application for Payment submittal for the purpose of payment request.

B. Each Application for Payment shall be consistent with previous applications and payments as certified and paid for by the Owner.

1. If the Contractor withholds any portion of a previous payment from a subcontractor or material supplier, other than normal retainage, the Contractor shall provide a letter to the Owner with the next Application for Payment stating the reasons for withholding the payment.

C. Payment Application Times: Progress payments will be based upon a monthly period.

D. Draft Payment Application: Draft copies shall be provided to the Owner. The draft payment request shall be a copy of the previous month's approved payment request, with proposed percentages and dollar amounts (rounded off to nearest whole dollar) beside each line item, and a total percentage complete and dollar amount for the month. Once the amounts are reviewed and agreed to by the Owner, the Contractor shall prepare the actual payment request as required in this section based upon the amounts agreed to in the draft application.

1. Have available for Owner review current Project Record Documents delineating any and all revisions since the previous application for payment.
- E. Application Preparation: Complete every entry on the actual payment request form. The Owner will return incomplete applications without action.
1. Entries shall match data on the Schedule of Values and the Contractor's Construction Schedule. Use updated schedules if revisions were made.
 2. Include amounts of Change Orders issued prior to the last day of the construction period covered by the application.
- F. Transmittal: Submit 1 original signed copy (no photocopies of signatures are permitted) of each Application for Payment to the Owner by a method ensuring receipt within 48 hours.
1. Transmit each copy with a transmittal form listing attachments and recording appropriate information related to the application, in a manner acceptable to the Owner.
- G. Initial Payment Application: The principal administrative actions and submittals which must precede or coincide with submittal of first payment application can be summarized as follows, but not necessarily by way of limitation:
1. Submit Statement of Intent to Pay Prevailing Wages on Public Works Contract on form issued by the State of Washington, Department of Labor and Industries. One is required from the Contractor and one from each of those subcontractors who will provide labor on the project site. When these forms have been filled in, the Contractor shall send them to the Industrial Statistician in Olympia for certification. After certification, three copies will be returned to the Contractor. The Contractor shall forward the Owner's copy directly to the Owner (do not send through the A/E). The Contractor shall also post on the project site one certified copy of each Statement of Intent. For further information, phone the Industrial Statistician (360) 902-5335. Processing of an application will not begin until an approved copy is on file with the Owner for each classification of laborers, workers, or mechanics employed by the Contractor or Subcontractor that are included in an application for payment; no exceptions.
 2. Submit and receive review comments for latest construction schedule.
 3. Submit Schedule of Values, allocated to the various portions of the work; the schedule shall be used as a basis for the Contractor's Application for Payment.
 4. List of Subcontractors, complete with phone numbers, business address and contact person.
 5. List of major material suppliers and fabricators, complete with phone numbers, business address and contact person.
 5. Contractor's Progress Schedule (preliminary if not final).
 6. Schedule of Unit Prices, as applicable.
 7. Schedule of Submittals (preliminary if not final).
 9. Copies of acquired building permits and similar authorizations and licenses from governing authorities for current performance of the work.
 10. Initial settlement survey and damage report, if required.
 11. Notification of Potential of Hazard Form (see section 00950)
 12. Quality Control Plan.
 13. Safety Plan.
 14. MWBE participation listing.
 15. Waste Management Plan.
 16. List of emergency contact information.
 17. Other documents as may be required in the Contract Documents.

H. Applications each Month during Construction:

1. Submit itemized application; in number of copies as specified herein, each with waivers of mechanics liens from principal subcontractors, sub-subcontractors and suppliers as specified below.
2. Applications are to be signed by a responsible officer of contracting firm. Do not sign in black ink; no photocopies of signature permitted.
3. Application for Payment shall include the following:
 - a. Application and Certificate for Payment on Contract.
 - b. Invoice Voucher
 - c. Invoice Voucher - Escrow.
 - d. Certificate for Material Stored on Job Site.
 - e. Certificate for Material Stored on Job Site.
 - f. Updated Construction and Submittal Schedules: If substantial changes have occurred in the project Construction Schedule, or if enough changes have occurred that the schedule is rendered inaccurate or ineffective, submit with Application for Payment a revised updated Construction Schedule for evaluation and measurement of actual work-in-place with said application for payment, together with updated submittal schedule. If the Contractor does not submit a revised schedule with a payment request it is agreed by the Contractor that the project is still on schedule according to the last submitted schedule.
 - 1) If actual work completed is more than 14 days behind schedule, submit a recovery schedule per requirements of Section 01 32 16, Construction Progress Schedule, subparagraph 3.04C.4.b.
 - g. Certificates of Notice of Potential Hazards in accordance with Section 00950.
4. When the Owner finds Application for Payment properly completed and correct, the Owner will sign and process all copies of Application for Payment for payment.
5. If the Owner finds the Application for Payment improperly or incorrectly executed, an annotated copy will be returned for a NEW SUBMITTAL.
6. Only minor corrections are allowed, with approval of Owner.

I. Application at Time of Substantial Completion: See Section 01770 for principal administrative actions and submittals which must precede or coincide with such special applications.

1.5 PAYMENT FOR STORED MATERIAL

A. See General Conditions for Washington State Facility Construction Article 6.03.

1.6 SUBSTANTIATING DATA

A. When the Owner requires substantiating information, submit data in a timely manner justifying line item amounts in question.

1.7 APPLICATION FOR FINAL PAYMENT

A. Application for a FINAL pay request will be accepted for processing only after satisfactory completion of the following:

1. Punchlist items complete and accepted;
2. Agreement on all Change Order costs;
3. Required permits signed off;
4. Submittal of Record Documents (as-builts);
5. Submittal of O&M Manuals;

6. Submittal of Warranty Manuals;
7. Certification of Asbestos Free Materials (see section 00950)
8. All training has been provided to Owner's designated staff and signed rosters of those attending submitted to the PM.
9. All security badges and building keys have been returned.
10. Other requirements as specified in Section 01770 - Closeout Procedures.

1.8 RELEASE OF RETAINAGE

- A. Pursuant to the completion of Work performed in accordance with a public works contract and Final Acceptance by the Owner, the following requirements must be satisfied to allow the release of retained contract funds at the earliest possible date.
1. All Contract Closeout items have been reviewed by the A/E, any corrections made by the Contractor, and final copies received by the Owner.
 2. The A/E maintain a Construction Completion Checklist of requirements for completing the project. When the A/E determines that the checklist has been completed, the A/E consults with the Owner for concurrence that all requirements have been met for establishing Final Completion.
 3. If there are no outstanding items required of the Contractor on the Construction Completion Checklist, the A/E provides a letter to the Owner with a copy to the Contractor that to the best of its knowledge, information, and belief, the Contractor has reached Final Completion on the project in conformance with the Contract Documents.
 4. Upon receipt of the signed Notification of Project Completion, the Owner issues its Completion Notice to the Department of Revenue and its Notice of Completion of Public Works Contract.
 5. Final Acceptance shall be issued to the Contractor when all the foregoing requirements are met and the project is formally accepted by the EWU Board of Trustees at their regularly-scheduled meeting.
 6. Certificate of Payment of State Excise Taxes by Public Works Contractor; following receipt of Owner's notice of completion and after determining that all taxes, increase and penalties due from Contractor have been paid, the Department of Revenue will issue this certificate to the Owner, releasing the state's lien on the retained percentage.
 7. Certificate of Payment of Contributions, Penalties and Interest on Public Works Contract; upon receiving a copy of the Owner's notice of completion from the Department of Revenue and determining that the Contractor is in compliance with the provisions of the Employment Security Act, the Employment Security Department will issue this certificate to the Owner, releasing its lien on the retained percentage.
 8. Request for Release. This form must be completed by the Contractor and mailed to the Department of Labor and Industries, Industrial Insurance division, Contract Release Section, Olympia, Washington 98504. One copy of the Contractor's request for release, including attached list of Subcontractors, shall be transmitted to Owner.
 9. Certificate of Release. Upon receipt of Contractor's request for release and verification from its records that the industrial insurance and medical aid premiums have been paid by Contractor and each Subcontractor, the Department of Labor and Industries will so note on its internet site. The owner will review L&I's internet site for status compliance. Once full compliance is noted, it is confirmation that L&I does not hold a lien against the project.
 10. At the time the Owner sends the Contractor written notice of Final Acceptance, it

advertises the acceptance of the project which begins the forty five (45) day period for liens to be filed.

11. At the end of the forty five (45) day period, releases have been received, or confirmed, and there are no liens filed that have not been released, the retainage will be released.
 - a. If the retainage was placed in an escrow account, the Owner will notify the escrow company that the retainage may be released. No invoice billing from the Contractor for the retainage is required.
 - b. If the Contractor has elected to not put the retainage in escrow, an invoice for the retainage amount must be submitted and processed to allow release of the retained money.

END OF SECTION 01 29 00

SECTION 01 33 00 - SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Definitions.
- B. Submittal procedures.
- C. Construction progress schedules.
- D. Proposed product list.
- E. Product data.
- F. Other submittals.
- G. Test reports.
- H. Manufacturer's instructions.
- I. Manufacturer's field reports.
- J. Construction photographs.
- K. Contractor review.
- L. Owner review.

1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Owner's responsive action.
- B. Informational Submittals: Written and graphic information and physical Samples that do not require Owner's responsive action. Submittals may be rejected for not complying with requirements.

1.3 SUBMITTAL PROCEDURES

- A. Transmit each submittal with Owner-accepted form.
- B. Sequentially number transmittal forms. Mark revised submittals with original number and sequential alphabetic suffix.
- C. Identify: Project, Contractor, Subcontractor and supplier, pertinent Drawing and detail number, and Specification Section number appropriate to submittal.

- D. Apply Contractor's stamp, signed or initialed, certifying that review, approval, verification of products required, field dimensions, adjacent construction Work, and coordination of information is according to requirements of the Work and Contract Documents.
- E. Schedule submittals to expedite Project, and post electronic submittals as PDF electronic files to Project website. Coordinate submission of related items.
- F. For each submittal for review, allow **15** days excluding delivery time to and from Contractor.
- G. Identify variations in Contract Documents and product or system limitations that may be detrimental to successful performance of completed Work.
- H. Allow space on submittals for Contractor and Owner review stamps.
- I. When revised for resubmission, identify changes made since previous submission.
- J. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report inability to comply with requirements.
- K. Submittals not requested will not be recognized nor processed.
- L. Incomplete Submittals: Owner will not review. Complete submittals for each item are required. Delays resulting from incomplete submittals are not the responsibility of Owner.

1.4 CONSTRUCTION PROGRESS SCHEDULES

- A. Comply with General Conditions for Washington State Facility Construction, Part 3.02.

1.5 PROPOSED PRODUCT LIST

- A. Within 15 days after date of Notice to Proceed, submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
- B. For products specified only by reference standards, indicate manufacturer, trade name, model or catalog designation, and reference standards.

1.6 PRODUCT DATA

- A. Product Data: Action Submittal: Submit to Owner for review for assessing conformance with information given and design concept expressed in Contract Documents.
- B. Post electronic submittals as PDF electronic files to Project website.
- C. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- D. Indicate product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

- E. After review, produce copies and distribute according to "Submittal Procedures" Article and for record documents described in Section 01 70 00 - Execution and Closeout Requirements.

1.7 MATERIAL SAFETY DATA SHEETS

- A. Material Safety Data Sheets (MSDS) shall be submitted for every product specified or intended to be used on the Site.

1.8 OTHER SUBMITTALS

- A. Closeout Submittals: Comply with Section 01 78 00 – Closeout Submittals.
- B. Informational Submittal: Submit data for Owner’s knowledge.
- C. Submit information for assessing conformance with information given and design concept expressed in Contract Documents.

1.9 TEST REPORTS

- A. Informational Submittal: Submit reports for Owner’s knowledge
- B. Submit test reports for information for assessing conformance with information given and design concept expressed in Contract Documents.

1.10 MANUFACTURER'S INSTRUCTIONS

- A. Informational Submittal: Submit manufacturer's installation instructions for Owner’s.
- B. Submit printed instructions for delivery, storage, assembly, installation, startup, adjusting, and finishing, to Owner in quantities specified for Product Data.
- C. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.11 MANUFACTURER'S FIELD REPORTS

- A. Informational Submittal: Submit reports for Owner’s knowledge.
- B. Submit report within 5 days of observation to Owner for information.
- C. Submit reports for information for assessing conformance with information given and design concept expressed in Contract Documents.

1.12 CONSTRUCTION PHOTOGRAPHS

- A. Provide photographs of Site and construction throughout progress of Work produced by [an experienced photographer acceptable to Owner.
- B. Each month submit photographs with Application for Payment.

- C. Photographs: color, JPEDG format, on CD-ROM disk. Submit images that hve same aspect ratio as sensor, uncropped.
 - 1. Produced by digital camera with minimum sensor size of 4.0 megapixels, and image resolution of not less than 1024 by 768 pixels.
- D. Take photographs as evidence of existing Project conditions and progress.
- E. Identify each print on a photo log. Identify location, orientation of view, and date and time of view.

1.13 CONTRACTOR REVIEW

- A. Review for compliance with Contract Documents and approve submittals before transmitting to Owner.
- B. Contractor: Responsible for:
 - 1. Determination and verification of materials including manufacturer's catalog numbers.
 - 2. Determination and verification of field measurements and field construction criteria.
 - 3. Checking and coordinating information in submittal with requirements of Work and of Contract Documents.
 - 4. Determination of accuracy and completeness of dimensions and quantities.
 - 5. Confirmation and coordination of dimensions and field conditions at Site.
 - 6. Construction means, techniques, sequences, and procedures.
 - 7. Safety precautions.
 - 8. Coordination and performance of Work of all trades.
- C. Stamp, sign or initial, and date each submittal to certify compliance with requirements of Contract Documents.
- D. Do not fabricate products or begin Work for which submittals are required until approved submittals have been received from Architect/Engineer.

1.14 OWNER REVIEW

- A. Do not make "mass submittals" to Owner. "Mass submittals" are defined as six or more submittals or items in one day or 20 or more submittals or items in one week. If "mass submittals" are received, Owner's review time stated above will be extended as necessary to perform proper review. Owner will review "mass submittals" based on priority determined by Owner.
- B. Informational submittals and other similar data are for Owner's information, do not require Owner's responsive action, and will not be reviewed or returned with comment.
- C. Submittals made by Contractor that are not required by Contract Documents may be returned without action.
- D. Submittal approval does not authorize changes to Contract requirements unless accompanied by Change Order or Field Order.

- E. Owner may withhold monies due to Contractor to cover additional costs beyond the second submittal review.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION 01 33 00

SECTION 01 40 00 - QUALITY REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Quality control.
- B. Tolerances.
- C. References.
- D. Testing and inspection services.
- E. Manufacturers' field services.

1.2 QUALITY CONTROL

- A. Monitor quality control over suppliers, manufacturers, products, services, Site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with specified standards as the minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- C. Perform Work using persons qualified to produce required and specified quality.
- D. Products, materials, and equipment may be subject to inspection by Architect/Engineer and Owner at place of manufacture or fabrication. Such inspections shall not relieve Contractor of complying with requirements of Contract Documents.
- E. Supervise performance of Work in such manner and by such means to ensure that Work, whether completed or in progress, will not be subjected to harmful, dangerous, damaging, or otherwise deleterious exposure during construction period.

1.3 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' recommended tolerances and tolerance requirements in reference standards. When such tolerances conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

1.4 REFERENCES

- A. For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of standard except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current as of date of Contract Documents except where specific date is established by code.
- C. Obtain copies of standards and maintain on Site when required by product Specification Sections.
- D. When requirements of indicated reference standards conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.
- E. Neither contractual relationships, duties, or responsibilities of parties in Contract nor those of Architect/Engineer shall be altered from Contract Documents by mention or inference in reference documents.

1.5 TESTING AND INSPECTION SERVICES

- A. Employ and pay for services of an independent testing agency or laboratory acceptable to Owner to perform specified testing.
 - 1. Before starting Work, submit testing laboratory name, address, and telephone number, and names of full-time Professional Engineer and responsible officer.
 - 2. Submit copy of report of laboratory facilities' inspection made by Materials Reference Laboratory of National Bureau of Standards during most recent inspection, with memorandum of remedies of deficiencies reported by inspection.
- B. Independent firm will perform tests, inspections, and other services specified in individual Specification Sections and as required by Owner.
 - 1. Laboratory: Authorized to operate at Project location.
 - 2. Laboratory Staff: Maintain full-time Professional Engineer on staff to review services.
 - 3. Testing Equipment: Calibrated at reasonable intervals with devices of an accuracy traceable to National Bureau of Standards or accepted values of natural physical constants.
- C. Testing, inspections, and source quality control may occur on or off Project Site. Perform off-Site testing as required by Architect/Engineer or Owner.
- D. Reports shall be submitted by independent firm to Owner, Contractor, and authorities having jurisdiction, indicating observations and results of tests and compliance or noncompliance with Contract Documents.
 - 1. Submit final report indicating correction of Work previously reported as noncompliant.
- E. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
 - 1. Notify Owner and independent firm 48 hours before expected time for operations requiring services.
 - 2. Make arrangements with independent firm and pay for additional Samples and tests required for Contractor's use.

- F. Employment of testing agency or laboratory shall not relieve Contractor of obligation to perform Work according to requirements of Contract Documents.
- G. Retesting or re-inspection required because of nonconformance with specified or indicated requirements shall be performed by same independent firm on instructions from Owner. Payment for retesting or re-inspection will be charged to Contractor by deducting testing charges from Contract Sum/Price.
- H. Agency Responsibilities:
 - 1. Test Samples of mixes submitted by Contractor.
 - 2. Provide qualified personnel at Site. Cooperate with Owner and Contractor in performance of services.
 - 3. Perform indicated sampling and testing of products according to specified standards.
 - 4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
 - 5. Promptly notify Owner and Contractor of observed irregularities or nonconformance of Work or products.
 - 6. Perform additional tests required by Owner.
 - 7. Attend preconstruction meetings and progress meetings.
- I. Agency Reports: After each test, promptly submit report to Owner, Contractor, and authorities having jurisdiction. When requested by Owner, provide interpretation of test results. Include the following:
 - 1. Date issued.
 - 2. Project title and number.
 - 3. Name of inspector.
 - 4. Date and time of sampling or inspection.
 - 5. Identification of product and Specification Section.
 - 6. Location in Project.
 - 7. Type of inspection or test.
 - 8. Date of test.
 - 9. Results of tests.
 - 10. Conformance with Contract Documents.
- J. Limits on Testing Authority:
 - 1. Agency or laboratory may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 - 2. Agency or laboratory may not approve or accept any portion of the Work.
 - 3. Agency or laboratory may not assume duties of Contractor.
 - 4. Agency or laboratory has no authority to stop the Work.

1.6 MANUFACTURER'S FIELD SERVICES

- A. When specified in individual Specification Sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe Site conditions, conditions of surfaces and installation, quality of workmanship, commissioning as applicable, and to initiate instructions when necessary.
- B. Report observations and Site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturer's written instructions.

C. Refer to Section 01 33 00 - Submittal Procedures, "Manufacturer's Field Reports" Article.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION 01 44 00

SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Photographic Documentation
- B. Temporary Utilities:
 - 1. Temporary electricity.
 - 2. Temporary lighting for construction purposes.
 - 3. Communication services.
 - 4. Temporary water service.
 - 5. Temporary sanitary facilities.
- C. Construction Facilities:
 - 1. Field offices and sheds.
 - 2. Vehicular access.
 - 3. Parking.
 - 4. Progress cleaning and waste removal.
 - 5. Traffic regulation.
 - 6. Fire-prevention facilities.
 - 7. Confined space.
- D. Temporary Controls:
 - 1. Barriers.
 - 2. Temporary Fencing.
 - 3. Security.
 - 4. Protection of existing trees and plants.
 - 5. Protection of existing utilities.
 - 6. Protection of installed work.
 - 7. Water control.
 - 8. Dust control.
 - 9. Erosion and sediment control.
 - 10. Noise control.
 - 11. Pollution control.
- E. Removal of utilities, facilities, and controls.
- F. Landscape Restoration

1.2 PHOTOGRAPHIC DOCUMENTATION

- A. Prior to the start of construction, the Owner, A/E and Contractor shall jointly photo-document all existing conditions and features within the area of Work. Each party shall retain copies in their files for future reference for determination of the existing conditions prior to the start of the Work.

- B. Photographs shall be as specified in Section 01 33 00 - Submittal Procedures, Part 1.16.

1.3 TEMPORARY ELECTRICITY

- A. Provide and pay for power service required from utility source as needed for construction operation, in accordance with General Conditions for Washington State Facility Construction, Part 5.14, B.
- B. Permanent convenience receptacles shall not be used during construction.

1.4 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

- A. Provide and maintain lighting for construction sufficient to perform and inspect work being performed in all areas during working hours.
- B. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, lamps, and the like, for specified lighting levels.
- C. Maintain lighting and provide routine repairs

1.5 COMMUNICATION SERVICES

- A. Provide, maintain, and pay for any communications services required by Contractor.

1.6 TEMPORARY WATER SERVICE

- A. Provide and pay for suitable quality water service as needed to maintain specified conditions for construction operations. [Connect to existing water source with a separate shut-off valve and a tested backflow prevention device approved by Owner. Provide separate metering and reimburse Owner for cost of water used.

1.7 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Existing facility use is not permitted. Provide facilities at time of Project mobilization.
- B. Contractor shall place facilities where directed by the Owner and maintain cleanliness.
- C. Comply with all applicable requirements for cleaning and/or disposal of waste from temporary sanitary facilities. Do not dispose of waste in either the existing sanitary or storm sewer systems.

1.8 FIELD OFFICES AND SHEDS

- A. Locate field offices and storage facilities within staging areas shown on Drawings.
- B. Do not use permanent facilities for field offices or for storage.

- C. Storage Areas and Facilities: Size to storage requirements for products of individual Sections, allowing for access and orderly provision for maintenance and inspection of products to suit requirements in Section 01 60 00 – Product Requirements.
- D. Removal: At completion of Work remove field offices and storage facilities, utility services, and debris. Restore areas to same or better condition as original condition.

1.9 VEHICULAR ACCESS

- A. Maintain access to existing buildings and parking lots at all times. Provide traffic-rated trench plates over trenches and excavations as required.
- B. Provide unimpeded access for emergency vehicles in and adjacent to work and staging areas. Maintain 20 foot-wide driveways with turning space between and around combustible materials..
- C. Provide and maintain access to fire hydrants and control valves free of obstructions.
- D. Provide means of removing mud from vehicle wheels before entering streets.

