NOB HILL WATER ASSOCIATION

YAKIMA COUNTY **WASHINGTON**

CONTRACT PROVISIONS

for

WESTBROOK RESERVOIRS IMPROVEMENTS

G&O #23873
MAY 2026

Gray & Osborne, Inc.
CONSULTING ENGINEERS

NOB HILL WATER ASSOCIATION

YAKIMA COUNTY **WASHINGTON**

CONTRACT PROVISIONS

for

WESTBROOK RESERVOIRS IMPROVEMENTS

ALEX MW QUINN
STATE OF WASHINGTON
21019150
REGISTERED
PROFESSIONAL ENGINEER
05/20/2026

JAMIN RAY ANKNEY
STATE OF WASHINGTON
53172
REGISTERED
PROFESSIONAL ENGINEER
5/20/2026

ZARA K. GUZMAN
STATE OF WASHINGTON
23024975
REGISTERED
PROFESSIONAL ENGINEER
5/18/2026

G&O #23873
MAY 2026

Gray & Osborne, Inc.
CONSULTING ENGINEERS

CALL FOR BIDS

NOB HILL WATER ASSOCIATION
WESTBROOK RESERVOIRS IMPROVEMENTS
ENGINEER'S ESTIMATE $1,800,000 to $2,500,000

Sealed Proposals will be received by the undersigned at the Nob Hill Water Association, 6111 Tieton Drive, Yakima, Washington 98908, up to 2:00 p.m.; local time on Wednesday, June 17, 2026, for furnishing the necessary labor, materials, equipment, tools, and guarantees thereof to construct Westbrook Reservoirs Improvements.

This project consists of furnishing all labor, materials, and equipment necessary for the improvements and modifications to the concrete Westbrook Reservoir 1 and Westbrook Reservoir 2. The project includes modification and replacement of the appurtenances, site piping modifications, structural repairs, instrumentation modifications, and other work as shown on the Plans and Specifications.

The Work shall be substantially complete within 120 working days after the commencement date stated in the Notice to Proceed. Additionally, the Work inside Westbrook Reservoir 1 shall be complete and the reservoir shall be returned to operation by February 24, 2027 and the Work inside Westbrook Reservoir 2 shall be complete and the reservoir shall be returned to operation by March 31, 2027.

The Work shall be physically complete within 130 working days after the commencement date stated in the Notice to Proceed. All bidding and construction is to be performed in compliance with the Contract Provisions and Contract Plans for this project and any addenda issued thereto that are on file at the office of the General Manager, Mr. Dustin Yates, P.E., Main Office, Yakima Washington.

The Proposals will be publicly opened and read aloud shortly after the time and date stated above. Proposals are to be submitted only on the form provided with the Bid Documents. All Proposals must be accompanied by a certified check, postal money order, cashiers check, or Proposal bond payable to the "Nob Hill Water Association" and in an amount of not less than five percent (5%) of the total Proposal amount.

Bid Documents for this project are available free-of-charge at the following website: https://gobids.grayandosborne.com. Bidders are encouraged to register in order to receive automatic email notification of future addenda and to be placed on the Bidders List. For assistance, please call (509) 453-4833. Contract questions shall be directed only to the office of the Project Engineer.

Any site visits shall be limited to 8:00 a.m.to 3:00 p.m., Monday through Friday, and shall be coordinated through Dustin Yates, P.E., of the Nob Hill Water Association by calling (509) 966-0272 at least 24 hours in advance of the visits. No unauthorized visits or unscheduled visits will be allowed.

The Nob Hill Water Association is an Equal Opportunity and Affirmative Action Employer. Small, Minority, and Woman-owned firms are encouraged to submit bids. All work on the project shall be subject to State wage rates. All contractors shall be licensed to conduct business in Washington State.

Financing of the Project has been provided by Nob Hill Water Association and the Washington State Drinking Water State Revolving Fund Program. The Nob Hill Water Association expressly reserves the right to reject any or all Proposals and to waive minor irregularities or informalities in any Proposal. All general contractors and all subcontractors must meet Washington State Drinking Water State Revolving Fund Program requirements.

(Signed) **DUSTIN YATES, P.E.**
GENERAL MANAGER

CONTRACT PROVISIONS

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PART 1

BID DOCUMENTS

BIDDER'S CHECKLIST

1. REQUIRED FORMS

The Bidder shall submit the following forms, which must be executed in full and submitted with the Proposal.

a.	Proposal (including Statement of Bidder's Qualifications)	(Pages P-1 - P-8)
b.	Certification of Non-Segregated Facilities	
c.	Bidders List	
d.	Bid Deposit or Proposal Bond	(PB-1)

2. SUPPLEMENTAL BIDDER CRITERIA

The Apparent two lowest bidders shall submit to the Contracting Agency the completed Supplemental Bidder Criteria forms in the Appendix by noon of the second business day following the bid submittal deadline.

3. AGREEMENT FORMS

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

a.	Agreement	(Pages A-1 - A-3)
b.	Performance Bond	(Page B-1)
c.	Public Works Payment Bond	(Page B-2)
d.	Certificate of Insurance	
e.	Certificate of Builders Risk Insurance (when required)	

WESTBROOK RESERVOIRS IMPROVEMENTS

PROPOSAL

Nob Hill Water Association
6111 Tieton Drive
Yakima, Washington 98908

The undersigned has examined the Work site(s), local conditions, the Contract, and all applicable laws and regulations covering the Work. The following unit and lump sum prices are tendered as an offer to perform the Work in accordance with all of the requirements set forth in the Contract and all applicable laws and regulations.

As required by the Contract, a postal money order, certified check, cashier's check or Proposal bond made payable to the Owner is attached hereto. If this Proposal is accepted and the undersigned fail(s) or refuse(s) to enter into a contract and furnish the required performance bond, labor and material payment bond, special guarantee bonds (if required), required insurance and all other required documentation, the undersigned will forfeit to the Owner an amount equal to five percent of the Proposal amount.

After the date and hour set for submitting the Proposals, no bidder may withdraw its Proposal, unless the Award of the contract is delayed for a period exceeding 60 consecutive calendar days.

The undersigned agrees that in the event it is Awarded the contract for the Work, it shall employ only Contractors and Subcontractors that are duly licensed by the State of Washington and remain so at all times they are in any way involved with the Work.

The undersigned agrees that the Owner reserves the right to reject any or all Proposals and to waive any minor irregularities and informalities in any Proposal.

The undersigned agrees that the Owner will Award the Contract to the lowest responsible, responsive bidder whose Proposal is in the best interest of the Owner.

PROPOSAL - Continued

SCHEDULE A: WESTBROOK RESERVOIR 1 IMPROVEMENTS

NO.	ITEM	QUANTITY		UNIT PRICE	AMOUNT
1.	Mobilization and Demobilization	1	LS	$_____	$_____
2.	Minor Change	1	EST	$30,000.00	$30,000.00
3.	Apprentice Incentive/Penalty	1	CALC	$2,000.00	$2,000.00
4.	Access Hatch and Ladder Installation	1	LS	$_____	$_____
5.	Vent Installation	1	LS	$_____	$_____
6.	Overflow Installation and Modifications	1	LS	$_____	$_____
7.	Inlet/Outlet Pipe Improvements	1	LS	$_____	$_____
8.	Crack Repair	600	LF	$_____	$_____
9.	Shallow Spalling Repair	50	SF	$_____	$_____
10.	Deep Spalling and Corroded Rebar Repair	400	SF	$_____	$_____
11.	Sump Infill and Sealing	1	LS	$_____	$_____
12.	Concrete Water Stop Benches	1	LS	$_____	$_____

Subtotal (Schedule A): ..... $_____

Washington State Sales Tax (8.5%): ..... $_____

TOTAL CONSTRUCTION COST (SCHEDULE A):..... $_____

PROPOSAL - Continued

SCHEDULE B: WESTBROOK RESERVOIR 2 IMPROVEMENTS

NO.	ITEM	QUANTITY		UNIT PRICE	AMOUNT
1.	Mobilization and Demobilization	1	LS	$_____	$_____
2.	Minor Change	1	EST	$50,000.00	$50,000.00
3.	Access Hatch and Ladder Installation	1	LS	$_____	$_____
4.	Vent Installation and Modifications	1	LS	$_____	$_____
5.	Overflow Installation and Modifications	1	LS	$_____	$_____
6.	Piping, Valves, and Appurtenances	1	LS	$_____	$_____
7.	Exposed Rebar End Repair	120	SF	$_____	$_____
8.	Shallow Spalling Repair	350	SF	$_____	$_____
9.	Deep Spalling and Corroded Rebar Repair	450	SF	$_____	$_____
10.	Crack Repair	300	LF	$_____	$_____
11.	Concrete Corner Repair	1	LS	$_____	$_____
12.	Tee-Connections Repairs	120	EA	$_____	$_____
13.	Floor Joint Repair	1,000	LF	$_____	$_____
14.	Seismic Retrofit (Replace Topping Slab)	1	LS	$_____	$_____

Subtotal (Schedule B): .....$_____

Washington State Sales Tax (8.5%): .....$_____

TOTAL CONSTRUCTION COST (SCHEDULE B): .....$_____

PROPOSAL - Continued

BID SUMMARY

1. TOTAL CONSTRUCTION COST
   (SCHEDULE A forwarded from page p-2):..... $_____

2. TOTAL CONSTRUCTION COST
   (SCHEDULE B forwarded from page P-3):..... $_____

3. TOTAL CONSTRUCTION COST
   (SCHEDULES A AND B) ..... $_____

Note: A bid must be received on all items.

STATEMENT OF BIDDER'S QUALIFICATIONS

Name of Firm: _____

Address: _____

Telephone No. _____ Fax No. _____

Contact Person for this Project: _____

E-mail: _____

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

_____

WORK TO BE COMPLETED BY BIDDER

List the Work and the dollar amount thereof that the Bidder will complete with its forces, if awarded the contract.

Work to be Performed	Dollar Amount

PROPOSED SUBCONTRACTORS (Per RCW 39.30.060)

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

These subcontractors must be listed below along with the work to be performed. This information must be provided with the Proposal for the work of heating, ventilation, air conditioning, plumbing and electrical. This information must be provided with the Proposal or within 48 hours after the published bid submittal time for the work of structural steel and rebar installation.

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

Subcontractor Name (and License Number if required) _____

Work to be performed _____

_____

_____

Subcontractor Name (and License Number if required) _____

Work to be performed _____

_____

_____

Subcontractor Name (and License Number if required) _____

Work to be performed _____

_____

_____

Subcontractor Name (and License Number if required) _____

Work to be performed _____

_____

_____

Subcontractor Name (and License Number if required) _____

Work to be performed _____

_____

_____

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

ADDENDA RECEIVED

Addendum No.	Date Received	Name of Recipient

NOTE: Bidder shall acknowledge receipt of all addenda. Bidder is responsible for verifying the actual number of addenda issued prior to submitting a Proposal.

Subject to any extensions of the Contract Time granted under the Contract, the undersigned agrees to substantially complete the Work required under this Contract within 120 working days (the Substantial Completion Date) and to physically complete the Work required under this contract within 130 working days (the Physical Completion Date) from when Contract Time begins.

The undersigned has reviewed and fully understands the provisions in the Contract regarding liquidated damages and agrees that liquidated damages shall be $2,500.00 per day for each and every working day beyond the Contract Time allowed for substantial completion until the Substantial Completion Date is achieved and $1,000.00 for each and every working day required beyond the Contract Time for physical completion until the Physical Completion Date is achieved. Additionally, liquidated damages shall be $2,500.00 for each and every working day beyond February 24, 2027, until the Work inside Westbrook Reservoir 1 is complete and the reservoir is returned to operation. Similarly, liquidated damages shall be $2,500.00 for each and every working day beyond March 31, 2027, until the Work inside Westbrook Reservoir 2 is complete and the reservoir is returned to operation. The counting of contract time is described in General Condition 3.04.14.

The undersigned is, and will remain in, full compliance with all Washington State administrative agency requirements including, but not limited to registration requirements of Washington State Department of Labor & Industries for contractors, including but not limited to requirements for bond, proof of insurance and annual registration fee. The undersigned's Washington State:

Dept. of Labor and Industries Workman's Compensation Account No. is _____;
Dept. of Licensing Contractor's Registration No. is _____;
Unified Business Identifier Number is _____;
Excise Tax Registration Number is _____; and
Employment Security Account Number is _____.

The undersigned has reviewed all insurance requirements contained in the Contract and has verified the availability of and the undersigned's eligibility for all required insurance. The undersigned verifies that the cost for all required insurance, has been included in this Proposal.

In relation to claims related in whole or in part to workplace injuries to employees, the undersigned waives any immunity granted under the State Industrial Insurance Law, RCW Title

51. This waiver has been specially negotiated by the parties, which is acknowledged by the undersigned in signing this Proposal.

By signing the proposal, the undersigned declares, under penalty of perjury under the laws of the United States and the State of Washington, that the following statements are true and correct:

1. That the undersigned person(s) or entity(ies) has(have) not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with the project for which this Proposal is submitted.

2. The bidder hereby certifies that, within the three-year period immediately preceding the bid solicitation date Thursday, May 21, 2026, that the bidder is not a "willful" violator, as defined in RCW 49.48.082, of any provision of chapters 49.46, 49.48, or 49.52 RCW, as determined by a final and binding citation and notice of assessment issued by the Department of Labor and Industries or through a civil judgment entered by a court of limited or general jurisdiction.

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

Sincerely,

_____ _____
Sign Name Date

By: _____ _____
Print Name, Title Location Executed (City, State or County)

_____
Print Company Name

Amount of Proposal deposit: $_____ Check No. _____,

or Proposal bond in the amount of $_____

_____, issued through _____
Name of Bank/Bonding Company

located at _____
Mailing Address

_____
Telephone Number of Bank/Bonding Company

Attachment 3 Certification of Nonsegregated Facilities

(Applicable to federally assisted construction contracts and related subcontracts exceeding $10,000, which are not exempt from the Equal Opportunity clause.)

The federally assisted construction contractor certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally assisted construction contractor certified, further that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally assisted construction contractor agrees that a breach of this certification is a violation of the Equal Opportunity clause in this contract.

As used in this certification, the term "segregated facilities" means any waiting rooms, work area, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or area, in fact; segregated on the basis of race, creed, color, or national origin, because of habit, local custom, or otherwise. The federally assisted construction contractor agrees that (except where he has obtained identical certifications from proposed contractors for specific time periods) he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding $10,000 which are not exempt from the provisions of the Equal Opportunity clause, and that he will retain such, certification in this file.

_____ _____

Signature Date

_____

Name and title of signer (please type)

[THIS FORM SHALL BE COMPLETED IN FULL AND SUBMITTED WITH THE BID PROPOSAL]

Bidders List (40 CFR Part 33 part 33.501)

All bidders shall submit the following information for all firms that bid or quote on subcontracts (including both DBE and non-DBE firms) with their bid proposal.

1. Entity's name with point of contact;
2. Entity's mailing address, telephone number, and e-mail address;
3. The procurement on which the entity bid or quoted, and when; and,
4. Entity's status as an MBE/WBE or non-MBE/WBE

PROPOSAL BOND

KNOW ALL MEN BY THESE PRESENTS, That we _____

_____

of _____ as principal, and the _____

_____

a corporation duly organized under the laws of the state of _____, _____and authorized to do business in the State of Washington, as surety, are held and firmly bound unto **NOB HILL WATER ASSOCIATION** in the full and penal sum of five percent of the total amount of the bid proposal of said principal for the work hereinafter described, for the payment of which, well and truly to be made, we bind our heirs, executors, administrators and assigns, and successors and assigns, firmly by these presents.

The condition of this bond is such, that whereas the principal herein is herewith submitting his or its sealed proposal for the following construction project, to wit:

WESTBROOK RESERVOIRS IMPROVEMENTS

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

NOW, THEREFORE, If the said proposal bid by said principal be accepted, and the contract be awarded to said principal, and if said principal shall duly make and enter into and execute said Contract and shall furnish bond as required by **NOB HILL WATER ASSOCIATION** within a period of 10 days from and after said award, exclusive of the day of such award, then this obligation shall be null and void, otherwise it shall remain and be in full force and effect.

IN TESTIMONY WHEREOF, The principal and surety have caused these presents to be

signed and sealed this_____day of_____, _____.

_____

_____

(Principal)

_____

(Surety)

_____

(Attorney-in-fact)

PART 2

AGREEMENT AND BONDS

AGREEMENT

THIS AGREEMENT is entered into by and between the **NOB HILL WATER ASSOCIATION** (hereinafter called the Owner) and _____ (hereinafter called the Contractor).

The Owner and the Contractor agree as follows:

ARTICLE 1. WORK.

[Include description of all schedules, alternate or additive items awarded]

ARTICLE 2. CONTRACT TIME.

The Contractor shall substantially complete the Work required by the Contract within _____ working days (the Substantial Completion Date) and physically complete the Work within _____working days (the Physical Completion Date).

ARTICLE 3. LIQUIDATED DAMAGES.

The Owner and the Contractor recognize that time is of the essence and that the Owner will suffer financial loss if the Work is not completed within the time, plus any extensions thereof, allowed in accordance with the Contract. They also recognize the inconvenience, expense, and difficulties involved in a legal proceeding to prove the actual loss suffered by the Owner if the Work is not completed within the time allowed in the Contract. Accordingly, the Owner and the Contractor agree that as liquidated damages for delay, and not as a penalty, the Contractor shall pay the Owner ($_____) per day for each working day beyond the Substantial Completion Date until the Contractor achieves substantial completion of the Work and ($_____) per day for each working day beyond the Physical Completion Date until the Contractor achieves physical completion of the Work.

ARTICLE 4. CONTRACT PRICE.

The Owner shall pay the Contractor the amount(s) set forth in the Proposal (in United States dollars) for completion of the Work in accordance with the Contract.

INFORMATION ONLY

ARTICLE 5. CONTRACT.

The Contract, which comprises the entire agreement between the Owner and the Contractor concerning the Work, consists of the following:

- This Agreement;
- The Contractor's Proposal including the bid, bid schedule(s), information required of bidder, Proposal bond, and all required certificates and affidavits;
- The Performance Bond and the Public Works Payment Bond;
- The Contract Provisions;
- The Plans (or drawings) consisting of _____ sheets, as listed in the index on sheet _____ of the Plans;
- Addenda numbers _____, inclusive; and
- Change Orders issued after the effective date of this Agreement.

There are no Contract Documents other than those listed in this Article 5. The Contract may be amended only in writing by Change Order as provided in the Contract.

ARTICLE 6. MISCELLANEOUS.

For purpose of indemnifying and defending any work place injury claims by employees of the Contractor and Subcontractors, the Contractor waives any immunity granted under the State Industrial Insurance Law, RCW Title 51. This waiver has been specifically negotiated between the parties and is hereby acknowledged by the Contractor. _____(Contractor's initials)

The Contractor shall not assign any rights under or interests in the Contract, including but not limited to rights to payment, without the prior written consent of the Owner. Unless specifically stated in a written consent to an assignment, no assignment will release or discharge the Contractor-assignor from any duty or responsibility under the Contract.

The Contractor acknowledges that neither the State of Washington nor any of its departments or employees are, or shall be, a party to this Contract or any subcontract resulting from this project and that all conflicts of interest shall be avoided.

The Contract is binding upon the Owner and the Contractor, and their respective partners, successors, assigns and legal representatives.

INFORMATION ONLY

IN WITNESS WHEREOF, Owner and Contractor have caused this Agreement to be executed the day and year indicated below.

NOB HILL WATER ASSOCIATION

By_____

Date_____

CONTRACTOR

License No. _____

By_____

Title_____

Attest_____

Name and Address for giving notices (print)

_____

_____

_____

INFORMATION ONLY

PUBLIC WORKS PERFORMANCE BOND
to NOB HILL WATER ASSOCIATION, YAKIMA, WA

Bond No. _____

The **NOB HILL WATER ASSOCIATION,** Washington, (Association) has awarded to _____ (Principal), a contract for the construction of the project designated as Westbrook Reservoirs Improvements in Yakima, Washington (Contract), and said Principal is required under the terms of that Contract to furnish a bond for performance of all obligations under the Contract.

The Principal, and _____ (Surety), a corporation organized under the laws of the State of _____ and licensed to do business in the State of Washington as surety and named in the current list of "Surety Companies Acceptable in Federal Bonds" as published in the Federal Register by the Audit Staff Bureau of Accounts, U.S. Treasury Dept., are jointly and severally held and firmly bound to the Association, in the sum of _____ US Dollars ($_____ **amount to include sales tax**) Total Contract Amount, subject to the provisions herein.

This statutory performance bond shall become null and void, if and when the Principal, its heirs, executors, administrators, successors, or assigns shall well and faithfully perform all of the Principal's obligations under the Contract and fulfill all the terms and conditions of all duly authorized modifications, additions, and changes to said Contract that may hereafter be made, at the time and in the manner therein specified; and if such performance obligations have not been fulfilled, this bond shall remain in full force and effect.

The Surety agrees to indemnify, defend, and protect the Association against any claim of direct or indirect loss resulting from the failure of the Principal, its heirs, executors, administrators, successors, or assigns (or any of the employees, subcontractors, or lower tier subcontractors of the Principal) to faithfully perform the Contract.

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

This bond may be executed in two (2) original counterparts, and shall be signed by the parties' duly authorized officers. This bond will only be accepted if it is accompanied by a fully executed and original power of attorney for the officer executing on behalf of the surety.

The Surety agrees to be bound by the laws of the state of Washington and subjected to the jurisdiction of the state of Washington.

PRINCIPAL		SURETY	
_____		_____	
Principal Signature	Date	Surety Signature	Date
_____		_____	
Printed Name		Printed Name	
_____		_____	
Title		Title	

Local office/agent of Surety Company:

Name _____ Telephone _____

Address _____

INFORMATIONAL ONLY

PUBLIC WORKS PAYMENT BOND
to NOB HILL WATER ASSOCIATION, YAKIMA, WA

Bond No. _____

The **NOB HILL WATER ASSOCATION**, Washington, (Association) has awarded to _____ (Principal), a contract for the construction of the project designated as Westbrook Reservoirs Improvements in Yakima, Washington (Contract), and said Principal is required under the terms of that Contract to furnish a payment bond in accord with Title 39.08 Revised Code of Washington (RCW) and (where applicable) 60.28 RCW.

The Principal, and _____ (Surety), a corporation organized under the laws of the State of _____ and licensed to do business in the State of Washington as surety and named in the current list of "Surety Companies Acceptable in Federal Bonds" as published in the Federal Register by the Audit Staff Bureau of Accounts, U.S. Treasury Dept., are jointly and severally held and firmly bound to the Association, in the sum of _____ US Dollars ($_____ **amount to include sales tax**) Total Contract Amount, subject to the provisions herein.

This statutory payment bond shall become null and void, if and when the Principal, its heirs, executors, administrators, successors, or assigns shall pay all persons in accordance with RCW Titles 60.28, 39.08, and 39.12 including all workers, laborers, mechanics, subcontractors, lower tier subcontractors, and material suppliers, and all persons who shall supply such contractor or subcontractor with provisions and supplies for the carrying on of such work, and all taxes incurred on said Contract under Title 50 and 51 RCW and all taxes imposed on the Principal under Title 82 RCW; and if such payment obligations have not been fulfilled, this bond shall remain in full force and effect.

The Surety agrees to indemnify, defend, and protect the Association against any claim of direct or indirect loss resulting from the failure of the Principal, its heirs, executors, administrators, successors, or assigns, (or the subcontractors or lower tier subcontractors of the Principal) to pay all laborers, mechanics, subcontractors, lower tier subcontractors materialpersons, and all persons who shall supply such contractor or subcontractors with provisions and supplies for the carrying on of such work.

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

This bond may be executed in two (2) original counterparts, and shall be signed by the parties' duly authorized officers. This bond will only be accepted if it is accompanied by a fully executed and original power of attorney for the officer executing on behalf of the surety.

The Surety agrees to be bound by the laws of the state of Washington and subjected to the jurisdiction of the state of Washington.

PRINCIPAL		SURETY	
_____	_____	_____	_____
Principal Signature	Date	Surety Signature	Date
_____		_____	
Printed Name		Printed Name	
_____		_____	
Title		Title	

Local office/agent of Surety Company:

Name _____ Telephone _____

Address _____

INFORMATIONAL

PART 3

SUPPLEMENTARY GENERAL CONDITIONS AND GENERAL CONDITIONS

SUPPLEMENTARY GENERAL CONDITIONS

Delete Section 2-01.8.3. in its entirety and replace with the following:

1.02.1 REFERENCED STANDARDS AND CODES

Add the following to this Section:

NSF National Sanitation Foundation

1.03 DEFINITIONS

Delete the definitions for "ACCEPTANCE," "CLERK," and "OWNER" and replace with the following definitions:

ACCEPTANCE

The formal action, as further described in Section 3.04.16(3) of these General Conditions by the Owner or Owner's governing body.

CLERK

The duly appointed representative of the Owner.

OWNER

The entity, Nob Hill Water Association, that is responsible for the execution and administration of the Contract.

3.04.18 RETAINAGE

Delete this Section and replace it with the following:

"1. There will be retained from monies earned by the Contractor on progress estimates a sum not to exceed 5 percent of the monies earned by the Contractor. Such retainage shall be used as a trust fund for the protection and payment (1) to the State with respect to taxes imposed pursuant to RCW Title 82, which may be due from such Contractor, and (2) the claims of any other person or entity arising under the Contract or RCW 60.04.

2. Monies retained shall, at the option of the Contractor, be:

a. Retained in a fund by the Owner;

b. Deposited by the Owner in an interest-bearing account in a bank, mutual savings bank, or savings and loan association (interest on monies so retained may be paid to the Contractor);

c. Deposited by the Owner in an escrow (interest-bearing) account in a bank, mutual saving bank, or savings and loan association (interest on monies so retained shall be paid to the Contractor). Deposits are to be in the name of the Owner and are not to be allowed to be withdrawn without the Owner's written authorization. The Owner will issue a check representing the sum of the monies reserved, payable to the bank or trust company;

d. In choosing option (b) or (c), the Contractor agrees to assume full responsibility to pay all costs which may accrue from escrow services, brokerage charges or both, and further agrees to assume all risks in connection with the investment of the retainage in securities.

At the time the Contract is executed the Contractor shall designate the option desired.

3. Release of retainage will be made within 60 days after the following conditions are met:

a. A release has been obtained from the Washington State Department of Revenue and Washington State Employment Security Department;

b. The Washington State Department of Labor and Industries verifies that the Contractor is current on the payment of industrial insurance and medical aid premiums;

c. All claims by the Owner against the Contractor have been resolved;

d. No claims have been filed against the retained percentage, against real property of the Owner or against the Owner, arising out of the Work.

4. In the event that claims are filed against the retainage, the Contractor will be paid the retained percentage less an amount sufficient to pay all such claims, together with a sum determined by the Owner to be sufficient to pay the costs of foreclosing on claims and to attorneys' fees, all in accordance with applicable law."

GENERAL CONDITIONS

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GENERAL CONDITIONS

SECTION 1 - GENERAL INFORMATION APPLICABLE TO PROPOSAL AND CONTRACT

1.01 DEFINITIONS AND TERMINOLOGY

The following terms are abbreviated and defined as they are used in the Contract. When used in the Proposal form to denote items of Work and units of measurements, abbreviations mean the full expression of the abbreviated term.

1.02 ABBREVIATIONS AND TERMINOLOGY

1.02.1 REFERENCED STANDARDS AND CODES

The following is a partial list of specifications and codes that may be referenced in sections of the Contract. The Contractor shall be responsible for conducting its Work and carrying out its operations and furnishing equipment in accordance with the latest edition or versions, in effect at the time of bid opening, of any applicable specified portions of the referenced standards and codes.

AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AFBMA	Anti-friction Bearing Manufacturing Association
AGA	American Gas Association
AGC	Associated General Contractors of America
AI	Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMCA	Air Moving and Conditioning Association
ANLA	American Nursery and Landscape Association
ANSI	American National Standards Institute, Inc.
APA	American Plywood Association
API	American Petroleum Institute
APWA	American Public Works Association
ARA	American Railway Association
AREMA	American Railway Engineering and Maintenance-of-Way Association
ASA	American Standards Association
ASCE	American Society of Civil Engineers
ASLA	American Society of Landscape Architects
ASME	American Society Mechanical Engineers
ASNT	American Society for Nondestructive Testing
ASTM	American Society for Testing and Material
AWPA	American Wood Preservers' Association
AWS	American Welding Society

AWWA	American Water Works Association
CFR	Code of Federal Regulations
CLI	Chain Link Institute
CRAB	County Road Administration Board
CRSI	Concrete Reinforcing Steel Institute
CSA	Canadian Standards Associations
CSI	Construction Specifications Institute
DIPRA	Ductile Iron Pipe Research Association
EEI	Edison Electric Institute
EPA	Environmental Protection Agency
ETL	Electrical Testing Laboratories
FHWA	Federal Highway Administration
FM	Factory Mutual
FSS	Federal Specifications and Standards, General Services Administration
HUD	United State Department of Housing and Urban Development
IBC	International Building Code
ICEA	Insulated Cable Engineers Association
IEEE	Institute of Electrical and Electronic Engineers
IES	Illumination Engineering Society
IMSA	International Municipal Signal Association
IPC	International Plumbing Code
ISA	Instrumentation Society of America
JIC	Joint Industry Conference Electrical Standards for Industrial Equipment
LID	Local Improvement District
LPI	Lightning Protection Institute
MSHA	Mine Safety and Health Act
MSS	Manufacturer's Standardization Society of the Valve and Fitting Industry
MUTCD	Manual on Uniform Traffic Control Devices
NCMA	National Concrete Manufacturer's Association
NEC	National Electrical Code
NEMA	National Electrical Manufacturers' Association
NEPA	National Environmental Policy Act
NFPA	National Fire Protection Association
NRMCA	National Ready Mix Concrete Association
OMWBE	Office of Minority and Women's Business Enterprises
OSHA	Occupational Safety and Health Administration
PCA	Portland Cement Association
PPI	Plastic Pipe Institute
P/PCI	Precast/Prestressed Concrete Institute
RCW	Revised Code of Washington
SAE	Society of Automotive Engineers
SEPA	State Environmental Policy Act
SIES	Specifications and Illuminating Engineering Society
SSPC	Steel Structures Painting Council
UL	Underwriters' Laboratory
ULID	Utility Local Improvement District
UMTA	Urban Mass Transit Administration

WABO	Washington Association of Building Officials
WAC	Washington Administrative Code
WCLIB	West Coast Lumber Inspection Bureau
WISHA	Washington Industrial Safety and Health Administration
WRI	Wire Reinforcement Institute
WSDL&I	Washington State Department of Labor and Industries
WSDOE	Washington State Department of Ecology
WSDOT	Washington State Department of Transportation
WWPA	Western Wood Products Association

1.02.2 TERMINOLOGY

The use of pronouns of any gender in these General Conditions shall include pronouns of all genders, as applicable.

The terms "provide," "furnish" and "install" are used interchangeably in the Contract and mean that the Contractor shall provide, furnish, and install the item(s) described unless specifically noted otherwise.

The terms "Plans" and "Drawings" are used interchangeably in the Contract and shall mean the Contract Plans, which show location, character, and dimensions of prescribed Work, including layouts, profiles, cross-sections, and other details.

1.02.3 ITEMS OF WORK AND UNITS OF MEASUREMENT

AC	Asbestos Cement Pipe
Agg.	Aggregate
Al.	Aluminum
ATB	Asphalt Treated Base
BST	Bituminous Surface Treatment
CB	Catch Basin
Cfm	Cubic Feet per Minute
Cfs	Cubic Feet per Second
Cl.	Class
CMP	Corrugated Metal Pipe
Comb.	Combination
Conc.	Concrete
CPEP	Corrugated Polyethylene Pipe
Crib.	Cribbing
Culv.	Culvert
Cy or Cu. Yd.	Cubic Yard(s)
Dia.	Diameter
DI	Ductile Iron
DIM	Dimension
EA	Each
EL	Elevation
Est.	Estimate or Estimated

Excl.	Excluding
F	Fahrenheit
FIG	Figure
Ft.	Foot or Feet
GALV	Galvanized
Gph	Gallon(s) per Hour
Gpm	Gallon(s) per Minute
HDPE	High Density Polyethylene
HMA	Hot Mix Asphalt
HR	Hour
Hund.	Hundred
In.	Inch or Inches
Incl.	Including
L	Liter
Lb.	Pound(s)
LF or Lin. Ft.	Linear Foot (Feet)
LS	Lump Sum
M	Thousand
MBM	Thousand Feet Board Measure
Pres.	Pressure
PSI	Pounds per Square Inch
PSF	Pounds per Square Foot
PVC	Polyvinyl Chloride
QTY	Quantity
Reg.	Regulator
Reinf.	Reinforced, Reinforcing
SF	Square Foot (Feet)
Sec.	Section
SL	Slope
St.	Street
Stl.	Steel
SST	Stainless Steel
Str.	Structural
Sy or Sq. Yd.	Square Yard(s)
Th.	Thick or Thickness
TN	Ton
Tr.	Treatment
TYP	Typical
VC	Vitrified Clay

1.03 DEFINITIONS

ACCEPTANCE

The formal action by Owner or Owner's governing body as provided in RCW 39.08 and RCW 60.28, as existing or amended.

ADDENDUM

A written or graphic document issued to all Bidders prior to bid opening and identified as an addendum, which clarifies, modifies or supplements the bid documents and becomes part of the Contract.

ADDITIVE

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

ALTERNATE

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

AWARD

The formal decision of the Owner awarding the Contract to the lowest or most favorable responsible and responsive Bidder for the Work.

BID DOCUMENTS

The component parts of the proposed Contract which may include, but not limited to, the Proposal form, the proposed Contract Provisions, the proposed Contract Plans, Addenda, and Subsurface Boring Logs (if any).

BIDDER

A natural person or legal entity (e.g., partnership, corporation, limited liability company, firm, or joint venture) submitting a proposal or bid.

BUSINESS DAY

A business day is any day from Monday through Friday, except holidays, as listed in Section 3.04.14.

CLERK

The duly elected or appointed Clerk of the Commission, Council, or Board of Directors of the Owner or authorized designee.

COMMISSION, COUNCIL, OR BOARD OF DIRECTORS

The duly elected or appointed Council, Commission, or Board of Directors of the Owner.

CONTRACT

The written agreement between the Owner and the Contractor. It describes, among other things:

1. What work will be done, and by when;

2. Who will provide labor and materials; and

3. How Contractor will be paid.

The Contract includes: the agreement form, Bidder's completed Proposal form, all required certificates and affidavits, Performance Bond and Public Works Payment Bond, Contract Provisions, Contract Plans, and all Addenda and Change Orders executed pursuant to the provisions of the Contract.

CONTRACT BOND

The approved form of security furnished by the Contractor and the Contractor's Surety as required by the Contract, that guarantees performance of all the Work required by the Contract and payment to anyone who provides supplies or labor for the performance of the Work.

CONTRACT DOCUMENTS

See definition for "Contract."

CONTRACT PLANS (PLANS OR DRAWINGS)

The Contract Plans (or drawings) are those plans, drawings or other illustrations and all addenda and revisions, whether issued before or after the award of the Contract to Contractor, which show location, character, and dimensions of the Work, including layouts, profiles, cross-sections and other details.

CONTRACT PROVISIONS

A publication addressing the Work required for an individual project. At the time of the Call for Bids, the Contract Provisions may include, for a specific individual project, general conditions, supplemental general conditions, specifications, a listing of the applicable WSDOT Standard Plans, the prevailing minimum hourly wage rates, and an informational Proposal form with the listing of Bid items. The proposed Contract Provisions may also include, for a specific individual project, various required certifications or declarations. At the time of the Contract execution date, the Contract Provisions include the proposed Contract Provisions and include any Addenda, a copy of the agreement form, and a copy of the Proposal form with the Contract prices and extensions.

CONTRACT TIME

The period of time established by the terms and conditions of the Contract within which the Work shall be complete.

CONTRACTOR

The natural person(s) or legal entity (e.g., partnership, corporation, limited liability company, firm, joint venture) Contracting with the Owner to do the prescribed Work.

DATES

Substantial Completion Date is the day that the Engineer determines the Owner has full and unrestricted use and benefit of the Work, from both an operational and safety standpoint, any remaining traffic disruptions will be rare and brief, and only minor incidental work, replacement of temporary substitute facilities, plant establishment periods, or correction or repair remains for the physical completion of the total Work.

Physical Completion Date is the day that the Engineer determines that all of the Work required by the Contract is physically completed and the Owner has received from the Contractor all required record drawings, operation and maintenance manuals, manufacturers' affidavits, and software and programming.

Contract Completion Date is the day when all the Work and all the obligations of the Contractor under the Contract are fulfilled by the Contractor. All documentation and other items required by the Contract and required by law shall be furnished by the Contractor before establishment of this date.

Final Acceptance Date is the date on which the Owner accepts the Work as complete.

FIELD REPRESENTATIVE

The Owner's representative who observes the Contractor's performance of the Work. Such observation shall not be relied upon by the Contractor or others as approval or acceptance of the Work, nor shall it in any manner relieve the Contractor from its obligations and responsibilities under the Contract.

NOTICE TO PROCEED

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

OWNER

The government entity or agency that awards the Contract to the Contractor and is responsible for the execution and administration of the Contract.

PROJECT ENGINEER/ENGINEER

The Owner's representative who administers the construction program for the Owner.

PROPOSAL (or BID)

A Bidder's offer, on a properly completed Proposal form, to perform the Work required by the Contract. The terms Proposal and Bid may be used interchangeably.

SPECIFICATIONS

Written provisions describing the Work and requirements thereof.

STANDARD PLANS

A manual of specific plans or drawings adopted by the Owner, which show frequently recurring components of work that, have been standardized for use.

SUBCONTRACTOR

A natural person, or entity (e.g., partnership, corporation, limited liability company, firm or joint venture) to which the Contractor sublets a portion of the Work.

SUBGRADE

The top surface of the roadbed on which subbase, base, surfacing, pavement, or layers of similar materials are placed.

SUPPLEMENTARY GENERAL CONDITIONS

That part of the Contract amends or supplements these General Conditions.

TRAVELED WAY

That part of the roadway made for vehicle travel, excluding shoulders and auxiliary lanes.

WORK

The provision of all labor, materials, tools, equipment, supervision and other things needed to complete the project in full accordance with the Contract Documents.

WORKING DRAWINGS

Shop drawings, shop plans, erection plans, falsework plans, framework plans, cofferdam, cribbing and shoring plans, bending diagrams for reinforcing steel, or any other supplementary plans or similar data, including a schedule of submittal dates for working drawings where specified, that the Contractor shall submit to the Engineer for approval.

SECTION 2 - INSTRUCTIONS FOR PREPARATION OF PROPOSAL (OR BID)

2.01 BID PROCEDURES AND CONDITIONS

2.01.1 QUALIFICATIONS OF BIDDERS

Where applicable and required, Bidders shall provide all requested information relating to experience, financing, equipment, and organization relating to their ability to properly perform the Work. The Owner reserves the right to take whatever action it deems necessary to ascertain the responsibility of the Bidder and the ability of the Bidder to perform the Work satisfactorily.

2.01.2 CONTRACT PROVISIONS AND CONTRACT PLANS

Contract Provisions and Contract Plans are on file in the offices of the Owner and the Engineer, Gray & Osborne, Inc. After award of the Contract, up to five sets of Contracts will be issued without charge to the Contractor. Additional sets of Contracts may be purchased from the Owner by the Contractor.

2.01.3 ESTIMATED QUANTITIES

The quantities shown in the Proposal form are estimates and are stated only for bid comparison purposes. The Owner does not warrant, expressly or by implication, that the actual quantities will correspond with those estimates. Payment will be made on the basis of the actual quantities of each item of Work satisfactorily completed in accordance with the requirements of the Contract.

2.01.4 EXAMINATION OF CONTRACT AND SITE

2.01.4(1) General

Bidders shall satisfy themselves by personal examination of Contract Provisions, Contract Plans, and site of the proposed improvements, and by any other examination and investigation which they may desire to make as to the accuracy of the estimate of quantities, the nature of the Work and the difficulties to be encountered. Bidders shall review the entire Contract to ensure that the completeness of their Proposal includes all items of Work regardless of where shown in the Contract. Bidders are cautioned that alternate sources of information (copies of the Contract obtained from third parties) are not necessarily an accurate or complete representation of the Contract. Bidders shall use such information at their own risk.

Bidders shall be familiar and comply with all applicable federal, state, and local laws, ordinances, and regulations in any way applicable to the performance the Work. Bidders are responsible for familiarizing themselves with all current state and federal wage rates applicable to the Work and its duration before submitting a Proposal based on the Contract Provisions and Contract Plans. Any wage determination contained in the Contract is for the Bidder's general information only and is not warranted to be complete or accurate. The Owner will not consider any plea of misunderstanding or ignorance of such requirements. Bid prices shall reflect what the Bidder has determined to be the total cost of completing the Work, including but not limited to: construction methods, materials, labor, administrative costs, any and all applicable taxes, and equipment.

Except as the Contract may provide, the Bidder to which the Contract is awarded shall receive no payment for any costs that exceed those set forth in the Proposal.

2.01.4(2) Interpretation of the Contract Provisions and Contract Plans

If any Bidder desires interpretation or clarification of the Contract Provisions and Contract Plans, the Bidder shall make a written request to the Engineer for such clarification or interpretation prior to the submission of a Proposal. If the Engineer determines that the Contract Provisions and/or Contract Plans do not require interpretation or clarification, the Engineer will so notify the Bidder making the request. All interpretations and clarifications made by the Engineer will be by written addendum to all planholders of record, and a copy of the addendum will be filed in the office of the Owner. Neither the Owner nor the Engineer will be responsible for any interpretation, clarification or explanation of the Contract Provisions and Contract Plans that is not set forth in a written addendum to all planholders of record, and Bidders shall not under any circumstances rely on any other interpretation, clarification or explanation.

2.01.4(3) Subsurface Information

If the Owner has made a subsurface investigation of the site of the proposed Work, the boring log data and soil sample test data accumulated by the Owner will be made available for inspection by the Bidders. However, the Owner makes no representation or warranty, express or implied, that:

a. The Bidders' interpretations from the boring logs may be correct;

b. Moisture conditions and indicated water tables will not vary from those found at the time the borings were made;

c. The ground at the location of the borings has not been physically disturbed or altered after the boring was made; and

d. Conditions below the surface of the ground are consistent throughout the site with the information made available hereunder, or that conditions to be encountered on the site are uniform or consistent with geological conditions usually encountered in the area.

The Owner makes no representations, guarantees, or warranties as to the condition, materials, or proportions of the materials between the specific borings, regardless of any subsurface information the Owner may make available to the prospective Bidders. Bidders are solely responsible for making the necessary investigations to support and/or verify any conclusions or assumptions used in preparation of their Proposals.

Any subsurface investigations and analysis were carried out for design purposes only. Contractor may not rely upon or make any claim against Owner, Engineer, or any of their subconsultants, with respect to:

1. The completeness of such reports for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and

procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or

2. Other conclusions, interpretations, opinions, representations, and information contained in such reports; or

3. Any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, conclusions, interpretations, opinions or information.

2.01.4(4) <u>Availability of Specified Items</u>

Prior to submitting a Proposal, all Bidders shall verify that all items necessary to complete the Work will be available in time to allow the Work to be completed within the Contract Time. In the event that one or more items may not be available to allow the Work to be completed within the Contract Time, the Bidder shall notify the Engineer in writing prior to submitting a Proposal. Responsibility for delays and related costs because of non-availability of items necessary to complete the Work shall be borne by the Contractor.

2.01.5 PROPOSAL DEPOSIT

A deposit of at least 5 percent of the total Proposal amount shall accompany each Proposal (Proposal Deposit). The Proposal Deposit may be in the form of a Proposal bond (surety bond), certified check, cashier's check, or postal money order made payable to the Owner. If so stated in the Contract Provisions, cash will not be accepted for a Proposal deposit. All Proposal bonds shall be on the form included within the Contract Provisions and shall be signed by the Bidder and the surety. The surety shall: (1) be registered with the Washington State Commissioner, and (2) appear on the current Authorized Insurance List in the State of Washington published by the Office of the Insurance Commissioner. The Proposal bond shall not be conditioned in any way to modify the minimum 5 percent required. The Proposal Deposit will be held as a guaranty that the successful Bidder will, within 10 days from the date of notification of Award, enter into a Contract and furnish approved Performance and Public Works Payment Bonds, on forms attached, in amounts equal to 100 percent of the amount of the Contract, including state sales tax.

The failure to furnish a Proposal Deposit of a minimum of 5 percent with the Proposal shall make the Proposal non responsive and shall cause the Proposal to be rejected by the Owner.

2.01.6 PROPOSAL

(1) Proposals shall be submitted on the Proposal form included in the Contract Provisions. All Proposals shall be completed, signed by an authorized person and dated. To be considered by the Owner as a responsive Proposal, the Bidder shall bid on all Additive or Alternate items set forth in the Proposal form, unless otherwise specified in the Contract Documents.

(2) To be responsive, a Proposal shall state that it will remain valid for a period of 60 days following the date of Proposal opening. In the event that a conflict in this

duration appears elsewhere in the Contract Provisions, the longest duration shall apply.

(3) All prices set forth on the Proposal form shall be legible figures and either be written in ink or typed and expressed in U.S. dollars. In the space provided on the Proposal form, Bidders shall identify all Addenda that have been received. The Proposal, Proposal Deposit, and all other certificates, forms or other documents required by the Contract Provisions to be executed and delivered with the Proposal shall be submitted in a sealed package, addressed to the Owner, and plainly marked "Proposal for _____ (insert name of project as shown on the Proposal) to be opened on the _____ day of _____, 20___," (insert the day, month and year shown in the published bid notice). The Owner will not consider any Proposal received after the time established for opening Proposals.

(4) Where noted in the Proposal, the Bidder is to furnish information concerning its experience with work of a similar nature, equipment to be used on this project, and general background information. Information that is incomplete, evasive, or of a general nature only, may be considered as grounds for rejection of the Proposal.

(5) RCW 39.30.060 requires Bidders on public works projects expected to cost one million dollars or more to provide the names of the structural steel installation, rebar installation, heating, ventilation and air conditioning, plumbing and electrical Subcontractors to whom the Bidder will directly subcontract those portions of the Work if awarded the Contract. The Bidder may not list more than one Subcontractor for each category of Work identified, unless Subcontractors vary with bid alternates, in which case the Bidder shall indicate which Subcontractor will be used for which alternate. Failure of the Bidder to list the names and license numbers, if required, of such Subcontractors or to name itself to perform such Work, or listing two or more Subcontractors to perform the same Work, shall render the Bidder's Proposal unresponsive and void. Under RCW 39.30.060, the required names of such Subcontractors for the work of HVAC, plumbing, and electrical shall be provided with the Proposal. The names of such subcontractors for the work of rebar and structural steel shall be submitted within 48 hours after the public bid submittal time. In addition to compliance with the requirements of RCW 39.30.060, the apparent successful Bidder may be required to submit to the Engineer as soon as possible after the Proposal opening, and not later than three calendar days thereafter, a written list of all proposed Subcontractors in addition to structural steel installation, rebar installation, heating, ventilation, and air conditioning, plumbing and electrical contractors, that will perform subcontracting Work on the project. If not previously provided, the following information shall be provided for each Subcontractor:

a. Name, address, email address, facsimile number, telephone number, contractor registration number and certification numbers;

b. The type of Work to be performed;

c. A list of at least three recently completed projects for Work similar to that to be performed by the proposed Subcontractor, with the following information for each project:

i. Name of project,

ii. Name, address, and telephone number of the project owner; and

d. Any additional pertinent information establishing the experience or qualifications of the proposed Subcontractor.

(6) After opening and reading Proposals, the Owner will check them for correctness of extensions of the prices per unit and the total price. If a discrepancy exists between the price per unit and the extended amount of any bid item, the price per unit, converted to the actual extension, will control. The total extensions, corrected where necessary, will be used by the Owner for comparison and award purposes and to establish the amount of the Contractor's Performance and Public Works Payment Bonds.

2.01.7 WITHDRAWING OR REVISING PROPOSAL

After submitting a physical Proposal to the Owner, the Bidder may withdraw, or revise it if:

1. The Bidder submits a written request signed by an authorized person and physically delivers it to the place designated for receipt of Proposals; and

2. The Owner receives the request before the time set for receipt of Proposals; and

3. The revised or supplemented Proposal (if any) is received by the Owner before the time set for receipt of Proposals.

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

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

2.01.8 DISQUALIFICATION OF BIDDERS

1. A Proposal will be considered irregular and will be rejected if:

a. The Bidder is not prequalified when so required;
b. The Bidder adds provisions reserving the right to reject or accept the

Award, or enter into the Contract;

c. A price per unit cannot be determined from the Bid Proposal;
d. The Proposal form is not properly executed;
e. The Bidder fails to submit or properly complete a proposed subcontractor list, if applicable, as required in Section 2.01.6;
f. The Bidder fails to submit, or properly complete a Disadvantaged Minority or Women's business Enterprise Certification, if applicable;
g. The Bid Proposal does not constitute a definite and unqualified offer to meet the material terms of the Bid invitation.

2. A Proposal may be considered irregular and may be rejected if:

a. The Proposal does not include a unit price for every Bid item;
b. Any of the unit prices are excessively unbalanced (either above or below the amount of a reasonable Bid) to the potential detriment of the Contracting Agency;
c. The authorized Proposal Form furnished by the Contracting Agency is not used or is altered;
d. The completed Proposal form contains unauthorized additions, deletions, alternate Bids, or conditions;
e. Receipt of Addenda is not acknowledged;
f. A member of a joint venture or partnership and the joint venture or partnership submit Proposals for the same project (in such an instance, both Bids may be rejected); or
g. If Proposal form entries are not made in ink.

3. A Bidder will be deemed not responsible if the Bidder does not meet the mandatory bidder responsibility criteria in RCW 39.04.350(1), as amended; or does not meet Supplemental Criteria 1 through 9 in this Section:

The Owner will verify that the Bidder meets the mandatory bidder responsibility criteria in RCW 39.04.350(1), and Supplemental Criteria 1. Evidence that the Bidder meets Supplemental Criteria 2 through 9 shall be provided by the Bidder as stated later in this Section.

a. **Criteria 1 – Federal Debarment**

1. Criterion: The Bidder shall not currently be debarred or suspended by the Federal government.

2. Documentation: The Bidder shall not be listed as having an "active exclusion" on the U.S. government's "System for Award Management" database (www.sam.gov).

b. **Criteria 2 – Delinquent State Taxes**

1. Criterion: The Bidder shall not owe delinquent taxes to the Washington State Department of Revenue without a payment plan approved by the Department of Revenue.

2. Documentation: The Bidder shall, if and when required as detailed below, sign a statement (on a form to be provided by the Owner) that the Bidder does not owe delinquent taxes to the Department of Revenue. If the Bidder owes delinquent taxes, they must submit a written payment plan approved by the Department of Revenue, to the Owner by the deadline listed below.

c. **Criteria 3 – Subcontractor Responsibility**

1. Criterion: The Bidder's standard subcontract form shall include the subcontractor responsibility language required by RCW 39.06.020, and the Bidder shall have an established procedure which it utilizes to validate the responsibility of each of its subcontractors. The Bidder's subcontract form shall also include a requirement that each of its subcontractors shall have and document a similar procedure to determine whether the sub-tier subcontractors with whom it contracts are also "responsible" subcontractors as defined by RCW 39.06.020.

2. Documentation: The Bidder, if and when required as detailed below, shall sign a statement (on a form to be provided by the Contracting Agency) that the Bidder complies with the subcontractor responsibility requirements of RCW 39.06.020.

d. **Criteria 4 – Claims Against Retainage and Bonds**

1. Criterion: The Bidder shall not have a record of excessive claims filed against the retainage or payment bonds for public works projects in the 3 years prior to the bid submittal date, that demonstrate a lack of effective management by the Bidder of making timely and appropriate payments to its Subcontractors, suppliers, and workers, unless there are extenuating circumstances and such circumstances are deemed acceptable to the Owner.

2. Documentation: The Bidder shall, if and when required as detailed below, sign a statement (on a form to be provided by the Owner) that the Bidder has not had claims against claims against retainage and bonds in the 3 years prior to the bid submittal date. If the Bidder has had claims against retainage and bonds in the three years prior to the bid submittal date, they shall submit a list of the public works projects completed in the 3 years prior to the bid submittal date that

have had claims against retainage and bonds and include for each project the following information:

- Name of project
- The owner and contact information for the owner;
- A list of claims filed against the retainage and/or payment bond for any of the projects listed;
- A written explanation of the circumstances surrounding each claim and the ultimate resolution of the claim.

e. **Criteria 5 – Public Bidding Crime**

1. Criterion: The Bidder and/or its owners shall not have been convicted of a crime involving bidding on a public works contract in the 5 years prior to the bid submittal date.

2. Documentation: The Bidder, if and when required as detailed below, shall sign a statement (on a form to be provided by the Owner) that the Bidder and/or its owners have not been convicted of a crime involving bidding on a public works contract.

f. **Criteria 6 – Termination for Cause / Termination for Default**

1. Criterion: The Bidder shall not have had any public works contract terminated for cause or terminated for default by a government agency in the 5 years prior to the bid submittal date, unless there are extenuating circumstances and such circumstances are deemed acceptable to the Owner.

2. Documentation: The Bidder, if and when required as detailed below, shall sign a statement (on a form to be provided by the Owner) that the Bidder has not had any public works contract terminated for cause or terminated for default by a government agency in the 5 years prior to the bid submittal date; or if Bidder was terminated, describe the circumstances.

g. **Criteria 7 – Lawsuits**

1. Criterion: The Bidder shall not have lawsuits with judgments entered against the Bidder in the 5 years prior to the bid submittal date that demonstrate a pattern of failing to meet the terms of contracts, unless there are extenuating circumstances and such circumstances are deemed acceptable to the Owner.

2. Documentation: The Bidder, if and when required as detailed below, shall sign a statement (on a form to be provided by the Owner) that the Bidder has not had any lawsuits with judgments

entered against the Bidder in the 5 years prior to the bid submittal date that demonstrate a pattern of failing to meet the terms of contracts, or shall submit a list of all lawsuits with judgments entered against the Bidder in the 5 years prior to the bid submittal date, along with a written explanation of the circumstances surrounding each such lawsuit. The Owner shall evaluate these explanations to determine whether the lawsuits demonstrate a pattern of failing to meet of terms of construction related contracts.

h. **Criteria 8 – Contract Time (Liquidated Damages)**

1. Criterion: The Bidder shall not have had liquidated damages assessed on any projects it has completed 5 years prior to the bid submittal date that demonstrate a pattern of failing to meet Contract Time, unless there are extenuating circumstances and such circumstances are deemed acceptable to the Owner.

2. Documentation: The Bidder, if and when required as detailed below, shall sign a statement (on a form to be provided by the Owner) that the Bidder has not had liquidated damages assessed on any projects it has completed within the 5 years prior to the bid submittal date, or shall submit a list of projects with assessed liquidated damages along with Owner contact information, and number of days assessed liquated damages.

i. **Criteria 9 – Capacity and Experience**

1. Criterion: The Bidder shall have sufficient current capacity and the Bidder, subcontractors, and project superintendent assigned to the project shall have experience to meet the requirements of this project. The Bidder, subcontractors, and the project superintendent shall meet the experience requirements as defined in Appendix A, Supplemental Bidder Responsibility Criteria.

2. Documentation: The Bidder shall, if and when required as detailed below, on a form to be provided by the Owner, provide the information requested in Appendix A documenting qualifications and experience. The Owner may check owner references for the previous projects and may evaluate the owner's assessment of the Bidder performance.

As evidence that the Bidder meets Supplemental Responsibility Criteria 2 through 9 stated above, the apparent two lowest Bidders must submit to the Owner by 12:00 P.M. (noon) of the second business day following the bid submittal deadline, a written statement verifying that the Bidder meets Supplemental Criteria 2 through 9 together with supporting documentation (sufficient in the sole judgment of the Owner) demonstrating compliance with Supplemental Responsibility Criteria 2

through 9. The Owner reserves the right to request further documentation as needed from the low bidder and documentation from other Bidders as well to assess Bidder responsibility and compliance with all bidder responsibility criteria. The Owner also reserves the right to obtain information from third-parties and independent sources of information concerning a Bidder's compliance with the mandatory and Supplemental Criteria, and to use that information in their evaluation. The Owner may consider mitigating factors in determining whether the Bidder complies with the requirements of the Supplemental Criteria.

The basis for evaluation of Bidder compliance with these mandatory and Supplemental Criteria shall include any documents or facts obtained by Owner (whether from the Bidder or third parties) including but not limited to: (i) financial, historical, or operational data from the Bidder; (ii) information obtained directly by the Owner from others for whom the Bidder has worked, or other public agencies or private enterprises; and (iii) any additional information obtained by the Owner which is believed to be relevant to the matter.

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

Request to Change Supplemental Bidder Responsibility Criteria Prior To Bid: Bidders with concerns about the relevancy or restrictiveness of the Supplemental Bidder Responsibility Criteria may make or submit requests to the Owner to modify the criteria. Such requests shall be in writing, describe the nature of the concerns, and propose specific modifications to the criteria. Bidders shall submit such requests to the Owner no later than 5 business days prior to the bid submittal deadline and address the request to the Project Engineer or such other person designated by the Owner in the Bid Documents.

2.01.9 PROPOSAL ERRORS

If a Bidder discovers an error in the Bidder's Proposal after the Proposals have been opened and tabulated and desires to withdraw the erroneous Proposal, the Bidder shall submit a notarized affidavit signed by the Bidder, accompanied by original certified worksheets used in the preparation of the Proposal, requesting relief from the Award. The affidavit shall describe the specific error(s) and certify that the worksheets are the originals used in the preparation of the Proposal.

The affidavit and the certified worksheets shall be received by the Engineer before 5:00 p.m. local time on the next business day following the day of the Proposal opening or the claim of error will not be considered. The Engineer will review the certified worksheets to determine the validity of the claimed error, and make its recommendation to the Owner. If the Owner and Engineer concur that the claim of error is allowable under applicable law, the Bidder will be relieved of responsibility for the Proposal, and the Proposal Deposit will be returned to the Bidder. Thereafter, at the discretion of the Owner, all Proposals may be rejected or an Award made to the next lowest responsive, responsible Bidder.

2.02 AWARD AND EXECUTION OF CONTRACT

2.02.1 AWARD OF CONTRACT

A Contract will not be awarded until the Owner is satisfied that the successful Bidder is responsible, reasonably familiar with the Work to be performed and has the necessary capital, tools, personnel and equipment to satisfactorily perform the Work.

The Owner reserves the right to waive informalities in the bidding, accept a Proposal of the lowest responsive, responsible Bidder, reject any or all Proposals, republish the call for Proposals, or revise or cancel the project.

After the date and hour set for the opening of the Proposals, no Bidder may withdraw its Proposal unless the Award of the Contract is delayed for a period exceeding 60 calendar days following Proposal opening. In the event that a conflicting duration appears elsewhere in the Invitation for Proposals or Contract Provisions or advertisement, the longer period shall govern.

2.02.2 EXECUTION OF CONTRACT

Within 10 calendar days after notification by the Owner of the Award, the successful Bidder shall return to the Engineer the signed Owner-prepared Contract, all insurance certificates and endorsements required by the Contract Provisions, all other certificates, information, and forms required by the Contract Provisions, and Performance and Public Works Payment Bonds required by the Contract Provisions. If the Contract is signed by an officer, agent, or other authorized representative of the Contractor, the officer, agent, or other representative shall furnish satisfactory evidence of authority to sign as the legal representative of the Contractor, if required by the Owner. An authorized partner of a joint venture may sign the Contract, subject to the approval of the Owner, which may, at its discretion, require each and every member of the joint venture to sign the Contract.

Should the successful Bidder fail to return to the Engineer the signed Owner-prepared Contract, all insurance certificates and endorsements required by the Contract Provisions, all other certifications, information, and forms required by the Contract Provisions, and Performance and Public Works Payment Bonds required by the Contract Provisions within 10 calendar days after notification by the Owner of the Award, the Owner reserves the right to and may elect to withdraw the award to the successful Bidder and award the Contract to the next responsible, responsive Bidder.

Until the Owner executes the Contract, no Proposal shall bind the Owner, and the Contractor shall not commence any Work. The Contractor shall bear all risks for any Work begun before the Contract is executed by the Owner.

2.02.3 FAILURE TO EXECUTE CONTRACT

If the Contractor fails to submit the insurance certificates, bonds, and all other certificates, forms, information and documents as required by the Contract Provisions, with the executed Contract within the time required by the Contract Provisions, the Owner may then award the Contract to the next lowest responsive, responsible Bidder or reject any or all Proposals.

2.02.4 RETURN OF PROPOSAL DEPOSIT

When Proposals have been examined and corrected as necessary, Proposal Deposits accompanying Proposals ineligible for further consideration will be returned. All other Proposal Deposits will be held until the Contract is awarded and fully executed, after which the Proposal Deposits, except those subject to forfeiture, will be returned.

2.02.5 NOTICE TO PROCEED

A written Notice to Proceed will be issued to the Contractor by the Owner or Engineer after the Contract has been executed by the Contractor and the Owner, and the Performance and Public Works Payment Bonds and required insurance and other certificates and documents are approved by the Owner and, when applicable, by State or Federal agencies responsible for funding any portion of the project. The Contractor shall not commence Work until the Notice to Proceed has been issued.

SECTION 3 - GENERAL REQUIREMENTS OF THE CONTRACT

3.01 SCOPE OF THE WORK

3.01.1 INTENT OF THE CONTRACT

The intent of the Contract is to describe a functionally complete project to be constructed in accordance with the Contract. The Contractor shall provide all labor, supervision, materials, tools, equipment, transportation, supplies, and other things required expressly by, or reasonably implied from, the Contract, to complete all Work. Omissions from the Contract of details of Work which are necessary to carry out the intent of the Contract, or which are customarily performed, shall not relieve the Contractor from performing the complete Work called for by the Contract; such Work shall be performed as if fully set forth and described in the Contract. The unit or other bid prices shall be full payment for everything required to complete the Work, including but not limited to labor, supervision, materials, equipment, jobsite and home office overhead and profit.

3.01.2 COORDINATION OF CONTRACT

The Contract Plans and the Contract Provisions for the Work shall be considered as a whole, and anything shown or called for in one and omitted in any other is as binding as if called for or shown on both. Figure dimensions shall, in all cases, be used in preference to scale dimensions. Any inconsistency in the Contract Documents shall be resolved by the following order of precedence (e.g., 1 presiding over 2 through 4, 2 presiding over 3 through 4, etc.):

1. Addenda;

2. The Agreement and Proposal Form;

3. Specifications;

3a. Supplementary General Conditions (including conditions supplied by federal or state agencies on projects funded, in whole or part, by such agencies. In the event of a conflict in various forms of General Conditions, those conditions affording the greatest benefit or protection to the Owner shall govern.);

3b. General Conditions;

3c. Technical Specifications;

4. Contract Plans.

3.01.3 ASSIGNMENT OF CONTRACT

The Contractor shall not assign the Contract or any part of the Contract or of the funds to be received under the Contract unless such assignment is approved by the Owner and the Contractor's Performance and Public Works Payment Bonds surety prior to the execution or effectiveness of the assignment.

3.02 CONTROL OF WORK

3.02.1 AUTHORITY AND ROLE OF THE ENGINEER

(1) The Engineer is the authorized representative of the Owner, and is employed to act as advisor and consultant to the Owner in engineering matters relating to the Contract. Among other things, the Engineer may determine the quantity of material installed or Work completed, evaluate whether materials and equipment comply with the Specifications, and assist the Owner with answering questions relating to the meaning and intent of the Contract. The Owner, with the advice of the Engineer, will make the final determination relating to quality, acceptability and conformity of labor and materials to the requirements of the Contract.

(2) The Engineer does not purport to be a safety expert, and is not engaged in that capacity under the Contract or the Engineer's contract with the Owner. The Engineer does not have either the authority or the responsibility to enforce construction safety laws, rules, regulations or procedures, or to order the stoppage of Work for claimed violations thereof. From time to time, the Engineer may inform the Contractor of conditions that may constitute safety issues or violations. Such information will be provided solely to cooperate with and assist the Contractor and shall not make the Field Representative or the Engineer responsible for the enforcement of safety laws, rules, regulations or procedures. After receiving information relating to safety issues from the Engineer, the Contractor shall make its own examination and analysis of the situation reported and take such action, if any, that the Contractor determines to be appropriate. The Engineer's performance of project representation and observation services shall not make the Engineer responsible for the enforcement of safety laws, rules, regulations or procedures; nor shall it make the Engineer responsible for construction means, methods, techniques, sequences, or procedures, or for the Contractor's failure to properly perform the Work, all of which are entirely the responsibility of the Contractor.

(3) The Engineer shall have no liability whatsoever to, or contractual relationship with, the Contractor in any way relating to the Contract. The Owner and the Contractor shall look solely to each other for the enforcement with respect to any rights, obligations, claims or liabilities arising under or in any way relating to the Contract. Neither the authority given to the Engineer herein, nor any action or service provided by the Engineer or its subconsultants with regard to the Work, shall create any duty owed by the Engineer or its subconsultants to the Contractor or a cause of action against the Engineer or its subconsultants by Contractor.

(4) Nothing in the Contract shall, in any way, be construed to place responsibility on the Field Representative, Engineer or the Owner for the method, manner, direction or superintendency of the performance of the Work by the Contractor. Such responsibility rests solely with the Contractor.

(5) Neither the Engineer nor any of its assistants or agents shall have any power to waive any obligation of the Contract. The Engineer's failure to reject Work that is defective or otherwise does not comply with the requirements of the Contract shall not constitute approval or acceptance of the Work or relieve the Contractor of its obligations under the Contract, notwithstanding that such Work has been estimated for payment or that payments have been made for that Work. Neither shall such failure to reject Work, nor any acceptance by the Engineer or by the Owner of any part or of the whole of the Work bar a claim by the Owner at any subsequent time for recovery of damages for the cost of removal and replacement of any portions of the Work that do not comply with the Contract.

(6) No order, measurement, determination or certificate by the Engineer or Owner for payment of money or payment for or acceptance of the whole or of any part of the Work by the Engineer or the Owner or extension of time or possession taken by the Owner shall constitute a waiver of any portion of the Contract, nor shall any waiver of any breach of the Contract constitute a waiver of any other or subsequent breach thereof.

3.02.2 AUTHORITY OF FIELD REPRESENTATIVE

(1) Field Representatives are assigned to the project site to keep the Engineer and Owner generally informed as to the progress of the Work and the manner in which it is being done; to keep records; and to act as liaison between the Contractor, Owner and Engineer. When observed, the Field Representative shall call the attention of the Contractor to any deviations from the Contract. However, failure of the Field Representative to call the attention of the Contractor to faulty Work or deviations from the Contract shall not constitute either a waiver of any requirement in the Contract or acceptance of said Work.

(2) Since one of the Field Representative's primary responsibilities is to observe that the Work progresses expediently and in a workmanlike manner, the Field Representative may offer suggestions to the Contractor, which the Contractor, at its sole discretion, may or may not choose to follow. Such suggestions are not to be considered as anything but suggestions offered to cooperate with and assist the Contractor and shall not constitute an assumption of responsibility, financial or otherwise, by the Field Representative, the Engineer or the Owner.

(3) The presence or absence of the Field Representative on the job site will be at the sole discretion of the Owner, and the presence or absence of the Field Representative at any time will not relieve the Contractor of its responsibility to properly perform the Work as required by the Contract.

(4) The Field Representative will have the authority, but not the obligation, to reject nonconforming materials and equipment if observed; however, the failure of the Field Representative to reject nonconforming materials and equipment or any other Work involving deviations from the Contract will not constitute acceptance of such Work. The Field Representative is not authorized to approve or accept any portion

of the Work or to issue instructions contrary to the Contract; all such approvals, acceptances or instructions shall be in writing and signed by the Engineer or the Owner.

(5) The Field Representative does not purport to be a safety expert, and is not engaged in that capacity under the Contract or the Engineer's contract with the Owner. The Field Representative does not have either the authority or the responsibility to enforce construction safety laws, rules, regulations or procedures, or to order the stoppage of Work for claimed violations thereof. From time to time, the Field Representative may inform the Contractor of conditions that may constitute safety issues or violations. Such information will be provided solely to cooperate with and assist the Contractor and shall not make the Field Representative or the Engineer responsible for the enforcement of safety laws, rules, regulations or procedures. After receiving information relating to safety issues from the Field Representative, the Contractor shall make its own examination and analysis of the situation reported and take such action, if any, that the Contractor determines to be appropriate. The Field Representative's performance of observation services shall not make the Field Representative responsible for the enforcement of safety laws, rules, regulations or procedures; nor shall it make the Field Representative responsible for construction means, methods, techniques, sequences, or procedures, or for the Contractor's failure to properly perform the Work, all of which are entirely the responsibility of the Contractor.

3.02.3 CONSTRUCTION OBSERVATION AND INSPECTIONS

(1) All Work required by the Contract, including all materials and equipment to be furnished and the manufacture and preparation thereof shall, at all times, be subject to observation by the Owner's designated representatives, who may, at any time in the performance of their duties, enter upon the Work or the shops and factories where any part of the Work, materials or equipment are being prepared, fabricated or manufactured.

(2) Observation of Work by the Owner, the Engineer, or the Field Representative shall not relieve the Contractor of its obligation to furnish satisfactory materials and workmanship. Work or materials found unsatisfactory at any time during the life of the Contract, and the applicable warranty periods, guarantees or limitation periods shall be promptly corrected or replaced immediately by the Contractor at its own expense.

(3) Upon request by the Owner or Engineer, the Contractor shall furnish all tools, labor, equipment and materials necessary to examine any Work that may be completed or in progress, even to the extent of uncovering or taking down portions of completed or covered Work. Work shall be left exposed until examined by the Owner or Engineer, at no additional cost to the Owner. If the Owner or the Engineer determines that the uncovered Work does not comply with the requirements of the Contract, the cost of such examination and the cost of reconstruction and/or repair shall be borne by the Contractor.