1.10 PARKING

- A. Provide parking areas within designated Staging Areas to accommodate construction personnel. Locate as indicated on Drawings.
- B. If Site space is not adequate, provide additional off-Site parking.
- C. Campus parking facilities may be utilized upon obtaining a proper permit. Contractor's construction personnel shall purchase parking permits if they choose to park in Owner's parking lots on a space-available basis.
- D. Use of existing on-Site streets and driveways used for parking is not permitted.
- E. Tracked vehicles are not allowed on paved areas.
- F. Do not allow heavy vehicles or construction equipment in parking areas.
- G. Do not allow vehicle parking on existing pavement.
- H. Maintenance:
 - 1. Maintain traffic and parking areas in sound condition free of excavated material, construction equipment, products, mud, snow, ice, and the like.
 - 2. Maintain existing paved areas used for construction; promptly repair breaks, potholes, low areas, standing water, and other deficiencies, to maintain paving and drainage in original condition.
- I. Removal, Repair:
 - 1. Remove temporary materials and construction at Substantial Completion.
 - 2. Repair existing and permanent facilities damaged by use, to original condition.

J. Mud from Site vehicles: Provide means of removing mud from vehicle wheels before entering streets.

1.11 PROGRESS CLEANING AND WASTE REMOVAL

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain Site in clean and orderly condition.
- B. Collect and remove waste materials, debris, and rubbish from Site daily and legally dispose of off-Site. Provide vehicles to haul materials off site that are constructed and loaded so as to prevent any leaking of materials from the vehicle (RCW 46.61.655). Provide Owner with copies of all dump receipts with each Application for Payment Request.
- C. Keep sidewalks, lawns, parking areas and streets clear of all construction materials, debris, gravel, rock and dirt attributed to the Contractor or sub-contractors. Clean up sidewalks, lawns, parking areas and streets on a weekly basis and/or upon request by the Owner.

1.12 TRAFFIC REGULATION

- A. Signs, Signals, and Devices:
 - 1. Provide signs, devices and/or flag persons in accordance with WAC 296-155-305 and RCW 47.36.200 for deliveries or operations which obstruct traffic in surrounding streets and parking areas.
 - 2. Contractor shall prepare site-specific Temporary Traffic Control plans for all operations within streets and parking areas.
 - 3. Temporary Traffic Control Plans shall be prepared by a certified Traffic Control Supervisor.
 - 4. Temporary Traffic Control Plans shall be submitted to Owner and the City of Cheney a minimum of twenty (20) days prior to beginning Work in impacted area.
 - 5. Provide signs, devices and/or flag persons at approaches to Work areas, at crossroads, detours, parking areas, and elsewhere as needed to direct construction and affected public traffic.
 - 6. Relocate signs, devices, and/or flag persons as Work progresses, to maintain effective traffic control.
 - 7. Use lights during hours of low visibility to delineate traffic lanes and to guide traffic.
 - 8. **Flag persons** shall be provided at each end of the fenced work area during any work on Cedar Street. A flag person shall be provided at the south end of the fenced work area during any work on 11th Street. These flag persons shall monitor and direct pedestrian and vehicle traffic at the entrances to the fenced work areas, and shall monitor and direct Contractor's vehicles and equipment into and out of the work area.
- B. Construction Traffic over Existing Steam Tunnels:
 - 1. The steam tunnels are not designed to withstand heavy vehicle loads (over 15,000 pounds GVW).
 - 2. Contractor shall coordinate his operations with the Owner and, if necessary, Contractor shall provide protective top plating or shoring from below before heavy vehicles cross or stand directly above existing tunnels.
 - 3. All temporary support mitigations shall be performed by the Contractor at his expense.
- C.

- D. Haul Routes:
 - 1. Consult with authorities having jurisdiction and establish public thoroughfares to be used for haul routes and Site access.
 - 2. Confine construction traffic to designated haul routes.
 - 3. Provide traffic control at critical areas of haul routes to regulate traffic and to minimize interference with public traffic.
- E. Removal:
 - 1. Remove equipment and devices when no longer required.
 - 2. Repair damage caused by installation.

1.13 FIRE-PREVENTION FACILITIES

- A. Designate area on Site where smoking is permitted. Provide approved ashtrays in designated smoking areas.
- B. Establish fire watch for cutting, welding, and other hazardous operations capable of starting fires. Maintain fire watch before, during, and after hazardous operations until threat of fire does not exist.
- C. Portable Fire Extinguishers: NFPA 10; 10-pound capacity, 4A-60B: C UL rating.
 - 1. Provide one fire extinguisher at each work area under construction.
 - 2. Provide minimum of one fire extinguisher in every construction trailer and storage shed.

1.14 CONFINED SPACE

- A. Contractor shall provide a written confined space entry program within fourteen (14) calendar days of Notice to Proceed for Owner review.
- B. Contractor shall follow confined space program and follow WISHA regulations when entering and occupying confined spaces.
- C. The existing steam tunnels are non-permit confined space.

1.15 BARRIERS

- A. Provide barriers to prevent unauthorized entry to all construction areas, to allow for Owner's use of Site, and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Protect pedestrian and vehicular traffic, stored materials, Site, and structures from damage.
- C. Security of the construction site materials and equipment is the sole responsibility of the Contractor.

1.16 TEMPORARY FENCING

- A. Provide 6-foot-high, commercial-grade chain-link fence around construction Site.

- B. Equip with vehicular and pedestrian gates with locks. Coordinate widths and locations of gates with the Owner and Fire Marshal.
- C. Fencing shall be sturdy and neat appearing.
- D. Staging Areas shall be fenced for the duration that the staging area is in use by the Contractor.
- E. Trenching areas shall be fenced for the duration of the trenching work in each area. Prior to removing fencing, the trench shall be backfilled and provided with a temporary surface that is suitable for pedestrian and vehicle traffic, until such time that the final surface treatment can be installed.
- F. The use of plastic construction netting as temporary fencing is prohibited.

1.17 SECURITY

- A. Security Program:
 - 1. Protect Work on from theft, vandalism, and unauthorized entry.
 - 2. Initiate program at Project mobilization.
 - 3. Maintain program throughout construction period until Owner occupancy.
- B. Entry Control:
 - 1. Restrict entrance of persons and vehicles to Project Site.
 - 2. Allow entrance only to authorized persons with proper identification.
 - 3. Coordinate access of Owner's personnel to Site in coordination with Owner's security forces.

1.18 PROTECTION OF EXISTING TREES AND PLANTS

- A. Critical Root Zone: Generally a circular area surrounding a tree, the center of which is the center of the tree trunk and the radius is the distance from the outside of the trunk to any point 12 times the diameter, as measured at 4½ feet from the ground on the low side of the trunk, which point constitutes the circumference of the critical root zone.
- B. Zone of Protection: The area of the critical root zone shall be fenced with no construction-related activities allowed within this zone of protection. The diameter of the fencing shall not be reduced without written instructions from the Owner. The restricted activities are, but are not limited to, storage, paving, grading, cutting, filling, stockpiling, equipment wash-down, travel within, dumping, or spillage of any solid or liquid unless otherwise shown on the Drawings.
- C. Open trenches are not to be routed beneath the outside boundary of the tree drip line that is to be preserved unless otherwise approved by the Owner; in which case damage may be reduced by careful placement of trenches to avoid and protect large tree roots or by tunneling under rather than cutting roots greater than 1-1/2" diameter.
- D. Construction and Post-Construction Requirements:
 - 1. The protective fence shall not be disturbed or removed until all exterior construction has been completed.
 - 2. Water shall be applied 2 times a week during growing season until the completion of exterior construction.

3. Removal of interfering branches will be supervised by the Owner.
 4. No roto-tilling or major soil disturbance shall take place within this zone of protection, before, during, or after the construction.
 5. If trees are damaged, notify the Owner immediately and promptly repair trees damaged by construction within 24 hours. Treatment of damaged trunks, limbs, and roots will conform to ANSI A300-Part 1-1995 pruning standards.
- E. The Contractor shall protect all trees and other plant types on site from damage until project completion. If any tree or other type of plants are destroyed, disfigured, or damaged so that in the Owner's opinion removal is required, Contractor will remove and replace the plant with like plant species and size materials. Provide new trees of 6-inch caliper size and of a species selected by Owner when trees more than 6 inches in caliper size, measured 12 inches above grade, are required to be replaced.
- F. At the completion of construction, aerate surface soil, compacted during construction, 10 feet beyond drip line and no closer than 36 inches to tree trunk. Drill 2-inch-diameter holes a minimum of 12 inches deep at 24 inches OC. Backfill holes with an equal mix of augured soil and sand.
- G. If at any time the Contractor judges that the protection of a tree designated to be saved is incompatible with work required, or if operations necessarily threaten the health of a tree, immediately notify the Owner and do no further work affecting the tree until a written agreement is reached concerning acceptable resolution.

1.19 PROTECTION OF EXISTING UTILITIES

- A. The existing concealed utilities shown on the Drawings are not necessarily exact with respect to location or completeness; therefore, Contractor shall take all necessary precautions and give proper notice to the Owner and Companies whose utilities have the possibility of being encountered in the area of Work.
- B. Prior to excavation of any area, the Contractor shall notify the “One-Call” service no later than three business days prior to digging.
- C. The Contractor shall coordinate any shutdown of campus utilities (power, steam, water, chilled water, etc.) with the Owner’s on-site representative two weeks prior to the anticipated shutdown.
- D. Proceed with sufficient caution to preclude damaging any utilities known or unknown, (e.g., hand digging or probing). In the event unidentified utilities are encountered, notify Owner immediately.
- E. In the event that located utilities are damaged during construction, temporary services or repairs must be made immediately at Contractor’s expense, to maintain continuity of service.
- F. Indicate on as-built drawings the elevation and location of any underground utilities encountered during construction.

1.20 PROTECTION OF INSTALLED WORK

- A. Protect installed Work and provide special protection where specified in individual specification Sections.
- B. Provide temporary protection for installed Products. Control activity in immediate work area to prevent damage.
- C. Prohibit traffic from all finished landscaped areas.
- D. Smoking shall be allowed in all areas of the project site. Smokers shall observe State Law and university policies when smoking outside with respect to distances from doorways and operable windows.

1.21 WATER CONTROL

- A. Grade Site to drain. Maintain excavations free of water. Provide, operate, and maintain necessary pumping equipment.
- B. Erosion and sediment control measures included in Drawings are provided as a minimum requirement. The Contractor shall exercise every reasonable precaution to protect channels, storm drains, and bodies of water from pollution and shall conduct and schedule its operations so as to minimize or avoid muddying and silting of said channels, drains, and waters. Water pollution control work shall consist of constructing those facilities which may be required to provide prevention, control, and abatement of water pollution in accordance with guidelines established by the Washington State Department of Ecology and authorities having jurisdiction.
- C. The Contractor shall maintain drainage within and through the work areas. Earth dams will not be permitted in paved areas. Temporary dams of sandbags, asphaltic concrete or other acceptable material will be permitted when necessary to protect the Work, provided their use does not create a hazard or nuisance to the public. Such dams shall be removed from the site as soon as their use is no longer necessary.
- D. Protect site from standing water or running water including underground water sources by installation of temporary drainage control systems or piping to storm drain system coordinated with the storm utility provider.

1.22 DUST CONTROL

- A. Execute Work by methods that minimize raising dust from construction operations.
- B. Provide positive means to prevent airborne dust from dispersing into atmosphere and into Owner-occupied areas.

1.23 EROSION AND SEDIMENT CONTROL

- A. Plan and execute construction by methods to control surface drainage from cuts and fills from borrow and waste disposal areas. Prevent erosion and sedimentation.

- B. Minimize surface area of bare soil exposed at one time.
- C. Provide temporary measures including berms, dikes, drains, and other devices to prevent water flow.
- D. Construct fill and waste areas by selective placement to avoid erosive surface silts and clays.
- E. Periodically inspect earthwork to detect evidence of erosion and sedimentation. Promptly apply corrective measures.
- F. Comply with **Erosion and Sediment Control Plan indicated on Drawings**. Erosion and sediment control measures included in Drawings are provided as a minimum requirement. The Contractor shall exercise every reasonable precaution to protect channels, storm drains, and bodies of water from pollution and shall conduct and schedule its operations so as to minimize or avoid muddying and silting of said channels, drains, and waters. Water pollution control work shall consist of constructing those facilities which may be required to provide prevention, control, and abatement of water pollution in accordance with guidelines established by the Washington State Department of Ecology and authorities having jurisdiction

1.24 NOISE CONTROL

- A. Provide methods, means, and facilities to minimize noise produced by construction operations.
- B. Noise from construction operations shall be prohibited between the hours of 10:00pm and 7:00am.

1.25 POLLUTION CONTROL

- A. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances and pollutants produced by construction operations.
- B. The Contractor shall be responsible for spill containment, regulatory reporting, cleanup, decontamination, and waste disposal meeting all federal, state and local laws, regulations and ordinances. (specifically WAC 173-340 and 173-303).
- C. Contractor and all subcontractors shall immediately report all spills of hazardous materials to the Owner, including leakage from vehicles.
- D. If hazardous materials are released on the construction premises, a record of type of materials spilled, quantity, containment, cleanup, decontamination and disposal mechanisms used, reports made to regulatory agencies, and records of regulatory agency activity, if any, shall be kept by the Contractor and provided to the Owner.

1.26 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, and materials before Substantial Completion inspection.
- B. Clean and repair damage caused by installation or use of temporary Work.

- C. Restore existing and permanent facilities used during construction to original condition as established by photographic documentation. Restore permanent facilities used during construction to specified condition.
- D. Remove all barrier fencing from site. Leave site clean and free from post holes, ties and ground scars and restore to existing condition prior to construction.

1.27 LANDSCAPE RESTORATION

- A. Landscape areas affected by construction work shall be restored to existing or better condition per the following requirements:
 - 1. Remove all construction equipment, building material, debris and remnants of destroyed sod or plantings before commencing landscape restoration.
 - 2. Rough grade the site according to the existing conditions or specified grading plan.
 - 3. Areas of removed or damaged turf grass shall be replaced with sod as specified in Section 32 92 23 - Sodding.
 - 4. Landscape planting areas removed or damaged shall be restored to match existing.
 - 5. Areas of native vegetation removed or damaged shall be restored with seeding as specified in Section 32 92 19 - Seeding.
 - 6. Trees adjacent to work areas that were damaged shall be replaced as directed by Owner.
 - 7. Existing irrigation systems removed or damaged shall be repaired or replaced as specified in Section 32 84 00 - Planting Irrigation.
 - 8. Provide adequate barriers and signs to prevent pedestrians from traversing the newly restored landscape areas.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Products.
- B. Product delivery requirements.
- C. Product storage and handling requirements.
- D. Product options.

1.2 PRODUCTS

- A. At minimum, comply with specified requirements and reference standards.
- B. Specified products define standard of quality, type, function, dimension, appearance, and performance required.
- C. Furnish products of qualified manufacturers that are suitable for intended use. Furnish products of each type by single manufacturer unless specified otherwise. Confirm that manufacturer's production capacity can provide sufficient product, on time, to meet Project requirements.
- D. Do not use materials and equipment removed from existing premises except as specifically permitted by Contract Documents.
- E. Furnish interchangeable components from same manufacturer for components being replaced.

1.3 PRODUCT DELIVERY REQUIREMENTS

- A. Transport and handle products according to manufacturer's instructions.
- B. Promptly inspect shipments to ensure products comply with requirements, quantities are correct, and products are undamaged.
- C. Provide equipment and personnel to handle products; use methods to prevent soiling, disfigurement, or damage.

1.4 PRODUCT STORAGE AND HANDLING REQUIREMENTS

- A. Store and protect products according to manufacturer's instructions.
- B. Store products with seals and labels intact and legible.
- C. Store sensitive products in weathertight, climate-controlled enclosures in an environment suitable to product.

- D. For exterior storage of fabricated products, place products on sloped supports aboveground.
- E. Provide bonded off-Site storage and protection when Site does not permit on-Site storage or protection.
- F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- G. Store loose granular materials on solid flat surfaces in well-drained area. Prevent mixing with foreign matter.
- H. Provide equipment and personnel to store products; use methods to prevent soiling, disfigurement, or damage.
- I. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

1.5 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Products complying with specified reference standards or description.
- B. Products Specified by Naming One or More Manufacturers: Products of one of manufacturers named and complying with Specifications; no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with Provision for Substitutions: Submit Request for Substitution for any manufacturer not named, according to Section 01 25 00 - Substitution Procedures.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION - Not Used

END OF SECTION 01 60 00

SECTION 01 77 00 – CLOSEOUT PROCEDURES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout including, but not limited to, the following:
 - 1. Training of Owner's personnel.
 - 2. Maintenance Materials submission.
 - 3. Substantial Completion.
 - 4. Final Acceptance.

1.3 SEQUENCE OF CLOSE-OUT

- A. The Contractor's superintendent shall perform a review of all installed work (general, mechanical, electrical) and note any corrections, touch-up, or otherwise restore marred, exposed surfaces that are necessary to comply with the Contract Document requirements before requesting the A/E to review the Work. The Contractor shall develop a written correction list (pre-punch list) and track the completion of the items by initialing and dating each item, signifying that it has been reviewed and properly completed.
- B. Comply with items under SUBSTANTIAL COMPLETION by submitting documentation and the Contractor's initialed correction list to the A/E with a written request that the A/E reviews the project.
- C. Upon receipt of the information from the Contractor, the A/E will visit the site and review the Project with the Owner for compliance with the Contract Documents. The A/E will develop a punch-list of any work that still needs corrections. If the list is incidental corrective punch work to complete, the A/E will issue the notice of Substantial Completion with the corrections list attached. If the correction work is still significant, the Contractor shall complete the corrections in the same format as its pre-punch list and request additional reviews by the A/E as necessary to establish that the Project is complete to the point where the Substantial Completion notification can be issued.
- D. Provide operation and maintenance instruction on installed equipment to the Owner.
- E. The Contractor shall correct any outstanding punch list items and submit all other close-out documentation to the A/E as indicated under FINAL ACCEPTANCE. When punch lists have been verified by the A/E as being complete and all documentation is satisfactory and accepted by the A/E, the A/E will issue its recommendation for Final Acceptance to the Owner.
- F. Upon receipt of the A/E's notification of Final Acceptance, the Owner shall, through administrative action, declare the Project as being accepted, starting the 45 day lien period.

1.4 PROJECT RECORD DOCUMENT SUBMITTAL

Refer to Section 01 78 00, Closeout Submittals.

1.5 MAINTENANCE MATERIALS

A. Provide maintenance materials (tools, spare parts, extra stock, etc) indicated in other sections of the specifications.

1. Submit a receipt to the Owner identifying the product and quantity that is being provided.
2. Obtain Owner's signature on the receipt.

1.6 SUBSTANTIAL COMPLETION

A. Substantial Completion is defined in the General Conditions. Before requesting A/E's review for certification of Substantial Completion, complete the following, and provide a written request for Substantial Completion.

1. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
2. Advise the Owner of pending insurance changeover requirements.
3. Advise the Owner's personnel of changeover in security provisions.
4. Complete startup testing and commissioning of systems; submit Balancing Logs.
5. Discontinue and remove temporary facilities from the site, along with mockups, construction tools, surplus materials, and similar elements.
6. Complete final clean-up requirements.
7. Return all keys that were issued to the Contractor.

1.7 FINAL ACCEPTANCE

A. Before requesting certification of Final Acceptance and final payment, complete the following. Submit all of the following items together – no partial submittals will be accepted.

1. Submit an affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the work for which the Owner of property might in any way be responsible, have been paid or otherwise satisfied. (AIA Document G706).
2. Submit Contractor's Affidavit of Release of Liens (AIA Document G706A): If any liens are filed and cause the Owner to employ the services of any attorneys, the cost of the services will be deducted from the retainage.
3. Submit a letter from the Contractor's Bonding Company addressed to Owner and submitted to A/E approving release of final payment and waiving submittal of final receipts as well as a statement confirming the extension of the Bond for the one-year warranty period. Final receipts from all subcontractors and material and equipment suppliers shall be furnished to the A/E by the Contractor if the Surety does not waive this requirement.
4. Submit a copy of the A/E's final review list ("punch list") of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, identifying the name and company of the individual who confirmed completion of each item, and date when confirmation inspection was performed.
5. Submit consent of surety to final payment on AIA Form G707.
6. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
7. Submit certified Statement(s) indicating asbestos or lead containing material were

- not utilized or incorporated on the Project provided by Contractor under this contract.
8. Submit final As-Built Documents.
 9. Submit final Operation and Maintenance Manuals.
 10. Submit final Warranties, Bonds, and Permit Manual.
 11. Submit evidence of completion of commissioning of designated building systems.
 12. Submit evidence of compliance with requirements of governing Authorities.
 - a. Certificate of Occupancy, if not submitted at time of Substantial Completion.
(Note: Certificate of Occupancy is required to be submitted with Substantial Completion Request unless otherwise exempted by Owner in writing.)
 - b. Others as required by Regulatory Agencies.
 13. Submit all other required close-out documents.

1.8 REVIEW FEES

- A. The A/E will complete one initial and one final project review of the Work at Substantial Completion and at Final Acceptance to establish and verify completion of punch list work. Should it be necessary for the A/E to perform any additional reviews due to failure of Work to comply with completion status claimed by the Contractor, the Contractor shall bear all costs incurred by the A/E for each additional review required until the Work is satisfactorily completed. This compensation shall be at the A/E's standard hourly billing rate at the time of the review, and expenses associated with the visit. Compensation by the Contractor will be through a deductive change order to the Contractor's contract.

END OF SECTION 01 77 00

SECTION 01 78 00 - CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES:

- A. Project Record Document submittal.
- B. Warranties, Bonds, Extra Stock, and Permits manuals.

1.3 SUBMITTALS:

- A. Project Record Documents: Submit documents to A/E. The following submittal procedure shall occur prior to Final Acceptance.
 - 1. Submit original copy of as-builts (drawings & specifications) to A/E for review.
 - 2. Compile and organize any drawings or schedules in the Project Manual onto sheets of the same size as the Contract Drawings and submit with other record documents.
 - 3. Contractor will be notified within 15 work days if the submitted documents are acceptable.
 - 4. Should the submittal be unacceptable for any reason, the Contractor shall make requested modifications and resubmit to the A/E. Continue to resubmit as necessary until the submittal is acceptable.
 - 5. Upon acceptance of the submittal, A/E will within 30 work days incorporate the Contractor's as-builts into the A/E's original Contract Documents.
- B. Warranties, Bonds, Extra Stock, and Permits:
 - 1. Obtain and assemble executed certificates, warranties, bonds, receipts for extra stock, permits signed by any authorities having jurisdiction, and any required service and maintenance contracts from the respective manufacturers, suppliers, and Subcontractors. These may be tabbed in the front of the General Operation and Maintenance Manual provided they do not over-fill the binder.
 - 2. Verify that documents are in proper form and contain full information.
 - 3. Include originals of each in operation and maintenance manual, indexed separately on Table of Contents.
 - 4. Co-execute submittals when required.
 - 5. Submittal of warranties, bonds, extra stock and permit manual to match submittal requirements of Operation and Maintenance Manual.
 - 6. Provide Table of Contents neatly typed, in complete and orderly sequence. Include complete information for each of the following:
 - a. Product or work item;
 - b. Firm, with name of principal, address, and telephone number;
 - c. Scope;
 - d. Date of beginning of warranty or service and maintenance contract;

- e. Duration of warranty or service maintenance contract;
 - f. Proper procedure in case of failure;
 - g. Instances which might affect validity of warranty or bond; and
 - h. Contractor, name or responsible principal, address, and telephone number.
7. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within ten days after acceptance.
 8. Make other submittals within ten days after Date of Substantial Completion.
 9. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within ten days after acceptance, listing the date of acceptance as the beginning of the warranty period.
 10. Furnish one (1) executed copy for inclusion into Operation & Maintenance manuals.

PART 2 PRODUCTS

2.1 PROJECT RECORD DOCUMENTS:

A. Project Record Documents include the following:

1. Marked-up copies of Contract Drawings.
2. Marked-up copies of Project Manuals (Specifications and Detail Book, as applicable), all volumes.
3. Addenda.
4. Reviewed and marked-up copies of shop drawings and product data.
5. Newly prepared drawings.
6. Change Orders, RFIs and other modifications to the Contract issued in printed form during construction.
7. Architect's Clarifications and Proposal Request with all supporting documentation.
8. Field Authorizations.
9. Record Samples.
10. Field records for variable and concealed conditions.
11. Record information on Work that is recorded only schematically.
12. Manufacturer's instruction for assembly, installation, and adjusting.
13. Other miscellaneous record documents as listed below and applicable.
 - a. Field records on excavations and foundations.
 - b. Field records on underground construction and similar work.
 - c. Survey showing locations and elevations of underground lines.
 - d. Invert elevations of drainage piping.
 - e. Surveys establishing building lines and levels.
 - f. Authorized measurements utilizing unit prices or allowances.
 - g. Records of plant treatment.
 - h. Ambient and substrate condition tests.
 - i. Certifications received in lieu of labels on bulk products.
 - j. Batch mixing and bulk delivery records.
 - k. Testing and qualification of tradesmen.
 - l. Documented qualification of installation firms and/or personnel.
 - m. Load and performance testing.
 - n. Inspections and certifications by governing authorities.
 - o. Leakage and water-penetration tests.
 - p. Fire-resistance and flame-spread test results.
 - q. Final inspection and correction procedures.

PART 3 EXECUTION

3.1 PROJECT RECORD DOCUMENTS:

A. Maintenance of Documents and Samples:

1. Store and maintain in field office apart from the Contract Documents used for construction, one complete set of record documents and samples which are used to record as-built conditions.
2. Do not use Project Record Documents for construction purposes; protect from deterioration and loss in a secure fire-resistant location. Maintain record documents in good order and in a clean, dry, legible condition.
3. Make record documents and samples available at all times for review by A/E and the Owner.
4. Record actual revisions to the Work concurrent with construction progress.
5. Ensure entries are complete and accurate, enabling future reference by Owner.
 - a. Following each monthly progress schedule meeting, Contractor shall meet with all major subcontractors whose work is in progress at the site, including but not limited to mechanical, plumbing, electrical, security, fire protection, civil, and as otherwise designated, to review all "as-built" revisions on the day-by-day working set of "Project Record Copy" and verify installed record information from the previous month is properly recorded on the day-by-day "Project Record Copy", with all revisions and pertinent information clearly indicated.

B. Record Drawings and CAD Files: A clean, undamaged set of Contract Drawings including coordination drawings shall be kept at the job site as as-built record documents. Record "as-built" drawings shall be comprised of all sheets contained in the Contract Drawings, as well as all special equipment or systems drawings.

1. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark whichever drawings that show conditions fully and accurately. Where shop drawings, RFI's or other communication record are used to identify a change, record a cross-reference at the corresponding location on the Contract
2. Contractor shall survey and record all locations and depths of the Work from Owner-established baselines and bench marks indicated on the Drawings. Contractor shall furnish, at its own expense, all equipment, tools, materials, and labor required to survey and record all portions of the Work. Contractor shall provide electronic CAD file of all surveyed and recorded Work.
3. Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date. Items required to be marked include, but are not limited to, the following:
 - a. Indicate field changes of dimension and detail.
 - b. RFI's.
 - c. Horizontal and vertical measurements of underground services and utilities, referenced to the building or other permanent construction.
 - d. Note changes of directions and locations, by dimensions and elevations, as utilities are actually installed.
 - e. Indicate details not on original Contract drawings.

- f. "X-out" conditions not constructed and appropriately annotate "not constructed" to convey the actual "as constructed" condition.
 4. Mark record sets in a clear, legible manner, using red ink (no pencils); use other colors to distinguish between variations in separate categories of the work. Use 'whiteout' to erase errors.
 5. Mark new information that is important to Owner, but which was not shown on Contract Documents.
 6. Show addenda items, change orders, RFI, or other means of communication used in the construction process.
 7. Show and date revisions to drawings with a "cloud" drawn around the revision.
 8. Organize record drawing sheets in manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set. Where shop drawings, RFI's or other communication record are used as a reference, include a copy of them as part of the record drawings.
- C. Project Manual(s): During the construction period, maintain one complete copy of the Project Manual(s), including Specifications, Detail Book(s), addenda, and one copy of other written construction documents, such as Change Orders and RFI's issued in printed form during construction.
1. Legibly mark these documents in red ink to show substantial variations in actual work performed in comparison with the text of the specification and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation. Note related record drawing information and product data. Record at each product section description of actual products installed, including the following:
 - a. Manufacturer's name and product model and number.
 - b. Product substitutions or alternates utilized.
 - c. Changes made by Addenda and modifications.
 2. Mark Detail Book schedules, details, etc., to indicate the actual installation where the installation varies from that indicated in the Detail Book and modifications issued. Complete information in accordance with paragraph below for all detail drawings.
 3. Each prime contractor (Subcontractor) is responsible for marking up Sections that contain its own Work.
 4. General Contractor shall be responsible for collecting marked-up record Sections from each of the other prime contractors. General Contractor shall also be responsible for collating these Sections in proper numeric order with its own Sections to form a complete set of record Specifications.
 5. General Contractor shall be responsible for submitting the complete set of record Specifications as specified.
- D. Record Product Data:
1. Maintain one copy of each product data submittal, and mark-up variations in actual work in comparison with submitted information. Include both variations in product as delivered to site, and variations from manufacturer's instructions and recommendations for installation.

2. Give particular attention to concealed products and portions of the work which cannot otherwise be readily discerned at a later date by direct observation. Note related change orders and mark-up of record drawings and project manuals.
 3. Note related Change Orders and mark-up of record Drawings, where applicable.
 4. Upon completion of mark-up, submit complete set to Architect for Owner's records.
 5. Where record Product Data is required as part of maintenance manuals, submit marked-up Product Data as an insert in the manual instead of submittal as record Product Data.
 6. Each prime contractor (Subcontractor) shall be responsible for marking up and submitting record Product Data for its own Work.
 7. Insofar as possible, insert record product data in individual sub-sections of O&M Manuals. Refer to 3.5 below.
- E. Record Sample Submittal: Immediately prior to date(s) of substantial completion, A/E will meet with Contractor at site, and will determine which (if any) of submitted samples maintained by Contractor during progress of the work are to be transmitted to Owner for record purposes. Comply with A/E's instructions for packaging, identification marking, and delivery to Owner's sample storage place.
- F. Miscellaneous Record Submittals: Refer to paragraph above for listing of miscellaneous record documents and to other Sections of these specifications for requirements of miscellaneous record-keeping and submittals in connection with actual performance of the work. Immediately prior to date of Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to A/E for Owner's records.

3.2 WARRANTIES, BONDS, AND PERMIT MANUAL:

A. Project Warranty - General:

1. If, within one (1) year after the Date of Substantial Completion of the Work, or designated portion thereof, or within such longer period of time as may be prescribed by law or by the terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be defective or not in accordance with the Contract Documents, the Contractor, and where applicable, his subcontractor that portion of the work, shall correct it promptly after receipt of a written notice from the Owner or Architect to do so. This obligation shall survive Termination of the Contract. The Owner will give such notice promptly after discovery of the condition.

B. Categories Of Specific Warranties:

1. Warranties on the work are in several categories, including those of General Conditions, and including (but not necessarily limited to) the following specific categories related to individual units of work specified in the technical sections of these specifications.
 - a. Special Project Warranty (Guarantee): A warranty specifically written and signed by Contractor for a defined portion of the work; and, where required, countersigned by subcontractor, installer, manufacturer or other entity engaged by Contractor.

- b. Specified Product Warranty: A warranty which is required by contract documents, to be provided for a manufactured product incorporated into the work; regardless of whether manufacturer has published warranty without regard for specific incorporation of product into the work, or has written and executed warranty as a direct result of contract document requirements.
 - c. Coincidental Product Warranty: A warranty which is not specifically required by contract documents (other than as specified in this section); but which is available on a product incorporated into the work, by virtue of the fact that manufacturer of product has published warranty in connection with purchases and uses of product without regard for specific applications except as otherwise limited by terms of warranty.
 2. Refer to individual sections for the determination of units of work which are required to be specifically or individually warranted, and for the specific requirements and terms of those warranties (or guarantees).
- C. Disclaimer and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products. Manufacturer's disclaimers and limitations on product warranties do not relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.
- D. General Limitations:
 1. It is recognized that specific warranties are intended primarily to protect Owner against failure of the work to perform as required, and against deficient, defective and faulty materials and workmanship, regardless of sources.
 2. Except as otherwise indicated, specific warranties do not cover failures in the work which result from: 1) Unusual and abnormal phenomena of the elements, 2) The Owner's misuse, maltreatment or improper maintenance of the work, 3) Vandalism after time of substantial completion, or 4) Insurrection or acts of aggression including war.
- E. Related Damages & Losses:
 1. General: In connection with Contractor's correction of warranted work which has failed, remove and replace other work of project which has been damaged as a result of such failure, or must be removed and replaced to provide access for correction of warranted work.
 2. Consequential Damages: Except as otherwise indicated or required by governing regulations, special project warranties and product warranties are not extended to cover damage to building contents (other than work of Contract) which occurs as a result of failure of warranted work.
- F. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial completion is determined.
- G. Reinstatement Of Warranty Period: Except as otherwise indicated, when work covered by a special project warranty or product warranty has failed and has been corrected by replacement or restoration, reinstate warranty by written endorsement for the time period starting on the date of acceptance of replaced or restored work and ending upon date

original warranty would have expired if there had been no failure, with an equitable adjustment for depreciation.

- H. Replacement Cost, Obligations: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of the Contract Documents. Contractor shall be responsible for the cost of replacing or restoring defective Work regardless of whether the Owner has benefited from use of the Work through a portion of anticipated useful service life.
- I. Owner's Recourse: Expressed warranties made to the Owner are in addition to implied warranties and shall not limit the duties, obligations, right, and remedies otherwise available under the law. Expressed warranty periods shall not be interpreted as limitations on the time in which the Owner can enforce such other duties, obligations, rights, or remedies.
- J. Rejection Of Warranties: Owner reserves the right, at time of final acceptance or thereafter, to reject coincidental product warranties submitted by the Contractor, which in opinion of Owner tend to detract from or confuse interpretation of requirements of Contract Documents.
- K. Contractor's Procurement Obligations: Do not purchase, subcontract for, or allow others to purchase or sub-subcontract for materials or units of work for project where a special project warranty, specified product warranty, certification or similar commitment is required, until it has been determined that entities required to countersign such commitments are willing to do so.
- L. Co-execute warranties when required. Provide originals of each for inclusion in each operation and maintenance manual.
- M. Retain warranties and bonds until time specified for submittal.

END OF SECTION 01 78 00

SECTION 03 10 00 - CONCRETE FORMING AND ACCESSORIES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Formwork for cast-in-place concrete.
 - 2. Form accessories.
 - 3. Form stripping.
- B. Related Requirements:
 - 1. Section 03 20 00 - Concrete Reinforcing: Reinforcing steel and required supports for cast-in-place concrete.
 - 2. Section 03 30 00 - Cast-in-Place Concrete: Cast-in-place or in-situ concrete for structural building frame, slabs-on-grade, and other concrete components associated with building.

1.2 REFERENCE STANDARDS

- A. American Concrete Institute:
 - 1. ACI 117 - Specification for Tolerances for Concrete Construction and Materials.
 - 2. ACI 301 - Specifications for Structural Concrete.
 - 3. ACI 318 - Building Code Requirements for Structural Concrete.
 - 4. ACI 347 - Guide to Formwork for Concrete.
- B. ASTM International:
 - 1. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
 - 2. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Material Safety Data Sheets (MSDS) shall be submitted for every product specified or intended to be used on the Site.

PART 2 PRODUCTS

2.1 PERFORMANCE AND DESIGN CRITERIA

- A. Construct formwork according to ACI 318 to conform to design and applicable code requirements to achieve concrete shape, line, and dimension as indicated on Drawings.

2.2 WOOD FORM MATERIALS

- A. Form Materials: At discretion of Contractor.

2.3 FORMWORK ACCESSORIES

- A. Form Release Agent:
 - 1. Description: Colorless mineral oil that will not stain concrete or absorb moisture or impair natural bonding or color characteristics of coating intended for use on concrete.
- B. Bituminous Joint Filler: Comply with ASTM D1751.
- C. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Size, strength, and character to maintain formwork in place while placing concrete.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify lines, levels, and centers before proceeding with formwork.
- B. Verify that dimensions agree with Drawings.
- C. If formwork is placed after reinforcement resulting in insufficient concrete cover over reinforcement, request instructions from Architect/Engineer before proceeding.

3.2 INSTALLATION

- A. All products shall be handled and installed in accordance with the requirements and recommendations of the MSDS.
- B. Earth Forms: Not permitted.
- C. Formwork:
 - 1. Provide top form for sloped surfaces steeper than 1.5 horizontal to 1 vertical to hold shape of concrete during placement, unless it can be demonstrated that top forms can be omitted.
 - 2. Construct forms to correct shape and dimensions, mortar-tight, braced, and of sufficient strength to maintain shape and position under imposed loads from construction operations.
 - 3. Positioning:
 - a. Carefully verify horizontal and vertical positions of forms.
 - b. Correct misaligned or misplaced forms before placing concrete.
 - 4. Complete wedging and bracing before placing concrete.
 - 5. Erect formwork, shoring, and bracing to achieve design requirements according to ACI 318.
 - 6. Stripping:
 - a. Arrange and assemble formwork to permit dismantling and stripping.
 - b. Do not damage concrete during stripping.
 - 7. Do not patch formwork.
 - 8. Leave forms in place for minimum number of days according to ACI 347.

- D. Form Removal:
 - 1. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads, and removal has been approved by Architect/Engineer.
 - 2. Loosen forms carefully; do not wedge pry bars, hammers, or tools against finish concrete surfaces scheduled for exposure to view.
 - 3. Store removed forms in manner that surfaces to be in contact with fresh concrete will not be damaged.
 - 4. Discard damaged forms.
 - 5. Form Release Agent:
 - a. Apply according to manufacturer instructions.
 - b. Apply prior to placement of reinforcing steel, anchoring devices, and embedded items.
 - c. Do not apply form release agent if concrete surfaces are indicated to receive special finishes or applied coverings that may be affected by agent.
 - d. Soak inside surfaces of untreated forms with clean water, and keep surfaces coated prior to placement of concrete.
 - 6. Form Cleaning:
 - a. Clean forms as erection proceeds to remove foreign matter within forms.
 - b. Clean formed cavities of debris prior to placing concrete.
 - c. Flush with water or use compressed air to remove remaining foreign matter.
 - d. Ensure that water and debris drain to exterior through cleanout ports.
 - e. Cold Weather:
 - 1) During cold weather, remove ice and snow from within forms.
 - 2) Do not use de-icing salts.
 - 3) Do not use water to clean out forms, unless formwork and concrete construction proceed within heated enclosure; use compressed air or other dry method to remove foreign matter.
 - 7. Reuse and Coating of Forms:
 - a. Thoroughly clean forms and reapply form coating before each reuse.
 - b. For exposed Work, do not reuse forms with damaged faces or edges.
 - c. Apply form coating to forms according to manufacturer instructions.
 - d. Apply form coatings before placing reinforcing steel.
- E. Arrange formwork to allow proper erection sequence and to permit form removal without damage to concrete.
- F. Construction Joints:
 - 1. Arrange joints in continuous line straight, true, and sharp.

3.3 TOLERANCES

- A. Construct formwork to maintain tolerances according to ACI 318.

3.4 FIELD QUALITY CONTROL

- A. Section 01 70 00 - Closeout Requirements: Requirements for testing, adjusting, and balancing.
- B. Inspection:
 - 1. Notify Architect/Engineer after placement of reinforcing steel in forms but prior to placing concrete.

2. Schedule concrete placement to permit formwork inspection before placing concrete.

END OF SECTION 03 10 00

SECTION 03 20 00 - CONCRETE REINFORCING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Reinforcing bars.
 - 2. Reinforcement accessories.
- B. Related Requirements:
 - 1. Section 03 10 00 - Concrete Forming and Accessories: Form materials, waterstops, and accessories required to form cast-in-place concrete.
 - 2. Section 03 30 00 - Cast-in-Place Concrete: Cast-in-place or in-situ concrete for structural building frame, slabs on grade, and other concrete components associated with building.

1.2 REFERENCE STANDARDS

- A. American Concrete Institute:
 - 1. ACI 301 - Specifications for Structural Concrete.
 - 2. ACI 318 - Building Code Requirements for Structural Concrete.
 - 3. ACI 530/530.1 - Building Code Requirements and Specification for Masonry Structures.
 - 4. ACI SP-66 - ACI Detailing Manual.
- B. ASTM International:
 - 1. ASTM A615 - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
 - 2. Section 03 10 00 - Concrete Forming and Accessories: Form materials and accessories required to form cast-in-place concrete.
 - 3. Section 03 30 00 - Cast-in-Place Concrete: Cast-in-place concrete for sidewalks and curbs.
- C. Concrete Reinforcing Steel Institute:
 - 1. CRSI 10-MSP - Manual of Standard Practice.
 - 2. CRSI 10PLACE - Placing Reinforcing Bars.

1.3 COORDINATION

- A. Coordinate Work of this Section with placement of formwork, formed openings, and other Work.

1.4 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- C. Submit certified copies of mill test report of reinforcement materials analysis.

1.5 QUALITY ASSURANCE

- A. Perform Work according to ACI 318.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.
- B. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.
- C. Store materials according to manufacturer instructions.
- D. Protection:
 - 1. Protect materials from moisture by storing in clean, dry location remote from construction operations areas.
 - 2. Provide additional protection according to manufacturer instructions.

1.7 EXISTING CONDITIONS

- A. Field Measurements:
 - 1. Verify field measurements prior to fabrication.

PART 2 PRODUCTS

2.1 REINFORCEMENT

- A. Reinforcing Steel:
 - 1. Comply with ASTM A615.
 - 2. Yield Strength: 60
 - 3. Billet Bars: [Deformed.
 - 4. Finish: Uncoated.

2.2 FABRICATION

- A. Fabricate concrete reinforcement according to ACI 318.
- B. Splicing:
 - 1. If not indicated on Drawings, locate reinforcement splices at point of minimum stress.
 - 2. Obtain approval of splice locations from Architect/Engineer.

2.3 ACCESSORY MATERIALS

- A. Tie Wire:
 - 1. Minimum 16 gage, annealed type.
- B. Chairs, Bolsters, Bar Supports, and Spacers:

1. Size and Shape: To strengthen and support reinforcement during concrete placement conditions.
 2. Furnish load-bearing pad on bottom to prevent vapor retarder puncture.
- C. Special Chairs, Bolsters, Bar Supports, and Spacers Adjacent to Weather-Exposed Concrete Surfaces:
1. Material: Plastic-coated steel.
 2. Size and Shape: To meet Project conditions.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Place, support, and secure reinforcement against displacement.
- B. Do not deviate from required position beyond specified tolerance.
- C. Do not weld crossing reinforcement bars for assembly except as permitted by Engineer.
- D. Spacing:
 1. Space reinforcement bars with minimum clear spacing according to ACI 318.
 2. If bars are indicated in multiple layers, place upper bars directly above lower bars.
- E. Maintain concrete cover around reinforcement according to ACI 318 as follows:

REINFORCEMENT LOCATION		MINIMUM CONCRETE COVER
Footings and Concrete Formed against Earth		3 Inches
Concrete Exposed to Earth or Weather	No. 6 Bars and Larger	2 Inches
	No. 5 Bars and Smaller	1-1/2 Inches
Supported Slabs, Walls, and Joists	No. 14 Bars and Larger	1-1/2 Inches
	No. 11 Bars and Smaller	3/4 inches
Beams and Columns		1-1/2 Inches
Shell and Folded Plate Members	No. 6 Bars and Larger	3/4 Inch
	No. 5 Bars and Smaller	1/2 Inch

3.2 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Requirements for inspecting and testing.
- B. Reinforcement Inspection:
 1. Placement Acceptance: Inspect specified and ACI 318 material requirements and specified placement tolerances.
 2. Periodic Placement Inspection: Inspect for correct materials, fabrication, sizes, locations, spacing, concrete cover, and splicing.

END OF SECTION 03 20 00

SECTION 03 30 00 - CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes Cast-in-Place Concrete for Following Items:
 - 1. Slabs on grade.
 - 2. Sidewalks.
- B. Related Requirements:
 - 1. Section 03 20 00 - Concrete Reinforcing: Requirements for reinforcing steel and supports.
 - 2. Section 03 369 00 – Concrete Curing: Curing of concrete floor surfaces.
 - 3. Section 32 13 13 – Concrete Paving: Sidewalks, curbs, and gutters.