(4) The Contractor shall promptly comply with all directions of the Engineer with reference to correcting any Work or replacing any materials or equipment found to be not in accordance with the Contract. In the event of a dispute, the Contractor may appeal to the Engineer's decision to the Owner in accordance with the Contract, and the Owner's decision shall be final.

3.02.4 EMERGENCY CONTACT LIST

The Contractor shall submit an emergency contact list to the Engineer no later than five calendar days after the date the Contract is executed. The list shall include, at a minimum, the Contractor's project manager or equivalent, project superintendent, traffic control supervisor, and erosion and sediment control lead. The list shall identify a representative with delegated authority to act as the emergency contact on behalf of the Contractor and include one or more alternates. The emergency contact shall be available upon the Engineer's request at other than normal working hours. The emergency contact list shall include 24-hour telephone numbers for all individuals identified as emergency contacts or alternates.

3.02.5 ORAL AGREEMENTS

No oral agreement or conversation with any officer, agent, or employee of the Owner, either before or after execution of the Contract, shall affect or modify any of the terms or obligations contained in any of the documents comprising the Contract. Such oral agreement or conversation shall be considered as unofficial information and in no way binding upon the Owner, unless subsequently put in writing and signed by the Owner.

3.02.6 ELECTRONIC FILES

All Work performed shall be in conformity with the signed Contract Plans and Contract Provisions. If the Contractor requests electronic files, the Engineer may provide the files. The use of the electronic files shall be at the Contractor's sole risk. The Engineer does not warrant the completeness or accuracy of the electronic files and the Engineer assumes no liability for any errors or omissions in the digital data. The Contractor shall be responsible for reviewing and checking the electronic files to ensure that they are suitable for the Contractor's purpose.

3.03 LEGAL RELATIONS AND RESPONSIBILITIES

3.03.1 APPLICABLE LAWS AND REGULATIONS

3.03.1(1) <u>General</u>

The Contractor shall comply with all laws, ordinances, rules and regulations of any authority having jurisdiction in any way relating to the project, including, but not limited to, regulations governing site maintenance, clean-up, air pollution control, noise control, water quality control, surface water control and runoff, tree and vegetation protection, cultural resources and oil and hazardous substance control.

3.03.1(2) Utilities and Similar Facilities

The Contractor shall protect all private and public utilities from damage. Utilities include, among others: telephone lines; cable television and high-speed internet lines; gas; electric power lines; sanitary sewer; septic sewer systems; storm sewer, waterlines, and irrigation lines; street lighting and traffic signal and signing systems; and railroad tracks and related equipment.

In accordance with Chapter 19.122 of the Revised Code of Washington, the Contractor shall call the One-Number Locator Service for the field location of underground utilities. If no locator service is available for the area where the project is located, the Contractor shall provide written notice to all owners of utilities known to, or suspected of, having underground facilities within or near all areas of that will be excavated.

The Contractor shall be responsible for all costs required to protect public and private utilities from damage.

3.03.1(3) Site Maintenance

The Contractor shall keep the Work site, staging areas, and Contractor's facilities clean and free from rubbish and debris. Materials and equipment shall be removed from the Work site when they are no longer necessary. Upon completion of the Work and before final acceptance, the Work site shall be cleared of equipment, unused materials, and rubbish and the Work site shall be left in clean and neat condition.

3.03.1(4) State Taxes

The Washington State Department of Revenue has issued special rules on the State sales tax. Section 3.03.1(4) a through Section 3.03.1(4) c are meant to clarify those rules. The Contractor should contact the Washington State Department of Revenue for answers to questions in this area. The Owner will not adjust its payment if the Contractor bases a bid on a misunderstood tax liability.

The Contractor shall include all Contractor-paid taxes in the unit bid prices or other contract amounts. In some cases, however, state retail sales tax will not be included. Section 3.03.1(4) b describes this exception.

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

a. State Sales Tax — Rule 171

   WAC 458-20-171, and its related rules, apply to building, repairing, or improving streets, roads, etc., which are owned by a municipal corporation, or political

subdivision of the state, or by the United States, and which are used primarily for foot or vehicular traffic. This includes storm or combined sewer systems within and included as a part of the street or road drainage system and power lines when such are part of the roadway lighting system. For work performed in such cases, the Contractor shall include Washington State Retail Sales Taxes in the various unit bid item prices, or other contract amounts, including those that the Contractor pays on the purchase of the materials, equipment, or supplies used or consumed in doing the Work.

b. State Sales Tax — Rule 170

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

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

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

c. Services

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

3.03.1(5) Equal Employment Responsibilities

The Contractor shall, at its sole cost and expense, comply with all applicable laws, policies and regulations pertaining to nondiscrimination and equal employment opportunities. The absence of specific provisions or other requirements mandated by state, municipal or federal laws, policies or regulations from these General Conditions shall not excuse the Contractor from compliance with such laws, regulations or policies.

3.03.1(6) Archaeological and Historical Objects

Archaeological or historical objects, such as ruins, human skeletal remains, sites, buildings, artifacts, fossils, or other objects of antiquity that may have significance from a historical or scientific standpoint, which may be encountered by the Contractor, shall not be further disturbed. The Contractor shall immediately notify the Engineer of any such finds.

The Engineer will determine if the material is to be salvaged. The Contractor may be required to stop work in the vicinity of the discovery until such determination is made. The Engineer may require the Contractor to suspend Work in the vicinity of the discovery until salvage is accomplished.

If the Engineer finds that the suspension of Work in the vicinity of the discovery increases or decreases the cost or time required for performance of any part of the Work under the Contract, the Engineer will make an adjustment in payment or the time required for the performance of the Work in accordance with Section 3.04.6.

3.03.2 SAFETY MEASURES

All Work under the Contract shall be performed in a safe manner. The Contractor and all Subcontractors shall comply with all applicable rules, regulations, and safety standards of the Washington State Department of Labor and Industries and all other federal, state, local and other governmental entities having jurisdiction over the project. The Contractor shall be solely and completely responsible for the conditions of the job site, including the safety of all persons and property during the performance of the Work. This requirement shall apply continuously and not be limited to normal working hours.

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

The Contractor shall exercise all required and appropriate precautions to protect all persons and property from injury and damage.

3.03.3 HAZARDOUS MATERIAL

Biological hazards and associated physical hazards may be present at the Work site. The Contractor shall take precautions and perform any necessary Work to provide and maintain a safe and healthful Work site in accordance with all applicable laws. The cost for all Work necessary to provide and maintain a safe Work site shall be included in the Contractor's Proposal, unless the Contract includes provisions to the contrary.

3.03.4 PAYMENT OF WAGES AND RELATED REQUIREMENTS

3.03.4(1) Minimum Prevailing Wage Requirements

a. The Contract is subject to the minimum prevailing wage and hour requirements of RCW 39.12 and RCW 49.28 (as amended or supplemented). On projects having federal funding, federal wage laws and rules may also apply. The Contract may list minimum hourly rates for wages for trades or occupations in the locality within the state where such labor is performed as determined by the Industrial Statistician for the Department of Labor and Industries or under the federal Davis-Bacon Act. These rates are for general reference purposes only and may not be current or complete. The Contractor, any Subcontractor, or other person doing any Work under the Contract shall not pay any worker less than the applicable current minimum hourly wage rates required by applicable law. Higher wages and benefits may be paid.

b. The Contractor, any Subcontractor, and all individuals or firms required by RCW 39.12, WAC 296-127, or the Federal Davis-Bacon and Related Acts (DBRA) to pay minimum prevailing wages, shall not pay any worker less than the minimum hourly wage rates and fringe benefits required by RCW 39.12 or the DBRA. Higher wages and benefits may be paid.

c. In accordance with WAC 296-127, the applicable prevailing wage rates that are in effect on the date when Proposals are due shall remain in effect for the duration of the Contract. By incorporating prevailing wage rates into the Contract, the Owner does not warrant or imply that the Contractor will find labor available at those rates. The Contractor shall calculate in its Proposal any amounts above the minimums that it will actually have to pay. Further, rates for wages and/or fringe benefits may change while the Contract is in force. If they do, the Contractor shall bear the cost of paying rates above those in effect at time of bid.

d. If employing labor in a class not listed in the Contract Provisions on State funded projects, the Contractor shall request the Industrial Statistician, Department of Labor and Industries to determine the correct wage and benefits rate.

e. If employing labor in a class not listed in the Contract Provisions on a federally funded project, the Contractor shall request the U.S. Secretary of Labor to determine the correct wage and benefits rate.

f. The Contractor shall ensure that any firm (Supplier, Manufacturer, or Fabricator) that falls under the provisions of RCW 39.12 because of the definition "Contractor" in WAC 296-127-010, complies with all the requirements of RCW 39.12.

g. The Contractor shall be responsible for compliance with the requirements of the DBRA and RCW 39.12 by all firms (Subcontractors, lower tier Subcontractors, Suppliers, Manufacturers, or Fabricators) engaged in any part of the Work necessary to complete the Contract. Therefore, should a violation of this

Subsection occur by any firm that is providing Work or materials for completion of the Contract whether directly or indirectly responsible to the Contractor, the Owner will take action against the Contractor, as provided by the provisions of the Contract, to achieve compliance, including, but not limited to, withholding payment on the Contract until compliance is achieved.

3.03.4(2) Posting Notice Requirements

Notice of intent to pay prevailing wages and prevailing wage rates for the project shall be posted for the benefit of workers. The Contractor shall post the following, together with anything else necessary to comply with all applicable laws and regulations:

a. One copy of the approved "Statement of Intent to Pay Prevailing Wages" for the Contractor, each Subcontractor, and any other firm (Supplier, Manufacturer, of Fabricator) that falls under the provisions of RCW 39.12 because of the definition of "Contractor" in WAC 296-127-010;

b. One copy of the prevailing wage rates for the project;

c. The address and telephone number of the Industrial Statistician for the Department of Labor and Industries, along with a statement that complaints and questions about wage rates may be directed there; and

d. FHWA 1495/1495A "Wage Rate Information" poster if the project is funded with federal aid.

Notice shall be posted at a location readily visible to workers at the job site, or where no field office is established, at a local office. The Contractor shall supply a copy of the Notice to any employee upon request.

3.03.4(3) Apprentices

If employing apprentices, the Contractor shall submit to the Owner written evidence showing:

a. That each apprentice is enrolled in a program approved by the Washington State Apprenticeship and Training Council;

b. The progression schedule for each apprentice; and

c. The established apprentice-journeyman ratios and wage rates in the project locality upon which the Contractor shall base such ratios and rates under the Contract. Any worker for whom an apprenticeship agreement has not been registered and approved by the Washington State Apprenticeship and Training Council shall be paid the prevailing hourly rate for journeymen provided in RCW 39.12.021.

3.03.4(3.1) Apprentice Utilization

The following Apprentice Utilization Requirements, per RCW 39.04.420, only apply to public works projects that meet the following thresholds and are phased in as follows.

Date	Apprentice Utilization Required for All Projects Estimated to Cost*
July 1, 2024 – June 30, 2026 (Award Date)	$2 million or more
July 1, 2026 – June 30, 2028 (Advertised for Bid Date)	$1.5 million or more
July 1, 2028 (Advertised for Bid Date) and After	$1 million or more

*"Estimated to Cost" refers to the engineer's estimate or project estimate developed by the public agency. Estimated cost is not the bid or award amount. Estimated cost includes all schedules of work and includes sales tax.

Apprentice Utilization
Fifteen percent or more of project Labor Hours shall be performed by Apprentices unless Good Faith Efforts are accepted. Apprentice Utilization will be determined using the Department of Labor and Industries (L&I) online Prevailing Wage Intent & Affidavit (PWIA) system.

Definitions
For the purposes of this specification the following definitions apply:

1. Apprentice is a person enrolled in a State-approved Apprenticeship Training Program.

2. Apprentice Utilization is the apprentice labor hours, on the project, expressed as a percentage of project Labor Hours based on certified payrolls or the affidavits of wages paid, whichever is least. The percentage is not rounded up.

3. Apprentice Utilization Requirement is the minimum percentage of apprentice labor hours required by the Contract.

4. Good Faith Effort(s) (GFE) describes the Contractor's efforts to meet the Apprentice Utilization Requirement including but not limited to the specific steps as described elsewhere in this specification.

5. Labor Hours are the total hours performed by all workers receiving an hourly wage who are subject to prevailing wage requirements for work performed on the Contract as defined by RCW 39.04.310. Labor Hours are determined based on the scope of work performed by the individuals, rather than the title of their occupations in accordance with WAC 296-127.

6. State-approved Apprenticeship Training Program is an apprenticeship training program approved by the Washington State Apprenticeship Council.

7. Apprentice Wage Rates are the applicable wage rates that are to be paid for an apprentice registered in a training program, separate from Journey Level rates, as set by the Washington State Apprenticeship Training Council and Washington State Department of Labor and Industries (L&I).

Electronic Reporting
The Contractor shall use the PWIA System to submit the "Apprentice Utilization Plan." Reporting instructions are available in the application.

Apprentice Utilization Plan
The Contractor shall submit an "Apprentice Utilization Plan" by filling out the Apprentice Utilization Plan Form (WSDOT Form 424-004) or other form approved by the Contracting Agency within 30 calendar days of Contract execution, however no later than the preconstruction meeting, demonstrating how and when they intend to achieve the Apprentice Utilization Requirement. The Plan shall be in sufficient detail for the Engineer to track the Contractor's progress in meeting the utilization requirements. An Apprentice Utilization Plan shall be updated and resubmitted as the Work progresses or when requested by the Engineer or other Contracting Agency representative.

If the Contractor is unable to demonstrate the ability to meet the Apprentice Utilization Requirement with their initial Apprentice Utilization Plan submission, an effort must be made to find additional registered apprentices to perform on the contract. If after attempts have been made at every tier and every scope, the Contractor must submit GFE documentation to the Contracting Agency. The Contractor shall actively seek out opportunities to meet the Apprentice Utilization Requirement during the construction Work.

Subcontacts
The Contractor must not require subcontractors to attain more than 15 percent of a subcontract's proposed labor hours for the subcontract's scope of Work.

Contacts
The Contractor may obtain information on State-approved Apprenticeship Training Programs by using the Apprentice Registration and Tracking System (ARTS) https://secure.lni.wa.gov/arts-public/#/program-search or contacting the Department of Labor and Industries directly at:

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

Compliance
The Contractor is expected to make attempts to employ Apprentices and shall include the requirement in any subcontracts at any tier. In the event that the Contractor is unable to achieve the Apprentice Utilization Requirement, the Contractor shall submit GFE documentation demonstrating the efforts and attempts they made. Final GFE documentation shall be submitted to the Contracting Agency after Substantial Completion but no later than 30 days after Physical Completion.

If the Contractor fails to actively attempt to employ Apprentices, submit GFE documentation, or if the Engineer does not approve the GFE, the Contractor will be assessed a penalty. The Engineer will provide the Contractor with a written notice at Final Acceptance of the project informing the Contractor of the failure to comply with this specification which will include a calculation of the penalty to be assessed as provided for in the Payment section in this special provision.

If the Contractor achieves the required Apprentice Utilization an incentive will be assessed with Final Payment.

Good Faith Efforts

The GFE shall document the attempts (efforts) the Contractor (and any subcontractor at any tier) made to meet the Apprentice Utilization Requirement. Emails, letters, or other written communications with letterhead, titles, and contact information are required.

Documentation must include one or more of the following accepted GFEs:

1. Demonstrated Lack of Availability of Apprentices. Correspondence from State-approved Apprenticeship Training Program(s), with project specific responses confirming there is a lack of availability of Apprentices for this project.

2. Demonstrated Disproportionate Ratio of Material/Equipment/Products to Labor Hours. Documentation explaining the bid includes a disproportionate high cost of material/equipment/products to Labor Hours. (E.g., a $2 M estimated contract includes $1 M or more in procurement costs of equipment to be installed.)

3. Demonstrated Lack of Necessary Labor Hours. Correspondence from a State-approved Apprentice Training Programs confirming there is not enough time in the project to meet required journey level to apprentice training ratios.

4. Demonstrated Lack of Available Approved Programs. Correspondence from State-approved Apprentice Training Programs, confirming there are no programs that train for the scopes included/anticipated on the project. Contractor and state programs to submit training program detail needs and details that could be used for future program creation.

5. Funding Precedent. Documentation that shows conflicting, more restrictive, or precedent requirements for other training on the Project. Examples include, but are not limited to, Tribal Employment Rights (TERO), Federal Training Hours, or Special Training that affect the ability to use state-registered apprentices.

6. Warranty Work. Documentation from Original Equipment Manufacturers, or similar, confirming that work performed must only be completed by certified journey-level installers or risk voiding warranty, or similar.

7. Other Effort. The Contractor may submit other evidence, documentation, or rationale for not being able to achieve the required Apprentice Utilization that are not covered in the other efforts named. Other efforts will still need to be corroborated by an independent, knowledgeable third-party.

Contractors may receive a GFE credit for graduated Apprentice hours through the end of the calendar year for all projects worked on as long as the Apprentice remains continuously employed with the same Contractor/subcontractor they were working for when they graduated. If an Apprentice graduates during employment on a project of significant duration, they may be counted towards a GFE credit for up to 1 year after their graduation or until the end of the project (whichever comes first). Determination of whether Contract requirements were met in good faith will be made by subtracting the hours from the journeyman total reported hours for the project and adding them to the apprentice hour total. If the new utilization percentage meets the Contract requirement, the Contractor will be reported as meeting the requirement in good faith.

Approving Good Faith Efforts
The Contracting Agency will review submitted Good Faith Efforts and issue a determination. The Engineer may request additional information, documentation, evidence or similar in order to approve such efforts. A determination by the Engineer is final. The approved Good Faith Efforts will be loaded into the PWIA system by the Contracting Agency.

3.03.4(4) Required Documents

1. General

   All "Statements of Intent to Pay Prevailing Wages", "Affidavits of Wages Paid" and Certified Payrolls, including a signed Statement of Compliance for Federal-aid projects, shall be submitted on the State L&I online Prevailing Wage Intent & Affidavit (PWIA) system. Statements of Intent to Pay Prevailing Wages", and "Affidavits of Wages Paid" shall also be submitted to the Engineer. When requested by the Engineer, Certified Payrolls shall also be submitted to the Engineer.

2. Intents and Affidavits

   On forms provided by the Industrial Statistician of State L&I, the Contractor shall submit to the Engineer the following for themselves and for each firm covered under RCW 39.12 that will or has provided Work and materials for the Contract:

   a. The approved "Statement of Intent to Pay Prevailing Wages" State L&I's form number F700-029-000. The Contracting Agency will make no payment under this Contract until this statement has been approved by State L&I and reviewed by the Engineer.

   b. The approved "Affidavit of Prevailing Wages Paid", State L&I's form number F700-007-000. The Contracting Agency will not grant Completion until all approved Affidavit of Wages paid for the Contractor and all Subcontractors have been received by the Engineer. The Contracting

Agency will not release to the Contractor any funds retained under RCW 60.28.011 until "Affidavit of Prevailing Wages Paid" forms have been approved by State L&I and all of the approved forms have been submitted to the Engineer for every firm that worked on the Contract.

The Contractor is responsible for requesting these forms from State L&I and for paying any fees required by State L&I.

3. Certified Payrolls

Certified payrolls are required to be submitted by the Contractor for themselves, all Subcontractors and all lower tier Subcontractors. The payrolls shall be submitted weekly on all Federal-aid projects and no less than monthly on State funded projects.

4. Penalties for Noncompliance

The Contractor is advised, if these payrolls are not supplied within the prescribed deadlines, any or all payments may be withheld until compliance is achieved. In addition, failure to provide these payrolls may result in other sanctions as provided by State laws (RCW 39.12.050) and/or Federal regulations (29 CFR 5.12).

3.03.5 BONDS, INSURANCE AND INDEMNITY OBLIGATIONS

3.03.5(1) Contract Bonds

The successful Bidder shall provide an executed Performance Bond and Public Works Payment Bond for the full Contract amount (including sales tax). The Contract Bonds shall:

1. Be on Owner-furnished forms;

2. Be signed by an approved Surety (or Sureties) that:

   a. Is registered with the Washington State Insurance Commissioner; and

   b. Appears on the current Authorized Insurance List in the State of Washington published by the Office of the Insurance Commissioner.

3. Be conditioned upon the faithful performance of the Contract by the Contractor within the prescribed time; and

4. Be conditioned upon the payment of taxes, increases, and penalties incurred on the project under Titles 50, 51 and 82 RCW; and

5. Guarantee that the Surety shall indemnify, defend, and protect the Owner against any claim of direct or indirect loss resulting from the failure:

    a. Of the Contractor (or any of the employees, Subcontractors, or lower tier Subcontractors of the Contractor) to faithfully perform the Contract; or

    b. Of the Contractor (or the Subcontractors or lower tier Subcontractors of the Contractor) to pay all laborers, mechanics, Subcontractors, lower tier Subcontractors, materialperson, or any other person who provides supplies or provisions for carrying out the Work.

6. Be accompanied by a power of attorney for the Surety's officer empowered to sign the bond; and

7. Be signed by an officer of the Contractor empowered to sign official statements (sole proprietor or partner). If the Contractor is a corporation, the bond must be signed by the president or vice-president, unless accompanied by written proof of the authority of the individual signing the bond to bind the corporation (i.e., corporate resolution, power of attorney or a letter to such effect by the president or vice-president).

The Owner may require Sureties or Surety companies on the Contract Bonds to appear and qualify themselves. Whenever the Owner deems the Surety or Sureties to be inadequate, it may, upon written demand, require the Contractor to furnish additional Surety to cover any remaining Work. Until the added Surety is furnished, payments on the Contract will stop.

3.03.5(1.1) Two-Year Guarantee Period

The Contractor shall return to the project and repair or replace all defects in workmanship and material discovered within 2 years following the Substantial Completion Date. The Contractor shall start work to remedy any such defects within 7 calendar days of receiving Owner's written notice of a defect, and shall complete such Work within the time stated in the Owner's notice. In case of an emergency, where damage may result from delay or where loss of services may result, such corrections may be made by the Owner's own forces or another contractor, in which case the cost of corrections shall be paid by the Contractor. In the event the Contractor does not accomplish corrections within the time specified, the Work will be otherwise accomplished and the cost of same shall be paid by the Contractor.

When corrections of defects are made, the Contractor shall then be responsible for correcting all defects in workmanship and materials in the corrected work for 2 years after acceptance of the corrections by Owner.

This guarantee is supplemental to and does not limit or affect the requirements that the Contractor's Work comply with the requirements of the Contract or any other legal rights or remedies of the Owner.

3.03.5(2) Worker's Benefits

a. The Contractor shall make all payments required for unemployment compensation under RCW Title 50 and for industrial insurance and medical aid required under RCW Title 51. If any payment required by Title 50 or Title 51 is not made when due, the Contractor shall indemnify the Owner with respect to all costs and damages, including attorneys' fees and expenses, associated with such nonpayment. The Owner may retain payments due under Title 50 or Title 51 from any money due to the Contractor and make payment to the appropriate fund.

b. The Contractor shall include in the various items in its bid Proposal all costs for payment of unemployment compensation and for providing the required insurance coverage(s). The Contractor will not be entitled to any additional payment for: (1) failure to include such costs in the Proposal, or (2) post-Award determinations made by the U.S. Department of Labor, the Washington State Department of Labor and Industries, or any other agency or entity regarding insurance coverage requirements.

3.03.5(4) Public Liability & Property Damage Insurance

3.03.5(4.1) General Requirements

A. The Contractor shall procure and maintain insurance described in all subsections in this Section, from insurers with a current A.M. Best rating not less than A – VII and licensed to do business in the state of Washington. The Owner reserves the right to approve or reject the insurance provided, based on the insurer (including financial condition), terms and coverage, the Certificate of Insurance, and/or endorsements.

B. The Contractor shall keep this insurance in force during the term of the Contract and for 30 days after the Physical Completion Date, unless otherwise indicated.

C. All insurance coverage required by this section shall be written and provided by "occurrence-based" policy forms rather than by "claims made" forms.

D. The insurance policies shall contain a "cross liability" provision.

E. The Contractor's and all Subcontractors' insurance coverage shall be primary and non-contributory insurance as respects the Owner's insurance, self-insurance, or insurance pool coverage. Any insurance, self-insurance or self-insured pool coverage maintained by the Owner shall be excess of the Contractor's insurance and shall not contribute with it.

F. The Contractor shall provide the Owner and all Additional Insured with written notice of any policy cancellation and the date of effective cancellation within 2 business days of receipt.

G. The Contractor shall not begin work under the Contract until the required insurance has been obtained and approved by the Owner.

H. Failure on the part of the Contractor to maintain the insurance as required shall constitute a material breach of Contract, upon which the Owner may, after giving 5 business days notice to the Contractor to correct the breach, immediately terminate the Contract or, at its discretion, procure or renew such insurance and pay any and all premiums in connection therewith, with any sums so expended to be repaid to the Owner on demand, or at the sole discretion of the Owner, offset against funds due the Contractor from the Owner.

I. Under no circumstances shall a wrap up policy be obtained, for either initiating or maintaining coverage, to satisfy insurance requirements for any policy required under this Section. A "wrap up policy" is defined as an insurance agreement or arrangement under which all the parties working on a specified or designated project are insured under one policy for liability arising out of that specified or designated project.

J. All costs for insurance shall be incidental to and included in the unit or lump sum prices of the Contract and no additional payment will be made.

3.03.5(4.2) Additional Insured

All insurance policies, with the exception of Workers Compensation, shall name the following listed entities as additional insured(s) using the forms or endorsements required herein:

- The Owner and its officers, elected/appointed officials, employees, agents, and volunteers;
- Gray & Osborne, Inc.;

The above-listed entities shall be additional insured(s) for the full available limits of liability maintained by the Contractor, irrespective of whether such limits maintained by the Contractor are greater than those required by the Contract, and irrespective of whether the Certificate of Insurance provided by the Contractor pursuant to 3.03.5(4.4) describes limits lower than those maintained by the Contractor.

3.03.5(4.3) Subcontractors

Contractor shall ensure that each Subcontractor of every tier obtains and maintains at a minimum the insurance coverages listed in 3.03.5(4.5)A and 3.03.5(4.5)B. Upon request of the Owner, the Contractor shall provide evidence of such insurance.

3.03.5(4.4) Verification of Coverage

The Contractor shall deliver to the Owner a Certificate(s) of Insurance and endorsements for each policy of insurance meeting the requirements set forth herein when the Contractor delivers the signed Contract for the Work. The certificate and endorsements shall conform to the following requirements:

1. An ACORD certificate or a form determined by the Owner to be equivalent. The certificate or an endorsement form shall indicate the Contractor's insurance is primary and non-contributory.

2. The Contractor shall obtain endorsement forms CG 2010 10 01, CG 2032 04 13 and CG 2037 04 13 or the equivalent of each, naming the Owner and all other entities listed in 3.03.5(4.2) as Additional Insured(s) and showing the policy number. If the Contractor is unsuccessful in securing these endorsements after exerting commercially reasonable efforts, the Contractor shall obtain other endorsements providing equivalent protection to the Additional Insured. Commercially reasonable efforts shall be evidenced by a signed statement by the Contractor's insurance broker indicating that endorsement forms CG 2010 10 01, CG 2032 04 13 and CG 2037 04 13 are not available and the endorsements submitted provide equivalent protection to the Additional Insured.

3. Any other amendatory endorsements to show the coverage required herein.

4. A notification of coverage enhancements on the Certification of Insurance shall not satisfy these requirements; actual endorsement must be submitted.

5. All insurance coverage maintained or procured pursuant to this agreement shall be endorsed to waive subrogation against the Contracting Agency, its elected or appointed officers, agents, officials, employees, and volunteers or shall specifically allow the Contractor or others providing insurance evidence in compliance with these Specifications to waive their right of subrogation prior to a loss. The Contractor hereby waives its own right of subrogation against the Contracting Agency and shall require similar written express waivers and insurance clauses from each of its subcontractors.

Upon request, the Contractor shall forward to the Owner a full and certified copy of the insurance policy(s). If Builders Risk Insurance is required on this project, a full and certified copy of that policy is required when the Contractor delivers the signed Contract for the Work.

3.03.5(4.5) Coverages and Limits

The insurance shall provide the minimum coverages and limits set forth below. Providing coverage in these stated minimum limits shall not be construed to relieve the Contractor from liability in excess of such limits. All deductibles and self-insured retentions shall be disclosed and are subject to approval by the Owner. The cost of any claim payments falling within the deductible shall be the responsibility of the Contractor.

3.03.5(4.5)A Commercial General Liability

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

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

Contractor shall maintain Commercial General Liability Insurance arising out of the Contractor's completed operations for at least 3 years following Substantial Completion of the Work.

Such policy must provide the following minimum limits:

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

3.03.5(4.5)B Automobile Liability

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

$1,000,000	combined single limit each accident

3.03.5(4.5)C Workers' Compensation

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

3.03.5(4.5)D Excess or Umbrella Liability

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

This requirement may be satisfied instead through the Contractor's primary Commercial General and Automobile Liability coverage, or any combination thereof.

3.03.5(4.5)E Builders Risk Insurance

The Contractor shall purchase and maintain Builders Risk insurance covering interests of the Owner, the Contractor, Subcontractors, and lower tier Subcontractors in the Work. Builders Risk shall be required for all structures on the project. A structure is any equipment, facility, building, bridge, retaining wall, or tank extending 4 feet or more above adjacent grade; or any facility less than 4 feet above adjacent grade, and containing more than $50,000 worth of electrical or mechanical equipment. Poles, light standards, or antenna less than 50 feet in height and less than 2 feet in diameter shall not be considered structures. Builders Risk insurance, when required, shall be on an all-risk policy form and shall insure against the perils of fire and extended coverage and physical loss or damage including flood, earthquake, theft, vandalism, malicious mischief and collapse. The Builders Risk insurance, when required, shall include coverage for temporary buildings, debris removal, and damage to materials in transit or stored off-site. Such insurance shall cover "soft costs" including but not limited to design costs, licensing fees, and architect's and engineer's fees. Builders Risk insurance shall be written in the amount of the completed value of the applicable portions of the project, with no coinsurance provisions.

The Builders Risk insurance covering the Work shall have a deductible of $5,000 for each occurrence, which will be the responsibility of the Contractor. Higher deductibles for flood, earthquake and all other perils may be accepted by the Owner upon written request by the Contractor and written acceptance by the Owner. Any increased deductibles accepted by the Owner will remain the responsibility of the Contractor.

The Builders Risk insurance shall be maintained until the Physical Completion Date.

The Contractor and the Owner waive all rights against each other and any of their Subcontractors, lower tier Subcontractors , agents and employees, each of the other, for damages caused by fire or other perils to the extent covered by Builders Risk insurance or other property insurance applicable to the Work. The policies shall provide such waivers by endorsement or otherwise.

Liability for facilities not covered by Builders Risk shall remain the responsibility of the Contractor.

3.03.5(4.5)F LHWCA Insurance

If the Contract involves work on or adjacent to Navigable Waters of the United States, the Contractor shall procure and maintain insurance coverage in compliance with the statutory requirements of the U.S. Longshore and Harbor Workers' Compensation Act (LHWCA).

Such policy must provide the following minimum limits:

$1,000,000	Bodily Injury by Accident – each accident
$1,000,000	Bodily Injury by Disease – each employee
$1,000,000	Bodily Injury by Disease – policy limits

3.03.5(4.5)G Protection and Indemnity Insurance Including Jones Act

If the Contract involves marine activities, or work from a boat, vessel, or floating platform, the Contractor shall procure and maintain Protection and Indemnity (P&I) coverage including collision liability, injury to crew (Merchant Marine Act of 1920 - Jones Act) and passengers, removal of wreck and liability for seepage, pollution, containment and cleanup using form SP-23 or SP 38 or a form as least as broad.

All entities listed under Section 3.03.5(4.2) of the General Conditions shall be named as additional insureds on the Contractor's Protection and Indemnity insurance policy.

Such policy must provide the following minimum limits:

$1,000,000	Bodily Injury by Accident – each accident or occurrence
$1,000,000	Bodily Injury by Disease – each employee
$1,000,000	Bodily Injury by Disease – policy limits

3.03.5(4.5)H Hull and Machinery

If the Contract involves use of a boat, vessel, or floating platform, the Contractor shall procure and maintain coverage at Market Value of vessel on American Institute Hull Clauses, 6/2/77 form.

3.03.5(4.5)I Marine Pollution

If this Contract is near or on water, the Contractor shall procure and maintain Pollution Liability (OPA, CERCLA) insurance to satisfy U.S. Coast Guard requirements as respects the Federal Oil Pollution Act of 1990 and the Comprehensive Environmental Response, Compensation and Liability Act of 1980 as amended.

Such policy must provide the following minimum limits, or statutory limits of liability as applicable, whichever is higher:

$1,000,000	per Occurrence

3.03.5(4.5)J Pollution Liability

If this Contract includes work with lead based paint, materials containing asbestos or transportation of hazardous materials, the Contractor shall provide a Contractors Pollution Liability policy, providing coverage for claims involving bodily injury, property damage (including loss of use of tangible property that has not been physically injured), cleanup costs, remediation, disposal or other handling of pollutants, including costs and expenses incurred in the investigation, defense, or settlement of claims, arising out of any one or more of the following:

1. Contractor's operations related to this project.
2. Remediation, abatement, repair, maintenance or other work with lead-based paint or materials containing asbestos.
3. Transportation of hazardous materials away from any site related to this project.

All entities listed under 3.03.5(4.2) of these general conditions shall be named by endorsement as additional insureds on the Contractors Pollution Liability insurance policy.

Such Pollution Liability policy shall provide the following minimum limits:

$1,000,000 each loss and annual aggregate

3.03.5(4.5)K Professional Liability

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

Such policy shall provide the following minimum limits:

$1,000,000 per claim and annual aggregate

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

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

3.03.5(5) <u>Indemnity and Hold Harmless</u>

a. To the fullest extent permitted by law and subject to the limitations of RCW 4.24.115, the Contractor shall defend, indemnify and hold harmless the Owner and the Engineer and their appointed and elected officials, agents and employees from and against all claims, damages, losses and expenses including, but not limited to, attorneys' fees and expenses arising out of or resulting from the Work. Provided, however, that when any such claim, damage, loss or expense arises from the concurrent negligence of (1) the Owner, or anyone for whose acts it may be liable, and (2) the Contractor, or anyone for whose acts it may be liable, it is expressly agreed that the Contractor's obligations of defense and indemnity under this section shall be effective only to the extent of the Contractor's negligence and those for whose negligence the Contractor is responsible. This obligation of indemnity shall not extend to claims, losses or expenses arising from the sole negligence of the Owner, its appointed or elected officials, agents or employees.

b. In any and all claims against the Owner or the Engineer or any of their agents or employees by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under this section shall not be limited in any way by any limitation on the amount or type of damages, compensation or

benefits payable by or for the Contractor or any Subcontractor under workmen's compensation acts, disability benefit acts or other employee benefit acts, it being the expressed intent of the parties that Contractor herein specifically waives any immunity granted under the State Industrial Insurance Law, RCW Title 51. **THIS WAIVER HAS BEEN SPECIALLY NEGOTIATED BY THE PARTIES, WHO HAVE ACKNOWLEDGED SAME BY AFFIXING THEIR SIGNATURES TO THE PROPOSAL FORM.**

3.03.5(6) Patent Royalties & Process Fees

The Contractor shall be responsible for all costs arising from the use of patented devices, materials, or processes used in or incorporated in the Work. The Contractor agrees to indemnify, defend, and save harmless the Owner from all claims and damages, in any way relating to the use of patented devices, materials, or processes used in or incorporated in the Work.

3.03.6 METHOD OF SERVING NOTICE

All correspondence from the Contractor constituting any notification, notice of protest, notice of dispute, or other correspondence constituting notification required to be furnished under the Contract, shall be in paper format, hand delivered or sent via mail delivery service to the Owner. Electronic formats such as emails or electronically delivered copies of correspondence will not constitute such notice and will not comply with the requirements of the Contract.

3.04 PROSECUTION AND PROGRESS OF THE WORK

3.04.1 QUALITY OF WORK

3.04.1(1) Workmanship

a. The Contractor represents that it is fully experienced and possesses all the necessary capital, facilities and expertise to perform all of the Work, and hereby guarantees that all of the Work performed by it under the Contract will be of the highest quality and done in a workmanlike fashion in strict accordance with the requirements of the Contract.

b. The Contractor shall at all times employ skilled workers and use skilled Subcontractors in the performance of the Work. When required in writing by the Owner or the Engineer, the Contractor or its Subcontractors shall remove from the Work site any person or Subcontractor who is, in the opinion of the Owner or the Engineer, not competent, not qualified, disorderly, or otherwise unsatisfactory and shall not again employ such discharged person or Subcontractor on the Work, except with the prior written consent of the Owner. Discharge of any person or Subcontractor shall not be the basis of any claim for compensation or damages against the Owner or the Engineer.

c. All Work performed under the Contract shall be of first quality workmanship throughout, with the Work complete and in full working order upon completion.

d. Except when otherwise expressly specified in the Contract, the Contractor shall design, survey, layout and be responsible for all methods, materials and equipment used in performing the Work.

e. If, at any time, the Contractor's workforce (including Subcontractors), in the opinion of the Owner and/or the Engineer, shall be inadequate for maintaining the necessary progress required to complete the Work within the Contract Time, the Contractor shall at its sole cost, if so required by the Owner and/or the Engineer, increase the workforce or equipment to such an extent as to give reasonable assurance of compliance with the Work schedule. The failure of the Owner and/or the Engineer to make such demand shall not relieve the Contractor of its obligation to perform the Work in accordance with the requirements of the Contract. The Contractor alone shall be responsible for the safety, efficiency and adequacy of its activities, construction methods and the rate of progress required by the Contract.

3.04.1(2) <u>Contractor's Supervisory and Site Personnel</u>

a. The Contractor shall assign sufficient supervisory personnel to ensure the faithful prosecution of the Work and shall have adequate supervisory personnel present at the Work site who are either employees of the Contractor or duly authorized representatives designated in writing to the Owner and/or the Engineer. The Contractor shall at all times maintain at the Work site a complete copy of the Contract Provisions, Contract Plans, and record drawings of the Work that has been completed.

b. The Contractor shall at all times have at least one duly authorized supervisory representative at the Work site who shall be fully authorized to make binding decisions on behalf of the Contractor with respect to the Work. If the Contractor's duly authorized supervisory representative at the Work site will be absent from the Work site for more than four hours, he/she shall designate an assistant who possesses the same authority and so inform the Owner and the Field Representative, if applicable.

3.04.2 MATERIALS AND EQUIPMENT

(1) Materials and equipment furnished and installed shall be manufactured, fabricated or constructed to meet all applicable safety requirements. All material and equipment supplied by the Contractor and incorporated in the Work shall be of new manufacture, free from defects and in strict compliance with the requirements of the Contract. When required by the Owner, a certificate from the manufacturer or other responsible supplier shall be supplied attesting to this fact.

(2) All tools and equipment used for construction operations shall be of the size and type suitable for the Work and shall be kept in safe and good working condition at all times.

(3) The Contractor shall, whenever required during the progress of the Work and after completion of the Work, furnish proof acceptable to the Owner that all items of equipment and all materials installed equal or exceed all requirements specified in the Contract.

(4) The Contractor shall use all means possible to protect materials and equipment from damage or degradation of any kind before, during and after installation.

(5) The Contractor shall replace any materials or equipment damaged during the performance of the Work to the approval of the Owner and the Engineer. The cost of replacing damaged materials and equipment shall be borne by the Contractor.

3.04.3 SPECIFICATION OF PARTICULAR MATERIALS AND EQUIPMENT

(1) Within the Contract, certain items are specified by brand, style, trade name, or manufacturer in order to set forth a standard of quality, and/or preference by the Owner. Unless specifically noted otherwise, it is not the intent of the Contract to exclude other processes or materials of a type and quality equal to those designated.

(2) The term "or equal" as used in the Contract does not mean that the Contractor's substitution of material or equipment will necessarily be approved as equal by the Engineer. If the Contractor desires to substitute material or equipment on the basis that it is equal to that specified, the Contractor shall submit a written request to the Engineer to substitute the material or equipment. The Contractor shall not use or incorporate such material or equipment into the Work until the Contractor has received written approval from the Engineer.

(3) If the Contractor proposes substitutions, the Engineer will record all time used to evaluate each proposed substitution. If an approved substitution requires revisions to the Contract Documents, the Engineer will record all time to accomplish the revisions. Whether or not the Engineer approves a proposed substitution all direct and indirect cost to evaluate the proposed substitution shall be deducted from amounts due or to become due to the Contractor.

(4) No additional compensation or extension of time will be allowed the Contractor for any changes required to incorporate substituted materials or equipment.

3.04.4 STORAGE

3.04.4(1) <u>On-Site Storage</u>

The Contractor shall store all equipment and materials in a safe and suitable place in accordance with the manufacturer's recommendations. Materials and equipment shall be covered or wrapped to protect them from moisture, dust and deterioration, as required or necessary. All on-site storage areas shall be approved in advance by the Owner and the Engineer.

3.04.4(2) Off-Site Storage

The Contractor may be required to provide offsite storage of equipment and materials to enable construction to occur at the Work site. The Contractor has full responsibility to secure all offsite storage areas, if needed, and shall include the costs for providing such storage areas in the bid Proposal for the individual equipment and material items requiring off-site storage. All off-site storage areas shall be enclosed or fenced and be secure.

3.04.5 NONCONFORMING MATERIALS, EQUIPMENT AND WORKMANSHIP

(1) Materials, equipment, or workmanship which, in the opinion of the Owner or the Engineer, does not conform to the Contract or are in any other way unsatisfactory or unsuited to the purpose for which they are intended may be rejected. The Contractor shall remove from the Work site without delay, all rejected materials, equipment and work, and shall promptly replace the same in strict conformity with the requirements of the Contract. Unsatisfactory materials, equipment and workmanship may be rejected at any time, notwithstanding any previous testing, inspection or acceptance of such materials, equipment or workmanship, or inclusion thereof in any previously issued progress estimates.

(2) If the Contractor fails to correct nonconforming Work, equipment or materials, the Owner shall have the right to exercise any of the following options or any combination thereof:

a. The Owner may replace the nonconforming Work, materials or equipment by purchase from or contract with any other parties at the expense of the Contractor, and in this event, the Owner shall be entitled without compensation to the Contractor, to the use of the nonconforming Work or equipment for such reasonable time as is necessary to enable Owner to replace such nonconforming Work, materials or equipment.

b. The Owner may elect to accept the nonconforming Work, materials or equipment and issue a Change Order reflecting a credit against the Contract price, computed under the terms of the Contract in an amount to be determined by the Engineer, which amount shall reflect the actual value to the Owner of the accepted Work.

c. Upon receipt of notice from the Owner of any defects in material, equipment or workmanship which appear within a two-year period following the Substantial Completion Date, or within any other warranty or guarantee period required by the Contract or provided by a manufacturer or supplier, the Contractor shall promptly and with the least possible delay and inconvenience to the Owner, repair or replace such nonconforming workmanship, material or equipment without expense to the Owner.

d. The Contractor shall be responsible for the full cost of correcting nonconforming Work and complying with warranties and guarantees as required by the Contract. Direct or indirect costs, including administrative and engineering, incurred by the Owner attributable to correcting and remedying nonconforming or unauthorized work, or Work the Contractor failed or refused to perform, shall be paid by the Contractor. Payment will be deducted by the Owner from monies due, or to become due, the Contractor. Such direct and indirect costs shall include in particular, but without limitation, compensation for additional professional services required, and costs for repair and replacement of work of others destroyed or damaged by correction, removal, or replacement of the Contractor's unauthorized work.

e. All warranties, guarantees, and other obligations to correct work that does not comply with the Contract are material requirements of the Contract. The performance of all warranties, guarantees and other obligations shall be secured by the Performance Bond and the Public Works Payment Bond submitted by the Contractor at the time the Contract is signed.

3.04.6 CHANGES IN THE WORK

(1) The Owner or the Engineer may, at any time, without notice to the Performance Bond or Public Works Payment Bond sureties, by written order designated or indicated to be a Change Order or Change Directive, make any change, including modifications to, additions to or deletions from the Work including, but not limited to, changes:

a. To the Contract Provisions and Contract Plans;

b. To quantities or performance of the Work;

c. To Owner-furnished facilities, equipment, materials, services or the Work site; or

d. To the schedule for the Work or the Contract Time.

(2) A Change Order is an amendment to the Contract, which signifies changes in the scope of the Work, the Contract Time, and/or the Contract price. A Change Order shall be the complete expression of the agreement between the Owner and the Contractor. No claims or entitlement to an equitable adjustment or changes to the Contract Time and/or Contract price will be allowed for alleged verbal or oral agreements or directives.

(3) The Engineer will issue a written change order for any change. If the Engineer determines that the change increased or decreased the Contractor's costs or time to do any of the Work, the Engineer will make an equitable adjustment to the Contract. The equitable adjustment will be by agreement with the Contractor. However, if

the parties are unable to agree, the Engineer will determine the amount of the equitable adjustment in accordance with Section 3.04.6(7) and adjust the time as the Engineer deems appropriate. Extensions of time will be evaluated in accordance with Section 3.04.15(2).

The Contractor shall proceed with the Work upon receiving:

1. A written change order approved by the Owner; or

2. An oral order from the Engineer before actually receiving the written change order.

Within 14 calendar days of delivery of the change order the Contractor shall endorse and return the change order, request an extension of time for endorsement or respond in accordance with Section 3.04.8. The Owner may unilaterally process the change order if the Contractor fails to comply with these requirements. Changes normally noted on field stakes or variation from estimated quantities, except as provided in Section 3.04.6(8), will not require a written change order. These changes shall be made at the unit prices that apply. The Contractor shall respond immediately to changes shown on field stakes without waiting for further notice.

The Contractor shall obtain written consent of the Surety or Sureties if the Engineer requests such consent.

(4) All Change Orders will be prepared by the Owner or Engineer and executed in triplicate with one copy to the Owner, one to the Contractor, and one retained by the Engineer.

(5) If the Contractor encounters any circumstances during the performance of the Work that the Contractor contends creates any entitlement to a change in the Contract Time, the Contract price, or both, the Contractor shall immediately provide written notice to the Engineer. Within 10 calendar days after providing written notice, the Contractor shall provide a written request to the Engineer for a change to the Contract Time and/or Contract price and provide detailed information supporting the request, including cost and schedule information.

(6) No claim by the Contractor shall be allowed if the terms of this Section 3.04.6 are not strictly followed. In the event of any non-compliance, the Contractor shall be conclusively determined to have waived any claim or entitlement to an adjustment of the Contract Time or the Contract price.

(7) The cost to be included in an adjustment for any changes to the Work, adjustment of the Contract Time or Contract price and any equitable adjustment or entitlement related to the Work or the Contract shall meet the notice provisions of Section 3.04.6, and will be determined strictly by one or a combination of the following methods:

a. Contract unit bid prices previously agreed upon; or

b. If there are no unit bid prices, an agreed lump sum; or

c. If the amount of the adjustment cannot be agreed upon in advance or in the manner provided in subparagraph a or b above, the cost will be determined by the actual cost of:

1. Labor including working foremen. Labor rates will only include the basic wage and fringe benefits, the current rates for Federal Insurance Compensation Act (FICA), Federal Unemployment Tax Act (FUTA) and State Unemployment Tax Act (SUTA), and the company's present rates for medical aid and industrial insurance premiums. Labor reimbursement calculations will be based on a "Labor List" (List) prepared and submitted by the Contractor and any Subcontractor before the Contractor commences force account Work. The Engineer may compare the List to payrolls and other documents and may at any time, require the Contractor to submit a new List.

   In the event that an acceptable List is not received by the time that force account calculations are begun, the Engineer will develop a List unilaterally, utilizing the best data available.

2. Materials incorporated permanently into the Work;

3. The ownership or rental cost of equipment during the time of use on the extra work. Equipment rates shall be as set forth in the then current AGC/WSDOT Equipment Rental Agreement. These rates shall be full compensation for all costs incidental to furnishing and operating the equipment. The Contractor shall submit copies of the applicable portions of the AGC/WSDOT Equipment Rental Agreement to the Engineer. The rates listed in the Rental Rate Blue Book (as modified by the current AGC/WSDOT Equipment Rental Agreement) shall be full compensation for all fuel, oil, lubrication, ordinary repairs, maintenance, and all other costs incidental to furnishing and operating the equipment except labor for operation; plus

4. For Services: compensation under force account for specialized services shall be made based on an invoice from the providing entity. Before Work is started the Engineer may require the Contractor to obtain multiple quotations for the service to be utilized and select the provider with the prices and terms most advantageous to the Contracting Agency. The following activities will be considered services and shall be compensated based on an invoice from the entity:

    a. Biohazard abatement services
    b. Camera Inspection services for Sewer/Storm sewer
    c. Commissioning services including manufacturing startup services
    d. Contaminated water and soil disposal fees including lab analysis
    e. Geotechnical Engineering services
    f. Laboratory Testing
    g. Professional Engineering Services
    h. Sanitation Services such as trash or restroom services
    i. Sawcutting
    j. Security of Surveillance Services
    k. Surveying including aerial surveying
    l. Vacuum Truck
    m. Water Truck
    n. Well Decommissioning

5. Overhead and Profit as follows:

    For Work performed by the Contractor, an amount to be agreed upon but not to exceed 15 percent of the labor, material, and equipment cost agreed to by the Engineer as compensation for supervision, small tools, provisions for safety, home office and field overhead, profit and other general conditions expenses, including, but not limited to, insurance, bond and business and occupation taxes.

    For Subcontractor Work, the Subcontractor will be allowed an amount to be agreed upon but not to exceed 15 percent of the labor, material, service, and equipment cost agreed to by the Engineer as compensation for supervision, small tools, provisions for safety, home office and field overhead, profit and other general conditions expenses, including, but not limited to, insurance, bond and business and occupation taxes. The Contractor will be allowed an additional markup of 10 percent to compensate the Contractor for all administrative costs, including home office and field overhead, profit, bonding, insurance, business and occupation taxes and any other costs incurred.

In no case will the total fixed fee for the Contractor and all Subcontractors of all tiers exceed 30 percent.

(8) Payment to the Contractor will be made only for the actual quantities of Work performed and accepted in conformance with the Contract. When the accepted quantity of Work performed under a unit item varies from the original bid quantity, payment will be at the unit Contract price for all Work unless the total accepted quantity of any Contract item, adjusted to exclude added or deleted amounts included in change orders accepted by both parties, increases or decreases by more than 25 percent from the original bid quantity, and that bid item represents 10 percent or more of the total original Contract price. In that case, payment for Contract Work may be adjusted as described herein.

The adjusted final quantity shall be determined by starting with the final accepted quantity measured after all Work under an item has been completed. From this amount, subtract any quantities included in additive change orders accepted by both parties. Then, to the resulting amount, add any quantities included in deductive change orders accepted by both parties. The final result of this calculation shall become the adjusted final quantity and the basis for comparison to the original Proposal quantity.

a. **Increased Quantities**. Either party to the Contract will be entitled to renegotiate the price for that portion of the adjusted final quantity in excess of 1.25 times the original Proposal quantity, if 10 percent or more of the original Contract price. The price for excessive increased quantities will be determined by agreement of the parties, or, where the parties cannot agree, the price will be determined by the Engineer based upon the actual costs to perform the Work, including reasonable markup for overhead and profit. The final price will be determined by the Engineer.

b. **Decreased Quantities**. Either party to the Contract will be entitled to an equitable adjustment if the adjusted final quantity of Work performed is less than 75 percent of the original Bid quantity, if 10 percent or more of the original Contract price. The Contractor shall submit the documentation to support the equitable adjustment to the Engineer. The equitable adjustment shall be based upon and limited to three factors:

1. Any increase or decrease in unit costs of labor, materials or equipment, utilized for Work actually performed, resulting solely from the reduction in quantity;

2. Changes in production rates or methods of performing Work actually done to the extent that the nature of the Work actually performed differs from the nature of the Work included in the original plan; and

3. An adjustment for the anticipated contribution to unavoidable fixed cost and overhead from the units representing the difference between the adjusted final quantity and 75 percent of the original plan quantity.

The following limitations shall apply to renegotiated prices for increases and/or equitable adjustments for decreases:

1. The equipment rates shall be actual cost but shall not exceed the rates set forth in the AGC/WSDOT Equipment Rental Agreement.

2. No payment will be made for extended or unabsorbed home office overhead and field overhead expenses to the extent that there is an unbalanced allocation of such expenses among the Contract Bid items.

3. No payment for consequential damages or loss of anticipated profits will be allowed because of any variance in quantities from those originally shown in the Proposal form, Contract Provisions, and Contract Plans.

4. The total payment (including the adjustment amount and unit prices for Work performed) for any item that experiences an equitable adjustment for decreased quantity shall not exceed 75 percent of the amount originally Bid for the item.

If the adjusted final quantity of any item does not vary from the quantity shown in the Proposal by more than 25 percent, then the Contractor and the Owner agree that all Work under that item will be performed at the original Contract unit price.

When ordered by the Engineer, the Contractor shall proceed with the Work pending determination of the cost or time adjustment for the variation in quantities.

The Contractor and the Owner agree that there will be no cost adjustment for decreases if the Owner has entered the amount for the item in the Proposal form only to provide a common Proposal for Bidders.

3.04.7 DIFFERING SITE CONDITIONS

The Contractor shall promptly, and before such conditions are disturbed, notify the Engineer in writing of: (1) pre-existing subsurface or latent physical conditions at the Work site that differ materially from those indicated in the Contract Documents, or (2) pre-existing unknown physical conditions at the Work site, of an unusual nature, that differ materially from those ordinarily encountered and generally recognized as inherent in the Work of the character required by the Contract. The Engineer shall be given an opportunity to examine such conditions in order to advise

the Owner of possible modifications to the Work to mitigate such conditions. If the Engineer determines that conditions are materially different and cause a material increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, an equitable adjustment shall be made in the Contract Time and/or Contract price in accordance with other applicable provisions of the Contract relating to changes in the Work. Failure of the Contractor to give notice of such conditions at the time of discovery shall constitute a waiver of any claim for an equitable adjustment. Any such adjustments to the Contract price shall be computed strictly limited to amounts provided under paragraph 3.04.6.

3.04.8 PROTEST BY THE CONTRACTOR

If the Contractor disagrees with anything in a Change Order or a written directive, or with any interpretation or determination by the Engineer, the Contractor shall:

a. Immediately submit a signed written notice of protest to the Engineer before doing the Work;

b. Supplement the written protest within 14 calendar days with a written statement and supporting documents providing the following:

1. The date and nature of the protested order, direction, instruction, interpretation or determination;

2. A full discussion of the circumstances which caused the protest, including names of persons involved, time, duration, and nature of the Work involved and a review of the Plans and Contract Provisions referenced to support the protest;

3. The estimated dollar cost, if any, of the protested Work and a detailed breakdown showing how that estimate was determined; and

4. An analysis of the progress schedule showing the schedule change or disruption if the Contractor is asserting a schedule change or disruption; and

5. If the protest is continuing, the information required above shall be supplemented upon request by the Engineer until the protest is resolved.

The Contractor shall keep detailed and complete records of extra costs and schedule impacts to Contract Time that in any way relate to a protest. The Contractor shall allow the Engineer to have access to all documents and records needed for evaluating the protest.

The Engineer will evaluate all protests that comply with this Section. If the Engineer determines that a protest is valid, the Engineer will adjust the Contract price and/or the Contract Time by an adjustment in accordance with Section 3.04.6 and 3.04.15(2).

During the time when any protest is pending, the Contractor shall proceed promptly with the Work, as the Engineer orders in writing.

The Contractor's failure to submit a protest in strict accordance with the requirements of this Section shall constitute a waiver of any claim for an adjustment to the Contract Time, the Contract price, or other relief.

3.04.9 SUBCONTRACTORS AND SUBCONTRACTS

3.04.9(1) Contractor Responsibility

Nothing contained in the Contract shall create any contractual or other relationship between the Owner and/or the Engineer and any Subcontractor or lower tier Subcontractor, and no performance undertaken by any such Subcontractor or lower tier Subcontractor shall, under any circumstances, relieve the Contractor of its obligations and responsibilities under the Contract.

Prior to subcontracting any Work, the Contractor shall verify that every first tier Subcontractor meets the responsibility criteria stated below at the time of subcontract execution. The Contractor shall include these responsibility criteria in every subcontract, and require every Subcontractor to:

1. Possess any electrical contractor license required by 19.28 RCW or elevator contractor license required by 70.87 RCW, if applicable;

2. Have a certificate of registration in compliance with Chapter 18.27 RCW;

3. Have a current State unified business identifier number;

4. If applicable, have:

    a. Industrial insurance coverage for the Subcontractor's employees working in Washington (Title 51 RCW);

    b. An employment security department number (Title 50 RCW);

    c. A state excise tax registration number (Title 82 RCW).

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

6. Verify these responsibility criteria for every lower tier subcontractor at the time of subcontract execution; and

7. Include these responsibility criteria in every lower tier subcontract.

3.04.9(2) Contractor Work Performance Requirement

Work done by the Contractor's own organization shall account for at least 30 percent of the awarded Contract price.

3.04.9(3) Approval of Subcontractors

The Contractor shall not subcontract Work unless the Engineer approves in writing. Each request to subcontract shall be on the form the Engineer provides. If the Engineer requests, the Contractor shall provide proof that the Subcontractor has the experience, ability, and equipment the Work requires. The Contractor shall require each Subcontractor to comply with Section 3.03.4 and to furnish all certificates and statements required by the contract. Approval of a Subcontractor by the Owner shall not relieve the Contractor or Subcontractor of any obligations or responsibilities under the Contract. Any delays or other impacts caused by the failure of the Contractor to provide required information and obtain approval of any Subcontractor in a timely manner will not be considered as justification for additional compensation or an extension of the Contract Time.

3.04.9(4) Subcontracts

Upon approval of Subcontractors by the Engineer, the Contractor shall, if requested, provide the Owner with complete copies of all subcontracts entered into between the Contractor and any Subcontractor. Providing requested subcontracts to the Owner shall be a condition precedent to the Owner's obligation to make any progress payment to the Contractor.

3.04.9(5) Incorporation of Contract

Every subcontract entered into by the Contractor shall expressly bind each Subcontractor to all of the terms and conditions of the Contract, which the Contractor shall incorporate into each subcontract by reference. The Contractor shall provide a copy of the Contract to all Subcontractors and obtain written confirmation from Subcontractors that the Subcontractor received a copy of the Contract. All Subcontractors shall provide a copy of the Contract to all lower tier Subcontractors and obtain written confirmation from lower tier Subcontractors that the lower tier Subcontractor received a copy of the Contract.

3.04.9(6) Replacement of Subcontractors

Subject to the requirements of state and/or federal agencies having jurisdiction over MBE/WBE/DBE requirements applicable to the Work, should it become impossible for a Subcontractor to perform the Subcontractor's intended work, the Contractor shall submit the information required above for an alternate Subcontractor at least 10 days prior to the time that the Subcontractor is scheduled to begin work. The failure of any Subcontractor to perform its portion of the Work in a timely or workmanlike fashion is the sole responsibility of the Contractor.

3.04.10 MUTUAL RESPONSIBILITY OF CONTRACTORS

The Owner reserves the right to perform other work on or near the Work site using its own forces and/or other contractors. The Contractor shall take all reasonable steps to coordinate its performance of the Work with the Owner and/or such other contractors and Subcontractors. If, through acts of commission or omission on the part of the Contractor, any other contractor or any Subcontractor shall suffer loss or damage with respect to the other work being performed by the Owner, the Contractor agrees to promptly settle with such other Contractor or Subcontractor by agreement or other dispute resolution process. The Contractor agrees to indemnify and hold harmless the Owner and the Engineer from all claims asserted against and liability incurred by the Owner or the Engineer resulting from disputes between the Contractor and any other contractor or any Subcontractor or material supplier. The indemnification rights of the Owner and the Engineer include expenses such as, but not limited to, salaries/wages of employees and all other expenses relating to any mediation, litigation, or arbitration, including costs, consulting fees and attorneys' fees. If such other Contractor or Subcontractor shall assert any claim against the Owner on account of any damage alleged to have been sustained by an act or omission of the Contractor or anyone for whose acts it may be liable, the Owner or the Engineer shall notify the Contractor, which shall defend, indemnify and save harmless the Owner and the Engineer against such claim.

The coordination of the Work with other work by the Owner shall be taken into account by the Contractor as part of its site investigation obligations under Section 2.01.4, and all costs thereof shall be borne by the Contractor as part of the Contract price for the Work.

3.04.11 RISK OF LOSS

The Contractor shall have all risk of loss for all Work in progress, all materials, all equipment and all other items in any way relating to the Work through theft, fire, other casualty, act of God, or any other cause until the Contract Completion Date.

3.04.12 MEASUREMENT AND PAYMENT

3.04.12(1) <u>General</u>

The Contract price for the Work, whether lump sum or unit prices, shall constitute full compensation for furnishing all facilities, labor, materials, appurtenances, and incidentals and performing all operations necessary to construct and complete all items of the Work in accordance with the Contract, notwithstanding that minor or incidental features of the Work may not be shown on the Contract Plans or Contract Provisions.

3.04.12(2) <u>Measurement</u>

Measurement for all items shall be as specified in the Contract for unit price and lump sum price items.

3.04.12(3) Payment

Payment for all of the Work will be made at the lump sum or unit Contract price as set forth in the Contract. Payment of the Contract price shall constitute full compensation for the complete performance of all of the Work.

3.04.12(4) Access to Books and Records

The Contractor shall, whenever so requested, give the Owner and/or the Engineer access to all invoices, bills of lading and other documents relating to the Work. The Contractor shall, without charge, provide personnel and measures and scales with adequate capacity for measuring or weighing any materials or other items paid for on a unit price basis.

3.04.12(5) Progress Payment Estimates

Progress payment estimates shall be prepared by the Engineer and reviewed by the Contractor and will be submitted with the Engineer's recommendation to the Owner for its approval on the first day of the month for all Work completed through the 26th day of the preceding month, unless otherwise agreed upon by the Owner, the Engineer and the Contractor. The Engineer will prepare progress payment estimates as accurately as available information permits. The Owner will make no payment under the Contract for the Work performed until the "Statement of Intent to Pay Prevailing Wages," in accordance with RCW 39.12.040, is submitted to the Engineer, including Subcontractor wage rates. In general, each progress payment will be based upon the payment schedule and the value of Work performed during the preceding pay period. Before the final progress payment estimate is prepared, all quantities will be reviewed by the Engineer.

3.04.12(6) Payment for Materials on Hand

The Owner may reimburse the Contractor for 90 percent of the invoice amount of materials and equipment purchased before their incorporation into the Work if properly stored on or near the Work site. Invoices for equipment and materials will be verified and approved by the Engineer. Each invoice shall be sufficiently detailed to enable the Engineer to determine actual costs. Payment for materials on hand shall not exceed the total Contract cost of the Contract item. Payment will not be made for granular materials, forming materials, consumables, nails, tie wire, etc. Payment will not be made for materials for any invoice that is less than $2,000.00 or for freight bills and similar items. Payment for equipment or materials on hand shall not constitute acceptance of the equipment or materials. Equipment and materials will be rejected if found to be faulty, even if payment for it has been made.

3.04.12(7) Payments Withheld

The Engineer may decide not to recommend approval of all or a portion of a progress estimate, and/or the Owner may decide to withhold from a progress estimate an amount sufficient to protect the Owner from loss because of:

a. Nonconforming Work not remedied;

b. Third-party claims or reasonable evidence indicating the probability that a third-party claim will be asserted;

c. Failure of the Contractor to make timely and proper payments to Subcontractors or for labor, materials or equipment;

d. Reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract price;

e. Damage to the Owner or another contractor;

f. Reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance of the Contract price will not be adequate to cover actual or liquidated damages for the anticipated delay;

g. Repeated failure by the Contractor to comply with the directions of the Owner or the Engineer or to carry out the Work in accordance with the Contract;

h. Other appropriate reasons necessary to protect the Owner.

3.04.12(8) Payment Upon Correction of Deficiencies

When the reason or reasons for withholding payment are resolved, payment will be made for amounts previously withheld.

3.04.12(9) Final Payment

After final inspection (Section 3.04.16(2)) of the Work and a determination by the Engineer that the Physical Completion Date has been achieved, the balance of the Contract price due to the Contractor will be paid based upon the final estimate by the Engineer and presentation of a Final Contract Voucher Certification signed by the Contractor. The Final Contract Voucher Certification shall be deemed to be a release of all claims of the Contractor unless a claim is filed in accordance with the requirements of Section 3.05 and is expressly excepted from release in the Contractor's Final Contract Voucher Certification. The date the Owner signs the Final Contract Voucher Certification constitutes the Contract Completion Date in accordance with Section 3.04.16(3).

If the Contractor fails, refuses, or is unable to sign and return the Final Contract Voucher Certification or any other documentation required in order to achieve the Contract Completion Date, the Owner reserves the right to establish a completion date (for the purpose of meeting the requirements of RCW 39.08 and RCW 60.28) and unilaterally accept the Work. Unilateral final acceptance will occur only after the Contractor has been provided the opportunity, by written request from the Engineer, to voluntarily submit such documents. If voluntary compliance is not achieved, formal notification of the impending establishment of a completion date and unilateral final acceptance will be provided by certified letter from the Owner to the Contractor, which will provide 30 calendar days for the Contractor to submit the necessary documents. The 30 calendar day period will begin on the date the certified letter is received by the Contractor. The date on

which the Owner unilaterally signs the Final Contract Voucher Certification shall constitute the Contract Completion Date under Section 3.04.16(3). The Owner shall have the right to unilaterally establish a Contract Completion Date when either (1) the Physical Completion Date for the Work has been achieved in accordance with Section 3.04.16(2), or (2) the Owner terminates the contract in accordance with Section 3.07. Unilateral establishment of the Contract Completion Date by the Owner shall not in any way relieve the Contractor of any liability for failing to comply with the Contract or from responsibility for compliance with all federal, state, tribal, or local laws, ordinances, and regulations that affect the Work.

Payment to the Contractor of partial or final payment estimates and retained percentages shall be subject to applicable laws.

3.04.13 WORK HOURS

Except in the case of emergency or unless otherwise approved by the Owner, the normal straight time working hours for the Contract shall be any consecutive 8-hour period between 7:00 a.m. and 6:00 p.m. of a working day with a maximum 1-hour lunch break and a 5-day work week. The normal straight time 8-hour working period for the Contract shall be established at the preconstruction conference or prior to the Contractor commencing the Work.

Written permission from the Engineer is required, if a Contractor desires to perform Work on holidays, Saturdays, or Sundays; before 7:00 a.m. or after 6:00 p.m. on any day; or longer than an 8-hour period on any day. The Contractor shall apply in writing to the Engineer for such permission, no later than noon on the working day prior to the day for which the Contractor is requesting permission to work.

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

Permission to work Saturdays, Sundays, holidays, or other than the agreed upon normal straight time working hours Monday through Friday may be given subject to certain other conditions set forth by the Owner or Engineer. These conditions may include but are not limited to:

- The Engineer may require designated representatives to be present during the Work. Representatives who may be deemed necessary by the Engineer include, but are not limited to: survey crews; personnel from the Owner's material testing lab; inspectors; and other Owner employees when in the opinion of the Engineer, such Work necessitates their presence.

- Requiring the Contractor to reimburse the Owner all the costs in excess of straight time costs for the Owner's representatives who work during such times. These costs shall be deducted from amounts due or to become due to the Contractor.

- Considering the Work performed on Saturdays, Sundays, and holidays as working days with regard to the Contract Time.

- Considering multiple work shifts as multiple working days with respect to Contract Time, even though the multiple shifts occur in a single 24-hour period.

3.04.14 CONTRACT TIME

The Contract Time shall begin on the first working day following the 10th calendar day after the issuance of the written Notice to Proceed or the first day on which the Contractor begins to perform Work on the site, whichever occurs first. Time is of the essence of the Contract. All of the Work shall be completed within the time limits set forth in the Contract, and the Contractor's unexcused failure to do so shall result in the assessment of liquidated damages as provided in the Contract.

The Contractor shall complete all of the physical Work within the number of working days that are specified as the Contract Time. Every day will be counted as a working day unless it is a non-working day or the Engineer determines the day to be an unworkable day. A non-working day is a Saturday, a Sunday, a day on which the Contract suspends work, or one of the following holidays: January 1st; the third Monday of January; the third Monday of February; Memorial Day; June 19th; July 4th; Labor Day; November 11th; Thanksgiving Day; the day after Thanksgiving; and Christmas Day. Whenever any of these holidays falls on a Sunday, the following Monday shall be counted a non-working day. When the holiday falls on a Saturday, the preceding Friday shall be counted a non-working day.

The days between December 25th and January 1st will be classified as nonworking days, provided that the Contractor actually suspends performance of the Work.

An unworkable day is defined as a partial or whole day that the Engineer determines to be unworkable because of weather, conditions caused by the weather, or such other conditions beyond the control of the Contractor that prevent the satisfactory and timely performance of the Work, and such performance, if not hindered, would have otherwise progressed toward physical completion of the Work.

Each working day shall be charged to the Contract Time as it occurs until the Work is physically complete. If requested by the Contractor in writing, the Engineer will provide the Contractor with a weekly statement that shows the number of working days: (1) charged to the Contract Time the week before; (2) specified for the substantial and physical completion of the Contract Time; and (3) remaining to achieve the substantial and physical completion of the Contract. The statement will also show the nonworking days and any partial or whole days that the Engineer declares to be unworkable. If the Contractor disagrees with any statement issued by the Engineer, the Contractor shall submit a written protest within 10 calendar days after the date of the statement. The protest shall be sufficiently detailed to enable the Engineer to ascertain the basis for the dispute and amount of time disputed. Any statement that is not protested by the Contractor as required in this

Section shall be deemed as having been accepted as correct. If the Contractor elects to work 10 hours a day 4 days a week (a 4-10 schedule), the fifth day of that week will be charged as a working day if that day would be chargeable as a working day if the Contractor had not elected to utilize a 4-10 schedule.