1.2 REFERENCE STANDARDS

- A. American Concrete Institute:
 - 1. ACI 301 - Specifications for Structural Concrete.
 - 2. ACI 305R - Guide to Hot Weather Concreting.
 - 3. ACI 306.1 - Standard Specification for Cold Weather Concreting.
 - 4. ACI 308.1 - Specification for Curing Concrete.
 - 5. ACI 318 - Building Code Requirements for Structural Concrete.
- B. ASTM International:
 - 1. ASTM C31 - Standard Practice for Making and Curing Concrete Test Specimens in the Field.
 - 2. ASTM C33 - Standard Specification for Concrete Aggregates.
 - 3. ASTM C94 - Standard Specification for Ready-Mixed Concrete.
 - 4. ASTM C143 - Standard Test Method for Slump of Hydraulic-Cement Concrete.
 - 5. ASTM C150 - Standard Specification for Portland Cement.
 - 6. ASTM C494 - Standard Specification for Chemical Admixtures for Concrete.
 - 7. ASTM C595 - Standard Specification for Blended Hydraulic Cements.
 - 8. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.
 - 9. ASTM C685 - Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing.
 - 10. ASTM C1218 - Standard Test Method for Water-Soluble Chloride in Mortar and Concrete.
 - 11. ASTM C1240 - Standard Specification for Silica Fume Used in Cementitious Mixtures.
 - 12. ASTM D994 - Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type).

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

- B. Material Safety Data Sheets (MSDS) shall be submitted for every product specified or intended to be used on the Site.
- C. Product Data: Submit data on joint devices, attachment accessories, and admixtures.
- D. Design Data:
 - 1. Submit concrete mix design for each concrete strength.
 - 2. Submit separate mix designs if admixtures are required for following:
 - a. Hot and cold weather concrete Work.
 - b. Air entrained concrete Work.
 - 3. Identify mix ingredients and proportions, including admixtures.
- E. Manufacturer Instructions: Submit installation procedures and interfacing required with adjacent Work.
- F. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

1.4 CLOSEOUT SUBMITTALS

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for submittals.
- B. Project Record Documents: Record actual locations of embedded utilities and components concealed from view in finished construction.

1.5 QUALITY ASSURANCE

- A. Perform Work according to ACI 318.
- B. Comply with ACI 305R when pouring concrete during hot weather.
- C. Comply with ACI 306.1 when pouring concrete during cold weather.
- D. Acquire cement and aggregate from one source for Work.

1.6 AMBIENT CONDITIONS

- A. Maintain concrete temperature after installation at minimum **50 degrees F** for minimum seven days.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Concrete:
 - 1. Cement:
 - a. Comply with ASTM **C150**, Type I - Normal.
 - b. Type: Portland.
 - 2. Normal Weight Aggregates:

- a. Comply with ASTM C33.
 - b. Coarse Aggregate Maximum Size: According to ACI 318.
 3. Water:
 - a. Comply with ACI 318.
 - b. Potable.
- B. Admixtures:
1. Manufacturers:
 - a. BASF Corporation-Construction Systems.
 - b. Euclid Chemical Company (The); an RPM company.
 - c. Grace Construction Products; W.R. Grace & Co. -- Conn.
 - d. Substitutions: As specified in Section 01 60 00 - Product Requirements.
 2. Air Entrainment: Comply with ASTM C260.
 3. Chemical:
 - a. Comply with ASTM C494.
 - b. Type A - Water Reducing.
 4. Fly Ash: Comply with ASTM C618.
 5. Silica Fume: Comply with ASTM C1240.
 6. Slag:
 - a. Description: Ground-granulated blast-furnace slag.
 - b. Comply with ASTM C989.
 - c. Grade 120.
 7. Plasticizing:
 - a. Comply with ASTM C1017.
 - b. Type I, plasticizing.
- C. Joint Devices and Filler:
1. Joint Filler, Type A:
 - a. Description: Asphalt-impregnated fiberboard or felt.
 - b. Comply with ASTM D1751 or D994.
 - c. Thickness: 1/4 inch.
 - d. Profile: Tongue-and-groove.
 2. Construction Joint Devices:
 - a. Material: Integral galvanized steel or extruded plastic.
 - b. Thickness: 1/4 inch.
 - c. Profile: Tongue-and-groove with removable top strip exposing sealant trough and knockout holes spaced at 6 inches o.c.
 - d. Furnish ribbed steel spikes with tongue to fit top screed edge.
 3. Sealant and Primer: as specified in Section 07 90 00 - Joint Protection.

2.2 CONCRETE MIX

- A. Select proportions for concrete according to ACI 318 trial mixtures or field test data or both.
- B. Performance and Design Criteria: As shown on Drawings.
- C. Admixtures:

1. Include admixture types and quantities indicated in concrete mix designs only if approved by Architect/Engineer.
 2. Cold Weather:
 - a. Use accelerating admixtures in cold weather.
 - b. Use of admixtures will not relax cold-weather placement requirements.
 3. Hot Weather: Use set-retarding admixtures.
 4. Do not use calcium chloride or admixtures containing calcium chloride.
 5. Add air entrainment admixture to concrete mix for Work exposed to freezing and thawing or deicing chemicals.
 6. For concrete exposed to deicing chemicals, limit fly ash, pozzolans, silica fumes, and slag content as required by applicable code.
- D. Average Compressive Strength Reduction: Permitted according to ACI 318.
- E. Ready-Mixed Concrete: Mix and deliver concrete according to ASTM C94.
- F. Site-Mixed Concrete: Mix concrete according to ACI 318.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify requirements for concrete cover over reinforcement.
- B. Verify that anchors, seats, plates, reinforcement, and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with placing concrete.

3.2 PREPARATION

Previously Placed Concrete:

1. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent.
 2. Remove laitance, coatings, and unsound materials.
- B. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels, and pack solid with non-shrink grout.
 - C. Remove debris and ice from formwork, reinforcement, and concrete substrates.
 - D. Remove water from areas receiving concrete before concrete is placed.

3.3 INSTALLATION

- A. All products shall be handled and installed in accordance with the requirements and recommendations of the MSDS.
- B. Placing Concrete:
 1. Place concrete according to ACI 318.
 2. Notify testing laboratory Owner minimum 24 hours prior to commencement of operations.

3. Ensure that reinforcement, inserts, embedded parts, formed expansion and contraction joints are not disturbed during concrete placement.
4. Joint Filler:
 - a. Separate slabs on grade from vertical surfaces with 1/4 inch thick joint filler
 - b. Extend joint filler from bottom of slab to within 1/2 inch of finished slab surface.
 - c. Finish Joint Sealer Requirements: As specified in Section 07 90 00 - Joint Protection.
- C. Concrete Finishing:
 1. Exterior concrete sidewalks, platforms, steps, ramps, and pads shall receive a broom finish. Unless otherwise shown in the Drawings, the broomed direction shall be perpendicular to the long dimension of the slab.
- D. Curing and Protection:
 1. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
 2. Protect concrete footings from freezing for minimum of five days.
 3. Maintain concrete with minimal moisture loss at relatively constant temperature for period as necessary for hydration of cement and hardening of concrete.
 4. Cure concrete floor surfaces as specified in Section 03 39 00 - Concrete Curing.

3.4 FIELD QUALITY CONTROL

- A. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of Work.
- B. Concrete Inspections:
 1. Continuous Placement Inspection: Inspect for proper installation procedures.
 2. Periodic Curing Inspection: Inspect for specified curing temperature and procedures.
- C. Patching:
 1. Allow Engineer to inspect concrete surfaces immediately upon removal of forms.
 2. Honeycombing or Embedded Debris in Concrete:
 - a. Not acceptable.
 - b. Notify Engineer upon discovery.
 3. Patch imperfections as directed by Engineer.
- D. Defective Concrete:
 1. Description: Concrete not conforming to required lines, details, dimensions, tolerances, or specified requirements.
 2. Repair or replacement of defective concrete will be determined by Architect/Engineer.
 3. Do not patch, fill, touch up, repair, or replace exposed concrete except upon express direction of Architect/Engineer for each individual area.

END OF SECTION 03 30 00

SECTION 03 39 00 - CONCRETE CURING

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes initial and final curing of horizontal and vertical concrete surfaces.
- B. Related Sections:
 - 1. Section 03 30 00 - Cast-In-Place Concrete.

1.2 REFERENCES

- A. American Concrete Institute:
 - 1. ACI 301 - Specifications for Structural Concrete.
- B. ASTM International:
 - 1. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
 - 2. ASTM C1315 - Standard Specification for Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete.
 - 3. ASTM D2103 - Standard Specification for Polyethylene Film and Sheeting.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures.
- B. Material Safety Data Sheets (MSDS) shall be submitted for every product specified or intended to be used on the Site.
- C. Product Data: Submit data on curing compounds, film, compatibilities, and limitations.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 318.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.
- B. Deliver curing materials in manufacturer's packaging including application instructions.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Membrane Curing Compound: ASTM C309, Type 1, Class A, low-VOC.
 - 1. Manufacturers:

- a. BASF Corporation-Construction Systems.
- b. Dayton Superior Specialty Chemicals.
- c. W.R. Meadows, Inc.
- d. Substitutions: Section 01 60 00 - Product Requirements.

B. Polyethylene Film Type E: ASTM C171,] 6 mil thick, clear.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify substrate surfaces are ready to be cured.

3.2 INSTALLATION – GENERAL

A. All products shall be handled and installed in accordance with the requirements and recommendations of the MSDS.

3.3 INSTALLATION - HORIZONTAL SURFACES

A. Cure concrete in accordance with ACI 308.1.

B. Membrane Curing Compound: Apply curing compound in two coats with second coat applied at right angles to first.

C. Polyethylene Film: Spread over floor slab areas, lap edges and sides, seal with pressure sensitive tape; maintain in place for 7 days.

3.4 PROTECTION OF FINISHED WORK

A. Do not permit traffic over unprotected floor surface.

END OF SECTION 03 39 00

SECTION 03 60 00 - GROUTING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Portland cement grout.
 - 2. Rapid curing epoxy grout.
 - 3. Non-shrink cementitious grout.

- B. Related Sections:
 - 1. Section 03 30 00 - Cast-In-Place Concrete
 - 2. Section 33 01 30.62 – Manhole Grout Sealing

1.2 REFERENCES

- A. American Society of Testing and Materials:
 - 1. ASTM C33 - Standard Specification for Concrete Aggregates.
 - 2. ASTM C40 - Test Method for Organic Impurities in Fine Aggregates for Concrete.
 - 3. ASTM C150 - Standard Specification for Portland Cement.
 - 4. ASTM C191 - Test Method for Time of Setting of Hydraulic Cement by Vicat Needle.
 - 5. ASTM C307 - Test Method for Tensile Strength of Chemical-Resistant Mortar, Grouts, and Monolithic Surfacing.
 - 6. ASTM C531 - Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes.
 - 7. ASTM C579 - Test Method for Compressive Strength of Chemical-Resistant Mortars, Grouts, monolithic Surfacing and Polymer Concretes.

- B. U. S. Army Corps of Engineers Concrete Research Division (CRD):
 - 1. CRD C621 - Non-Shrink Grout.

- C. Washington State Department of Transportation Standard Specifications for Road, Bridge, and Municipal Construction M41-10 (WSDOT Standard Specifications).

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

- B. Product Data: Submit product data on grout.

- C. Manufacturer's Installation Instructions: Submit manufacturer's instructions for mixing, handling, surface preparation and placing epoxy type and non-shrink type grouts.

- D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with WSDOT Standard Specifications.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.
- B. Deliver grout in manufacturer's unopened containers with proper labels intact.
- C. Store grout in a dry shelter, protect from moisture.

1.6 ENVIRONMENTAL REQUIREMENTS

- A. Do not perform grouting if temperatures exceed <_____> degrees F (<_____> degrees C).
- B. Maintain minimum temperature of <_____> degrees F (<_____> degrees C) before, during, and after grouting, until grout has set.

PART 2 PRODUCTS

2.1 PORTLAND CEMENT GROUT MATERIALS

- A. Portland Cement: ASTM C150, Type I and II.
- B. Water:
 - 1. Potable; containing no impurities, suspended particles, algae or dissolved natural salts in quantities capable of causing:
 - a. Corrosion of steel.
 - b. Volume change increasing shrinkage cracking.
 - c. Efflorescence.
 - d. Excess air entraining.
- C. Fine Aggregate:
 - 1. Washed natural sand.
 - 2. Gradation in accordance with ASTM C33 and represented by smooth granulometric curve within required limits.
 - 3. Free from injurious amounts of organic impurities as determined by ASTM C40.
- D. Mix:
 - 1. Portland cement, sand and water. Do not use ferrous aggregate or staining ingredients in grout mixes.

2.2 NON-SHRINK CEMENTITIOUS GROUT

- A. Furnish materials in accordance with WSDOT Standard Specifications 9-20.3.

- B. Non-shrink Cementitious Grout: Pre-mixed ready for use formulation requiring only addition of water; non-shrink, non-corrosive, non-metallic, non-gas forming, no chlorides.
- C. Properties: Certified to maintain initial placement volume or expand after set and meet the following minimum properties when tested in accordance with CRD-C621, for Type D non-shrink grout:

Property	Test	Time	Result
Setting Time	ASTM C191	Initial	2 hours (Approx)
		Final	3 hours (Approx)
Expansion			0.10% - 0.4% Maximum
Compressive Strength	CRD-C621	1 day	4,000 psi
		7 days	7,000 psi
		28 days	10,000 psi to 10,800 psi

2.3 FORMWORK

- A. Refer to Section 03 10 00 for formwork requirements.

2.4 CURING

- A. Prevent rapid loss of water from grout during first 48 hours by use of approved membrane curing compound or with use of wet burlap method.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify areas to receive grout.

3.2 PREPARATION

- A. Remove defective concrete, laitance, dirt, oil, grease and other foreign material from concrete surfaces by brushing, hammering, chipping or other similar means until sound, clean concrete surface is achieved.
- B. Rough concrete lightly, but not enough to interfere with placement of grout.
- C. Remove foreign materials from metal surfaces in contact with grout.
- D. Align, level and maintain final positioning of components to be grouted.
- E. Saturate concrete surfaces with clean water; remove excess water, leave none standing.

3.3 INSTALLATION - FORMWORK

- A. Construct leakproof forms anchored and shored to withstand grout pressures.
- B. Install formwork with clearances to permit proper placement of grout.

3.4 MIXING

- A. Portland Cement Grout:
 - 1. Use proportions of 2 parts sand and 1 part cement, measured by volume.
 - 2. Prepare grout with water to obtain consistency to permit placing and packing.
 - 3. Mix water and grout in two steps; pre-mix using approximately 2/3 of water; after partial mixing, add remaining water to bring mix to desired placement consistency and continue mixing 2 to 3 minutes.
 - 4. Mix only quantities of grout capable of being placed within 30 minutes after mixing.
 - 5. Do not add additional water after grout has been mixed.
 - 6. Capable of developing minimum compressive strength of 4000 psi in 48 hours at 7 days.

***** [OR] *****

- B. Mix and prepare non-shrink cementitious grout in accordance with manufacturer's instructions.
 - 1. Capable of developing minimum compressive strength of 4000 psi in 48 hours at 7 days.
- C. Mix grout components in proximity to work area and transport mixture quickly and in manner not permitting segregation of materials.

3.5 PLACING GROUT

- A. Place grout material quickly and continuously.
- B. Do not use pneumatic-pressure or dry-packing methods.
- C. Apply grout from one side only to avoid entrapping air.
- D. Do not vibrate placed grout mixture, or permit placement when area is being vibrated by nearby equipment.
- E. Thoroughly compact final installation and eliminate air pockets.
- F. Do not remove leveling shims for at least 48 hours after grout has been placed.

3.6 CURING

- A. Immediately after placement, protect grout from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. After grout has attained its initial set, keep damp for minimum of 3 days.

3.7 FIELD QUALITY CONTROL

- A. Tests of grout components may be performed to ensure conformance with specified requirements.

END OF SECTION

SECTION 31 05 13 - SOILS FOR EARTHWORK

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Subsoil materials.
2. Topsoil materials.

B. Related Sections:

1. Section 31 05 16 - Aggregates for Earthwork.
2. Section 31 23 17 - Trenching.
3. Section 31 25 00 – Erosion and Sedimentation Controls.
4. Section 32 05 16 - Aggregates for Exterior Improvements.
5. Section 32 91 19 - Landscape Grading.
6. Section 32 92 19 – Seeding.
7. Section 32 92 23 - Sodding.

1.2 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Materials Source: Submit name of imported materials source.
- C. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.3 QUALITY ASSURANCE

- A. Furnish each subsoil and topsoil material from single source throughout the Work.
- B. Perform Work in accordance with Washington State Department of Transportation Standard Specifications for Road, Bridge and Municipal Construction M41-10 (WSDOT Standard Specifications).
- C. Maintain one copy on site.

PART 2 PRODUCTS

2.1 SUBSOIL MATERIALS

A. Subsoil Type S1:

1. Excavated and re-used on-site native material.
2. Graded.
3. Free of lumps larger than 3 inches, rocks larger than 2 inches, and debris.

2.2 TOPSOIL MATERIALS

- A. Topsoil Type S2:
1. Commercially manufactured, compost-amended topsoil.
 2. Graded.
 3. Reasonably free of roots, rocks larger than $\frac{1}{2}$ inch, subsoil, debris, large weeds, and foreign matter.
 - a. Screening: Single screened.
 4. Acidity range (pH) of 5.5 to 7.5.
 5. Containing minimum of 15 percent and maximum of 30 percent inorganic matter.

2.3 SOURCE QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Testing and Inspection Services Testing and analysis of soil material.
- B. When tests indicate materials do not meet specified requirements, change material and retest.
- C. Furnish materials of each type from same source throughout the Work.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify site conditions.
- B. Verify survey bench mark and intended elevations for the Work are as indicated on Drawings.

3.2 PREPARATION

- A. Call the Utility Notification Center at 811 not less than three working days before performing Work.
1. Request underground utilities to be located and marked within and surrounding construction area.
 2. Mark the boundary of the excavation area with white paint applied to the ground.
- B. Verify that Temporary Erosion and Sediment Controls are in place and are adequate to protect adjacent areas and storm drain systems from impact. Inspect Temporary Erosion and Sediment Controls on a regular basis to ensure successful performance of the BMPs.
- C. Protect utilities indicated to remain from damage.
- D. Protect plant life, lawns, and other features remaining as portion of final landscaping.
- E. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

3.3 EXCAVATION

- A. Excavate subsoil and topsoil from areas designated. Strip topsoil to full depth of topsoil in areas of excavation or trenching.
- B. Stockpile excavated material meeting requirements for subsoil materials.
- C. Remove topsoil and excess excavated subsoil materials not intended for reuse from site.
- D. Remove excavated materials not meeting requirements for subsoil materials from site.

3.4 STOCKPILING

- A. Stockpile materials on site at locations designated by Engineer.
- B. Stockpile in sufficient quantities to meet Project schedule and requirements.
- C. Separate differing materials with dividers or stockpile apart to prevent mixing.
- D. Prevent intermixing of soil types or contamination.
- E. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.
- F. Stockpile unsuitable or hazardous materials on impervious material and cover to prevent erosion and leaching, until disposed of.

3.5 STOCKPILE CLEANUP

- A. Remove stockpile, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.
- B. When borrow area is indicated, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.

END OF SECTION 31 05 13

SECTION 31 05 16 - AGGREGATES FOR EARTHWORK

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Coarse aggregate materials.
2. Fine aggregate materials.

B. Related Sections:

1. Section 31 05 13 - Soils for Earthwork: Fill and grading materials.
2. Section 31 23 17 - Trenching.
3. Section 32 11 23 - Aggregate Base Courses.
4. Section 33 31 00 - Sanitary Utility Sewerage Piping.

1.2 REFERENCES

A. American Association of State Highway and Transportation Officials:

1. AASHTO M147 - Standard Specification for Materials for Aggregate and Soil-Aggregate Subbase, Base and Surface Courses.
2. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

B. ASTM International:

1. ASTM C136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
2. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)).
3. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).
4. ASTM D2487 - Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System).
5. ASTM D4318 - Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

1.3 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

B. Samples: Submit, in air-tight containers, 10 lb sample of each type of aggregate material to testing laboratory.

C. Materials Source: Submit name of imported materials suppliers.

D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.4 QUALITY ASSURANCE

- A. Furnish each aggregate material from single source throughout the Work.
- B. Perform Work in accordance with Washington State Department of Transportation Standard Specifications for Road, Bridges and Municipal Construction M41-10 (WSDOT Standard Specifications).
- C. Maintain one copy of each document on site.

PART 2 PRODUCTS

2.1 COARSE AGGREGATE MATERIALS

- A. Gravel Backfill for Pipe Zone Bedding: Conforming to WSDOT Standard Specification 9-03.12(3).
- B. Gravel Borrow: Conforming to WSDOT Standard Specification 9-03.14(1).

2.2 FINE AGGREGATE MATERIALS

- A. ASTM C33, clean washed river or bank sand.

2.3 SOURCE QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Testing and inspection services.
- B. Coarse Aggregate Material - Testing and Analysis: Perform in accordance with WSDOT Standard Specifications.
- C. Fine Aggregate Material - Testing and Analysis: Perform in accordance with WSDOT Standard Specifications.
- D. When tests indicate materials do not meet specified requirements, change material and retest.

PART 3 EXECUTION

3.1 STOCKPILING

- A. Stockpile materials on site at locations designated by Engineer.
- B. Stockpile in sufficient quantities to meet Project schedule and requirements.
- C. Separate different aggregate materials with dividers or stockpile individually to prevent mixing.
- D. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.

3.2 STOCKPILE CLEANUP

- A. Remove stockpile, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.

END OF SECTION – 31 05 16

SECTION 31 10 00 - SITE CLEARING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Removing surface debris.
 - 2. Removing designated paving, curbs, and sidewalks.
 - 3. Removing designated trees, shrubs, and other plant life.
 - 4. Removing abandoned utilities.
- B. Related Sections:
 - 1. Section 31 23 17 - Trenching

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify existing plant life designated to remain is tagged or identified.
- B. Identify waste area for placing removed materials.

3.2 PREPARATION

- A. Call Local Utility Line Information service at 811 not less than three working days before performing Work.
 - 1. Request underground utilities to be located and marked within and surrounding construction areas.
 - 2. Mark the boundary of the excavation area with white paint applied to the ground.

3.3 PROTECTION

- A. Locate, identify, and protect utilities indicated to remain, from damage.
- B. Protect trees, plant growth, and features designated to remain, as final landscaping.
- C. Protect bench marks, survey control points, and existing structures from damage or displacement.
- D. Inspect Temporary Erosion and Sediment Controls on a regular basis to ensure successful performance of the BMPs.

3.4 CLEARING

- A. Clear areas required for access to site and execution of Work to minimum depth of 12 inches.

- B. Remove trees and shrubs within the limits of excavation or trenching. Remove stumps, main root ball, surface rock, and groundcovers.
- C. Clear undergrowth and deadwood, without disturbing subsoil.

3.5 REMOVAL

- A. Remove debris, rock, and extracted plant life from site.
- B. Partially remove paving, curbs, and, sidewalks as indicated on Drawings. Neatly saw cut edges at right angle to surface.
- C. Remove abandoned utilities. Indicated removal termination point for underground utilities on Record Documents.
- D. Continuously clean-up and remove waste materials from site. Do not allow materials to accumulate on site.
- E. Do not burn or bury materials on site. Leave site in clean condition.

END OF SECTION 31 10 00

SECTION 31 23 16 - EXCAVATION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Excavating trenching for utilities.
2. Excavating for slabs-on-grade.
3. Compacted fill from top of utility bedding to subgrade elevations.
4. Backfilling and compaction.

B. Related Sections:

1. Section 31 05 13 - Soils for Earthwork: Topsoil and subsoil removal from site surface, Soils for fill.
2. Section 31 05 16 - Aggregates for Earthwork: Aggregates for fill.
3. Section 31 23 17 - Trenching: Excavating for utility trenches.
4. Section 33 31 10 – Sanitary Utility Sewerage Piping
5. Section 33 31 13 – Public Sanitary Utility Sewerage Piping

1.2 REFERENCES

- A. Local utility standards when working within 24 inches of utility lines.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Excavation Protection Plan: Describe sheeting, shoring, and bracing materials and installation required to protect excavations and adjacent structures and property; include structural calculations to support plan.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with Washington State Department of Transportation Standard Specifications for Road, Bridges and Municipal Construction M41-10 (WSDOT Standard Specifications).
- B. Maintain one copy of each document on site.

1.5 QUALIFICATIONS

- A. Prepare excavation protection plan under direct supervision of Professional Engineer experienced in design of this Work and licensed in the State of Washington.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 PREPARATION

- A. Call Local Utility Line Information service at 811 not less than three working days before performing Work.
 - 1. Request underground utilities to be located and marked within and surrounding construction areas.
 - 2. Mark the boundary of the excavation area with white paint applied to the ground.
- B. Verify that Temporary Erosion and Sediment Controls are in place and are adequate to protect adjacent areas and storm drain systems from impact. Inspect Temporary Erosion and Sediment Controls on a regular basis to ensure successful performance of the BMPs.
- C. Identify required lines, levels, contours, and datum.
- D. Protect utilities indicated to remain from damage.
- E. Protect plant life, lawns, and other features remaining as portion of final landscaping.
- F. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.
- G. Maintain and protect above and below grade utilities indicated to remain.
- H. Establish temporary traffic control and detours when excavating is performed in public right-of-way. Relocate controls as required during progress of Work.

3.2 EXCAVATION

- A. Underpin adjacent structures which may be damaged by excavation work.
- B. Excavate subsoil to accommodate slabs-on-grade, paving, and site structures, construction operations, and installation of manholes.
- C. Do not interfere with 45 degree bearing splay of foundations.
- D. Slope banks with machine to angle of repose or less until shored.
- E. Grade top perimeter of excavation to prevent surface water from draining into excavation.
- F. Trim excavation. Remove loose matter.
- G. Remove lumped subsoil, boulders, and rock up to 1/3 cu yd measured by volume. Remove larger material as specified in Section 31 05 16.

- H. Notify Engineer of unexpected subsurface conditions.
- I. Correct areas over excavated with compacted structural fill specified in Section 31 05 16.
- J. Stockpile subsoil in area designated on site to depth not exceeding 8 feet and protect from erosion.
- K. Repair or replace items indicated to remain damaged by excavation.

3.3 FIELD QUALITY CONTROL

- A. Perform laboratory material tests in accordance with ASTM D1557.
- B. Perform in place compaction tests in accordance with the following:
 - 1. Density Tests: ASTM D2922.
 - 2. Moisture Tests: ASTM D3017.
- C. When tests indicate Work does not meet specified requirements, remove Work, replace, compact, and retest.
- D. Request visual inspection of bearing surfaces by Engineer before installing subsequent work.

3.4 PROTECTION

- A. Prevent displacement or loose soil from falling into excavation; maintain soil stability.
- B. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.
- C. Protect structures, utilities and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth operations.

END OF SECTION 31 23 16

SECTION 31 23 17 - TRENCHING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Excavating trenches for utilities.
2. Compacted fill from top of utility bedding to subgrade elevations
3. Backfilling and compaction.

B. Related Sections:

1. Section 31 05 13 - Soils for Earthwork: Topsoil and subsoil removal from site Surface, Soils for fill.
2. Section 31 05 16 - Aggregates for Earthwork: Aggregates for fill.
3. Section 31 23 16 - Excavation: General structures excavation.
4. Section 33 31 00 - Sanitary Utility Sewerage Piping: Sanitary sewer piping and bedding.

1.2 REFERENCES

A. American Association of State Highway and Transportation Officials:

1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

B. ASTM International:

1. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).
2. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
3. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

1.3 DEFINITIONS

- ##### A. Utility: Any buried pipe, duct, conduit, or cable.

1.4 SUBMITTALS

- ##### A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

- ##### B. Excavation Protection Plan: Describe sheeting, shoring, and bracing materials and installation required to protect excavations and adjacent structures and property; include structural calculations to support plan.

1.5 QUALIFICATIONS

- ##### A. Prepare excavation protection plan under direct supervision of Professional Engineer experienced in design of this Work and licensed in the State of Washington.

1.6 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

1.7 COORDINATION

- A. Verify Work associated with lower elevation utilities is complete before placing higher elevation utilities.

PART 2 PRODUCTS

2.1 FILL MATERIALS

- A. Subsoil Fill: Type S1 as specified in Section 31 05 13.
- B. Structural Fill: Gravel Borrow as specified in Section 31 05 16.
- C. Granular Fill: Gravel Backfill for Pipe Zone Bedding as specified in Section 31 05 16.

PART 3 EXECUTION

3.1 LINES AND GRADES

- A. Lay pipes to lines and grades indicated on Drawings.
 - 1. Engineer reserves right to make changes in lines, grades, and depths of utilities when changes are required for Project conditions.
- B. Use laser-beam instrument with qualified operator to establish lines and grades.

3.2 PREPARATION

- A. Call Local Utility Line Information service at 811 not less than three working days before performing Work.
 - 1. Request underground utilities to be located and marked within and surrounding construction areas.
 - 2. Mark the boundary of the excavation area with white paint applied to the ground.
- B. Verify that Temporary Erosion and Sediment Controls are in place and are adequate to protect adjacent areas and storm drain systems from impact. Inspect Temporary Erosion and Sediment Controls on a regular basis to ensure successful performance of the BMPs.
- C. Identify required lines, levels, contours, and datum locations.
- D. Protect plant life, lawns, and other features remaining as portion of final landscaping.
- E. Protect bench marks, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

- F. Maintain and protect above and below grade utilities indicated to remain.
- G. Establish temporary traffic control and detours when trenching is performed in public right-of-way. Relocate controls as required during progress of Work.

3.3 TRENCHING

- A. Excavate subsoil required for utilities.
- B. Remove lumped subsoil, boulders, and rock up of 1/3 cubic yard, measured by volume.
- C. Perform excavation within 24 inches of existing utility service in accordance with utility's requirements.
- D. Do not advance open trench more than 100 feet ahead of installed pipe.
- E. Do not advance open trench more than 200 feet ahead of backfilled and traffic-ready trench.
- F. Cut trenches sufficiently wide to enable installation and allow inspection. Remove water or materials that interfere with Work.
- G. Excavate bottom of trenches maximum 18 inches wider than outside diameter of pipe.
- H. Excavate trenches to depth indicated on Drawings. Provide uniform and continuous bearing and support for bedding material.
- I. Do not interfere with 45 degree bearing splay of foundations.
- J. When Project conditions permit, slope side walls of excavation starting 2 feet above top of pipe. When side walls can not be sloped, provide sheeting and shoring to protect excavation as specified in this section.
- K. When subsurface materials at bottom of trench are loose or soft, notify Engineer, and request instructions.
- L. Trim excavation. Remove loose matter.
- M. Correct areas over excavated areas with compacted Structural Fill.
- N. Remove excess subsoil not intended for reuse, from site.
- O. Stockpile subsoil in area designated on site to depth not exceeding 8 feet and protect from erosion.

3.4 SHEETING AND SHORING

- A. Sheet, shore, and brace excavations to prevent danger to persons, structures and adjacent properties and to prevent caving, erosion, and loss of surrounding subsoil.

- B. Support trenches more than 4 feet deep excavated through unstable, loose, or soft material. Provide sheeting, shoring, bracing, or other protection to maintain stability of excavation.
- C. Design sheeting and shoring to be removed at completion of excavation work.
- D. Repair damage caused by failure of the sheeting, shoring, or bracing and for settlement of filled excavations or adjacent soil.
- E. Repair damage to new and existing Work from settlement, water or earth pressure or other causes resulting from inadequate sheeting, shoring, or bracing.

3.5 BACKFILLING

- A. Place pipe bedding to limits shown on Drawings. Compact in accordance with schedule at end of this schedule.
- B. Backfill trenches to contours and elevations with unfrozen fill materials.
- C. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen, or spongy subgrade surfaces.
- D. Place material in continuous layers as follows:
 - 1. Subsoil Fill: Maximum 8 inches compacted depth.
 - 2. Structural Fill: Maximum 6 inches compacted depth.
 - 3. Granular Fill: Maximum 6 inches compacted depth.
- E. Compact in accordance with schedule at end of this section.
- F. Employ placement method that does not disturb or damage foundation perimeter drainage, utilities in trench, and adjacent improvements.
- G. Maintain optimum moisture content of fill materials to attain required compaction density.
- H. Do not leave more than 25 feet of trench open at end of working day.
- I. Protect open trench to prevent danger to the public.

3.6 TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances.
- B. Top Surface of Backfilling Under Paved Areas: Plus or minus ½ inch from required elevations.
- C. Top Surface of General Backfilling: Plus or minus 1 inch from required elevations.

3.7 FIELD QUALITY CONTROL

- A. Perform laboratory material tests in accordance with ASTM D1557.

- B. Perform in place compaction tests in accordance with the following:
 - 1. Density Tests: ASTM D2922.
 - 2. Moisture Tests: ASTM D3017.
- C. When tests indicate Work does not meet specified requirements, remove Work, replace, compact, and retest.
- D. Frequency of Tests: One test per lift per 50 lineal feet of trench.

3.8 PROTECTION OF FINISHED WORK

- A. Reshape and re-compact fills subjected to vehicular traffic during construction.

3.9 SCHEDULE

- A. Pipe Bedding
 - 1. Gravel Backfill for Pipe Zone Bedding: To limits shown on Drawings.
 - 2. Hand place and compact uniformly to minimum 90 percent of MDD.
 - 3. Ensure placement and compaction methods do not move or damage pipe.
- B. Trench backfill under and 3 feet outside the limits of Paving, Sidewalks, Curbs, and Concrete Unit Pavers:
 - 1. Cover bedding with Grave Borrow: To subgrade elevation.
 - 2. Compact uniformly to minimum 95 percent of MDD.
- C. Trench backfill under Grass Areas:
 - 1. Cover bedding with Subsoil Fill Type S1: to 6 inches below finished grade.
 - 2. Compact uniformly to minimum 85 percent of MDD.
- D. Trench backfill under Landscape Areas:
 - 1. Cover bedding with Subsoil Fill Type S1: to 12 inches below finished grade.
 - 2. Compact uniformly to minimum 85 percent of MDD.

END OF SECTION 31 23 17

SECTION 32 11 23 - AGGREGATE BASE COURSES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Aggregate subbase.
 - 2. Aggregate base course.
- B. Related Sections:
 - 1. Section 31 23 17 - Trenching: Compacted fill under base course.
 - 2. Section 32 12 16 - Asphalt Paving: Binder and finish asphalt courses.
 - 3. Section 32 14 23 - Asphalt Unit Paving.
 - 4. Section 33 05 13 - Manholes and Structures: Manholes including frames.

1.2 REFERENCES

- A. American Association of State Highway and Transportation Officials:
 - 1. AASHTO M288 - Standard Specification for Geotextile Specification for Highway Applications.
- B. ASTM International:
 - 1. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 - 2. ASTM D2940 - Standard Specification for Graded Aggregate Material For Bases or Subbases for Highways or Airports.
 - 3. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data:
 - 1. Submit data for herbicide.
- C. Samples: Submit, in air-tight containers, 10 lb sample of each type of aggregate fill to testing laboratory.
- D. Materials Source: Submit name of aggregate materials suppliers.
- E. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.4 QUALITY ASSURANCE

- A. Furnish each aggregate material from single source throughout the Work.

- B. Perform Work in accordance with Washington State Department of Transportation Standard Specifications for Road, Bridge, and Municipal Construction M41-10 (WSDOT Standard Specifications).
- C. Maintain one copy of each document on site.

PART 2 PRODUCTS

2.1 AGGREGATE MATERIALS

- A. Subbase Aggregate: Crushed Surfacing Base Course conforming to WSDOT Standard Specification 9-03.9(3).
- B. Base Aggregate: Crushed Surfacing Top Course conforming to WSDOT Standard Specification 9-03.9(3).

2.2 ACCESSORIES

- A. Herbicide: Conforming to WSDOT Standard Specification 8-02.3(3)B.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify compacted substrate is dry and ready to support paving and imposed loads.
 - 1. Proof roll substrate with minimum 10-ton compactor of heavy rubber-tire equipment in two perpendicular passes to identify soft spots.
 - 2. Remove soft substrate and replace with compacted fill as specified in Section 31 23 23.
- B. Verify substrate has been inspected, gradients and elevations are correct.

3.2 PREPARATION

- A. Correct irregularities in substrate gradient and elevation by scarifying, reshaping, and re-compacting.
- B. Do not place fill on soft, muddy, or frozen surfaces.

3.3 AGGREGATE PLACEMENT

- A. Place aggregate equal thickness layers to total compacted thickness of inches indicated on Drawings.
 - 1. Maximum Layer Compacted Thickness: 6 inches.
 - 2. Minimum Layer Compacted Thickness: 2 inches.
- B. Roller compact aggregate to 95 percent maximum density.

- C. Level and contour surfaces to elevations, profiles, and gradients indicated.
- D. Maintain optimum moisture content of fill materials to attain specified compaction density.
- E. Use mechanical tamping equipment in areas inaccessible to compaction equipment.

3.4 TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances.
- B. Maximum Variation From Flat Surface: ¼ inch measured with 10 foot straight edge.
- C. Maximum Variation From Thickness: ¼ inch.
- D. Maximum Variation From Elevation: ¼ inch.

3.5 FIELD QUALITY CONTROL

- A. Compaction testing will be performed in accordance with ASTM D2922.
- B. When tests indicate Work does not meet specified requirements, remove Work, replace and retest.
- C. Frequency of Tests: One test for every 1000 square feet of area.

3.6 COMPACTION

- A. Compact materials to 98 percent of maximum density as determined from test strip, in accordance with ASTM D2940.

END OF SECTION 32 11 23

SECTION 32 12 16 - ASPHALT PAVING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Asphalt materials.
2. Aggregate materials.
3. Aggregate subbase.
4. Asphalt paving base course, binder course, and wearing course.
5. Asphalt paving overlay for existing paving.
6. Surface slurry.

B. Related Requirement:

1. Section 31 05 16 - Aggregates for Earthwork: Product requirements for subgrade aggregates
2. Section 32 11 23 - Aggregate Base Courses: Compacted subbase for paving.
3. Section 32 17 23 - Pavement Markings: Painted pavement markings, lines, and legends.
4. Section 33 05 13 - Manholes and Structures: Manholes including frames.

1.2 REFERENCE STANDARDS

- A. Washington State Department of Transportation Standard Specifications for Road, Bridge, and Municipal Construction M41-10 (WSDOT Standard Specifications).
- B. Maintain one copy of each document on site.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data:
 1. Submit product information for asphalt and aggregate materials.
 2. Submit mix design with laboratory test results supporting design.
- C. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with WSDOT Standard Specification Section 5-04.
- B. Obtain materials from same source throughout.

1.5 QUALIFICATIONS

- A. Installer: Company specializing in performing work of this section with minimum 5 years documented experience.

1.6 AMBIENT CONDITIONS

- A. Do not place asphalt mixture between October 15 and March 31 of the following year.
- B. Do not place asphalt mixture when ambient air or base surface temperature is less than the minimum temperatures in WSDOT Standard Specification Section 5-04.3(16), or surface is wet or frozen.

PART 2 PRODUCTS

2.1 ASPHALT PAVING

- A. Asphalt Materials:
 - 1. Asphalt Binder: AASHTO M320 performance grade PG 64-28.
 - 2. Tack Coat: CSS-1, conforming to WSDOT Standard Specification Section 9-02.1(6).
- B. Aggregate Materials:
 - 1. Coarse Aggregate: In accordance with WSDOT Standard Specifications Section 9-03.8
 - 2. Fine Aggregate: In accordance with WSDOT Standard Specifications Section 9-03.8.
 - 3. Mineral Filler: In accordance with WSDOT Standard Specifications Section 9-03.8(5).
- C. Aggregate Subbase: Specified in Section 32 11 23

2.2 MIXES

- A. Asphalt Paving Mixtures: Designed in accordance with WSDOT Standard Specifications Section 5-04.

2.3 SOURCE QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Testing, inspection and analysis requirements.
- B. Submit proposed mix design of each class of mix for review prior to beginning of Work.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify utilities indicated under paving are installed with excavations and trenches backfilled and compacted.
- B. Verify compacted aggregate base is dry and ready to support paving and imposed loads.
 - 1. Proof roll subbase with minimum 10-ton compactor or heavy rubber-tire equipment in two perpendicular passes to identify soft spots.
 - 2. Remove soft subbase and replace with compacted fill as specified in Section 31 23 23.
- C. Verify gradients and elevations of base are correct.

- D. Verify gutter drainage grilles and frames, manhole frames, and cleanouts are installed in correct position and elevation.

3.2 PREPARATION

- A. Prepare subbase in accordance with Section 31 23 17 – Trenching.

3.3 DEMOLITION

- A. Saw cut and notch existing paving as indicted on Drawings.
- B. Clean existing paving to remove foreign material, excess joint sealant and crack filler from paving surface.
- C. Repair surface defects in existing paving to provide uniform surface to receive new paving.

3.4 INSTALLATION

A. Subbase:

1. Aggregate Subbase: Install as specified in Section 32 11 23.

B. Tack Coat:

1. Apply tack coat in accordance with WSDOT Standard Specifications Section 5-04.

C. Asphalt Paving:

1. Install Work in accordance with WSDOT Standard Specifications Section 5-04.
2. Compact paving by rolling to specified density. Do not displace or extrude paving from position. Hand compact in areas inaccessible to rolling equipment.
3. Perform rolling with consecutive passes to achieve even and smooth finish without roller marks.

3.5 TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances.
- B. Flatness: Maximum variation of **1/8 inch** measured with **10 foot** straight edge.
- C. Scheduled Compacted Thickness: Within **1/4 inch**.
- D. Variation from Indicated Elevation: Within **1/4 inch**.

3.6 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Requirements for inspecting, testing.
- B. Take samples and perform tests in accordance with WSDOT Standard Specifications Section 5-04.
- C. Asphalt Paving Mix Temperature: Measure temperature at time of placement.

D. Asphalt Paving Thickness: ASTM D3549; test one core sample from every 1000 square yards compacted paving.

3.7 PROTECTION

A. Immediately after placement, protect paving from mechanical injury for 8 hours or until surface temperature is less than 120 degrees F.

END OF SECTION 32 12 16

SECTION 32 13 13 - CONCRETE PAVING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Aggregate base course.
 - 2. Concrete paving for:
 - a. Concrete sidewalks.
 - b. Concrete curbs and gutters.
- B. Related Requirements:
 - 1. Section 03 20 00 – Concrete Reinforcing.
 - 2. Section 03 30 00 – Cast-in-place Concrete.
 - 3. Section 03 39 00 – Concrete Curing.
 - 4. Section 32 11 23 – Aggregate Base Courses: base course.
 - 5. Section 32 14 13 – Precast Concrete Unit Paving.

1.2 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data:
 - 1. Submit data on concrete materials, joint filler, admixtures, and curing compounds.
- C. Design Data:
 - 1. Submit concrete mix design for each concrete strength. Submit separate mix designs when admixtures are required for the following:
 - a. Hot and cold weather concrete work.
 - 2. Identify mix ingredients and proportions, including admixtures.

1.3 QUALITY ASSURANCE

- A. Perform Work in accordance with requirements of Section 03 10 00, Section 03 20 00, and Section 03 30 00.
- B. Obtain cementitious materials from same source throughout.

1.4 AMBIENT CONDITIONS

- A. Section 01 50 00 - Temporary Facilities and Controls: Ambient conditions control facilities for product storage and installation.
- B. Do not place concrete when base surface temperature is less than 40 degrees F, or surface is wet or frozen.

PART 2 PRODUCTS

2.1 AGGREGATE BASE COURSE

- A. Aggregate Base Course: As specified in Section 32 11 23.

2.2 CONCRETE PAVING

- A. Form Materials:
 - 1. Form Materials: As specified in Section 03 10 00.
 - 2. Joint Filler: Premolded compressible type; 1/2 inch thick.
- B. Reinforcement:
 - 1. Reinforcing Steel: Type specified in Section 03 20 00.
- C. Concrete Materials:
 - 1. Concrete Materials: As specified in Section 03 30 00.

2.3 MIXES

- 1. Provide concrete to the following criteria:
 - a. Compressive Strength: 3000 psi at 28 days.
 - b. Slump: 4 to 5.5 inches.
 - c. Minimum Cement Content: 564 pounds/cu yd.
 - d. Air Entrainment: 4.5 to 7.5 percent.

2.4 ACCESSORIES

- A. Curing Compound: Specified in Section 03 39 00.

2.5 SOURCE QUALITY CONTROL

- A. Submit proposed mix design to appointed firm for review prior to commencement of Work.
- B. Tests on cement, aggregates, and mixes will be performed to ensure conformance with specified requirements.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify compacted subgrade is dry.
 - 1. Remove soft subbase and replace with compacted fill as specified in Section 32 11 23.
- B. Verify gradients and elevations of base are correct.

3.2 PREPARATION

- A. Moisten substrate to minimize absorption of water from fresh concrete.

- B. Notify Engineer minimum 24 hours prior to commencement of concreting operations.

3.3 INSTALLATION

A. Base Course:

1. Crushed Surfacing Top Course: Install as specified in Section 32 11 23.

B. Forms:

1. Place and secure forms and screeds to correct location, dimension, profile, and gradient.
2. Assemble formwork to permit easy stripping and dismantling without damaging concrete.

C. Reinforcement:

1. Place reinforcing at mid-height of paving.
2. Interrupt reinforcing at expansion joints.
3. Place reinforcing to achieve paving and curb alignment as detailed.