3.04.15 CONSTRUCTION SCHEDULE

3.04.15(1) Progress Schedule

a. The Contractor shall submit to the Engineer four copies of a progress schedule no later than at the preconstruction conference, or some other mutually agreed upon submittal time. The schedule shall be a critical path method (CPM) schedule, bar chart, or other standard schedule format unless otherwise specified in the Technical Specifications. Regardless of which format is used, the schedule shall identify the critical path. The Engineer will evaluate the schedule and return the schedule for corrections. No progress payments will be made until the required progress schedules have been submitted in a form acceptable to the Engineer.

b. Scheduling terms and practices shall conform to the standards established in Construction Planning and Scheduling, Second Edition, published by the Associated General Contractors of America. Except for Weekly Look-Ahead Schedules, all schedules shall meet these general requirements, and provide the following information:

i. Show the construction start date.

ii. Include all activities necessary to physically complete the Work on the project.

iii. Show the planned order of Work activities in a logical sequence.

iv. Show the durations of Work activities in working days as defined in Section 3.04.13 and 3.04.14.

v. Show activities in durations that are reasonable for the intended Work.

vi. Define activity duration in sufficient detail to evaluate the progress of individual activities on a daily basis.

vii. Show the Substantial and Physical Completion of all Work within the Contract Time.

Total float belongs to the project and shall not be for the exclusive benefit of any party. If the Engineer determines that the Progress Schedule or any necessary Schedule Update does not provide the required information, then the schedule will be returned to the Contractor for correction and resubmittal.

c. Each week the Work is performed, the Contractor shall submit a Weekly Look-Ahead Schedule showing the Contractor's and all the Subcontractors' proposed Work activities for the next two weeks. The Weekly Look Ahead Schedule shall include the description, duration and sequence of Work, along with the planned hours of Work. This schedule may be network schedule, bar chart, or other standard schedule format. The Weekly Look-Ahead Schedule shall be submitted to the Engineer by the mid-point of the week preceding the scheduled Work or some other mutually agreed upon submittal time.

d. The Engineer may request a Schedule Update when any of the following events occur:

i. The project has experienced a change that affects the critical path.

ii. The sequence of Work is changed from that in the approved schedule.

iii. The project is significantly delayed.

iv. Upon receiving an extension of Contract Time.

The Contractor shall submit four copies of the Schedule Update within 15 calendar days of receiving a written request, or when an update is required by any other portion of the Contract. A "significant" delay in time is defined as 10 working days or 10 percent of the original Contract Time, whichever is greater.

In addition to the other requirements in this Section, Schedule Updates shall reflect the following information:

v. The actual duration and sequence of as-constructed Work activities, including changed Work.

vi. Approved time extensions.

vii. Any construction delays or other conditions that affect the progress of the Work.

viii. Any modifications to the as-planned sequence or duration of remaining activities.

ix. The Substantial and Physical Completion of all remaining Work in the remaining Contract Time.

Unresolved request for time extensions shall be reflected in the Schedule Update by assuming no time extension will be granted, and by showing the effects to follow-on activities necessary to substantially and physically complete the project within the currently authorized time for completion.

e. The original Progress Schedule and all Schedule Updates shall not conflict with any time and order-of-work requirement in the Contract.

f. If the Engineer deems that the original or any necessary supplemental progress schedule does not provide the information required in this section, the Owner may withhold progress payments until a schedule containing the required information has been submitted by the Contractor and accepted by the Engineer.

g. The Contractor shall comply with other progress schedule requirements that are further defined in the Technical Specifications.

h. The Engineer's approval of any schedule shall not transfer any of the Contractor's responsibilities to the Owner. The Contractor alone shall remain responsible for adjusting forces, equipment, and work schedules to ensure completion of the Work within the time(s) specified in the Contract.

3.04.15(2) <u>Extensions of the Contract Time</u>

a. The Contractor specifically waives claims for damages for any hindrance or delay, excepting unreasonable delays caused by the Owner. In lieu thereof, the Contractor will be granted equitable extensions of the Contract Time for which liquidated damages will not otherwise be claimed by the Owner under the following circumstances:

i. A delay caused by any suit or other legal action against the Owner will entitle the Contractor to an equivalent extension of time, unless the period of such delay exceeds 90 calendar days. When such period is exceeded, the Owner will, upon written request of the Contractor, either negotiate a termination of the Contract or grant a further extension of the Contract Time, whichever is in the best interests of the Owner.

ii. Should any other unforeseen condition occur that is beyond the reasonable control of Contractor, requires more time for the Contractor to complete the performance of the Work by the Substantial Completion Date, the Contractor shall notify the Owner and the Engineer in writing prior to the performance of such Work, and in any event within 10 calendar days after the occurrence of the unforeseen condition. The notice shall set forth in detail the Contractor's estimate of the required time extension. The Owner will allow such equitable extension of the Contract Time that the Engineer determines to be appropriate. Failure to comply with the notice provisions required by the Contract shall be deemed a complete waiver of any entitlement to adjustment of the Contract Time.

3.04.15(3) Liquidated Damages

a. The Contractor acknowledges that the Owner will suffer monetary damages in the event of an unexcused delay in the Substantial Completion Date and the Physical Completion Date of the Work. If the Contractor fails, without excuse under the Contract, to complete the Work within the Contract Time, or any proper extension thereof granted by the Owner, the Contractor agrees to pay to the Owner the amount specified in the Proposal form, not as a penalty, but as liquidated damages for such breach of the Contract, for each day that the Contractor shall be in default after the time stipulated for the Substantial Completion Date and the Physical Completion Date of the Work.

b. The amount of liquidated damages is fixed and agreed upon by and between the Contractor and the Owner because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain, and said amount is specifically agreed to be a reasonable approximation of damages that the Owner would sustain as a result of an unexcused delay in the Substantial Completion Date and the Physical Completion Date; said amount may be retained from time to time by the Owner from current progress payments.

3.04.16 COMPLETION AND ACCEPTANCE OF THE WORK

3.04.16(1) Substantial Completion Date

a. When the Contractor considers the Work to be substantially complete and ready for its intended purpose, the Contractor shall notify the Engineer in writing and include an itemized list of remaining Work to be completed. On the Substantial Completion Date, the Owner shall have full and unrestricted use and benefit of all of the facilities that comprise the Work, both from an operational and safety standpoint, with only minor incidental work, replacement of temporary substitute facilities, or correction or repair of work remaining for the physical completion of the total Work.

b. If the Engineer determines that the Work is not substantially complete, it will so notify the Contractor in writing identifying those items of the Work that shall be completed by the Contractor in order to achieve the Substantial Completion Date.

c. If the Engineer believes that the Work is substantially complete, the Engineer will meet with the Contractor to: (1) prepare a list of incomplete or unsatisfactory items of the Work that shall be completed or corrected; (2) define the division of responsibility between Owner and Contractor with respect to security, operation, maintenance, heat, utilities, insurance, etc., for the facilities; and (3) describe any other issues related to approval of the substantially completed Work. Upon reaching agreement with the Contractor, the Engineer will notify the Owner that, in its opinion and based on the information supplied by the Contractor, the Work is substantially complete, listing the items of incomplete Work, defining the division

of responsibilities for the facilities, and setting forth any other terms related to final completion and acceptance.

d. The Owner, who has sole authority to make the determination of the Substantial Completion Date, will review the Engineer's recommendation that the Work is substantially complete and, if it concurs, will instruct the Engineer to notify the Contractor that the Work is accepted as being substantially complete. Except for any portion(s) of Work specified for early completion or required by the Owner for early possession, substantial completion will not occur for any portion of the Work until the entire Work is ready for possession and use. The approval notice will include a list of incomplete Work items, establish the Substantial Completion Date, and describe any other terms relating to such approval. The Contractor shall acknowledge receipt of the approval notice in writing, indicating acceptance of all of its terms and provisions.

e. The date of Substantial Completion, as determined by the Engineer and agreed to by the Owner, shall be the date for the beginning of the warranty period.

f. Subsequent to the Substantial Completion Date, the Owner may exclude the Contractor from the Work during such periods when construction activities might interfere with the operation of the project. The Owner, however, shall allow the Contractor reasonable access for completion of incomplete punch list items.

3.04.16(2) <u>Physical Completion Date</u>

a. The Contractor shall complete all physical Work within the Contract Time.

b. Upon physical completion of the Work, including completion of all corrective Work described in Section 3.04.16(1) above and the submission of all required record drawings, operation and maintenance manuals, manufacturers' affidavits, software and programming, and other items required by the Contract, the Contractor shall notify the Engineer in writing that the Work is physically complete. Upon receipt of the notification, the Engineer will determine if the Work is physically complete in accordance with the Contract. If the Engineer determines that any materials, equipment, or workmanship do not meet the requirements of the Contract, the Engineer will prepare a list of such items and submit it to the Contractor. Following the satisfactory completion of the corrective Work by the Contractor, the Engineer will notify the Owner that the Work is physically complete in accordance with the requirements of the Contract.

c. The Engineer, with the concurrence of the Owner, will give the Contractor written notice of the Physical Completion Date for all of the Work. The Physical Completion Date shall not constitute the Owner's acceptance of the Work.

3.04.16(3) Contract Completion Date (Acceptance of the Project)

a. When all of the Contractor's obligations under the Contract have been performed satisfactorily, the Owner will provide the Contractor with written notice of the Contract Completion Date. The following events shall occur in order for the Contractor to achieve the Contract Completion Date:

1. The Contractor shall have achieved the Substantial Completion Date and the Physical Completion Date for the Work; and

2. The Contractor shall furnish all documentation required by the Contract and required by law. The documents shall include, but are not limited to, the following:

i. Complete and legally effective releases and/or waivers of liens or bond or retainage claims in a form acceptable to the Owner. Subject to prior approval of the Owner, the Contractor may, if approved by the Owner, submit in lieu of the lien or claims releases and waivers: (1) receipts showing payment of all accounts in full; (2) an affidavit that the release and receipts cover all labor, services, materials, and equipment for which a lien or other claim could be filed and that all payrolls, material, and equipment bills and other indebtedness connected with the Work for which the Owner or the Owner's property might in any way be responsible, have been paid; and (3) the consent of the surety, if any, to final payment. If any Subcontractor or supplier fails to furnish a release waiver or receipt in a form satisfactory to the Owner, the Contractor may be permitted by the Owner to furnish a bond or other collateral satisfactory to the Owner to indemnify the Owner against any lien or similar claim;

ii. Certified Payrolls (Federal Aid projects or if requested);

iii. Final Contract Voucher Certification.

iv. Affidavits of Wages Paid for the Contractor and all Subcontractors must be submitted to the Owner.

b. The Contractor agrees that neither completion nor final acceptance shall relieve the Contractor of the responsibility to indemnify, defend, and protect the Owner against any claim or loss resulting from the failure of the Contractor (or the Subcontractors or lower tier Subcontractors) to pay all laborers, mechanics, Subcontractors, materialpersons, or any other person who provides labor, supplies, or provisions for carrying out the Work or for any payments required for unemployment compensation under Title 50 RCW or for industrial insurance and medical aid required under Title 51 RCW.

Final acceptance shall not constitute acceptance of any unauthorized or nonconforming work or material. The Owner shall not be barred from requiring the Contractor to remove, replace, repair, or dispose of any unauthorized or nonconforming work or material or from recovering damages for any such work or material.

3.04.16(4) Use of Completed Portions of the Work

The Owner reserves the right to use and occupy any portion of the Work which has been completed sufficiently to permit partial use and occupancy, and such partial use and occupancy shall not be construed as an acceptance of the Work as a whole or any part thereof. Any claims that the Owner may have against the Contractor shall not be deemed to have been waived by such partial use and occupancy.

3.04.16(5) Waiver of Claims by Contractor

The Contractor's acceptance of the final payment from the Owner constitutes an irrevocable and complete waiver of any and all claims against the Owner under the Contract or otherwise arising from the Work, except for those claims that have been properly identified in writing in advance of final payment, and for which timely and sufficient prior written notice has been given, all in accordance with the Contract.

3.04.17 CORRECTION OF FAULTY WORK AFTER FINAL PAYMENT

The Owner's final payment to the Contractor shall not relieve the Contractor of responsibility for faulty materials, equipment or workmanship. The Contractor shall promptly repair or replace any such defects discovered within the warranty or other applicable limitations period.

3.04.18 RETAINAGE

1. Pursuant to RCW 60.28, there will be retained from monies earned by the Contractor on progress estimates a sum not to exceed 5 percent of the monies earned by the Contractor. Such retainage shall be used as a trust fund for the protection and payment (1) to the State with respect to taxes imposed pursuant to RCW Title 82, which may be due from such Contractor, and (2) the claims of any other person or entity arising under the Contract or RCW 60.28.

2. Monies retained pursuant to RCW 60.28 shall, at the option of the Contractor, be:

    a. Retained in a fund by the Owner;

    b. Deposited by the Owner in an interest-bearing account in a bank, mutual savings bank, or savings and loan association (interest on monies so retained may be paid to the Contractor);

c. Deposited by the Owner in an escrow (interest-bearing) account in a bank, mutual saving bank, or savings and loan association (interest on monies so retained shall be paid to the Contractor). Deposits are to be in the name of the Owner and are not to be allowed to be withdrawn without the Owner's written authorization. The Owner will issue a check representing the sum of the monies reserved, payable to the bank or trust company;

d. In choosing option (b) or (c), the Contractor agrees to assume full responsibility to pay all costs which may accrue from escrow services, brokerage charges or both, and further agrees to assume all risks in connection with the investment of the retainage in securities.

At the time the Contract is executed the Contractor shall designate the option desired.

3. Release of retainage will be made within the statutory period following the last date for filing of claims pursuant to RCW Chapter 60.28, provided that the following conditions are met:

a. A release has been obtained from the Washington State Department of Revenue;

b. A "Certificate of Payment of Contributions Penalties and Interest on Public Works Contract" is received from the Washington State Employment Security Department;

c. The Washington State Department of Labor and Industries indicates the Contractor is current on the payment of industrial insurance and medical aid premiums;

d. All claims by the Owner against the Contractor have been resolved;

e. No claims have been filed against the retained percentage;

f. All required "Affidavits of Wages Paid" are on file with the Owner for the Contractor and all Subcontractors, regardless of tier;

4. In the event that claims are filed against the retainage, the Contractor will be paid the retained percentage less an amount sufficient to pay all such claims, together with a sum determined by the Owner to be sufficient to pay the costs of foreclosing on claims and to attorneys' fees, all in accordance with applicable law.

3.05 DISPUTES AND CLAIMS

3.05.1 DISPUTES

When disputes occur, the Contractor shall pursue resolution through the Engineer. The Contractor shall follow the notice and protest procedures outlined in Section 3.04. If negotiation using the procedures outlined in Section 3.04 fails to provide satisfactory resolution, the Contractor shall pursue the more formalized method set forth in Section 3.05.2 for submitting claims.

3.05.2 CLAIMS

If the Contractor contends that additional payment is due, has provided timely notices and protests as required by Section 3.04, and the Contractor has pursued and exhausted all of the means provided in that section to resolve the dispute, the Contractor may submit a claim as provided in this Section. Any claim for an increase in the Contract price or for an extension of the Contract Time by the Contractor is waived if the written notifications and protests required in Section 3.04 have been not provided, or if the Engineer is not afforded reasonable access to the Contractor's complete records relating to the claim, as required by Section 3.04.8, or if a claim is not submitted in accordance with the requirements of this Section. The fact that the Contractor has provided proper notification, properly submitted a claim, or provided the Engineer with access to records, shall not in any way be construed as proving or substantiating the validity of the claim. If, after consideration by the Owner, the claim is found to have merit, the Owner will make an equitable adjustment to either the Contract price, the Contract Time, or both. If the Owner finds the claim to be without merit, no adjustment will be made.

All claims submitted by the Contractor shall be in writing and in sufficient detail to enable the Engineer to ascertain the basis for and amount of the claim. All claims shall be submitted to the Engineer in the manner in Section 3.03.6. The following information shall accompany each claim submitted:

1. A detailed factual statement of the basis for the claim for additional compensation and/or extension of time, including all relevant dates, locations, and items of work relating to the claim.

2. The date on which the events occurred that give rise to the claim.

3. The name of each person involved in or having knowledge about the claim.

4. The specific provisions of the Contract which support the claim and a statement of the reasons why such provisions support the claim.

5. If the claim relates to a decision of the Engineer that the Contract leaves to the Engineer's discretion or as to which the Contract provides that the Engineer's decision is final, the Contractor shall set out in detail all facts supporting its position relating to the decision of the Engineer.

6. The identification of any documents and the substance of any oral communications that support the claim.

7. Copies of any identified documents, other than Owner documents and documents previously furnished to the Owner by the Contractor, that support the claim (manuals which are standard to the industry may be included by reference).

8. If an extension of the Contract Time is sought:

    a. The specific days and dates for which the extension is sought;

    b. The specific reasons why the Contractor believes a time extension should be granted;

    c. The specific provisions of Section 3.04.15(2) under which the time extension is sought; and

    d. An analysis of the Contractor's progress schedule, demonstrating the reasons why a time extension should be granted.

9. If additional compensation is sought, the exact amount sought and a breakdown of that amount into the following categories:

    a. Labor;

    b. Materials;

    c. Direct equipment. The actual cost for each piece of equipment for which a claim is made, or, in the absence of actual cost, the rates established by the AGC/WSDOT Equipment Rental Agreement which was in effect when the Work was performed. The amounts claimed for any piece of equipment shall not exceed the rates established by the Equipment Rental Agreement, even if the actual cost for such equipment is higher. The Owner may audit the Contractor's cost records, as provided in Section 3.06, to determine actual equipment costs. The following information shall be provided for each piece of equipment:

        i. Detailed description (e.g., make, model, year, diesel or gas, size of bucket);

        ii. The hours of use or standby; and

        iii. The specific day and dates of use or standby.

    d. Subcontractor claims (in the same level of detail as specified herein); and

    e. Other information as requested by the Engineer or the Owner.

10. A notarized statement containing the following language:

Under the penalty of law for perjury or falsification, the undersigned,

_____, _____
(name) (title)

of _____
(company)
hereby certifies that the claim for extra compensation and time, if any, made herein for work on this Contract is a true statement of the actual costs incurred and time sought, and is fully documented and supported under the Contract between the parties.

If the claim for extra time and/or compensation involves any work of a Subcontractor or lower tier Subcontractor, the undersigned duly authorized agent of the Contractor hereby swears that Contractor has investigated the basis for the Subcontractor's or lower tier Subcontractor's claims and has determined that all such claims are justified as to entitlement and amount of money and/or time requested, has reviewed and verified the adequacy of all back-up documentation and has no reason to believe and does not believe that the factual basis for the Subcontractor's or lower tier Subcontractor's claim is falsely represented.

Dated _____/s/_____

Subscribed and sworn before me this _____ day of _____

_____
Notary Public

My Commission Expires:_____

It will be the responsibility of the Contractor to keep full and complete records of the costs and additional time incurred with respect to any claim. The Contractor shall permit the Engineer to have access to those records and any other records and documents as may be required by the Engineer to determine the facts or contentions involved in the claim. The Contractor shall retain all records and documents in any way relating to the Work for a period of not less than three years after the Contract Completion Date.

The Contractor shall in good faith attempt to reach a negotiated resolution of all claims with the Engineer or its designee.

The Contractor's failure to submit with the Final Contract Voucher Certification a list of all claims, together with the information and details required by this Section shall operate as a waiver of the claims by the Contractor, as provided in Section 3.04.12(9).

If the Contractor submits a claim in full compliance with all the requirements of this Section, the Owner will respond in writing to the claim as follows:

1. Within 45 calendar days from the date the claim is received by the Owner, if the claim amount is less than $100,000;

2. Within 90 calendar days from the date the claim is received by the Owner, if the claim amount is equal to or greater than $100,000; or

3. If these time periods are unreasonable due to the complexity of the claim, the Contractor will be notified within 15 calendar days from the date the claim is received by the Owner of the amount of time which will be necessary for the Owner to evaluate the claim and issue a response.

Full compliance by the Contractor with the provisions of this Section is a condition precedent to the Contractor's right to commence a lawsuit or pursue other legal remedies.

3.05.3 TIMELINE AND JURISDICTION

For the convenience of the parties to the Contract it is mutually agreed by the parties that any claims or causes of action which the Contractor has against the Owner arising from the Contract shall be brought within 180 calendar days from the date of Physical Completion (Section 3.04.16(2)) of the Contract by the Owner; and it is further agreed that any such claims or causes of action shall be brought only in the Superior Court of the county where the Owner headquarters is located, provided that where an action is asserted against a county, RCW 36.01.050 shall control venue and jurisdiction. The parties understand and agree that the Contractor's failure to bring suit within the time period provided, shall be a complete bar to any such claims or causes of action. It is further mutually agreed by the parties that when any claims or causes of action which the Contractor asserts against the Owner arising from the Contract are filed with the Owner or initiated in court, the Contractor shall permit the Owner to have timely access to any records deemed necessary by the Owner to assist in evaluating the claims or action.

3.05.4 CONTINUATION OF WORK PENDING RESOLUTION OF DISPUTES

The Contractor shall expeditiously carry on the Work, adhere to the progress schedule, and comply with all written directives of the Owner or the Engineer regardless of any dispute or claim that may exist between the Owner and the Contractor. No Work shall be delayed or postponed pending resolution of any dispute or claim. Failure or refusal of the Contractor to comply with the written directives of the Owner or the Engineer shall constitute a material breach of the Contract and immediately constitute grounds for the Owner to withhold payments to the Contractor, suspend

the Work or terminate the Contract. Notice under this Section shall be in accordance with other provisions of the Contract.

3.06 AUDITS

If the Contractor requests an equitable adjustment to either the Contract price or the Contract Time, the Owner shall have the right to audit the Contractor's books, records, other documents, and accounting practices and procedures, and to inspect the Contractor's plant, equipment and facilities to examine all facts and verify all direct and indirect costs of whatever nature claimed to have been incurred or are anticipated to be incurred. The right to audit encompasses all subcontracts and is binding upon Subcontractors. All subcontracts that the Contractor enters into shall contain a clause allowing the Owner to audit all Subcontractor books, records, other documents, and accounting practices and procedures, and to inspect the Subcontractor's plant, equipment and facilities. All audits shall be performed by auditors of the Owner during normal working hours at the Contractor's or Subcontractor's office or any other location mutually agreed upon. The Contractor, Subcontractor, or lower tier Subcontractor shall cooperate fully with the auditor and shall make available all required information. Failure to cooperate or provide requested information shall be grounds for denial of the claim.

3.07 SUSPENSION OF WORK AND TERMINATION OF CONTRACT

3.07.1 SUSPENSION OF WORK

1. The Owner or the Engineer may order suspension of all or any part of the Work if:

    a. Unsuitable or other conditions that are beyond the reasonable control of the Contractor exist or arise that prevent satisfactory and timely performance of the Work; or

    b. The Contractor does not comply with the Contract; or

    c. It is in the public interest.

2. If the Engineer determines that the suspension is for reasons set forth in Subsection a. or c. above, an equitable adjustment will be made in the Contract Time but not the Contract price. If the Engineer determines that the suspension is for reasons set forth in Subsection b. above, no adjustment shall be made in the Contract Time or the Contract price.

3. If the Contract is suspended for reasons set forth in Subsection a. or c. above and the Contractor believes that the suspension of performance of all or part of the Work has continued for an unreasonable period of time, the Contractor shall give written notice to the Engineer of its intention to seek an equitable adjustment in the Contract Time or the Contract price. In the event that an equitable adjustment is allowed, no adjustment shall be allowed for any time lost or costs incurred more than 10 calendar days before delivery of the written notice to the Engineer. No profit of any kind will be allowed on any increase in costs due to the suspension,

delay or interruption.

3.07.2 TERMINATION FOR DEFAULT

1. The Owner may terminate the Contract for default, effective seven days following delivery of written notice of default to the Contractor, if the Contractor:

    a. Refuses or fails to supply enough properly skilled laborers or conforming materials to complete the Work in a timely manner;

    b. Refuses or fails to prosecute the Work with such diligence as will ensure its physical completion by the Physical Completion Date;

    c. Performs work which deviates from the requirements of the Contract and refuses or fails to correct the non-conforming work;

    d. Fails to make prompt payment to Subcontractors and/or suppliers for labor or materials;

    e. Fails to comply with laws, ordinances, rules, regulations or orders of a public authority having jurisdiction; or

    f. Otherwise fails to follow written directives of the Owner or the Engineer or is in default of a material provision of the Contract.

2. If the Contractor abandons the Work for any cause other than failure of the Owner to make monthly progress payments for Work properly performed, or if the Contractor refuses to comply with requirements of the Contract, the Owner has the additional right to notify the Contractor's performance bond surety and require the surety to complete the Work in accordance with the Contract.

3.07.3 TERMINATION FOR CONVENIENCE OF THE OWNER

The Owner may by written notice terminate the Contract at any time in whole or in part, without cause, and except where termination is due to the Contractor's default, the Owner shall pay the Contractor that portion of the Contract price corresponding to the acceptable Work completed to the Owner's satisfaction, together with reasonable costs, as determined in the sole discretion of the Owner, necessarily incurred by the Contractor in terminating the remaining portion of Work, less any payments made before termination. In no event shall the Owner be required to pay the Contractor any amount in excess of the completed portion Contract price. The Owner shall not be required to pay the Contractor any amount for consequential damages including but not by means of limitation lost or anticipated profits on Work that is not performed as a result of termination.

3.07.4 RESPONSIBILITY OF THE CONTRACTOR AND SURETY

Termination of the Contract shall not relieve the Contractor of any responsibilities under the Contract for Work performed. Nor shall termination of the Contract relieve the sureties of their obligations under the bonds required or permitted by the Contract or applicable law.

PART 4

DWSRF REQUIREMENTS

Attachment 7-E: Bid Spec Insert for Non-municipal Borrowers

(Pages 75-103)

WASHINGTON STATE DEPARTMENT OF HEALTH

DRINKING WATER STATE REVOLVING FUND (DWSRF)

SPECIFICATIONS INSERT

NONMUNICIPAL

The following clauses will be incorporated into construction contracts receiving financial assistance from the Washington State Department of Health Drinking Water State Revolving Fund. In the event of conflict within the contract, these clauses shall take precedence.

Required Bid Submittals

The following submittals are required to be submitted with the bid proposal:

- Complete Bidders List

Compliance with State and Local Laws

The contractor shall assure compliance with all applicable federal, state, and local laws, requirements, and ordinances as they pertain to the design, implementation, and administration of the approved project.

Civil Rights

Title VI of the Civil Rights Act of 1964, 42 U.S.C. § 2000d

No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.

Section 504 of the Rehabilitation Act of 1973, 29 U.S.C. § 794

No otherwise qualified individual with a disability in the United States . . . shall, solely by reason of his or her disability, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity receiving federal financial assistance . . .

The Age Discrimination Act of 1975, 42 U.S.C. § 6102

No person in the United States shall, on the basis of age, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity receiving financial assistance.

Equal Employment Opportunity, Executive Order No. 11246 (1965)

Through a series of Executive Orders, and a decision by the Equal Employment Opportunity Commission, the federal government has established a national policy designed to battle discrimination based on race, color, sex, religion, and national origin in federal assistance programs and to enhance hiring, training, and promotion opportunities for minorities and women in construction programs financed, in part, by federal dollars.

If a Contract exceeds $10,000, the contractor shall comply with Executive Order 11246, "Equal Employment Opportunity," as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and as supplemented by regulations at 41 CFR part 60.

Contractor's compliance with Executive Order 11246 shall be based on implementation of the Equal Opportunity Clause, and specific affirmative active obligations required by the Standard Federal Equal Employment Opportunity Construction Contract Specifications, as set forth in 41 CFR Part 60-4.

Equal Opportunity Clause (41 CFR part 60-1.4(b))

During the performance of this contract, the contractor agrees as follows:

1. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
2. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.
3. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
4. The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
5. The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
6. If the contractor doesn't comply with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further government contracts or federally assisted construction contracts according to procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
7. The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding on each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing

such provisions, including sanctions for noncompliance: Provided, however, That in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the contractor may request the United States to enter into such litigation to protect the interests of the United States.

Federal Equal Employment Opportunity Construction Contract Specifications

(Executive Order 11246 and 41 CFR part 60-4.3)

1. As used in these specifications:
    a. "Covered area" means the geographical area described in the solicitation from which this contract resulted.
    b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority.
    c. "Employer identification number" means the federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.
    d. "Minority" includes:
        i. Black (all persons having origins in any of the Black African racial groups not of Hispanic origin).
        ii. Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race).
        iii. Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands).
        iv. American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
2. Whenever the contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of $10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
3. If the contractor is participating (pursuant to 41 CFR 60–4.5) in a U.S. Department of Labor-approved Hometown Plan in the area covered, either individually or through an association, its affirmative action obligations on all work in the plan area (including goals and timetables) must follow that plan for those trades that have unions participating in the plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each contractor or subcontractor participating in an approved plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the plan in each trade in which it has employees. The overall good faith performance by other contractors or Subcontractors toward a goal in

an approved plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the plan goals and timetables.

4. The contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing construction work in geographical areas where they do not have a federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from federal procurement contracting officers. The contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.
5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.
6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the contractor during the training period, and the contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.
7. The contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the contractor's compliance with these specifications shall be based on its effort to achieve maximum results from its actions. The contractor shall document these efforts fully and shall implement affirmative action steps at least as extensive as the following.
    a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the contractor's employees are assigned to work. The contractor, where possible, will assign two or more women to each construction project. The contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
    b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
    c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a

union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the contractor by the union or, if referred, not employed by the contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the contractor may have taken.

d. Provide immediate written notification to the director when the union or unions with which the contractor has a collective bargaining agreement has not referred to the contractor a minority person or woman sent by the contractor, or when the contractor has other information that the union referral process has impeded the contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the contractor's employment needs, especially those programs funded or approved by the Department of Labor. The contractor shall provide notice of these programs to the sources compiled under 7b above.

f. Disseminate the contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the contractor's EEO policy with other contractors and subcontractors with whom the contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the contractor shall send written notification to organizations such as the above,

describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a contractor's work force.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR part 60–3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations, which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these Specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the contractor. The obligation to comply, however, is the contractor's and failure of such a group to fulfill an obligation shall not be a defense for the contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the contractor may be in violation of the Executive

Order if a particular group is employed in a substantially disparate manner (for example, even though the contractor has achieved its goals for women generally, the contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

10. The contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.
11. The contractor shall not enter into any Subcontract with any person or firm debarred from government contracts pursuant to Executive Order 11246.
12. The contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.
13. The contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed according to 41 CFR 60–4.8.
14. The contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.
15. Nothing herein provided shall be construed as a limitation on the application of other laws which establish different standards of compliance or on the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

Reporting Requirements (EEO-1)

On or before September 30 of each year, a contractor that is subject to Title VII of the Civil Rights Act of 1964, as amended, and that has 100 or more employees, shall file with the EEOC or its delegate an "Employer Information Report EEO-1." Instructions on how to file are available on the EEOC's website. The contractor shall retain a copy of the most recent report filed.

Segregated Facilities (41 CFR part 60-1.8)

The contractor shall ensure that facilities provided for employees are provided in such a manner that segregation based on race, color, religion, sex, or national origin cannot result. The contractor may

neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensuring that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. This obligation extends to all contracts containing the equal opportunity clause regardless of the amount of the contract. The term "facilities," as used in this section, means waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, wash rooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees; Provided, That separate or single-user restrooms and necessary dressing or sleeping areas shall be provided to assure privacy between the sexes.

b. Provision

During the performance of this contract, the contractor shall comply with all federal and state nondiscrimination laws, including, but not limited to Chapter 49.60 RCW, Washington's Law Against Discrimination, and 42 U.S.C. 12101 et seq, the Americans with Disabilities Act (ADA).

In the event of the contractor's noncompliance or refusal to comply with any applicable nondiscrimination law, regulation, or policy, this contract may be rescinded, canceled, or terminated in whole or in part, and the contractor may be declared ineligible for further contracts with the DOH. The contractor shall, however, be given a reasonable time in which to cure this noncompliance.

The contractor must also include the following terms and conditions in contracts with all contractors, subcontractors, engineers, vendors, and any other entity for work or services listed in Attachment I: Scope of Work.

"The contractor shall not discriminate based on race, color, national origin or sex in the performance of this contract. The contractor shall carry out applicable requirements of 40 CFR part 33 in the award and administration of contracts awarded under Environmental Protection Agency financial agreements. Failure by the contractor to carry out these requirements is a material breach of this contract which may result in termination of this contract."

~~*American Iron and Steel*~~

~~Congress passed a law January 17, 2014, that requires water systems to use U.S. steel and iron products for projects funded in part or in full by a Drinking Water State Revolving Fund (DWSRF) loan.~~

~~The act defines iron and steel products as, "…the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials."~~ **This project is not subject to AIS requirements.**

Prohibition Statement

Pursuant to Section 106 of the Trafficking Victims Protection Act of 2009, as amended, the contractor and its employees may not engage in severe forms of trafficking in persons during the period of time the contract is in effect, procure a commercial sex act during the period of time the contract is in effect, or use forced labor during the performance of this contract. The contractor shall require this prohibition statement in contracts with all contractors, subcontractors, engineers, vendors, and any other entity for work or services listed in Attachment I: Scope of Work.

If the contractor or any of its employees is determined to have violated the terms of this section, this contract may be terminated.

~~*Prevailing Wage*~~

~~The work performed under this contract is subject to the wage requirements of the Davis-Bacon Act. The contractor shall conform to the wage requirements prescribed by the federal Davis-Bacon and Relate Acts, which require that all laborers and mechanics employed by contractors and subcontractors performing on contracts funded in whole or in part by SRF appropriations in excess of $2,000 pay their laborers and mechanics not less than the prevailing wage rates and fringe benefits, and determined by the Secretary of Labor, for corresponding classes of laborers and mechanics employed on similar projects in the area. Attachment 1A or 1B to this specification insert, and an up-to-date wage determination must be included in full into any contract and in any subcontract in excess of $2,000. Wage determinations can be found at LNI's Prevailing Wage Policies webpage.~~

Certification Regarding Suspension, Debarment, Ineligibility or Voluntary Exclusion

1. The contractor, by signing this agreement, certifies that it is not suspended, debarred, proposed for debarment, declared ineligible or otherwise excluded from contracting with the federal government, or from receiving contracts paid for with federal funds. If the contractor is unable to certify the statements contained in the certification, they must provide an explanation as to why they cannot.
2. The contractor shall provide immediate written notice to the Department if at any time the contractor learns that its certification was erroneous when submitted or had become erroneous by reason of changed circumstances.
3. The terms covered transaction, debarred, suspended, ineligible, lower tier covered transaction, participant, person, primary covered transaction, principal, proposal, and voluntarily excluded, as used in this clause, have the meaning set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department for assistance in obtaining a copy of those regulations.
4. The contractor agrees it shall not knowingly enter into any lower tier covered transaction with a person who is proposed for debarment under the applicable Code of Federal Regulations, debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction.
5. The contractor further agrees by signing this agreement, that it will include this clause titled "Certification Regarding Suspension, Debarment, Ineligibility or Voluntary Exclusion" without modification in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
6. Pursuant to 2CFR180.330, the contractor is responsible for ensuring that any lower tier covered transaction complies with certification of suspension and debarment requirements.
7. The contractor acknowledges that failing to disclose the information required in the Code of Federal Regulations may result in the delay or negation of this funding agreement, or pursuance of legal remedies, including suspension and debarment.
8. The contractor agrees to keep proof in its agreement file, that it, and all lower tier recipients or contractors, are not suspended or debarred, and will make this proof available to DOH on request. Recipient or contractor must run a search at SAM.gov and print a copy of completed searches to document proof of compliance.

This term and condition supersedes EPA Form 5700-49, "Certification Regarding Debarment, Suspension, and Other Responsibility Matters."

Disadvantaged Business Enterprises (as applicable at time of signing)

Small, minority and women-owned firms should be afforded the maximum opportunity to compete for and obtain bid documents for projects funded by the DWSRF program. The level of participation by small, minority and women-owned firms should be consistent with their general availability within the professional community involved.

General Compliance (40 CFR Part 33).

The contractor shall comply with the requirements of the Environmental Protection Agency's Program for Participation by Disadvantaged Business Enterprises (DBE) 40 CFR Part 33.

Nondiscrimination Provision (40CFR Appendix A to Part 33).

The contractor shall not discriminate based on race, color, national origin or sex in the performance of this contract. The contractor shall carry out applicable requirements of 40 CFR part 33 in the award and administration of contracts awarded under EPA financial assistance agreements. Failure by the contractor to carry out these requirements is a material breach of this contract which may result in the termination of this contract or other legally available remedies.

The contractor shall comply with all federal and state nondiscrimination laws, including, but not limited to Title VI and VII of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Title IX of the Education Amendments of 1972, the Age Discrimination Act of 1975, and Chapter 49.60 RCW, Washington's Law Against Discrimination, and 42 U.S.C. 12101 et seq, the Americans with Disabilities Act (ADA).

Six Good Faith Efforts (40 CFR Part 33 Subpart C).

The contractor agrees to make the following good faith efforts whenever procuring subcontracts, equipment, services and supplies. The contractor shall retain records documenting compliance with the following six good faith efforts.

1. Ensuring Disadvantaged Business Enterprises are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities. For tribal, state and local government recipients, this will include placing Disadvantaged Business Enterprises on solicitation lists and soliciting them whenever they are potential sources. Qualified Women and Minority business enterprises may be found on the Internet at Office of Minority and Women's Business Enterprises or by calling 360-704-1181.
2. Making information on forthcoming opportunities available to Disadvantaged Business Enterprises and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by Disadvantaged Business Enterprises in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30calendar days before the bid or proposal closing date.
3. Considering in the contracting process whether firms competing for large contracts could subcontract with Disadvantaged Business Enterprises. For tribal, state and local government recipients, this will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by

Disadvantaged Business Enterprises in the competitive process.

4. Encourage contracting with a consortium of Disadvantaged Business Enterprises when a contract is too large for one of these firms to handle individually.
5. Using services and assistance of the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.
6. If the prime contractor awards subcontracts, requiring the subcontractors to take the six good faith efforts in paragraphs 1 through 5 above.

Fair Share Objective Goal (40 CFR Part 33 Subpart D).

A fair share objective is a goal based on the capacity and availability of qualified, certified Minority Business Enterprises (MBEs) and Women's Business Enterprises (WBEs) in the relevant geographic market. As mandated by EPA, all general contractors and subcontractors must comply with the requirements of the EPA's Program for Utilization of Small, Minority, and Women's Business Enterprises (40 CFR, Part 33) in procurement under the DWSRF program. The goals for the utilization of disadvantaged businesses are as follows.

Construction	10% MBE	6% WBE
Supplies	8% MBE	4% WBE
Equipment	8% MBE	4% WBE
Purchased Services	10% MBE	4% WBE

All general contractors and subcontractors must accept the fair share objective/goals stated above and attest to the fact they are purchasing the same or similar construction, supplies, services, and equipment, in the same or similar relevant geographic buying market as the Washington Office of Minority Women Business goals.

Under the DWSRF program, borrowers receiving a total of $250,000 or less in EPA funds in a given fiscal year are exempted from the Fair Share Objective requirements.

IMPORTANT: Only MBEs and WBEs that are certified by EPA, SBA, DOT, or by state, local, tribal or private entities whose certification criteria match EPA's can be counted towards the MBEs and WBEs utilization goal.

MBE/WBE Reporting (40 CFR Part 33 Parts 33.302, 33.502 and 33.503).

The contractor shall provide EPA Form 6100-2 DBE Subcontractor Participation Form to all DBE subcontractors. Subcontractors may submit EPA Form 6100-2 Subcontractor Participation Form to the EPA Region 10 DBE coordinator in order to document issues or concerns with their usage or payment for a subcontract. The contractor shall require all DBE subcontractors to complete EPA Form 6100-3 DBE Subcontractor Performance Form. The contractor shall complete EPA Form 6100-4 DBE Subcontractor Utilization Form.

The EPA Forms 6100-2, 6100-3 and 6100-4 have been suspended; however, the suspension of these forms does not affect the requirements to employ the use of the six good faith efforts and maintain proper documentation supporting those efforts.

Bidders List (40 CFR Part 33 part 33.501)

All bidders shall submit the following information for all firms that bid or quote on subcontracts (including both DBE and non-DBE firms) with their bid proposal.

1. Entity's name with point of contact;
2. Entity's mailing address, telephone number, and e-mail address;
3. The procurement on which the entity bid or quoted, and when; and,
4. Entity's status as an MBE/WBE or non-MBE/WBE.

Contract Administration Provisions (40 CFR Part 33.302).

The contractor shall comply with the contract administration provisions of 40 CFR, Part 33.302.

1. The contractor shall pay its subcontractor for satisfactory performance no more than 30 days from the contractor's receipt of payment.
2. The contractor shall notify the owner in writing prior to any termination of a DBE subcontractor.
3. If a DBE subcontractor fails to complete work under the subcontract for any reason, the contractor shall employ the six good faith efforts when soliciting a replacement subcontractor.
4. The contractor shall employ the six good faith efforts even if the contractor has achieved its fair share objectives.

Third Party Beneficiary

Partial funding of this project is being provided through the Washington State Department of Health Drinking Water State Revolving Fund. All parties agree that Washington State shall be, and is hereby, named as an express third-party beneficiary of this contract, with full rights as such.

Access to the Construction Site and to Records

The contractor shall provide for the safe access to the construction site and to the contractor's records by personnel from the Washington State Department of Health and Environmental Protection Agency (EPA).

The contractor shall maintain accurate records and accounts to facilitate the owner's audit requirements and shall ensure that all subcontractors maintain auditable records.

These project records shall be separate and distinct from the contractor's other records and accounts.

All such records shall be available to the owner and to Washington State Department of Health and EPA personnel for examination. The contractor must retain all records pertinent to this project for three years after the final audit.

Attachments

1. Wage Rate Requirements for Subrecipients.
    a. Attachment 1B for non-municipal borrowers.
2. Current Wage Rate Determination (Verified by Contract Manager). **SEE PART 6: WAGE RATES**
3. Certification Of Non-Segregated Facilities. **SEE PART 1: BID DOCUMENTS**
4. Notice To Labor Unions or Other Organization of Workers: Nondiscrimination in Employment.
5. ~~EPA Form 6100-2 (DBE Subcontractor Participation Form).~~

6. ~~EPA Form 6100-3 (DBE Subcontractor Performance Form) for all DBE subcontractors.~~
7. ~~EPA Form 6100-4 (DBE Subcontractor Utilization Form).~~
8. ~~American Iron and Steel Requirements – The Use of American Iron and Steel.~~

Wage Rate Requirements for Subrecipients

The following terms and conditions specify how recipients will assist EPA in meeting its DB responsibilities when DB applies to EPA awards of financial assistance under the FY2013 Continuing Resolution with respect to subrecipients that are not governmental entities. If a subrecipient has questions regarding when DB applies, obtaining the correct DB wage determinations, DB provisions, or compliance monitoring, it may contact the state recipient for guidance.

~~1. Applicability of the Davis- Bacon (DB) prevailing wage requirements.~~

~~Under the FY 2013 Continuing Resolution, DB prevailing wage requirements apply to the construction, alteration, and repair of treatment works carried out in whole or in part with assistance made available by a state Water Pollution Control Revolving Fund and to any construction project carried out in whole or in part by assistance made available by a drinking water treatment revolving loan fund. If a subrecipient encounters a unique situation at a site that presents uncertainties regarding DB applicability, the subrecipient must discuss the situation with the recipient state before authorizing work on that site.~~

2. Obtaining Wage Determinations.

(a) Subrecipients must obtain proposed wage determinations for specific localities at L&I's Prevailing Wage Policies webpage. After the subrecipient obtains its proposed wage determination, it must submit the wage determination to Department of Health DWSRF contract manager for approval before inserting the wage determination into a solicitation, contract, or issuing task orders, work assignments or similar instruments to existing contractors (ordering instruments unless subsequently directed otherwise by the state award official.

(b) Subrecipients shall obtain the wage determination for the locality in which a covered activity subject to DB will take place prior to issuing requests for bids, proposals, quotes or other methods for soliciting contracts (solicitation) for activities subject to DB. These wage determinations shall be incorporated into solicitations and any subsequent contracts. Prime contracts must contain a provision requiring that subcontractors follow the wage determination incorporated into the prime contract.

(i) While the solicitation remains open, the subrecipient shall monitor L&I's Prevailing Wage Policies webpage on a weekly basis to ensure that the wage determination contained in the solicitation remains current. The subrecipients shall amend the solicitation if L&I issues a modification more than 10 days prior to the closing date (i.e. bid opening) for the solicitation. If L&I modifies or supersedes the applicable wage determination less than 10 days prior to the closing date, the subrecipients may request a finding from the state recipient that there is not a reasonable time to notify interested contractors of the modification of the wage determination. The state recipient will provide a report of its findings to the subrecipient.

(ii) If the subrecipient does not award the contract within 90 days of the closure of the solicitation, any modifications or supersedes L&I makes to the wage determination contained in the solicitation shall be effective unless the state recipient, at the request of the subrecipient, obtains an extension of the 90 day period from DOL (29 CFR 1.6(c)(3)(iv)). The subrecipient shall monitor L&I's Prevailing Wage

Policies webpage on a weekly basis if it does not award the contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.

(c) If the subrecipient carries out activity subject to DB by issuing a task order, work assignment or similar instrument to an existing contractor (ordering instrument) rather than by publishing a solicitation, the subrecipient shall insert the appropriate L&I wage determination from L&I's Prevailing Wage Policies webpage into the ordering instrument.

(d) Subrecipients shall review all subcontracts subject to DB entered into by prime contractors to verify that the prime contractor has required its subcontractors to include the applicable wage determinations.

(e) As provided in 29 CFR 1.6(f), L&I may issue a revised wage determination applicable to a subrecipient's contract after the award of a contract or the issuance of an ordering instrument if L&I determines that the subrecipient has failed to incorporate a wage determination or has used a wage determination that clearly does not apply to the contract or ordering instrument. If this occurs, the subrecipient shall either terminate the contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate L&I's wage determination retroactive to the beginning of the contract or ordering instrument by change order. The subrecipient's contractor must be compensated for any increase in wages resulting from the use of L&I's revised wage determination.

Attachment 1B Labor Standards Provisions Nonmunicipal Borrowers

Contract and Subcontract provisions.

(a) The recipient shall ensure that the subrecipient(s) shall insert in full in any contract in excess of $2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a treatment work under the DWSRF or a construction project under the DWSRF financed in whole or in part from federal funds or according to guarantees of a federal agency or financed from funds obtained by pledge of any contract of a federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in § 5.1 or the FY 2013 Continuing Resolution, the following clauses:

(1) Minimum wages.

(i) All laborers and mechanics employed or working on the work site will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein if the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) ~~and the Davis-Bacon poster (WH-1321)~~ shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

Subrecipients may obtain wage determinations from the U.S. Department of Labor website.

(ii)(A) The subrecipient(s), on behalf of EPA, shall require that any class of laborers or mechanics, including helpers, which are not listed in the wage determination, and which is to be employed under the contract shall be classified in conformance with the wage determination. The state award official shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the subrecipient(s) agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the subrecipient(s) to the state award official. The state award official will transmit the report, to the administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The administrator, or an authorized representative, will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the state award official or will notify the state award official within the 30-day period that additional time is necessary.

(C) If the contractor, laborers or mechanics to be employed in the classification or their representatives, and the subrecipient(s) do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the award official shall refer the request, and the local wage determination, including the views of all interested parties and the recommendation of the state award official, to the administrator for determination. The request shall be sent to the EPA Regional Coordinator concurrently. The administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, that the Secretary of Labor has found, on the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account, assets for the meeting of obligations under the plan or program.

(2) Withholding. The subrecipient(s) shall on written request of the EPA award official or an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract or any other federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the (Agency) may, after written notice to

the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the subrecipient, that is, the entity that receives the sub-grant or loan from the state capitalization grant recipient. Such documentation shall be available on request of the state recipient or EPA. As to each payroll copy received, the subrecipient shall provide written confirmation in a form satisfactory to the state indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead, the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose at Instructions For Completing Davis-Bacon and Related Acts Weekly Certified Payroll Form, WH-347 | U.S. Department of Labor. The prime contractor is responsible for submitting copies of payrolls from all subcontractors. Contractors and subcontractors must maintain the full social security number and current address of each covered worker and provide them to the subrecipient(s) for transmission to the state or EPA on request from EPA, the state, the contractor, or the Wage and Hour Division of the Department of Labor for an investigation or compliance audit with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the subrecipient(s).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the state, EPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the federal agency or state may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records on request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and trainees

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a state Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a state Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality

other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits according to the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid according to that determination. If the Office of Apprenticeship Training, Employer and Labor Services, or a state Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits according to the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. If the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the EPA determines may by appropriate, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The

prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved according to procedures of the U.S Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and subrecipient(s), state, EPA, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility.

(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

4. Contract Provision for Contracts in Excess of $100,000.

(a) Contract Work Hours and Safety Standards Act. The subrecipient shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item 3, above or 29 CFR 4.6. As used in this paragraph, the terms “laborers and mechanics” include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of

40 hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The subrecipient shall on the request of the EPA award official or an authorized representative of the Department of Labor, withhold or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other federal contract with the same prime contractor, or any other federally assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (a)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

(c) In addition to the clauses contained in Item 3, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the subrecipient shall insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the subrecipient shall insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the (write the name of agency) and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

5. Compliance Verification

(a) The subrecipient shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The subrecipient must use Standard Form 1445 (SF 1445) or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from EPA on request.

(b) The subrecipient shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. Subrecipients must conduct more frequent interviews if the initial interviews or other information indicated that there is a risk that the contractor or subcontractor is not complying with DB. Subrecipients shall immediately conduct interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence.

(c) The subrecipient shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that contractors or subcontractors are paying the appropriate wage rates. The

subrecipient shall establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, if practicable the subrecipient should spot check payroll data within two weeks of each contractor or subcontractor's submission of its initial payroll data and two weeks prior to the completion date the contract or subcontract. Subrecipients must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB . In addition, during the examinations the subrecipient shall verify evidence of fringe benefit plans and payments thereunder by contractors and subcontractors who claim credit for fringe benefit contributions.

(d) The subrecipient shall periodically review contractors and subcontractors use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that contractors and subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be conducted in according to the schedules for spot checks and interviews described in Item 5(b) and (c) above.

(e) Subrecipients must immediately report potential violations of the DB prevailing wage requirements to the EPA DB contact listed above and to the appropriate DOL Wage and Hour District Office.

Attachment 3 Certification of Nonsegregated Facilities

(Applicable to federally assisted construction contracts and related subcontracts exceeding $10,000, which are not exempt from the Equal Opportunity clause.)

The federally assisted construction contractor certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally assisted construction contractor certified, further that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally assisted construction contractor agrees that a breach of this certification is a violation of the Equal Opportunity clause in this contract.

As used in this certification, the term "segregated facilities" means any waiting rooms, work area, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or area, in fact; segregated on the basis of race, creed, color, or national origin, because of habit, local custom, or otherwise. The federally assisted construction contractor agrees that (except where he has obtained identical certifications from proposed contractors for specific time periods) he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding $10,000 which are not exempt from the provisions of the Equal Opportunity clause, and that he will retain such, certification in this file.

_____ _____

Signature Date

_____

Name and title of signer (please type)

[THIS FORM SHALL BE COMPLETED IN FULL AND SUBMITTED WITH THE BID PROPOSAL]

Attachment 4 Notice to Labor Unions or other Organization of Works: Non-Discrimination in Employment

Notice To Labor Unions or Other Organization of Workers: Non-Discrimination in Employment

TO: _____

(name of union or organization of worker)

The undersigned currently holds contract(s) with _____

(name of applicant)

involving funds or credit of the U.S. Government or (a) subcontract(s) with a prime contractor holding such contract(s).

You are advised that under the provisions of the above contract(s) or subcontract(s) and according to Section 202 of Executive Order 11246 dated September 24, 1965, the undersigned is obliged not to discriminate against any employee or applicant for employment because of race, color, creed, or national origin. This obligation not to discriminate in employment includes, but is not limited to, the following:

EMPLOYMENT, UPGRADING, TRANSFER OR DEMOTION

RECRUITMENT AND ADVERTISING

RATES OF PAY OR OTHER FORMS OF COMPENSATION

SELECTION FOR TRAINING INCLUDING APPRENTICESHIP, LAYOFF OR TERMINATION

This notice is furnished you pursuant to the provisions of the above contract(s) or subcontract(s) and Executive Order 11246.

Copies of this notice will be posted by the undersigned in conspicuous places available to employees or applicants for employment.

_____

_____

_____

_____

(contractor or subcontractor(s))

_____

(Date)

PART 5

TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS

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DIVISION 1

GENERAL TECHNICAL REQUIREMENTS

SECTION 01110

SUMMARY OF WORK

PART 1 GENERAL

1.1 SCOPE OF WORK

The work specified in this Section consists of furnishing all labor, materials, and equipment necessary for construction of the Westbrook Reservoirs Improvements, as shown on the Plans, and hereinafter specified, at the intersection of North 80th Avenue and Poplar View Way. Work shall include, but not be limited to, the following:

SCHEDULE A: WESTBROOK RESERVOIR 1 IMPROVEMENTS

A. Improvements to Westbrook Reservoir 1, including access hatch and ladder installation, new vent installation, overflow pipe replacement, inlet/outlet pipe improvements, structural concrete repairs, and expansion joint repair throughout the reservoir interior.

B. Provide temporary erosion and sediment control.

C. Restore all surfaces disturbed by construction activities.

D. Provide all associated work as shown on the Plans and specified herein, for a complete and workable system.

SCHEDULE B: WESTBROOK RESERVOIR 2 IMPROVEMENTS

A. Improvements to Westbrook Reservoir 2, including access hatch and ladder replacement, vent replacement, overflow pipe replacement, reservoir isolation valve installations, site piping improvements, topping slab replacement, concrete stiffener beam repair, precast tee girder joint improvements, wall surface repairs, crack control measures, and expansion joint repair throughout the reservoir interior.

B. Modifications to reservoir instrumentation.

C. Provide temporary erosion and sediment control.

D. Restore all surfaces disturbed by construction activities.

E. Provide all associated work as shown on the Plans and specified herein, for a complete and workable system.

All materials in substantial contact with drinking water shall comply with NSF 61 and all chemicals added to potable water shall comply with NSF 60.

1.2 PROJECT INFORMATION

The Contract Documents show the location, arrangement, and type of work to be performed under the proposed project.

The Contractor shall be responsible for proper notification to and coordination with all utility districts, service districts, and all other persons and services that will be affected by this project at least one week in advance of beginning any construction that affects them.

It is the intent and purpose of these Contract Documents to have constructed complete facilities in good working order for the least practical cost to the Owner. Suggestions, recommendations, as well as inquiries from the Contractor that will serve this purpose are welcome and will be given consideration by the Owner and the Engineer.

1.3 WEB-BASED PROJECT COMMUNICATION SYSTEM

The Contractor shall install and use the necessary computer hardware and software to receive and transmit project communications through the Engineer's web-based, online project communications system. This website will be used by the Engineer, Field Representative, Owner and Contractor to communicate online between these parties to clarify design and construction requirements, to provide information concerning construction issues, and to post certain project documents.

The web-based project communication system will use the secure website and programming developed by the Engineer. The Engineer will provide the Contractor with the instructions and credentials for access and use of the website.

The website shall be used for posting and responding to the following communications and documents:

- Submittals
- Request to Sublet
- Progress Estimates
- Requests for Information

- Construction meeting minutes
- Job photos
- Change order proposals
- Weekly Working Day Reports
- Material Testing Reports

No hard copy submittals will be accepted without the Engineer's prior approval. All other reporting requirements shall remain in effect for this project.

1.4 CONTRACTOR USE OF SITE AND PREMISES

Construction operations shall be limited to the areas noted on the Plans and subject to the approval of the Engineer.

The Contractor shall submit a traffic control plan for all site access and egress routes for construction vehicle traffic per Section 01950.

The Contractor shall allow representatives of the Owner, funding, and regulatory agencies access to the project site at all times.

The Owner's electrician will be completing work in coordination and parallel with the work contained herein. The Contractor shall allow access as necessary to the Owner's electrician.

The Contractor shall notify the Owner (or other water utility purveyor) at least 48 hours in advance of any proposed water system shut downs. The Contractor shall also be responsible for notifying all impacted water users 48 hours in advance of any water shutoff.

1.5 ORDER OF WORK

The order of work will be at the option of the Contractor, except as noted below, in keeping with good construction practice, time restrictions, requirements of the permits applicable to this project, and the order of work as outlined herein, all costs of which shall be included in the various bid amounts. The Contractor shall conduct the order of work to allow the existing facilities to remain operational during the construction of the Project and shall coordinate all of their activities through the Engineer with the Owner's operations and maintenance staff. The Contractor shall provide a written plan of activities to the Engineer and Owner each Thursday for the following week, for review and coordination with existing facility operations.

The implementation of any measure required to protect the environment shall supersede any order of work designated within these Specifications. The Contractor shall meet the conditions as outlined in any and all permits and requirements of the Federal, State, County, and City regulatory agencies.

The Contractor shall keep the disruption of the existing facility operations to a minimum.

Access to the existing operations areas shall be maintained. Disruption of this access shall be kept to a minimum and must be prearranged and scheduled through the Engineer with the Owner's operations and maintenance staff.

The following summary shall be used as a general guideline of the construction tasks to be performed. The tasks are generally listed in the order of completion. The tasks, however, can be completed in a different order than listed herein, including performance of two or more tasks concurrently. The Contractor shall prepare a complete project schedule, which shall be provided in accordance with the limitations specified herein.

A. DRAINING OF WESTBROOK RESERVOIR 1 AND RESERVOIR 2

Shortly following the end of the irrigation season in October, the Owner's staff will isolate and drain Westbrook Reservoir 1 and 2. The draining process will take a few days to accomplish. Improvements to Westbrook Reservoir 1 and 2 can begin no sooner than October 1, 2026, and can end no later than February 24, 2027, for Westbrook Reservoir 1 and March 31, 2027, for Westbrook Reservoir 2. Coordinate closely with the Owner to confirm actual date for beginning work.

B. MOVE PREPURCHASED MATERIAL TO THE SITE

Move 12-inch flexible expansion joint from the Nob Hill Water Association, 6111 Tieton Drive, Yakima, WA 98908, Attn: Dustin Yates, P.E., (509) 966-0272 to the job site.

C. CONSTRUCTION OF WESTBROOK RESERVOIR REPAIRS AND IMPROVEMENTS

Complete the construction of the repairs and improvements as indicated on the Plans and specified herein.

D. DISINFECTION AND TESTING

Backfill and compact the connection to the Association's existing water system.

Coordinate with the Association to complete a leak test for Westbrook Reservoir 1 and Reservoir 2 and to fill the reservoirs.

Complete disinfection of Westbrook Reservoir 1 and Reservoir 2 (AWWA C652). Coordinate with Association to fill the reservoirs. Assume bacteriological testing will take three working days. Contractor must coordinate with the Association to sample water for testing.

By March 31, 2027, improvements to both Westbrook Reservoir 1 and 2 shall be completed. In addition, the reservoirs shall be leak tested, disinfected and filled, and a passing bacteriological test shall be obtained.

E. RESTORATION

Restore all surfaces disturbed by construction activities.

Improvements located outside the reservoirs that do not affect reservoir operation may be completed after February 24, 2027, for Westbrook Reservoir 1 and March 31, 2027 for Westbrook Reservoir 2, as contract days allow.

Provide all associated work as shown on the Plans and specified herein for a complete and workable system.

***** END OF SECTION *****

SECTION 01160

REGULATORY REQUIREMENTS

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section contains information pertaining to permits and licenses, and use of private property.

1.2 PERMITS AND LICENSES

Except as noted below, the Contractor shall be responsible for obtaining and paying all fees associated with all the necessary permits, licenses, approvals, and construction permits necessary for the execution of this Contract, whether they be City, County, State, or federal permits.

The Owner is in possession of, or will be responsible for obtaining the following approvals and permits, and will pay the fees associated with the application and procurement of such approvals and permits. The Contractor is advised to become familiar with these approvals and permits as necessary for this project. The Contractor shall comply with all conditions of each approval/permit as if the conditions were detailed herein. Copies of these permits are required to be onsite at all times.

A. DOH plan review and approval (obtained by Owner)

B. City of Yakima short-term ROW use (obtained by Owner)

1.3 OTHER PERMIT REQUIREMENTS

Not used.

1.4 USE OF PRIVATE PROPERTY

The Contractor shall be responsible for all conditions of any arrangements the Contractor makes for the use of any privately-owned property.

In the event any dispute occurs and claims for damages are filed by the property owners, the Owner will request that the Contractor give evidence that they have requested their insurance company to make personal contact with the claimants. Any settlement for insurance claims shall be strictly an act restricted to the claimant, the Contractor, and their insurance company.

The Contractor is advised that in the event of any property damage, the Owner reserves the right to withhold monies to protect the property owner.

1.5 PROPERTY RELEASE FORM

The Contractor shall be held responsible for acquiring signed property release forms, in the format provided on the following page, for all properties that have been disturbed or damaged by the Contractor's operations, or utilized by the Contractor for staging, storing, or stock piling of materials or equipment.

This work shall include submitting the form(s), as further shown herein, by certified mail to each property owner effected and further including therein a self addressed stamped envelope for the property owner's use. The enclosed self addressed envelope shall be addressed to: Nob Hill Water Association, 6111 Tieton Drive, Yakima, Washington 98908. Contractor shall provide evidence of all certified mailings.

***** END OF SECTION *****

PROPERTY RELEASE

_____
(Property Address)

_____

_____

DATE:_____

I, _____, owner of _____
(Property Owner's Name) (Property Description or

_____, hereby release
Address)

_____, from any property
(Contractor's Name)

damage or personal injury resulting from construction adjacent

to or on my property located at _____,
(Property Address)
during construction of the Westbrook Reservoirs Improvements.

My signature below is my acknowledgment and acceptance that my property, as identified above, was returned to a satisfactory condition.

Name: _____

Signed: _____

Address: _____

_____

Phone: _____

SECTION 01200

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.1 SCOPE

This Section further defines Measurement and Payment for this project.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
GC Section 3.04.12	Measurement and Payment
01290	Schedule of Values
01300	Submittals

1.3 MEASUREMENT

Measurement for all items shall be as indicated in these Specifications for unit price and lump sum price bid items. Bid items are outlined in detail in this Specification Section and listed in the Proposal.

Measurement shall be in accordance with Section 1-09.1 of the WSDOT Standard Specifications. Volumes of gravel materials and concrete volumes shall be measured by the Engineer in the field and quantities will be limited to the relative neat line dimensions shown on the Plans or as approved by the Engineer in the field.

Weighing equipment, scale verification checks, load tickets for quarry spalls, rock riprap, cobbles, gravel materials, hot mix asphalt, bituminous construction materials, etc., shall conform to Section 1-09.2 of the WSDOT Standard Specifications. Load tickets shall include all gravel materials, cast-in-place concrete, cement grout, CDF, hot mix asphalt, ATB, and reinforcing steel. The Owner will pay for no material received by weight unless they have been weighed as required in this Section or as required by another method the Engineer has approved in writing. All costs incidental to weighing shall be merged into the various unit prices bid.

1.4 INDIVIDUAL BID ITEMS

The following is a list of bid items for the project. The contract price for each item constitutes full compensation for furnishing all equipment, labor, materials, appurtenances, and incidentals and performing all operations necessary to

construct and complete the various bid items in accordance with the Contract Documents. Payment for each item shall be considered as full compensation, notwithstanding that minor features may not be mentioned herein. Work paid for under one item will not be paid for under any other item. If a particular item of work shown on the Plans or described in Specifications is not described in a specific bid item, this item of work shall be considered as incidental to the work and the costs for this work shall be merged into the various respective unit price and lump sum bid items. The materials provided by the Owner for installation by the Contractor under the bid items below are noted on the Plans. All materials not specifically noted as being provided by the Owner, shall be furnished by the Contractor.

The project is subject to the Apprentice Utilization Requirement established per RCW 39.04.320. General Conditions Section 3.03.4(3) provides additional information regarding this requirement and is included for local and state funded only projects when the engineer's estimate is $2,000,000 or more.

A. SCHEDULE A: WESTBROOK RESERVOIR 1 IMPROVEMENTS

1. Mobilization and Demobilization

a. Measurement: Will be measured by lump sum.

b. Payment: The lump sum contract price for MOBILIZATION AND DEMOBILIZATION shall include all costs for the labor, materials, and equipment required for mobilization and demobilization for Reservoir 1 as described in Section 01505.

Payment for MOBILIZATION AND DEMOBILIZATION shall be as follows:

35% Payment: When Contractor has mobilized on-site and temporary facilities are in place.

50% Payment: When 5 percent of the total pay items are completed (not including payment for materials on hand).

75% Payment: When 50 percent of the total pay items are completed (not including payment for materials on hand).

100% Payment: When Project is completed and recommended for acceptance.

2. Minor Change

a. Measurement: Will be negotiated prior to commencing any such work under this pay item and shall be for work to remedy unforeseen conditions, utility conflicts, minor landscaping, minor drainage improvements, or special surface restoration.

b. Payment: Payment or credits for changes amounting to $30,000 or less may be made under the Bid Item MINOR CHANGE. At the discretion of the Owner, this procedure for Minor Changes may be used in lieu of the more formal procedure as outlined in General Conditions Section 3.04.6. The Contractor will be provided a copy of the completed order for Minor Changes. The agreement for the Minor Changes will be documented by signature of the Contractor or notation of the verbal agreement. If the Contractor is in disagreement with anything required by the order for Minor Changes, the Contractor may protest the order as provided in General Conditions Section 3.04.8.

Payments or credits will be determined in accordance with General Conditions Section 3.04.6. All Minor Change work will be within the scope of the Contract Work and will not change Contract Time. For the purpose of providing a common Proposal for all Bidders, the Owner has entered an amount for MINOR CHANGE in the Proposal to become part of the total Bid by the Contractor.

3. Apprenticeship Incentive/Penalty

a. Measurement: Shall be measured by calculation.

Apprenticeship hours used to calculate the item APPRENTICESHIP INCENTIVE/PENALTY, by calculation, will be measured for each hour of Work performed by an apprentice as shown on the Monthly Apprentice Utilization Report, based on certified payrolls or the affidavits of wages paid, whichever is least. The percentage is not rounded up.

Where there are multiple schedules of work, the measurement by calculation for the apprentice incentive/penalty bid item will be based on the assessment of the entire project as a whole meeting the Apprentice Utilization Requirement without a reduction by Good Faith effort, rather than by schedule of work.

b. Payment: For the purpose of providing a common Proposal for all bidders, the Contracting Agency has entered an amount in the Proposal for Apprenticeship Incentive/Penalty to become a part of the total bid by the Contractor.

When the Contractor meets the apprenticeship requirement of 15 percent, an incentive will be assessed. When the Contractor fails to meet the apprenticeship requirement of 15 percent, a penalty will be assessed for the percentage range of requirement met below 100 percent, unless a Good Faith Effort is approved by the Contracting Agency.

Apprenticeship Incentive/Penalty will be calculated as described below:

Percent of Requirement Met	**Incentive**	**Penalty**
100%	$2,000	N/A
>90% to <100%	N/A	$500
>75% to 90%	N/A	$1,000
>50% to 75%	N/A	$1,500
>0% to 50%	N/A	$2,000
0%	N/A	$3,000

The Contractor shall include all related costs in the unit Bid prices of the Contract, included but not limited to implementing, developing, documenting, and administering an apprenticeship utilization program, recording and reporting hours and all other costs to comply with this provision.

4. Access Hatch and Ladder Installation

    a. Measurement: Shall be measured by lump sum.

    b. Payment: The lump sum contract price for ACCESS HATCH AND LADDER INSTALLATION shall include all costs for labor, materials, and equipment to cut a new opening in Reservoir 1, to install a new access hatch onto a new concrete curb, and install a new access ladder as shown on the Plans and as specified herein.

5. Vent Installation

    a. Measurement: Shall be measured by lump sum.

    b. Payment: The lump sum contract price for VENT INSTALLATION shall include all costs for labor, materials, and equipment to cut a new vent opening in Reservoir 1, and install a new vent onto a new concrete curb, as shown on the Plans and as specified herein.

6. Overflow Installation and Modifications

    a. Measurement: Shall be measured by lump sum.

    b. Payment: The lump sum contract price for OVERFLOW INSTALLATION AND MODIFICATIONS shall include all costs for labor, materials, and equipment to replace overflow piping and pipe supports, completely demolish existing grout and sealant around overflow pipe, prepare surface for grout, reapply grout around overflow pipe, coat existing pipe and install a new spillway funnel as shown on the Plans and as specified herein.

7. Inlet/Outlet Pipe Improvements

    a. Measurement: Shall be measured by lump sum.

    b. Payment: The lump sum contract price for INLET/OUTLET PIPE IMPROVEMENTS shall include all costs for labor, materials, and equipment to completely demolish existing grout and sealant around inlet/outlet pipe, prepare surface for grout, reapply grout around inlet/outlet pipe as shown on the Plans and as specified herein.

8. Crack Repair

   a. Measurement: Shall be measured by linear foot.

   b. Payment: The linear foot contract price for CRACK REPAIR shall include all labor, materials, and equipment to cut a V-cut into an approved crack, including cutting, cleaning, surface preparation, and repair with structural repair material as shown on the Plans and specified herein.

9. Shallow Spalling Repair

   a. Measurement: Shall be measured by square foot as marked by the Contractor and accepted by the Engineer in the field.

   b. Payment: The unit price bid per square foot for SHALLOW SPALLING REPAIR shall include all costs for labor, material and equipment to remove loose concrete, chip out and prepare existing concrete surfaces, apply bonding agent, repair spalling at the base of the columns and rock pockets at the interior of the wall, as shown on the Plans and as specified herein.

11. Deep Spalling and Corroded Rebar Repair

   a. Measurement: Shall be measured by square foot as marked by the Contractor and accepted by the Engineer in the field.

   b. Payment: The unit price bid per square foot for DEEP SPALLING AND CORRODED REBAR REPAIR shall include all costs for labor, material and equipment to remove loose concrete, chip out and prepare existing concrete surfaces, prepare exposed rebar surfaces, apply bonding agent, and infill with new material at locations where concrete has spalled to expose rebar, or where rebar is visibly corroding near the surface of concrete, as shown on the Plans and as specified herein.

12. Sump Infill and Sealing

   a. Measurement: Shall be measured by lump sum.

b. Payment: The lump sum contract price for SUMP INFILL AND SEALING shall include all labor, materials, and equipment to infill the sump of the reservoir with concrete and seal the edges, as shown on the Plans and specified herein.

13. Concrete Water Stop Benches

a. Measurement: Shall be measured by lump sum.

b. Payment: The lump sum contract price for CONCRETE WATER STOP BENCHES shall include all labor, materials, and equipment to remove sealant and loose concrete at base of wall and columns and install new concrete benches at these locations with water-stop and complete reservoir leak testing and disinfection as shown on the Plans and specified herein.

B. SCHEDULE B: WESTBROOK RESERVOIR 2 IMPROVEMENTS

1. Mobilization and Demobilization

a. Measurement: Will be measured by lump sum.

b. Payment: The lump sum contract price for MOBILIZATION AND DEMOBILIZATION shall include all costs for the labor, materials, and equipment required for mobilization and demobilization for Reservoir 2 as described in Section 01505.

Payment for MOBILIZATION AND DEMOBILIZATION shall be as follows:

35% Payment: When Contractor has mobilized on-site and temporary facilities are in place.

50% Payment: When 5 percent of the total pay items are completed (not including payment for materials on hand).

75% Payment: When 50 percent of the total pay items are completed (not including payment for materials on hand).

100% Payment: When Project is completed and recommended for acceptance.

2. Minor Change

   a. Measurement: Will be negotiated prior to commencing any such work under this pay item and shall be for work to remedy unforeseen conditions, utility conflicts, minor landscaping, minor drainage improvements, or special surface restoration.

   b. Payment: Payment or credits for changes amounting to $50,000 or less may be made under the Bid Item MINOR CHANGE. At the discretion of the Owner, this procedure for Minor Changes may be used in lieu of the more formal procedure as outlined in General Conditions Section 3.04.6. The Contractor will be provided a copy of the completed order for Minor Changes. The agreement for the Minor Changes will be documented by signature of the Contractor or notation of the verbal agreement. If the Contractor is in disagreement with anything required by the order for Minor Changes, the Contractor may protest the order as provided in General Conditions Section 3.04.8.

   Payments or credits will be determined in accordance with General Conditions Section 3.04.6. All Minor Change work will be within the scope of the Contract Work and will not change Contract Time. For the purpose of providing a common Proposal for all Bidders, the Owner has entered an amount for MINOR CHANGE in the Proposal to become part of the total Bid by the Contractor.

3. Access Hatch and Ladder Installation

   a. Measurement: Shall be measured by lump sum.

   b. Payment: The lump sum contract price for ACCESS HATCH AND LADDER INSTALLATION shall include all costs for labor, materials, and equipment to demolish the existing access hatch, cut a new opening in the roof of Reservoir 2, install new access hatch onto new concrete curb, and install a new access ladder, as shown on the Plans and as specified herein.

4. Vent Installation and Modifications

    a. Measurement: Shall be measured by lump sum.

    b. Payment: The lump sum contract price for VENT INSTALLATION AND MODIFICATIONS shall include all costs for labor, materials, and equipment to demolish the existing vent and screen, install new vent onto a new concrete curb, and install a new mounting support plate as shown on the Plans and as specified herein.

5. Overflow Installation and Modifications

    a. Measurement: Shall be measured by lump sum.

    b. Payment: The lump sum contract price for OVERFLOW INSTALLATION AND MODIFICATIONS shall include all costs for labor, materials, and equipment to replace overflow piping, coat existing pipe, and install a new spillway funnel as shown on the Plans and as specified herein.

6. Piping, Valves, and Appurtenances

    a. Measurement: Shall be measured by lump sum.

    b. Payment: The lump sum contract price for PIPING, VALVES, AND APPURTENANCES shall include all costs for labor, materials, and equipment to install pipes, demolish existing manhole and appurtenances within, valves, fittings and associated appurtenances, trench excavation, bedding, material and compaction testing, disinfection and pressure testing, flushing, disposal of disinfection water, connection to the existing system, installation of new telemetry ports, and restoration of areas disturbed by construction as shown on the Plans and as specified herein.

7. Exposed Rebar End Repair

    a. Measurement: Shall be measured per square foot as marked by the Contractor and accepted by the Engineer in the field.

b. Payment: The unit price bid per square foot for EXPOSED REBAR END REPAIR shall include all costs for labor, material, and equipment to chip concrete out around exposed rebar, coat exposed rebar with zinc-rich primer, and repair with cement grout for Reservoir 2 as shown on the Plans and as specified herein.

8. Shallow Spalling Repair

a. Measurement: Shall be measured per square foot as marked by the Contractor and accepted by the Engineer in the field.

b. Payment: The unit bid price per square foot for SHALLOW SPALLING REPAIR shall include all costs for labor, material, and equipment to remove loose concrete, chip out and prepare existing concrete surfaces, apply bonding agent, repair spalling at the base of columns and rock pockets at interior of the wall, and complete reservoir leak testing and disinfection, as shown on the Plans and as specified herein.

9. Deep Spalling and Corroded Rebar Repair

a. Measurement: Shall be measured by square foot as marked by the Contractor and accepted by the Engineer in the field.

b. Payment: The unit price bid per square foot for DEEP SPALLING AND CORRODED REBAR REPAIR shall include all costs for labor, material and equipment to remove loose concrete, chip out and prepare existing concrete surfaces, prepare exposed rebar surfaces, apply bonding agent, and infill with new material at locations where concrete has spalled to expose rebar, or where rebar is visibly corroding near the surface of concrete, as shown on the Plans and as specified herein.

10. Crack Repair

a. Measurement: Shall be measured per linear foot as marked by the contractor and accepted by the Engineer in the field.

b. Payment: The linear foot contract price for CRACK REPAIR shall include all labor, materials, and equipment to cut a V-cut into an approved crack, including cutting,

cleaning, surface preparation, and repair with structural repair material as shown on the Plans and specified herein.

11. Concrete Corner Repair

    a. Measurement: Shall be measured by lump sum.

    b. Payment: The lump sum contract price for CONCRETE CORNER REPAIR shall include all costs for labor, materials, and equipment necessary to remove unsound concrete, chip out and prepare concrete surfaces, clean and coat exposed reinforcement, and repair with structural repair material as shown on the Plans and specified herein.

12. Tee-Connections Repairs

    a. Measurement: Shall be measured by each.

    b. Payment: The contract price per each TEE-CONNECTIONS REPAIRS shall include all costs for labor, materials, and equipment necessary for blast cleaning, surface preparation, and repair as shown on the Plans and specified herein.

13. Floor Joint Repair

    a. Measurement: Shall be measured by lineal foot.

    b. Payment: The lump sum contract price for FLOOR JOINT REPAIR shall include all labor, materials, and equipment to remove and replace existing sealant, as shown on the Plans and as specified herein.

14. Seismic Retrofit (Replace Topping Slab)

    a. Measurement: Shall be measured by lump sum.

    b. Payment: The lump sum contract price for SEISMIC RETROFIT (REPLACE TOPPING SLAB) shall include all labor, materials, and equipment to remove the existing roof topping slab and install the new concrete slab for Reservoir 2 as shown on the Plans.

1.5 PROJECT MATERIALS ON HAND

See General Conditions Section 3.04.12(6).

1.6 PAYMENT

Payment for all work will be made at the contract unit price or lump sum price as indicated in the Proposal, payment of which shall constitute full compensation, for a complete installation.

***** END OF SECTION *****

SECTION 01290

SCHEDULE OF VALUES

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section establishes the procedures for preparing the schedule of values used for preparation of the Contractor's progress pay estimates.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
GC Section 3.04.12	Measurement and Payment
01200	Measurement and Payment
01300	Submittals

1.3 DESCRIPTION

Within 14 calendar days following receipt of Notice to Proceed, the Contractor shall submit to the Engineer, for review and approval, a complete breakdown of components of all lump sum bid items showing the value assigned to each portion of the work. The schedule of values shall be prepared in such form, and supported by data that substantiates its accuracy as may be required by the Engineer. This schedule of values shall, once approved by Engineer, be used as the basis for reviewing and determining each monthly progress payment estimate and as such shall be subject to periodic review by the Engineer to assure that the schedule of values reasonably represents, in the opinion of the Engineer, the actual value of the individual items of work to be performed. No payments shall be made until the schedule of values has been approved.

***** END OF SECTION *****

SECTION 01300

SUBMITTALS

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section includes requirements that apply to all equipment and materials supplied on the Project.

The Contractor shall be responsible for the accuracy and completeness of the information contained in each submittal and shall assure that the material, equipment or method of work shall be as described in the submittal. The Contractor shall verify that all features of all products conform to the requirements of the Contract Documents. Submittal documents shall be clearly edited to indicate only those items, models, or series of equipment that are being submitted for review. All extraneous materials shall be crossed out or otherwise obliterated. The Contractor shall ensure that there is no conflict with other submittals and notify the Engineer in each case where their submittal may affect the work of another contractor or the Owner. The Contractor shall ensure coordination of submittals among the related crafts and subcontractors and shall verify such coordination on all submittals.

Where noted in the Contract Documents, the structural, mechanical, and electrical designs associated with the indicated equipment items are specific to the manufacturer and model number specified. Any structural, mechanical, or electrical modifications required to utilize an approved substitution to the specified equipment shall be made by the Contractor at no additional cost to the Owner. Where approved substitutions of specified equipment affect other materials or equipment, mechanical, structural, or electrical work, the Contractor shall note in the equipment submittal any necessary changes to accommodate the substituted equipment. It shall also be the responsibility of the Contractor to coordinate other mechanical, structural, or electrical equipment submittals to make sure that all changes necessary to accommodate the substituted equipment are addressed in these submittals as well. See General Condition 3.04.3.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	**Item**
01720	Record Drawings

1.3 WORK INCLUDED

Submittals required for this work shall include any or all of the following as required by the particular specification section and the submittal schedule:

A. SCHEDULES AND PLANS

B. PRODUCT SUBMITTALS

1. Manufacturer's Literature
2. Shop Drawings
3. Color and Material Samples
4. Design Calculations
5. Test Reports

C. EQUIPMENT OPERATION AND MAINTENANCE MANUALS

D. RECORD DRAWINGS

1.4 SUBMITTAL INFORMATION

Shop, catalog, and other appropriate drawings and information shall be submitted to the Engineer for review prior to fabrication or ordering of all equipment and materials specified. The number of copies of submittal information to be submitted shall be as indicated below.

All submittal information shall be sent to the Engineer through the Contractor. The Contractor shall assign a separate submittal number to each item or group of items that relate to each specification section. Submittal numbers shall be assigned in consecutive ascending order, with the first project submittal assigned the number "1." Resubmittals shall be numbered using the same number followed by an alphabetical suffix. All submittals shall bear the Contractor's certification that they have reviewed, checked, and approved the submittal information prior to transmitting to the Engineer. The submittal number and related specification section shall be marked on each submittal.

PART 2 PRODUCTS

2.1 GENERAL

The Contractor shall submit all submittals on the Web-Based Project Communication System. The Contractor shall submit the specified information as PDF files on the web-based project communication system, with a table of contents bookmarked to provide a navigation link to each section of the submittal.

The PDF shall consist of one submittal for each submittal number and shall not be broken up into separate documents. Three USB drives and four hard copies of all final equipment manuals shall be submitted.

2.2 PRODUCT SUBMITTALS

A. GENERAL

When indicated in the Contract Documents the contractor shall submit product data for review by the Engineer. Unless otherwise specified, within 21 calendar days after receipt of the submittal, the Engineer shall review the submittal and return the marked-up submittal. The reproducible original will be retained by the Engineer. The returned submittal shall indicate one of the following actions:

1. If the review indicates that the material, equipment, or work method complies with the project Specifications, submittal copies will be marked "NO EXCEPTIONS TAKEN." In this event, the Contractor may begin to implement the work method or incorporate the material or equipment covered by the submittal.

2. If the review indicates limited corrections are required, copies will be marked "MAKE CORRECTIONS NOTED." The Contractor may begin implementing the work method or incorporating the material and equipment covered by the submittal in accordance with the noted corrections. Where submittal information will be incorporated in operation and maintenance data, a corrected copy shall be provided.

3. If the review reveals that the submittal is insufficient or contains incorrect data, copies will be marked "AMEND AND RESUBMIT." Except at their own risk, the Contractor shall not undertake work covered by this submittal until it has been revised, resubmitted, and returned marked either "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED."

4. If the review indicates that the material, equipment, or work method does not comply with the project Specifications, copies of the submittal will be marked "REJECTED - SEE REMARKS." Submittals with deviations that have not been identified clearly may be rejected. Except at their own risk, the Contractor shall not undertake the work covered by such submittals until a new submittal is made and returned marked either "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED."

B. MANUFACTURER'S LITERATURE

Where the contents of submitted literature include data not pertinent to the submittal, the portion(s) of the contents being submitted for the Engineer's review shall be clearly indicated.

C. SHOP DRAWINGS

Shop drawings shall be submitted in the form of blue-line or black-line prints of each sheet. Blueprint submittals will not be acceptable.

All shop drawings shall be accurately drawn to a scale sufficiently large enough to show pertinent features and method of connection or joining. On all shop drawings, figure dimensions shall be used as opposed to scaled dimensions.

D. COLOR AND MATERIAL SAMPLES

All material samples shall be of the exact article proposed to be furnished for the work and shall be submitted in the quantity required. Samples shall be returned to the Contractor, with one retained by the Engineer.

Unless the precise color is specifically described in the Contract Documents, or whenever a choice of color or pattern is available in a specified product, accurate color charts shall be submitted to the Engineer for their review and selection.

E. DESIGN CALCULATIONS

Where required in the Specifications, design calculations shall be submitted to the Engineer. Design calculations shall be complete, concise, and in an easy-to-read format. All design calculations shall be stamped by a Professional Engineer licensed in the State of Washington.

F. TEST REPORTS

Copies of all test reports shall be submitted to the Engineer.

2.3 EQUIPMENT MANUALS

A. GENERAL

For all items of equipment, manufacturer's equipment operation and maintenance manuals shall be submitted to the Engineer for review. One copy will be returned to the Contractor with comments.

The following information shall be furnished for all items of equipment installed on the project requiring operational and/or maintenance procedures, and for any additional items indicated by the Engineer.

1. Lubrication Information

   This shall consist of the manufacturer's recommendations regarding the lubricants to be used and the lubrication schedule to be followed.

2. Electrical and Control Diagrams

   Diagrams shall show internal and connection wiring.

3. Startup Procedures

   These instructions consist of equipment manufacturer's recommendations for installation, adjustment, calibration, and troubleshooting.

4. Operating Procedures

   These instructions consist of the equipment manufacturer's recommended step-by-step procedures for starting, operating, and stopping the equipment under specified modes of operation.

5. Preventive Maintenance Procedures

   These instructions consist of the equipment manufacturer's recommended steps and schedules for maintaining the equipment.

6. Overhaul Instructions

   These instructions consist of the manufacturer's directions for the disassembly, repair, and reassembly of the equipment and any

safety precautions that must be observed while performing the work.

7. Parts List

   This list consists of the generic title and identification number of each component part of the equipment.

8. Spare Parts List

   This list consists of the manufacturer's recommendations of number of parts, which should be stored by the Owner and any special storage precautions, which may be required.

9. Exploded View

   Exploded or cut views of equipment shall be provided if available as a standard item of the manufacturer's information. When exploded or cut views are not available, plan and section views shall be provided with detailed callouts.

10. Test Documentation

    Reports, records, data and forms documenting the results of equipment factory tests, including pump and blower performance curves, shall be provided, with the operating points for the specific equipment designated. When a special factory test of the supplied equipment is not performed, the manufacturer's standard performance reports and curves, with specified operating points, shall be provided for the supplied equipment.

11. Specific Information

    Where items of information not included in the above list are required, they will be provided as described in the specifications for the equipment.

12. Warranty Information

13. Maintenance Information Summaries

    In addition, the following items of equipment shall be provided with Maintenance Information Summaries in each appropriate

section of the equipment manuals, prepared according to the format specified herein:

- Valves (larger than 1 inch in size)

Maintenance information summaries shall be prepared on 8-1/2-inch x 11-inch paper only and shall contain the following information compiled from manufacturer's recommendations in the order shown.

1. Description or name of item of equipment.

2. Manufacturer.

3. Name, address, and telephone number of local manufacturer's representative.

4. Serial number (where applicable). The Contractor shall verify that it matches the equipment installed on the project.

5. Equipment nameplate data including model number.

6. Recommended maintenance procedures:

    a. Description of procedures.

    b. Maintenance frequency required.

    c. Lubricant(s) or other materials required (where applicable), including type of lubricant, lubricant manufacturer, and specific compound.

    d. Additional information as required for proper maintenance.

7. Recommended spare parts.

The maintenance information summary shall be placed at the beginning of the manual.

B. EXTRANEOUS DATA

Where the contents of the manuals include manufacturers' standard brochures or catalog pages, the exact item(s) used in this installation shall

be clearly indicated and all manufacturers' data which is extraneous shall be clearly deleted.

C. FINAL EQUIPMENT MANUALS

The Contractor shall be responsible for tracking and coordinating each separate manufacturer's equipment operation and maintenance manual submittal and shall resubmit, as necessary, until the Engineer's review indicates that the submittal is acceptable. The Contractor shall maintain equipment manual files until final approval copies are delivered to the Engineer. The Contractor shall be responsible for collating the approved operation and maintenance submittal sections into complete final manufacturers' equipment operation and maintenance manuals bound in post binders which are indexed to the Specifications. The Contractor shall deliver the complete final operation and maintenance manuals to the Engineer prior to project completion. All copies final manufacturers' equipment manuals submitted will be retained by the Engineer or Owner.

The Contractor shall also supply three USB copies of the final equipment manuals in a tabbed, searchable, .pdf format, with a table of contents bookmarked to provide a navigation link to each section of the manual.

PART 3 EXECUTION

3.1 IDENTIFICATION OF SUBMITTALS

A. GENERAL

Each submittal shall be accompanied by a letter of transmittal showing the date of transmittal, specification section, or drawing number to which the submittal pertains, submittal number, and a brief description of the material submitted.

B. RESUBMITTALS

When material is resubmitted for any reason, it shall be submitted under a new letter of transmittal and referenced to the previous submittal.

3.2 REVIEW OF SUBMITTALS

The Engineer will review all submittals for general conformance with the design and other requirements of the Contract Documents. Markings or comments shall not be construed as relieving the Contractor from compliance with the Contract Documents. Submittals may be rejected based on inadequate information and/or

not meeting the requirements of the Contract Documents. Rejection of submittals requires action on the part of the Contractor to correct the reason for the rejection. The Contractor remains responsible for details and accuracy, for confirming and correlating all quantities and dimensions, for selecting fabrication processes, and for techniques of assembly and installation.

3.3 COORDINATION OF PRODUCT SUBMITTALS

A. GENERAL

Prior to submittal for review by the Engineer, all data shall be fully coordinated, including the following:

1. All field dimensions and conditions.

2. All trades and public agencies involved, including necessary approvals.

3. All deviations from the Contract Documents.

B. GROUPING OF SUBMITTALS

1. All submittals shall be grouped with associated items, unless otherwise specifically permitted by the Engineer.

2. The Engineer may reject the submittals in their entirety or any part thereof, if not in accordance with the Contract Documents.

C. CERTIFICATION

Submittals shall bear the Contractor's certification that they have reviewed, checked, and approved the shop drawings prior to forwarding them to the Engineer.

3.4 TIMING OF PRODUCT SUBMITTALS

A. GENERAL

1. All submittals shall be made far enough in advance of installation to provide all required time for reviews and securing necessary approvals.

2. In scheduling, the Contractor shall allow for the time indicated in Part 2.2A for the Engineer's review following their receipt of the submittal.

B. DELAYS

No additional or separate payment will be made for costs of delays occasioned by tardiness of submittals on the part of the Contractor.

3.5 EQUIPMENT MANUALS

The preliminary copies of the manufacturer's equipment manuals shall be delivered to the Engineer for review not later than the time of equipment delivery to the project site.

Final copies of the manufacturer's equipment manuals shall be delivered to the Engineer at least 14 calendar days prior to requesting payment in excess of 90 percent completion for the project. Prior to submittal of the final equipment manuals, the Contractor shall check the manuals for accuracy and completeness and shall verify that prior review comments have been addressed.

***** END OF SECTION *****

SECTION 01310

PROJECT MEETINGS

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section includes information pertaining to the various meetings that will be held during the course of constructing this project.

1.2 PRECONSTRUCTION CONFERENCE

As soon as possible following the award of the Contract, a preconstruction conference shall be scheduled for representatives of the Owner, the Contractor, the Engineer, funding agencies, regulatory agencies, and affected utilities.

1.3 PROJECT PROGRESS MEETINGS

The Owner and the Engineer will schedule and attend regular biweekly meetings with the Contractor for coordination, administrative, and procedural requirements of the project. The Contractor shall provide a meeting room with table and chairs at or near the site for project progress meetings.

1.4 CONSTRUCTION MEETINGS

The Contractor shall schedule and hold regular meetings during the project:

A. Safety Meetings (Contractor's subcontractors shall attend if they are working onsite.)

B. Project Progress Meetings

C. Equipment Installation Meetings

D. Coordination Meetings

E. Startup and Testing Meetings

The Contractor shall notify the Owner and Engineer in advance of all meetings. The meetings may or may not be attended by the Owner and Engineer.

***** END OF SECTION *****

SECTION 01385

DOCUMENTATION OF EXISTING CONDITIONS

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section includes all photography requirements for the project.

The Contractor shall provide comprehensive preconstruction photographs of the entire construction area and adjacent properties. The photographs shall provide complete coverage of all features in the project area, including the reservoir appurtenances to be replaced or modified and all concrete joints and surfaces to be repaired.

Prior to construction, photographs shall be taken in the project area where work is to be done. Special attention shall be given to depict existing roadway and property conditions, fences, buildings, trees, ditches, culverts, meter boxes, etc. The photographs shall be of commercial quality and must be submitted to the Engineer prior to the initiation of construction.

The Contractor shall submit digital photographs on an electronic storage device (USB drive). Three copies of each storage device shall be submitted to the Engineer. Each photograph shall be of good quality, sufficiently large to distinguish unique features captured in the photograph, and should be at least 4 MB in size. Each electronic storage device shall be labeled, and shall, at a minimum include the name of the Owner, name of the Contractor, Date, Project Name, and the title, “Pre-Construction Photographs” in sufficiently legible text.

The photographs shall be arranged in a continuous fashion indicating topographical features from one end of the project to the other. The Contractor shall invite the Engineer to the site while collecting these photographs.

Photographs shall be taken during a period of good visibility. Unless otherwise directed by the Engineer, photographs will not be allowed during times of precipitation or poor visibility.

Following construction, the Contractor shall provide post-construction photographs of the entire construction area, which includes the reservoir appurtenances replaced or modified and all repaired concrete joints and surfaces, and adjacent properties in a similar format to the preconstruction photographs.

***** END OF SECTION *****

SECTION 01400

QUALITY CONTROL

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section includes the control tests, test sample collection, required field-testing, and special inspections as specified herein, and indicated on the Plans.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
02300	Earthwork
02700	Gravel Materials
03300	Reinforced Concrete

1.3 PAYMENT

All testing as required by this Section shall be paid for by the Contractor. All costs to prepare and implement the sample and testing program shall be included in the bid prices for the various items associated with the sampling and testing program.

Retesting and reinspection required because of defective work and testing performed for the convenience of the Contractor shall also be paid for by the Contractor.

Testing requirements shall not be cause for claims of delay by the Contractor and all expenses accruing therefrom shall be deemed incidental to the performance of the Contract.

PART 2 PRODUCTS

2.1 GENERAL

The Contractor shall be responsible for all material testing specified in the Contract Documents and any applicable permits and codes. The materials testing laboratory shall be accredited for performing the various testing methods either by AASHTO R18, AASHTO 150/IEC 17025 or the American Association for Laboratory Accreditation and further approved by the Owner. The materials testing laboratory shall send test results directly to the Engineer.

2.2 EARTHWORK AND GRANULAR MATERIALS

A. COMPACTION CONTROL

Optimum moisture content and maximum density tests shall be determined by the following method:

ASTM D1557 – Laboratory Compaction Characteristics of Soil Using Modified Effort

B. IN-PLACE TESTS

In-place density and moisture content tests shall be made by an independent testing laboratory according to the following methods:

ASTM D6938 – Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).

2.3 AGGREGATES

All aggregates shall be tested in accordance with applicable WSDOT test methods:

Title	**Test Method**
Sampling	AASHTO T2
Sieve Analysis of Fine and Coarse Aggregates	104A
Material Finer than No. 200 Sieve in Aggregates	102A
Percentage of Particles Smaller than 0.025 mm and 0.005 mm	603A
Organic Impurities	111A
Abrasion of Coarse Aggregates by Use of the Los Angeles Machine	101A
Sand Equivalent	109A

2.4 CAST-IN-PLACE CONCRETE

Cast-in-place concrete shall be tested in accordance with applicable parts of Chapter 16 of ACI 301. Concrete reinforcement and concrete special inspections

shall be performed in accordance with local Building Official and WABO requirements.

PART 3 EXECUTION

3.1 SAMPLING AND TESTING FREQUENCY

A. GENERAL

The Contractor shall provide the following quality control tests at the number and frequency described herein. On-site testing technicians and testing laboratories shall be WABO-certified. The precise location of the tests shall be designated by the Engineer. The Contractor shall cooperate with laboratory personnel employed to conduct the density testing, sampling of material(s), and special inspections. The Contractor shall provide safe access within the work site for laboratory personnel such that density testing and visual inspection can be performed. The Contractor shall provide samples of materials to be tested in the quantities required and herein specified to the appropriate laboratory personnel. The Contractor shall furnish all labor, equipment, tools, and materials necessary to obtain and deliver samples as herein designated. They shall also provide and repair any test holes required in order to facilitate the testing and sampling and to provide for the testing laboratory's exclusive use for storage and curing of test samples until removed to the laboratory.

Any areas tested and further failing compliance with the Specifications shall be recompacted and retested at the Contractor's expense, until a successful density test indicating compliance with these Specifications has been achieved.

B. SOIL TESTING

The following soil quality control tests shall be completed at the given frequency:

Material	**Test**	**Minimum Sampling & Testing Frequency**
Backfill for foundations, walls, trenches and roads	Gradation[1]	One every 500 cy or one per day for quantities exceeding 25 cy. For trenches, one every 750 feet of trench.
	In-Place Density[2,3,4]	One every 500 cy or one per day for each type of soil or fill material with quantities exceeding 25 cy.

Material	Test	Minimum Sampling & Testing Frequency
		For trenches, one per day and one every 250 feet of trench.
	Moisture-Density Relationship[3]	One prior to start of backfilling operation, one every 20 densities and any time material type changes.
Pipe Bedding	Gradation[1]	One every 750 feet of trench.
Subgrade and Fills	In-Place Density[2,3]	One every 500 cy of each type material.
	Moisture-Density Relationship	One for every 20 densities for each material.
	Gradation	One for every moisture-density.

1. All acceptance tests shall be conducted from in-place samples.
2. Additional tests shall be conducted when variations occur due to the Contractors, operations, weather conditions, site conditions, etc.
3. The nuclear densometer, if properly calibrated, may be used but only to supplement the required testing frequency and procedures. The densometer shall be calibrated and is recommended for use when the time for complete results becomes critical.
4. Depending on soil conditions, it is anticipated that compaction tests shall be required at depths of 2 feet above the pipe and at each additional 5 feet to the existing surface plus a test at the surface.

C. CONCRETE TESTING

All testing shall conform to applicable portions of ACI. Special inspections of concrete and concrete reinforcement shall comply with WABO requirements.

All concrete must meet the specified requirements for minimum 28-day compressive strength.

All concrete cylinders shall be molded and tested for strength by an independent testing laboratory employed by the Contractor.

The Contractor shall furnish all concrete required for molding of the cylinders. In cases where cylinders are stored at the project site, the Contractor shall provide storage and protection for the cylinders in accordance with ACI requirements.

Concrete tests and testing frequency shall be in accordance with the more stringent of the testing requirements specified in Section 03300-3.17 of these Specifications, and the following table:

Material	Test	Minimum Sampling & Testing Frequency
Coarse Aggregate (for each grading size)[1]	Gradation	One test every 500 cy of concrete.
	Deleterious Substances	One test initially and thereafter when appearance makes the material suspect.
	L.A. Abrasion	One every 2,000 tons of aggregate.
	Moisture specific gravity and absorption[1]	One initially and every 250 cy thereafter. One moisture to be conducted prior to any batching and more frequently if hauling and storage does not provide a consistent moisture content.
Fine Aggregate[1]	Gradation and fineness modules	One every 250 cy of concrete.
	Deleterious Substances	(same as coarse aggregate).
	Moisture, specific gravity and absorption[1]	(same as coarse aggregate).
Concrete	Slump	Conduct one test every day of placement and one additional test for every 50 cy placed and more frequently if batching appears inconsistent. Conduct in conjunction with taking concrete cylinders.
	Entrained Air	Conduct with each slump test.
	Ambient and concrete temperatures	Conduct with each slump test.
Concrete	Compressive strength and evaluation of results per ACI 214. (includes unit	For all concrete placement, take one set of four cylinders per day and one additional set of cylinders for every 50 cy of each class of structural concrete. Cylinders shall

Material	Test	Minimum Sampling & Testing Frequency
	weight of each cylinder)	be 4 inch by 8 inch. Test one cylinder at 7 days and two at 28 days. Fourth cylinder shall be held in reserve. A plot and statistical evaluation shall be maintained in accordance with ACI 214 for compressive strength results. Field cure cylinders shall be made when insitu strengths are required to be known.

1. Aggregate moisture tests are to be conducted in conjunction with concrete strength tests for water/cement (w/c) calculations.

D. SPECIAL INSPECTIONS

Contractor shall perform all required Special Inspections per WABO requirements (Chapter 17 of the IBC). Special inspections include, but are not limited to, cast-in-place concrete, concrete reinforcement, structural welded connections, bolted connections, compaction testing for structure foundations, and epoxy adhesive bolting.

Contractor shall ensure Owner and Engineer or Field Representative are present for all special inspections.

***** END OF SECTION *****

SECTION 01500

TEMPORARY FACILITIES

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section includes the temporary facilities required for this project, but not necessarily limited to:

A. Temporary utilities such as water, electricity, telephone, off-site staging, and off-site parking.

B. Temporary piping, pumps, valves, fittings, manholes, vaults, and appurtenances necessary to keep existing facilities fully operational during construction.

C. Sanitary facilities.

D. Temporary enclosures such as fences, steel plates, tarpaulins, barricades, and canopies.

PART 2 PRODUCTS

2.1 UTILITIES

A. TEMPORARY ELECTRICITY

The Contractor shall provide temporary power for construction at the project site. They shall make arrangements with the electrical utility (to obtain temporary power) and shall pay all costs and fees charged by the utility associated with connection of temporary power. The Contractor shall provide all special connections, receptacles, panelboards, etc., which are required for temporary service, and are not provided by the utility.

The Contractor shall furnish and install all temporary wiring and associated equipment required to keep all portions of the existing facilities in operation at all times.

Area distribution boxes shall be furnished, installed, and located that the individual trades may use their own construction-type extension cords to obtain proper power and artificial lighting at all points where required. The Contractor shall provide a main disconnect on all temporary wiring

panels, labeled “MAIN DISCONNECT,” to ensure the safety of personnel using extension cords and hand tools. Panels shall also be properly grounded and equipped with GFCI breakers in accordance with WISHA requirements.

The Contractor shall provide the Engineer single line diagrams of the temporary wiring showing all circuit breakers. These diagrams shall be provided prior to installation of this wiring. These diagrams are necessary to provide information to Owner personnel for off-hours operation.

The Contractor shall pay all demand, consumption, taxes, and fees associated with the temporary electrical service.

B. WATER

The Contractor shall be responsible for providing water necessary for construction. This includes costs for supplying potable water for hydrostatic pressure leak testing of all water-holding structures and operational testing of all equipment and processes. Water is available from the Owner free of charge, provided that it is used responsibly. The Contractor shall install a meter with backflow prevention device prior to obtaining water from the Owner.

2.2 TEMPORARY PIPING

The Contractor shall furnish and install all temporary piping and pumping and, upon completion of the work, remove all such temporary piping as required, except as designated on the Plans to remain as a part of the Project. Prior to installation, the Contractor shall submit drawings to the Engineer showing the proposed installation of temporary piping and pumps, including location, type of pipe, fittings, and valves. The Contractor shall obtain the Engineer’s approval for temporary piping and pumping plan prior to installation.

Temporary piping and pumping shall be provided as necessary to maintain the existing facilities in operation until the new facilities are constructed, operational. An effort has been made on the Plans and/or Specifications to note instances and locations where temporary piping and/or pumping may be required; however, this in no way limits the temporary piping and pumping to be provided by the Contractor at these locations.

2.3 SANITARY FACILITIES

The Contractor shall provide toilet and wash-up facilities for their workforce and the Engineer at the site of work. They shall comply with applicable laws, ordinances, and regulations pertaining to the public health and sanitation of dwellings and camps.

2.4 OFF-SITE STAGING AND PARKING

The Contractor shall note that space is limited throughout the construction site. Employees of the Contractor, all subcontractors, vendors, suppliers, and associated personnel shall not be allowed to park onsite during the course of construction without prior approval from the Owner. It shall be the responsibility of the Contractor to provide sufficient parking facilities in authorized area(s) other than the construction site for the above-mentioned personnel.

The Contractor will be allowed to stockpile and store equipment and materials onsite, space permitting and with the approval of the Owner. The Contractor shall coordinate their schedule so that equipment and materials are brought to the construction site when they are to be installed/utilized.

If necessary, the Contractor shall provide storage of equipment and materials at an offsite, bonded warehouse, to be approved by the Engineer. The Contractor shall pay all costs associated with off-site delivery, storage, and transfer to the construction site.

2.5 ENCLOSURES

The Contractor shall furnish, install, and maintain during the project time all required scaffolds, tarpaulins, barricades, canopies, warning signs, steps, bridges, platforms, and other temporary construction necessary for proper completion of the work in compliance with all pertinent safety and other regulations.

Contractor shall furnish, install, and maintain coverings to secure all reservoir openings and trench openings, as necessary, during the work.

2.6 FENCING

Contractor shall furnish, install, maintain, and remove temporary security fencing around the laydown/storage area, trench openings, and both reservoir structures, as necessary, during the work.

PART 3 EXECUTION

All temporary facilities and controls shall be maintained as long as required for the safe and proper completion of the work. The Contractor shall remove such temporary facilities and controls as rapidly as progress of the work will permit or as directed by the Owner.

***** END OF SECTION *****

SECTION 01505

MOBILIZATION AND DEMOBILIZATION

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section consists of mobilization and demobilization. Mobilization consists of preconstruction activities and preparatory work for the project necessary to mobilize labor, materials, and equipment to the project site. Demobilization consists of activities to remove materials and equipment from the project site upon project completion, including final cleanup. Items which are not considered mobilization or demobilization include but are not limited to:

A. On-going activities throughout the duration of construction.

B. Profit, interest on borrowed money, overhead, or management costs.

PART 2 PRODUCTS

Products and materials required for mobilization and demobilization are described in the various sections of Division 1 and in other parts of the Contract Documents.

PART 3 EXECUTION

Complete mobilization and demobilization as required by the various sections of Division 1 and other parts of the Contract Documents.

***** END OF SECTION *****

SECTION 01720

RECORD DRAWINGS

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section includes the record drawings, which shall be maintained and annotated by the Contractor during construction.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
01300	Submittals

1.3 INFORMATION PROVIDED BY THE OWNER

The Contractor will be provided with the following items to maintain record drawings for the project:

A. One full size paper set of Plans.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.1 GENERAL

The Contractor shall maintain the following record drawings for the project:

A. A neat and legibly marked set of Contract Plans showing the final location of piping, equipment, electrical conduits, outlet boxes and cables;

B. Additional documents such as schedules, lists, drawings, and electrical and instrumentation diagrams included in the Contract Documents; and

C. Contractor layout and installation drawings.

Unless otherwise specified, record drawings shall be full size and maintained in a clean, dry, and legible condition. Record documents shall not be used for construction purposes and shall be available for review by the Engineer during

normal working hours at the Contractor's field office. At the completion of the work, prior to final payment, all record drawings shall be submitted to the Engineer.

Marking of the drawings shall be kept current and shall be done at the time the material and equipment are installed. Annotations to the record documents shall be made with an erasable colored pencil conforming to the following color code:

A. Additions - Red

B. Deletions - Green

C. Comments - Blue

D. Dimensions - Graphite

Legibly mark drawings to record actual depths, horizontal and vertical location of underground raceways, cables, and appurtenances referenced to permanent surface improvements.

The Contractor's record drawings (full-size hard-copy) will be reviewed monthly for completeness by the Engineer prior to preparing the progress estimate for payment. If the record drawings do not reflect the work performed, payment for that item of work will not be included in the progress estimate.

***** END OF SECTION *****

SECTION 01740

CLEANUP

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section includes the maintenance of the building, structures, and site(s) in a standard of cleanliness throughout the construction period as described herein.

Throughout the construction period, the Contractor shall maintain the cleanliness of the site and structures as described herein. The Contractor is also to maintain access to all existing, operating equipment such that the equipment may be serviced and operated.

Dust of all kinds, including concrete dust produced by construction activities, shall be controlled to avoid damage to existing, operating equipment. Enclosures, ventilation, and air scrubbing may be required where significant potential for damage is determined by the Engineer.

1.2 RELATED WORK SPECIFIED ELSEWHERE

In addition to standards described in this Section, comply with all requirements for cleaning up when described in other sections of these Contract Documents.

1.3 QUALITY ASSURANCE

A. INSPECTION

The Contractor shall conduct daily site inspections, and more often if necessary, to verify that requirements are being met.

B. CODES AND STANDARDS

In addition to the standards described in this Section, comply with all pertinent requirements of governmental agencies having jurisdiction.

PART 2 PRODUCTS

2.1 CLEANING MATERIALS AND EQUIPMENT

Provide all required personnel, equipment, and materials needed to maintain the specified standard of cleanliness.

2.2 COMPATIBILITY

Use only the cleaning materials and equipment which are compatible with the surface being cleaned, as recommended by the manufacturer of the material or as approved by the Engineer.

PART 3 EXECUTION

3.1 PROGRESS CLEANING

A. GENERAL

Retain all stored materials and equipment in an orderly fashion allowing maximum access, not impeding drainage or traffic, and providing protection.

Do not allow the accumulation of scrap, debris, waste material, and other items not required for this work.

At least twice each month, and more often if necessary, completely remove all scrap, debris, and waste material from the project site.

Provide adequate storage for all materials awaiting removal from the project site, observing all requirements for fire protection and protection of the environment.

The Contractor shall remove debris and disinfect footwear prior to each entry into the reservoir.

B. SITE

Daily, and more often if necessary, inspect the site and pick up all scrap, debris, and waste material. Move these items into a place designated for their storage until disposal becomes available.

Weekly, and more often if necessary, inspect all arrangements of materials stored on the site, restack, arrange, or otherwise service all arrangements to meet the requirements above.

Maintain the site in a neat and orderly condition at all times so as to meet the approval of the Engineer.

C. STRUCTURES

Weekly, and more often if necessary, inspect the structures and pick up all scrap, debris and waste material. Move these items into a place designated for their storage until disposal becomes available.

Weekly, and more often if necessary, sweep clean all interior spaces. "Clean" shall be interpreted to mean free from dust and other materials that can be swept with a broom using reasonable diligence.

In preparing to install succeeding materials, clean the structures or pertinent portions thereof to the degree of cleanliness recommended by the manufacturer of the succeeding material. Use all equipment and materials required to achieve the required cleanliness.

D. STREETS

All paved and unpaved streets in the vicinity of the project shall be kept free of material tracked from the project site(s) or dropped from vehicles entering and leaving the site(s). The Contractor shall inspect roads in each active area daily, and all material deposited on the road from the Contractor's activities shall be removed prior to the end of the workday. This shall include sweeping, as required, to collect any mud, dirt and dust from the surface. All catch basins and culverts in the work area shall be inspected before completion and cleaned as directed by the Engineer.

3.2 FINAL CLEANING

A. DEFINITION

Except as otherwise specifically provided, "clean" shall be interpreted as meaning the level of cleanliness generally provided by commercial building maintenance equipment and materials.

B. GENERAL

Prior to final inspection, remove from the jobsite all tools, surplus materials, equipment, scrap, debris, and waste. Conduct final project cleaning as described below.

C. STRUCTURES

1. Exterior

Visually inspect all exterior surfaces and remove all traces of soil, waste, smudges, and other foreign matter. Remove all traces of splashed materials from adjacent surfaces. If necessary to achieve a uniform degree of exterior cleanliness, hose down the exterior of the structure. In the event of stubborn stains not removable with water, the Engineer may require light sandblasting or other cleaning at no additional cost to the Owner.

2. Interior

Visually inspect all interior surfaces and remove all traces of soil, waste, smudges, and other foreign matter. Remove all traces of splashed materials from adjacent surfaces. Remove all paint droppings, spots, stains, and dirt from finished surfaces. Use only appropriate cleaning materials and equipment.

3. Glass

Clean all glass inside and outside.

D. TIMING

Schedule final cleaning as approved by the Engineer to enable the Owner to accept a completely clean project, ready for occupancy.

***** END OF SECTION *****

SECTION 01900

SALVAGE AND DEMOLITION

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section covers the demolition of existing structures, piping, equipment, and sitework, and the salvage of existing materials and equipment as indicated on the Plans and as specified herein.

Demolition and salvage work shall create a minimum of interference with the operation of the facility.

The Plans show the major items to be demolished and removed. In addition to these items, the Contractor shall remove any other incidental above-grade items which are not to be used in the completed project.

1.2 SALVAGE

Salvageable equipment and material shall be removed with care so as not to impair future uses and shall include all equipment and material so indicated on the Plans. Salvaged equipment and material not reused or rejected by the Owner shall be cleaned and protected from corrosion and weather and delivered by the Contractor to the Owner.

Reuse of salvageable equipment and material by the Contractor will not be permitted except where specifically indicated on the Plans and in the Specifications or where approved by the Engineer and Owner. Salvageable equipment and materials rejected in writing by the Owner shall become the property of the Contractor and shall be disposed of away from the site without additional cost to the Owner.

1.3 DEMOLITION

The Contractor shall be responsible for compliance with current City, County, State, and Federal codes and regulations related to demolition.

The Contractor shall notify all affected utilities and comply with their respective requirements for abandonment of such utilities including power, telephone, natural gas, water, sanitary sewer, and storm sewer utilities.

The Contractor shall maintain access for the Owner's employees during the demolition period and provide barricades, fences, etc., as required for job site safety.

Demolition of concrete, masonry, roofing, asphalt, and other materials shall be done so as to avoid damage to existing structures intended to remain. Demolition or cutting required to add to or modify existing structures shall be done in such a manner that the appearance and utility of the existing structure is not impaired and so that a neat transition from new to old material may occur.

All piping and appurtenances located less than 4 feet below finished grade shall be removed and hauled to an approved disposal site. All piping and appurtenances located four feet or more below finished grade may be abandoned in place, unless shown otherwise on the Plans, as long as the Contractor fully seals all pipe and appurtenance openings with grout.

All waste materials from demolition or cutting shall become the property of the Contractor and shall be removed from the site and hauled to an approved waste disposal site, if declared surplus by the Owner. All materials and equipment, however, are property of the Owner unless declared surplus. Some equipment and materials scheduled for salvage and delivery to the Owner are noted on the Plans.

***** END OF SECTION *****

SECTION 01950

TRAFFIC CONTROL

PART 1 GENERAL

1.1 SCOPE

Temporary traffic control refers to the control of all types of traffic, including vehicles, bicyclists and pedestrians (including pedestrians with disabilities). The Contractor, utilizing contractor labor and contractor-provided equipment and materials (except when such labor, equipment, or materials are to be provided by the Owner as specifically identified in the Contract Documents), shall plan, manage, supervise and perform all temporary traffic control activities needed to support the work of the Contract.

The Contractor shall provide flaggers, signs, and other traffic control devices not otherwise specified as being furnished by the Owner. The Contractor shall erect and maintain all construction signs, warning signs, detour signs, and other traffic control devices, necessary to warn and protect the public at all times from injury or damage as a result of the Contractor's operations which may occur on highways, roads or streets. No work shall be done on or adjacent to the roadway until all necessary signs and traffic control devices are in place.

The traffic control resources and activities shall be used for the safety of the public, the Contractor's employees, the Owner's personnel and to facilitate the movement of the traveling public. Traffic control resources and activities may be used for the separation or merging of public and construction traffic when in accordance with a specific approved traffic control plan.

Upon failure of the Contractor to immediately provide flaggers; erect, maintain, and remove signs; or provide, erect, maintain, and remove other traffic control devices when ordered to do so by the Owner, the Owner may, without further notice to the Contractor or the Surety, perform any of the above and deduct all of the costs from the Contractor's payment.

The Contractor shall be responsible for providing adequate flaggers, signs and other traffic control devices for the protection of the work and the public at all times regardless of whether or not the flaggers, signs, and other traffic control devices are ordered by the Owner, furnished by the Owner, or paid for by the Owner.

There is no specific bid item for traffic control. Payment for any traffic control required by the Work shall be considered incidental to the other bid items.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
01160	Regulatory Requirements
01300	Submittals

1.3 REFERENCES

This Section references the latest revisions to the following documents:

Reference	Title
MUTCD	*Manual of Uniform Traffic Control Devices* *Washington State Modifications to the MUTCD* *Quality Guidelines for Temporary Traffic Control Devices*
ANSI 107	*High Visibility Garment Standard*

1.4 TRAFFIC CONTROL MANAGEMENT

A. GENERAL

It is the Contractor's responsibility to plan, conduct, and safely perform the work. The Contractor shall manage temporary traffic control with his or her own staff. Traffic control management responsibilities shall be formally assigned to one or more company supervisors who are actively involved in the planning and management of field Contract activities. The Contractor shall provide the Engineer with a copy of the formal assignment. The duties of traffic control management may not be subcontracted.

The Contractor shall designate an individual or individuals to perform the duties of the primary Traffic Control Supervisor (TCS). The designation shall also identify an alternate TCS who can assume the duties of the primary TCS in the event that person's inability to perform. The TCS shall be responsible for safe implementation of approved Traffic Control Plans provided by the Contractor.

The primary and alternate TCS shall be certified as worksite traffic control supervisors by one of the organizations listed herein. Possession of a current TCS card and flagging card by the primary and alternate TCS is mandatory. A traffic control management assignment and a TCS designation are required on all projects that will utilize traffic control.

The Contractor shall maintain 24-hour telephone numbers at which the Contractor's assigned traffic control management personnel and the TCS can be contacted and be available upon the Engineer's request at other than normal working hours. These persons shall have the resources, ability and authority to expeditiously correct any deficiency in the traffic control system.

B. The duties of the Contractor's traffic control management personnel shall include:

1. Overseeing and approving the actions of the Traffic Control Supervisor (TCS) to ensure that proper safety and traffic control measures are implemented and consistent with the specific requirements created by the Contractor's work zones and the Contract. Some form of oversight shall be in place and effective even when the traffic control management personnel are not present at the jobsite.

2. Providing the Contractor's designated TCS with approved Traffic Control Plans (TCPs), which are compatible with the work operations, and traffic control for which they will be implemented.

3. Discussing proposed traffic control measures and coordinating implementation of the Contractor-adopted traffic control plan(s) with the Owner.

4. Coordinating all traffic control operations, including those of subcontractors, suppliers, and any adjacent construction or maintenance operations.

5. Coordinating the project's activities (road closures and lane closures) with appropriate police, fire control agencies, city or county engineering, medical emergency agencies, school districts, and transit companies.

6. Overseeing all requirements of the Contract, which contribute to the convenience, safety, and orderly movement of vehicular and pedestrian traffic.

7. Having the latest adopted edition of the MUTCD including the Modifications to the MUTCD for Streets and Highways for the State of Washington and applicable standards and specifications available at all times on the Project.

8. Attending all Project meetings where traffic management is discussed.

9. Being present onsite a sufficient amount of time to adequately accomplish the above-listed duties.

C. TRAFFIC CONTROL SUPERVISOR

A Traffic Control Supervisor (TCS) shall be on the Project whenever traffic control labor is required or less frequently, as approved by the Owner.

The TCS shall personally perform all the duties of the TCS. The TCS's duties shall include:

1. Inspecting traffic control devices and nighttime lighting for proper location, installation, message, cleanliness, and effect on the traveling public. Traffic control devices shall be inspected each work shift except that Class A signs and nighttime lighting need to be checked only once a week. Traffic control devices left in place for 24 hours or more should also be inspected once during the nonworking hours when they are initially set up (during daylight or darkness, whichever is opposite of the working hours).

2. Ensuring that corrections are made if traffic control devices are not functioning as required. The TCS may make minor revisions to the approved traffic control plan to accommodate site conditions as long as the original intent of the traffic control plan is maintained and the revision has concurrence of the TCM and/or Owner.

3. Attending traffic control coordinating meetings or coordination activities as authorized by the Owner.

4. Ensuring that all needed traffic control devices are available and in good working condition prior to the need to install those devices.

5. Ensuring that all pedestrian routes or access points, existing or temporary, are kept clear and free of obstructions and that all temporary pedestrian routes or access points are detectable and accessible to persons with disabilities as provided for in the approved plans.

6. Having a current set of approved TCPs and applicable contract provisions as provided by the TCM and the latest adopted edition

of the MUTCD including the *Washington State Modifications to the MUTCD* and applicable standards and specifications.

1.5 TCM AND TCS QUALIFICATIONS

The TCM and TCS shall be certified by one of the following:

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

Evergreen Safety Council
12545 135th Avenue NE
Kirkland, Washington 98034-8709
1-800-521-0778
https://www.esc.org

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

Integrity Safety
13912 NE 20th Avenue
Vancouver, Washington 98686
(360) 574-6071
https://www.integritysafety.com

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

K&D Services Inc.
2719 Rockefeller Avenue
Everett, Washington 98201
(800) 343-4049
https://www.kndservices.net

Trafficorp
5077 N Bldg Center Drive
Coeur d'Alene, ID 83815
(208) 665-4683
https://trafficorp.com/contact-us

The TCS and all flaggers shall have a current flagging card from the State of Washington, Oregon, or Idaho.

1.6 SUBMITTALS

A. TRAFFIC CONTROL PLAN

The Contractor shall prepare and submit a Traffic Control Plan(s). All construction signs, flaggers, spotters, and other traffic control devices shall be shown on the traffic control plans. The Contractor shall designate and adopt in writing the specific traffic control plan or plans required for their method of performing the work. The traffic control plan(s) shall be in accordance with the established standards for plan development as shown in the MUTCD, Part VI.

The Traffic Control Plan shall meet the specific requirements of the franchise agreements and right-of-way permits required for this project. In addition, the Traffic Control Plan shall meet the following requirements:

- Maintain at least one-way traffic on state highways and through roads.
- Maintain local access and emergency access on local access roads.
- Driveways and alleys can be blocked with at least 1-week notification of all affected property owners. A second notification of property owners with affected driveways shall be made within 24 to 48 hours of commencement of the work.

The Contractor, at the end of each day, shall leave the Work area in such condition that it can be traveled without damage to the Work, without danger to traffic, and without one-way traffic control.

PART 2 PRODUCTS

2.1 TRAFFIC CONTROL DEVICES

Flagging, signs and all other traffic control devices furnished or provided shall conform to the standards established in the latest WSDOT adopted edition of the *Manual on Uniform Traffic Control Devices* (MUTCD) published by the U.S. Department of Transportation and the *Washington State Modifications to the MUTCD*. Requirements for pedestrian traffic control devices are addressed in the MUTCD.

2.2 CONSTRUCTION SIGNS

All construction signs required by the approved traffic control plan(s) as well as any other appropriate signs prescribed by the Owner shall be furnished by the Contractor. The Contractor shall provide the posts or supports and erect and maintain the signs in a clean, neat, and presentable condition until the necessity for them has ceased. All non-applicable signs shall be removed or completely covered with either metal or plywood during periods when they are not needed. When the need for any of these signs has ceased, the Contractor, upon approval of the Owner, shall take down these signs, post, or supports.

Construction signs will be divided into two classes. Class A construction signs are those signs that remain in service throughout the construction or during a major phase of the work. They are mounted on posts, existing fixed structures, or substantial supports of a semi-permanent nature. Sign and support installation for Class A signs shall be in accordance with the WSDOT Standard Plans. Class A signs shall be designated as such on the Traffic Control Plan. Class B Construction signs are those signs that are placed and removed daily, or are used for short durations which may extend for 1 to 3 days. They are mounted on portable or temporary mountings.

Tripod-mounted signs in place more than 3 days in any one location, unless approved by the Engineer, shall be required to be post-mounted and shall be classified as Class A construction signs. Where it is necessary to add weight to the signs for stability, sandbags or other similar ballast may be used but the top of the ballast shall not be more than 4 inches above the road surface, and shall not interfere with the breakaway features of the device. The Contractor shall follow the manufacturer's recommendations for sign ballasting.

PART 3 EXECUTION

3.1 GENERAL

The Contractor shall provide all labor and equipment to execute the Traffic Control Plan. It is the Contractor's responsibility to plan, conduct, and safely perform the work.

The TCS shall be responsible for safe implementation of approved Traffic Control Plans provided by the TCM.

3.2 TRAFFIC CONTROL LABOR

The Contractor shall furnish all personnel for flagging, spotting, for the execution of all procedures related to temporary traffic control and for setup, maintenance and removal of all temporary traffic control devices and construction signs necessary to control traffic during construction operations.

Vests and other high-visibility apparel shall be in conformance with ANSI 107.

Flaggers and spotters shall be posted where shown on the approved Traffic Control Plan. Flaggers and spotters shall possess a current flagging card issued by the State of Washington, Oregon, or Idaho. The flagging card shall be immediately available and shown upon request by the Owner.

During hours of darkness, flagging stations shall be illuminated in a manner that insures that flaggers can easily be seen but that does not cause glare to the traveling public. Flagger station illumination shall meet the requirements of the MUTCD.

Flaggers shall be equipped with portable two-way radios, with a range suitable for the project. The radios shall be capable of having direct contact wit project management (foreman, superintendents, etc.).

The Contractor shall furnish flagger Stop/Slow paddles conforming to the requirements of the MUTCD, except the minimum width shall be 24 inches.

***** END OF SECTION *****

DIVISION 2

SITEWORK

SECTION 02050

LOCATE EXISTING UTILITIES

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section includes the anticipated conflicts, which may exist with existing utilities. A reasonable attempt has been made to locate the existing utilities; however, the exact location, and/or depth are unknown in most instances. Locations and dimensions shown in the Plans for existing facilities are in accordance with available information obtained without uncovering, measuring, or other verification. It shall be the responsibility of the Contractor to locate existing utilities and their depth.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
01200	Measurement and Payment
02250	Temporary Shoring and Bracing
02300	Earthwork

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 GENERAL

The Contractor shall determine the difficulties to be encountered in constructing the Project and their locate effort based upon the information provided on the Plans, field investigation, and the Contractor's contacts with the existing utility companies. The Contractor shall determine the extent of exploration required to first prevent damage to those existing utilities, and secondly to determine if the proposed improvements are in conflict with existing utilities.

The Contractor shall locate existing utilities sufficiently ahead of construction so that the Engineer can modify the alignment, or grade prior to construction. Where the alignment of the proposed utility cannot be adjusted to miss the existing utility without installation of additional pipe or fittings, the Contractor may be entitled to additional compensation to reroute the proposed utility.

The Contractor shall call the Utility Location Request Center (One Call Center), for field location, not less than 2 nor more than 10 business days before the scheduled date for commencement of excavation that may affect underground utility facilities, unless otherwise agreed upon by the parties involved. A business day is defined as any day other than Saturday, Sunday, or a legal local, State, or Federal holiday. The telephone number for the One Call Center for this project is (800) 424-5555 (or 811). If no one-number locator service is available, notice shall be provided individually to those owners known to or suspected of having underground facilities within the area of the proposed excavation.

The Contractor is alerted to the existence of Chapter 19.122 RCW, a law relating to underground utilities. Any cost to the Contractor incurred as a result of this law shall be at the Contractor's expense.

No excavation shall begin until all know facilities in the vicinity of the excavation area have been located and marked.

***** END OF SECTION *****

SECTION 02240

DEWATERING

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section includes dewatering excavations of any kind and location, including but not limited to groundwater, surface water, and precipitation, until backfilling has been completed to finished grade.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
01160	Regulatory Requirements
01200	Measurement and Payment
01300	Submittals
02300	Earthwork
02370	Erosion Control

1.3 SUBMITTALS

Prior to the start of construction, the Contractor shall submit a dewatering plan in accordance with Section 01300 containing both a graphical and narrative presentation identifying proposed methods, equipment sizes and contingency plans should dewatering cause settlement of any adjacent facilities. The dewatering plan shall show specific locations, in plan and section, where dewatering is expected as well as a general discussion of methods to be employed should water be encountered in other locations. The plan shall detail the depth, diameter and anticipated flow for dewatering wells, well points or sumps.

Acceptance by the Owner of the method, installation, and operation and maintenance details submitted by the Contractor shall not in any way be considered to relieve the Contractor from full responsibility for errors therein or from the entire responsibility for complete and adequate design and performance of the system in controlling the water level in the excavated areas, and for control of the hydrostatic pressures to the depths specified herein. The Contractor shall be solely responsible for the proper design, installation, proper operation, maintenance, and any failure of any component of the dewatering system.

1.4 REFERENCES

"Rossum J.R., 1954, *Control of Sand in Water Systems*, Journal American Water Works Association, Volume 46, pp. 123-132"

1.5 QUALITY CONTROL

It shall be the sole responsibility of the Contractor to control the rate and effect of the dewatering efforts to avoid all objectionable settlement and subsidence. The Contractor shall comply with local codes and ordinances of governing authorities with regard to disposal of water pumped from dewatering operations.

Proposed discharge points shall be approved by the Owner prior to implementation of dewatering. The Contractor shall be responsible for taking all reasonable precautions necessary to ensure continuous, successful operation of the system.

PART 2 PRODUCTS

The Contractor shall have sufficient pumping equipment and/or other machinery available onsite before operations begin to assure that the operation of the dewatering system can be maintained. This shall include providing backup pumps of similar capacity and a standby generator of the capacity required to continuously operate the Contractor's dewatering system.

PART 3 EXECUTION

3.1 INSTALLATION AND APPLICATION

During excavation, the installation of piping, conduits and structures and during the placing of backfill, excavations shall be kept free of water, subsurface or otherwise. The Contractor shall furnish all equipment necessary to dewater the excavations and shall dispose of the water so as not to cause a nuisance or menace to the public. The dewatering system shall be installed and operated by the Contractor so that the groundwater level outside the excavation is not reduced to the extent that would damage or endanger adjacent structures or property. The release of groundwater to its static levels shall be performed so as to maintain the undisturbed state of the foundation soils, prevent disturbance of backfill and prevent movement of all structures and pipelines.

Design implementation and maintenance of any dewatering system shall be the responsibility of the Contractor.

The Contractor shall construct all dewatering wells in accordance with WAC 173-160. The dewatering system shall be sufficient to maintain the groundwater level at an elevation to protect the surface of the trench bottoms, the base of the bedding course or other foundation, and shall be accomplished prior to pipe laying and jointing or placement of reinforcing steel for concrete.

If well points or wells are used, they shall be adequately spaced to provide the necessary dewatering. The dewatering operation, however accomplished, shall be carried out so that it does not destroy or weaken the strength of the soil under or alongside the excavations.

The Contractor shall design filters and screen slot sizes for all sumps, wells and well points which prevents the movement of fines during pumping. The Contractor shall develop the wells such that they produce no more than 10-ppm silica as measured with a Rossum Sand Tester (Rossum, 1954) or equivalent.

3.2 MONITORING

The Contractor shall install water level observation wells in dewatered areas sufficient to determine whether groundwater levels are maintained as per Part 3.1 of this Section.

3.3 FIELD QUALITY CONTROL

A continual check by the Contractor shall be maintained to ensure that the subsurface soil is not being removed by the dewatering operation. The Contractor shall test all dewatering discharge using a Rossum Sand Tester or equivalent to determine the silica content of the discharge. The Contractor shall notify the Owner at least 24 hours prior to testing. Where critical structures or facilities exist immediately adjacent to areas of proposed dewatering, reference points shall be established and observed at frequent intervals to detect any settlement that could develop.

Should settlement be observed, the Contractor shall cease dewatering operations and implement contingency plans as outlined in the Contractor's approved dewatering plan. The responsibility for conducting the dewatering operation in a manner that protects adjacent structures and facilities rests solely on the Contractor. The cost of repairing any damage to adjacent structures and restoration of facilities shall be the responsibility of the Contractor. Permanent piping systems, existing or new, shall not be incorporated into the Contractor's dewatering system.

***** END OF SECTION *****

SECTION 02250

TEMPORARY SHORING AND BRACING

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section includes the temporary shoring and bracing for excavations including the trench excavation safety systems as shown on the Plans and as specified herein.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
01200	Measurement and Payment
01300	Submittals
02300	Earthwork
02511	Connection to Existing System
15050	Piping System

1.3 SUBSURFACE CONDITIONS

No test borings were drilled as part of the design process for this project.

1.4 WORK INCLUDED

The extent of temporary shoring and bracing work includes, but is not limited to:

A. Temporary shoring and bracing necessary to protect the following against loss of ground or caving embankments: existing structures, buildings, roads, walkways, utilities, electrical transmission towers and support wiring, other facilities and improvements where required to comply with codes and authorities having jurisdiction.

B. Trench excavation safety systems, pursuant to RCW Chapter 49.17 and WAC 296-155-655.

C. Maintenance of shoring and bracing.

1.5 QUALITY ASSURANCE

A. SHORING CONSULTANT

The Contractor shall engage the services of a qualified geotechnical engineer and qualified structural engineer registered in the State of Washington to design temporary shoring and bracing when required by applicable regulations.

B. SHORING DESIGN

The Contractor shall provide layout and design drawings and specifications for shoring and bracing when a trench box is inadequate for the purpose or will not be used and trench depth exceeds 4 feet and back sloping will not be used. Temporary shoring and bracing system design and calculations shall be prepared, stamped, and signed by a Professional Engineer registered in the State of Washington.

C. REGULATIONS

The Contractor shall design sheeting, shoring and bracing in accordance with the Washington State Safety Code and any local codes and ordinances of governing authorities having jurisdiction. Pile driving will not be allowed on the site; drilling shall be required for all required piles.

1.6 SUBMITTALS

The Contractor shall submit shoring and bracing layout and design drawings, calculations and other backup data to the Owner for review in accordance with Section 01300 prior to the start of construction.

1.7 PROJECT CONDITIONS

A. SITE SURVEY

The background survey information provided on the Plans is shown for clarity only. The Contractor shall determine, before commencing work, the exact location of all existing features that may be disrupted by new construction, including existing underground utilities. The Contractor shall be fully responsible for any and all damages, which might be caused by the Contractor's failure to exactly locate and/or preserve existing site features. Prior to commencing work, the Contractor shall check and verify governing dimensions and elevations.

The Contractor shall survey adjacent structures and facilities, establishing exact elevations at fixed points to act as temporary bench marks to monitor potential settlement from the contractor's ongoing operations. Clearly identify temporary bench marks and record existing elevations from the control points shown on the Plans.

During excavation, the Contractor shall resurvey bench marks weekly. The Contractor shall maintain and make available at the job site an accurate log of surveyed elevations for comparison with original elevations, and promptly notify the Owner if changes in elevations occur or if cracks, sags or other damage is evident.

1.8 EXISTING UTILITIES

The Contractor shall protect existing active sewer, water, gas, electrical, and other utility services and structures that may be present. This shall also include all pipelines, services, and structures that are the property of the Owner.

PART 2 PRODUCTS

The Contractor shall provide suitable shoring and bracing materials, which shall support loads imposed. Materials for shoring systems need not be new, but shall be in serviceable conditions.

PART 3 EXECUTION

3.1 VERIFICATION OF CONDITIONS

The Contractor shall notify the Owner immediately if, during construction, subsurface conditions are different from those encountered in the exploratory holes.

3.2 INSTALLATION AND APPLICATION

The Contractor shall provide shoring systems adequately anchored and braced to resist earth and hydrostatic pressures at locations as needed to support excavations during construction. The Contractor shall locate required bracing to clear all permanent work. Bracing which must be relocated shall be installed prior to the removal of original bracing. The Contractor shall not place bracing where it will be cast into or included in permanent concrete work, except as otherwise acceptable to the Owner. The Contractor shall maintain bracing until structural elements are rebraced by other bracing or until permanent construction is able to withstand lateral earth and hydrostatic pressures.

3.3 REMOVAL

The Contractor shall remove shoring and bracing in stages to avoid disturbances to adjacent and underlying soils and damage to structures, pavements, facilities and utilities. The Contractor shall repair or replace, as acceptable to the Owner, adjacent work damaged or displaced through the installation or removal of shoring and bracing work.

3.4 EXCAVATION SAFETY SYSTEMS

All work shall be carried out with due regard for public safety. Open trenches shall have proper barricades and at night they shall be distinctly indicated by adequately placed lights, as provided for elsewhere in the Specifications.

The Contractor is reminded that the Owner has not so delegated, and the Owner's Representative does not purport to be a trench or excavation system safety expert, is not so engaged in that capacity under this Contract, and has neither the authority nor the responsibility to enforce construction, safety laws, rules, regulations, or procedures or to order the stoppage of work for claimed violations of trench or excavation safety.

The furnishing by the Owner of resident representation and inspection personnel shall not make the Owner responsible for the enforcement of such laws, rules, regulations, or procedures, nor shall such make the Owner responsible for construction means, methods, techniques, sequences, procedures, or for the Contractor's failure to properly perform the work necessary for proper trench and excavation safety.

***** END OF SECTION *****

SECTION 02300

EARTHWORK

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section includes the earthwork, including trench excavation and backfill for piping, excavation and backfill for structures, and finish grading.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
01200	Measurement and Payment
01300	Submittals
01500	Temporary Facilities
02240	Dewatering
02250	Temporary Shoring and Bracing
02305	Wet Weather Earthwork
02370	Erosion Control
02510	Disinfection
02700	Gravel Materials

PART 2 PRODUCTS

2.1 GRAVEL MATERIALS

All gravel materials shall conform to Section 02700.

PART 3 EXECUTION

3.1 PREPARATION

Excavation may commence once all erosion control measures are in place in accordance with the Plans and Section 02370 and to the satisfaction of the Owner.

3.2 GENERAL REQUIREMENTS

Excavation, compaction and backfill for structures, pipelines and the final site contours shall be formed by either excavating or compacting fill, as required, to provide the cross-sections as shown on the Plans.

All excavation performed on this Project shall be considered unclassified. Excavation shall consist of the removal of any and all material encountered, including debris, rubble, concrete, metal, topsoil, cutting and removal of existing surfacing, tree stumps, trees, logs, abandoned rail ties, abandoned piping, piling, riprap, etc.

Excavations shall be kept free of water, both surface water and groundwater, during the excavation, installation of pipelines and structures, and the placement of backfill. For additional requirements see Section 02240.

The Contractor's attention is also called to the depth of the structures and piping; for this reason, special shoring and bracing may be required. All shoring and bracing or sheeting required to perform and protect the excavation and to safeguard the employees, shall be furnished by the Contractor. For additional requirements see Section 02250.

No timber bracing, lagging, sheathing or other lumber shall be left in any excavation except with permission of the Engineer and in the event such permission is granted, no separate payment shall be allowed for burying such material.

All stockpiles shall be covered with plastic and no stockpile shall be higher than 6 feet above existing grade.

3.3 EXCAVATION AND BACKFILL FOR TRENCHES

Excavation and backfill for trenches shall be in conformance with Sections 7-08 and 7-09 of the WSDOT Standard Specifications, and as further described herein. The following pipe materials shall be considered flexible:

- PVC
- Polyethylene Tubing
- FRP
- HDPE
- Polyethylene
- Corrugated Polyethylene

All other pipe materials shall be considered rigid.

Upon completion of work each day, all pipeline open trenches shall be completely backfilled, leveled, and temporarily patched or graveled, as herein specified. Under certain conditions, the trench may be left open at the last length of pipe laid during the day to avoid re-excavation the following morning, provided that the opening is adequately plated or covered for vehicle traffic. Special attention shall

be given to barricading to keep vehicular traffic away from newly-backfilled trench areas until restored for traffic.

The Engineer reserves the right to restrict the Contractor in the amount of trench for pipeline that can be opened during the working day. Should the Contractor, in the Engineer's opinion, fail to diligently pursue backfilling, an allowable limit of open trench shall be 100 lineal feet and shall be strictly enforced.

The width of the trench at or below a point 12 inches above the top of the outside diameter of the pipe shall be carefully controlled and maintained to ensure the strength of the pipe and prevent pipe failures. Backfilling shall proceed as follows:

A. SUBGRADE PREPARATION

The subgrade for piping is defined as the elevation of the bottom of the pipe bedding material as shown on the Plans.

In the event unsuitable material is encountered below the subgrade shown on the Plans and described herein, the Contractor, as required by the Engineer, shall over-excavate until a suitable foundation is reached. If over-excavation of unsuitable material is required by the Engineer, it will be paid for under the bid item entitled "MINOR CHANGES," as found in the Proposal. The Contractor shall then replace the material with compacted foundation gravel, as specified in Section 02700.

Quantities, if any, shall be calculated by neat line measurement to the depth agreed to in the field by the Engineer.

B. BEDDING FOR RIGID PIPE

Above the foundation material, if any, the bedding material shall be Gravel Backfill for Pipe Bedding, as specified in Section 02700. This material shall be placed in lifts of approximately 8 inches up to a point 12 inches above the pipe. This material shall be hand shoveled in place and carefully worked under and around the pipe.