D. Placing Concrete:

1. Place concrete as specified in Section 03 30 00.
2. Ensure reinforcing, inserts, embedded parts, and formed joints are not disturbed during concrete placement.
3. Place concrete continuously over the full width of the panel and between predetermined construction joints. Do not break or interrupt successive pours such that cold joints occur.

E. Joints

1. Place full-depth expansion joints at 12 foot intervals. Align curb, gutter, and sidewalk expansion joints.
2. Place scored contraction joints at 4 foot intervals.
3. Place joint filler between paving components and building or other appurtenances.

F. Finishing:

1. Sidewalk Paving: Light broom, radius to 1/2 inch radius, and trowel joint edges.
2. Curbs and Gutters: Light broom.
3. Place curing compound on exposed concrete surfaces immediately after finishing.

G. Curing and Protection

1. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
2. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

3.4 TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances.

- B. Maximum Variation of Surface Flatness: 1/4 inch in 10 ft.

- C. Maximum Variation from True Position: 1/2 inch.

3.5 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Requirements for inspecting, testing.
- B. Inspect reinforcing placement for size, spacing, location, support.
- C. Testing firm will take cylinders and perform slump and air entrainment tests in accordance with ACI 301.
- D. Maintain records of placed concrete items. Record date, location of pour, quantity, air temperature, and test samples taken.

3.6 PROTECTION

- A. Immediately after placement, protect paving from premature drying, excessive hot or cold temperatures, and mechanical injury.
- B. Do not permit pedestrian traffic over paving for 1 day minimum after finishing. Do not permit vehicular traffic over paving for 7 days minimum after finishing.

END OF SECTION 32 13 13

SECTION 32 14 13 - PRECAST CONCRETE UNIT PAVING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Concrete paver units.
 - 2. Sand bed and sand joint.
 - 3. Cast-in-place Concrete Edging.
- B. Related Sections:
 - 1. Section 32 13 13 - Concrete Paving: Concrete base preparation.
 - 2. Section 32 11 23 – Aggregate Base Courses: Pavement subbase.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Pavers: Retain and re-use existing pavers removed for utility trenching. Replacement pavers for broken or missing units shall match existing construction in color, size, texture, and pattern.
- B. Sand for Setting Bed and Joint Filler: ASTM C33, clean washed river or bank sand.
- C. Edging: Formed and cast-in-place concrete curbing reinforced with two #4 rebar set continuously through the bottom third of the cross sectional depth of the curb.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that substrate is level or to correct gradient, smooth, capable of supporting pavers and imposed loads, and ready to receive Work of this section.
- B. Verify gradients and elevations of substrate are correct.

3.2 INSTALLATION

- A. Spread sand evenly over prepared substrate surface to a maximum thickness of **2 inches**.
- B. Dampen and roller compact sand to level and even surface.
- C. Screed and scarify top 1/2 inch of sand.
- D. Place paver units in pattern matching adjacent paving, from straight reference edge.
- E. Maintain tight, evenly spaced joints.

- F. Place concrete edging at edges. Dowel concrete edging reinforcement into existing edging.
- G. Sprinkle sand over surface and sweep into joints. Moisten joints and recover with additional sand until firm joints are achieved. Remove excess sand.
- H. Tamp and level paver units with mechanical vibrator until units are firmly bedded, level, and to correct elevation and gradients. Do not tamp unrestrained edges.
- I. Recover with additional sand, sweep into joints and hollow areas of pavers. Remove excess sand.

END OF SECTION 32 13 13

SECTION 32 17 23 - PAVEMENT MARKINGS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Traffic lines and markings.
 - 2. Paint.
 - 3. Glass beads.

- B. Related Requirements:
 - 1. Section 32 12 16 - Asphalt Paving.

1.2 REFERENCE STANDARDS

- A. American Association of State Highway and Transportation Officials:
 - 1. AASHTO M247 - Standard Specification for Glass Beads Used in Traffic Paint.

- B. ASTM International:
 - 1. ASTM D34 - Standard Guide for Chemical Analysis of White Pigments.
 - 2. ASTM D126 - Standard Test Methods for Analysis of Yellow, Orange, and Green Pigments Containing Lead Chromate and Chromium Oxide Green.
 - 3. ASTM D562 - Standard Test Method for Consistency of Paints Measuring Krebs Unit (KU) Viscosity Using a Stormer-Type Viscometer.
 - 4. ASTM D711 - Standard Test Method for No-Pick-Up Time of Traffic Paint.
 - 5. ASTM D713 - Standard Practice for Conducting Road Service Tests on Fluid Traffic Marking Materials.
 - 6. ASTM D969 - Standard Test Method for Laboratory Determination of Degree of Bleeding of Traffic Paint.
 - 7. ASTM D1301 - Standard Test Methods for Chemical Analysis of White Lead Pigments.
 - 8. ASTM D1394 - Standard Test Methods for Chemical Analysis of White Titanium Pigments.
 - 9. ASTM D1475 - Standard test Method for Density of Liquid Coatings, Inks, and Related Products.
 - 10. ASTM D1640 - Standard Test Methods for Drying, Curing, or Film Formation of Organic Coatings at Room Temperature.
 - 11. ASTM D2202 - Standard Test Method for Slump of Sealants.
 - 12. ASTM D2371 - Standard Test Method for Pigment Content of Solvent-Reducible Paints.
 - 13. ASTM D2621 - Standard Test Method for Infrared Identification of Vehicle Solids From Solvent-Reducible Paints.
 - 14. ASTM D2743 - Standard Practices for Uniformity of Traffic Paint Vehicle Solids by Spectroscopy and Gas Chromatography.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

- B. Product Data: Submit paint formulation for each type of paint.

- C. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.
- D. Test and Evaluation Reports: Submit source and acceptance test results in accordance with AASHTO M247.
- E. Manufacturer's Instructions: Submit instructions for application temperatures, eradication requirements, application rate, line thickness, type of glass beads, bead embedment and bead application rate, and any other data on proper installation.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with Washington State Department of Transportation Standard Specifications for Road, Bridge, and Municipal Construction M41-10 (WSDOT Standard Specifications).
- B. Maintain one copy of each document on site.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.
- B. Invert containers several days prior to use when paint has been stored more than 2 months. Minimize exposure to air when transferring paint. Seal drums and tanks when not in use.
- C. Glass Beads. Store glass beads in cool, dry place. Protect from contamination by foreign substances.

1.6 AMBIENT CONDITIONS

- A. Section 01 50 00 - Temporary Facilities and Controls: Ambient conditions control facilities for product storage and installation.
- B. Do not apply materials when surface and ambient temperatures are outside temperature ranges required by paint product manufacturer.
- C. Do not apply exterior coatings during rain or snow when relative humidity is outside humidity ranges, or moisture content of surfaces exceed those required by paint product manufacturer.
- D. Do not apply paint when temperatures are expected to fall below **50 degrees F** for 24 hours after application.
- E. Volatile Organic Content (VOC). Do not exceed State or Environmental Protection Agency maximum VOC on traffic paint.

PART 2 PRODUCTS

2.1 PAINTED PAVEMENT MARKINGS

A. Manufacturers:

1. 3M Co. – Traffic Safety Systems Division.
2. Ennis Traffic Safety Solutions, Inc.
3. McStars Enterprises Inc.
4. Potters Industries, Inc.
5. Rodda Paint Company
6. Sherwin-Williams Co.
7. Swarco manufactured by Colorado Paint Company
8. No substitutions permitted.

B. Furnish materials in accordance with WSDOT Qualified Products List.

C. Glass Beads: AASHTO M247, Type 1, coated to enhance embedment and adherence with paint.

2.2 EQUIPMENT

A. Continuous Longitudinal Line Application Machine: Use application equipment with following capabilities.

1. Dual nozzle paint gun to simultaneously apply parallel lines of indicated width in solid or broken patterns or various combinations of those patterns.
2. Pressurized bead-gun to automatically dispense glass beads onto painted surface, at required application rate.
3. Measuring device to automatically and continuously measure length of each line placed, to nearest foot.

B. Other Equipment:

1. For application of crosswalks, intersections, stop lines, legends and other miscellaneous items by walk behind strippers, hand spray or stencil trucks, apply with equipment meeting requirements of this section. Do not use hand brushes or rollers. Optionally apply glass beads by hand.

PART 3 EXECUTION

3.1 PREPARATION

A. Maintenance and Protection of Traffic:

1. Provide short term traffic control in accordance with Section 01 50 00 - Temporary Facilities and Controls.
2. Prevent interference with marking operations and to prevent traffic on newly applied markings before markings dry.
3. Maintain access to existing businesses, and other properties requiring access.

B. Surface Preparation.

1. Clean and dry paved surface prior to painting.

2. Blow or sweep surface free of dirt, debris, oil, grease or gasoline.

3.2 APPLICATION

- A. Install in accordance with WSDOT Standard Specification 8-22.
- B. Prevent splattering and over spray when applying markings.
- C. Unless material is track free at end of paint application convoy, use traffic cones to protect markings from traffic until track free. When vehicle crosses a marking and tracks it or when splattering or over spray occurs, eradicate affected marking and resultant tracking and apply new markings.
- D. Collect and legally dispose of residues from painting operations.

3.3 PROTECTION

- A. Protect painted pavement markings from vehicular and pedestrian traffic until paint is dry and track free. Follow manufacturer's recommendations or use minimum of 30 minutes. Consider barrier cones as satisfactory protection for materials requiring more than 2 minutes dry time.

END OF SECTION 32 17 23

SECTION 32 84 00 - PLANTING IRRIGATION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Trenching.
2. Pipe and fittings.
3. Valves.
4. Outlet heads, emitters, bubblers, and accessories.

B. Related Sections:

1. Section 31 23 17 - Trenching: Excavating and backfilling for irrigation piping.
2. Section 32 92 19 - Seeding.
3. Section 32 92 23 - Sodding

1.2 REFERENCES

A. ASTM International:

1. ASTM D1785 – Standard Specification for Polyvinylchloride (PVC) plastic Pipe, Schedules 40, 80, and 120.
2. ASTM D2564 - Standard Specification for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping Systems.

1.3 SYSTEM DESCRIPTION

- A. Repairs to existing underground irrigation systems damaged by utility trenching.

1.4 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit component and control system and wiring diagrams.

PART 2 PRODUCTS

2.1 PIPE MATERIALS

- A. PVC Pipe: Schedule 80 for pipe sizes greater than 3 inches, Schedule 40 for pipe sizes of 3 inches and smaller.
- B. Fittings: Type and style of connection to match pipe.
- C. Solvent Cement: ASTM D2564 for PVC pipe and fittings

2.2 OUTLETS

- A. Heads used for large lawn areas shall be Hunter I-25 pop up type with nozzle type as required.
- B. Heads used for smaller lawn areas shall be Hunger PGP series size and type as required.
- C. Heads used for shrub beds or small irregularly shaped lawn sections shall be Rainbird 800 series with appropriate nozzle sizes provided by Rainbird.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify location of existing utilities.

3.2 PREPARATION

- A. Identify components of the existing irrigation system, match replacement components to existing as required.

3.3 TRENCHING

- A. Trench in accordance with Section 31 23 17.
- B. Trench Size:
 - 1. Minimum Cover Over Installed Supply Piping: 24 inches.
 - 2. Minimum Cover Over Installed Branch Piping: 18 inches.
 - 3. Minimum Cover Over Installed Outlet Piping: 18 inches.
- C. Trench to accommodate grade changes and slope to drains.
- D. Maintain trenches free of debris, material, or obstructions damaging to pipe.

3.4 INSTALLATION

- A. Slope piping for self drainage.
- B. Use threaded nipples for risers to each outlet.
- C. After piping is installed, but before outlets are installed and backfilling commences, open valves and flush system with full head of water.

3.5 BACKFILLING

- A. Backfill with Type S1 fill in accordance with Section 31 23 17.
- B. Install **3** inch sand cover over piping.
- C. Protect piping from displacement.

3.6 FIELD QUALITY CONTROL

- A. Prior to backfilling, test system for leakage for whole system to maintain 150 psi pressure for thirty minutes.
- B. System is acceptable when no leakage or loss of pressure occurs and system self drains during test period.

3.7 ADJUSTING

- A. Adjust head types for full water coverage as directed by Owner.

END OF SECTION 32 84 00

SECTION 32 92 19 - SEEDING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Preparation of subsoil.
 - 2. Placing topsoil.
 - 3. Fertilizing.
 - 4. Seeding.
 - 5. Hydroseeding.
 - 6. Mulching.
 - 7. Maintenance.

- B. Related Sections:
 - 1. Section 31 05 13 – Soils for Earthwork: Topsoil material
 - 2. Section 31 23 17 - Trenching: Rough grading over cut.
 - 3. Section 32 84 00 - Planting Irrigation.
 - 4. Section 32 92 23 - Sodding.

1.2 REFERENCES

- A. ASTM International:
 - 1. ASTM C602 - Standard Specification for Agricultural Liming Materials.

1.3 DEFINITIONS

- A. Weeds: Vegetative species other than specified species to be established in given area.

1.4 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit data for seed mix, fertilizer, mulch, and other accessories.
- C. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.5 QUALITY ASSURANCE

- A. Provide seed mixture in containers showing percentage of seed mix, germination percentage, inert matter percentage, weed percentage, year of production, net weight, date of packaging, and location of packaging.

1.6 QUALIFICATIONS

- A. Seed Supplier: Company specializing in manufacturing Products specified in this section with minimum three years documented experience.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.
- B. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable.
- C. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

1.8 MAINTENANCE SERVICE

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for maintenance service.
- B. Maintain seeded areas immediately after placement until desired vegetation is well established and exhibits vigorous growing condition.

PART 2 PRODUCTS

2.1 SEED MIXTURE

- A. Suppliers:
 - 1. Plants of the Wild.
 - 2. Substitutions: Section 01 60 00 – Product Requirements.
- B. Seed Mixture:

Garnett Mountain Brome	35 percent
Idaho Fescue	20 percent
Bluebunch Wheatgrass	20 percent
Slender Wheatgrass	15 percent
Sherman Big Bluegrass	10 percent

2.2 ACCESSORIES

- A. Mulching Material: wood cellulose fiber, dust or chip form, free of growth or germination inhibiting ingredients.
- B. Fertilizer: Commercial grade; recommended for grass; with fifty percent of elements derived from organic sources; to the following proportions: Nitrogen eighteen percent, phosphoric acid ten percent, potassium ten percent, and sulfur seven percent.
- C. Lime: ASTM C602, Class O agricultural limestone containing a minimum 80 percent calcium carbonate equivalent.
- D. Water: Clean, fresh and free of substances or matter capable of inhibiting vigorous growth of grass.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify prepared soil base is ready to receive the Work of this section.

3.2 PREPARATION OF SUBSOIL

- A. Prepare sub-soil and eliminate uneven areas and low spots.
- B. Maintain lines, levels, profiles, and contours. Make changes in grade gradual. Blend slopes into level areas.
- C. Remove foreign materials and undersirable plants and their roots. Do not bury foreign material beneath areas to be seeded.
- D. Remove contaminated subsoil.
- E. Scarify sub-soil to depth of 4 inches where topsoil is to be placed.
- F. Repeat cultivation in areas where equipment, used for hauling and spreading topsoil, has been compacted subsoil.

3.3 PLACING TOPSOIL

- A. Spread topsoil to minimum depth of 6 inches over area to be seeded.
- B. Place topsoil during dry weather and on dry unfrozen subgrade.
- C. Remove vegetable matter and foreign non-organic material from topsoil while spreading.
- D. Grade topsoil to eliminate rough, low or soft areas and to ensure positive drainage.

3.4 FERTILIZING

- A. Apply lime at application rate recommended by soil analysis. Work lime into top 4 inches of soil.
- B. Apply fertilizer at application rate of 4 lbs per 1000 sq. ft.
- C. Apply after smooth raking of topsoil and prior to roller compaction.
- D. Do not apply fertilizer at same time or with same machine used to apply seed.
- E. Mix fertilizer thoroughly into upper 2 inches of topsoil.
- F. Lightly water soil to aid dissipation of fertilizer. Irrigate top level of soil uniformly.

3.5 SEEDING

- A. Apply seed at rate of 2-4 lbs per 1000 sq ft evenly in two intersecting directions. Rake in lightly.

- B. Do not seed areas in excess of that which can be mulched on same day.
- C. Planting Season: October 1 through November 15.
- D. Do not sow immediately following rain, when ground is too dry, or when winds are over 12 mph.
- E. Roll seeded area with roller not exceeding 112 lbs/linear foot.
- F. Immediately following seeding and compacting, apply mulch to thickness of 1/4 inches. Maintain clear of shrubs and trees.
- G. Apply water with fine spray immediately after each area has been mulched. Saturate to **4** inches of soil.

3.6 HYDROSEEDING

- A. Apply fertilizer, mulch and seeded slurry with hydraulic seeder at rate of 60 lbs per 1000 sq ft evenly in one pass.
- B. After application, apply water with fine spray immediately after each area has been hydroseeded. Saturate to **4** inches of soil and maintain moisture levels two to four inches.

3.7 MAINTENANCE

- A. Water to prevent grass and soil from drying out.
- B. Control growth of weeds. Apply herbicides. Remedy damage resulting from improper use of herbicides.
- C. Immediately reseed areas showing bare spots.
- D. Repair washouts or gullies.
- E. Protect seeded areas with warning signs during maintenance period.

END OF SECTION 32 92 19

SECTION 32 92 23 - SODDING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Preparation of subsoil.
 - 2. Placing topsoil.
 - 3. Fertilizing.
 - 4. Sod installation.
 - 5. Maintenance.

- B. Related Sections:
 - 1. Section 31 23 17 - Trenching: Rough grading over cut.
 - 2. Section 32 84 00 - Planting Irrigation.
 - 3. Section 32 92 19 – Seeding.

1.2 REFERENCES

- A. ASTM International:
 - 1. ASTM C602 - Standard Specification for Agricultural Liming Materials.

- B. Turfgrass Producers International:
 - 1. TPI - Guideline Specifications to Turfgrass Sodding.

1.3 DEFINITIONS

- A. Weeds: Vegetative species other than specified species to be established in given area.

1.4 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

- B. Product Data: Submit data for sod grass species, fertilizer, mulch, and other accessories.

- C. Test Reports: Indicate topsoil nutrient and pH levels with recommended soil supplements and application rates.

- D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.5 QUALITY ASSURANCE

- A. Sod: Root development capable of supporting its own weight without tearing, when suspended vertically by holding upper two corners.

1.6 QUALIFICATIONS

- A. Sod Producer: Company specializing in manufacturing Products specified in this section with minimum three years documented experience.
- B. Installer: Company specializing in performing work of this section with minimum three years documented experience.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.
- B. Deliver sod on pallets. Protect exposed roots from dehydration.
- C. Do not deliver more sod than can be laid within 24 hours.

1.8 COORDINATION

- A. Coordinate with installation of underground sprinkler system piping and watering heads.

1.9 MAINTENANCE SERVICE

- A. Section 01 70 00 - Execution and Closeout Requirements: Maintenance service.
- B. Maintain sodded areas immediately after placement until grass is well established and exhibits vigorous growing condition for two cuttings.

PART 2 PRODUCTS

2.1 SOD

- A. Sod Growers:
 - 1. Ray Turf Farms
 - 2. Basin Sod & Gravel
 - 3. Substitutions: Section 01 60 00 - Product Requirements
- B. Sod: Certified Number 1 Quality/Premium complying with TPI's "Specifications for Turfgrass Sod Materials"; cultivated grass sod; type indicated below; with strong fibrous root system, free of stones, burned or bare spots; containing no more than 5 percent weeds.
 - 1. Kentucky Blue Grass varietal blend.

2.2 SOIL MATERIALS

- A. Topsoil: As specified in Section 32 05 13 Type S2.

2.3 ACCESSORIES

- A. Fertilizer: Commercial grade; recommended for grass, with fifty percent of elements derived from organic sources; to the following proportions: nitrogen 18 percent, phosphorous 10 percent, potassium 10 percent, sulfur 7 percent.
- B. Lime: ASTM C602, Class O agricultural limestone containing a minimum 80 percent calcium carbonate equivalent.
- C. Water: Clean, fresh and free of substances or matter capable of inhibiting vigorous growth of grass.

2.4 HARVESTING SOD

- A. Machine cut sod and load on pallets in accordance with TPI.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify prepared soil base is ready to receive the Work of this section.

3.2 PREPARATION OF SUBSOIL

- A. Prepare sub-soil and eliminate uneven areas and low spots.
- B. Maintain lines, levels, profiles and contours. Make changes in grade gradual. Blend slopes into level areas.
- C. Remove foreign materials and undesirable plants and their roots. Do not bury foreign material beneath areas to be sodded.
- D. Remove contaminated subsoil.
- E. Scarify sub-soil to depth of 4 inches where topsoil is to be placed.
- F. Repeat cultivation in areas where equipment, used for hauling and spreading topsoil, has compacted subsoil.

3.3 PLACING TOPSOIL

- A. Spread topsoil to minimum depth of **6 inches** over area to be sodded.
- B. Place topsoil during dry weather and on dry unfrozen subgrade.
- C. Remove vegetable matter and foreign non-organic material from topsoil while spreading.
- D. Grade topsoil to eliminate rough, low or soft areas and to ensure positive drainage.

- E. Install edging at periphery of sodded areas in straight lines to consistent depth.

3.4 FERTILIZING

- A. Apply lime at application rate recommended by soil analysis. Work lime into top 4 inches of soil.
- B. Apply fertilizer at application rate of 4 lbs per 1000 sq. ft..
- C. Apply fertilizer after smooth raking of topsoil and prior to installation of sod.
- D. Apply fertilizer no more than 48 hours before laying sod.
- E. Mix fertilizer thoroughly into upper 2 inches of topsoil.
- F. Lightly water soil to aid dissipation of fertilizer.

3.5 LAYING SOD

- A. Moisten prepared surface immediately prior to laying sod.
- B. Lay sod immediately after delivery to site and within 24 hours after harvesting to prevent deterioration.
- C. Lay sod tight with no open joints visible, and no overlapping; stagger end joints 12 inches minimum. Do not stretch or overlap sod pieces.
- D. Lay smooth. Align with adjoining grass areas.
- E. Place top elevation of sod 1/2 inch below adjoining edging, paving, and curbs.
- F. Do not place sod when temperature is lower than 45 degrees F.
- G. Water sodded areas immediately after installation. Saturate sod to 4 inches of soil.
- H. After sod and soil have dried, roll sodded areas to bond sod to soil and to remove minor depressions and irregularities. Roll sodded areas with roller not exceeding 112 lbs/linear foot.
- I. Roll before first watering.

3.6 MAINTENANCE

- A. Mow grass at regular intervals to maintain at maximum height of 2-1/2 inches. Do not cut more than 1/3 of grass blade at each mowing.
- B. Neatly trim edges and hand clip where necessary.
- C. Immediately remove clippings after mowing and trimming.
- D. Water to prevent grass and soil from drying out.

- E. Roll surface to remove or irregularities.
- F. Control growth of weeds. Apply herbicides. Remedy damage resulting from improper use of herbicides.
- G. Immediately replace sod on areas showing deterioration or bare spots.
- H. Protect sodded areas with warning signs during maintenance period.

END OF SECTION 32 92 23

SECTION 33 01 30.13 - SEWER AND MANHOLE TESTING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Testing of Gravity Sewer Piping:
 - a. Low pressure air testing.
 - 2. Testing of Manholes:
 - a. Vacuum testing.
- B. **Related Requirements:**
 - 1. Section 33 01 30.61 - Sewer and Pipe Joint Sealing: Testing and sealing of sewer pipe joints.
 - 2. Section 33 01 30.62 - Manhole Grout Sealing: Cleaning, plugging, and grout sealing of defective manholes.
 - 3. Section 33 31 00 - Sanitary Utility Sewerage Piping: Pipe materials, manholes, and accessories normally encountered with gravity sanitary drain building piping from 5 feet (1.5 m) outside building to final connection.

1.2 REFERENCE STANDARDS

- A. ASTM International:
 - 1. ASTM C1244 - Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test Prior to Backfill.
 - 2. ASTM D2122 - Standard Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Submit following items prior to start of testing:
 - 1. Testing procedures.
 - 2. List of test equipment.
 - 3. Testing sequence schedule.
- C. Test and Evaluation Reports: Indicate results of manhole and piping tests.

PART 2 PRODUCTS

2.1 VACUUM TESTING

- A. Equipment:
 - 1. Vacuum pump.
 - 2. Vacuum line.

3. Vacuum Tester Base:
 - a. Compression band seal.
 - b. Outlet port.
4. Shutoff valve.
5. Stopwatch.
6. Plugs.
7. Vacuum Gage: Calibrated to 0.1 in. Hg

2.2 AIR TESTING

- A. Equipment:
 1. Air compressor.
 2. Air supply line.
 3. Shutoff valves.
 4. Pressure regulator.
 5. Pressure relief valve.
 6. Stopwatch.
 7. Plugs.
 8. Pressure Gage: Calibrated to 0.1 psi

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that manholes and piping are ready for testing.
- B. Verify that trenches are backfilled.
- C. Verify that pressure piping thrust restraint system is installed.

3.2 PREPARATION

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for preparation.
- B. Plugs:
 1. Plug outlets, wye branches, and laterals.
 2. Brace plugs to resist test pressures.

3.3 FIELD QUALITY CONTROL

- A. Testing of Gravity Sewer Piping:
 1. Low Pressure Air Testing:
 - a. Test each reach of gravity sewer piping between manholes.
 - b. Introduce air pressure slowly to approximately 4 psig.
 - 1) Determine ground water elevation above spring line of piping.
 - 2) For every foot of ground water above spring line of piping, increase starting air test pressure by 0.43 psi.
 - 3) Do not increase pressure above 10 psig.

- c. Allow pressure to stabilize for at least five minutes.
- d. Adjust pressure to 3.5 psig or to increased test pressure as determined above when ground water is present.
- e. Testing:
 - 1) Determine test duration for reach of sewer with single pipe size from following table; do not make allowance for laterals. Minimum test duration shall be 60 minutes.

NOMINAL PIPE SIZE, INCHES	MINIMUM TESTING TIME, MIN/100 FEET
4	0.3
6	0.7
8	1.2
10	1.5
12	1.8
18	2.4

- 2) Record drop in pressure during testing period.
- 3) If air pressure drops more than 1.0 psi during testing period, piping has failed.
- 4) If 1.0 psi air pressure drop has not occurred during testing period, piping is acceptable; discontinue testing.
- 5) If piping fails, test reach of piping in incremental stages until leaks are isolated, repair leaks, and retest entire reach between manholes.

B. Testing of Manholes:

- 1. Description:
 - a. If air testing, test whenever possible prior to backfilling in order to more easily locate leaks.
 - b. Repair both outside and inside of joint to ensure permanent seal.
 - c. Test manholes with manhole frame set in place.
- 2. Vacuum test according to ASTM C1244 and following:
 - a. Plug pipe openings; securely brace plugs and pipe.
 - b. Inflate compression band to create seal between vacuum base and structure.
 - c. Connect vacuum pump to outlet port with valve open, then draw vacuum to 10 in. Hg.
 - d. Close valve.
 - e. Testing:

- 1) Determine manhole testing duration using following table:

MANHOLE DIAMETER (feet)	TEST PERIOD
4	60 seconds
5	75 seconds

- 2) Record vacuum drop during test period.
- 3) If vacuum drop is greater than 1 in. Hg (3.4 kPa) during testing period, repair and retest manhole.
- 4) If vacuum drop of 1 in. Hg (3.4 kPa) does not occur during test period, manhole is acceptable; discontinue testing.
- 5) If vacuum test fails to meet 1 in. Hg (3.4 kPa) drop in specified time after repair, repair and retest manhole.

SECTION 33 01 30.16 - TV INSPECTION OF SEWER PIPELINES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Pipeline flushing and cleaning.
 - 2. TV inspection of sewer pipelines.
 - 3. Audio-video recording of pipeline interior.
- B. Related Requirements:
 - 1. Section 33 01 30.61 - Sewer and Pipe Joint Sealing.
 - 2. Section 33 31 00 - Sanitary Utility Sewerage Piping.

1.2 COORDINATION

- A. Section 01 30 00 - Administrative Requirements: Requirements for coordination.
- B. Coordinate Work of this Section with Owner.

1.3 SCHEDULING

- A. Section 01 30 00 - Administrative Requirements
- B. Schedule Work of this Section to coincide with installing the monitoring equipment.

1.4 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Submit completed narrated DVDs identified by Project name, street name, right-of-way property name, and manhole numbers.
- C. DVDs become property of Owner.
- D. Inspection Logs:
 - 1. Submit cleaning and TV inspection logs for each section of sewer line to be rehabilitated or newly installed and three copies of color DVDs for Work performed.
 - 2. Include following minimum information:
 - a. Stationing and location of lateral services, wyes, or tees.
 - b. Clock time references.
 - c. Pipe joints.
 - d. Infiltration/inflow defects.
 - e. Cracks.
 - f. Leaks.
 - g. Offset joints.

- h. Other information required to assess condition of sewer.
- E. Submit specific detailed description of proposed bypass pumping system, including written description of plan addressing quantity, capacity, and location of pumping equipment.
- F. Submit spill plan to address any spills that might occur.
- G. Qualifications Statement:
 - 1. Submit qualifications for applicator.

1.5 QUALITY ASSURANCE

- A. Perform Work according to Washington State Department of Transportation Standard Specifications for Rad, Bridge, and Municipal Construction M41-10 (WSDOT Standard Specifications).

1.6 QUALIFICATIONS

- A. Applicator: Company specializing in performing Work of this Section with minimum three years' documented experience.

PART 2 PRODUCTS

2.1 DVDs

- A. Description: Digital video formatted discs.
- B. Audio track containing simultaneously recorded narrative commentary and evaluations of videographer, describing in detail condition of pipeline interior.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify location of sewer pipelines to be inspected.

3.2 PREPARATION

- A. Flush and clean pipeline to remove sludge, dirt, sand, stone, grease, and other materials to ensure clear view of interior conditions.
- B. Intercept flushed debris at next downstream manhole using weir or screening device; remove and dispose of debris off Site.
- C. Furnish temporary bypass pumping system around Work area for time required to complete TV inspection.

3.3 APPLICATION

A. Closed-Circuit TV Camera System:

1. Use cameras specifically designed and constructed for closed-circuit sewer line inspection. Use camera equipment with pan and tilt capability to view each lateral connection at multiple angles.
2. Use camera capable of moving both upstream and downstream with minimum 1,000 feet horizontal distance within one setup and direct-reading cable position meter.

3.4 FIELD QUALITY CONTROL

A. Pipeline Inspection:

1. Audio-video record sections of sewer pipeline between designated manholes.
2. Identify and record locations of flat grades, dips, deflected joints, open joints, broken pipe, protrusions into pipeline, and points of infiltration.
3. Locate and record service connections.
4. Record locations of pipeline defects, connection horizontal distance in **feet**, and direction from manholes.
5. Video record with pipe section plugged to view 100 percent of inside pipe diameter; use flow-control methods as specified for bypass pumping system to eliminate surcharging and reduce flow.

END OF SECTION 33 01 30.16

SECTION 33 01 30.62 - MANHOLE GROUT SEALING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Manhole interior cleaning.
 - 2. Manhole sealing.
- B. Related Requirements:
 - 1. Section 33 01 30.13 - Sewer and Manhole Testing: Methods for gravity sewer piping, pressure sewer piping, and manhole testing.

1.2 REFERENCE STANDARDS

- A. ASTM International:
 - 1. ASTM C33 - Standard Specification for Concrete Aggregates.
 - 2. ASTM C150 - Standard Specification for Portland Cement.

1.3 SCHEDULING

- A. Schedule Work of this Section to coincide with installation of conduit.
- B. Furnish Work schedule when sewer piping section is out of service for joint sealing.

1.4 SEQUENCING

1.5 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit product data on grout, and sealant.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- D. Test and Evaluation Reports: Indicate vacuum testing results.
- E. Manufacturer Instructions: Submit detailed instructions on application requirements, including storage and handling procedures.
- F. Qualifications Statements:

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

- B. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.
- C. Protect materials from damage by storing in secure location.

PART 2 PRODUCTS

2.1 GROUT SEALANT

- A. Chemical Grout:
 - 1. Mixture of dry acrylamide and dry N, N-methylenebisacrylamide in proportions capable of diluting aqueous solutions and, when properly catalyzed, forming stiff gels.
 - 2. Make solution at concentrations as high as lb./gal. of water.
 - 3. Able to tolerate ground water dilution and react in moving water.
 - 4. Viscosity of less than 0.000041771 lbf-s/sq. ft. remaining constant until gelation concurs.
 - 5. Reaction time controllable from 10 seconds to 1 hour.
 - 6. Reaction produces continuous and irreversible gel at chemical concentrations as low as lb./gal. of water.
- B. Catalyst: Use ammonium persulfate in combination with activator; use of catalyst containing (dimethylamino) propionitrile is prohibited.
- C. Activator: Triethanolamine or other compounds of equivalent properties.
- D. Inhibitor: Potassium ferricyanide.
- E. Root Growth Inhibitor:
 - 1. Dichlorobenzonitrile meeting recommendations of grout manufacturer.
 - 2. Root treatment additive capable of remaining active for minimum of two years.
 - 3. Active ingredient for destroying root intrusions: Sodium methyldithiocarbamate.
 - 4. Root Cell Inhibiting Agent:
 - a. 2,6-dichlorobenzonitrile.
 - b. For each application, disperse root control agent into clean, cool water free of acid, alkali, oxidizing agents, or large amounts of oil or other organic compounds or materials.
 - c. Use tanks for transportation or storage of makeup water free of material listed above.
- F. Portland Cement: ASTM C150, Type II.
- G. Fine Aggregate: ASTM C33 gradation.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify which manholes require grouting.

3.2 PREPARATION

- A. Manhole Interior Cleaning:
1. Clean each defective or fouled manhole interior with high-velocity water jet to remove grease, dirt, sludge, and roots.
 2. Cut remaining roots flush with manhole interior.
 3. Flush foreign material cleaned from interior of manhole; remove and properly dispose of material off Site.
 4. If leaks are not readily identifiable upon completion of cleaning operation, use blower to dry manhole interior for positive identification of leaks and sweep areas.

3.3 APPLICATION

- A. Grout Sealing:
1. Drill hole at each identifiable leakage point from inside manhole extending through sidewall of manhole.
 2. Insert metal rod through hole to determine if exterior void space exists.
 3. Fill exterior void spaces with chemical grout mix, pumping into void space until refusal is recorded by rise in pressure on pump pressure gauge.
 4. Ensure that hole through manhole wall is kept open and free of chemical grout; plug hole and allow one hour for chemical grout to set.
 5. Upon completion of grouting, pump manhole sealant until refusal at minimum pressure of **3.0 psig** through probe-type injection equipment.
 6. Deposit sealant from interior surface of set chemical grout through drilled hole to inside surface of manhole.
 7. Upon setting of manhole sealant, remove excess material protruding into interior of manhole.

END OF SECTION 33 01 30.62

SECTION 33 05 26 - UTILITY IDENTIFICATION

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Plastic ribbon tape for placement above direct-buried utility.
 - 2. Trace wire for placement above direct-buried utility.
- B. Related Requirements:
 - 1. Section 31 23 17 - Trenching: Backfilling considerations for installation of underground pipe markers.
 - 2. Section 33 31 00 - Sanitary Utility Sewerage Piping: Piping, valves, and appurtenances requiring identification marking.
 - 3. Section 33 31 13 - Public Sanitary Utility Sewerage Piping: Piping, valves, and appurtenances requiring identification marking.

1.2 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit manufacturer's catalog information for each product required.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

PART 2 PRODUCTS

2.1 RIBBON TAPE

- A. Manufacturers:
 - 1. Bernsten International Inc.
 - 2. Brimar Industries, Inc.
 - 3. Substitutions: As specified in Section 01 25 00 – Substitution Procedures.

2.2 TRACE WIRE

- A. Manufacturers:
 - 1. Northtown Company
 - 2. Priority Wire and Cable
 - 3. TracerWire
 - 4. Substitutions: As specified in Section 01 25 00 – Substitution Procedures.
 - 5. Description:
 - a. Wire: Unshielded 10-AWG THWN insulated copper.

PART 3 EXECUTION

3.1 INSTALLATION

A. Trace Wire:

1. Continuous over top of pipe.
2. If multiple pipes occur in common trench, install wires over top of each pipe.
3. Coordinate with trench Work as specified in Section 31 23 17 – Trenching.

B. Ribbon Tape:

1. Continuous buried 12 inches below finished grade, above piping.
2. If multiple pipes of the same utility occur in common trench, located tape above centerline of trench.
3. If multiple pipes of different utilities occur in common trench, locate respective tape above centerline of each pipe.
4. Coordinate with trench Work as specified in Section 31 23 17 – Trenching.

END OF SECTION 33 05 26

SECTION 33 31 00 - SANITARY UTILITY SEWERAGE PIPING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Sanitary sewerage piping.
2. Manholes.
3. Bedding and cover materials.

B. Related Requirements:

1. Section 03 60 00 - Grouting: Non-shrink grout.
2. Section 31 05 13 - Soils for Earthwork: Soils for backfill in trenches.
3. Section 31 05 16 - Aggregates for Earthwork: Aggregate for backfill in trenches.
4. Section 31 23 16 - Excavation: Product and execution requirements for excavation and backfill required by this Section.
5. Section 31 23 17 - Trenching: Execution requirements for trenching required by this Section.

1.2 DEFINITIONS

- A. Bedding: Fill placed under, beside, and directly over pipe, prior to subsequent backfill operations.

1.3 REFERENCE STANDARDS

- A. Washington State Department of Transportation Standard Specifications for Road, Bridge, and Municipal Construction (WSDOT Standard Specifications).
- B. City of Cheney Engineering Design Standards
- C. American Association of State Highway and Transportation Officials:
1. AASHTO T 180 - Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.
- D. ASTM International:
1. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).
 2. ASTM D1785 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
 3. ASTM D2321 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.
 4. ASTM D2466 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40.
 5. ASTM D2564 - Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems.

6. ASTM D2729 - Standard Specification for Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
7. ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.

1.4 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit manufacturer information indicating pipe material to be used, pipe, pipe accessories, and related items.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- D. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

1.5 CLOSEOUT SUBMITTALS

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for closeout procedures.
- B. Project Record Documents: Record locations of pipe runs, connections, and manholes, cleanouts, and invert elevations.
- C. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.6 EXISTING CONDITIONS

- A. Field Measurements:
 1. Verify field measurements prior to fabrication.
 2. Indicate field measurements on Shop Drawings.

PART 2 PRODUCTS

2.1 SANITARY SEWERAGE PIPING

- A. Plastic Pipe:
 1. Material: Polyvinyl chloride (PVC).
 2. Comply with ASTM D3034, SDR 35.
 3. Inside Nominal Diameter: 3.75" inches.
 4. End Connections: Bell and spigot style, with rubber-ring-sealed gasket joint.
 5. Fittings: PVC.
 6. Joints:
 - a. Elastomeric gaskets.
 - b. Comply with ASTM F477.

2.2 MANHOLES – To Be Verified by Whitney Equipment

A. Manufacturers:

1. Open Channel Flow, Inc.
2. Substitutions: Not permitted.

B. Manhole Lid and Frame:

1. Material: Cast iron.
2. Lid Design:
 - a. As per City of Cheney Engineering Standard Plans Sheet C-11.
3. Nominal Lid and Frame Size: 27-5/8" by 6" inches

C. Shaft and Cone Top Section:

1. Material: Single-body Fiberglass.
2. Joints: Not Applicable
3. Ladder Rungs:
 - a. Material: Cast steel.
 - b. Spacing in Shaft Sections: [12] < > inches ([300] < > mm) o.c.
4. Nominal Shaft Section Diameter: 48 inches.

D. Base Pad:

1. Material: Cast-in-place concrete as specified in Section 03 30 00 - Cast-in-Place Concrete.
2. Top Surface:
 - a. Levelled to receive pre-fabricated fiberglass manhole.

2.3 MATERIALS

A. Bedding and Cover:

1. As Specified in Section 31 23 17 - Trenching.

2.4 MIXES

- ### A. Grout: As specified in Section 03 60 00 - Grouting

2.5 ACCESSORIES

- ### A. Pipe Markers: As specified in Section 33 05 26 - Utility Identification.

PART 3 EXECUTION

3.1 EXAMINATION

- #### A. Verify that trench cut and/or excavation base is ready to receive Work.
- #### B. Verify that excavations, dimensions, and elevations are as indicated on Drawings.

3.2 PREPARATION

- A. Correct over-excavation with coarse aggregate.
- B. Remove large stones or other hard materials that could damage pipe or impede consistent backfilling or compaction.
- C. Protect and support existing sewer lines, utilities, and appurtenances.
- D. Utilities:
 - 1. Maintain profiles of utilities.
 - 2. Coordinate with other utilities to eliminate interference.
 - 3. Notify Engineer if crossing conflicts occur.

3.3 INSTALLATION:

- A. Bedding:
 - 1. Excavate pipe trench as specified in Section 31 23 17 - Trenching.
 - 2. Place bedding material at trench bottom.
 - 3. Level materials in continuous layer not exceeding 6 inches.
 - 4. Maintain optimum moisture content of bedding material to attain required compaction density.
- B. Piping:
 - 1. Install pipe, fittings, and accessories according to ASTM D2321, and seal joints watertight.
 - 2. Lay pipe to slope gradients as indicated on Drawings.
 - 3. Maximum Variation from Indicated Slope: 1/8 inch in 10 feet.
 - 4. Install bedding at sides and over top of pipe, to minimum compacted thickness of 6 inches.
 - 5. Backfill and compact as specified in Section 31 23 17 - Trenching.
 - 6. Do not displace or damage pipe when compacting.
 - 7. Connect to building sanitary sewer outlet and campus sewer system through installed sleeves.
 - 8. Pipe Markers: As specified in Section 33 05 26 - Utility Identification.
 - 9. Install Site sanitary sewage system piping to within 5 feet of building, and connect to building sanitary waste system as specified in Section 22 13 00 - Facility Sanitary Sewerage.
- C. Manholes:
 - 1. Excavate for manholes as specified in Section 31 23 16 - Excavation.
 - 2. Form bottom of excavation clean and smooth, and to correct elevation.
 - 3. Form and place cast-in-place concrete base pad, with provision for sanitary sewer pipe end sections.
 - 4. Establish elevations and pipe inverts for inlets and outlets as indicated on Drawings.
 - 5. Mount lid and frame level in grout, secured to top cone section to indicated elevation.

3.4 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Requirements for inspecting and testing.
- B. Request inspection by Engineer prior to and immediately after placing bedding.
- C. Testing:
 - 1. If tests indicate that Work does not meet specified requirements, remove Work, replace, and retest.
 - 2. Perform testing on Site sanitary sewage system according to WSDOT Standard Specifications 7-17.

3.5 PROTECTION

- A. Protect pipe and aggregate cover from damage or displacement until backfilling operation is in progress.

END OF SECTION 33 31 00

SECTION 33 XX XX – SEWER MONITORING EQUIPMENT

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Sewer Wastewater Monitoring equipment including flow meters and samplers and accessories.

B. Related Requirements:

1. Section 33 31 00 – Sanitary Utility Sewer Piping

1.2 REFERENCE STANDARDS

1. ASTM D3753 - Standard Specification for Glass-Fiber-Reinforced Polyester Manholes and Wetwells.

1.3 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit cover and frame construction, features, configuration, and dimensions.

C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

D. Manufacturer Instructions: Submit detailed instructions on installation requirements, including storage and handling procedures.

E. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Unload, store, and handle monitoring equipment according to manufacturer instructions.

PART 2 PRODUCTS

2.1 FLOW METER

A. Manufacturers:

1. Teledyne Isco
2. Substitutions: Not permitted.

B. Functional Design:

1. Primary flow measurement technology shall be bubbler.

2. The flow meter shall be able to utilize multiple flow and parameter sensing technologies simultaneously, using proprietary Teledyne Isco connectivity.
 - a. Additional Isco TIENet™ device options for flow measurement technology will include downward looking ultrasonic level measurement, non-contact laser area velocity, and submerged Doppler ultrasonic area velocity.
 - b. Isco TIENet options for parameter sensing will include a pH/temperature device.
 - c. The flow meter shall be capable of running up to 9 connected TIENet devices simultaneously.
3. The flow meter shall be capable of interfacing with an optional Isco wastewater sampler by means of an optional Isco TIENet device.1 Via the interface device, the flow meter shall be capable of enabling and pacing the sampler based on multiple preprogrammed conditions, as well as receiving sampling data from the sampler.
4. The flow meter shall accept SDI-12 device data from up to two connected devices.
5. The flow meter shall be able to record and transmit data from connected monitoring equipment.
6. The flow meter shall be able to track event data that cannot be altered, in order to ensure that data integrity has not been compromised.
7. The flow meter shall have optional 4-20mA output capability by means of field-installable Isco TIENet card(s).
8. The flow meter shall optionally provide field-installable cellular communication for remote communication without physically visiting the monitoring site, for alarm notification, and for transmission of data to a central server.
 - a. The flow meter shall be capable of remote configuration and data transmission via a dedicated web browser that duplicates flow meter menu and keypad operation.