C. BEDDING FOR FLEXIBLE PIPE

Above the foundation material, if any, Gravel Backfill for Pipe Bedding, as specified in Section 02700, shall be placed in lifts of approximately 8 inches up to a point 12 inches above the pipe. This material shall be hand shoveled in place and carefully worked under and around the pipe.

D. BACKFILL FOR TRENCHES

Partial backfill to protect the pipe will be permitted immediately after the pipe has been properly laid in accordance with the Plans and these Specifications. Complete backfilling of trenches will not be permitted until the section of pipe installed has been inspected by the Engineer.

From the point 6 inches above the top of the pipe barrel, the backfill material to be used in the trench section shall be suitable native material or Crushed Surfacing Top Course, as specified in Section 02700, except where required or shown on the Plans to use other material. The Contractor shall place backfill in horizontal lifts not to exceed 8 inches in thickness. All backfill shall be free of large rocks, organic matter, stumps, trees, pieces of pavement, broken concrete and other deleterious substances.

The Contractor shall remedy, at their expense, any defects that appear in the backfill prior to final acceptance of the work. Cleanup operations shall progress immediately behind backfilling to accommodate the return to normal use of the trench area.

During placement of the initial lifts, the backfill material shall not be bulldozed into the trench or dropped directly over the pipe with less than 3 feet of backfill material above the top of the pipe.

3.4 ROCK EXCAVATION

It is not anticipated that solid rock will be encountered. Should such material be encountered, however, it will be paid for change order as directed by the Engineer and approved by the Owner. Boulders or broken rock less than 2 cubic yards in volume as measured in the field by the Engineer, will not be classified as rock, nor will so-called “hard-pan” or cemented gravel, even though it may be advantageous to use explosives in its removal if blasting were allowed. For the purpose of this contract, rock excavation shall be defined as mineral matter in place and of such hardness and texture that, when it is encountered, cannot be loosened by three passes of a ripper tooth mounted on the larger of a tracked backhoe of at least 25,000 pounds operating weight and 75 horsepower or the largest backhoe being utilized on the job by the Contractor. Where rocks occur as boulders they shall be considered incidental to excavation if they are smaller than the larger of: (1) 2 cubic yards in volume, or (2) the volume that can be readily handled by the largest backhoe being utilized on the job by the Contractor.

Where removal of a boulder results in a void below the desired elevation of the intended excavation, backfilling of the void shall be handled in the same manner as the replacement of unsuitable excavated material.

3.5 REUSE AND DISPOSAL OF EXCAVATED MATERIAL

Excavated materials shall be properly protected and reused where possible. Excavated materials not used for fill shall be hauled to an approved waste site(s), as selected by the Contractor. The Contractor shall submit a list of approved waste haul site(s) to the Owner prior to the commencement of hauling of waste materials. Any permits required for waste haul and disposal shall be the responsibility of the Contractor.

3.6 FINAL SITE GRADING

The site shall be graded consistent with the elevations shown on the Plans. The slopes between elevations shall be uniform or as shown on the Plans. Excavations and backfill shall be to the elevations required for the placement of all surface restorations, such as asphalt, concrete, gravel surfacing, or landscaping. All areas shall be graded to provide proper drainage. The final ground surface shall be smooth, raked free of debris and stones, and prepared for restoration as specified in Section 02950.

3.7 TRENCH COMPACTION

Trench backfill materials shall be moisture conditions to within three percent of optimum moisture content. Water settlement is not allowed for compaction.

Pipe bedding materials, for both rigid and flexible pipes, shall be compacted to at least 95 percent of the maximum dry density, using the Modified Proctor, per ASTM D1557.

Compaction of the backfill above the bedding material in all trenches in non-structural and non-paved areas shall be performed by using mechanical equipment to at least 95 percent of the maximum dry density, using the Modified Proctor, per ASTM D1557.

Compaction of the backfill above the bedding material in all trenches in structural or paved areas shall be performed by using mechanical equipment to at least 95 percent of the maximum dry density, using the Standard Proctor, per ASTM D 698 Tests.

***** END OF SECTION *****

SECTION 02305

WET WEATHER EARTHWORK

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section includes the procedures to be followed if earthwork is to be accomplished in wet weather or in wet conditions where control of soil moisture is difficult.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
01200	Measurement and Payment
01300	Submittals
02300	Earthwork
02370	Erosion Control
02700	Gravel Materials

PART 2 PRODUCTS

The size or type of construction equipment shall be selected as required to prevent soil disturbance. In some instances, it may be necessary to limit equipment size or to excavate soils with a backhoe, Gradall, or equivalent type of equipment to minimize subgrade disturbance caused by construction traffic.

Material used as structural fill during wet weather earthwork shall generally consist of clean granular material containing less than 5 percent fines (material passing the U.S. Standard No. 200 sieve), based on wet sieving the fraction passing the 3/4-inch sieve. The fines shall be non-plastic.

PART 3 EXECUTION

3.1 WET WEATHER EXCAVATION AND FILL PLACEMENT QUALITY CONTROL

Excavation and placement of fill or backfill material will be observed on a full-time basis by the Owner, to determine that all work is being accomplished in accordance with these Specifications.

3.2 WET WEATHER EARTHWORK PROTECTION

The ground surface shall be sloped away from construction areas to promote the rapid runoff of precipitation and prevent ponding of water.

Earthwork shall be accomplished in small sections to minimize exposure to wet weather. Excavation or the removal of unsuitable soil shall be followed immediately by the placement and compaction of a suitable thickness (generally 8 inches or more if approved by the Owner) of clean foundation gravel.

No soil shall be left uncompacted and exposed to moisture. A smooth drum vibratory roller, or equivalent, shall be used to seal the ground surface after placement of fill or backfill materials.

All wet weather work shall meet local, state and federal codes as specified herein and as indicated on the Plans.

***** END OF SECTION *****

SECTION 02370

EROSION CONTROL

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section includes the temporary erosion and sedimentation control (TESC) in and around the site caused by the actions of the Contractor as shown on the Plans and as specified herein.

Work under this Section shall be directed towards site areas disturbed during construction as well as all off-site storage and parking areas maintained by the Contractor.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
01160	Regulatory Requirements
01200	Measurement and Payment
01300	Submittals
02240	Dewatering
02300	Earthwork

1.3 SUBMITTALS

A. Stormwater Pollution Prevention Plan (SWPPP)

A SWPPP shall be prepared by the CESCL for the project and submittal in accordance with Section 01300 and paragraph 1.5 of this specification section. The SWPPP shall be submitted to the Owner for approval at the preconstruction conference.

1.4 CERTIFIED EROSION AND SEDIMENT CONTROL LEAD (CESCL)

The Contractor shall designate a Certified Erosion and Sediment Control Lead (CESCL) for this project. The CESCL shall have, for the life of this Contract, a current Certificate of Training in Construction Site Erosion and Spill Control signed by the WSDOT Water Quality Program Manager.

Duties of the CESCL shall include, but are not limited to:

A. Inspecting temporary erosion and spill control Best Management Practice (BMPs) for proper location, installation, maintenance, and repair.

Inspections shall be made as noted on the Plans and after each significant precipitation event, including those that occur during weekends and after working hours. A Temporary Erosion and Spill Control Inspection Report shall be prepared for each inspection and shall be included in the Temporary Erosion and Spill Control file. The inspection report shall include, but not be limited to:

1. When BMPs are installed, removed or changed;

2. Repairs needed or made;

3. Turbidity monitoring results;

4. Observations of BMP effectiveness and proper placement;

5. Recommendations for improving performance of BMPs.

B. Prepare and maintain a Temporary Erosion and Spill Control file on site that includes but is not limited to:

1. Temporary Erosion and Spill Control Inspection Reports;

2. Contractor's Stormwater Pollution Prevention Plan (SWPPP);

3. Spill Prevention, Control, and Countermeasures (SPCC) Plan;

4. All project permits, including but not limited to grading permits and Hydraulics Project Approval;

5. Manufacturer instructions for all products used for TESC BMPs;

6. Washington State Department of Ecology's Stormwater Management Manual for Eastern Washington, Chapter 7.

1.5 STORMWATER POLLUTION PREVENTION PLAN

The CESCL Contractor shall be responsible for preparing a Stormwater Pollution Prevention Plan (SWPPP). The intent of the SWPPP is to reflect the Contractor's operations by supplementing the TESC Drawings, details, and notes shown on the Plans to provide comprehensive pollution control at the construction site, staging areas, stockpiles, and borrow sites. The SWPPP shall be prepared by the CESCL for the project and submittal in accordance with Section 01300. The SWPPP shall be submitted to the Owner for approval at the preconstruction conference. No work shall begin until the Contractor's SWPPP, as approved by the Owner, is implemented. The SWPPP shall address, at least, the following items:

- Identification of construction haul routes and location of BMPs (e.g., stabilized construction entrance, silt fences, storm drain inlet protection).

- Waste disposal methods and locations.

- Detailed construction sequence and schedule, including identifying dates scheduled for BMP installation, removal, clearing, grading, seeding, and landscaping.

- Details for any temporary flow diversions, dewatering systems, and BMPs (in accordance with the current edition of the Washington State Department of Ecology's Stormwater Management Manual for Eastern Washington) proposed by the Contractor.

- Calculations for temporary sedimentation ponds, if used.

- A list of products to be used, including Material Safety Data Sheets.

- Identification of stockpile and staging areas, and BMPs to be implemented at these locations.

The SWPPP shall be prepared in accordance with details shown on the Plans, these Specifications, and Chapter 4, Volume II Chapter 7 – BMPs from the current edition of the Washington State Department of Ecology's Stormwater Management Manual for Eastern Washington, which are hereby referenced and made a part of the Contract Documents. Only those sections of the Stormwater Management Manual for Eastern Washington that address preparation, implementation, and maintenance of permanent and temporary erosion and sedimentation control BMPs are applicable.

The SWPPP shall include best management practices to control windblown dust.

PART 2 PRODUCTS

2.1 SILT FENCES

Silt fences and the fabric shall conform meet the requirements of Section 9-33 Construction Geosynthetic of the latest WSDOT Standard Specifications.

2.2 STORM DRAIN INLET (CATCH BASIN) PROTECTION

Storm drain inlet protection shall be with a "silt sack," as manufactured by ACF Environmental or equal.

PART 3 EXECUTION

3.1 PREPARATION

Site preparation work shall be performed only during periods when beneficial results can be obtained. When drought, excessive moisture or other unsatisfactory conditions prevail, the work shall be stopped.

3.2 BEST MANAGEMENT PRACTICES (BMPS)

Silt fences shall be constructed to control erosion and migration of soils disturbed during construction. The fences and dams shall provide temporary protection and shall be removed only upon approval of the Owner.

All areas or drainage ways downstream of the construction site shall have Best Management Practices (BMPs) installed prior to the beginning of any clearing activities. Runoff from cleared or disturbed area shall be directed through the BMPs. Disturbed ground shall be stabilized at the end of each work day. Permanent soil stabilization and erosion and sedimentation control shall be implemented upon reaching finish grade. Slope protection shall be immediately implemented upon any soils showing signs of erosion. This shall be done in a manner approved by the Owner.

All BMPs shall be inspected, maintained and kept in a condition sufficient to provide effective erosion and sedimentation control at all times. The site shall be inspected to ensure the BMPs are properly located, constructed and operating as designed during the first storm. Any necessary adjustments or repairs shall be made immediately and be approved by the Owner. The BMPs shall be inspected thereafter as noted on the Plans and after all significant storm events. Turbidity monitoring will be held on a weekly basis at a minimum, or more frequently if necessary as determined by the CESCL.

All BMPs shall be removed no later than 30 consecutive calendar days after final site stabilization has been achieved as determined by the Owner. BMPs such as storm drain inlet protection, straw bales, silt fences and supports and plastic coverings shall be removed and properly disposed of offsite by the Contractor. Areas disturbed by removal of these BMPs shall be immediately stabilized in a manner approved by the Owner.

***** END OF SECTION *****

SECTION 02510

DISINFECTION

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section includes disinfection of potable water piping, distribution mains, and reservoirs; testing; and reporting results.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
Division 15	Mechanical

1.3 REFERENCES

A. AWWA B300 - Standard for Hypochlorites.

B. AWWA B301 - Standard for Liquid Chlorine.

C. AWWA B302 - Standard for Ammonium Sulfate.

D. AWWA B303 - Standard for Sodium Chlorite.

E. AWWA C651 - Standards for Disinfecting Water Mains.

F. AWWA C652 – Standard for Disinfection of Water Storage Facilities.

1.4 SUBMITTALS

A. DISINFECTION PLAN

Provide a Disinfection and Testing Plan that includes, but is not limited to, written procedures for disinfection of the water mains and reservoir and collecting of the samples to be tested by an independent laboratory. The Disinfection and Testing Plan shall include a plan for disposal of test water. The Disinfection and Testing Plan shall be submitted at least two weeks prior to the commencement of the activities described therein.

B. TEST REPORTS

Indicate results comparative to specified requirements.

1.5 PROJECT RECORD DOCUMENTS

A. Submit under provisions of Section 01300.

B. DISINFECTION REPORT RECORD

1. Type and form of disinfectant used.

2. Date and time of disinfectant injection start and time of completion.

3. Test locations.

4. Initial and 24-hour disinfectant residuals (quantity in treated water) in ppm for each outlet tested.

5. Date and time of flushing start and completion.

6. Disinfectant residual after flushing in ppm for each outlet tested.

C. BACTERIOLOGICAL REPORT RECORD

1. Date issued, project name, and testing laboratory name, address, and telephone number.

2. Time and date of water sample collection.

3. Name of person collecting samples.

4. Test locations.

5. Initial and 24-hour disinfectant residuals in ppm for each outlet tested.

6. Coliform bacteria test results for each outlet tested.

7. Certification that water conforms, or fails to conform, to bacterial standards of the Department of Health.

8. Bacteriologist’s signature and authority.

1.6 QUALITY ASSURANCE

Perform Work in accordance with AWWA C651 and C652.

1.7 REGULATORY REQUIREMENTS

A. Conform to Department of Health code or regulation for performing the work of this Section.

B. Provide certificate of compliance from Department of Health indicating approval of water system.

PART 2 PRODUCTS

2.1 DISINFECTION CHEMICALS

Chemicals: AWWA B300, Hypochlorite, AWWA B301, Liquid Chlorine, AWWA B302, Ammonium Sulfate, and AWWA B303, Sodium Chlorite.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that piping system has been cleaned, inspected, and pressure tested.

B. Perform scheduling and disinfection activity prior to startup, testing, adjusting and balancing, demonstration procedures, including coordination with related systems.

3.2 WATER PIPE DISINFECTION

A. Provide and attach required equipment to perform the work of this Section.

B. Inject treatment disinfectant into piping system.

C. Maintain disinfectant in system for 24 hours.

D. Replace permanent system devices removed for disinfection.

E. Water for disinfection must be obtained by the Contractor by arrangement with the Owner. The following describe specific procedures to be used by the Contractor in maintaining a satisfactory environment for prevention of

contamination of the proposed water system installation, the cleanliness of the pipe and fittings and the actual method of disinfection.

F. When the line is completed and ready to disinfect, water shall be allowed to flow in slowly, until it appears at the far end of the line so as not to displace the disinfecting agent. The system shall then be allowed to stand for at least 24 hours. The line shall then be flushed through the fire hydrants until a test shows the chlorine residual no longer exceeds the distribution system residual.

G. In all instances, the Contractor shall utilize a state approved double check valve type backflow prevention device to protect the potable water supply while filling, flushing and disinfecting the particular water main.

H. Where connections are made to existing facilities and it is impractical to use the methods described herein to disinfect the section between the existing water main and the point of isolation of the new water main (valve or temporarily plugged line) or where pipes and fittings require immediate use, cleaning and disinfecting shall be directed by the Owner.

I. The Contractor is herein advised that prior to making any restorations or permanent connections to the existing water mains, that the Contractor shall first demonstrate to the Owner, that the new water main has adequately passed a pressure test, been adequately flushed, and finally passed the required bacteriological test.

J. In all disinfection processes, the Contractor shall take particular care in flushing and wasting the chlorinated water from the mains to assure that the flushed and chlorinated water does no physical or environmental damage to property, streams, storm sewers or any waterways. Flushing water must be disposed of in accordance with Washington State Department of Ecology Standards. The Contractor shall chemically or otherwise treat the chlorinated water to prevent damage to the effected environment, particularly aquatic and fish life of receiving streams. The method and the time of flushing is to be approved by the Owner.

K. Before placing the lines in service, satisfactory results must be obtained on samples collected from representative points in the new system and submitted to a State DOH approved laboratory. All new and modified potable water pipe and appurtenances shall be sterilized and a satisfactory bacteriological report obtained in accordance with Section 7-09.3(24) of the WSDOT Standard Specifications, latest edition. All new and modified potable water pipe and appurtenances shall be sterilized and a satisfactory bacteriological report obtained in accordance with Section 7-09.3(24) of

the WSDOT Standard Specifications, latest edition. The Owner shall collect all samples for the bacteriological tests. However, the Contractor shall notify the Owner for collection of samples two days in advance, and schedule on days wherein samples can be conveniently processed by State DOH approved laboratory. If any of the pipeline materials are replaced thereafter, then that section shall again be disinfected and tested for bacteriological count and pressure tested.

If disinfection of mains by the above methods, prove unsatisfactory and the lab report indicates any type of bacteria count, then the Owner may direct the Contractor to use other methods in accordance with AWWA C651, and as approved by the Association, until a satisfactory report is obtained. No additional compensation will be made to the Contractor for any work necessary to achieve a satisfactory bacteriological test result. These repeat procedures shall follow Section 7-09.3(24) of the WSDOT Standard Specifications, as appropriate and as necessary for the addition of chlorine. The cost of disposal of water used for disinfection shall be borne by the Contractor.

Only the Owner's staff will be allowed to operate existing and new tie-in valves. The Contractor's personnel are expressly forbidden to operate any valve on any section of line which is part of the Owner's potable water system.

L. METHOD 1

1. Calcium or Sodium Hypochlorite or Chlorinated Lime in Water

A mixture of either calcium or sodium hypochlorite or chlorinated lime of known chlorine content and water may be used. (Typical commercial products of this type are Perchloron (HDH), Multichlor, Purex, etc.) The minimum amount of calcium hypochlorite granules placed at the beginning and in every 500 feet of pipe shall follow AWWA C651, Table 1.

2. Proportions of Chlorine Compound and Water Mixtures

Prepare a solution containing approximately 5 percent available chlorine by weight. In the case of Perchloron, at 70 percent available chlorine, use 6 pounds per 10 gallons of water. In the case of 12.5 percent hypochlorite, add 2.5 parts water to 1 part of 12.5 percent hypochlorite. For other strength compounds, adjust the dilution accordingly.

3. Preparation of Chlorine Compound

To prepare the chlorine compound-mixture from a powder, first make a paste, and then thin to a slurry to ensure getting all active ingredients into solution. The prepared solution shall be injected by means of a hypochlorinator, or hand or engine operated pump. The rate chlorine-water mixture shall be in such proportion to the rate of water entering the newly laid pipe that the dose applied to the water entering the newly laid pipe will be at least 50 parts per million. A color comparator set shall be used to determine chlorine residual. For solutions containing approximately 5 percent available chlorine, the rate of bleeding the main to be sterilized should be 1,000 times the rate of feed or injection of the chlorine solution.

4. Cross-Connection Prevention

A cross-connection control device (DOH approved) shall be utilized to prevent potential cross-connections.

5. Retention Period

Treated water shall be retained in the pipe at least 24 hours. After this period, the chlorine residual at pipe extremities and at other representative points shall be at least 5 parts per million.

6. Chlorinating Valves and Hydrants

In the process of chlorinating newly laid water pipe, all valves or other appurtenances shall be operated while the pipeline is filled with the chlorinating agent.

7. Final Flushing and Chlorine Residual Test

Following chlorination, all treated water shall be thoroughly flushed from the newly laid pipe at its extremity until the replacement water throughout its length, upon test, shows the absence of chlorine (or in the event chlorine is normally used in the source of supply, then the tests shall show a residual not in excess of that carried by the system). A state-approved bacteriological test shall then be conducted.

8. Repetition of Procedure

Should the initial treatment prove ineffective, the chlorination procedure shall be repeated until tests show that the water sample from the newly laid pipe conforms to the requirements of these Specifications.

3.3 RESERVOIR DISINFECTION

The reservoir shall be disinfected and tested after all interior accessories are in place. Methods and procedures for disinfecting the reservoir shall conform to AWWA C652, Disinfection of Water-Storage Facilities.

The use of chlorine solution (sodium hypochlorite) or dry chlorine (calcium hypochlorite) is anticipated as the active disinfecting agent. Contractor shall be responsible for safe and proper handling and storage of chlorine compounds or other hazardous chemical that are used to perform this work. Handling of such chemicals shall be in accordance with chemical manufacturer's instructions and federal, state and local regulations. Other hazardous chemicals shall be used only after acceptance by the Engineer and Department of Health.

The intent of this section of the specifications is for the passage of bacterial and odor tests, protection of materials, health/safety and conservation of water. To achieve these requirements the Contractor shall submit written procedures and plans for disinfection of the reservoir and collecting samples to be tested by an independent laboratory. The submittal shall include:

1. Type of disinfection solution and method of preparation.

2. Method of disposal for disinfection wastewater.

Before disinfecting, isolate the reservoir to prevent contamination of the distribution system. Remove all scaffolding, planks, tools, rags and other material not part of the structure or operating facilities of the reservoir. Clean the interior surfaces (walls, roof, beams and floor) with a pressure washer to remove dirt, oils and other foreign materials. Contractor shall be careful not to damage the structure in preparing the reservoir for disinfection. Disposal of water used to clean the interior of the reservoir shall be done before disinfection in accordance with applicable regulations. All water, dirt and foreign material accumulated in this cleaning operation shall be discharged from the reservoir or otherwise removed. This foreign material may be discharged out the drain piping, but shall be captured in the drain manhole and disposed to waste.

The Contractor shall complete two wash downs of the reservoir interior surfaces (walls, floor, etc.) prior to disinfection of the reservoir.

Disinfect all interior surfaces of the reservoir in accordance with the following method:

> Spray or brush a solution containing 200 ppm of available chlorine onto the interior surfaces of the reservoir as prescribed in AWWA C652 Method 2. Apply solution from the bottom up, to include the entire surface area of the reservoir and the interior surfaces above the overflow water level. Allow to remain 30 minutes or until dry before being rinsed off. Drain, dechlorinate, and dispose of all cleaning water. Contractor shall spray or brush a solution twice to ensure reservoir disinfection at all interior locations and to the extent described above. After no less than 30 minutes have passed after the second spray down, fill the reservoir with potable water to approximately ten percent full such that the reservoir will have free chlorine of not less than 10 mg/L when filled. It shall be held full for a period of not less than 12 hours. Fill reservoir with potable water as specified in AWWA C652. If the chlorine residual is greater than 2.0 mg/L, the reservoir shall be partially drained and then filled to lower the residual.

Prior to disinfecting the reservoir, the Contractor shall schedule with the Owner to collect and analyze water samples.

After the reservoir has been cleaned, disinfected and filled with potable water, the Owner will take water samples and have them analyzed for presence/absence of total coliform. Sampling requirements are as follows:

1. After 48 hours a minimum of two samples shall be obtained and analyzed by standard procedures outlined by state and local regulatory agencies after at least 10,000 gallons are allowed to flush from the reservoir.

2. Sampling points shall be representative.

If satisfactory results are shown in the presence/absence test for total coliform, then the reservoir may be placed in service. If unsatisfactory results are shown in the presence/absence test for total coliform, repeated sampling and testing shall be done until two consecutive samples are satisfactory or the reservoir shall again be subjected to disinfection.

The Owner will provide the water to fill each reservoir one time. Any additional water required due to failure of the disinfection or leakage tests shall be paid by the Contractor.

3.4 QUALITY CONTROL

Samples shall be taken and tested in accordance with AWWA C651 and C652.

*****END OF SECTION*****

SECTION 02511

CONNECTION TO EXISTING SYSTEM

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section includes the connection of pipelines being constructed under this project to existing water mains as shown on the Plans and as specified herein.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
01200	Measurement and Payment
Division 15	Mechanical

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

All cut-in connections to the existing system shall be made after a successful pressure test of the new main has been witnessed by the Owner and after a bacteriological test has been satisfactorily evidenced except as allowed by the Owner.

Size on size taps shall not be permitted.

The location, type and size of existing facilities have been determined from available records and are approximate. It is anticipated that connections to these existing facilities may be made, in general, as shown on the Plans except adjustments may be required for vertical and horizontal alignment.

It shall be the responsibility of the Contractor to determine the exact location and ascertain the type and size of the existing facilities prior to starting work on each connection and to provide any alternations as required in the connection detail.

Connections to existing facilities shall be made with the use of fittings, valves, flexible couplings, solid sleeves, shackling and other miscellaneous fittings, including thrust blocks as shown on the Plans or with additional pipe or fittings as approved by the Owner and as indicated in Division 15 to connect the new construction under this Project to the existing pipelines.

All pipe and fittings used for the connection shall be clean and disinfected with a minimum 5 percent chlorinated solution immediately prior to making said connection. The Contractor shall take extra precautions to ensure the tightness of the connections, nuts, and bolts. The existing water main shall be placed back into service by the Owner and the connection observed by the Owner prior to backfilling the pipe.

All valves shall be operated by Owner personnel only. Where it is necessary to shut off the existing mains to make a connection, the Contractor shall notify the Owner and all water customers affected 48 hours in advance of such shut off, provide temporary services to critical customers, and the Owner will shut off the mains. Once the water has been shut off, the Contractor shall diligently pursue the connection to completion so that the time required for the shut off is held to a minimum.

All connections to existing mains shall be completed the same day as they are started. Connections shall be performed between the hours of 9:00 A.M. and 4:30 P.M. only. The Contractor shall time its operations so that the water will not be shut off overnight or over weekends or during holidays.

***** END OF SECTION *****

SECTION 02700

GRAVEL MATERIALS

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section includes the various types of granular materials that are to be used in trenches and other excavations as shown on the Plans and as specified herein.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
01200	Measurement and Payment
01300	Submittals
02300	Earthwork
02305	Wet Weather Earthwork

1.3 SUBMITTALS

The Contractor shall provide certificates of laboratory tests in accordance with Section 01300, indicating particle size distribution for review for each type of granular material furnished and proctor test reports for all material to be placed as pipe bedding material, trench backfill, backfill under and around structures and underneath crushed surfacing and asphalt concrete pavements.

The certificates and proctor test reports shall be provided to the Owner at least 5 calendar days prior to placement.

PART 2 PRODUCTS

2.1 FOUNDATION GRAVEL

Foundation gravel shall be Class A Gravel Backfill for Foundations in conformance with Section 9-03.12(1)A of the WSDOT Standard Specifications.

2.2 GRAVEL BACKFILL FOR PIPE BEDDING

Gravel backfill for pipe bedding shall be crushed surfacing top course and shall be placed as shown in the Plans.

Native granular material shall not be utilized for gravel backfill for pipe bedding.

2.3 CRUSHED SURFACING

Crushed surfacing base course and top course shall conform to Section 9-03.9(3) of the WSDOT Standard Specifications.

2.4 PEA GRAVEL

Pea gravel shall be relatively round, processed, washed rock conforming to ASTM C33 with the following sieve analysis.

Sieve Analysis (% Passing by Weight)	
Sieve Size	**Percent Passing**
1/2″	100
3/8″	85-100
No. 4	10-30
No. 8	0-10
No. 16	0-5

2.5 MISCELLANEOUS GRAVEL

If the Plans call for a gravel that is not herein specified than the gravel shall conform to the type of gravel called for as per the WSDOT Specifications.

PART 3 EXECUTION

3.1 FOUNDATION GRAVEL

Foundation gravel shall be placed and compacted underneath all structures to a minimum depth of 12 inches unless indicated otherwise on the Plans, and to a greater depth where foundations are unstable and excess suitable excavated material is unavailable to stabilize such foundations.

In the event the Contractor unnecessarily overexcavates the pipe trench or structure foundation, or if the width of the pipe trench becomes wider than the pay limit shown on the Plans, all material so placed shall be at the Contractor's sole expense.

3.2 GRAVEL BACKFILL FOR PIPE BEDDING

Bedding material shall be placed simultaneously on both sides of the pipe for the full width of the trench in lifts not exceeding 6 inches. To assure uniform support, the material shall be carefully worked underneath the pipe haunches with a tool capable of preventing the formation of void spaces around the pipe. In the event the Contractor overexcavates the pipe trench, or if the width of the pipe

trench becomes wider than the pay limit shown on the Plans, all material so placed shall be at the Contractor's sole expense.

3.3 CRUSHED SURFACING

Crushed surfacing base course and/or top course shall be placed underneath asphalt paving, to the lines and grades shown on the Plans or as required by the Plans and shall be compacted to a dense, unyielding state of at least 95 percent of the maximum dry density, using the modified Proctor, per ASTM D1557.

3.4 PEA GRAVEL

Pea gravel shall be placed where shown on the Plans.

3.5 MISCELLANEOUS GRAVEL

Miscellaneous gravel shall be installed per the Plans.

***** END OF SECTION *****

SECTION 02950

SITE RESTORATION AND REHABILITATION

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section includes areas requiring restoration or rehabilitation as shown on the Plans or specified herein. The work also includes repair and replacement of other property features impacted by construction.

Particular care shall be taken to minimize damage to landscaped areas and to the irrigation system within and adjacent to construction areas.

Surface restoration type and location are shown on the Plans.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
01200	Measurement and Payment
01300	Submittals
02300	Earthwork

1.3 FINISHING AND CLEANUP

Before acceptance of the Project, all pipes, manholes, catch basins, and other appurtenances shall be cleaned of all debris and foreign material. After all other work on the Project is completed and before final acceptance, the entire roadway, including the roadbed, planting, sidewalk areas, shoulders, driveways, alley and side street approaches, slopes, ditches, utility trenches, and construction areas shall be neatly finished to the lines, grades and cross-sections shown on the Drawings and as hereinafter specified.

In undeveloped areas, the entire area which has been disturbed by the construction shall be shaped so that, upon completion, the area will present a uniform appearance, blending into the contour of the adjacent properties. All other requirements outlined previously shall be met. Slopes, sidewalk areas, planting areas and roadway shall be smoothed and finished to the required cross-section and grade.

Upon completion of the cleaning and dressing, the Project shall appear uniform in all respects. All graded areas shall be true to line and grade as shown on the typical sections and as required by the Owner.

All rocks in excess of 1-inch diameter shall be removed from the entire construction area and shall be disposed of the same as required for other waste material. In no instance, shall the rock be thrown onto private property. Overhang on slopes shall be removed and slopes dressed neatly so as to present a uniform, well sloped surface.

All excess excavated material within the limits of the Project shall be removed entirely. All debris resulting from clearing and grubbing or grading operations shall be removed and disposed.

Drainage facilities, such as inlets, catch basins, culverts, and open ditches, shall be cleaned of all debris resulting from the Contractor's operations.

All pavements and oil mat surfaces, whether new or old, shall be thoroughly cleaned. Existing improvements, such as Portland cement concrete curbs, curb and gutters, walls, sidewalks, and other facilities which have been sprayed by the asphalt cement shall be cleaned to the satisfaction of the Owner.

Castings for manholes, monuments, water valves, lamp poles, vaults, and other similar installations which have been covered with the asphalt material shall be cleaned to the satisfaction of the Owner.

1.4 PERMANENT SIGNING AND APPURTENANCES

During the life of the Contract all existing signs, mailboxes and other appurtenances that are damaged or removed shall be replaced by the Contractor at no additional expense to the Owner.

Existing signs may be temporarily relocated to portable sign stands for convenience of construction, subject to the approval of the Owner. When temporarily installed on posts, the signs shall be located as near as practical to their permanent locations and shall have a minimum vertical clearance above the pavement in accordance with the Manual on Uniform Traffic Control Devices (MUTCD). Private signs and appurtenances shall be removed and provided to the Owner.

All portable sign stands shall be designed to rigidly support the sign in position without creating a hazard to the motorist. Portable sign stands shall be furnished by the Contractor and upon completion of the work shall remain the property of the Contractor and shall be removed from the Project.

All signs, unless specified herein, shall be mounted at a height of 7 feet as measured vertically from the ground (finished grade) to the bottom of the sign.

***** END OF SECTION *****

DIVISION 3

CONCRETE

SECTION 03200

CONCRETE REINFORCEMENT

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section includes reinforcement and associated items for all concrete, including, but not necessarily limited to: reinforcing steel bars, wire fabric, and accessories for cast-in-place concrete.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
01300	Submittals
03300	Cast-in-Place Concrete
13212	Concrete Reservoir Rehabilitation

1.3 REFERENCES

This Section references the latest revisions of the following documents:

Reference	Title
ACI 301	Structural Concrete for Buildings
ACI 318	Building Code Requirements for Structural Concrete
ACI SP-66	American Concrete Institute - Detailing Manual
ANSI/ASTM A82	Cold Drawn Steel Wire for Concrete Reinforcement
ANSI/ASTM A185	Welded Steel Wire Fabric for Concrete Reinforcement
ANSI/AWS D1.4	Structural Welding Code for Reinforcing Steel
ASTM A615	Deformed and Plain Billet Steel Bars for Concrete Reinforcement

1.4 SUBMITTALS

Submit in accordance with provisions of Section 01300.

A. SHOP DRAWINGS

Indicate bar sizes, spacings, locations, and quantities of reinforcing steel and welded wire fabric, bending and cutting schedules, and supporting and spacing devices.

B. MANUFACTURER'S CERTIFICATE

Certify that reinforcing bar and welded wire fabric meet or exceed specified requirements.

Submit certified copies of mill test reports of reinforcement materials analysis.

1.5 QUALITY ASSURANCE

Perform Work in accordance with ACI 301.

1.6 COORDINATION

Coordinate with placement of formwork, formed openings, and other Work.

PART 2 PRODUCTS

2.1 REINFORCEMENT

A. REINFORCING STEEL

ASTM A615, deformed bars: Grade 40 for #3 bars and smaller, Grade 60 for #4 bars and larger, unless noted otherwise on the Plans.

B. WELDED STEEL WIRE FABRIC

ASTM A185 Plain Type; in flat sheets; plain.

2.2 ACCESSORY MATERIALS

A. TIE WIRE

Minimum 16-gauge annealed type.

B. CHAIRS, BOLSTERS, BAR SUPPORTS, SPACERS

Sized and shaped for strength and support of reinforcement during concrete placement conditions including load-bearing pad on bottom where required to prevent vapor barrier puncture.

C. SPECIAL CHAIRS, BOLSTERS, BAR SUPPORTS, SPACERS ADJACENT TO WEATHER EXPOSED CONCRETE SURFACES

Plastic-coated steel type; size and shape as required.

D. MECHANICAL BAR SPLICES

Comply with ACI 318 requirement of minimum tensile strength of 125 percent of specified yield for reinforcement.

Subject to compliance with the requirements and approval of the Engineer, products, which may be incorporated into the work include, but are not limited to, the following:

BAR-LOCK (MBT) Coupler Systems
"ERICO" REBAR SPLICING

E. ADHESIVE ANCHORS

Injection adhesive system shall consist of a dual-cylinder adhesive refill pack, a mixing nozzle, and dispenser. The adhesive shall be formulated to include resin and hardeners.

1. Subject to compliance with the requirements, products which may be incorporated in the work include, but are not limited to, the following:

   a. HIT RE 500 Injection Adhesive Anchor, Hilti, Inc.

   b. SET-3G, Simpson Strong Tie, Inc.

   c. PE1000+, Powers Fasteners, Inc.

2.3 FABRICATION

Fabricate concrete reinforcing in accordance with ACI SP-66. Obtain written approval from the Engineer prior to welding reinforcing steel. Weld reinforcement in accordance with ANSI/AWS D1.4.

PART 3 EXECUTION

3.1 PLACEMENT

Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars" for details and methods of reinforcement placement and supports, and as herein specified. Avoiding cutting or puncturing vapor barrier during reinforcement placement and concreting operations.

Clean reinforcement of loose rust and mill scale, earth, ice, and other materials that reduce or destroy bond with concrete. Accurately position, support, and secure reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support reinforcing by metal/plastic chairs, runners, bolsters, spacers, and hangers, as required.

Install reinforcing bars with clearance indicated on the Plans. Provide laps as shown and stagger locations to minimize the concentration of multiple reinforcing at joints. Bar lap splicing shall have full contact. Where full contact cannot be achieved, the maximum space between the spliced bars shall not exceed 2 inches. Unless noted otherwise on the Plans, provide two #5 minimum trim bars around all openings and penetrations. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Limit bearing locations of bar supports per the requirements of the Plans. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces. Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least one full mesh and lace splices with tie wire. Offset end laps in adjacent widths to prevent continuous laps in either direction.

***** END OF SECTION *****

SECTION 03300

CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section includes schedules, notes, and details for the construction of cast-in-place concrete structures, landings, equipment piers, housekeeping pads and slabs on grade.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
01300	Submittals
01400	Quality Control
03200	Concrete Reinforcement
Division 7	Thermal and Moisture Protection
13212	Concrete Reservoir Rehabilitation

1.3 REFERENCES

This Section references the latest revisions of the following documents:

Reference	Title
ACI 117	Specifications for Tolerances for Concrete Construction and Materials and Commentary
ACI 212.3	Chemical Admixtures for Concrete
ACI 301	Specifications for Structural Concrete
ACI 304	Guide for Measuring, Mixing, Transporting, and Placing Concrete
ACI 305	Hot Weather Concreting
ACI 306	Cold Weather Concreting
ACI 309	Guide for Consolidation of Concrete
ACI 318	Building Code Requirements for Structural Concrete and Commentary
ACI 350	Code Requirements for Environmental Engineering Concrete Structures and Commentary
ACI 347	Guide to Formwork for Concrete
ACI 350.1	Tightness Testing of Reinforced Engineering Concrete Structures and Commentary
ASTM C31	Making and Curing Concrete Test Specimens in the Field
ASTM C33	Concrete Aggregates

ASTM C39	Compressive Strength of Cylindrical Concrete Specimens
ASTM C42	Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
ASTM C94	Ready-Mixed Concrete
ASTM C131	Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C143	Slump of Hydraulic Cement Concrete
ASTM C150	Portland Cement
ASTM C172	Sampling Freshly Mixed Concrete
ASTM C173	Air Content of Freshly Mixed Concrete by the Volumetric Method
ASTM C231	Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C260	Air-Entraining Admixtures for Concrete
ASTM C309	Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C494	Chemical Admixtures for Concrete
ASTM C535	Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C618	Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete
ASTM C878	Standard Test Method for Restrained Expansion of Shrinkage Compensating Concrete
ASTM C881	Epoxy-Resin-Base Bonding Systems for Concrete

1.4 SUBMITTALS

Submittals shall be in accordance with Section 01300.

A. GENERAL

The submittal for each included concrete mix shall include, as a complete package, the following as defined below:

1. Concrete Mix Design

2. Certified Test Results

3. Sieve Analysis

4. Product Data

5. Shrinkage/Expansion Testing

An incomplete concrete mix submittal package may render a rejection of the mix or could delay the review process.

B. CONCRETE MIX DESIGN

Submit mix design for the proposed mix to be used on the Project, indicating components, and proportions by weight, including any admixtures. Mix design shall state chloride content. Mix designs to be provided are:

1. Unspecified Concrete for Liquid Containment Structures

2. Unspecified Concrete

3. Expansive Concrete for Reservoir 2 Topping Slab

C. CERTIFIED TEST RESULTS

Submit laboratory test results indicating compressive strength of concrete in compliance with requirements specified herein and in accordance with ACI 301.

D. SIEVE ANALYSIS

Submit sieve analysis for proposed coarse and fine aggregates indicating components, source, gradation, and WSDOT aggregate source approval report, including WSDOT Aggregate Source ID.

E. PRODUCT DATA

Provide product data on all proposed admixtures, accessories, and embedded items to be used on the Project, including, but not limited to:

1. Cement; source and type

2. Air Entraining Agent

3. Water Reducing Admixtures

4. Pozzolans

5. Bonding Agents

6. Curing Compounds/Floor Hardeners

7. Non-Shrink Grout; Non-metallic and Metallic

8. Waterstops

9. Plastic Joint Formers

10. Vapor Barriers

11. Stair Nosings

12. Expansive Components

For admixtures other than those proposed for air entrainment, submit a letter from the manufacturer describing the benefits of its use for the project and effect of its use on the properties of the concrete. Product data shall expressly state admixtures are chloride free, or the manufacturer shall submit a letter certification stating the same.

F. SHRINKAGE/EXPANSION TESTING

Expansive components for Expansive Concrete for Reservoir 2 Topping slab shall be tested in accordance with ACI 223 and ASTM C878 to determine correct dosage ratio.

Perform concrete trial batches in accordance with the manufacturer's recommendations.

G. MATERIAL DELIVERY TICKETS

Provide copies of all concrete and grout material delivery tickets for the Project to the Engineer.

1.5 QUALITY ASSURANCE

Perform work in accordance with ACI 301. Acquire cement and aggregates from same source for all work performed on the Project. Conform to ACI 305 when concreting during hot weather. Conform to ACI 306 when concreting during cold weather. Provide or coordinate field and laboratory testing as described later in this Section and under provisions of Section 01400.

1.6 COORDINATION

Coordinate work in accordance with provisions of Section 01310. Coordinate the placement of embedded items with erection of concrete formwork and placement of form accessories.

PART 2 PRODUCTS

2.1 FORM MATERIALS

A. FORMS FOR EXPOSED FINISH CONCRETE

Plywood, metal, metal-framed plywood faced, or other acceptable panel-type materials, to provide continuous, straight, smooth, exposed surfaces. Furnish in largest practicable sizes to minimize number of joints and to conform to joint system shown on the Plans.

B. FORMS FOR UNEXPOSED FINISH CONCRETE

Plywood, lumber, metal, or other acceptable material. Provide lumber dressed on at least two edges and one side for tight fit.

C. FORMS FOR CYLINDRICAL COLUMNS AND SUPPORTS

Metal, fiberglass reinforced plastic, or paper or fiber tubes. Construct paper or fiber tubes of laminated plies using water-resistant adhesive with wax-impregnated exterior for weather and moisture protection. Provide units with sufficient wall thickness to resist loads imposed by wet concrete without deformation.

D. FORM COATINGS

Provide commercial formulation form-coating compounds that will not bond with, stain, or adversely affect concrete surfaces, and will not impair subsequent treatments of concrete surfaces.

E. FORM TIES

Factory-fabricated, adjustable-length, removable or snapoff metal form ties, designed to prevent form deflection and to prevent spalling of concrete upon removal. Provide units, which will leave no metal closer than 1-1/2 inches to surface. Unless noted otherwise on Plans, provide ties with plastic cone devices which, when removed, will leave holes not larger than 1-inch diameter in concrete surface.

2.2 CONCRETE MATERIALS

A. CEMENT

ASTM C150, Type II – Moderate or Type I - II. Use one brand of cement throughout the project, unless otherwise approved by the Engineer. Provide low alkali cement where Alkali-Silica Reaction (ASR) mitigation measures are required by WSDOT Aggregate Source Approval.

B. FINE AND COARSE AGGREGATES

Comply with ASTM C33. Provide aggregates from a single source. Coarse aggregate shall be size designation 467 (Nominal size 1-1/2 inch to No. 4 sieve) for all liquid containing structures, and size designation 67 (Nominal size 3/4-inch to No. 4 sieve) for all other concrete. Aggregates shall show a loss of weight not exceeding 35 percent after 500 revolutions in a Los Angeles wear machine, when tested in accordance with ASTM C131 or ASTM C535. Aggregates shall be from a WSDOT approved source.

C. WATER

Clean, potable, and not detrimental to concrete, in compliance with ASTM C94.

D. EXPANSIVE CEMENT

ASTM C845, Type K. Use in accordance with manufacturer's recommendations.

Provide CTS Cement Manufacturing Corp. Komponent Type K Cement or approved equal.

2.3 ADMIXTURES

Except for air entrainment and shrinkage compensation required by the plans, use of all other admixtures used shall be subject to approval of the Engineer and at no additional cost to the Owner. Only admixtures expressly stated by the manufacturer as being chloride-free shall be used. Subject to compliance with

requirements, products, which may be incorporated into the work include, but are not limited to, the following:

A. AIR ENTRAINMENT

ASTM C260 certified by manufacturer to be compatible with other proposed admixtures.

Master Builders MB AE 90 or MICRO-AIR
Sika AER
W.R. Grace Daravair or Darex Series

B. EXPANSIVE ADMIXTURE COMPONENT

ASTM C494 Type S. Shrinkage compensating admixtures shall contain expansive component Type K or G, as specified in ACI 223

C. WATER REDUCING ADMIXTURE

ASTM C494 Type A.

Master Builders PolyHeed
Sika Plastocrete 161
W.R. Grace WRDA Series

D. ACCELERATING ADMIXTURE

ASTM C494 Type C.

Master Builders Pozzolith NC534
Sika Plastocrete 161 FL
W.R. Grace Polarset or DCI

E. WATER REDUCING, RETARDING ADMIXTURE

ASTM C494, Type D.

Master Builders Pozzolith 100XR
Sika Plastiment
W.R. Grace Daratard Series

F. WATER REDUCING, ACCELERATING ADMIXTURE

ASTM C494, Type E.

Euclid Chemical Co. Accelguard 80
Master Builders Pozzutec 20
W.R. Grace Daraccel

G. HIGH RANGE WATER REDUCER (HRWR)

ASTM C494, Type F.

Master Builders Rheobuild 1000/3000 FC
Sika Sikament 10 ESL
W.R. Grace ADVA 100

H. HIGH RANGE WATER REDUCER AND RETARDER

ASTM C494, Type G.

Master Builders Pozzolith 440N
W.R. Grace Daracem-100

I. POZZOLAN

ASTM C618 - CLASS F, with a CaO maximum content of 10 percent.

2.4 ACCESSORIES

A. BONDING AGENT

ASTM C881, Type I and II, Grade 2, Class C, Epoxy Resin. Subject to Contract requirements, provide one of the following or equal:

Sika Armatec 110
Conspec SpecBond 100
W.R. Meadows Sealtight Rezi Weld 1000

B. CURING COMPOUND/CHEMICAL FLOOR HARDENER

Do not use curing compounds for surfaces that may come into contact with potable water, including all interior surfaces of reservoirs. For other surfaces:

ASTM C309, Type I, Class A and B. Subject to Contract requirements, provide one of the following or equal:

W.R. Meadows Sealtight 1100-Clear
Conspec RX cure
Chemrex, Inc. Masterkure
Burke Spartan-Cote WB

C. GENERAL PURPOSE NON-SHRINK NON-METALLIC GROUT

Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents; capable of developing minimum compressive strength of 2,400 psi (17 Mpa) in 48 hours and 7,000 psi (48 Mpa) in 28 days. Subject to Contract requirements, provide one of the following or equal:

Sika SikaGrout 212
Conspec 100 Non Metallic
Chemrex, Inc. Masterflow 928 Grout
W.R. Meadows Sealtight 588

D. WATERSTOPS

Provide waterstop of type and size at construction joints and other joints as indicated on the Plans.

1. PVC (Polyvinyl Chloride)

Serrated (ribbed), 3/8 of an inch minimum thickness for 6 inches and larger and 3/16 of an inch minimum thickness for 4 inches. Comply with Corps of Engineers CRD-C-572. No reclaimed PVC will be allowed in waterstop.

Subject to compliance with requirements, manufacturers offering products, which may be incorporated in the work, include, but are not limited to, the following:

Greenstreak
Vinylex Corporation
W.R. Meadows

2. Cold Joint Waterstop

Install where shown on the Plans or at locations approved by the Engineer. Cold joint waterstop shall be certified by the manufacturer to be compatible for use in potable water containment structures. Unless otherwise shown in the Plans, size shall be 1-inch thick and 1-inch wide.

Subject to compliance with requirements, manufacturers offering products, which may be incorporated in the work, include, but are not limited to, the following:

Hydrotite, Greenstreak

E. PLASTIC JOINT FORMER

Provide and install, per manufacturer's recommendations, where shown on the Plans or at locations approved by the Engineer. Subject to compliance with requirements, manufacturers offering products, which may be incorporated in the work, include, but are not limited to, the following:

Greenstreak
Vinylex Corporation
W.R. Meadows

F. STAIR NOSINGS

American Safety Tread Co., Inc., Style 816 with steel wing anchors with nuts and anchor bolts or equal.

G. VAPOR BARRIER

Six-mil fabric reinforced plastic film.

2.5 CONCRETE MIX

A. GENERAL

Prepare design mixes for each type and strength of concrete by either laboratory trial batch or field experience methods as specified in ACI 301. If trial batch method is used, use an independent testing facility acceptable to the Engineer for preparing and reporting proposed mix designs. The testing facility shall not be the same as that used for field quality control testing.

The maximum water-soluble chloride ion content, expressed as a percent of the cement, contributed from all ingredients of the concrete mix, including water, aggregates, cementitious materials, and admixtures, shall not exceed 0.10 percent. Pozzolans may be counted as part of the total cementitious material in the concrete mix design. The cementitious material is the "minimum cement content" specified in the mix design for each type of concrete. When pozzolans are used as part of this "cement content," the minimum content shall be 15 percent by weight of the total cementitious materials (Portland cement and pozzolans) and not more than 20 percent.

Where ASR mitigation measures are required by WSDOT, provide a minimum of 15 percent pozzolan included in the cementitious material in the design mix.

B. MIX DESIGNS

Provide normal weight concrete with the following properties, unless noted otherwise on the Plans.

1. Unspecified Concrete for Liquid Containment Structures

Structural concrete of general use in liquid containment structures.

Minimum compressive strength @ 28 days:	4,000 psi
Minimum cement content:	6 sacks per cubic yard
Maximum water cement ratio by weight:	0.45
Nominal coarse aggregate size:	1-1/2" to No. 4 (size designation 467)

2. Unspecified Concrete

Structural concrete of general use in structures, sidewalks, and where no specific class of concrete is designated.

Minimum compressive strength @ 28 days: 3,500 psi
Minimum cement content: 5.5 sacks per cubic yard
Maximum water cement ratio by weight: 0.45
Nominal coarse aggregate size: 3/4" to No. 4 (size designation 67)

3. Expansive Concrete for Reservoir 2 Topping Slab

Concrete for use in the new topping slab of Reservoir 2.

Minimum compressive strength @ 28 days: 3,500 psi
Minimum cement content: 5.5 sacks per cubic yard
Maximum water cement ratio by weight: 0.45
Nominal coarse aggregate size: 3/4" to No. 4 (size designation 67)

Expansive Component

One of the following shall be used:

Type K shrinkage compensating cement or Type K or Type G expansive admixture component.

C. ADMIXTURES

1. Air Entrainment

Use air-entraining admixture complying with ASTM C260 in all exterior exposed concrete. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement in accordance with ASTM C173 or C231 having total air content with a tolerance of plus or minus 1 percent within the following limits:

5.5 percent for 1.5 inch max. coarse aggregate size
6.0 percent for 1.0 inch max. coarse aggregate size
7.0 percent 0.50 inch or less max. coarse aggregate size

2. Other Admixtures

Use of all other admixtures shall be subject to the approval of the Engineer, and shall be in accordance with ACI 212.3 and

Manufacturer's recommendations. Only admixtures stated by the manufacturer to be chloride free shall be used.

D. SLUMP LIMITS

Proportion and design mixes to result in concrete slump (1 inch ± of the maximum) at the point of placement in accordance with ASTM C143 as follows:

Ramps, slabs, and sloping surfaces: 3 inches.

Reinforced foundation systems: 3 inches.

Other concrete: 4 inches.

Concrete containing HRWR admixture (super-plasticizer): Not more than 8 inches after addition of HRWR to site-verified 2- to 3-inch slump concrete.

E. CONCRETE MIXING

Comply with requirements of ASTM C94, and as herein specified.

During hot weather, or under conditions contributing to rapid setting of concrete, a shorter mixing time than that specified in ASTM C94 may be required.

PART 3 EXECUTION

3.1 GENERAL

Coordinate the installation of joint materials and vapor barriers with placement of forms and reinforcing steel.

3.2 FORMS

Design, erect, support, brace, and maintain formwork to support vertical and lateral, static, and dynamic loads that might be applied until such loads can be supported by concrete structure. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation, and position. Maintain formwork construction tolerances complying with ACI 347.

Design formwork to be readily removable without impact, shock, or damage to cast-in-place concrete surfaces and adjacent materials.

Construct forms to sizes, shapes, lines, and dimensions shown, and to obtain accurate alignment, location, grades, level and plumb work in finished structures. Provide for openings, offsets, sinkages, keyways, recesses, moldings, rustications, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts, and other features required in the work. Use selected materials to obtain required finishes. Solidly butt joints and provide back up at all joints to prevent leakage of cement paste.

Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast-in-place concrete surfaces. Provide top forms for inclined surfaces where slope is too steep to place concrete with bottom forms only. Provide Kerf wood inserts for forming keyways, reglets, recesses, and the like, to prevent swelling and for easy removal.

Provide temporary openings where interior area of formwork is inaccessible for cleanout, for inspection before concrete placement, and for placement of concrete. Securely brace temporary openings and set tightly to forms to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

Chamfer all exposed corners and edges and other areas shown on the Plans, using wood, metal, PVC, or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints.

Provisions for Other Trades: Provide openings in concrete formwork to accommodate work of other trades. Determine size and location of openings, recesses, and chases from trades providing such items. Accurately place and securely support items built into forms.

3.3 JOINTS AND WATERSTOPS

A. CONSTRUCTION JOINTS

Locate and install construction joints where indicated, or locate so as not to impair strength and appearance of the structure, as acceptable to the Engineer. Place construction joints perpendicular to main reinforcement. Continue reinforcement across construction joints, except as otherwise shown on the Plans.

B. WATERSTOPS

Provide waterstops in construction joints of all water containment structures and where shown on the Plans. Install waterstops to form

continuous diaphragm in each joint in accordance with manufacturer's recommendations. Make provisions to support and protect exposed waterstops during progress of work. Fabricate field joints in waterstops in accordance with manufacturer's printed instructions and recommendations. All waterstops shall be tied into place using hog rings and/or tie wire to keep the waterstop from moving during placement of concrete. Provide manufacturer's written warranty for all waterstop installations.

C. ISOLATION JOINTS IN SLABS-ON-GRADE

Unless otherwise noted, construct isolation joints in slabs-on-grade at points of contact between slabs-on-grade and vertical surfaces, such as column pedestals, foundation walls, grade beams, and elsewhere as shown on the Plans.

Joint filler and sealant materials are specified in Division 7.

D. SLAB (CONTROL) JOINTS

Construct joints in slabs-on-grade as shown on the Plans. Use saw cuts 1/8 of an inch wide x 1/4 of the slab depth or inserts 1/4-inch wide x 1/4 of the slab depth.

E. PREMOLDED (CONTROL) JOINTS

Insert premolded plastic, hardboard or fiberboard strip into fresh concrete until top surface of strip is flush with slab surface. Tool slab edges round on each side of insert. After concrete has cured, remove inserts and clean groove of loose debris.

F. EDGE FORMS AND SCREED STRIPS FOR SLABS

Set edge forms or bulkheads and intermediate screed strips for slabs to obtain required elevations and contours in finished slab surface. Provide and secure units sufficiently to support types of screed strips by use of strike-off templates or accepted compacting type screeds.

3.4 INSTALLATION OF EMBEDDED ITEMS:

A. GENERAL

Set and build into work anchorage devices and other embedded items required for other work that is attached to, or supported by, cast-in-place

concrete. Use installation drawings, diagrams, instructions, and directions provided by suppliers of items to be embedded.

B. CLEANING AND TIGHTENING

Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, or other debris just before concrete is placed. Retighten forms and bracing after concrete placement as required to eliminate mortar leaks and maintain proper alignment.

C. REGLETS

Install reglets to receive top edge of foundation sheet waterproofing, and to receive thru-wall flashing as shown at lintels, relieving angles, and other conditions.

3.5 VAPOR BARRIER INSTALLATION

Following leveling and tamping of granular base material for slabs on grade, place vapor barrier sheeting with longest dimension parallel with direction of concrete placement.

Lap joints a minimum of 6 inches and seal with appropriate approved tape. After placement of vapor barrier, cover with sand material and compact to depth as shown on the Plans.

3.6 PLACING REINFORCEMENT

See Section 03200.

3.7 PREPARATION OF FORM SURFACES

Clean reused forms of concrete matrix residue, repair and patch as required to return forms to acceptable surface condition. Coat contact surfaces of forms with a form-coating compound before reinforcement is placed.

Thin form coating compounds only with thinning agent of type, amount, and under conditions of form-coating compound manufacturer's directions. Do not allow excess form-coating material to accumulate in forms or to come into contact with in-place concrete surfaces against which fresh concrete will be placed. Apply in compliance with manufacturer's instructions.

Coat steel forms with a non-staining, rust-preventative form oil or otherwise protect against rusting. Rust-stained steel formwork is not acceptable.

3.8 PREPARATION OF EXISTING CONCRETE SURFACES

The Contractor shall bush hammer all existing concrete surfaces that are to have new concrete cast against them. Apply epoxy bonding agent prior to placing concrete.

3.9 CONCRETE PLACEMENT

A. GENERAL

Comply with ACI 304 and as herein specified.

Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast-in. Notify other crafts to permit installation of their work; cooperate with other trades in setting such work. Apply temporary protective covering to lower 2 feet of finished walls adjacent to poured floor slabs and similar conditions, and guard against spattering during concrete placement.

B. PLACING CONCRETE IN FORMS

Deposit concrete in forms in horizontal layers not deeper than 24 inches and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints.

Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures for consolidation of concrete in accordance with ACI 309.

Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than visible effectiveness of machine. Place vibrators to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing segregation of mix.

C. PLACING CONCRETE SLABS

Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until the placing of a panel or section is

completed. Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners. Bring slab surfaces to correct level with straightedge and strikeoff. Use bull floats or darbies to smooth surface, free of humps or hollows. Do not disturb slab surfaces prior to beginning finishing operations. Maintain reinforcing in proper position during concrete placement operations.

D. COLD WEATHER PLACING

Protect concrete work from physical damage or reduced strength, which could be caused by frost, freezing actions, or low temperatures, in compliance with ACI 306 and as herein specified.

When air temperature has fallen to or is expected to fall below 40 degrees F (4 degrees C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 degrees F (10 degrees C), and not more than 80 degrees F (27 degrees C) at point of placement.

Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials. Do not use calcium chloride, salt, and other materials containing antifreeze agents or chemical accelerators, unless otherwise accepted in mix designs.

E. HOT WEATHER PLACING

When hot weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 305 and as herein specified.

Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 degrees F (32 degrees C). Mixing water may be chilled, or chopped ice may be used to control temperature provided water equivalent of ice is calculated to total amount of mixing water. Use of liquid nitrogen to cool concrete is at Contractor's option.

Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedment in concrete. Fog spray forms, reinforcing steel, and subgrade just before concrete is placed. Upon approval, water-reducing retarding admixture (Type D) may be used when required by high temperatures, low humidity, or other adverse placing conditions.

3.10 FINISH OF FORMED SURFACES

Provide smooth form finish for all formed concrete surfaces exposed-to-view including all surfaces exposed to water or wastewater, or that are to be covered with a coating material applied directly to the concrete, or a covering material applied directly to concrete, such as veneer plaster, painting, or other similar type of system.

Provide smooth form finish for surfaces to be waterproofed or dampproofed. Surfaces must comply with recommendations of the manufacturer of the product being utilized.

Provide rough form finish for formed concrete surfaces not exposed-to-view in the finished work or by other construction, unless otherwise indicated.

A. SMOOTH FORM FINISH

This is to be the as-cast concrete surface obtained utilizing selected form facing material, arranged orderly and symmetrically with a minimum of seams, and as specified herein.

Repair and patch tie holes and defective areas, with all fins or other projections completely removed and smoothed, by one of the following methods:

1. Provide smooth rubbed finish to concrete surfaces after form removal. Moisten concrete surfaces and rub with carborundum brick or other abrasive until a uniform color and texture is produced. Do not apply cement grout other than that created by the rubbing process.

2. Provide grout "sacked" cleaned finish. The sacking grout shall be one part Portland cement to 1-1/2 parts fine sand by volume, and mixed with water to consistency of thick paint. Proprietary additives such as epoxy bonding agents or adhesives may be used at Contractor's option. Blend standard Portland cement and white Portland cement, amounts to be determined by trial patches, so that final color of dry grout matches adjacent surfaces. Thoroughly wet concrete surfaces and apply grout to coat surfaces and fill small holes. Remove excess grout by scraping and rubbing with clean burlap. Keep sacked surfaces damp by fog spray or other acceptable method so surfaces do not dry out.

B. ROUGH FORM FINISH

This is the concrete surface having texture imparted by form facing material used, with tie holes and defective areas repaired and patched and fins and other projections exceeding 1/8 of an inch in height rubbed down or chipped off. All "bug holes" exceeding 1/2 inch in diameter and exceeding 1/4-inch depth shall be repaired or filled in.

C. RELATED UNFORMED SURFACES

At tops of walls, horizontal offsets, and similar unformed surfaces occurring at adjacent formed surfaces, continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

D. TOLERANCES FOR FORMED SURFACES

1. Variations from the plumb:

a.	In the lines and surfaces of columns, pier, walls and in arises	In any 10 feet of length – 1/4 inch. Maximum for entire length – 1 inch
b.	For exposed corner columns, control-joint grooves, and other conspicuous lines	In any 20 feet of length – 1/4 inch. Maximum for entire length – 1/2 inch

2. Variations from level or from the grades indicated on the Plans:

a.	In slab soffits, ceilings, beam soffits, and in arises, measured before removal of supporting shores	In any 10 feet of length – 1/4 inch. In any bay or opening, or in any 20 feet of length – 3/8 of an inch. Maximum for entire length – 3/4 inch
b.	In exposed lintels, sills, parapets, horizontal grooves, and other conspicuous lines	In any bay or opening, or in any 20 feet of length – 1/4 inch. Maximum for entire length – 1/2 inch

3.	Variations in the linear building lines from the established position in plan view		In 20 feet of length – 1/2 inch. Maximum for entire length – 1 inch
4.	Variations in distance between walls, columns and partitions		In any 10 feet of distance – 1/4 inch. In any bay or opening – 1/2 inch. Maximum total variation – 1-inch.
5.	Variations in the sizes and locations of sleeves, floor openings and wall openings		Minus – 1/4 inch Plus – 1/2 inch
6.	Variations in cross-sectional dimensions of columns and beams and in the thickness of slabs and walls		Minus – 1/4 inch Plus – 1/2 inch
7.	Variations in footings:		
	a.	Variation from dimensions on Plans when formed or plus 3-inches when placed against unformed excavations	Minus – 1/2 inch Plus – 2 inches
	b.	Misplacement of eccentricity	2 percent of the footing width in the direction of the misplacement, but not more than 2 inches
	c.	Reduction in thickness of specified thickness	Minus – 5 percent
8.	Variations in steps:		
	a.	In a flight of stairs	Riser – 1/8 of an inch Tread – 1/4 inch
	b.	In consecutive steps	Riser – 1/16 of an inch Tread – 1/8 of an inch

3.11 MONOLITHIC SLAB FINISHES:

A. SCRATCH FINISH

Apply scratch finish to monolithic slab surfaces that are to receive concrete floor topping, including grout finishes where indicated on plans, or mortar setting beds for tile, portland cement terrazzo, and other bonded applied cementitious finish flooring material, and as otherwise indicated. Slope surfaces uniformly to floor drains where required. After leveling, roughen surface before final set, with stiff brushes, brooms, or rakes.

B. FLOAT FINISH

Apply float finish to monolithic slab surfaces to receive trowel finish and other finishes as hereinafter specified, and slab surfaces which are to be covered with membrane or elastic waterproofing, membrane or elastic roofing, or sand-bed terrazzo, and as otherwise indicated.

After screeding, consolidating, and leveling concrete slabs, do not work surface until ready for floating. Begin floating when surface water has disappeared or when concrete has stiffened sufficiently to permit operation of power-driven floats, or by hand-floating if area is small or inaccessible to power units. Check and level surface plane. Cut down high spots and fill low spots. Uniformly slope surfaces to drains. Immediately after leveling, refloat surface to a uniform, smooth, granular texture.

C. TROWEL FINISH

Apply trowel finish to monolithic slab surfaces to be exposed-to-view, and slab surfaces to be covered with resilient flooring, carpet, ceramic or quarry tile, paint, or other thin film finish coating system. After floating, begin first trowel finish operation using a power-driven trowel. Begin final troweling when surface produces a ringing sound as trowel is moved over surface. Consolidate concrete surface by final hand-troweling operation, free of trowel marks and uniform in texture and appearance. Grind smooth surface defects that would telegraph up through applied floor covering system.

D. TROWEL AND FINE BROOM FINISH

Where ceramic or quarry tile is to be installed with thin-set mortar, apply trowel finish as specified, then immediately follow with slightly scarifying surface by fine brooming.

E. NON-SLIP BROOM FINISH

Apply non-slip broom finish to exterior concrete platforms, landings, steps, and ramps, sidewalks and elsewhere as indicated. Immediately after float finishing, slightly roughen concrete surface by brooming with fiber bristle broom perpendicular to main traffic route. Coordinate required final finish with Owner before application.

F. CHEMICAL-HARDENER FINISH

Apply chemical-hardener finish to interior exposed concrete floors and steps, unless noted otherwise. Apply liquid chemical-hardener after complete curing and drying of the concrete surface. Evenly apply each coat, and allow 24 hours for drying between coats. Apply proprietary chemical hardeners, in accordance with manufacturer's printed instructions. After final coat of chemical-hardener solution is applied and dried, remove surplus hardener by scrubbing and mopping with water.

G. TOLERANCES FOR MONOLITHIC SLAB FINISHES

The flatness of the concrete shall be carefully controlled and the tolerances shall be measured by the straight edge system as specified in paragraph 4.5.7 of ACI 117, using a 10-foot straight edge, within 72 hours after floor slab installation and before shores and/or forms are removed. The tolerances listed below shall be met at any and every location at which the straight edge can be placed.

Bullfloated	1/2 inch
Float Finish	3/16 inch
Trowel Finish	1/8 inch
Straightedges	5/16 inch

3.12 CONCRETE CURING AND PROTECTION

A. GENERAL

Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep concrete continuously wet for not less than 7 days. Begin final curing procedures immediately following initial curing and before concrete has dried out. Continue final curing for at least 7 days in accordance with ACI 301 curing methods. Avoid rapid drying of concrete at the end of final curing period.

B. CURING METHODS

Perform curing of concrete by use of curing and sealing compound, by moist curing, by moisture-retaining cover curing, or by combinations thereof, as herein specified.

Provide moisture curing by the following methods. Keep concrete surface continuously wet by covering with water, or provide continuous water-fog spray.

Covering concrete surface with absorptive cover, thoroughly saturating cover with water and keeping continuously thoroughly saturating cover with water and keeping continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with 4-inch lap over adjacent absorptive covers.

Provide moisture-cover curing as follows: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in wide as practicable width with sides and ends lapped at least 3 inches and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

Provide curing and sealing compound to exposed interior slabs and to exterior slabs, walls, sidewalks, and curbs, as follows:

Apply curing and sealing compound to concrete slabs and walls as soon as initial curing operations are complete or immediately after the forms have been stripped (within 2 hours). Apply uniformly in continuous operation by power-spray or roller in accordance with manufacturer's directions. Completely cover the concrete surfaces with curing and sealing compound. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair any damage during curing period.

Do not use membrane curing compounds on surfaces which are to be covered with coating material applied directly to concrete, liquid floor hardener, waterproofing, dampproofing, membrane roofing, flooring (such as ceramic or quarry tile, glue-down carpet), painting, and other coatings and finish materials, unless otherwise acceptable to the Engineer.

C. CURING FORMED SURFACES

Cure formed concrete surfaces, including undersides of beams, supported slabs, and other similar surfaces by moist curing with forms in place for full curing period and until forms are removed. When forms are removed, continue curing by methods specified above, as applicable.

D. CURING UNFORMED SURFACES

Cure unformed surfaces, such as slabs, floor topping, and other flat surfaces by application of an appropriate curing method.

Final cure concrete surfaces to receive liquid floor hardener or finish flooring by use of moisture retaining cover.

3.13 SHORES AND SUPPORTS

A. GENERAL

Comply with ACI 347 for shoring, and as herein specified. Extend shoring from ground to roof for structures four stories or less, unless otherwise permitted. Remove shores and reshore in a planned sequence to avoid damage to partially cured concrete. Locate and provide adequate reshoring to safely support work without excessive stress or deflection.

Keep reshores in place a minimum of 15 days after placing upper tier, and longer if required, until all concrete has attained its required 28-day strength and heavy loads due to construction operations have been removed.

B. REMOVAL OF FORMS

Formwork not supporting weight of concrete, such as sides of beams, walls, columns, and similar parts of the work, may be removed after cumulatively curing at not less than 50 degrees F (10 degrees C) for 24 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form removal operations, and provided curing and protection operations are maintained.

Formwork supporting weight of concrete, such as beam soffits, joints, suspended slabs, and other structural elements, may not be removed in less than 14 days and until concrete has attained 70 percent of the design minimum compressive strength at 28 days. Determine potential

compressive strength of in-place concrete by testing field-cured specimens, representative of concrete location or members.

Form facing material may be removed 4 days after placement, only if shores and other vertical supports have been arranged to permit removal of form facing material without loosening or disturbing shores and supports.

3.14 REUSE OF FORMS

Clean and repair surfaces of forms to be reused in work. Split, frayed, delaminated, or otherwise damaged form facing material will not be acceptable for exposed surfaces. Provide new form facing material. Apply new form coating compound as specified for new formwork prior to reuse of forms.

When forms are extended for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close joints. Align and secure joint to avoid offsets. Do not use "patched" forms for exposed concrete surfaces, unless approved by the Engineer and acceptable to the Owner.

3.15 MISCELLANEOUS CONCRETE ITEMS

A. FILLING-IN

Fill-in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after work of other trades is in place. Mix, place, and cure concrete as herein specified, to blend with in-place construction. Provide other miscellaneous concrete filling shown or required to complete work. Fill-in all form tie holes and other forming system holes with non-shrink grout.