C. Description:

1. Flow Meter Construction
 - a. The flow meter electronics and connections will be housed in a PPO Polyphenylene Oxide, NEMA4X/IP66, lockable enclosure suitable for conduit connection.
 - b. Basic construction will consist of a two-piece electronics enclosure, front panel, and door.
 - c. The enclosure door will have a clear polycarbonate window for viewing the LCD, optional mechanical totalizer, and LED indicator without opening the door.
 - d. The interior of the enclosure, bubbler air supply, and air reference shall be protected from humidity by an indicating, reusable silica gel desiccant contained within a detachable chamber. Humidity values in the chamber, bubbler supply line, and air reference line can be viewed on the display screen.
 - e. Connections will be accessible for addition and removal of optional devices by unlatching the door and then opening the front panel on the enclosure.
 - f. The flow meter shall include a stainless steel bracket for wall mounting, and shall also be suitable for mounting on a rack or inside a console enclosure.
 - g. Operating and storage temperature shall be -20 to 60°C (-4 to 140°F).

- h. The flow meter's primary user interface shall include a tactile keypad with audible feedback, and 4-inch, 320x240, backlit liquid crystal display with graphing functionality.
- i. The flow meter will have a two-color LED indicator next to the display to indicate activated alarms/events.
- j. The flow meter shall optionally include a 7-digit, non-resettable, electromechanical totalizer that can be removed or installed in the field.
- k. Input power shall be nominal 12VDC.
 - 1) The flow meter's internal mains power supply will operate on 100VAC,50/60Hz or 240VAC,50/60Hz line power.
 - 2) The flow meter shall have the provision to be powered by an external 12VDC source.
 - 3) The flow meter shall have the option for external, uninterrupted battery backup power lasting a minimum of 4 hours.
 - 4) The power circuit shall include trickle charge for a connected rechargeable Isco lead acid battery.
- l. TIENet device connection(s) shall be performed by wiring to easily accessible terminal strips and following simple instructions printed on the circuit board assembly.
 - 1) The flow meter shall provide nominal 12VDC output power to connected TIENet devices.
- 2. Flow Meter Functionality
 - a. Communication and User Interface
 - 1) Primary programming will be directly through the tactile keypad and programming menus on the front panel of the flow meter.
 - 2) Teledyne Isco Flowlink® software shall be used to connect to the flow meter, either directly or remotely, and display secure web server pages with an internal browser for configuration and programming. The displayed pages will duplicate the flow meter keys and menus in appearance and function. Flowlink shall also provide a one-step control for downloading site and event data to a database.
 - 3) An optional internal GSM or CDMA cellular modem or Ethernet modem shall provide remote communication for configuration and programming, data access, and alarm notifications.
 - 4) Alarm status/events shall be indicated by the LED next to the display. Detailed information about the alarm/event(s) indicated will be accessed by pressing a key on the keypad.
 - 5) Flowlink software shall be able to retrieve stored data from the flow meter, and generate graphs and reports from stored data.
 - 6) Direct serial connection to a computer or USB flash drive will be through a micro A/B USB port located on the front panel of the flow meter.
 - a) Updates to the flow meter and optional TIENet device software will be performed by connecting a USB flash drive to the flow meter.
 - b) The flow meter's program can be downloaded onto the connected flash drive. The saved program can then be

duplicated onto other Signature flow meters via the flash drive.

- c) Data shall be exported from the flow meter in .ddp format to a USB flash drive.
 - d) Verifiable text reports shall be exported from the flow meter to a USB flash drive.
 - e) The flow meter shall include an adaptor for connecting a USB flash drive.
 - f) The flow meter shall include an optional adaptor cable for connecting to the USB port on a computer.
- 7) Direct I.P. interface for local area network access will be through an internal Ethernet connection.
- b. Outputs
- 1) The flow meter shall be able to activate an optional connected sampler based on multiple user-selected trigger conditions.
 - 2) The flow meter shall optionally provide industry standard 4-20 mA analog output via a factory- or field-installed internal card, and shall accept up to three such cards, allowing for up to six outputs.
 - a) Output range shall be from 4 to 20 mA.
 - b) Isolation will be monolithic air core transformer technology.
 - c) Maximum load shall be 500 Ω .
 - 3) The flow meter shall act as a slave for Modbus interfacing via RS-485 terminal strip connection, using ASCII or RTU transmission coding.
- c. Inputs
- 1) The following data shall be received by the flow meter from an optional connected sampler:
 - a) Sample event
 - b) Bottle number
 - c) Sampler voltage
 - 2) The flow meter shall record flow and parameter data from optional connected TIENet devices.
 - 3) The flow meter shall record parameter data from up to two optional connected SDI-12 devices.
 - 4) The flow meter shall be capable of separate, simultaneous interfacing with multiple connected devices of the same type, i.e., one or more sampler interfaces, one or more pH/Temperature devices, etc.
 - 5) The flow meter shall be capable of accepting inputs from multiple external TIENet devices via optional expansion box(es). For every expansion box, three more devices can be added to the system.
- d. Data Storage
- 1) The flow meter will store recorded data and program settings on a recoverable, flash-based, secure, non-volatile digital memory card with standard 8M capacity (180 days with 5 parameters logged at 1-minute intervals and reports at 24-hour intervals).
 - 2) The program memory shall be capable of being updated via the USB port on the flow meter without opening the enclosure.

- e. Data Integrity
 - 1) Program Report - Tracks configuration changes to the flow meter.
 - 2) Two programmable Summary Reports - Tracks measurement summaries.
 - 3) Diagnostic Report - Tracks occurrences and results from diagnostic tests.
 - 4) History Report - Tracks user events (such as calibration, etc.).
- f. Submerged Bubble Line Flow Measurement Technology
 - 1) A pressure transducer in the flow meter shall measure the liquid level. An internal air compressor shall provide a continuous supply of air to the bubble tube. The bubble line shall be:
(1/8 " (0.32 cm) OD PTFE, 1/16 " (0.17 cm) ID, 25 ft. (7.6 m) long)
(1/4" (0.63cm) OD vinyl, 1/8 " (0.32 cm) ID, 50 ft. (15.2 m) long)
(1/4" (0.63 cm) OD vinyl, 1/8 " (0.32 cm) ID, 100 ft. (30.5 m) long).
An optional stainless steel bubble tube shall be supplied for installation in the flow stream.
 - 2) The flow meter shall maintain the bubble rate, adjusting the required pressure automatically for any changes in stream conditions.
 - 3) The flow meter shall include automatic bubble line purge with adjustable frequency to minimize plugging of the bubble tube.
 - 4) The level measurement range of the bubbler shall be from 0.003 to 3.05 m (0.01 to 10 feet).
 - 5) The level measurement accuracy of the bubbler shall be $\pm 0.002\text{m}$ at $22\text{ }^{\circ}\text{C}$ (0.007ft at $72\text{ }^{\circ}\text{F}$).
 - 6) The compensated temperature range shall be 0 to $60\text{ }^{\circ}\text{C}$ (32 to $140\text{ }^{\circ}\text{F}$).
 - 7) The temperature coefficient shall be $\pm 0.0003 \times \text{Level (m)} \times \text{temperature deviation from } 22\text{ }^{\circ}\text{C}$ ($\pm 0.00017 \times \text{Level (ft)} \times \text{temperature deviation from } 72\text{ }^{\circ}\text{F}$).
 - 8) The flow meter shall include automatic drift and temperature compensation to periodically reference both sides of the pressure transducer to atmospheric pressure, and automatically compensate for errors due to temperature change, warm-up, and long-term drift.
- g. Additional Flow Measurement Options
 - 1) Ultrasonic: Non-Contact Level Sensor – will not use
 - 2) Area Velocity: Non-Contact Laser Sensor – will not use
 - 3) Area Velocity: Submerged Doppler Ultrasonic Sensor – required
- h. Level-to-Flow Calculation
 - 1) Measured liquid level readings shall be converted into corresponding flow rate readings using internal conversion algorithms. The flow meter shall contain conversions for V-notch, rectangular and Cipolletti weirs, and Parshall, Palmer-Bowlus, trapezoidal, and H flumes. The flow meter shall accept up to 4 sets of level-flow rate points, with up to 50 pairs of points in each set. The flow meter shall accept a user-defined, one- or two-term, level-flow rate polynomial equation.
- i. Level-to-Area Calculation

- 1) Measured liquid level readings shall be converted into the area of the flow using internal conversion algorithms. The flow meter shall contain conversion information for round, U-shaped, rectangular trapezoidal and elliptical channels. The flow meter shall accept a silt level measurement and adjust the area of the flow appropriately. The flow meter shall also accept up to 50 pairs of level-area points.

2.2 SAMPLER

A. Manufacturers:

1. Teledyne Isco
2. Substitutions: Not permitted.

B. Description

1. Instrument
 - a. There shall be furnished an automatic sampler for aliquot collection from a variety of liquid sources.
 - b. The unit shall route samples to storage containers for collection and off-site analysis.
 - c. The unit shall be suited to collect priority pollutant or general purpose samples in a single bottle.
 - d. The unit shall be capable of either battery or line-powered operation.
 - e. The sampler shall be circular in shape with a maximum outside diameter of less than 16.5 inches (42 cm) and shall be at least 26 inches (66 cm) in height.
 - f. The dry weight of the unit shall not exceed 25 pounds (11.3 kg) with a plastic bottle included.
 - g. The exterior shall be a light colored ABS plastic for superior corrosion resistance and all weather durability.
 - h. All other external components shall be constructed of stainless steel, anodized aluminum, or polypropylene.
 - i. This external hardware shall provide an insulation value of at least R-11.
 - j. The base section shall hold at least 12 pounds of crushed ice (when using a round 1 gallon bottle) to cool the sample after collection.
 - k. The base section and center section shall be a two piece construction and include foamed in place insulation.
 - l. The unit shall be assembled in sections for easy cleaning.
2. Sampler Controller
 - a. All electrical components shall be housed in a single controller.
 - b. There shall be no external electrical or control components.
 - c. The controller shall use a 2 line 40 character display to show sampler status and program information.
 - d. An 18-position keypad shall be used for all program entries, and manual control of the sampler.
 - e. The sampler shall provide battery backed memory with a typical life of five years.
 - f. This memory shall maintain the sampler's program settings, any stored programs and the results of the last sampling sequence when the sampler is turned off or in the event of an external power interruption.

- g. A user initiated diagnostics routine shall determine the operational status of the sampler.
 - h. The controller shall continually run internal diagnostics checks to ensure proper operation of electrical components.
 - i. Any error conditions detected by the diagnostic routines shall be displayed to the user.
 - j. An optional software program lock shall be provided to prevent unauthorized tampering or accidental changing of the sampler control settings.
 - k. The control box shall be constructed of 1/4" (0.64 cm) thick Noryl® plastic and shall conform to NEMA 4X, 6 (IP 67) standards for water tight, dust tight, and corrosion resistance and submersion.
 - l. A desiccator shall be used inside the control box to prevent moisture damage to electrical components.
3. Sampler Programming
- a. The user can program the sampler to collect single bottle composite samples at user-definable intervals. A delay to first sample collection shall be programmable in minutes from 0 to 9,999.
 - b. The sampler shall use an internal real-time clock to provide both time and date information.
 - c. It shall also offer two types of sample pacing: time and flow.
 - d. Uniform time paced samples shall be collected at regular time intervals from 1 minute to 99 hours and 59 minutes.
 - e. The sampler shall accept a 12V DC flow proportional pulse or isolated dry contact closure for flow pacing.
 - f. The pulse or contact closure must be at least 25 ms in length.
 - g. The user shall select the number of pulses as the flow interval for each sample collection.
4. Fail-Safe Shutoff
- a. The sampler shall be provided with a fail-safe shutoff mechanism. This will be a non-contacting device using the liquid detector during the purging cycles. If the sensor detects a specific amount of liquid during the purge cycle, the bottle is identified as full. No further samples are attempted to prevent an overflow of the sample container.
5. Data Storage
- a. The sampler shall be capable of storing key information for each sampling routine. This information shall be accessible at any time during or after a sampling routine on the sampler's display.
 - b. The sampling result report shall list the sample number, reason for the sample, errors that occurred, time of the sample, and pump revolution counts. Error codes used in the report shall be listed and defined at the end of the report. This report shall verify correct operation, indicate regulatory compliance, or used as an enforcement document.
6. Sample Delivery
- a. Peristaltic Pump
 - 1) Samples shall be collected using a peristaltic pump typically producing a line velocity of 2.5 feet (0.76 m) per second in a 3/8

- inch (0.95 cm) ID suction line at 3 feet (1 m) of head and capable of producing 26 feet (8 m) of lift.
- 2) The body of the peristaltic pump shall be made of high strength plastic for corrosion resistance and extended pump-tubing life.
 - 3) Before and after each sample is collected, the pump shall air purge the suction line. Pre-purges and post-purges shall be automatically controlled, and no pre-calibration adjustments are required.
 - 4) The sample stream shall be a direct tubing path from sample source to sample bottle. Samples that pass through valves, metering chambers, or non-flexible routing tubing are not acceptable.
- b. The sampler shall deliver repeatable sample volumes accurate to ± 10 ml. The user can select sample volumes from 10 to 9,990 ml in 1-ml increments. In addition to sample size determination, the delivery system monitors anomalies in the sample collection process. If no liquid is detected the sampler the sampler will note this in a log, and record that no sample was collected for that interval.
7. Liquid Detector
- a. The sampler shall utilize a non-wetted, non-conductive detector to sense the presence of the liquid. The sensor shall not be dependent on, or affected by any compositional, chemical, or physical property of the liquid and require no routine maintenance or cleaning.
 - b. The liquid detection system shall minimize the effects of changing head, intermittent flow in the suction line, or variable battery conditions on sample volume. After initial detection of liquid, the sensor monitors for the presence of liquid during the sample collection sequence.
8. Pump Revolution Counter
- a. After liquid detection, the pump revolution counter shall count actual pump revolutions to determine sample volume delivery to the storage containers. If liquid flow is interrupted during the sample collection sequence, the detector shall inhibit the pump revolution counter from incrementing the counter until liquid flow is restored.
9. Power Sources
- a. The sampler shall require 12 VDC power for operation. This power shall be supplied from Isco AC Power Converter 120 or 240 volt or External user-supplied 12 VDC power source.
10. Suction Lines and Strainers
- a. The sampler shall require a suction line and strainer. The suction line shall be made of 3/8" ID vinyl with of 100 feet. The suction line shall have a factory-installed standard 3/8" weighted polypropylene strainer, or an optional (all stainless steel strainer for 3/8" (0.95cm) line).
11. Sample Collection Bottles
- a. The sampler shall be supplied with sample collection bottles. The containers shall be 1 round 2.5 gallon polyethylene. Additionally, there shall be provided an option for a disposable bottle liner for sample collection. This liner shall have a minimum capacity of 2 gallons.

2.3 AREA VELOCITY SENSOR

A. Manufacturers:

1. Teledyne Isco
2. Substitutions: Not permitted.

B. Functional Design

1. The TIENet 350 Area Velocity Sensor will directly measure average liquid velocity using submerged ultrasonic continuous wave Doppler technology.
 - a. The sensor will not require a multiplying factor based on flow depth to convert a point velocity to the average liquid velocity.
2. The sensor will directly measure liquid level using a submerged differential linear integrated circuit pressure transducer.
3. The sensor will transmit flow stream velocity and level data to a Teledyne Isco Signature Series Flow Meter using Teledyne Isco proprietary protocol.
4. Maximum cabling length from the Signature Series Flow Meter to the sensor shall be 305 m (1,000 ft), typical.
5. The velocity measurement range of the sensor shall be from -1.5 to +6.1 meters per second (-5 to +20 feet per second).
6. The sensor shall be capable of measuring forward and reverse flows.
7. The typical minimum depth for velocity measurement shall be 0.025 m (0.08 feet).
Velocity Accuracy - the velocity in water with a uniform velocity profile and a speed of sound of 1,480 meters per second (4,850 feet per second) will be measured with a maximum error of ± 0.03 meters per second (± 0.1 feet per second) over a range of -1.5 to +1.5 meters per second (-5 to +5 feet per second), and $\pm 2\%$ of reading over a range of 1.5 to 6.1 meters per second (5 to 20 feet per second).
8. The level measurement range of the sensor shall be from 0.010 to 3.05 m (0.033 to 10 ft).
Level Accuracy - Maximum non-linearity, hysteresis, and temperature error from actual liquid level shall be $\pm 0.10\%$ full scale over a compensated temperature range of 0 to 70°C (32 to 158°F).
9. The pressure transducer will be factory calibrated, with the calibration data stored as digital values in a microcontroller in the sensor.
10. Typical long-term level stability shall be ± 0.007 m/yr (± 0.023 ft/yr).
 - a. Temperature range will be 0 to 70 °C (32 to 158 °F), operating and storage.
11. Power Input
 - a. Input voltage range will be 7 to 14VDC.
 - b. Measurement current @ nominal 12VDC will 100 mA.
12. Standard unterminated sensor cable length shall be 5, 10, or 23 meters (16.4, 32.8, or 75.5 ft).
13. Sensor weight shall be [0.88 kg (1.95 lb), 1.68 kg (3.70 lb), 3.10 kg (6.84 lb)], depending on cable length.
14. Optionally, stainless steel mounting hardware shall be included for physical installation.
15. Optionally, the sensor shall have a cable length of 0.54 m (1.75 ft) with a terminated plug connector for installation on a Teledyne Isco LaserFlow velocity sensor for continued measurement in the case of submersion

C. Description:

1. Sensor Construction
 - a. The sensor probe body will be 1.9 cm (0.75 inches) in height and 3.3 cm (1.31 inches) in width. The cable diameter is 0.9 cm (0.37 in).

- b. Sensor materials exposed to the flow stream will be epoxy, stainless steel, Polycarbonate (PC), and UV-rated polyvinyl chloride (PVC).
- c. The sensor cable will include a vent tube that will reference one side of the pressure transducer to atmospheric pressure.
- 2. Sensor Operation
 - a. The sensor will measure flow stream velocity using submerged continuous wave Doppler technology.
 - 1) Ultrasonic transducers inside the probe transmit ultrasonic sound waves at 500kHz, at an angle of 20° from horizontal, into the flow stream. The transducers then receive the reflected sound waves. The increase or decrease in the frequency of the reflected wave indicates forward or reverse flow. A shift in frequency is proportional to flow stream velocity.
 - 2) The sensor will contain an automatic gain control amplifier that will adjust its gain based on the strength of the received Doppler signal.
 - b. The sensor will measure the hydrostatic pressure of the liquid depth using a submerged differential linear pressure transducer.
 - 1) The sensor will have automatic level correction over the full operating temperature range by way of integral digital compensation coefficients.
 - 2) The analog output of the pressure transducer will be converted to a digital value in the sensor, and the sensor will transmit to the flow meter a digital signal corresponding to the current level measurement.
 - 3) The pressure transducer is rated at 5 psi, with a maximum submersible depth of 10.55 m (34.6 ft).

2.4 FLOW METER TO SAMPLER INTERFACE DEVICE

A. Manufacturers:

- 1. Teledyne Isco
- 2. Substitutions: Not permitted.

B. Functional Design

- 1. The model 306 interface device connects a Teledyne Isco Signature Series flow meter to an optional Teledyne Isco sampler using Teledyne Isco proprietary protocol.
- 2. The interface shall facilitate sampler enabling/disabling triggered by user-programmed condition(s).
- 3. The interface shall facilitate flow-proportional sampler pacing by the flow meter.
- 4. The interface shall facilitate input signals to the flow meter from the sampler indicating when a sample is collected, and into which bottle it is placed.
- 5. The device will be powered by the Signature flow meter.

C. Description

- 1. Construction
 - a. The device cable shall be PVC jacketed, and shall be 16.5, 32.8, or 72.5ft (5, 10, or 23m,) standard length.

- b. The interface enclosure shall be 3 x 2 in. (7.6 x 5cm), self-certified NEMA 4X, 6P IP68.
 - c. Operating temperature shall be -20 to 50°C (-4 to 122°F). Storage temperature shall be -40 to 60°C (-40 to 140°F).
 - d. The device shall connect to the sampler with a standard 6-pin female, sealed plug connector.
2. Operation
 - a. The flow-proportional pulse transmitted from flow meter to sampler shall have an output of 5V and width of 50ms.
 - b. The presence of a connected, powered-on sampler shall be indicated by the presence of 12VDC on pin A of the sampler connector.

2.5 PH AND TEMPERATURE SENSOR

A. Manufacturers:

1. Teledyne Isco
2. Substitutions: Not permitted.

B. Functional Design

1. The device will transmit flow stream pH and temperature data to a Teledyne Isco Signature Series flow meter using Teledyne Isco proprietary protocol.
2. The probe can be mounted horizontally or vertically in the stream.
3. The probe shall have an operational range from 0 to 14 pH units, with a measurement accuracy of +/-0.1 (with new probe, freshly calibrated within range).

C. Description

1. 301 Device
 - a. Cable from the flow meter to the analog to digital converter box shall be PVC jacketed, and shall be 32.8 or 72.5ft (10 or 23m) standard length.
 - b. The converter box shall be 4 x 2.125in (10.16x5.4cm), with two flanges for wall mounting.
 - c. Ambient operating temperature shall be -4 to 122°F, -20 to 50°C.
 - d. Temperature compensation shall be performed by the 301 device.
2. Sensor Construction
 - a. The probe shall be constructed of 316 stainless steel. The probe cable shall be constructed of polyvinyl chloride.
 - b. The probe body shall be 6 in. (15.2cm) long and 1.12 in. (2.8cm) in diameter. The probe cable length shall be 25 ft (7.6m), ending in a standard, 4-pin, male M/S connector.
 - c. The double porous liquid junction probe shall be resistant to fouling and coating. The probe shall include an exposed temperature sensor for both pH adjustments and independent temperature recording.
 - d. The probe shall include a steam-sterilized glass hemi-bulb for long-term stability.
 - e. Temperature measurement range shall be 32 to 176 °F, 0 to 80 °C.
3. Sensor Operation
 - a. The sensor and amplifier assembly shall measure the acidity or alkalinity of an aqueous solution by determining the relative quantity of dissociated hydrogen ions present in the solution.

- b. The sensor shall have built-in reduction of electrical noise and high impedance.

PART 3 EXECUTION – **WAITING FOR MANUFACTURER'S INSTALLATION GUIDE**

3.1 EXAMINATION

3.2 PREPARATION

3.3 INSTALLATION

3.4 FIELD QUALITY CONTROL

END OF SECTION 33 XX XX