B. CURBS

Provide monolithic finish to interior curbs by stripping forms while concrete is still green and steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

C. BASE PLATE, EQUIPMENT BASES AND FOUNDATIONS

Provide machine and equipment bases (housekeeping pad/pier) and foundations, as shown on the Plans. Set anchor bolts for machines and equipment with template at correct elevations, complying with certified diagrams or templates of manufacturers furnishing machines and equipment.

Provide 4-inch-high, square or rectangular concrete pad around all conduits and small diameter pipes that penetrate through floor slabs.

Provide leveling grout under base plates and equipment frames using non-metallic, non-shrink grout. Minimum thickness for leveling grout shall be 1/2 inch unless noted otherwise on the Plans or specified by equipment manufacturer.

D. STAIR NOSINGS

Provide stair nosings at all exterior cast-in-place concrete stairs or steps. The stair nosings shall be installed in accordance with the manufacturer's written instructions.

3.16 CONCRETE SURFACE REPAIRS

A. PATCHING DEFECTIVE AREAS

Repair and patch defective areas immediately after removal of forms. Cut out honeycomb, rock pockets, voids or bugholes over 1/4 inch in any dimension, and holes left by tie rods and bolts, down to solid concrete but, in no case to a depth of less than 1 inch. Make edges of cuts perpendicular to the concrete surface. Thoroughly clean, dampen with water, and brush-coat the area to be patched with specified bonding agent. For water and wastewater containment structures, utilize an epoxy resin bonding agent. Place patching mortar after bonding compound has dried.

For exposed-to-view surfaces, blend white Portland cement and standard Portland cement so that, when dry, patching mortar will match surrounding color. Provide test areas at inconspicuous location to verify mixture and color match before proceeding with patching. Compact mortar in place and strike-off slightly higher than surrounding surface.

B. REPAIR OF FORMED SURFACES

Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of the Engineer. Surface defects, as such, include color and texture irregularities, cracks, spalls, air bubbles, bug holes, honeycomb, rock pockets; fins and other discolorations that cannot be removed by cleaning. Flush out form tie holes and form bolt holes, fill with non-shrink grout, or precast concrete cone plugs or rubber plugs secured in place with bonding agent or epoxy adhesive.

Repair concealed formed surfaces, where possible, that contain defects that affect the durability of concrete. All repairs shall be approved by the Engineer. If defects cannot be repaired, the Contractor shall remove and replace the concrete.

C. REPAIR OF UNFORMED SURFACES

Test unformed surfaces, such as monolithic slabs, for smoothness and verify surface plane to tolerances specified for each surface and finish. Correct low and high areas as herein specified. Test unformed surfaces sloped to drain for trueness of slope, in addition to smoothness using a template having required slope.

Repair finished unformed surfaces that contain defects, which affect durability of concrete. Surface defects, as such, include crazing, cracks in excess of 0.01 inches wide or which penetrate to reinforcement or completely through non-reinforced sections regardless of width, spalling, pop-outs, honeycomb, rock pockets, and other objectionable conditions.

Correct high areas in unformed surfaces by grinding, after concrete has cured at least 14 days. Correct low areas in unformed surfaces during or immediately after completion of surface finishing operations by cutting out low areas and replacing with fresh concrete. Finish repaired areas to blend into adjacent concrete. Proprietary patching compounds may be used when acceptable to the Engineer.

Repair defective areas, except random cracks and single holes not exceeding 1-inch diameter, by cutting out and replacing with fresh concrete. Remove defective areas to sound concrete with clean, square cuts and expose reinforcing steel with at least 3 inches of clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials to provide concrete of same type or class as original concrete. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.

Repair isolated random cracks and single holes not over 1 inch in diameter by dry-pack method. Groove top of cracks and cutout holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Mix dry-pack, consisting of one part Portland cement to 2-1/2 parts fine aggregate passing a No. 16 mesh sieve, using only enough water as required for handling and placing. Place dry pack after bonding agent has dried. Compact dry-pack mixture

in place and finish to match adjacent concrete. Keep patched area continuously moist for not less than 72 hours.

Perform structural repairs with prior approval of the Engineer for method and procedure, using specified epoxy adhesive and mortar. Repair methods not specified above may be used, subject to approval of the Engineer. If acceptable repairs cannot be made, the Contractor shall remove and replace the concrete at no cost to the Owner.

3.17 QUALITY CONTROL TESTING DURING CONSTRUCTION

A. GENERAL

Sampling and testing for quality control during placement of concrete shall include the following:

1. Sampling Fresh Concrete

   ASTM C172, except modified for slump to comply with ASTM C94.

2. Slump

   ASTM C143: one test at point of discharge for each day's placement of each type of concrete; additional tests when concrete consistency seems to have changed.

3. Air Content

   ASTM C173, volumetric method for lightweight or normal weight concrete; ASTM C231 pressure method for normal weight concrete; one for each day's placement of each type of air-entrained concrete.

4. Concrete Temperature

   Test hourly when air temperature is 40 degrees F (4 degrees C) and below, and when 80 degrees F (27 degrees C) and above; and each time a set of compression test specimens is made.

5. Compression Test Specimen

   ASTM C31; one set of four standard cylinders for each compressive strength test, unless otherwise directed. Mold and

store cylinders for laboratory cured test specimens except when field-cure test specimens are required.

6. Compressive Strength Tests

ASTM C39; one set for each day's placement exceeding 5 cubic yards plus additional sets for each 50 cubic yards over and above the first 25 cubic yards of each concrete class placed in any 1 day; one specimen tested at 7 days, two specimens tested at 28 days, and one specimen retained in reserve for later testing if required.

When total quantity of a given class of concrete is less than 50 cubic yards, Engineer may waive strength test if, in their judgment, adequate evidence of satisfactory strength is provided.

When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, evaluate current operations and provide corrective procedures for protecting and curing the in-place concrete. Strength level of concrete will be considered satisfactory if averages of sets of three consecutive strength test results equal or exceed specified compressive strength, and no individual strength test result falls below specified compressive strength by more than 500 psi.

Test results will be reported via email to Engineer and Contractor within 24 hours after testing. Reports of compressive strength tests shall contain the project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in structure, design compressive strength at 28 days, concrete mix proportions and materials; compressive breaking strength and type of break for both 7-day tests and 28-day tests.

7. Shrinkage/Expansion Testing

Concrete for the Reservoir 2 topping slab must provide expansion between 0.04 percent and 0.10 percent at 7 days when tested in accordance with ASTM C878.

28-day shrinkage is limited to a maximum of 0.015 percent.

8. Nondestructive Testing

Impact hammer, sonoscope, or other nondestructive device may be permitted but shall not be used as the sole basis for acceptance or rejection of concrete.

9. Additional Tests

The testing service will make additional tests of in-place concrete when test results indicate specified concrete strengths and other characteristics have not been attained in a structure, as directed by the Owner. Testing service may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42, or by other methods as directed. Contractor shall pay for cost of such tests when unacceptable concrete is verified.

3.18 WATERTIGHTNESS

All water and wastewater holding tanks, basins and structures listed on the Structural Plans shall be tested for watertightness. Each tank, structure or basin shall be tested independently.

Watertightness tests shall be made after the concrete has obtained at least 90 percent of its required 28-day compressive strength, but in no case sooner than 20 days after placement. Watertightness shall conform to the requirements of ACI 350.1.

Leakage testing shall not be conducted during periods of time with measurable precipitation. Evaporation correction shall be made on the basis of an evaporation pan. Suitable evaporation pan shall be approved by Owner and shall be provided by Contractor.

Watertightness testing may follow backfill of the structure, at the Contractor's option. However, if the structure does not pass the test, re-excavation to locate leaks shall be required. All costs associated with location (re-excavation and backfilling) and repair of leaks shall be borne by the Contractor.

***** END OF SECTION *****

SECTION 03930

CONCRETE REHABILITATION

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section includes repair of existing concrete structures as called for in the Plans.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
01300	Submittals
01310	Project Meetings

1.3 REFERENCES

This Section references the latest revisions of the following documents:

The following standards are referenced and shall be considered a part of these Specifications:

American Society for Testing and Materials (ASTM):

ASTM C 33, Concrete Aggregates
ASTM C 117, Materials Finer Than 75 micrometer (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C 136, Sieve Analysis of Fine and Coarse Aggregates
ASTM C 881, Epoxy-Resin-Base Bonding Systems for Concrete
ASTM D 4258, Practice for Surface Cleaning Concrete for Coating
ASTM D 4260, Standard Practice for Acid Etching Concrete

Society for Protective Coatings:

SSPC-SP 13, Surface Preparation of Concrete

International Concrete Repair Institute (ICRI):

Technical Guideline No. 310.2R-2013, Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays.
Technical Guideline No. 310.1R-2008, Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion

1.4 DEFINITIONS

A. EPOXY RESIN ADHESIVE

A two-component smooth paste epoxy adhesive used by itself to secure injection ports in cracks and seal cracks prior to pressure injection grouting.

B. EPOXY RESIN

A two-component epoxy resin adhesive in low and medium viscosities used by itself as a primer, an adhesive, for pressure-injection of cracks in structural concrete

C. POLYMER-MODIFIED CEMENT MORTAR

A two-component, polymer modified Portland cement trowel grade mortar for horizontal and vertical surfaces with a penetrating corrosion inhibitor.

1.5 SUBMITTALS

In addition to the general submittal requirements listed in Section 01300, the following shall be submitted:

A. Written acknowledgment and certification that products submitted meet requirements of standards referenced in this Section.

B. Manufacturer's application instructions.

C. Manufacturer's surface preparation instructions.

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

E. List of Applicator's experience and qualifications. A minimum of 5-years of experience in the rehabilitation of structural concrete for liquid containment structures of wastewater treatment plant facilities required.

1.6 DELIVERY, STORAGE, AND HANDLING

Inspect materials delivered to site for damage, unload and store with a minimum of handling. Deliver epoxy resin components, mortars, and aggregate materials in original sealed containers and store in dry covered areas at temperatures below 30 degrees C (90 degrees F). Remove unused mixed materials which have reached end of working or pot life from job site.

1.7 WEATHER LIMITATIONS

Halt work when weather conditions detrimentally affect the quality of patching or bonding concrete. Apply product materials only when the contact surfaces and if the atmospheric and surface temperature ranges are suitable for the specified material. Follow manufacturer's instructions for weather conditions and temperature ranges.

1.8 EQUIPMENT

Use a container recommended by the product manufacturer as the mixing vessel. Use a power drive (air or spark-proof) and manufacturer recommended propeller type blade for mixing except that hand mixing may be used for small batches. Use equipment specified by product manufacturer for field mixing of aggregates, epoxy resin, and mortars.

PART 2 PRODUCTS

2.1 APPROVED MANUFACTURERS

Subject to compliance with requirements, concrete rehabilitation products shall be manufactured by Sika Corporation, or approved equal.

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

Sika Corporation products are the reference standard and Sika designations for product type are used herein. Requirements for an approved equal product are listed below:

A. For approval of an equal manufacturer. The Contractor shall provide to the Government in writing a detailed side-by-side comparison of the proposed equal Products Characteristics, Performance Characteristics, and Application Conditions for each Sika product specified in this specification. For consideration for approval this written comparison shall be certified and notarized by an officer of the proposed manufacturer as true and correct.

B. For Products Characteristics this detailed side-by-side comparison shall include for example, but not limited to, Density, Compressive Strength, Bond Strength, Viscosity, Mix Ratio, Coverage, Drying Schedule, Corrosion Testing, and Shelf Life.

C. For Performance Characteristics this detailed side-by-side comparison shall include for example, but not limited to, Corrosion Weathering, Compressive Strength, Flexural Strength, Splitting Tensile Strength, Freeze/Thaw Resistance, and Bond Strength.

D. In addition to the detailed side-by-side comparison for approval of an equal manufacturer, The Contractor shall provide to the Government in writing five similar installations that have had the proposed or equal product system and date product system was put into service. In addition, the installations names, locations, and owner's name with contact person and telephone number shall be provided.

E. For consideration for approval as an equal product the detailed side-by-side comparison shall be submit, with successful bidder's Shop Drawing at the time of the Preconstruction Conference, along with any proposed monetary adjustments to the contract price. As with all shop drawings, final approval rests with the Government.

F. As a minimum standard any equal product system shall have a 5-year service history.

2.2 MATERIALS

A. CRACK SURFACE SEALER FOR PRESSURE INJECTION

Epoxy Resin Adhesive shall be used as the crack surface sealer for pressure grouting. The epoxy resin adhesive for sealing cracks and porting devices shall be Sikadur 31 Hi-Mod Gel, ASTM C 881, Type IV, Grade 3 or approved equal.

The epoxy resin shall consist of two components. Component "A" shall be a modified epoxy resin of the diglycidiether bisphenol A Type or

containing suitable viscosity control agents. It shall not contain butyl glycidyl ether. Component "B" shall be primarily a reaction product of a selected amine blend with an epoxy resin of the diglycidiether bisphenol A Type containing suitable viscosity control agents, pigments, and accelerators. The ratio of component A: component B shall be 1:1 by volume. The material shall not contain asbestos.

Porting devices for automated epoxy resin injection shall be supplied from manufacturer of the pressure injection equipment.

B. EPOXY RESIN FOR PRESSURE INJECTION CRACK REPAIR

Epoxy resin for pressure injection of cracks up to 1/4-inch wide in structural concrete shall be Sikadur 52, ASTM C 881, Type I, Grade 1 or approved equal.

The epoxy resin shall consist of two components. Component "A" shall be a modified epoxy resin of the diglycidiether bisphenol A Type or containing suitable viscosity control agents. It shall not contain butyl glycidyl ether. Component "B" shall be primarily a reaction product of a selected amine blend with an epoxy resin of the diglycidiether bisphenol A Type containing suitable viscosity control agents, pigments, and accelerators. The ratio of component A: component B shall be 2:1 by volume. The material shall not contain asbestos.

C. POLYMER-MODIFIED CEMENT MORTAR

The Polymer Modified Morter for structural repair of horizontal concrete surfaces and cracks larger than 1/4 inch shall be SikaTop 122 Plus. Structural repairs of vertical and overhead surfaces shall use SikaTop 123 Plus.

The polymer-modified cement mortar shall consist of two components. Component "A" shall be a liquid polymer emulsion of an acrylic copolymer base and additives with the following properties:

1. pH range from 4.5 to 6.5.

2. Film forming temperature 73 degrees F maximum.

3. Tear strength 950-psi min.

4. Elongation at break 500 percent minimum.

5. Particle size shall be less than 0.1 micron.

Component "A" shall contain an organic, penetrating corrosion inhibitor which has been independently proven to reduce corrosion in concrete via ASTM G3 (half-cell potential tests). The corrosion inhibitor shall not be calcium nitrate, and shall have a minimum of 5 years of independent field testing to document performance on actual construction projects.

Component "B" shall be a blend of selected Portland cements, specially graded aggregates, admixtures for controlling setting time, water reducers for workability, and an organic accelerator as manufactured by Sika.

The components shall be non-combustible, both before and after cure. The materials shall be supplied in a factory-proportioned unit. The polymer-modified, portland cement mortar must be placeable from 1/8 inch to 1-1/2 inch in depth per lift for vertical applications and 1/8-inch to 1-inch depth for overhead applications.

D. BONDING ADHESIVE

The bonding adhesive shall be used at all joints between existing concrete and cement repairs, and shall be Sikadur 32 Hi-Mod.

PART 3 EXECUTION

3.1 PREPARATION

A. CRACK SURFACE SEALER FOR PRESSURE INJECTION

Surface shall be clean and sound. Inspect the concrete in repair area for remaining defective concrete by tapping with a hammer or steel rod and listening for dull or hollow sounds. In areas where tapping does not produce a solid tone, remove additional concrete until testing produces a solid tone. Surface may be dry or damp, but free of standing water. Remove dust, laitance, grease, curing compounds, impregnations, waxes, and any other contaminants. Concrete shall be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by blast cleaning or equivalent mechanical means. Exposed reinforcing steel shall be cleaned and prepared thoroughly by blast cleaning.

B. EPOXY RESIN FOR PRESSURE INJECTION CRACK REPAIR

Surface shall be clean and sound. Inspect the concrete in repair area for remaining defective concrete by tapping with a hammer or steel rod and listening for dull or hollow sounds. In areas where tapping does not

produce a solid tone, remove additional concrete until testing produces a solid tone. Surface may be dry or damp, but free of standing water. Remove dust, laitance, grease, curing compounds, impregnations, waxes, and any other contaminants. Concrete shall be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by blast cleaning or equivalent mechanical means. Exposed reinforcing steel shall be cleaned and prepared thoroughly by blast cleaning.

C. POLYMER MODIFIED CEMENT MORTAR

Remove deteriorated concrete, dirt, oil, grease, and all bond-inhibiting materials from surface. Inspect the concrete in repair area for remaining defective concrete by tapping with a hammer or steel rod and listening for dull or hollow sounds. In areas where tapping does not produce a solid tone, remove additional concrete until testing produces a solid tone.

Repair area shall be at least 1/8 inch in depth. Preparation work shall be done by high pressure water blast, scabbler, or other appropriate mechanical means to obtain an exposed aggregate surface with a minimum surface profile of ± 1/16 inch (CSP-5). Surface shall be saturated surface dry with no standing water during application. Exposed reinforcing steel shall be thoroughly prepared by mechanical cleaning to remove all traces of rust. Where corrosion has occurred due to the presence of chlorides, the steel shall be high-pressure washed with clean water after mechanical cleaning. Exposed reinforcing steel shall be primed with Sika Armatec 110 EpoCem follow surface preparation.

The substrate shall be primed with a brush or spray applied coat of Sika Armatec 110 EpoCem prior to placement of the mortar.

3.2 MIXING MATERIALS

Make batches small enough to ensure placement before binder sets. Mix materials in accordance with manufacturer's recommendations.

3.3 PLACEMENT

A. CRACK SURFACE SEALER FOR PRESSURE INJECTION

Place neat mixed material over the cracks to be pressure injected and around each injection port. Allow sufficient time to set before pressure injecting.

B. EPOXY RESIN FOR PRESSURE INJECTION CRACK REPAIR

Use automated injection equipment or manual method. Set appropriate injection ports based on system used. Ports shall be located beside the crack and drilled at angle to intersect the crack at mid-depth of the concrete slab. Seal ports and cracks with Sikadur 31. When crack surface sealer has cured, inject Sikadur 52 with steady pressure.

C. POLYMER MODIFIED CEMENT MORTAR

The substrate shall be primed with a brush or sprayed applied coat of Sika Armatec 110 EpoCem at rate of 80 square feet per gallon. Existing concrete and rebar shall be primed. Apply one coat and allow to dry, and apply second coat and allow to dry prior to installation of polymer modified cement mortar, in accordance with manufacturer instructions.

Force polymer modified cement mortar against edge of repair, working toward center. After filling repair, consolidate, then screed. Material may be applied in multiple lifts. The thickness of each lift shall not be less than 1/8-inch minimum or more than 1.5 inches maximum. Where multiple lifts are required, score top surface of each lift to produce a roughened surface for the next lift and allow product to cure for 30 minutes minimum. Apply subsequent lifts after preceding lift has set. Saturate surface of the lift with clean water and scrub mortar into preceding lift. Allow the mortar or concrete to set to desired stiffness then finish to match surrounding surfaces.

3.4 CURING

Cure materials in accordance with manufacturer's recommendations. Polymer modified cement mortar shall be kept continuously wet for a minimum of seven days after placement. Curing methods may include wet burlap and polyethylene cover, or fine mist of water.

3.5 INSPECTION

Check each repaired area for cracks, spalls, popouts and loss of bond between repaired area and surrounding concrete. Check each repaired area for voids by tapping with a hammer or steel rod and listening for dull or hollow sounds. Immediately repair defects.

***** END OF SECTION *****

DIVISION 5

METALS

SECTION 05120

STRUCTURAL STEEL

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section includes structural steel work as shown on the Plans, including schedules, notes, and details to show size and location of members, typical connections, and type of steel required. Miscellaneous metal fabrications are specified elsewhere in Division 5.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
01300	Submittals
03300	Cast-In-Place Concrete
06520	Fiberglass Reinforced Plastic (FRP) Grating
07410	Metal Roof and Wall Panels

1.3 REFERENCES

This Section references the latest revisions of the following documents:

Reference	Title
ASTM A36	Structural Steel
ASTM A53	Hot-Dipped, Zinc-coated Welded and Seamless Steel Pipe
ASTM A123	Zinc (Hot Dipped Galvanized) Coatings on Iron and Steel Products
ASTM A153	Zinc Coating (Hot Dip) on Iron and Steel Hardware
ASTM A276	Stainless Steel Bars and Shapes
ASTM A307	Carbon Steel Externally Threaded Standard Fasteners
ASTM A325	High Strength Bolts for Structural Steel Joints
ASTM A490	Quenched and Tempered Alloy Steel Bolts for Structural Steel Joints
ASTM A500	Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Round and Shapes
ASTM A501	Hot-Formed Welded and Seamless Carbon Steel Structural Tubing
ASTM A572	High-Strength Structural Steel
ASTM A992	High-Strength Structural Steel
AWS A2.4	Standard Welding Symbols
AWS D1.1	Structural Welding Code

AISC	Specification for Structural Steel Buildings
SSPC	Steel Structures Painting Council

1.4 SUBMITTALS

Submit under provisions of Section 01300.

A. SHOP DRAWINGS

Indicate profiles, sizes, spacing, locations, and complete details of structural members, to include openings, cuts, camber, fasteners, connections, and other pertinent data. Indicate welded connections with AWS A2.4 welding symbols. Indicate net weld lengths. Provide setting drawings, templates, and directions for installation of anchor bolts and other anchorages to be installed as work of other sections.

B. MANUFACTURER'S MILL CERTIFICATE

Submit under provisions of Section 01300 certifying that products meet or exceed specified requirements.

C. MILL TEST REPORTS

Submit under provisions of Section 01300 Manufacturer's Certificates, indicating structural strength, destructive and non-destructive test analysis.

D. WELDERS' CERTIFICATES

Submit under provisions of Section 01300 Manufacturer's Certificates, certifying welders employed on the Work, verifying AWS qualifications within the previous 12 months.

1.5 QUALITY ASSURANCE

Codes and Standards: Comply with the provisions of the following, except otherwise indicated:

Standard	**Title**
AISC	"Code of Standard Practice for Steel Buildings and Bridges"
AISC	"Specifications for Structural Steel Buildings," including "Commentary" and Supplements thereto as issued

AISC	"Specifications for Structural Joints using ASTM A325 or A490 Bolts" approved by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation.
American Welding Society (AWS)	D1.1 "Structural Welding Code – Steel"
ASTM A6	"General Requirements for Delivery of Rolled Steel Plates, Shapes, Sheet Piling and Bars for Structural Use"

1.6 DELIVERY, STORAGE, AND HANDLING

Deliver material to site at such intervals to ensure uninterrupted progress of work.

Deliver anchor bolts and anchorage devices that are to be embedded in cast-in-place concrete or masonry in ample time as to not delay work.

Store materials to permit easy access for inspection and identification. Keep steel members off ground, using pallets, platforms, or other supports. Protect steel members and packaged materials from erosion and deterioration.

Do not store materials on structure in a manner that might cause distortion or damage to members or supporting structures. Repair or replace damaged materials or structures as directed.

PART 2 PRODUCTS

2.1 MATERIALS

A. STRUCTURAL STEEL SHAPES

ASTM A992, High-Strength Structural Steel.

B. STRUCTURAL STEEL PLATES AND BARS

ASTM A36, unless noted otherwise.

C. STRUCTURAL TUBING

Cold-Formed:	ASTM A500, Grade B, Fy=46KSI
Hot-Formed:	ASTM A501, Fy=36KSI

D. STEEL PIPE

ASTM A53, Type E or S Grade B.

E. HEADED STUD-TYPE CONNECTORS

ASTM A108, Grade 1015, forged steel, uncoated.

F. HIGH-STRENGTH THREADED FASTENERS

Heavy hexagon structural bolts, as follows:

Quenched and tempered medium carbon steel bolts, nuts and washers complying with ASTM A325.

Quenched and tempered alloy steel bolts, nuts and washers complying with ASTM A490 where indicated.

Heavy hexagon nuts complying with ASTM A563.

Hardened washers complying with ASTM F436.

Provide and install bolts with load indicator devices (load indicator washers or snap-off heads).

G. ANCHOR BOLTS AND THREADED RODS

ASTM F1554, Grade 36, unless noted otherwise. Heavy hexagon nuts complying with ASTM A563 and hardened washers complying with ASTM F436.

ASTM A193 Grade B8, where stainless steel is noted in the plans. Heavy hexagon nuts complying with ASTM A194 Grade 8 and type 304 stainless steel washers.

H. UNFINISHED THREADED FASTENERS

ASTM A307, Grade A, regular low-carbon steel bolts and nuts. Provide hexagonal heads and nuts for all connections.

I. EXPANSION ANCHORS

Provide size and type indicated. Expansion anchors shall be one-piece stud type, wedge-style anchor.

Carbon steel expansion anchors shall meet the following:

- Stud: ASTM A108 and zinc plated in accordance with ASTM B633
- Wedge: AISI 1010 carbon steel
- Nut: ASTM A563 Grade A
- Washer: SAE 1005-1020

Stainless steel expansion anchors shall meet the following:

- Stud: ASTM F593, AISI 304 or 316
- Wedge: AISI 304 or 316
- Nut: ASTM F594
- Washer: AISI 304 or 316 conforming to ASTM A240

Subject to compliance with the requirements, products which may be incorporated in the work include, but are not limited to, the following:

KWIK Bolt 3, Hilti, Inc.
Strong-Bolt 2, Simpson Strong Tie, Inc.
Power-Stud+ SD1, Powers Fasteners, Inc.

J. FLUSH TYPE EXPANSION ANCHORS

Provide size to match fastener indicated, conforming to AISI 12L14, meeting ASTM A108, and zinc plated in accordance with ASTM B633, SC1, Type III.

Subject to compliance with the requirements products, which may be incorporated in the work include, but are not limited to, the following:

HDI Anchor, Hilti, Inc.
Drop-In Anchor, Powers Fasteners, Inc.

K. ADHESIVE ANCHORS

1. Adhesive capsules shall be self-contained two-part component consisting of a vinyl urethane resin with a Dibenzoyl Peroxide Hardener.

Subject to compliance with the requirements products, which may be incorporated in the work include, but are not limited to the following:

HVU Adhesive capsule, Hilti, Inc.
Chem-Stud Capsule, Powers Fasteners, Inc.

2. Injection adhesive system shall consist of a dual-cylinder adhesive refill pack, a mixing nozzle, and dispenser. The adhesive shall be formulated to include resin and hardeners.

   Subject to compliance with the requirements products, which may be incorporated in the work include, but are not limited to, the following:

   HIT RE 500 V3 Injection Adhesive Anchor, Hilti, Inc.
   SET-3G, Simpson Strong Tie, Inc.
   PE1000+, Powers Fasteners, Inc.

3. For hollow-base materials such as concrete masonry units (CMU), provide galvanized screen tubes as required by the manufacturer.

   Subject to compliance with the requirements products, which may be incorporated in the work include, but are not limited to, the following:

   HIT HY 70 Adhesive Anchor System for Unreinforced Masonry, Hilti, Inc.
   Pure 110+, Powers Fasteners, Inc.

L. WELDING MATERIALS

AWS A5.1 or A5.5, E70XX; AWS A5.17, E70S-X; AWS A5.20, E70XT-X. Comply with AWS code.

M. GROUTING MATERIALS

Shall comply with Section 03300 “Cast-in-Place Concrete.”

N. STRUCTURAL STEEL PRIMER PAINT

Epoxy Primer per Section 09900, SSPC SP-10.

2.2 FABRICATION

A. SHOP FABRICATION AND ASSEMBLY

Fabricate and assemble structural assemblies in shop to greatest extent possible. Fabricate items of structural steel in accordance with AISC Specifications and as indicated on final shop drawings. Provide camber in structural members where indicated.

Properly mark and match-mark materials for field assembly. Fabricate for delivery sequence, which will expedite erection and minimize field handling of materials.

Where finishing is required, complete assembly, including welding of units, before start of finishing operations. Provide finish surfaces of members exposed in final structure free of markings, burrs, and other defects.

B. CONNECTIONS

Weld or bolt shop connections, as indicated on the Plans or as specified.

Bolt field connections, except where welded connections or other connections are indicated.

Provide high-strength threaded fasteners for all bolted connections, except where unfinished bolts are indicated.

C. HIGH-STRENGTH BOLTED CONSTRUCTION

Install high-strength threaded fasteners in accordance with AISC "Specifications for Structural Joints using ASTM A325 or A490 Bolts."

D. WELDED CONSTRUCTION

Comply with AWS Code for procedures, appearance and quality of welds, and methods used in correcting welding work. Assemble and weld built-up sections where indicated by methods which will produce true alignment of axes without warp.

E. SHEAR CONNECTORS

Prepare steel surfaces as recommended by manufacturer of shear connectors. Shop weld shear connectors, spaced as shown, to beams and

girders in composite construction. Use automatic end welding of headed stud shear connectors in accordance with manufacturer's printed instructions.

F. STEEL WALL FRAMING

Select members, which are true and straight for fabrication of steel wall framing. Straighten as required to provide uniform, square and true members in completed wall framing. Where indicated, build up welded doorframes attached to structural steel framing. Weld exposed joints continuously and grind smooth. Plug weld steel bar stops to frames, except where shown removable. Secure removable stops to frames with countersunk, cross-recessed head machine screws, uniformly spaced not more than 10-inches on center, unless otherwise indicated.

Provide holes required for securing other work to structural steel framing, and for passage of other work through steel framing member, as shown on final shop drawings.

Provide threaded nuts welded to framing, and other specialty items as indicated to receive other work.

Cut, drill, or punch holes perpendicular to metal surfaces. Do not flame cut holes or enlarge holes by burning. Drill holes in bearing plates.

2.3 SHOP PAINTING

A. GENERAL

Shop paint structural steel, except those members or portions of members to be embedded in concrete or mortar. Paint embedded steel that is partially exposed, or the exposed portions and initial two inches of embedded areas only. Do not paint surfaces that are to be welded or are high-strength bolted with friction-type connections. Apply two coats of paint complying with Section 09900 to surfaces that are inaccessible after assembly or erection.

B. SURFACE PREPARATION

After inspection and before shipping, clean steelwork to be painted. Remove loose rust, loose mill scale, and spatter, slag or flux deposits. Clean steel in accordance with Steel Structures Painting Council (SSPC) as follows: SP-10 "Near-White Blast Cleaning."

C. PAINTING

Immediately after surface preparation, apply structural steel primer paint in accordance with Section 09900 and manufacturer's instructions and at a rate to provide dry film thickness of not less than 1.5 mils DFT. Use painting methods, which result in full coverage of joints, corners, edges and exposed surfaces.

D. ZINC COATING

Unless noted otherwise, where structural steel (ferrous metal) is exposed to weather, it shall be zinc coated or galvanized by the "hot-dip" method in accordance with ASTM A123. Provide the following minimum coating weight per square foot of actual surface.

(a)	Steel 1/8 inch	2.0 Ounces Average
	and 3/16 inch	1.8 Ounces Minimum
(b)	Steel 1/4 inch	2.3 Ounces Average
	and heavier	2.0 Ounces Minimum

Provide galvanized fasteners with zinc-coated items.

2.4 SOURCE QUALITY CONTROL AND TESTS

Testing and analysis of components will be performed under provisions of Section 01400.

PART 3 EXECUTION

3.1 ERECTION

A. GENERAL

Provide temporary shoring and bracing members with connections of sufficient strength to bear imposed loads. Remove temporary members and connections when permanent members are in place and final connections are made. Provide temporary guy lines to achieve proper alignment of structures as erection proceeds.

B. SETTING BASES AND BEARING PLATES

Clean concrete and masonry bearing surfaces of bond-reducing materials and roughen to improve bond to surfaces. Clean bottom surface of base and bearing plates.

Set loose and attached base plates and bearing plates for structural members on wedges or other adjusting devices.

Tighten anchor bolts after supported members have been positioned and plumbed. Do not remove wedges or shims, but if protruding, cut off flush with edge of base or bearing plate prior to packing with grout.

Pack non-shrink grout solidly between bearing surfaces and bases or plates to ensure that no voids remain. Finish exposed surfaces, protect installed materials, and allow to cure. For proprietary grout materials, comply with manufacturer's instructions.

C. FIELD ASSEMBLY

Set structural frames accurately to lines and elevations indicated. Align and adjust various members forming part of complete frame or structure before permanently fastening. Clean bearing surfaces and other surfaces that will be in permanent contact before assembly. Perform necessary adjustments to compensate for discrepancies in elevations and alignment. Level and plumb individual members of structure within specified AISC tolerances.

Splice members only where indicated and accepted on shop drawings.

D. ERECTION BOLTS

On exposed welded construction, remove erection bolts, fill holes with plug welds, and grind smooth at exposed surfaces.

Comply with AISC Specification for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces adjacent to field welds.

Do not enlarge unfair holes in members by burning or by use of drift pins, except in secondary bracing member. Ream holes that must be enlarged to admit bolts.

E. GAS CUTTING

Do not use gas-cutting torches in field for correcting fabrication errors in primary structural framing. Cutting will be permitted only on secondary members, which are not under stress, as acceptable to the Engineer.

F. TOUCHUP PAINTING

Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint. Apply paint to exposed areas using same material as used for shop painting. Apply by brush or spray to provide minimum dry film thickness of 1.5 mils. Painting shall conform to the requirements of Section 09900.

Cleaning and touchup painting of field welds, bolted connections and abraded areas of shop paint on structural steel is included in Section 09900.

G. REPAIR OF GALVANIZED WORK

Galvanized work damaged during installation shall be repaired with a "hot stick method" using "galv-bar."

3.2 QUALITY CONTROL

A. GENERAL

Comply with Section 01400 for independent testing and inspection agency to inspect high-strength bolted connections and welded connections and to perform tests and prepare test reports.

Testing agency shall conduct and interpret tests and state in each report whether test specimens comply with requirements, and specifically state any deviations therefrom.

Provide testing agency access to places where structural steel work is being fabricated or produced so that required inspection and testing can be accomplished.

Testing agency may inspect structural steel at plant before shipment; however, the Engineer reserves right, at any time before final acceptance, to reject material not complying with specified requirements.

Correct deficiencies in structural steel work that inspections and laboratory test reports indicate as not in compliance with requirements. The performance of additional tests, at the Contractor's expense, may be necessary to reconfirm any non-compliance of original work, as well as to show compliance of corrected work.

B. SHOP-BOLTED CONNECTIONS

Inspect or test in accordance with AISC specifications.

C. SHOP WELDING

Inspect and test during fabrication of structural steel assemblies, as follows:

Certify welders and conduct inspections and tests as required. Record types and locations of defects found in work. Record work required and performed to correct deficiencies.

Perform visual inspection of all welds.

Perform tests of welds as follows. Inspection procedures listed are to be used at Contractor's option.

CONTRACTOR'S OPTION

Liquid Pentrant Inspection:	ASTM E165
Magnetic Particle Inspection:	ASTM E709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration not acceptable.
Radiographic Inspection:	ASTM E94
Ultrasonic Inspection:	ASTM E164

D. FIELD-BOLTED CONNECTIONS

Inspect in accordance with AISC specifications.

E. FIELD WELDING

Inspect and test during erection of structural steel as follows:

Certify welders and conduct inspections and tests as required. Record types and locations of defects found in work. Record work required and performed to correct deficiencies.

Perform visual inspection of all welds.

Perform tests of welds as follows:

Liquid Pentrant Inspection:	ASTM E165
Magnetic Particle Inspection:	ASTM E709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration not acceptable.
Radiographic Inspection:	ASTM E94
Ultrasonic Inspection:	ASTM E164

***** END OF SECTION *****

SECTION 05122

STRUCTURAL STAINLESS STEEL

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section includes structural stainless steel work as shown on the Plans, including schedules, notes, and details to show size and location of members, typical connections, and type of steel required.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
01300	Submittals
03300	Cast-In-Place Concrete
05120	Structural Steel
05500	Miscellaneous Metal Fabrications

1.3 REFERENCES

This Section references the latest revisions of the following documents:

Reference	Title
ASTM A276	Stainless Steel Bars and Shapes
AWS A2.4	Standard Welding Symbols
AWS D1.1	Structural Welding Code
AISC	Specification for Structural Steel Buildings
SSPC	Steel Structures Painting Council

1.4 SUBMITTALS

Submit under provisions of Section 01300.

A. SHOP DRAWINGS

Indicate profiles, sizes, spacing, locations, and complete details of structural members, to include openings, cuts, camber, fasteners, connections, and other pertinent data. Indicate welded connections with AWS A2.4 welding symbols. Indicate net weld lengths. Provide setting drawings, templates, and directions for installation of anchor bolts and other anchorages to be installed as work of other sections.

B. MANUFACTURER'S MILL CERTIFICATE

Submit under provisions of Section 01300 certifying that products meet or exceed specified requirements.

C. MILL TEST REPORTS

Submit under provisions of Section 01300 Manufacturer's Certificates, indicating structural strength, destructive and non-destructive test analysis.

D. WELDERS' CERTIFICATES

Submit under provisions of Section 01300 Manufacturer's Certificates, certifying welders employed on the Work, verifying AWS qualifications within the previous 12 months.

1.5 QUALITY ASSURANCE

Codes and Standards: Comply with the provisions of the following, except otherwise indicated:

Standard	**Title**
AISC	"Code of Standard Practice for Steel Buildings and Bridges"
AISC	"Specifications for Structural Steel Buildings," including "Commentary" and Supplements thereto as issued
AISC	"Specifications for Structural Joints using ASTM A325 or A490 Bolts" approved by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation.
American Welding Society (AWS)	D1.1 "Structural Welding Code – Steel"
ASTM A6	"General Requirements for Delivery of Rolled Steel Plates, Shapes, Sheet Piling and Bars for Structural Use"

1.6 DELIVERY, STORAGE, AND HANDLING

Deliver material to site at such intervals to ensure uninterrupted progress of work.

Deliver anchor bolts and anchorage devices that are to be embedded in cast-in-place concrete or masonry in ample time as to not delay work.

Store materials to permit easy access for inspection and identification. Keep steel members off ground, using pallets, platforms, or other supports. Protect steel members and packaged materials from erosion and deterioration.

Do not store materials on structure in a manner that might cause distortion or damage to members or supporting structures. Repair or replace damaged materials or structures as directed.

PART 2 PRODUCTS

2.1 MATERIALS

A. STRUCTURAL STEEL PLATES, ANGLES, AND BARS

ASTM A276, Type 316 Stainless Steel.

B. HIGH-STRENGTH THREADED FASTENERS

Heavy hexagon structural bolts, as follows:

ASTM F593G or F593H Type 316 stainless steel bolts.

C. ANCHOR BOLTS AND THREADED RODS

ASTM A193 Grade B8M, Type 316 stainless steel bolts. Heavy hexagon nuts complying with ASTM A194 Grade 8M and type 316 stainless steel washers.

D. EXPANSION ANCHORS

Provide size and type indicated. Expansion anchors shall be one piece stud type, wedge-style anchor.

Expansion anchors shall be stainless steel and meet the following:

- Stud: ASTM F593, Type 316
- Wedge: Type 316
- Nut: ASTM F594, Type 316
- Washer: Type 316 conforming to ASTM A240

Subject to compliance with the requirements, products which may be incorporated in the work include, but are not limited to, the following:

KWIK Bolt 3, Hilti, Inc.
Strong-Bolt 2, Simpson Strong Tie, Inc.
Power-Stud+ SD1, Powers Fasteners, Inc.

E. ADHESIVE ANCHORS

1. Injection adhesive system shall consist of a dual-cylinder adhesive refill pack, a mixing nozzle, and dispenser. The adhesive shall be formulated to include resin and hardeners.

Subject to compliance with the requirements products, which may be incorporated in the work include, but are not limited to, the following:

HIT RE 500 V3 Injection Adhesive Anchor, Hilti, Inc.
SET-3G, Simpson Strong Tie, Inc.
PE1000+, Powers Fasteners, Inc.

F. WELDING MATERIALS

AWS A5.1 or A5.5, E70XX; AWS A5.17, E70S-X; AWS A5.20, E70XT-X. Comply with AWS code.

G. GROUTING MATERIALS

Shall comply with Section 03300 "Cast-in-Place Concrete."

2.2 FABRICATION

A. SHOP FABRICATION AND ASSEMBLY

Fabricate and assemble structural assemblies in shop to greatest extent possible. Fabricate items of structural steel in accordance with AISC Specifications and as indicated on final shop drawings. Provide camber in structural members where indicated.

Properly mark and match-mark materials for field assembly. Fabricate for delivery sequence, which will expedite erection and minimize field handling of materials.

Where finishing is required, complete assembly, including welding of units, before start of finishing operations. Provide finish surfaces of members exposed in final structure free of markings, burrs, and other defects.

B. CONNECTIONS

Weld or bolt shop connections, as indicated on the Plans or as specified.

Bolt field connections, except where welded connections or other connections are indicated.

Provide high-strength threaded fasteners for all bolted connections, except where unfinished bolts are indicated.

C. WELDED CONSTRUCTION

Comply with AWS Code for procedures, appearance and quality of welds, and methods used in correcting welding work. Assemble and weld built-up sections where indicated by methods which will produce true alignment of axes without warp.

D. SHEAR CONNECTORS

Prepare steel surfaces as recommended by manufacturer of shear connectors. Shop weld shear connectors, spaced as shown, to beams and girders in composite construction. Use automatic end welding of headed stud shear connectors in accordance with manufacturer's printed instructions.

2.3 SOURCE QUALITY CONTROL AND TESTS

Testing and analysis of components will be performed under provisions of Section 01400.

PART 3 EXECUTION

3.1 ERECTION

A. GENERAL

Provide temporary shoring and bracing members with connections of sufficient strength to bear imposed loads. Remove temporary members and connections when permanent members are in place and final

connections are made. Provide temporary guy lines to achieve proper alignment of structures as erection proceeds.

B. SETTING BASES AND BEARING PLATES

Clean concrete and masonry bearing surfaces of bond-reducing materials and roughen to improve bond to surfaces. Clean bottom surface of base and bearing plates.

Set loose and attached base plates and bearing plates for structural members on wedges or other adjusting devices.

Tighten anchor bolts after supported members have been positioned and plumbed. Do not remove wedges or shims, but if protruding, cut off flush with edge of base or bearing plate prior to packing with grout.

Pack non-shrink grout solidly between bearing surfaces and bases or plates to ensure that no voids remain. Finish exposed surfaces, protect installed materials, and allow to cure. For proprietary grout materials, comply with manufacturer's instructions.

C. FIELD ASSEMBLY

Set structural frames accurately to lines and elevations indicated. Align and adjust various members forming part of complete frame or structure before permanently fastening. Clean bearing surfaces and other surfaces that will be in permanent contact before assembly. Perform necessary adjustments to compensate for discrepancies in elevations and alignment. Level and plumb individual members of structure within specified AISC tolerances.

Splice members only where indicated and accepted on shop drawings.

D. ERECTION BOLTS

On exposed welded construction, remove erection bolts, fill holes with plug welds, and grind smooth at exposed surfaces.

Comply with AISC Specification for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces adjacent to field welds.

Do not enlarge unfair holes in members by burning or by use of drift pins, except in secondary bracing member. Ream holes that must be enlarged to admit bolts.

E. GAS CUTTING

Do not use gas-cutting torches in field for correcting fabrication errors in primary structural framing. Cutting will be permitted only on secondary members, which are not under stress, as acceptable to the Engineer.

F. DISSIMILAR METALS

Avoid direct fastening of dissimilar metals to one another. Connections shall include means as required to isolate dissimilar metals from one another. Possible methods of isolation include, but are not limited to, non-metallic bushings/washers at bolts, and epoxy paint coating of contact surfaces. Intended means of isolation shall be noted on the submitted shop drawings. See Section 09900 for epoxy paint requirements.

3.2 QUALITY CONTROL

A. GENERAL

Comply with Section 01400 for independent testing and inspection agency to inspect high-strength bolted connections and welded connections and to perform tests and prepare test reports.

Testing agency shall conduct and interpret tests and state in each report whether test specimens comply with requirements, and specifically state any deviations therefrom.

Provide testing agency access to places where structural steel work is being fabricated or produced so that required inspection and testing can be accomplished.

Testing agency may inspect structural steel at plant before shipment; however, the Engineer reserves right, at any time before final acceptance, to reject material not complying with specified requirements.

Correct deficiencies in structural steel work that inspections and laboratory test reports indicate as not in compliance with requirements. The performance of additional tests, at the Contractor's expense, may be necessary to reconfirm any non-compliance of original work, as well as to show compliance of corrected work.

B. SHOP-BOLTED CONNECTIONS

Inspect or test in accordance with AISC specifications.

C. SHOP WELDING

Inspect and test during fabrication of structural steel assemblies, as follows:

Certify welders and conduct inspections and tests as required. Record types and locations of defects found in work. Record work required and performed to correct deficiencies.

Perform visual inspection of all welds.

D. FIELD-BOLTED CONNECTIONS

Inspect in accordance with AISC specifications.

E. FIELD WELDING

Inspect and test during erection of structural steel as follows:

Certify welders and conduct inspections and tests as required. Record types and locations of defects found in work. Record work required and performed to correct deficiencies.

Perform visual inspection of all welds.

***** END OF SECTION *****

SECTION 05500

MISCELLANEOUS METAL FABRICATIONS

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section includes the miscellaneous metal fabrication work including, but is not limited to, the following: preassembled stairs, ladders, handrails, railings, grating, including stair treads and nosings; floor plates and covers, custom fabricated pipe brackets, supports, and pipe sleeves.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
01300	Submittals
03300	Cast In Place Concrete
04200	Masonry
05120	Structural Steel
05122	Structural Stainless Steel
09900	Painting

1.3 REFERENCES

This section references the latest revisions of the following documents:

Reference	Title
ASTM A36	Structural Steel
ASTM A53	Hot-Dipped, Zinc-coated Welded and Seamless Steel Pipe
ASTM A123	Zinc (Hot-Galvanized) Coatings on Products Fabricated From Rolled, Pressed and Forged Steel Shapes, Plates, Bars, and Strip
ASTM A153	Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A240	Heat-Resisting Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels
ASTM A283	Carbon Steel Plates, Shapes, and Bars
ASTM A307	Carbon Steel Externally Threaded Standard Fasteners
ASTM A325	High Strength Bolts for Structural Steel Joints
ASTM A500	Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Round and Shapes
ASTM A501	Hot-Formed Welded and Seamless Carbon Steel Structural Tubing

ASTM A653	Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM B221	Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes
ASTM B241	Aluminum-Alloy Seamless Pipe and Seamless Extruded Steel Tube
NAAMM	National Association of Architectural Metal Manufacturers, "Metal Bar Grating Manual"
AISC	American Institute of Steel Construction
AWS D1.1	Structural Welding Code - Steel
AWS D1.2	Structural Welding Code - Aluminum
SSPC	Steel Structures Painting Council

1.4 SUBMITTALS

Submit under provisions of Section 01300.

Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.

PART 2 PRODUCTS

2.1 MATERIALS

A. STRUCTURAL STEEL

Structural steel members and sections as defined in the AISC "Code of Standard Practice" are specified in Section 05120. Structural stainless steel members and sections are specified in Section 05122.

B. STEEL CASTINGS

Comply with ASTM A27. Grade 65-35, medium strength carbon steel.

C. CAST IRON

Comply with ASTM A48, Class 20.

D. STAINLESS STEEL

Comply with ASTM A276, Type 316.

E. ALUMINUM ALLOY EXTRUDED BARS, RODS, WIRE, SHAPES AND TUBES

Comply with ASTM B221, Alloy 6061-6.

F. WELDING MATERIALS

As specified in Sections 05120 and 05122.

G. ZINC COATING

Comply with ASTM A123 or ASTM A153.

H. FASTENERS, ANCHORS, AND ANCHOR BOLTS

As specified in Sections 05120 and 05122.

I. PAINTING

Comply with Section 09900.

J. GROUT MATERIALS

As specified in Section 03300.

2.2 PRODUCTS

A. HANDRAILS AND RAILINGS

Handrails and railings shall be clear satin finish, anodized 1-1/2-inch nominal diameter Schedule 40 extruded aluminum tubing conforming to ASTM B241, Alloy 6063 with concealed aluminum spigot splice connectors and fasteners countersunk and flush. Fasteners shall be 316 stainless steel. Maximum post spacing shall be 6'-0" on center.

Post connections shall be cast aluminum R&B Wagner Interna-Rail or approved equal. Mounting shall be cast aluminum R&B Wagner-Interna-Rail drive on flange or approved equal; other acceptable manufacturers are Golden Railings, Inc., or Alumaguard Corporation.

B. GRATING AND STAIR TREADS

Grating and stair treads shall be serrated, aluminum alloy 6063, rectangular bar grating complying with the requirements of NAAMM "Metal Bar Grating Manual"; in addition, stair treads shall be provided with 1-1/4" corratred nosings.

Unless noted otherwise on the Plans, minimum size of aluminum grating shall be 1-1/2" x 3/16" bearing bars at 1-3/16-inch on center with cross bars at 4-inches on center for a maximum span of 4'-6". For spans greater than 4'-6", grating shall be designed for 100 psf uniform load and 250 pounds concentrated load and 1/2-inch maximum deflection.

Stair treads shall be designed for 300-pound concentrated load with 33 1/3 percent impact.

Subject to compliance with the requirements, products which may be incorporated in the work include, but are not limited to the following:

AMICO Bar Grating
IKG Borden
McNichols Co.
Seidlehuber Metal Products

2.3 FABRICATION

Fit and shop assemble components in the largest practical size for delivery and installation at site.

A. STRUCTURAL STEEL MEMBERS AND SECTIONS

Fabrication of structural steel members and sections shall comply with Section 05120.

Provide galvanized fasteners with zinc coated items except as noted below. For all items installed in submerged, intermittently submerged, or areas subject to splash and spill, or corrosive atmospheres, fasteners shall be 316 stainless steel. The term fasteners includes nut, bolts, washers, leveling nuts, and U-bolts.

B. HANDRAIL AND RAILINGS

Unless noted otherwise, handrail and railing assemblies shall include a minimum 1/4" x 4" aluminum kick plate. Fabricate components with joints tightly fitted and secured. Fabricate anchors and related components of the same material and finish unless noted otherwise. Coordinate and accurately form components to suit stairs, landings and building structure. All stair stringers shall have handrail installed on them, unless noted otherwise.

C. GRATING AND STAIR TREADS

Fabricate with bearing bars placed edgewise and joined by straight cross bars. Do not notch, slot or cut bearing bars to receive cross bars. Cross bars shall be secured to the main bearing bars to prevent turning, twisting, or coming loose. Each of the cross bars shall be trimmed flush with outside face of bearing bars. Grating shall be fully banded at ends and at all openings. Provide anchorage as indicated on the Drawings.

D. ACCESSORIES

Provide necessary accessories as required for complete installation of products. Provide anchors, anchor bolts, plates, angles, hangers, struts, and other items required for connecting stairs to structure.

E. ANCHORAGE TO SUPPORTING STRUCTURES

For anchorage to supporting structures, provide 316 stainless steel fasteners for all aluminum items. Provide tapered washers where required to avoid point loading of structural members.

PART 3 EXECUTION

3.1 EXAMINATION

Verify that field conditions are acceptable and are ready to receive the work.

3.2 PREPARATION

Clean and strip primed steel items to bare metal where site welding is required. Supply items required to be cast into concrete or embedded in masonry with setting templates.

Paint embedded aluminum items in accordance with Section 09900.

3.3 INSTALLATION

A. TOLERANCES

Install items plumb and level, accurately fitted, free from distortion or defects. Comply with the following tolerances:

Maximum Variation From Plumb: 1/4 inch (6 mm) per story, non-accumulative.
Maximum Offset From True Alignment: 1/4 inch (6 mm).

Allow for erection loads, and provide sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments. Handrail installation shall be sturdy and without play.

B. BOLTING AND WELDING

Field bolt and weld to match shop bolting and welding. Conceal bolts and screws whenever possible. Field weld components as indicated on the Drawings. Perform field welding in accordance with AWS D1.1 or AWS D1.2.

Obtain Owner's approval prior to field cutting or making adjustments not scheduled on the shop drawings.

C. COATINGS

After erection, prime welds, abrasions, and surfaces not shop primed or galvanized, except surfaces to be in contact with concrete complying with Section 09900. Field galvanizing shall be done by the hot-stick method utilizing Galv-bar, or equal. Spray-on zinc paint is not acceptable.

D. DISSIMILAR MATERIALS

Avoid direct fastening of dissimilar metals to one another. Connections shall include means as required to isolate dissimilar metals from one another. Possible methods of isolation include, but are not limited to, non-metallic bushings/washers at bolts, and epoxy paint coating of contact surfaces. Intended means of isolation shall be noted on the submitted shop drawings. See Section 09900 for epoxy paint requirements.

E. ANCHORING GRATING

All grating shall be mechanically fastened into place. Provide plate fasteners or F-9 fasteners as recommended by the manufacturer. Where removable grating is specified on the Plans, fasteners shall be provided and installed to allow for easy removal of the grating.

***** END OF SECTION *****

DIVISION 7

THERMAL AND MOISTURE PROTECTION

SECTION 07900

CAULKING AND SEALANTS

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section includes the furnishing of all labor, materials, tools, and equipment required to install caulking and sealants, as indicated on the Plans and as specified herein.

All exterior wall joints and interior and exterior joints between all differing or dissimilar materials and at windows, doors, roof penetrations, louvers and similar types of openings shall receive sealants to make the joint air and watertight. This includes concrete to CMU, concrete to wood, CMU to wood, concrete to sheet metal, CMU to sheet metal, etc.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
01300	Submittals
03930	Concrete Rehabilitation
09900	Painting

1.3 REFERENCE STANDARDS

This Section references the latest revisions of the following documents:

Reference	Title
AAMA 800	Sealant Manual, Specifications and Test Methods for Sealants
ASTM C834	Standard Specification for Latex Sealants
ASTM C920	Standard Specification for Elastomeric Joint Sealants
ASTM C1193	Standard Guide for Joint Sealants
ASTM C1311	Standard Specification for Solvent Release Sealants
ASTM D5249	Standard Specification for Backer Material for Use with Cold- and Hot-Applied Joint Sealants in Portland-Cement Concrete and Asphalt Joints

ASTM D7174	Standard Specification for Preformed Closed-Cell Polyolefin Expansion Joint Fillers for Concrete Paving and Structural Construction
NSF/ANSI 61	Drinking Water System Components – Health Effects

PART 2 PRODUCTS

2.1 POLYURETHANE SEALANTS

Provide a one-component, gunnable grade, non-sag, solvent-free polyurethane sealant. The sealant shall cure under the influence of atmospheric moisture. Sealant shall meet ASTM C920, Type S, Grade NS, Class 35, under uses NT, T, M, G, I, A, and O. Performance characteristics shall include a 175 psi 21-day tensile strength, a minimum 500-percent ultimate elongation, and a maximum Shore "A" Hardness of 45.

Polyurethane sealants shall be Sikaflex-1a, as manufactured by the Sika Corporation, or equal by Tremco, Inc. or BASF Corporation.

2.2 SILICONE SEALANTS

Provide a one-component, gunnable grade, neutral cure, silicone sealant. Sealant shall meet ASTM C920, Type S, Grade NS, Class 50, under uses NT, M, G, A and O. Performance characteristics shall include a 200 psi 21-day tensile strength, a minimum 700-percent ultimate elongation, and a maximum Shore "A" Hardness of 25.

Silicone sealants shall be Sikasil WS-295, as manufactured by the Sika Corporation, or equal by Tremco, Inc. or BASF Corporation.

2.3 PREFORMED FLEXIBLE JOINT BACKER MATERIAL

Provide a closed-cell, polyolefin preformed foam backer rod material. Backer rod material shall meet ASTM D5249 and shall be compatible with the proposed cold-applied sealant.

Backer rod material shall be Kool-Rod, as manufactured by W.R. Meadows, or equal.

2.4 PRIMERS

Provide primer materials made by or recommended by the sealant manufacturer for the conditions of the application, including the materials to be sealed at the joints and the type of sealant or caulking material to be used.

PART 3 EXECUTION

3.1 GENERAL

All sealant and primer work shall comply with ASTM C1193 and with the manufacturer's written instructions.

The Contractor shall confirm that the proposed sealant and primer materials are compatible with any concrete curing compound used, or the Contractor shall lightly sandblast and thoroughly clean concrete joint surfaces prior to application of sealant materials.

All priming and sealant work shall be done under temperature and moisture conditions that are within the requirements of the manufacturer’s written instructions.

All exterior dissimilar materials shall be sealed with elastomeric sealants at the joints between the different materials.

3.2 APPLICATION OF SEALANTS

A. PREPARATION OF JOINTS

Inspect profiles and surfaces of all joints prior to application. Verify joint dimensions are adequate for development of the sealant movement capability. All joints shall be solvent cleaned, dry, and free of dust, oils and grease before receiving backing materials and sealant. Floor joints shall be wire brushed, free of laitance or other residues. Aluminum or other metal surfaces to be in contact with sealants shall be wiped clean with xylol or an MEK solvent to remove any coatings or contamination. Joint sealants shall be installed before other surface finishes are applied. Proceed with joint sealant work only once conditions meet the manufacturer’s requirements.

B. BACKINGS

Install filler and backer materials in as long of lengths as practicable. Stretch and force into joints with tool designed for that purpose, to a uniform depth, as indicated on the Plans or as required by the manufacturer, allowing for installation of sealant and caulking. Provide filler material in slab shapes for joints 1/2 inch or more in depth, and in 3/4 inch or more wide joints to receive sealing material. Provide extruded rod backer material in all other joints to receive sealant. Filler or backer material shall be of a depth as required to bring the top surface to within 1/2 inch of the slab surface, or as indicated on the Plans. All joints shall include a suitable bond breaker between backing materials and sealant.

C. MASKING

Both sides of joints shall be masked with tape to prevent soiling floor, slab, or wall beyond limits of the joint.

D. PRIMING

Apply primer to all surfaces of joints in contact with sealant materials. Apply full strength and undiluted in a uniform coating of surface. Allow to set or cure prior to proceeding. Do not prime surfaces at back of joint.

E. APPLICATION

Sealant shall be gun applied, giving the joint a full bead of sealant. Skin beads are not acceptable. Tool the bead immediately after application to ensure a firm and full contact with the inner faces of the joint. Joints in sills and other wash surfaces shall be filled slightly convex to obtain a flush joint when dry. Entire perimeter of openings in concrete surfaces shall be sealed. Do not apply sealants to wet or damp surfaces nor in temperatures below 50 degrees F, and as required by the manufacturer. Strike off excess sealant with tooling stick or a knife so that finished bead is slightly below surface. Remove excess sealant as work progresses. Sealants in masonry wall joints are to be a maximum of 1/2-inch deep and not less than 1/4 inch in each dimension. When applying sealant, do not permit thickness of sealant to exceed 1/2 of the width of the joint. Any joints over 1/2-inch wide shall be reported to the Owner and instructions for correcting the applications will be given.

3.3 CLEANUP

Upon completion, the Contractor shall remove and dispose of masking materials. Remove any excess materials and clean adjacent surfaces free from any soiling or staining resulting from the sealing and caulking operations.

***** END OF SECTION *****

DIVISION 8

DOORS AND WINDOWS

SECTION 08310

METAL ACCESS HATCHES

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section consists of the Contractor furnishing and installing 2 aluminum access hatches and accessories as shown on the Plans and as specified herein.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
01300	Submittals
05500	Misc. Metal Fabrications

1.3 QUALITY ASSURANCE

Access hatches shall be guaranteed against defects in material and/or workmanship for a period of 10 years by the manufacturer.

1.4 EQUIPMENT LIST

The metal access hatches to be installed are as follows:

Location	Clear Opening	Type
Reservoir 1 Ladder Access Hatch	72" x 36"	Type 1
Reservoir 2 Ladder Access Hatch	72" x 36"	Type 1

PART 2 PRODUCTS

2.1 APPROVED MANUFACTURERS

Metal access hatches shall be as manufactured by Halliday Products, Inc., Bilco, L. W. Hatch, or equal.

2.2 ACCESS HATCH TYPE 1

Type 1 access hatches shall be Halliday F1R series, or equal. The hatches shall have 1/4-inch-thick one-piece mill finish, aluminum channel frame, incorporating a continuous concrete anchor. A bituminous coating shall be applied to the frame exterior where it comes in contact with concrete. The door panel shall be 1/4-inch

aluminum diamond plate reinforced to withstand a live load of 625 psf. Door shall incorporate a 90 degree return flange around the perimeter to drain rainwater off the lid to the exterior of the frame. Stainless steel pressure locks shall be provided to work in conjunction with a 1/4-inch thick EPDM compression gasket, mounted to the underside of the door, to insure minimal water intrusion. Door shall open to 90 degrees and automatically lock with a T-316 stainless steel hold-open arm with an aluminum release handle. Hinges and all fastening hardware shall be T-316 stainless steel. Unit shall lock with pad lock lugs.

Unit shall carry a Lifetime guarantee against defects in material and/or workmanship.

PART 3 EXECUTION

Units shall be installed as specified herein and as shown on the Plans. The units shall be connected with drain piping as shown on the Plans, and shall be installed according to the manufacturer's recommendations for safe and proper storage.

***** END OF SECTION *****

DIVISION 9

FINISHES

SECTION 09900

PAINTING

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section covers the furnishing and installation of protective coatings, complete-in-place. Special shop coatings and/or factory-applied finishes on manufactured or fabricated items may be specified elsewhere. Regardless of the number of paint coats previously applied, at least two field coats of paint shall be applied to all surfaces unless otherwise specified herein. Field painting is not required for factory prefinished equipment items such as pumps, blowers, motors, etc. Touchup of the factory applied coatings may be required.

The word "paint" as used herein shall be taken to include all protective coatings and incidental materials as required with the exception that anodized aluminum or zinc galvanized coatings shall not be considered as paint.

Unless specifically noted otherwise in these Specifications or on the Plans, all work performed under this Contract (both new work and modifications to existing facilities) shall be painted. If an existing wall or ceiling (or similar surface) is modified in someway, the entire wall or ceiling surface is to be painted.

All coatings in contact with potable water shall be NSF-61 approved for potable water use.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
01300	Submittals
03300	Concrete
07900	Caulking and Sealant
Division 5	Metals
Division 13	Special Construction
Division 15	Mechanical

1.3 REFERENCED STANDARDS

The following standards are referenced and shall be considered a part of these Specifications:

American National Standards Institute (ANSI):
A159.1, Surface Preparation Specifications;
Z53.1, Safety Color Code for Marking Physical Hazards

American Society for Testing and Materials (ASTM):
D4263, Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method
E84, Standard Test Method for Surface Burning Characteristics of Building Materials

National Fire Protection Association (NFPA):
101, Life Safety Code

Steel Structures Painting Council (SSPC):
SP-1, Solvent Cleaning
SP-2, Hand Tool Cleaning
SP-3, Power Tool Cleaning
SP-5, White Metal Blast Clearing
SP-6, Commercial Blast Cleaning
SP-7, Brush-off Blast Cleaning
SP-10, Near-White Blast Cleaning
SP-11, Power Tool Cleaning
SP-13 Surface Preparation for Concrete Surfaces
VIS-89, Visual Standard

NSF/ANSI 61 Drinking Water System Components – Health Effects

1.4 DEFINITIONS

A. PAINT

Includes fillers, primers, sealers, emulsions, oils, alkyds, latex, enamels, thinners, stains, epoxies, vinyls, urethanes, shellacs, varnishes and any other applied coating specified within these Specifications or shown on the Plans.

B. FINISHED ROOM OR SPACE

One that has a finish called for on Room Finish Schedule, or is indicated on the Plans, or is specified herein, to be painted.

C. PAINTING COVERAGE RATE

Coverage's expressed in SF/GAL/coat are the manufacturer's published theoretical coverage's in square feet per gallon per coat.

1.5 SUBMITTALS

In addition to the general submittal requirements listed in Section 01300, the following shall be submitted:

1. Written acknowledgment and certification that products submitted meet requirements of standards referenced in this Section.

2. Manufacturer's application instructions for primer and finish coats.

3. Manufacturer's surface preparation instructions.

4. Manufacturer's full line of color samples for color selection by Owner.

5. If products being used are manufactured by a company other than the specified reference standard, the Contractor must provide a complete comparison of the proposed products with the specified reference products per Part 2.1 requirements, including application procedure, coverage rates, and verification that product is designed for intended use. Information must be provided that demonstrates that manufacturer's products are equal to the performance standards of products manufactured by the Tnemec Company, which is the reference standard.

6. Manufacturer's approval of protective coating systems applicator.

7. List of Applicator's experience (5 years minimum of experience) and qualifications.

PART 2 PRODUCTS

2.1 APPROVED MANUFACTURERS

The following is an approved coating systems manufacturers list subject to compliance with the Specifications contained herein:

1. Ameron Protective Coatings Division.
2. Sherwin Williams.
3. Tnemec Company.
4. Or equal.

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

No substitutions shall be allowed that change the number of coats, thickness or generic type of paint required. All materials shall be brought to the jobsite in the original sealed and labeled containers of the paint manufacturer and shall be subject to inspection by the Engineer.

No coating materials other than those specified shall be brought to the jobsite. Thinners, driers and oils brought to the jobsite shall be only those recommended and approved by the paint manufacturer.

All paint shall conform to the applicable air quality regulations at the point of application. Any paint material which cannot be guaranteed by the manufacturer to comply, whether specified by product designation or not, shall not be used.

It shall be the responsibility of the Contractor to ensure the compatibility of the field painting products which will be in contact with each other or which will be applied over shop painted or previously painted surfaces. Paint used in successive field coats shall be produced by the same manufacturer. Paint used in the first field coat over shop painted or previously painted surfaces shall cause no wrinkling, lifting, or other damage to the underlying paint.

All paint used for intermediate and finish coats shall be guaranteed by the paint manufacturer to be suitable for potable water atmospheres. Any paint that cannot be so guaranteed shall not be used. Paint shall be lead-free and mercury-free.

Tnemec Company products are the reference standard and Tnemec designations for product type are used herein. Requirements for an approved equal product are listed below:

1. For approval of an equal manufacturer. The Contractor shall provide to the Owner in writing a detailed side-by-side comparison of the proposed equal Products Characteristics, Performance Characteristics, and Application Conditions for each Tnemec coating specified in this specification. For consideration for approval this written comparison shall be certified and notarized by an officer of the proposed manufacturer as true and correct.

2. For Products Characteristics this detailed side-by-side comparison shall include for example, but not limited to, Volume Solids, Weight Solids, VOC, Mix Ratio, Zinc Content in Dry Film (by Weight), Spreading Rate per coat, Drying Schedule, Shelf Life and Flash Point.

3. For Performance Characteristics this detailed side-by-side comparison shall include for example, but not limited to, Abrasion Resistance, Corrosion Weathering, Direct Impact Resistance, Dry Heat Resistance, Flexibility, Moisture Condensation Resistance, Pencil Hardness, Salt Fog Resistance, Slip Coefficient and Wet Heat Resistance

4. In addition to the detailed side-by-side comparison for approval of an equal manufacturer, The Contractor shall provide to the Owner in writing five similar installations that have had the proposed or equal coating system and date coating system was put into service. In addition the installations names, locations, and owner's name with contact person and telephone number shall be provided.

5. For consideration for approval as an equal coating system the detailed side-by-side comparison shall be submit, with successful bidder's Shop Drawing at the time of the Preconstruction Conference, along with any proposed monetary adjustments to the contract price. As with all shop drawings, final approval rests with the Owner.

6. As a minimum standard any equal coating system shall have a 5-year service history on its coating system.

2.2 PAINT SYSTEMS

A. COATING OF FACTORY NON-APPROVED FINISHES

1. Scope

This Section shall apply to all steel items which have a factory finish which is not an approved corrosion resistant finish.

2. Surface Preparation

Factory coating is to remain. Provide clean surfaces, lightly sand 100 percent of the surfaces, then provide solvent cleaning, SSPC-SP-1.

3. Coatings

Primer System:

Coat One	
Product:	Typoxy Tnemec Series N27
MDFT:	2.0 to 3.0 mils

Finish System:

Coat One	
Product:	Endura-Shield Tnemec Series 1095
MDFT:	3.0 to 5.0 mils

Total MDFT: 5.0 to 8.0 mils

B. STRUCTURAL STEEL - POTABLE WATER

1. Scope

This Section shall apply to all structural steel components and structural steel items which are exposed to potable water, including items that are submerged, partially submerged, or on reservoir interiors above the high water line.

2. Surface Preparation

Near-white blast cleaning, SSPC-SP-10

3. Coatings

Primer System:

Coat One

Product:	Series 1 Omnithane
MDFT:	2.5 to 3.5 mils

Finish System:

Coat One

Product:	Tnemec Series N140 POTA-POX PLUS
MDFT:	4.0 to 6.0 mils

Coat Two

Product:	Tnemec Series N140 POTA-POX PLUS
MDFT:	4.0 to 6.0 mils

Total MDFT: 10.5 to 15.5 mils

C. STRUCTURAL STEEL - MILD CONDITIONS

1. Scope

This Section shall apply to all interior structural steel. Items which are interior but may be exposed to splashing of liquids or corrosives shall be coated for severe conditions.

2. Surface Preparation

Commercial blast cleaning, SSPC-SP-6.

3. Coatings

Shop Primer System:

Coat One

Product:	Omnithane Series 1
MDFT:	2.5 to 3.5 mils

Field Finish System:

Coat One

Product:	Hi-Build Epoxoline Tnemec Series N69
MDFT:	4.0 to 6.0 mils

Coat Two
Product: Hi-Build Epoxoline Tnemec Series N69
MDFT: 4.0 to 6.0 mils

Total MDFT: 10.5 to 15.5 mils

D. STRUCTURAL STEEL - SEVERE CONDITIONS

1. Scope

This Section shall apply to all exterior structural steel components and structural steel items which are interior but may be exposed to splashing of liquids or corrosives.

2. Surface Preparation

Near-white blast cleaning, SSPC-SP-10.

3. Coatings

Primer System:
Coat One
Product: Series 1 Omnithane
MDFT: 2.5 to 3.5 mils

Finish System:
Coat One
Product: Hi-Build Epoxoline Tnemec Series N69
MDFT: 4.0 to 6.0 mils

Coat Two
Product: Endura-Shield Tnemec Series 1095
MDFT: 3.0 to 5.0 mils

Total MDFT: 9.5 to 14.5 mils

E. DUCTILE IRON AND STEEL PIPE AND FITTING MATERIALS (IMMERSION)

1. Scope

This Section shall apply to exposed ductile iron pipe, fittings and materials that are continuously or intermittently submerged or exposed to splash or spill of liquids or corrosive atmospheres.

2. Surface Preparation

Provide Near-white blast-cleaning, SSPC-SP-10

3. Coatings

Primer System:

Coat One

Product:	Tnemec Series N140 POTA-POX PLUS
MDFT:	3.0 to 5.0 mils

Finish System:

Coat One:

Product:	Tnemec Series N140 POTA-POX PLUS
MDFT:	4.0 to 6.0 mils

Coat Two:

Product:	Tnemec Series N140 POTA-POX PLUS
MDFT:	4.0 to 6.0 mils

Total MDFT: 11.0 to 17.0 mils

F. GALVANIZED SURFACE TOUCHUP

1. Scope

This Section shall apply to all galvanized surfaces, which have received minor damange to the galvanized surface during construction.

2. Surface Preparation

Power tool cleaning, SPCC-SP-3.

3. Coatings

Paint System:

Product:	PerimePrime Tnemec Series 394
MDFT:	3.0 to 5.0 mils
Total MDFT:	3.0 to 5.0 mils

G. ALUMINUM BURIED IN CONCRETE - DISSIMILAR METALS

1. Scope

This Section shall apply to all surfaces, which are conducive to corrosion due to interactions between dissimilar metals, or to chemical reactions, to include embedments in cast-in-place or precast concrete or masonry grout. This Section applies to aluminum, hot-dipped galvanized steel, and any other metals that have a dissimilar metals or chemical reaction concern when installed or embedded in concrete, or against concrete, mortar or grout.

2. Surface Preparation

Lightly sand with 150 grit sandpaper to degloss and roughen surfaces. Solvent cleaning, SSPC-SP-1.

3. Coatings

Finish Coat

Product:	Hi-Build Epoxoline Tnemec Series N69
MDFT:	4.0 to 6.0 mils
Total MDFT:	4.0 to 6.0 mils

Finish System:

Coat One:

Product:	Hi-Build Epoxoline Tnemec Series N69
MDFT:	8.0 to 10.0 mils

Coat Two:

Product:	Hi-Build Epoxoline Tnemec Series N69
MDFT:	8.0 to 10.0 mils

Total MDFT: 16.0 to 20.0 mils

2.3 COLORS

A. GENERAL

Paint colors used for the finish coatings on process equipment, piping and building surfaces shall conform to the following schedules. All finishes shall be glossy unless otherwise specified. Finish coatings, which are applied in the shop by the manufacturer, shall conform with this color schedule wherever possible. Factory coatings which are damaged during shipment or installation, or which are not of suitable color, as determined by the Engineer, shall be recoated in the field in accordance with these Specifications. Color samples shall be submitted to the Engineer for approval prior to application of any field coatings.

B. PIPING COLOR SCHEDULE

Piping scheduled to be color coded shall be completely painted with the indicated colors, except surfaces specified to be unpainted shall have segments painted with the specified coding color long enough to accommodate the required lettering and arrows. All other piping specified to be painted shall match adjacent surfaces, unless otherwise approved by the Engineer.

PART 3 EXECUTION

3.1 GENERAL

It is the intent of these Specifications that materials and workmanship be provided such that the highest quality job is obtained. The completed work, prior to acceptance, must be free from runs, skips, mars and any other disfiguring mark due to faulty workmanship or care of the completed work.

It is the responsibility of the Contractor to ensure that all surfaces are prepared in accordance with the written recommendations and directions of the paint manufacturer whose paint is applied.

Approval of conditions shall be obtained from the Engineer prior to applying any or all coats of paint; however, such approval shall not relieve the Contractor of their responsibility of conformance with these Specifications and conformance with the manufacturer's recommendations.

It shall be the responsibility of the Contractor to prevent settling of dust or the occurrence of other conditions detrimental to the finished quality of the job and to repair any damaged paint at no additional cost to the Owner.

Materials or equipment delivered with prime coats shall be touched up as required prior to the application of additional coating(s).

The Contractor shall apply each coating at the rate and in the manner specified by the paint manufacturer. If material has thickened or must be diluted for application by spray gun, the coating shall be built-up to the same thickness achieved with undiluted material. Deficiencies in film thickness shall be corrected by the application of an additional coat(s) of paint. Film thickness shall be determined when dry by the Engineer with a magnetic dry film thickness gauge. The thickness gauge shall be calibrated with test shims.

Where thinning is necessary, only the products of the manufacturer furnishing the paint and for the particular purpose shall be allowed. All thinning shall be done strictly in accordance with the manufacturer's instructions as well as with the full knowledge and approval of the Engineer.

No paint shall be applied when the surrounding air temperature, as measured in the shade, is below 40 degrees F. No paint shall be applied when the temperature of the surface to be painted is below 35 degrees F. Paint shall not be applied to wet or damp surfaces and shall not be applied in rain, snow, fog or mist or when the relative humidity exceeds 85 percent. No paint shall be applied when it is expected that the relative humidity will exceed 85 percent or that the air temperature will drop below 40 degrees F within 18 hours after the application of the paint. Dew or moisture condensation should be anticipated and if such conditions are prevalent, painting shall be delayed until conditions improve to be certain that the surfaces are dry prior to application of paint. No paint shall be applied when the ambient temperature is less than 5 degrees F. above the dewpoint. Further, the day's painting shall be completed well within advance of the probable time of day when condensation will occur, in order to permit the paint film an appreciable drying time prior to the formation of moisture.

Manufacturer's recommended drying time shall be construed to mean "under normal conditions." Where conditions are other than normal because of the weather or because painting must be done in confined spaces, longer drying times shall be necessary. The manufacturer's recommendations for recoating time intervals shall be strictly adhered to.

Adequate ventilation, which will effectively remove solvents, shall be provided for proper drying of paints on interior surfaces. A minimum of 7-consecutive calendar days at 70 degrees F following the application of the final coat on submerged surfaces shall be required before submergence. Longer periods shall be allowed prior to submergence if recommended by the paint manufacturer or if weather conditions require a longer curing time.

3.2 MIXING AND THINNING

Paint shall be thoroughly mixed each time any is withdrawn from the container. Paint containers shall be kept tightly closed except while paint is being withdrawn.

Paint shall be factory mixed to proper consistency and viscosity for hot weather application without thinning. Thinning will be permitted only as necessary to obtain recommended coverage at lower application temperatures. Only thinners approved by the paint manufacturer shall be used. In no case shall the wet film thickness of applied paint be reduced, by addition of paint thinner or otherwise, below the thickness recommended by the paint manufacturer.

3.3 SURFACE PREPARATION

A. GENERAL

Surfaces shall be dry and thoroughly cleaned of foreign materials with all defects filled or removed. All trades employed shall leave the surfaces of their work in such a condition that only minor cleaning, sanding and filling is required of the painting trade for surface preparation.

Hardware, switchplates, machined surfaces, nameplates, lighting fixtures and all other surfaces not to be painted shall be removed or otherwise protected. Drop cloths shall be provided, where necessary, to avoid spotting of surfaces adjacent to the item being painted. Working parts of electrical equipment shall be protected from damage during surface preparation and painting operations.

Ferrous metal cleaning shall be in accordance with Steel Structures Painting Council Specifications (SSPC).

Description	SSPC
White Metal Blast Cleaning	SP-5
Commercial Blast Cleaning	SP-6
Brush-Off Blast Cleaning	SP-7
Near-White Blast Cleaning	SP-10
Preparation of Concrete	SP-13

The words "blast cleaning" or equivalent phrases of equal intent shall be taken to refer to the applicable SSPC specification when used in the paint manufacturer's recommendations or these Specifications.

Hand tool cleaning shall be used when power tool cleaning is not possible. Hand and power tool cleaning shall be in accordance with SSPC Specifications SP-2, SP-3 or SP-11, respectively.

The blast cleaning profile depth shall be not less than 1 mil or greater than 2 mils. In the case of equipment to which the manufacturer applies a primer coating in the shop after fabrication, the blast profile depth needs to be as noted above.

B. FERROUS METAL, GALVANIZED METAL AND HOLLOW METAL SURFACES

The Contractor shall assure that fabrication, welding or burning is completed prior to the sandblasting operation. The Contractor shall chip or grind off flux, splatter, slag or other laminations left from welding. The Contractor shall remove all mill scale. The Contractor shall grind smooth rough welds and other sharp projections.

The Contractor shall near-white blast clean, in accordance with SSPC SP-10, submerged surfaces and surfaces to 12 inches above highest liquid level, and areas subject to splash or spillage.

The Contractor shall commercial blast clean, in accordance with SSPC SP-6, all interior and exterior structural steel surfaces, surfaces located 12 inches above submerged areas, and surfaces located in areas not subject to splash or spillage where exposed to open bodies of liquids.

The Engineer reserves the right to accept preparation of these surfaces in accordance with SSPC SP-3 for areas not practical or possible to sandblast to SSPC SP-6 requirements.

The Contractor shall near-white blast clean, in accordance with SSPC SP-10 surfaces, subject to heat in excess of 600 degrees F. The Contractor

shall power tool or hand clean in accordance with SSPC SP-2 or SSPC SP-3. The Contractor shall apply prime coat on cleaned surfaces within 2 hours of cleaning. The Contractor shall solvent clean galvanized surfaces in accordance with SSPC SP-1.

C. EQUIPMENT

The Contractor shall sandblast the following equipment items or surfaces in accordance with applicable SSPC standards whether prime coated or not:

Shop primed surfaces, which have 2 percent or more of the primed surface damaged.

If catalyzed epoxy prime coat has been exposed to sunlight for longer than 60 days.

D. PREPARATION BY SANDBLASTING

The Contractor shall not sandblast surfaces that will be wet after blasting and before painting. The Contractor shall apply primer to sandblasted surfaces the same day that the surface is blasted and before rusting occurs. The Contractor shall reblast surfaces allowed to set overnight prior to priming or surfaces that show rust bloom.

The sand shall be clean, water washed, with controlled particle size and high silica content. The sand shall have sharp, angular surfaces and contain no clay particles or other extraneous matter.

The profile depth of sandblasted surfaces shall be not less than 1 mil or greater than 2 mils, unless required otherwise by the coating manufacturer.

Compressed air for blasting shall be free of water and oil. The Contractor shall provide accessible separators and traps, shall confine sandblast sand to the area being blasted, shall provide shields of polyethylene sheeting or other such barriers to confine sand and shall plug pipes, holes or openings before sandblasting and keep them plugged until the sandblasting operation is complete and the sand is removed.

The Contractor shall protect nameplates, valve stems, rotating equipment, motors and other items that may be damaged from sandblasting. The Contractor shall reblast surfaces not meeting the requirements of these Specifications.

Piping to be sandblasted shall be plugged on the interior of the reservoir and blast material shall be prevented from entering the riser.

3.4 APPLICATION

A. GENERAL

The Contractor shall mix and apply coatings by brush, roller or spray in accordance with the manufacturer's installation instructions. Spraying equipment shall be inspected and approved in writing by the coating manufacturer. The Contractor shall provide complete coverage's to the mil thickness specified. The thickness specified shall be dry film mil thickness. All paint systems are "to cover." In situations of discrepancy between the manufacturer's square footage coverage rates and mil thickness, mil thickness requirements govern. When color or undercoats show through, the Contractor shall apply additional coats until paint film is of uniform finish and color. The Contractor shall not apply consecutive coats until the Engineer has had an opportunity to observe and approve previous coats.

The Contractor shall apply materials under adequate illumination, shall evenly spread and flow on to provide full, smooth coverage, shall work each application of material into corners, crevices, joints and other difficult to work areas, shall avoid degradation and contamination of blasted surfaces and avoid intercoat contamination, shall clean contaminated surfaces before applying next coat and shall immediately smooth out runs or sags, or remove and recoat entire surfaces. The Contractor shall assure that preceding coats are dry before recoating, shall recoat within the time limits specified by the coating manufacturer and shall allow coated surfaces to cure prior to allowing traffic or other work to proceed.

The Contractor shall coat all aluminum surfaces in contact with dissimilar materials. All fabricated and structural steel shall have prime coat(s) applied in the shop and finish coat(s) applied in the field.

During application of either prime or finish coats, brush coat all weld seams, edges, angles, fasteners and other irregular surfaces to insure a monolithic film, pinhole free surface. Finish coats of paint shall be uniform in color and sheen without streaks, laps, runs, drips, sags or missed areas.

All submerged or intermittently submerged materials shall have surface preparation and coatings applied prior to installation unless otherwise

approved by the Engineer. All pipe, pipe supports, and pipe hangers that will be painted shall have surface preparation and coatings applied prior to installation.

B. PRIME COAT INSTALLATION

The Contractor shall prime all surfaces indicated to be painted, shall touch-up damaged primer coats prior to finish coats and shall assure field-applied coatings are compatible with factory-applied coatings. If coatings are not compatible, and if approved in writing by the Engineer, the Contractor shall apply a 2-mil-thick universal barrier coat recommended by the paint manufacturer prior to applying field coats or completely remove factory coatings and reprime.

The Contractor shall prime ferrous metals bedded in concrete to a minimum of 1 inch below exposed surfaces. The Contractor shall backroll all primer coats applied to existing or new CMU block. The Contractor shall assure sandblasting operations do not result in the embedment of sand particles in paint film. The Contractor shall brush or spray bolts, welds, edges and difficult access areas with primer prior to primer application over the entire surface being coated. The Contractor shall backroll concrete, masonry, gypsum board and plaster surfaces with a roller if the primer has been spray applied.

C. FINISH SCHEDULE

All work performed under this Contract (both new work and modifications to existing facilities) shall be painted. If the finish schedule requires wall surfaces to be painted in a particular space, the Contractor shall paint all appurtenant surfaces unless specifically noted not to be painted on the Plans. These items to be painted shall include:

1. Pipe supports, and equipment supports.

2. Insulated or wrapped piping, valves, fittings, hydrants and appurtenances except where covered by lagging.

3. Insulated or wrapped ductwork and appurtenances.

4. Conduit and appurtenances.

5. Ferrous metals.

6. Exposed woodwork.

7. Copper and brass surfaces.

8. Inside and/or outside of ferrous metal tankage.

9. New machinery and equipment except:

    a. Electrical panels;

    b. Switchboards;

    c. Switchgear;

    d. Safety switches;

    e. Motor starter equipment;

    f. Busways;

    g. Raceways.

The Contractor shall paint the following surfaces in areas not considered as finished areas:

1. Insulated or wrapped piping, valves, fittings, yard or fire hydrants and appurtenances.

2. Insulated or wrapped ductwork and appurtenances.

3. Exposed wood.

4. New machinery and equipment.

5. Machinery and equipment in sumps, pits, boxes, channels, wetwells and structures.

The Contractor shall paint all exposed interior and exterior surfaces including:

1. Insulated or wrapped piping, valves, fittings, yard or fire hydrants and appurtenances except when covered by lagging.

2. Insulated or wrapped ductwork and appurtenances except when covered by lagging.

3. Conduit and appurtenances.

4. Exterior and interior surfaces of ferrous metal tankage.

5. Ferrous metals.

6. Exposed wood.

The Contractor shall not paint the following elements unless specifically noted on the Plans to be painted:

1. Stainless steel surfaces except as required to identify piping.

2. Exposed to view aluminum surfaces.

3. Galvanized metal surfaces.

4. Fiberglass surfaces except fiberglass piping and piping appurtenances.

5. FRP ductwork unless gel coat color is not acceptable to the Owner.

6. Interior of pipe, ductwork, and conduits.

7. Moving parts of mechanical and electrical units.

8. Code labels and equipment identification and rating plates.

9. Piping, ductwork, or pipe conduit when enclosed between suspended ceiling and overhead slabs or located in pipe chases or surfaces to be lagged.

10. Factory-finished furniture, laboratory casework, metal toilet partitions, kitchen units, lockers, shop and storage equipment or miscellaneous items that have preapproved factory applied finishes.

11. Prefaced masonry, burnished masonry units, or glass masonry.

12. Structural steel or steel deck required to be fireproofed.

13. Contact surfaces of friction-type connections.

14. Pipe and/or duct lagging.

3.5 FIELD QUALITY CONTROL

The Contractor shall be responsible for performing, testing and assuring conformance with all requirements of these Specifications.

The Contractor shall maintain daily records showing:

- Start date of work in each area.
- Date of application for each following coat.
- Moisture content and surface temperature of substrate. Also record weather conditions, ambient air temperature and dew point.
- Provisions utilized to maintain temperature and humidity of work area within paint manufacturer's recommended ranges.

The Contractor shall measure the surface temperature of items to be painted with surface temperature gauges specifically designed for such use. The Contractor shall measure substrate humidity with humidity gauges specifically designed for such use. The Contractor shall measure wet paint with wet film thickness gauges. The Contractor shall measure paint dry film thickness with a Mikrotest gauge calibrated against the National Bureau of Standards "Certified Coating Thickness Calibration Standards." The Engineer may direct measurement of paint thickness at any time during the project to ensure conformance with these Specifications. A sufficient number of dry film thickness measurements shall be made so that there is approximately one measurement for each 100 square feet of surface area painted.

Where a wall or ceiling or other type of surface is disturbed and patched, the Contractor shall repaint entire wall or ceiling. The Contractor shall provide wet paint signs as necessary. The Contractor shall touch up damaged finish coats using the same material as specified for the finish coat.

At the conclusion of all painting activities, Contractor shall submit a painting field test report to the Engineer showing the above information plus results of wet film and dry film thickness tests. Provide four copies of final test report.

3.6 PAINTING SITE

Either shop painting or field painting and surface preparation shall be acceptable when painting work is performed in conformance with this Section, unless the painting is activity specified elsewhere in these Specifications.

3.7 PAINT THICKNESS

All paint thicknesses specified herein are minimum dry film thickness (MDFT). The thickness of paint over metallic surfaces shall be measured with a magnetic thickness gauge; paint thickness over wood or masonry shall vary in accordance with surface texture, but in no case shall the manufacturer's recommended coverage rate be exceeded. The minimum thicknesses given are total coating thickness for the coating specified, including multiple coats of the same material, where applicable.

***** END OF SECTION *****

DIVISION 13

SPECIAL CONSTRUCTION

SECTION 13212

CONCRETE RESERVOIR REHABILITATION

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section includes the furnishing of all materials, labor, and equipment for the construction of a concrete water storage reservoir with concrete cover and interior supports as required.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
01300	Submittals
02510	Testing and Disinfection
03200	Concrete Reinforcement
03300	Cast-in-Place Concrete
08310	Metal Access Hatches

1.3 SUBMITTALS

Submit under provisions of Section 01300.

A. CONCRETE

For concrete products, comply with Section 03300 and 03930.

B. SHOP DRAWINGS

1. Plans and/or elevations locating and defining all material furnished by manufacturer, including dimensions and finishes.

2. Sections and details showing connections, cast-in items and their relation to the structure.

3. Sections and details to indicate quantities and position of reinforcing steel, anchors, inserts, etc.

4. Description of all loose, cast-in and field hardware.

1.4 DESIGN REQUIREMENTS

Design, fabricate, erect, inspect, and test in accordance with the 2018 International Building Code (IBC), except as modified herein.

Railings and ladders shall be designed in conformance with applicable safety and building codes, including OSHA, WISHA and the IBC.

1.5 GUARANTEE

The Contractor shall guarantee the complete tank and all items related thereto against defective materials and workmanship for a period of 2 years after date of acceptance by the Owner. Any defective materials or workmanship shall be replaced by the Contractor, at his/her expense, immediately upon notification by the Owner.

PART 2 PRODUCTS

A. CONCRETE

All concrete products shall comply with Section 03300.

B. CONCRETE REPAIRS

All concrete products shall comply with Section 03930.

C. REINFORCING STEEL

Reinforcing steel shall comply with Section 03200.

D. WATERSTOPS

Provide waterstops in construction joints of all water containment structures and where shown on the Plans. See Section 03300 for additional waterstop specifications.

E. ACCESSORIES

Provide the following accessories:

1. Ladders

Provide inside and outside ladders at the locations shown on the Plans. Ladders shall be stainless steel. The ladders and landings shall be designed to be in compliance with WAC 296-24. Ladders shall be furnished with Ladderup safety post, or equal.

2. Access Hatches

Provide a weather-proof type access hatch, size as shown on the Plans, and as specified in Section 08310.

3. Roof Vent

Provide one circular removable mushroom-shaped roof vent for each reservoir, as shown on the Plans, and as manufactured by T Bailey, Inc. or approved equal. The vent shall be of adequate size to handle pressure differential caused by water entering or leaving the tank at a maximum rate of 10,000 gpm with 30 percent of the vent screen blocked. The open area of the overflow shall not be considered as venting area. The Contractor shall provide a special screened vent to ensure fail-safe operation, in the event the screen frosts over or is otherwise clogged. The vent shall be easily dismantled to remove the screens for cleaning. The vent shall be screened with No. 4 and No. 24 mesh stainless steel screen and properly attached to prevent insects, water or other contaminants from entering.

4. Overflow

Provide an overflow as shown on the Plans, and as specified in Section 15050.

5. Pipe Connections

Provide inlet, outlet, overflow, and drain connections, as shown on the Plans.

PART 3 EXECUTION

3.1 CONCRETE

All concrete products shall comply with Section 03300, except the following:

A. FINISHES

1. Surface Finishes

All finished or formed surfaces shall conform accurately to the shape, alignment, grades and sections as shown on the Plans. Surfaces shall be free from fins, bulges, ridges and offsets,

honeycombing or roughness and shall present a finished continuous hard surface.

2. Wall Surfaces

Steel forms shall be used on all wall pours. Forms shall not leak excessive amounts of mortar or yield beyond specific tolerances when the concrete is vibrated. Rock pockets, honeycombed areas, form tie holes, and any holes over 1/2-inch deep shall be repaired. No sacking or hand-rubbing will be required on any concrete finishes.

Allowable tolerances for concrete surfaces shall be classified as "abrupt" and "gradual." Offsets caused by displaced or misplaced forms and form alignment shall be considered as abrupt irregularities. All others are classed as gradual irregularities. Allowable tolerances are the same for both slabs and walls, and are as follows:

a. Abrupt - 1/2"

b. Gradual - 1"

3. Base and Roof Surfaces

All slab finishes shall have a "non-slip broom" finish, to prevent slippery surfaces. The concrete "non-slip broom" finish shall be uniform in texture, relatively free from screed/float marks, and shall comply with Section 03300. The underside of the roof shall be a rough form finish as results from the use of plywood forms. Roof shall be a minimum slope of 1:12 after 30 days cure.

3.2 LADDERS

Install ladders as shown on the Plans and in accordance with manufacturer's recommendations.

3.3 DISINFECTION AND TESTING

The reservoir shall be disinfected and tested in accordance with Section 02510, Disinfection.

3.4 LEAK TESTING

Watertightness tests shall be made at the time that the reservoir is being disinfected after the concrete has obtained at least 90 percent of its required

28-day compressive strength, but in no case sooner than 20 days after placing. Watertightness tests shall consist of filling the tank to the overflow with potable water after plugging outlets as necessary and allowing the tank to remain full for 72 hours.

Maximum allowable water surface drop after correction for evaporation shall be 0.10 inch during the final 24 hours of the test.

Leakage testing shall not be conducted during periods of time with measurable precipitation. Evaporation correction shall be made on the basis of an evaporation pan.

Watertightness testing may follow backfill of the structure, at the Contractor's option. However, if the structure does not pass the test, re-excavation to locate leaks will be required. If a joint is not watertight after construction, the Engineer will require the repair to be by epoxy adhesive injection. Adhesive shall be MasterInject 1380/Structural Concrete Bonding Process, which is a product, and process of the Master Builders Solutions, or equal. Epoxy adhesive injection shall be performed in strict accordance with the manufacture's Guideline Specification. Concrete bonding and adhesives used to assure water-tightness of the structures must be listed by NSF as conforming to Standards 60/61.

The Owner will provide the water to fill the reservoir one time. Any additional water required due to failure of the disinfection or leakage tests shall be paid by the Contractor.

***** END OF SECTION *****

DIVISION 15

MECHANICAL

SECTION 15050

PIPING SYSTEMS

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section describes process and utility piping, fittings, supports, and accessories shown on the Plans, described in these Specifications and as required to completely interconnect all equipment with piping for complete and operable systems.

The Contractor shall direct the attention of all subcontractors and suppliers of piping systems and related appurtenances for the work to the applicable provisions in the Contract Documents wherever they may occur.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
01300	Submittals
02300	Earthwork
09900	Painting
Division 13	Special Construction
Division 15	Mechanical

1.3 STANDARDS FOR THE WORK

Pipe, fittings, and supports shall be provided to produce complete, operable systems with all elements properly interconnected as shown in schematic diagrams or to provide specified operations. If a specific dimensioned location is not shown for interconnections or smaller system elements, the Contractor shall select appropriate locations and show them on Shop Drawing submittals for review.

Piping systems and materials shall be new and without imperfections and shall be erected in a neat and workmanlike manner; aligned, leveled, cleaned and adjusted for satisfactory operation; installed in accordance with the best standard practices for this type of work so that connecting and disconnecting of piping and accessories can be readily made and so that all parts are easily accessible for inspection, operation, maintenance and repair. In order to meet these requirements minor deviation from the Plans may be made as approved by the Engineer.

1.4 SUBMITTALS

Submittal data shall be supplied in accordance with Section 01300. Detailed installation drawings of all piping and connected equipment shall be submitted. The drawings shall include all piping, valves, fittings, pipe support locations and types, seismic bracing, and appurtenances.

Submit data to show that the following items conform to the Specification requirements:

A. Pipe, fittings, and accessories.

B. Valves.

C. Couplings and couplers.

D. Pipe supports and seismic braces as required herein.

PART 2 PRODUCTS

2.1 GENERAL

Pipe sizes are nominal inside diameter unless otherwise noted.

All materials delivered to the job site shall be new, free from defects, and marked to identify the material, class and other appropriate data such as thickness for piping.

Acceptance of materials shall be subject to strength and quality testing in addition to inspection of the complete product. Acceptance of installed piping systems shall be based on inspection and leakage tests as specified in Part 3 Execution of this Section.

All water piping, valves, and appurtenances shall be certified under NSF 61 and NSF 372 for potable water use. Additionally, all submerged water piping shall be NSF 61 certified along the pipe exterior and suitable for installation within a potable water reservoir.

The Owner has prepurchased the flexible expansion joint coupling to eliminate long delivery time and facilitate the construction time window.

2.2 DUCTILE IRON PIPE AND FITTINGS

A. GENERAL

Ductile iron pipe shall be centrifugal cast pipe conforming to AWWA C151, Class 52, unless otherwise noted. The exterior shall be bituminous coated and the interior cement mortar lined in accordance with, AWWA C104, lined to a minimum thickness of 1/16-inch meeting NSF standards for potable water. All flanged spools shall be Class 53.

Each length shall be plainly marked with the manufacturer's identification, year, cast, thickness, class of pipe and weight. All above ground piping shall be flanged piping unless otherwise specified or indicated.

Below ground piping shall be push on joint or mechanical joints unless otherwise specified or indicated. Mechanical joints shall comply with AWWA C111.

All mechanical joints shall be restrained joints with a mechanical joint restraint device. The restrainer shall utilize the full circumference of the pipe for restraining and utilize standard MJ gasket and bolts. The mechanical joint restraint device shall have a working pressure of at least 250 psi with a minimum safety factor of 2:1. The restrainer shall be Grip Ring as manufactured by Romac Industries, Mega-Lug, EBAA Iron, Inc., or approved equal. Stargrip Series 3000 mechanical joint restraint devices are not accepted or approved as equal.

Flanges shall comply with ANSI Bl6.1, Class 125. Flange gaskets shall be full face. Approved adaptor flanges shall be used instead of flanges where shown on the Plans.

Fittings shall be ductile iron and shall comply with AWWA C110 or AWWA C153, bituminous-coated exterior and cement mortar lined, 350-psi minimum pressure. Fittings shall be mechanical joint, or flanged fittings. Fittings shall not be “Tyton” or other push-on type joint.

The exterior of buried ductile iron pipe and fittings and pipe and fittings in contact with concrete shall be coated with bituminous coating. The exterior surface of ductile iron pipe and fittings inside of buildings, structures, and vaults shall be painted in accordance with Section 09900 of the Specifications.

All bolts shall be coated with an NSF-61 approved anti-seize compound, SAF-T-EZE, or equal, prior to installation.

2.3 POLYETHLYNE PIPING

A. PRESSURE PIPE

High Density Polyethylene (pipe) shall be butt welded PE 4710 pipe conforming to ASTM D3350 having a cell classification of PE 445574 or better. Pipe dimensions and workmanship shall conform to ASTM F714. HDPE pipe shall conform to AWWA C906 Standards and have a pressure rating of at least 200 psi (SDR11). HDPE pipe shall be class DIPS.

Manufacturer shall provide certification that stress regression testing has been performed on the product. Pipe shall be free of cracks, holes, inclusions, voids or other inclusions. Pipe manufacturer shall meet the minimum quality control requirements of ASTM D3035 or ASTM F174.

Fittings shall be standard HDPE fittings, meet the above HDPE pipe specifications, and be manufactured by injection molding or extrusion and machining. All fittings shall have the same working pressure as the pipe.

Pipe sections shall be joined by butt fusion complying with ASTM D2657 and the joints shall be equal or greater in strength than the pipe. Socket fusion joints shall not be used. Class 150, ANSI B16.5 flanges shall be used for connections for flanged connections of another material. Flange backing rings used shall be 316 stainless steel with 316 stainless steel nuts, bolts and washers.

All bolts, buried and unburied, shall be coated with an NSF-61 approved anti-seize compound, SAF-T-EZE, or equal, prior to installation.

2.4 FABRICATED STEEL PIPE AND FITTINGS

Fabricated steel pipe and fittings shall be fabricated from ASTM A570 steel sheet, Grade 36 or stronger, in accordance with AWWA C200.

Minimum wall thickness shall vary in relation to pipe size (outside diameter) as shown in the following table. Where a fitting includes more than one size, then the minimum wall thickness shall be based on the largest size incorporated in the fitting.

Nominal Pipe Size (inches)	Minimum Wall Thickness (inches)
12" or smaller	0.134
18" to 42"	0.25

Fittings shall be fabricated with dimensions in accordance with AWWA C208. Flanges shall comply with AWWA C207, Class D for 12 inches and smaller pipe and Class E for pipe large than 12 inches, and be furnished with full face gaskets.

The pipe and fittings shall be coal-tar epoxy lined and tested in accordance with AWWA C210. The nominal thickness of the lining shall be 25 mils.

The exterior of the buried pipe and pipe in contact with concrete shall be coated with a minimum of 80 mils of cold-applied tape coating in accordance with AWWA C214.

2.5 DETECTABLE MARKING TAPE

The Contractor shall furnish and install detectable marking tape over all water mains and service pipes as shown on the Plans. The tape shall extend its full length. Detectable marking tape shall be as manufactured by Pro-Line Safety Products, or equal, and shall be a minimum of 6 inches in width, a minimum of 5 mil (0.0050") overall thickness, and shall have no less than 0.35-mil solid aluminum foil core.

The foil shall be visible from both sides of the tape and shall be Safety Blue in color to identify buried water systems and shall be printed to identify same. Printing shall be encased in the plastic jacket to avoid ink rub-off. Adhesives used to bond the plastic jacket to the foil shall not contain any dilutants, pigments, or contaminants and shall be specifically formulated to resist degradation by elements normally encountered in the soil.

In addition, the Contractor shall furnish and install 14-gauge coated copper wire, taped to the top of the water main and service pipe. The wire shall be brought up and tied off in valve boxes and meter boxes (as applicable).

2.6 MISCELLANEOUS FITTINGS

A. FLEXIBLE COUPLINGS

Flexible couplings shall be Romac 501, or approved equal. Middle ring and follower shall have fusion bonded epoxy coating. All buried flexible couplings shall be furnished with stainless steel bolts and nuts.

B. ADAPTER FLANGES

Adapter flanges for ductile iron pipe shall be manufactured of high strength ductile iron, ASTM A536, Grade 65-45-12. Flange dimensions shall be in accordance with ANSI B16.1, 125-lb. pattern. Gasket shall be

SBR. Setscrews shall be AISI 4140, high strength, low alloy steel. The adapter flanges shall be Uni-Flange Series 200, or equal.

C. DIELECTRIC INSULATED UNIONS

Dielectric insulated unions shall be used to connect dissimilar metals. They shall separate the metals so that the passage of more than 1 percent of the galvanic current, which would exist with metal to metal contact, is prevented. Unions shall be of the same material as the pipe to which attached, and pressure and temperature ratings shall be no lower than that of the piping system in which it is installed.

D. WALL SLEEVES AND SEALS

Wall and/or floor pipe penetrations in existing concrete shall be cored drilled as shown on the Plans.

PART 3 EXECUTION

3.1 PIPING INSTALLATION

A. GENERAL HANDLING AND PLACING

All piping constructed on this project shall be performed in accordance with the Uniform Plumbing Code. These Plans do not detail all items such as complete venting, etc.; however, it is understood that this work shall be included as a part of this Section and all costs included in the lump sum bid.

All pipe shall be delivered to the job site with watertight wrapping or pipe plugs. All pipes shall be carefully checked on delivery as well as before placing in the trench. Pipe shall be carefully bedded, joined, and protected. It shall be laid to the line and grade established and at all times the interior kept free from dirt, gravel, and all other foreign matter. The open ends shall be wrapped or plugged and secured at any time pipe laying is not in progress.

Pipe and accessories shall be handled in such a manner as to ensure delivery on site in sound, undamaged condition. Particular care taken not to injure pipe coating. No other pipe or material of any kind shall be placed inside of lined pipe or fitting after lining has been applied. All pipe and fittings shall be unloaded, stored, handled in such a manner as to insure against damage. Dropping of pipe or fittings shall be cause for rejection.

If any part of the coating or lining is damaged, repair thereof shall be made by the Contractor at no additional expense to the Owner and in a manner satisfactory to the Owner. Damaged pipe shall be rejected, and the Contractor shall immediately place damaged pipe apart from the undamaged and shall remove the damaged pipe from the site within 24 hours. Methods of pipe handling and storage shall be corrected by the Contractor should the Owner determine that these methods are damaging to the pipe.

Pipe shall be stacked in such a manner as to prevent damage to the pipe, to prevent dirt and debris from entering the pipe, and to prevent any movement of the pipe. The bottom tiers of the stack shall be kept off the ground on timbers, rails, or other similar supports. Pipe on succeeding tiers shall be alternated by bell and plain end. Timbers 4 inches by 4 inches in size shall be placed between tiers and chocks shall be placed at each end to prevent movement. For safety each size of pipe shall be stacked separately.

The types and sizes of pipes to be used shall be as specified herein and as shown on the Plans. Where sizes of small pipe are omitted from the plans and not mentioned in the Specifications, the sizes to be used shall correspond to plumbing code requirements. In any event, undesignated pipe sizes shall be proper for the function to be performed and as accepted by the Engineer.

All pipe shall be carefully placed and supported at the proper lines and grades and where possible shall be sloped to permit complete drainage. Piping runs shown on the Plans shall be followed as closely as possible, except for minor adjustments to avoid architectural and structural features. If major relocations are required, they shall be approved by the Engineer.

Unions shall be installed in all threaded joint piping to facilitate the removal of sections for maintenance and repair in accordance with the best trade practice. Unions shall be ground joint, malleable iron type. Where unions connect dissimilar materials, the union shall be protected from reaction with dissimilar metals by installation of insulating materials and dielectric unions at contact points.

All joints in the pipe, fittings, valves, flexible couplings, and sleeves, shall be fully seated with small clearances allowed for pipe expansion. Where flexible couplings are called for, the space between pipe ends shall not exceed 1/4 inch.

The interior of all piping shall be cleaned after assembly and before connecting to equipment.

All piping for which no location dimensions are shown shall be installed in a neat and workmanlike manner in accordance with best trade practice. Wherever possible runs and rises shall be grouped and kept parallel. Properly lay out all miscellaneous piping to clear obstructions such as passageways, equipment, larger sized pipes, ventilation ducts, lights, etc.

Whenever pipe requires field cutting to fit in line, work shall be done by a machine in a satisfactory manner so as to leave a smooth end at right angles to axis of pipe.

All piping to be buried below structures, foundations, or slabs shall be installed with extreme care. When all joints have been made, Contractor shall demonstrate to Engineer's satisfaction that all of piping is watertight and that all lines are clear before proceeding with any work above this piping. It shall be Contractor's responsibility to see that these lines are kept clear until final acceptance of the project, providing suitable tight wooden bulkheads or plugs for open end pipes. Any blockage of these systems due to earth, debris, cement slurry or anything else shall be rectified at Contractor's expense before project is accepted.

All pipe shall be installed in strict accordance with manufacturer's recommendations and/or specifications, and best commercial trade practice. Any special tools required for laying, jointing, cutting, etc., shall be supplied and properly used. All pipe shall be kept thoroughly clean until acceptance of completed work, and shall conform accurately to lines and grades given. At all times during pipe laying operations keep trench free of water either by pumping, bailing, or drainage. Seal end of line with a tight-fitting plug when pipe is not being laid.

Valves shall have interiors cleaned of all foreign matter and inspected, both in open and closed positions prior to installation.

All pipes running through concrete walls below water surface or where subject to groundwater pressure shall be assembled as shown on the plans. Pipes running through concrete not subject to water pressure may be installed through standard steel sleeves, one or two pipe sizes larger than pipe in question. The pipe shall be free of all dirt and grease and thoroughly cleaned to insure a tight bond with the concrete.

All above ground outside pipe carrying liquids shall be insulated.

B. GENERAL EXPOSED PIPING INSTALLATION

Unless shown otherwise, piping shall be installed parallel to building lines, plumb, and level.

Piping shall be installed without springing or forcing.

All pipe flanges shall be set level, plumb, and aligned. All flanged fittings shall be true and perpendicular to the axis of the pipe. All bolt holes in flanges shall straddle vertical centerline of pipes.

Flexible couplings shall be provided for all piping connections to motor-driven equipment and where otherwise shown in the Plans. The Contractor may install additional flexible couplings at approved location to facilitate piping installation, provided that they submit complete details describing location, pipe supports, and hydraulic thrust protection.

Unions or flexible couplings shall be installed where shown on the Plans, and at all non-motor-driven equipment to facilitate removal of the equipment.

Where equipment drain connections are provided, they shall be valved, with the discharge pipe carried to the nearest floor drain, drain trench, or sump. Where no receptacle for drain exists, drain valves shall be piped to 1 inch above the floor. Drain piping and valve materials shall conform to the requirements of the system served.

All exposed or submerged piping shall be painted and color-coded in accordance with Section 09900, unless otherwise specified.

3.2 EXCAVATION

All earthwork, excavation, bedding, backfill, and compaction shall meet the requirements of Section 02300.

3.3 DEWATERING

Dewatering of excavations, if necessary, shall meet the requirements of Section 02240.

3.4 TEMPORARY SHORING AND BRACING

Temporary shoring and bracing, including trench excavation safety systems, shall meet the requirements of Section 02250.

3.5 PIPE INSTALLATION (BELL AND SPIGOT)

All bell and spigot connections shall be made up in strict compliance with the manufacturer's recommendations and all pipe manufacture and handling shall meet or exceed the AWWA recommended specifications, current revisions.

Dirt or other foreign material shall be prevented from entering the pipe or pipe joint during handling or laying operations, and any pipe or fitting that has been installed with dirt or foreign material in it shall be removed, cleaned, and relayed. At times when pipe laying is not in progress, the open ends of the pipe shall be closed by a watertight plug or by other means approved by the Engineer to ensure cleanliness inside the pipe.

Except where necessary, in making connections with other lines and unless authorized by the Owner, pipes shall be laid with bells facing in the direction of laying, and for lines on an appreciable slope, the bells shall face upwards.

Pipe handling after the gasket has been affixed shall be carefully controlled to avoid disturbing the gasket and knocking it out of position, or loading it with dirt or other foreign material. Any gaskets so disturbed shall be removed, cleaned, re-lubricated if required, and replaced before the rejoining is attempted.

Care shall be taken to properly align the pipe before joints are entirely forced home. During insertion of the tongue or spigot, the pipe shall be partially supported by hand, sling or crane to minimize unequal lateral pressure on the gasket and to maintain concentricity until the gasket is properly positioned. Since most flexible gasketed joints tend to creep apart when the end pipe is deflected and straightened, such movement shall be held to a minimum once the joint is home.

Sufficient pressure shall be applied in making the joint to assure that it is home, as described in the installation instructions provided by the pipe manufacturer. Sufficient restraint shall be applied to the line to assure that joints once home are held so, until fill material under and alongside the pipe has been sufficiently compacted. Restrained joint pipe and fittings shall be installed in accordance with the manufacturer's recommendations to provide the degrees of flexibility in the joint following installation.

3.6 CUTTING PIPE

Whenever it becomes necessary to cut a length of pipe, the cut shall be made by abrasive saw or by a special pipe cutter. Pipe ends shall be square with the longitudinal axis of the pipe and shall be reamed and otherwise smoothed so that good connections can be made. Oxyacetylene torch cutting of ductile iron pipe shall not be allowed.

The Contractor shall have the approval from the Owner and notification shall be given to the Owner before any pipe cutting on existing water mains will be allowed. The Contractor shall comply with all the conditions established by the Owner. The Contractor shall give the Owner a minimum notice of 48 hours before cutting any water main. No pipe cutting will be allowed on holidays or weekends, unless specifically agreed to by the Owner.

3.7 CONNECTION TO EXISTING SYSTEM

Connection to existing system work shall be as specified in Section 02511.

The Contractor shall notify (i.e. door hangers) all of the Owner's customers who will experience a scheduled service interruption. The notices shall be hand delivered not less than 48 hours or more than 72 hours before the scheduled service interruption.

3.8 CONCRETE THRUST BLOCKING

Fittings shall be adequately "blocked" with poured-in-place concrete, poured within wooden forms shaped to establish a firm minimum bearing area, against an undisturbed earth wall as shown on the Plans. Timber blocking or dry blocking will not be permitted.

Concrete thrust and/or anchor blocking, as indicated on the Plans, shall be placed at bends, tees, dead ends, crossed, and as designated by the Engineer. Blocking shall be 3,000 psi concrete mix cast in place.

All concrete thrust blocking configurations and sizes shall be per the Plans. The poured in place concrete thrust and/or anchor blocks shall be in place at least 24 hours before beginning the pressure test, to allow the concrete to set. Longer durations may be required to insure adequate curing has been established to conduct the necessary testing. All blocking dimensions shown on the Plans are considered as minimums with the ideal trench excavation results, and consideration shall be given to unusual circumstances, soil conditions, and topography.

All valves and all fittings requiring a concrete block shall first be covered with 4-mil Visqueen plastic sheets, before concrete is poured. At no time shall the concrete be allowed to cover joints, bolt heads, or nuts.

3.9 FLANGED PIPING

Flanged joints shall be made in accordance with best trade practice. Screwed flanges for piping shall be run until pipe projects beyond face and no more than one thread is exposed on backside. All flange faces shall then be machined so as to be perfectly parallel. All flanged pipe shall be accurately dimensioned; no "drawing-up" will be allowed. Gaskets shall be full face, rubber.

3.10 MECHANICAL JOINT PIPING

Mechanical joint piping shall be installed in best trade practice with torque wrenches used to avoid overstressing bolts. Piping shall be installed using recommended procedures outlined in "Handbook of Cast Iron Pipe" as published by Cast Iron Research Association which in part requires that all contact surfaces of rubber seal with pipe be wire brushed, spigot be centrally located in bell. When tightening bolts, it is essential that the gland be brought up toward pipe flange evenly, maintaining approximately same distance between gland and face of flange at all points around socket.

3.11 PIPE SUPPORTS

Provide all necessary supports, tie rods, bracing, brackets or other types of supports which may be required, as shown on the Plans.

3.12 HIGH DENSITY POLYETHYLENE (HDPE) PIPING

HDPE pipe shall be installed in accordance with the manufacturer's instructions as shown on the Plans and as specified herein.

3.13 FLEXIBLE EXPANSION PIPE JOINT

The flexible expansion pipe joint shall be installed at the location indicated on the Plans and shall be installed without expanding or contracting the factory preset length of the expansion joint. Flexible expansion pipe joint to be installed in accordance with the manufacturer's instructions.

3.14 PIPE BEDDING

All pipe shall be bedded as specified in Section 02300 and Section 02700.

3.15 TESTING

A. GENERAL

All piping shall be tested and inspected in accordance with the provisions of Division 7 APWA/WSDOT, except as modified herein. Where new piping systems are being connected to existing piping systems the existing piping systems shall be tested prior to connecting to the new pipe to the existing piping. Once the new piping system has been connected to the existing piping system the entire system shall be tested again.

All piping systems will be tested to demonstrate leak tightness prior to acceptance. The Contractor shall provide all equipment and labor necessary to perform all testing required herein, the costs to be included in the lump sum bid price.

Each particular piping system shall be tested as hereinafter specified. All leaks shall be repaired or defective material replaced and the test repeated as directed by the Engineer. After compliance with test requirements and approval of the Engineer, the field painting, where required, may be started. All pressure testing shall be done prior to any finish painting or pipe insulating.

The Contractor shall be responsible for repair of any damage resulting from or caused by leak testing.

All thrust blocks shall be in place for at least 7 days to allow concrete to cure before testing. Install adequate blocking or other means of resisting test pressure.

3.16 PRESSURE TESTING

All pipelines shall be tested and disinfected prior to acceptance of work. All pumps, gauges, plugs, saddles, corporation stops, double check valve assemblies, miscellaneous hose and piping, and measuring equipment necessary for performing the test shall be furnished, installed and operated by the Contractor. The Contractor shall provide an oil-filled pressure gauge with a range of 0 to 300 psi.

All temporary connection to the existing water lines for filling or flushing new pipe lines shall be equipped with double check valve assemblies to prevent backflow into the existing waterline.

The pipeline shall be backfilled sufficiently to prevent movement of the pipe under pressure. All thrust blocks shall be in place and time allowed for the concrete to cure before testing.

All piping systems shall be tested to demonstrate leak tightness prior to acceptance. The Contractor shall provide all equipment and labor necessary to perform all testing required herein. Gauges used in testing shall be certified by an approved laboratory.

Testing is to be done in sections between valves with no back pressure against the valves to ensure water tightness of the valves in either direction. Maximum differential allowed across closed butterfly valves is 150 psi.

The pipeline shall be backfilled sufficiently to prevent movement of the pipe under pressure. All thrust blocks shall be in place for at least 24 hours to allow concrete to cure before testing.

Prior to the acceptance test, the lines shall be filled and allowed to stand under pressure for a sufficient length of time to allow the escape of entrapped air and to allow any pipe lining to absorb water.

Testing will be done by pumping up the line to 150 psi and closing a valve between the pump and the line. The line shall be pumped back up to 150 psi 15-minute intervals. The test shall be conducted for a period of 2 hours.

The quantity of water lost during the test period shall not exceed the number of gallons as determined by the following formula:

$$L = \frac{SD\sqrt{P}}{266{,}400}$$

Where

L=allowable leakage, gallons/hour
S=gross length of pipe tested, feet
D=nominal diameter of the pipe, inches
P=test pressure during the leakage test, psi

Make-up water shall be pumped from a disinfected, clean container that will allow the amount of water pumped to be easily computed or verified.

There should be no appreciable loss of pressure during the 15-minute test intervals.

All leaks shall be repaired or defective material replaced and the test repeated as directed by the Engineer.

All visible leaks in pipelines or fittings shall be repaired even if the test results fall within the allowable leakage.

The Contractor shall be responsible for repair of any damage resulting from or caused by leak testing.

For HDPE Pipe, after the pipe is filled with water and all air expelled, it shall be pumped to a test pressure of 1.5 times the design operating pressure at the lowest point in the section under test pressure and minimum of 1.25 times the highest point on the line. If testing is not completed due to leakage, equipment failure, etc. depressurize the test section and allow it to relax for 8 hours before retesting. The test procedure consists of initial expansion phase of 3 hours and a test phase of 1-hour.

During the initial expansion phase the test section is pressurized to the test pressure and enough make-up liquid is added each hour to maintain the test pressure for 3 hours.

During the test phase, reduce pressure by 10 psi and hold pressure for 1 hour. If pressure remains steady (within 5 percent of target value) no leakage is indicated. Allowable makeup water for the test phase per hundred feet of pipe is 1.7 gallons of water for 16-inch pipe, 1.1 gallons for 12-inch pipe and 0.5 gallons for 8-inch pipe.

Pressure testing against existing valves shall not be permitted unless authorized by the Association.

The mainline shall have the appropriate temporary plugs, caps and blocking as required to pressure test and disinfect the new water main prior to making connections to the existing system.

3.17 FLUSHING

Flushing shall be done through hydrants or temporary taps. Water for flushing will be available from the Owner's system.

The pipes shall be flushed at a minimum velocity of at least 2.5 fps for a sufficient time to insure a minimum of three turnouts of water through the pipe. Following chlorination, all pipes shall be flushed to remove any solids until a test shows no more than 0.1 parts per million available chlorine.

The Contractor shall be responsible for the disposal of treated water flushed from the pipelines. The treated water shall be neutralized in accordance with the provisions of AWWA C651, Appendix B.

3.18 WATER PIPE DISINFECTION

Pipelines shall be disinfected in accordance with Section 02510, Disinfection.

***** END OF SECTION *****

SECTION 15066

PIPE AND CONDUIT SUPPORT SYSTEM

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

The work specified in this Section includes pipe and conduit hangers, brackets, and supports. Pipe and conduit support systems shall be furnished complete with all necessary inserts, bolts, nuts, rods, washers, structural attachments, and other accessories as shown on the Plans and specified herein.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
01200	Measurement and Payment
01300	Submittals
09900	Painting
15050	Piping Systems

1.3 REFERENCES

All pipe and conduit support materials and methods shall conform to the latest, applicable requirements of documents listed hereafter. In case of conflict between this section and the listed documents, the requirements of this Section shall prevail.

ANSI A13.1	Piping and Piping System
ANSI B31.1	Power Piping
ASME	Boiler and Pressure Vessel Code
ANSI/MSS SP-58	Pipe Hangers and Supports C Materials, Design and Manufacture
ANSI/MSS SP-69	Pipe Hangers and Supports C Selection and Application
SMACNA	Seismic Restraint Manual C Guidelines for Mechanical Systems
IPC	International Plumbing Code

1.4 SUBMITTALS

In accordance with the requirements of Section 01300, submit the following project data prepared by a licensed Professional Engineer:

A. Manufacturer's technical data for all hangers, brackets, supports and documentation of conformance with appropriate standards and these specifications.

B. Location of pipe and conduit support, including type of structural and pipe attachments, shown on detail drawings and/or specified under Section 15050.

PART 2 PRODUCTS

2.1 GENERAL

The Contractor shall design, provide, and install pipe and conduit support systems, which include hangers, brackets, supports, anchors, expansion joints, and structural attachments. The support system shall be pipe rack, trapeze pipe hangers or individual pipe clamps, hangers, supports and structural attachments as specified herein. The support system shall be designed in conjunction with the pipe and conduit to be supported. Seismic restraints shall be provided in accordance with SMACNA Manual as referenced in paragraph 1.3.

In certain locations, pipe supports, anchors, and expansion joints have been indicated on the Plans, but no attempt has been made to indicate every pipe support, anchor, and expansion joint. It shall be the Contractor's responsibility to provide a complete system of pipe and conduit supports.

2.2 PIPE RACKS AND TRAPEZE HANGERS

Pipe and conduit racks and trapeze hangers shall be constructed of stainless steel channels, rods, posts, post base, clamps, brackets, fittings, and accessories for supporting pipes in equipment and pump rooms. All components for pipe and conduit rack and trapeze shall be Unistrut or equal and shall be installed as noted in the Plans.

2.3 PIPE CLAMPS AND HANGERS

In areas where pipe racks and trapezes are not used, pipe shall be supported with clamp hangers and stanchion saddle support system. The clamps and hangers shall be fastened to threaded rods hanging from structural attachments. Pipe supports shall be selected for the size and type of pipe to which they are applied. Strap hangers will not be acceptable. Threaded rods shall have sufficient threading to permit the maximum adjustment available in the support item.

All pipe clamps and hangers, including all accessories, shall be Type 316 stainless steel.

2.4 STRUCTURAL ATTACHMENTS

Structural attachments shall be concrete insert channels or individual inserts for new concrete, surface-mounted channel or individual inserts for existing concrete or where applicable, steel, roof plate supported attachments in the control building, complete with all accessories required. All structural attachments including all accessories shall be stainless steel, and shall be provided by a single manufacturer. Structural attachments shall be as measured by Unistrut Corporation or approved equal.

2.5 PIPE SUPPORT ATTACHMENTS TO CONCRETE

All pipe support attachment to concrete shall be in adhesive anchors unless noted otherwise.

Products which may be incorporated in the work include, but are not limited to, the following:

A. HIT RE 500 Injection Adhesive Anchor, Hilti, Inc.

B. HIT HY 150 Injection adhesive Anchor, Hilti, Inc.

C. Power-Fast, Powers Fasteners, Inc.

PART 3 EXECUTION

3.1 DESIGN

Pipe and conduit support systems shall be designed in accordance with applicable reference standards specified in paragraph 1.3. Pipe and conduit supports shall be designed and selected to withstand seismic loads for IBC 2018 with Ss=0.42g and S1=0.20g and shall adhere to the following conditions:

A. Weight balance calculations shall be made to determine the required supporting force at each pipe support location and the pipe weight at each equipment location. Design loads for inserts, clamps, and other support items shall not exceed the manufacturer's recommended loads.

B. Pipe supports shall be able to support the pipe in all conditions of operation. They shall allow free expansion and contraction of the piping,

and prevent excessive stress resulting from transferred weight being induced into the pipe or connected equipment. Allow clearances for pipe expansion and contraction.

C. Wherever possible, pipe attachments for horizontal piping shall be pipe clamps, or as shown on the pipe support detail sheet. Horizontal or vertical pipes should be supported preferably at locations of least vertical movement.

D. All pipe supports shall provide a means or vertical adjustment after erection.

E. Where practical, riser pipe shall be supported independently of the connected horizontal piping. Pipe support attachments to the riser piping shall be riser clamps.

3.2 INSTALLATION

Pipe support system shall be installed strictly in accordance with standards and codes referenced in paragraph 1.3 of this Section and piping support system manufacturer and piping manufacturer's recommendations.

In addition, all piping shall be rigidly support and anchored so that there is no movement or visible sagging between supports.

Contact between dissimilar metals, including contact between stainless steel and carbon steel, shall be prevented. Supports for brass or copper pipe or tubing shall be copper-plated. Those portions of pipe supports, which contact other dissimilar metals, shall be rubber or vinyl coated.

Anchorage shall be provided to resist thrust due to temperature changes, changes in diameter or direction, or dead-ending. Anchors shall be located as required to force expansion and contract movement to occur at expansion joints, loops, or elbows, and as required to prevent excessive bending stresses and opening of mechanical couplings. Anchorage for temperature changes shall be centered between elbows and mechanical joints used as expansion joints. Anchorage for bellows type expansion joints may be located adjacent to the joint.

Pipe supports and expansion joints are not required in buried piping, but concrete thrust blocking or other approved anchorage shall be provided as indicated on the Plans or specified in other sections.

*****END OF SECTION *****

SECTION 15100

VALVES

PART 1 GENERAL

1.1 SCOPE

The work specified in this Section shall consist of valves and accessories as shown on the Plans, described in these Specifications, and as required to completely interconnect all equipment with piping for complete operable systems.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
01200	Measurement and Payment
01300	Submittals
Division 15	Mechanical

1.3 SUBMITTALS

Submit catalog cuts and shop drawings in accordance with Section 01300 to demonstrate that the valves and appurtenances conform to the Specifications requirements.

The Contractor shall furnish manufacturer's installation and operation manuals, bulletins, and spare parts lists for all valves.

1.4 QUALITY ASSURANCE

All materials and equipment furnished under this Section shall be by the manufacturer specified.

All materials in contact with potable water shall be NSF 61 and NSF 372 certified for potable water use.

PART 2 PRODUCTS

2.1 GATE VALVES

Gate valves larger than 3 inches shall be ductile iron body, bronze mounted, resilient seat, wedge disc, left opening, high-strength bronze stem double O-ring which shall withstand the test pressure without leakage, with a 2-inch-square operating nut opening counterclockwise and complying with AWWA C509 or C515. Gate valves shall be non-rising stem unless noted otherwise. Valves shall be rated at 250 psi minimum working pressure, and furnished with either flanged and/or mechanical joints as shown on the plans. All surfaces, interior and exterior, shall be epoxy-coated, acceptable for potable water. Valves shall be M&H Style 4067 C515 ductile iron gate valve, or approved equal.

2.2 VALVE BOXES

There shall be furnished and installed with all valves installed underground, two-piece adjustable cast iron valve boxes with a minimum inside diameter of 5 inches. The valve boxes shall be set concentric with the axis of the stem and adjusted to the finish grade. Valve box lids shall be identified with a letter/number code and opening direction designation as shown on the Plans.

Valve boxes shall be equal to the “6855 Slip Type Tyler” Model or approved equal.

PART 3 EXECUTION

3.1 GENERAL

All valves and accessories shall be installed in a manner and location as shown on the Plans or as required for the application and in accordance with manufacturer’s instructions. Valve size is fully equal to line piping in which the valve is installed unless otherwise noted on the Plans. Support all valves where necessary. In case of conflict between these Specifications and a governing code, the more stringent standard shall prevail.

All valves of the same style or type shall be furnished by a single manufacturer.

Provide all accessories necessary for proper valve operation as specified or required for the application.

Valves shall be installed with the operator in a position for convenient operation. Particular care shall be taken to ensure that space is available for operation of lever or handwheel operated valves without interference to walls, piping or equipment. Any valve which is installed, in the opinion of the Engineer, in a

manner that operation is inconvenient shall be modified or removed and reinstalled in a manner suitable to the Engineer at the expense of the Contractor. Operations for manual valves shall be lever or handwheel as is standard with the manufacturer unless another type of operator is specified or required by the manufacturer.

For submerged valves, provide stem guides as recommended by the valve manufacturer on a spacing of 6' 0". As an alternate, provide valves with extended bonnets where practical. Provide supports for extended bonnets as required. Stem guides and supports shall be 316 stainless steel. All installation fasteners for submerged valves, guides, and supports (nuts, bolts and washers) shall be 316 stainless steel.

3.2 VALVES

All valves shall be inspected in the field to ensure proper working order before installation. Valves shall be set and jointed to the pipe in the manner as set forth in the AWWA Standards for the type of connecting ends furnished.

Valves shall have the interiors cleaned of all foreign matter and shall be inspected both in open and closed position prior to installation. Valves and valve boxes shall be set plumb.

Valves shall include operator extension stems to raise the operating nut if it is more than six feet below finished grade.

If a valve stem is needed, the extension stem of the length required to meet field conditions shall be a manufactured unit with a 1-inch-diameter mild steel rod. At the top of the extension stem there shall be a 2-inch standard operating nut complete with a centering flange.

3.3 VALVE BOXES

The valve box cover shall be set flush with the finished paved surface.

The valve box shall be placed over the valve or valve operator in such a manner that the valve box does not transmit shock or stress loads to the valve. The casting shall not rest directly upon the body of the valve or upon the water main.

The axis of the valve box shall be common with the projected axis of the valve stem. The tops of the adjustable valve boxes shall be set to the existing or established grade, whichever is applicable. All valves shall be set with the operating stems vertical.

Valve boxes shall be set such that the slots in the boxes and/or ears in the valve box lid are in-line with the run of the pipe being installed.

The flared end of the valve box shall be set at the bottom elevation of the 2-inch operating nut to allow space for rocks to be moved laterally from the operation nut.

Any extension of the valve box shall utilize additional flared end box bottom sections or cast-iron hub soil pipe. Other materials are not acceptable.

***** END OF SECTION *****

PART 6

WAGE RATES

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

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

Journey Level Prevailing Wage Rates for the Effective Date: 6/17/2026

Yakima County

Trade	Job Classification	Wage	Holiday	Overtime	Note	Risk Class
Asbestos Abatement Workers	Journey Level	$55.11	5D	1H		View
Boilermakers	Journey Level	$77.39	5N	1C		View
Brick Mason	Journey Level	$61.09	5A	1M		View
Building Service Employees	Janitor	$17.13		1		View
Building Service Employees	Shampooer	$17.13		1		View
Building Service Employees	Waxer	$17.13		1		View
Building Service Employees	Window Cleaner	$17.13		1		View
Cabinet Makers (In Shop)	Journey Level	$17.13		1		View
Carpenters	Acoustical Worker	$83.21	15J	11U		View
Carpenters	Bridge Dock and Wharf Carpenter	$84.81	15J	11U	9L	View
Carpenters	Bridge, Dock & Wharf Carpenter	$80.50	15J	4C		View
Carpenters	Floor Layer & Floor Finisher	$83.21	15J	11U		View
Carpenters	General Carpenter	$83.21	15J	11U		View
Carpenters	Scaffold Erector	$83.21	15J	11U		View
Cement Masons	Journey Level	$58.03	7B	1N		View
Divers & Tenders	Bell/Vehicle/Submersible Operator (not	$144.72	15J	11T	9I	View

	under pressure)					
Divers & Tenders	Dive Supervisor	$146.22	**15J**	**11T**	**9I**	**View**
Divers & Tenders	Diver	$144.72	**15J**	**11T**	**9I**	**View**
Divers & Tenders	Diver Tender	$91.05	**15J**	**11T**	**9I**	**View**
Divers & Tenders	Hyperbaric Worker - Compressed Air Worker 0-30.00 PSI	$114.73	**15J**	**11U**		**View**
Divers & Tenders	Hyperbaric Worker - Compressed Air Worker 30.01-44.00 PSI	$124.28	**15J**	**11U**		**View**
Divers & Tenders	Hyperbaric Worker - Compressed Air Worker 44.01 - 54.00 PSI	$133.82	**15J**	**11U**		**View**
Divers & Tenders	Hyperbaric Worker - Compressed Air Worker 54.01 - 60.00 PSI	$143.37	**15J**	**11U**		**View**
Divers & Tenders	Hyperbaric Worker - Compressed Air Worker 60.01 - 64.00 PSI	$152.91	**15J**	**11U**		**View**
Divers & Tenders	Hyperbaric Worker - Compressed Air Worker 64.01 - 68.00 PSI	$162.46	**15J**	**11U**		**View**
Divers & Tenders	Hyperbaric Worker - Compressed Air Worker 68.01 - 70.00 PSI	$172.00	**15J**	**11U**		**View**
Divers & Tenders	Hyperbaric Worker - Compressed Air Worker 70.01 - 72.00 PSI	$181.55	**15J**	**11U**		**View**
Divers & Tenders	Hyperbaric Worker - Compressed Air Worker 72.01 - 74.00 PSI	$191.09	**15J**	**11U**		**View**
Divers & Tenders	Lead Diver (Dive Master)	$105.51	**15J**	**11T**	**9I**	**View**
Divers & Tenders	Manifold Operator (Life Support Technician)	$96.05	**15J**	**11U**	**9I**	**View**
Divers & Tenders	Remote Operated Vehicle Operator/ Technician	$91.05	**15J**	**11T**	**9I**	**View**
Divers & Tenders	Remote Operated Vehicle Operator/ Technician	$91.05	**15J**	**11U**	**9I**	**View**
Divers & Tenders	Remote Operated Vehicle Tender	$84.75	**15J**	**11T**	**9I**	**View**
Divers & Tenders	Stand-by Diver	$100.51	**15J**	**11T**	**9I**	**View**
Dredge Workers	Assistant Engineer	$89.47	**5D**	**3F**		**View**

Dredge Workers	Assistant Mate (Deckhand)	$88.78	5D	3F		View
Dredge Workers	Boatmen	$89.47	5D	3F		View
Dredge Workers	Engineer Welder	$91.20	5D	3F		View
Dredge Workers	Leverman, Hydraulic	$93.03	5D	3F		View
Dredge Workers	Mates	$89.47	5D	3F		View
Dredge Workers	Oiler	$88.78	5D	3F		View
Drywall Applicator	Journey Level	$81.71	15O	11S		View
Drywall Tapers	Journey Level	$81.71	15O	11S		View
Electrical Fixture Maintenance Workers	Journey Level	$43.32		1		View
Electricians - Inside	Cable Splicer	$91.45	5A	11F		View
Electricians - Inside	Journey Level	$88.34	5A	11F		View
Electricians - Inside	Welder	$103.90	5A	11F		View
Electricians - Motor Shop	Craftsman	$17.13		1		View
Electricians - Motor Shop	Journey Level	$17.13		1		View
Electricians - Powerline Construction	Cable Splicer	$107.31	5A	4D		View
Electricians - Powerline Construction	Certified Line Welder	$98.45	5A	4D		View
Electricians - Powerline Construction	Groundperson	$61.75	5A	4D		View
Electricians - Powerline Construction	Heavy Line Equipment Operator	$98.45	5A	4D		View
Electricians - Powerline Construction	Journey Level Lineperson	$98.45	5A	4D		View
Electricians - Powerline Construction	Line Equipment Operator	$84.18	5A	4D		View
Electricians - Powerline Construction	Meter Installer	$61.75	5A	4D	8W	View
Electricians - Powerline Construction	Pole Sprayer	$98.45	5A	4D		View
Electricians - Powerline Construction	Powderperson	$72.81	5A	4D		View
Electronic Technicians	Journey Level	$53.13	5I	1B		View

Elevator Constructors	Mechanic	$119.17	7D	4A		View
Elevator Constructors	Mechanic In Charge	$128.95	7D	4A		View
Fabricated Precast Concrete Products	Craftsman - In-Factory Work Only	$17.13		1		View
Fabricated Precast Concrete Products	Journey Level	$17.13		1		View
Fabricated Precast Concrete Products	Journey Level - In-Factory Work Only	$17.13		1		View
Fence Erectors	Fence Erector	$51.98	15J	11P	8Y	View
Fence Erectors	Fence Laborer	$51.98	15J	11P	8Y	View
Flaggers	Journey Level	$51.98	15J	11P	8Y	View
Glaziers	Journey Level	$48.20	7L	4L		View
Heat & Frost Insulators And Asbestos Workers	Journey Level	$96.42	15H	11C		View
Heating Equipment Mechanics	Journey Level	$81.31	5A	1X		View
Hod Carriers & Mason Tenders	Journey Level	$58.36	15J	11P	8Y	View
Industrial Power Vacuum Cleaner	Journey Level	$17.13		1		View
Inland Boatmen	Journey Level	$17.13		1		View
Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Cleaner Operator	$54.56	15M	11O		View
Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Foamer Operator	$54.56	15M	11O		View
Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Grout Truck Operator	$54.56	15M	11O		View
Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Head Operator	$52.40	15M	11O		View
Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Technician	$45.97	15M	11O		View
Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	TV Truck Operator	$49.20	15M	11O		View
Insulation Applicators	Journey Level	$83.21	15J	11U		View

Ironworkers	Journeyman	$78.44	**15K**	**11N**		**View**
Laborers	Erosion Control Worker	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Air, Gas Or Electric Vibrating Screed	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Airtrac Drill Operator	$56.64	**15J**	**11P**	**8Y**	**View**
Laborers	Ballast Regular Machine	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Batch Weighman	$51.98	**15J**	**11P**	**8Y**	**View**
Laborers	Brick Pavers	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Brush Cutter	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Brush Hog Feeder	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Burner	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Caisson Worker	$56.64	**15J**	**11P**	**8Y**	**View**
Laborers	Carpenter Tender	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Cement Dumper-paving	$56.64	**15J**	**11P**	**8Y**	**View**
Laborers	Cement Finisher Tender	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Change House Or Dry Shack	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Chipping Gun (30 Lbs. And Over)	$56.00	**15J**	**11P**	**8Y**	**View**
Laborers	Chipping Gun (Under 30 Lbs.)	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Choker Setter	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Chuck Tender	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Clary Power Spreader	$56.00	**15J**	**11P**	**8Y**	**View**
Laborers	Clean-up Laborer	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Concrete Dumper/Chute Operator	$56.64	**15J**	**11P**	**8Y**	**View**
Laborers	Concrete Form Stripper	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Concrete Placement Crew	$56.64	**15J**	**11P**	**8Y**	**View**

Laborers	Concrete Saw Operator/Core Driller	$56.00	15J	11P	8Y	View
Laborers	Crusher Feeder	$51.98	15J	11P	8Y	View
Laborers	Curing Laborer	$55.11	15J	11P	8Y	View
Laborers	Demolition: Wrecking & Moving (Incl. Charred Material)	$55.11	15J	11P	8Y	View
Laborers	Ditch Digger	$55.11	15J	11P	8Y	View
Laborers	Diver	$56.64	15J	11P	8Y	View
Laborers	Drill Operator (Hydraulic, Diamond)	$56.00	15J	11P	8Y	View
Laborers	Dry Stack Walls	$55.11	15J	11P	8Y	View
Laborers	Dump Person	$55.11	15J	11P	8Y	View
Laborers	Epoxy Technician	$55.11	15J	11P	8Y	View
Laborers	Faller & Bucker Chain Saw	$56.00	15J	11P	8Y	View
Laborers	Fine Graders	$55.11	15J	11P	8Y	View
Laborers	Firewatch	$51.98	15J	11P	8Y	View
Laborers	Form Setter	$56.64	15J	11P	8Y	View
Laborers	Gabian Basket Building	$55.11	15J	11P	8Y	View
Laborers	Gaurdrail Erector	$55.11	15J	11P	8Y	View
Laborers	General Laborer	$55.11	15J	11P	8Y	View
Laborers	Grade Checker & Transit Person	$58.36	15J	11P	8Y	View
Laborers	Grinders	$55.11	15J	11P	8Y	View
Laborers	Grout Machine Tender	$55.11	15J	11P	8Y	View
Laborers	Groutmen (Pressure) Including Post Tension Beams	$56.00	15J	11P	8Y	View
Laborers	Hazardous Waste Worker (Level A)	$56.64	15J	11P	8Y	View
Laborers	Hazardous Waste Worker (Level B)	$56.00	15J	11P	8Y	View

Laborers	Hazardous Waste Worker (Level C)	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	High Scaler	$56.64	**15J**	**11P**	**8Y**	**View**
Laborers	Jackhammer	$56.00	**15J**	**11P**	**8Y**	**View**
Laborers	Laserbeam Operator	$56.00	**15J**	**11P**	**8Y**	**View**
Laborers	Maintenance Person	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Manhole Builder-Mudman	$56.00	**15J**	**11P**	**8Y**	**View**
Laborers	Material Yard Person	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Miner	$58.46	**15J**	**11P**	**8Y**	**View**
Laborers	Mold Abatement Worker	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Motorman-Dinky Locomotive	$58.46	**15J**	**11P**	**8Y**	**View**
Laborers	Nozzleman (Concrete Pump, Green Cutter When Using Combination Of High Pressure Air & Water On Concrete & Rock, Sandblast, Gunite, Shotcrete, Water Blaster, Vacuum Blaster)	$58.36	**15J**	**11P**	**8Y**	**View**
Laborers	Pavement Breaker	$56.00	**15J**	**11P**	**8Y**	**View**
Laborers	Pilot Car	$51.98	**15J**	**11P**	**8Y**	**View**
Laborers	Pipe Layer (Lead)	$58.36	**15J**	**11P**	**8Y**	**View**
Laborers	Pipe Layer/Tailor	$56.00	**15J**	**11P**	**8Y**	**View**
Laborers	Pipe Pot Tender	$56.00	**15J**	**11P**	**8Y**	**View**
Laborers	Pipe Reliner	$56.00	**15J**	**11P**	**8Y**	**View**
Laborers	Pipe Wrapper	$56.00	**15J**	**11P**	**8Y**	**View**
Laborers	Pot Tender	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Powderman	$56.64	**15J**	**11P**	**8Y**	**View**
Laborers	Powderman's Helper	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Power Jacks	$56.00	**15J**	**11P**	**8Y**	**View**

Laborers	Power Washer	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Railroad Spike Puller - Power	$56.00	**15J**	**11P**	**8Y**	**View**
Laborers	Raker - Asphalt	$58.36	**15J**	**11P**	**8Y**	**View**
Laborers	Re-timberman	$56.64	**15J**	**11P**	**8Y**	**View**
Laborers	Remote Equipment Operator	$56.00	**15J**	**11P**	**8Y**	**View**
Laborers	Rigger/Signal Person	$56.00	**15J**	**11P**	**8Y**	**View**
Laborers	Rip Rap Person	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Rivet Buster	$56.00	**15J**	**11P**	**8Y**	**View**
Laborers	Rodder	$56.64	**15J**	**11P**	**8Y**	**View**
Laborers	Scaffold Erector	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Scale Person	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Sloper (Over 20")	$56.00	**15J**	**11P**	**8Y**	**View**
Laborers	Sloper Sprayer	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Spreader (Concrete)	$56.64	**15J**	**11P**	**8Y**	**View**
Laborers	Stake Hopper	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Stock Piler	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Swinging Stage/Boatswain Chair	$51.98	**15J**	**11P**	**8Y**	**View**
Laborers	Tamper & Similar Electric, Air & Gas Operated Tools	$56.00	**15J**	**11P**	**8Y**	**View**
Laborers	Tamper (Multiple & Self-propelled)	$56.00	**15J**	**11P**	**8Y**	**View**
Laborers	Timber Person - Sewer (Lagger, Shorer & Cribber)	$56.00	**15J**	**11P**	**8Y**	**View**
Laborers	Toolroom Person (at Jobsite)	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Topper	$55.11	**15J**	**11P**	**8Y**	**View**
Laborers	Track Laborer	$55.11	**15J**	**11P**	**8Y**	**View**

Laborers	Track Liner (Power)	$56.00	15J	11P	8Y	View
Laborers	Traffic Control Laborer	$54.89	15J	11P	9C	View
Laborers	Traffic Control Supervisor	$58.32	15J	11P	9C	View
Laborers	Truck Mounted Attenuator	$54.89	15J	11P	9C	View
Laborers	Truck Spotter	$55.11	15J	11P	8Y	View
Laborers	Tugger Operator	$56.00	15J	11P	8Y	View
Laborers	Tunnel Work-Guage and Lock Tender	$58.46	15J	11P	8Y	View
Laborers	Tunnel Work-Guage and Lock Tender	$58.46	15J	11P	8Y	View
Laborers	Vibrator	$56.64	15J	11P	8Y	View
Laborers	Vinyl Seamer	$55.11	15J	11P	8Y	View
Laborers	Watchmen	$47.72	15J	11P	8Y	View
Laborers	Welder	$56.00	15J	11P	8Y	View
Laborers	Well Point Laborer	$56.00	15J	11P	8Y	View
Laborers	Window Washer/Cleaner	$47.72	15J	11P	8Y	View
Laborers - Underground Sewer & Water	General Laborer & Topman	$55.11	15J	11P	8Y	View
Laborers - Underground Sewer & Water	Pipe Layer	$56.00	15J	11P	8Y	View
Landscape Construction	Landscape Construction/landscaping Or Planting Laborers	$47.72	15J	11P	8Y	View
Landscape Construction	Landscape Operator	$88.60	15J	11G	8X	View
Landscape Maintenance	Groundskeeper	$17.13		1		View
Lathers	Journey Level	$81.71	15O	11S		View
Marble Setters	Journey Level	$61.09	5A	1M		View
Metal Fabrication (In Shop)	Fitter	$17.13		1		View
Metal Fabrication (In Shop)	Laborer	$17.13		1		View

Metal Fabrication (In Shop)	Machine Operator	$17.13		1		View
Metal Fabrication (In Shop)	Painter	$17.13		1		View
Metal Fabrication (In Shop)	Welder	$17.13		1		View
Millwright	Journey Level	$80.28	15J	4C		View
Modular Buildings	Journey Level	$17.13		1		View
Painters	Commercial Painter	$49.90	15P	11V		View
Painters	Industrial Painter	$57.22	15P	11V	9D	View
Pile Driver	Crew Tender	$80.50	15J	11U	9L	View
Pile Driver	Journey Level	$84.81	15J	11U		View
Plasterers	Journey Level	$78.60	7Q	1R		View
Plasterers	Nozzleman	$82.70	7Q	1R		View
Playground & Park Equipment Installers	Journey Level	$17.13		1		View
Plumbers & Pipefitters	Journey Level	$100.41	6Z	1Q		View
Power Equipment Operators	Asphalt Plant Operators	$90.09	15J	11G	8X	View
Power Equipment Operators	Assistant Engineer	$84.69	15J	11G	8X	View
Power Equipment Operators	Barrier Machine (zipper)	$89.28	15J	11G	8X	View
Power Equipment Operators	Batch Plant Operator: concrete	$89.28	15J	11G	8X	View
Power Equipment Operators	Boat Operator	$88.20	7A	11H	8X	View
Power Equipment Operators	Bobcat	$84.69	15J	11G	8X	View
Power Equipment Operators	Brokk - Remote Demolition Equipment	$84.69	15J	11G	8X	View
Power Equipment Operators	Brooms	$84.69	15J	11G	8X	View
Power Equipment Operators	Bump Cutter	$89.28	15J	11G	8X	View
Power Equipment Operators	Cableways	$90.09	15J	11G	8X	View
Power Equipment Operators	Chipper	$89.28	15J	11G	8X	View

Power Equipment Operators	Compressor	$84.69	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Concrete Finish Machine - Laser Screed	$84.69	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Concrete Pump - Mounted Or Trailer High Pressure Line Pump, Pump High Pressure	$88.60	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Concrete Pump: Truck Mount With Boom Attachment Over 42 M	$90.09	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Concrete Pump: Truck Mount With Boom Attachment Up To 42m	$89.28	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Conveyors	$88.60	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Cranes Friction: 200 tons and over	$90.88	**7A**	**11H**	**8X**	**View**
Power Equipment Operators	Cranes, A-frame: 10 tons and under	$82.95	**7A**	**11H**	**8X**	**View**
Power Equipment Operators	Cranes: 100 tons through 199 tons, or 150' of boom (including jib with attachments)	$89.09	**7A**	**11H**	**8X**	**View**
Power Equipment Operators	Cranes: 20 tons through 44 tons with attachments	$87.42	**7A**	**11H**	**8X**	**View**
Power Equipment Operators	Cranes: 200 tons- 299 tons, or 250' of boom including jib with attachments	$90.00	**7A**	**11H**	**8X**	**View**
Power Equipment Operators	Cranes: 300 tons and over or 300' of boom including jib with attachments	$90.88	**7A**	**11H**	**8X**	**View**
Power Equipment Operators	Cranes: 45 tons through 99 tons, under 150' of boom(including jib with attachments)	$88.20	**7A**	**11H**	**8X**	**View**
Power Equipment Operators	Cranes: Friction cranes through 199 tons	$90.00	**7A**	**11H**	**8X**	**View**
Power Equipment Operators	Cranes: through 19 tons with attachments, a-frame over 10 tons	$86.75	**7A**	**11H**	**8X**	**View**
Power Equipment Operators	Crusher	$89.28	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Deck Engineer/Deck Winches (power)	$89.28	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Derricks, On Building Work	$88.20	**7A**	**11H**	**8X**	**View**
Power Equipment Operators	Dozers D-9 & Under	$88.60	**15J**	**11G**	**8X**	**View**

Power Equipment Operators	Drill Oilers: Auger Type, Truck Or Crane Mount	$88.60	15J	11G	8X	View
Power Equipment Operators	Drilling Machine	$91.00	15J	11G	8X	View
Power Equipment Operators	Elevator and man-lift: permanent and shaft type	$84.69	15J	11G	8X	View
Power Equipment Operators	Finishing Machine, Bidwell And Gamaco & Similar Equipment	$89.28	15J	11G	8X	View
Power Equipment Operators	Forklift: 3000 lbs and over with attachments	$88.60	15J	11G	8X	View
Power Equipment Operators	Forklifts: under 3000 lbs. with attachments	$84.69	15J	11G	8X	View
Power Equipment Operators	Grade Engineer: Using Blue Prints, Cut Sheets, Etc	$89.28	15J	11G	8X	View
Power Equipment Operators	Gradechecker/Stakeman	$84.69	15J	11G	8X	View
Power Equipment Operators	Guardrail Punch	$89.28	15J	11G	8X	View
Power Equipment Operators	Hard Tail End Dump Articulating Off-Road Equipment 45 Yards. & Over	$90.09	15J	11G	8X	View
Power Equipment Operators	Hard Tail End Dump Articulating Off-road Equipment Under 45 Yards	$89.28	15J	11G	8X	View
Power Equipment Operators	Horizontal/Directional Drill Locator	$88.60	15J	11G	8X	View
Power Equipment Operators	Horizontal/Directional Drill Operator	$89.28	15J	11G	8X	View
Power Equipment Operators	Hydralifts/Boom Trucks Over 10 Tons	$86.75	7A	11H	8X	View
Power Equipment Operators	Hydralifts/boom trucks: 10 tons and under	$82.95	7A	11H	8X	View
Power Equipment Operators	Leverman	$91.94	15J	11G	8X	View
Power Equipment Operators	Loader, Overhead, 6 Yards. But Not Including 8 Yards	$90.09	15J	11G	8X	View
Power Equipment Operators	Loaders, Overhead Under 6 Yards	$89.28	15J	11G	8X	View
Power Equipment Operators	Loaders, Plant Feed	$89.28	15J	11G	8X	View
Power Equipment Operators	Loaders: Elevating Type Belt	$88.60	15J	11G	8X	View
Power Equipment Operators	Locomotives, All	$89.28	15J	11G	8X	View

Power Equipment Operators	Material Transfer Device	$89.28	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Mechanics: All (Leadmen - $0.50 per hour over mechanic)	$91.00	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Motor Patrol Graders	$90.09	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Mucking Machine, Mole, Tunnel Drill, Boring, Road Header And/or Shield	$90.09	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Oil Distributors, Blower Distribution & Mulch Seeding Operator	$84.69	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Outside Hoists (Elevators and Manlifts), Air Tuggers, Strato	$88.60	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Overhead, bridge type Crane: 20 tons through 44 tons	$87.42	**7A**	**11H**	**8X**	**View**
Power Equipment Operators	Overhead, bridge type: 100 tons and over	$89.09	**7A**	**11H**	**8X**	**View**
Power Equipment Operators	Overhead, bridge type: 45 tons through 99 tons	$88.20	**7A**	**11H**	**8X**	**View**
Power Equipment Operators	Pavement Breaker	$84.69	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Pile Driver (other Than Crane Mount)	$89.28	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Plant Oiler - Asphalt, Crusher	$88.60	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Posthole Digger, Mechanical	$84.69	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Power Plant	$84.69	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Pumps - Water	$84.69	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Quad 9, Hd 41, D10 And Over	$90.09	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Quick Tower: no cab, under 100 feet in height base to boom	$89.28	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Remote Control Operator On Rubber Tired Earth Moving Equipment	$90.09	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Rigger and Bellman	$82.95	**7A**	**11H**	**8X**	**View**
Power Equipment Operators	Rigger/Signal Person, Bellman(Certified)	$86.75	**7A**	**11H**	**8X**	**View**
Power Equipment Operators	Rollagon	$90.09	**15J**	**11G**	**8X**	**View**

Power Equipment Operators	Roller, Other Than Plant Mix	$84.69	15J	11G	8X	View
Power Equipment Operators	Roller, Plant Mix Or Multi-lift Materials	$88.60	15J	11G	8X	View
Power Equipment Operators	Roto-mill, Roto-grinder	$89.28	15J	11G	8X	View
Power Equipment Operators	Saws - Concrete	$88.60	15J	11G	8X	View
Power Equipment Operators	Scraper, Self Propelled Under 45 Yards	$89.28	15J	11G	8X	View
Power Equipment Operators	Scrapers - Concrete & Carry All	$88.60	15J	11G	8X	View
Power Equipment Operators	Scrapers, Self-propelled: 45 Yards And Over	$90.09	15J	11G	8X	View
Power Equipment Operators	Service Engineers: Equipment	$88.60	15J	11G	8X	View
Power Equipment Operators	Shotcrete/Gunite Equipment	$84.69	15J	11G	8X	View
Power Equipment Operators	Shovel, Excavator, Backhoe, Tractors Under 15 Metric Tons	$88.60	15J	11G	8X	View
Power Equipment Operators	Shovel, Excavator, Backhoe: Over 30 Metric Tons To 50 Metric Tons	$90.09	15J	11G	8X	View
Power Equipment Operators	Shovel, Excavator, Backhoes, Tractors: 15 To 30 Metric Tons	$89.28	15J	11G	8X	View
Power Equipment Operators	Shovel, Excavator, Backhoes: Over 50 Metric Tons To 90 Metric Tons	$91.00	15J	11G	8X	View
Power Equipment Operators	Shovel, Excavator, Backhoes: Over 90 Metric Tons	$91.94	15J	11G	8X	View
Power Equipment Operators	Slipform Pavers	$90.09	15J	11G	8X	View
Power Equipment Operators	Spreader, Topsider & Screedman	$90.09	15J	11G	8X	View
Power Equipment Operators	Subgrader Trimmer	$89.28	15J	11G	8X	View
Power Equipment Operators	Tower Bucket Elevators	$88.60	15J	11G	8X	View
Power Equipment Operators	Tower Crane: over 175' through 250' in height, base to boom	$90.00	7A	11H	8X	View
Power Equipment Operators	Tower crane: up to 175' in height base to boom	$89.09	7A	11H	8X	View
Power Equipment Operators	Tower Cranes: over 250' in height from base to boom	$90.88	7A	11H	8X	View

Power Equipment Operators	Transporters, All Track Or Truck Type	$90.09	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Trenching Machines	$88.60	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Truck Crane Oiler/Driver: 100 tons and over	$87.42	**7A**	**11H**	**8X**	**View**
Power Equipment Operators	Truck crane oiler/driver: under 100 tons	$86.75	**7A**	**11H**	**8X**	**View**
Power Equipment Operators	Truck Mount Portable Conveyor	$89.28	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Vac Truck (Vactor Guzzler, Hydro Excavator)	$89.28	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Welder	$90.09	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Wheel Tractors, Farmall Type	$84.69	**15J**	**11G**	**8X**	**View**
Power Equipment Operators	Yo Yo Pay Dozer	$89.28	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Asphalt Plant Operators	$90.09	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Assistant Engineer	$84.69	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Barrier Machine (zipper)	$89.28	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Batch Plant Operator, Concrete	$89.28	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Boat Operator	$88.20	**7A**	**11H**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Bobcat	$84.69	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Brokk - Remote Demolition Equipment	$84.69	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Brooms	$84.69	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Bump Cutter	$89.28	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Cableways	$90.09	**15J**	**11G**	**8X**	**View**

Power Equipment Operators-Underground Sewer & Water	Chipper	$89.28	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Compressor	$84.69	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Concrete Finish Machine - Laser Screed	$84.69	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Concrete Pump - Mounted Or Trailer High Pressure Line Pump, Pump High Pressure	$88.60	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Concrete Pump: Truck Mount With Boom Attachment Over 42 M	$90.09	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Concrete Pump: Truck Mount With Boom Attachment Up To 42m	$89.28	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Conveyors	$88.60	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Cranes Friction: 200 tons and over	$90.88	**7A**	**11H**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Cranes, A-frame: 10 tons and under	$82.95	**7A**	**11H**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Cranes: 100 tons through 199 tons, or 150' of boom (including jib with attachments)	$89.09	**7A**	**11H**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Cranes: 20 tons through 44 tons with attachments	$87.42	**7A**	**11H**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Cranes: 200 tons- 299 tons, or 250' of boom including jib with attachments	$90.00	**7A**	**11H**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Cranes: 300 tons and over or 300' of boom including jib with attachments	$90.88	**7A**	**11H**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Cranes: 45 tons through 99 tons, under 150' of boom(including jib with attachments)	$88.20	**7A**	**11H**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Cranes: Friction cranes through 199 tons	$90.00	**7A**	**11H**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Cranes: through 19 tons with attachments, a-frame over 10 tons	$86.75	**7A**	**11H**	**8X**	**View**

Power Equipment Operators-Underground Sewer & Water	Crusher	$89.28	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Deck Engineer/Deck Winches (power)	$89.28	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Derricks, On Building Work	$88.20	7A	11H	8X	View
Power Equipment Operators-Underground Sewer & Water	Dozers D-9 & Under	$88.60	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Drill Oilers: Auger Type, Truck Or Crane Mount	$88.60	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Drilling Machine	$91.00	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Elevator and man-lift: permanent and shaft type	$84.69	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Finishing Machine, Bidwell And Gamaco & Similar Equipment	$89.28	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Forklift: 3000 lbs and over with attachments	$88.60	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Forklifts: under 3000 lbs. with attachments	$84.69	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Grade Engineer: Using Blue Prints, Cut Sheets, Etc	$89.28	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Gradechecker/Stakeman	$84.69	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Guardrail Punch	$89.28	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Hard Tail End Dump Articulating Off-Road Equipment 45 Yards. & Over	$90.09	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Hard Tail End Dump Articulating Off-road Equipment Under 45 Yards	$89.28	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Horizontal/Directional Drill Locator	$88.60	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Horizontal/Directional Drill Operator	$89.28	15J	11G	8X	View
Power Equipment Operators-	Hydralifts/boom trucks: 10 tons and	$82.95	7A	11H	8X	View

Underground Sewer & Water	under					
Power Equipment Operators-Underground Sewer & Water	Hydralifts/boom trucks: over 10 tons	$86.75	7A	11H	8X	View
Power Equipment Operators-Underground Sewer & Water	Leverman	$91.94	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Loader, Overhead, 6 Yards. But Not Including 8 Yards	$90.09	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Loaders, Overhead Under 6 Yards	$89.28	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Loaders, Plant Feed	$89.28	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Loaders: Elevating Type Belt	$88.60	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Locomotives, All	$89.28	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Material Transfer Device	$89.28	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Mechanics: All (Leadmen - $0.50 per hour over mechanic)	$91.00	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Motor Patrol Graders	$90.09	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Mucking Machine, Mole, Tunnel Drill, Boring, Road Header And/or Shield	$90.09	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Oil Distributors, Blower Distribution & Mulch Seeding Operator	$84.69	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Outside Hoists (Elevators and Manlifts), Air Tuggers, Strato	$88.60	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Overhead, bridge type Crane: 20 tons through 44 tons	$87.42	7A	11H	8X	View
Power Equipment Operators-Underground Sewer & Water	Overhead, bridge type: 100 tons and over	$89.09	7A	11H	8X	View
Power Equipment Operators-Underground Sewer & Water	Overhead, bridge type: 45 tons through 99 tons	$88.20	7A	11H	8X	View
Power Equipment Operators-Underground Sewer & Water	Pavement Breaker	$84.69	15J	11G	8X	View

Power Equipment Operators-Underground Sewer & Water	Pile Driver (other Than Crane Mount)	$89.28	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Plant Oiler - Asphalt, Crusher	$88.60	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Posthole Digger, Mechanical	$84.69	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Power Plant	$84.69	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Pumps - Water	$84.69	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Quad 9, Hd 41, D10 And Over	$90.09	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Quick Tower: no cab, under 100 feet in height base to boom	$89.28	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Remote Control Operator On Rubber Tired Earth Moving Equipment	$90.09	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Rigger and Bellman	$82.95	**7A**	**11H**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Rigger/Signal Person, Bellman(Certified)	$86.75	**7A**	**11H**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Rollagon	$90.09	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Roller, Other Than Plant Mix	$84.69	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Roller, Plant Mix Or Multi-lift Materials	$88.60	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Roto-mill, Roto-grinder	$89.28	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Saws - Concrete	$88.60	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Scraper, Self Propelled Under 45 Yards	$89.28	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-Underground Sewer & Water	Scrapers - Concrete & Carry All	$88.60	**15J**	**11G**	**8X**	**View**
Power Equipment Operators-	Scrapers, Self-propelled: 45 Yards And	$90.09	**15J**	**11G**	**8X**	**View**

Underground Sewer & Water	Over					
Power Equipment Operators-Underground Sewer & Water	Shotcrete/Gunite Equipment	$84.69	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Shovel, Excavator, Backhoe, Tractors Under 15 Metric Tons	$88.60	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Shovel, Excavator, Backhoe: Over 30 Metric Tons To 50 Metric Tons	$90.09	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Shovel, Excavator, Backhoes, Tractors: 15 To 30 Metric Tons	$89.28	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Shovel, Excavator, Backhoes: Over 50 Metric Tons To 90 Metric Tons	$91.00	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Shovel, Excavator, Backhoes: Over 90 Metric Tons	$91.94	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Slipform Pavers	$90.09	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Spreader, Topsider & Screedman	$90.09	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Subgrader Trimmer	$89.28	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Tower Bucket Elevators	$88.60	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Tower Crane: over 175' through 250' in height, base to boom	$90.00	7A	11H	8X	View
Power Equipment Operators-Underground Sewer & Water	Tower crane: up to 175' in height base to boom	$89.09	7A	11H	8X	View
Power Equipment Operators-Underground Sewer & Water	Tower Cranes: over 250' in height from base to boom	$90.88	7A	11H	8X	View
Power Equipment Operators-Underground Sewer & Water	Transporters, All Track Or Truck Type	$90.09	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Trenching Machines	$88.60	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Truck Crane Oiler/Driver: 100 tons and over	$87.42	7A	11H	8X	View
Power Equipment Operators-Underground Sewer & Water	Truck crane oiler/driver: under 100 tons	$86.75	7A	11H	8X	View

Power Equipment Operators-Underground Sewer & Water	Truck Mount Portable Conveyor	$89.28	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Vac Truck (Vactor Guzzler, Hydro Excavator)	$89.28	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Welder	$90.09	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Wheel Tractors, Farmall Type	$84.69	15J	11G	8X	View
Power Equipment Operators-Underground Sewer & Water	Yo Yo Pay Dozer	$89.28	15J	11G	8X	View
Power Line Clearance Tree Trimmers	Journey Level In Charge	$69.62	5A	4A		View
Power Line Clearance Tree Trimmers	Spray Person	$65.89	5A	4A		View
Power Line Clearance Tree Trimmers	Tree Equipment Operator	$69.62	5A	4A		View
Power Line Clearance Tree Trimmers	Tree Trimmer	$62.19	5A	4A		View
Power Line Clearance Tree Trimmers	Tree Trimmer Groundperson	$45.93	5A	4A		View
Refrigeration & Air Conditioning Mechanics	Journey Level	$100.41	6Z	1Q		View
Residential Brick Mason	Journey Level	$37.47		1		View
Residential Carpenters	Journey Level	$56.28		1		View
Residential Cement Masons	Journey Level	$28.00		1		View
Residential Drywall Applicators	Journey Level	$39.60		1		View
Residential Drywall Tapers	Journey Level	$32.94		1		View
Residential Electricians	Journey Level	$28.40		1		View
Residential Glaziers	Journey Level	$26.00		1		View
Residential Insulation Applicators	Journey Level	$21.74		1		View
Residential Laborers	Journey Level	$17.13		1		View
Residential Marble Setters	Journey Level	$37.47		1		View
Residential Painters	Journey Level	$21.59		1		View

Residential Plumbers & Pipefitters	Journey Level	$28.62		1		View
Residential Refrigeration & Air Conditioning Mechanics	Journey Level	$37.30	5A	11R		View
Residential Sheet Metal Workers	Journey Level (Field or Shop)	$58.36	5A	1X		View
Residential Soft Floor Layers	Journey Level	$30.83		1		View
Residential Sprinkler Fitters (Fire Protection)	Journey Level	$18.40		1		View
Residential Stone Masons	Journey Level	$18.19		1		View
Residential Terrazzo Workers	Journey Level	$17.13		1		View
Residential Terrazzo/Tile Finishers	Journey Level	$21.96		1		View
Residential Tile Setters	Journey Level	$19.07		1		View
Roofers	Irritable Bituminous Roofer	$53.53	7G	4I		View
Roofers	Journeyman Roofer, Waterproofer, Kettleman	$50.53	7G	4I		View
Sheet Metal Workers	Journey Level (Field or Shop)	$81.31	5A	1X		View
Sign Makers & Installers (Electrical)	Journey Level	$17.13		1		View
Sign Makers & Installers (Non-Electrical)	Journey Level	$17.13		1		View
Soft Floor Layers	Journey Level	$62.66	7C	3J		View
Solar Controls For Windows	Journey Level	$17.13		1		View
Sprinkler Fitters (Fire Protection)	Journey Level	$76.94	7J	1R		View
Stage Rigging Mechanics (Non Structural)	Journey Level	$17.13		1		View
Stone Masons	Journey Level	$61.09	5A	1M		View
Street And Parking Lot Sweeper Workers	Journey Level	$17.13		1		View
Surveyors	Assistant Construction Site Surveyor	$86.75	7A	11H	8X	View
Surveyors	Chainman	$82.95	7A	11H	8X	View

Surveyors	Construction Site Surveyor	$88.20	7A	11H	8X	View
Surveyors	Drone Operator (when used in conjunction with survey work only)	$82.95	7A	11H	8X	View
Surveyors	Ground Penetrating Radar Operator	$82.95	7A	11H	8X	View
Telecommunication Technicians	Journey Level	$53.13	5I	1B		View
Telephone Line Construction - Outside	Cable Splicer	$42.62	5A	2B		View
Telephone Line Construction - Outside	Hole Digger/Ground Person	$27.97	5A	2B		View
Telephone Line Construction - Outside	Telephone Equipment Operator (Light)	$35.60	5A	2B		View
Telephone Line Construction - Outside	Telephone Lineperson	$40.28	5A	2B		View
Terrazzo Workers	Journey Level	$43.81	5A	1M		View
Tile Setters	Journey Level	$43.81	5A	1M		View
Tile, Marble & Terrazzo Finishers	Journey Level	$35.93	5A	1M		View
Traffic Control Stripers	All cleanup required in connection with traffic control stripers work (Group 1)	$95.41	15L	1K		View
Traffic Control Stripers	Handling, painting and installing of all car stops, stop signs and any other type sign (Group 2)	$55.54	15L	1K		View
Traffic Control Stripers	Installation of guard rail and posts and similar protective devices (Group 2)	$55.54	15L	1K		View
Traffic Control Stripers	Installation of parking gates, ticket spitters and other mechanical and automatic control devices (Group 2)	$55.54	15L	1K		View
Traffic Control Stripers	Installation of plastic metal or composition button, or lines used instead of paint (Group 1)	$95.41	15L	1K		View
Traffic Control Stripers	Line removal; chemical sand and hydro-blast, paint and button (Group 1)	$95.41	15L	1K		View
Traffic Control Stripers	Manufacturing and installation of all car stops and control devices and similar traffic regulators (Group 2)	$55.54	15L	1K		View
Traffic Control Stripers	Manufacturing, painting, stenciling, servicing, repairing, placing and	$55.54	15L	1K		View

	removal of traffic safety and control devices/barricades (Group 2)					
Traffic Control Stripers	Painting and installing lines, arrows, bumpers, curbs, etc., on parking lots, air fields, highways, game courts (Group 1)	$95.41	**15L**	**1K**		**View**
Traffic Control Stripers	Preparation and maintenance of all surfaces (Group 1)	$95.41	**15L**	**1K**		**View**
Traffic Control Stripers	Seal coating, slurry coating and other surface protection (Group 2)	$55.54	**15L**	**1K**		**View**
Truck Drivers	Asphalt Mix Over 20 Yards	$66.73	**5D**	**1V**	**8M**	**View**
Truck Drivers	Asphalt Mix To 20 Yards	$66.52	**5D**	**1V**	**8M**	**View**
Truck Drivers	Dump Truck	$66.52	**5D**	**1V**	**8M**	**View**
Truck Drivers	Dump Truck & Trailer	$66.73	**5D**	**1V**	**8M**	**View**
Truck Drivers	Other Trucks	$62.14	**5D**	**1V**	**8M**	**View**
Truck Drivers - Ready Mix	Transit Mixers 20 yards and under	$66.73	**5D**	**1V**	**8M**	**View**
Truck Drivers - Ready Mix	Transit Mixers over 20 yards	$67.10	**5D**	**1V**	**8M**	**View**
Well Drillers & Irrigation Pump Installers	Irrigation Pump Installer	$25.44		**1**		**View**
Well Drillers & Irrigation Pump Installers	Oiler	$17.13		**1**		**View**
Well Drillers & Irrigation Pump Installers	Well Driller	$18.00		**1**		**View**

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Overtime Codes

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

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

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

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

D. The first two (2) hours before or after a five-eight (8) hour workweek day or a four-ten (10) hour workweek day and the first eight (8) hours worked the next day after either workweek shall be paid at one and one-half times the hourly rate of wage. All additional hours worked and all worked on Sundays and holidays shall be paid at double the hourly rate of wage.

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

F. The first two (2) hours after eight (8) regular hours Monday through Friday and the first ten (10) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other overtime hours worked, except Labor Day, shall be paid at double the hourly rate of wage. All hours worked on Labor Day shall be paid at three times the hourly rate of wage.

G. The first ten (10) hours worked on Saturdays and the first ten (10) hours worked on a fifth calendar weekday in a four-ten hour schedule, shall be paid at one and one-half times the hourly rate of wage. All hours worked in excess of ten (10) hours per day Monday through Saturday and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

H. All hours worked on Saturdays (except makeup days if work is lost due to inclement weather conditions or equipment breakdown) shall be paid at one and one-half times the hourly rate of wage. All hours worked Monday through Saturday over twelve (12) hours and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

I. All hours worked on Sundays and holidays shall also be paid at double the hourly rate of wage.

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

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

M. All hours worked on Saturdays (except makeup days if work is lost due to inclement weather conditions) shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

Overtime Codes Continued

1. N. All hours worked on Saturdays (except makeup days) shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

O. The first ten (10) hours worked on Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays, holidays and after twelve (12) hours, Monday through Friday and after ten (10) hours on Saturday shall be paid at double the hourly rate of wage.

P. All hours worked on Saturdays (except makeup days if circumstances warrant) and Sundays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid at double the hourly rate of wage.

Q. The first two (2) hours after eight (8) regular hours Monday through Friday and up to ten (10) hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked in excess of ten (10) hours per day Monday through Saturday and all hours worked on Sundays and holidays (except Christmas day) shall be paid at double the hourly rate of wage. All hours worked on Christmas day shall be paid at two and one-half times the hourly rate of wage.

R. All hours worked on Sundays and holidays shall be paid at two times the hourly rate of wage.

U. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays (except Labor Day) shall be paid at two times the hourly rate of wage. All hours worked on Labor Day shall be paid at three times the hourly rate of wage.

V. All hours worked on Sundays and holidays (except Thanksgiving Day and Christmas day) shall be paid at one and one-half times the hourly rate of wage. All hours worked on Thanksgiving Day and Christmas day shall be paid at double the hourly rate of wage.

X. The first four (4) hours after eight (8) regular hours Monday through Friday and the first twelve (12) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked over twelve (12) hours Monday through Saturday, Sundays and holidays shall be paid at double the hourly rate of wage. When holiday falls on Saturday or Sunday, the day before Saturday, Friday, and the day after Sunday, Monday, shall be considered the holiday and all work performed shall be paid at double the hourly rate of wage.

Y. All hours worked outside the hours of 5:00 am and 5:00 pm (or such other hours as may be agreed upon by any employer and the employee) and all hours worked in excess of eight (8) hours per day (10 hours per day for a 4 x 10 workweek) and on Saturdays and holidays (except labor day) shall be paid at one and one-half times the hourly rate of wage. (except for employees who are absent from work without prior approval on a scheduled workday during the workweek shall be paid at the straight-time rate until they have worked 8 hours in a day (10 in a 4 x 10 workweek) or 40 hours during that workweek.) All hours worked Monday through Saturday over twelve (12) hours and all hours worked on Sundays and Labor Day shall be paid at double the hourly rate of wage.

Z. All hours worked on Saturdays and Sundays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid the straight time rate of pay in addition to holiday pay.

Overtime Codes Continued

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

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

   F. The first eight (8) hours worked on holidays shall be paid at the straight hourly rate of wage in addition to the holiday pay. All hours worked in excess of eight (8) hours on holidays shall be paid at double the hourly rate of wage.

   M. This code appears to be missing. All hours worked on Saturdays, Sundays and holidays shall be paid at double the hourly rate of wage.

   R. All hours worked on Sundays and holidays and all hours worked over sixty (60) in one week shall be paid at double the hourly rate of wage.

   U. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked over 12 hours in a day or on Sundays and holidays shall be paid at double the hourly rate of wage.

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

   F. All hours worked on Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sunday shall be paid at two times the hourly rate of wage. All hours worked on paid holidays shall be paid at two and one-half times the hourly rate of wage including holiday pay.

   H. All work performed on Sundays between March 16th and October 14th and all Holidays shall be compensated for at two (2) times the regular rate of pay. Work performed on Sundays between October 15th and March 15th shall be compensated at one and one half (1-1/2) times the regular rate of pay.

   J. All hours worked between the hours of 10:00 pm and 5:00 am, Monday through Friday, and all hours worked on Saturdays shall be paid at a one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

   K. Work performed in excess of eight (8) hours of straight time per day, or ten (10) hours of straight time per day when four ten (10) hour shifts are established, or forty (40) hours of straight time per week, Monday through Friday, or outside the normal 5 am to 6pm shift, and all work on Saturdays shall be paid at one and one-half times the hourly rate of wage. All work performed after 6:00 pm Saturday to 5:00 am Monday and Holidays, and all hours worked in excess of twelve (12) hours in a single shift shall be paid at double the hourly rate of wage.

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

Overtime Codes Continued

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

A. All hours worked in excess of eight (8) hours per day or forty (40) hours per week shall be paid at double the hourly rate of wage. All hours worked on Saturdays, Sundays and holidays shall be paid at double the hourly rate of wage

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

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

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

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

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

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

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

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

I. The First eight (8) hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked in excess of eight (8) per day on Saturdays shall be paid at double the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

Overtime Codes Continued

4. J. The first eight (8) hours worked on a Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked in excess of eight (8) hours on a Saturday shall be paid at double the hourly rate of wage. All hours worked over twelve (12) in a day, and all hours worked on Sundays and Holidays shall be paid at double the hourly rate of wage.

K. All hours worked on a Saturday shall be paid at one and one-half times the hourly rate of wage, so long as Saturday is the sixth consecutive day worked. All hours worked over twelve (12) in a day Monday through Saturday, and all hours worked on Sundays and Holidays shall be paid at double the hourly rate of wage.

L. The first twelve (12) hours worked on a Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked on a Saturday in excess of twelve (12) hours shall be paid at double the hourly rate of pay. All hours worked over twelve (12) in a day Monday through Friday, and all hours worked on Sundays shall be paid at double the hourly rate of wage. All hours worked on a holiday shall be paid at one and one-half times the hourly rate of wage, except that all hours worked on Labor Day shall be paid at double the hourly rate of pay.

S. On a four (4) day ten (10) hour workweek scheduled Monday through Thursday, or Tuesday through Friday, work performed in excess of (10) hours shall be paid at one and one half (1-1/2) times the hourly rate of pay. On Monday through Friday, work performed outside the normal work hours of 6:00 a.m. and 6:00 p.m. shall be paid at one and one-half (1-1/2) times the straight time rate, (except for special shifts or multiple shift operations).

All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All work performed on Sundays and holidays shall be paid at double the hourly rate of wage. When an employee returns to work without at least eight (8) hours time off since their previous shift, all such time shall be a continuation of shift and paid at the applicable overtime rate until such time as the employee has had a break of eight (8) hours.

Multiple Shift Operations: When the first shift of a multiple shift (a two or three shift) operation is started at the basic straight time rate or at a specific overtime rate, all shifts of that day's operation shall be completed at that rate. Special Shifts: The Special Shift Premium is the basic hourly rate of pay plus $2.00 an hour. When due to conditions beyond the control of the employer or when an owner (not acting as the contractor), a government agency or the contract specifications require more than four (4) hours of a special shift can only be performed outside the normal 6am to 6pm shift then the special shift premium will be applied to the basic straight time for the entire shift. When an employee works on a special shift, they shall be paid the special shift premium for each hour worked unless they are in overtime or double-time status. (For example, the special shift premium does not waive the overtime requirements for work performed on Saturday or Sunday).

U. The first four (4) hours after eight (8) regular hours Monday through Friday and the first twelve (12) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. (Except on makeup days if work is lost due to inclement weather, then the first eight (8) hours on Saturday may be paid the regular rate.) All hours worked over twelve (12) hours Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

Overtime Codes Continued

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

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

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

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

Overtime Codes Continued

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

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

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

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

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

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

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

Overtime Codes Continued

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

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

G. Work performed in excess of eight (8) hours of straight time per day, or ten (10) hours of straight time per day when four ten (10) hour shifts are established, or forty (40) hours of straight time per week, Monday through Friday, or outside the normal 5 am to 6pm shift, and all work on Saturdays shall be paid at one and one-half times the hourly rate of wage.

All work performed after 6:00 pm Saturday to 5:00 am Monday and Holidays, and all hours worked in excess of twelve (12) hours in a single shift shall be paid at double the hourly rate of wage.

After an employee has worked eight (8) hours at an applicable overtime rate, all additional hours shall be at the applicable overtime rate until such time as the employee has had a break of nine (9) hours or more. When an employee returns to work without at least nine (9) hours time off since their previous shift, all such time shall be a continuation of shift and paid at the applicable overtime rate until he/she shall have the nine (9) hours rest period.

H. Work performed in excess of eight (8) hours of straight time per day, or ten (10) hours of straight time per day when four ten (10) hour shifts are established, or forty (40) hours of straight time per week, Monday through Friday, or outside the normal 5 am to 6pm shift, and all work on Saturdays shall be paid at one and one-half times the hourly rate of wage.

All work performed after 6:00 pm Saturday to 5:00 am Monday and Holidays, and all hours worked in excess of twelve (12) hours in a single shift shall be paid at double the hourly rate of wage.

After an employee has worked eight (8) hours at an applicable overtime rate, all additional hours shall be at the applicable overtime rate until such time as the employee has had a break of ten (10) hours or more. When an employee returns to work without at least ten (10) hours time off since their previous shift, all such time shall be a continuation of shift and paid at the applicable overtime rate until he/she shall have the ten (10) hours rest period.

J. All hours worked on holidays shall be paid at double the hourly rate of wage.

K. On Monday through Friday hours worked outside 4:00 am and 5:00 pm, and the first two (2) hours after eight (8) hours worked shall be paid at one and one-half times the hourly rate. All hours worked over 10 hours per day Monday through Friday, and all hours worked on Saturdays, Sundays, and Holidays worked shall be paid at double the hourly rate of wage.

L. An employee working outside 5:00 am and 5:00 pm shall receive an additional two dollar ($2.00) per hour for all hours worked that shift. All hours worked on holidays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid at one and one-half times the hourly rate of wage.

Overtime Codes Continued

11. M. On Monday through Friday, the first four (4) hours of overtime after eight (8) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay, unless a four (4) day ten (10) hour workweek has been established. On a four (4) day ten (10) hour workweek scheduled Monday through Thursday, or Tuesday through Friday, the first two (2) hours of overtime after ten (10) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay.

Work performed outside the normal work hours of 5:00 a.m. and 6:00 p.m. shall be paid at one and one-half (1-1/2) times the straight time rate, (except for special shifts or multiple shift operations). When the first shift of a multiple shift (a two or three shift) operation is started at the basic straight time rate or at a specific overtime rate, all shifts of that day's operation shall be completed at that rate. When due to conditions beyond the control of the Employer or when contract specifications require that work can only be performed outside the regular day shift of 5:00 am to 6:00 pm, then a special shift may be worked at the straight time rate, plus the shift pay premium when applicable. The starting time of work will be arranged to fit such conditions of work. Such shift shall consist of eight (8) hours work for eight (8) hours pay or ten (10) hours work for ten (10) hours pay for four ten shifts.

On Saturday, the first twelve (12) hours of work shall be paid at one and one half (1-1/2) times the straight time rate of pay. All work performed after 6:00 pm Saturday to 5:00 am Monday, all work performed over twelve (12) hours, and all work performed on holidays shall be paid at double the straight time rate of pay.

Shift Pay Premium: In an addition to any overtime already required, all hours worked between the hours of 6:00 pm and 5:00 am shall receive an additional two dollars ($2.00) per hour.

N. All work performed over twelve hours in a shift and all work performed on Sundays and Holidays shall be paid at double the straight time rate.

Any time worked over eight (8) hours on Saturday shall be paid double the straight time rate, except employees assigned to work six 10-hour shifts per week shall be paid double the straight time rate for any time worked on Saturday over 10 hours.

O. All work performed on Saturdays, Sundays, and Holidays shall be paid at one and one half (1-1/2) times the straight time rate of pay.

Overtime Codes Continued

11. P. Work performed in excess of ten (10) hours of straight time per day when four ten (10) hour shifts are established and all work on Saturdays, except for make-up days shall be paid at time and one-half (1 ½) the straight time rate.

Work performed outside the normal work hours of 5:00 a.m. and 6:00 p.m. shall be paid at one and one-half (1-1/2) times the straight time rate, (except for special shifts or multiple shift operations). When the first shift of multiple shift (a two or three shift) operation is started at the basic straight time rate or at a specific overtime rate, all shifts of that day's operation shall be completed at that rate. When due to conditions beyond the control of the Employer or when contract specifications require that work can only be performed outside the regular day shift of 5:00 a.m. to 6:00 p.m., then a special shift may be worked at the straight time rate, plus the shift pay premium when applicable. The starting time of work will be arranged to fit such conditions of work. Such shifts shall consist of eight (8) hours work for eight (8) hours pay or ten (10) hours work for ten (10) hours pay for four ten-hour shifts.

In the event the job is down due to weather conditions, then Saturday may, be worked as a voluntary make-up day at the straight time rate. However, Saturday shall not be utilized as a make-up day when a holiday falls on Friday. All work performed on Sundays and holidays and work in excess of twelve (12) hours per day shall be paid at double (2x) the straight time rate of pay.

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

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

Q. All hours worked between the hours of 6:00 pm and 6:00 am, Monday through Saturday, shall be paid at a premium rate of 35% over the hourly rate of wage. Work performed on Sundays shall be paid at double time. All hours worked on holidays shall be paid at double the hourly rate of wage.

R On Monday through Saturday hours worked outside 6:00 am and 7:00 pm, and all hours after eight (8) hours worked shall be paid at one and one-half times the hourly rate. All hours worked on Sundays and Holidays shall be paid at double the hourly rate of wage.

When a holiday falls on a Saturday, the Friday before shall be the observed holiday. When a holiday falls on a Sunday, the following Monday shall be the observed holiday.

S. The first ten (10) hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. In the event the job is down due to weather conditions, or other conditions beyond the control of the Employer, then Saturday may be worked at the straight time rate, for the first eight (8) hours, or the first ten (10) hours when a four day ten hour workweek has been established.

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

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

Overtime Codes Continued

11. T. On Monday through Friday, the first four (4) hours of overtime after eight (8) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay, unless a four (4) day ten (10) hour workweek has been established. On a four (4) day ten (10) hour workweek scheduled Monday through Thursday, or Tuesday through Friday, the first two (2) hours of overtime after ten (10) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay.

On Saturday, the first twelve (12) hours of work shall be paid at one and one half (1-1/2) times the straight time rate of pay, except that if the job is down on Monday through Friday due to weather conditions or other conditions outside the control of the employer, the first ten (10) hours on Saturday may be worked at the straight time rate of pay.

All hours worked over twelve (12) hours in a day and all hours worked on Sunday and Holidays shall be paid at two (2) times the straight time rate of pay.

U. On Monday through Friday, the first four (4) hours of overtime after eight (8) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay, unless a four (4) day ten (10) hour workweek has been established. On a four (4) day ten (10) hour workweek scheduled Monday through Thursday, or Tuesday through Friday, the first two (2) hours of overtime after ten (10) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay.

On Saturday, the first twelve (12) hours of work shall be paid at one and one half (1-1/2) times the straight time rate of pay, except that if the job is down on Monday through Friday due to weather conditions or other conditions outside the control of the employer, the first ten (10) hours on Saturday may be worked at the straight time rate of pay.

All hours worked over twelve (12) hours in a day and all hours worked on Sunday and Holidays shall be paid at two (2) times the straight time rate of pay.

If, due to conditions beyond the control of the Employer or when contract specifications require that work can only be performed outside the regular day shift, then a Special Shift may be worked, Monday through Friday, at the straight-time rate. The starting time of work for the Special Shift will be arranged to fit such conditions of work. Such Special Shift shall consist of eight (8) hours of work for eight (8) hours of pay or ten (10) hours of work for ten(10) hours of pay on a four-ten workday schedule.

V. 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.

W. 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 6 am to 6pm shift, and all work on Saturdays shall be paid at one and one-half times the hourly rate of wage. All work performed on Sundays 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.

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

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).

I. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day (6).

K. Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday After Thanksgiving Day, The Day Before Christmas, And Christmas Day (9).

L. Holidays: New Year's Day, Martin Luther King Jr. Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, And Christmas Day (8).

N. Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, The Friday After Thanksgiving Day, And Christmas Day (9).

P. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday And Saturday After Thanksgiving Day, The Day Before Christmas, And Christmas Day (9). If A Holiday Falls On Sunday, The Following Monday Shall Be Considered As A Holiday.

Q. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day (6).

R. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Day After Thanksgiving Day, One-Half Day Before Christmas Day, And Christmas Day. (7 1/2).

S. Paid Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, And Christmas Day (7).

Z. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (8).

Holiday Codes Continued

6. G. Paid Holidays: New Year's Day, Martin Luther King Jr. Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and Christmas Eve Day (11).

H. Paid Holidays: New Year's Day, New Year's Eve Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday After Thanksgiving Day, Christmas Day, The Day After Christmas, And A Floating Holiday (10).

T. Paid Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, The Friday After Thanksgiving Day, The Last Working Day Before Christmas Day, And Christmas Day (9).

Z. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, And Christmas Day (7). If a holiday falls on Saturday, the preceding Friday shall be considered as the holiday. If a holiday falls on Sunday, the following Monday shall be considered as the holiday.

Holiday Codes Continued

7. A. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8). Any Holiday Which Falls On A Sunday Shall Be Observed As A Holiday On The Following Monday. If any of the listed holidays falls on a Saturday, the preceding Friday shall be a regular work day.

B. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

C. Holidays: New Year's Day, Martin Luther King Jr. Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

D. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (8). Unpaid Holidays: President's Day. Any paid holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any paid holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

E. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (7). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

F. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, the last working day before Christmas day and Christmas day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

Holiday Codes Continued

7. G. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day (6). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday.

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

I. Holidays: New Year's Day, President's Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day, The Friday After Thanksgiving Day, The Day Before Christmas Day And Christmas Day (9). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

J. Holidays: New Year's Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day and Christmas Day (6). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

K. Holidays: New Year's Day, Memorial Day, Independence Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

L. Holidays: New Year's Day, Memorial Day, Labor Day, Independence Day, Thanksgiving Day, the Last Work Day before Christmas Day, And Christmas Day (7). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

N. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (7). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. When Christmas falls on a Saturday, the preceding Friday shall be observed as a holiday.

P. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, And Christmas Day (7). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday.

Q. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, the Last Working Day before Christmas Day and Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. If any of the listed holidays falls on a Saturday, the preceding Friday shall be a regular work day.

S. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, Christmas Day, the Day after Christmas, and A Floating Holiday (9). If any of the listed holidays falls on a Sunday, the day observed by the Nation shall be considered a holiday and compensated accordingly.

V. Holidays: New Year's Day, President's Birthday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, the day before or after Christmas, and the day before or after New Year's Day. If any of the above listed holidays falls on a Sunday, the day observed by the Nation shall be considered a holiday and compensated accordingly.

W. Holidays: New Year's Day, Day After New Year's, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Eve Day, Christmas Day, the day after Christmas, the day before New Year's Day, and a Floating Holiday.

Holiday Codes Continued

7. X. Holidays: New Year's Day, Day before or after New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and the day before or after Christmas day. If a holiday falls on a Saturday or on a Friday that is the normal day off, then the holiday will be taken on the last normal workday. If the holiday falls on a Monday that is the normal day off or on a Sunday, then the holiday will be taken on the next normal workday.

Y. Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, and Christmas Day. (8) If the holiday falls on a Sunday, then the day observed by the federal government shall be considered a holiday and compensated accordingly.

Z. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, Christmas Eve, and Christmas Day (9). Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday. Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday.

Holiday Codes Continued

15. G. New Year's Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, The Friday After Thanksgiving Day, the last scheduled workday before Christmas, and Christmas Day (9). If any of the listed holidays falls on a Sunday, the day observed by the Nation shall be considered a holiday and compensated accordingly.

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

I. Holidays: New Year's Day, President's Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day, The Friday After Thanksgiving Day, The Day Before Christmas Day And Christmas Day (9). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

J. Holidays: New Year's Day, Martin Luther King Jr. Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, and Christmas Day (9). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. If any of the listed holidays falls on a Saturday, the preceding Friday shall be a regular work day.

K. Holidays: New Year's Day, Memorial Day, Independence Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

L. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the Friday after Thanksgiving Day, and Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. If any of the listed holidays falls on a Saturday, the preceding Friday shall be a regular work day.

M. Holidays: New Year's Day, Martin Luther King Jr. Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Eve Day and Christmas Day (9). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. If any of the listed holidays falls on a Saturday, the preceding Friday shall be a regular work day.

Holiday Codes Continued

15. N. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the Friday after Thanksgiving Day, and Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday.

O. Holidays: New Year's Day, Martin Luther King Jr. Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, the day before Christmas day, and Christmas Day (10). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday.

P. Holidays: New Year's Day, Memorial Day, Labor Day, Independence Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Eve 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.

Note Codes

8. D. Workers working with supplied air on hazmat projects receive an additional $1.00 per hour.

L. Workers on hazmat projects receive additional hourly premiums as follows -Level A: $0.75, Level B: $0.50, And Level C: $0.25.

M. Workers on hazmat projects receive additional hourly premiums as follows: Levels A & B: $1.00, Levels C & D: $0.50.

N. Workers on hazmat projects receive additional hourly premiums as follows -Level A: $1.00, Level B: $0.75, Level C: $0.50, And Level D: $0.25.

S. Effective August 31, 2012 – A Traffic Control Supervisor shall be present on the project whenever flagging or spotting or other traffic control labor is being utilized. Flaggers and Spotters shall be posted where shown on approved Traffic Control Plans or where directed by the Engineer. All flaggers and spotters shall possess a current flagging card issued by the State of Washington, Oregon, Montana, or Idaho. This classification is only effective on or after August 31, 2012.

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

U. Workers on hazmat projects receive additional hourly premiums as follows – Class A Suit: $2.00, Class B Suit: $1.50, And Class C Suit: $1.00. Workers performing underground work receive an additional $0.40 per hour for any and all work performed underground, including operating, servicing and repairing of equipment. The premium for underground work shall be paid for the entire shift worked. Workers who work suspended by a rope or cable receive an additional $0.50 per hour. The premium for work suspended shall be paid for the entire shift worked. Workers who do "pioneer" work (break open a cut, build road, etc.) more than one hundred fifty (150) feet above grade elevation receive an additional $0.50 per hour.

Note Codes Continued

8. V. In addition to the hourly wage and fringe benefits, the following depth and enclosure premiums shall be paid. The premiums are to be calculated for the maximum depth and distance into an enclosure that a diver reaches in a day. The premiums are to be paid one time for the day and are not used in calculating overtime pay.

   Depth premiums apply to depths of fifty feet or more. Over 50' to 100' - $2.00 per foot for each foot over 50 feet. Over 101' to 150' - $3.00 per foot for each foot over 101 feet. Over 151' to 220' - $4.00 per foot for each foot over 220 feet. Over 221' - $5.00 per foot for each foot over 221 feet.

   Enclosure premiums apply when divers enter enclosures (such as pipes or tunnels) where there is no vertical ascent and is measured by the distance travelled from the entrance. 25’ to 300’ - $1.00 per foot from entrance. 300’ to 600’ - $1.50 per foot beginning at 300’. Over 600’ - $2.00 per foot beginning at 600’.

   W. Meter Installers work on single phase 120/240V self-contained residential meters. The Lineman/Groundmen rates would apply to meters not fitting this description.

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

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

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

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

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

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

Note Codes Continued

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

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

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

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

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

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

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

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

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

D. Industrial Painter wages are required for painting within industrial facilities such as treatment plants, pipelines, towers, dams, bridges, power generation facilities and manufacturing facilities such as chemical plants, etc., or anywhere abrasive blasting is necessary to prepare surfaces, or hazardous materials encapsulation is required.

E. Heavy Construction includes construction, repair, alteration or additions to the production, fabrication or manufacturing portions of industrial or manufacturing plants, hydroelectric or nuclear power plants and atomic reactor construction. Workers on hazmat projects receive additional hourly premiums as follows -Level A: $1.00, Level B: $0.75, Level C: $0.50, And Level D: $0.25.

Note Codes Continued

9. F. Industrial Painter wages are required for painting within industrial facilities such as treatment plants, pipelines, towers, dams, power generation facilities and manufacturing facilities such as chemical plants, etc., or anywhere abrasive blasting is necessary to prepare surfaces, or hazardous materials encapsulation is required.

H. One (1) person crew shall consist of a Party Chief. (Total Station or similar one (1) person survey system). Two (2) person survey party shall consist of a least a Party Chief and a Chain Person. Three (3) person survey party shall consist of at least a Party Chief, an Instrument Person, and a Chain Person.

I. In addition to the hourly wage and fringe benefits, the following depth and enclosure premiums shall be paid. The premiums are to be calculated for the maximum depth and distance into an enclosure that a diver reaches in a day. The premiums are to be paid one time for the day and are not used in calculating overtime pay.

Depth premiums apply to depths of fifty feet or more. Over 50' to 100' - $2.00 per foot for each foot over 50 feet. Over 101' to 150' - $3.00 per foot for each foot over 101 feet. Over 151' to 220' - $4.00 per foot for each foot over 220 feet. Over 221' - $5.00 per foot for each foot over 221 feet.

Enclosure premiums apply when divers enter enclosures (such as pipes or tunnels) where there is no vertical ascent and is measured by the distance travelled from the entrance. 25’ to 300’ - $1.00 per foot from entrance. 300’ to 600’ - $1.50 per foot beginning at 300’. Over 600’ - $2.00 per foot beginning at 600’.

Employees may be required to perform any combination of work within the Diving team/crew, (with the exception of dive Supervisor) provided they are paid at the highest rate at which he/she has worked for the shift.

L. Workers on hazmat projects receive additional hourly premiums as follows -Level A: $0.75, Level B: $0.50, And Level C: $0.25.

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

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

M. Certified Crane Operator Premium: Crane operators requiring certifications shall be paid $1.50 per hour above their classification rate.

Workers on hazmat projects receive additional hourly premiums as follows - Class A Suit: $2.00, Class B Suit: $1.50, Class C Suit: $1.00, and Class D Suit: $0.50.

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

PART 7

APPENDIX

APPENDIX A

SUPPLEMENTAL BIDDER RESPONSIBILITY CRITERIA

APPENDIX A

SUPPLEMENTAL BIDDER RESPONSIBILITY CRITERIA FORMS
WESTBROOK RESERVOIRS IMPROVEMENTS

These forms shall be completed in their entirety and submitted by the apparent two lowest Bidders to the Nob Hill Water Association by 12:00 p.m. (noon) of the second business day following the bid submittal deadline.

Failure to submit and meet the requirements as stated in Section 2.01.8 of the General Conditions shall be grounds for rejection of the bid. Nob Hill Water Association will be the sole judge in determining if the prospective contractor meets the minimum experience requirements.

Contractor:

Name: _____

Address: _____

Phone: _____

Contact Person: _____

2. Delinquent State Taxes

Instructions to Bidders: Check the appropriate box

☐ The Bidder does not owe delinquent taxes to the Washington State Department of Revenue.

☐ Alternatively, the Bidder does owe delinquent taxes to the Washington State Department of Revenue.

If the Bidder owes delinquent taxes, they must submit a written payment plan approved by the Department of Revenue, to the Contracting Agency.

_____ _____

(Date) (Signature)

_____

(Print Name)

_____

(Title)

3. Subcontractor Responsibility:

Instructions to Bidders: Check all boxes that apply

☐ The Bidder's standard subcontract form includes the subcontractor responsibility language required by RCW 39.06.020.

☐ The Bidder has a procedure for validating the responsibility of subcontractors with which the Bidder contracts.

☐ The Bidder's subcontract form includes a requirement that each of its subcontractors shall have and document a similar procedure to determine whether the sub-tier subcontractors with whom it contracts are also "responsible" subcontractors as defined by RCW 39.06.020.

If the Bidder is unable to check all of the above boxes, provide an explanation as to how the bidder will comply with RCW 39.06.020.

_____ _____

(Date) (Signature)

_____

(Print Name)

_____

(Title)

4. Claims Against Retainage and Bonds:

Instructions to Bidders: Check the appropriate box

☐ The Bidder has not had claims against retainage and bonds in the 3 years prior to the bid submittal date.

☐ Alternatively, the Bidder has had claims against retainage and bonds in the 3 years prior to the bid submittal date.

If the Bidder has had claims against retainage and bonds in the 3 years prior to the bid submittal date, submit a list of public works projects completed during this period that have had claims against retainage and bonds and include name of Project, contact information for the Owner, a list of claims filed against retainage and/or payment bond for any of the projects listed; and a written explanation of circumstances surrounding each claim and the ultimate resolution of the claim.

_____ _____

(Date) (Signature)

_____

(Print Name)

_____

(Title)

5. Public Bidding Crime:

Instructions to Bidders: Check the appropriate box

☐ The undersigned certifies that the Bidder and/or its Owners have not been convicted of a crime involving bidding on a public works contract in the 5 years prior to the bid submittal date.

☐ Alternatively, the undersigned confirms that the Bidder and/or its Owners have been convicted of a crime involving bidding on a public works contract in the 5 years prior to the bid submittal date.

If the Bidder and/or its Owners have been convicted of a crime involving bidding on a public works contract, provide a written explanation identifying the date of the conviction and a description of the circumstances surrounding the conviction.

_____ _____

(Date) (Signature)

_____

(Print Name)

_____

(Title)

6. Termination for Cause/Termination for Default

Instructions to Bidders: Check the appropriate box

☐ The undersigned certifies that the Bidder has not had any public works contracts terminated for cause or terminated for default by a government agency in the 5 years prior to the bid submittal date.

☐ Alternatively, the undersigned confirms that the Bidder has had public works contracts terminated for cause or terminated for default by a government agency in the 5 years prior to the bid submittal date.

If the Bidder has had any public works contracts terminated for cause or terminated for default in the 5 years prior to the bid submittal date, provide a written explanation for all contracts terminated for cause or terminated for default by identifying the project contract that was terminated, the government agency which terminated the Contract, the date of the termination, and a description of the circumstances surrounding the termination.

_____ _____

(Date) (Signature)

_____

(Print Name)

_____

(Title)

7. Lawsuits

Instructions to Bidders: Check the appropriate box

☐ The undersigned certifies that the Bidder has not had any lawsuits with judgments entered against the Bidder in the 5 years prior to the bid submittal date that demonstrate a pattern of failing to meet the terms of contracts.

☐ Alternatively, the undersigned confirms that the Bidder has had any lawsuits with judgments entered against the Bidder in the 5 years prior to the bid submittal date that demonstrate a pattern of failing to meet the terms of contracts.

If the Bidder has had any lawsuits with judgments entered against the Bidder in the 5 years prior to the bid submittal date that demonstrate a pattern of failing to meet the terms of contracts, submit a list of lawsuits along with a written explanation of the circumstances surrounding each lawsuit. The Contracting Agency shall evaluate these explanations to determine whether the lawsuits demonstrate a pattern of failing to meet the terms of contracts.

_____ _____

(Date) (Signature)

_____

(Print Name)

_____

(Title)

8. Contract Time (Liquidated Damages)

Instructions to Bidders: Check the appropriate box

☐ The undersigned certifies that the Bidder has not had liquidated damages assessed on any project it has completed in the 5 years prior to the bid submittal date.

☐ Alternatively, the undersigned confirms that the Bidder has had liquidated damages assessed on projects in the 5 years prior to the bid submittal date.

If the Bidder has had liquidated damages assessed against projects in the 5 years prior to the bid submittal dated, submit a list of projects along with Owner contact information, and number of days assessed liquidated damages. The Contracting Agency shall determine whether the Contractor has a pattern of failing to complete projects within Contract Time.

_____ _____

(Date) (Signature)

_____

(Print Name)

_____

(Title)

9. Capacity and Experience

The Bidder shall have sufficient current capacity and the Project Superintendent assigned to the Project shall have experience to meet the requirements of this Project. The Bidder and Project Superintendent shall have substantially completed at least two projects as the prime contractor, of a similar size and scope, during the 10-year period immediately preceding the bid submittal deadline for this project. Similar size and scope is defined as follows: the contractor must have completed at least two water storage tank/reservoir construction or retrofit projects or concrete structure retrofit/rehabilitation projects of at least $700,000 in the last 10 years.

A. Capacity

i. Gross dollar amount of work currently under contract:

_____

ii. Gross dollar amount of contracts currently not completed:

_____

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

_____

_____

_____

_____

_____

iv. Number of superintendents on Bidder's staff:

_____

B. Experience

i. General character of work performed by firm:

_____

_____

_____

_____

ii. Identify who will be the superintendent on this project and years of experience. Also, list the number of years this person has been with your firm.

_____

_____

iii. Similar Size and Scope Projects Completed in the Past 10 Years

#1 Owner's Name and Contact Information: _____
_____
_____
Owner is a Government Agency? ___ Yes ____ No
Superintendent's Name: _____
Project Name: _____
Awarded Contract Amount: _____
Final Contract Amount: _____
Completion Date: _____
Project Description: _____
_____
_____
_____

#2 Owner's Name and Contact Information: _____

_____

_____

Owner is a Government Agency? ___ Yes ____ No
Superintendent's Name: _____
Project Name: _____
Awarded Contract Amount: _____
Final Contract Amount: _____
Completion Date: _____
Project Description: _____

_____

_____

_____

#3 Owner's Name and Contact Information: _____

_____

_____

Owner is a Government Agency? ___ Yes ____ No
Superintendent's Name: _____
Project Name: _____
Awarded Contract Amount: _____
Final Contract Amount: _____
Completion Date: _____
Project Description: _____

_____

_____

_____

APPENDIX B

HISTORICAL DRAWINGS
(FOR REFERENCE ONLY)

RESERVOIR 1

81'3" EXTREME ROOF DIAMETER

CONC. JOISTS - 8 x 10" AT 24" C.S.
1-3/4Φ S. 1-3/4Φ B.
12x16"x8" PUMICE B.W.C.
FOR PAN SOFFITS

AT 24" CENTERS

A — A

81'6" OUTSIDE DIAMETER WALL FOOTING

FLOOR STEEL
QUARTER PLAN

FLOOR SLAB STEEL -
CIRCUMFERENTIAL BARS - 1/2Φ AT 24"
RADIAL BARS - ALL BARS - 1/2Φ
SPACING: EACH 4TH BAR - FULL RADIUS
EACH 2ND BAR - RADIUS LESS 6'
EACH 1ST & 3RD BAR - RADIUS LESS 10'

2'x2' SCUTTLE COVER

STUB PIPE AT FLOOR

8" CLASS 150 C.I. PIPE - IN
10" CLASS 150 C.I. PIPE - OUT
12" CONC. PIPE - OVERFLOW

20'x20' SUMP

BACKFILL TRENCH WITH SAND & GRAVEL TO DRAIN FOUNDATION

OVERFLOW - 10" C.I. PIPE WITH TOP 6" BELOW ROOF. USE 10" C.I. ELBOW & 10" TO 8" C.I. REDUCER BELOW FLOOR. ANCHOR PIPE TO WALL 10" BELOW ROOF WITH 2 1/2" x 1/2" AND 3/4" MACH. BOLTS.

RADIAL DUMMY JOINT
1/2 WIDE 2" DEEP
FILL WITH ASPHALT JOINT SEALER

PROVIDE 1" V JOINT BETWEEN FLOOR SLAB & COLUMNS & AT INSIDE OF WALL - TO BE CAULKED WITH OAKUM FOR 2 1/2" DEPTH & THEN FILLED WITH ASPHALT JOINT SEALER

COAT TOP OF FOOTING WITH HOT ASPHALT BEFORE POURING FLOOR SLAB

8" — 79'4" INSIDE WALL DIAMETER — 8"

80'8" OUTSIDE WALL DIAMETER

ROOF PLAN
1/8"=1'0"

8" — 79'4" INSIDE WALL DIAMETER — 8"

80'8" OUTSIDE WALL DIAMETER

FLOOR PLAN
1/8"=1'0"

SLOPE 1/2" PER FOOT

SPACING OF 3/4Φ CIRCUMFERENTIAL BARS
5@12"
2@9"
3@7"
3@6"
2@5 1/2"
2@5"
3@4 1/2"
4@4"

VERTICAL WALL BARS 1 1/2Φ AT 24"

13'6 WATER DEPTH
FOR 500,000 GALS.

5/8Φ STUDS AT 18"

2-1/2Φ CONTS.

3" MIN. COARSE GRAVEL

5 1/2" SLAB

BEAM 12" x 34"
3-10Φ S. 2-1"Φ B.

12 x 18" COL
6 - 3/4Φ VERT.
3/8Φ TIES AT 12"

6 3/4Φ STUBS

1/2Φ AT 6' C. - VAR.

COL. FOOTINGS - 3'0" x 4'0" x 10"

SUMP STEEL
2 - 1/2Φ
3 - 1/2Φ

SUMP COVER - 3/4Φ AT 4" B.W.WLD'D.

4Φ AT 6 B.W.

8" 2'9" 12"

SECTION 'AA'
1/4"=1'0"

LADDER
2 - 4" [7.25 UPRIGHTS 1'2" BACK TO BACK
4" [5.4 x 1'2" TREADS AT 12" C.C. WELDED
2 - 4 1/2" x 3/8" x 1'10" PL. WITH 3/4" ANCHOR BOLTS 1'8" C.C. ON PL. & WELD TOP AND BOTTOM AS SHOWN.

2-3/4Φ S. BARS

SLOPE 1/2" PER FOOT

ANCHOR PL.

2-1/2Φ CONTS.

10" CLASS 150 C.I. PIPE

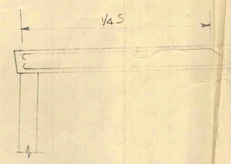
15# FELT A.S. ON TOP GRAVEL

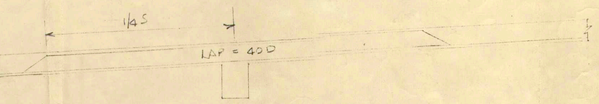
W. M. YEAMAN
GEN. CONT. YAKIMA, WN.

500,000 GAL. RESERVOIR FOR
NOB HILL WATER CO.

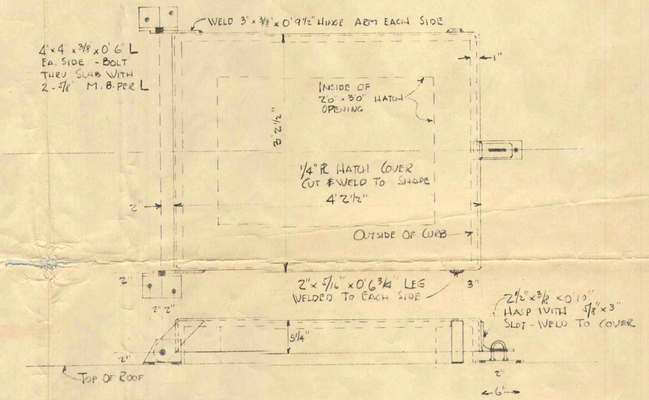
SHEET 1

DRWN BY - ATL
CHECKED BY -
DATE - 6-25-52

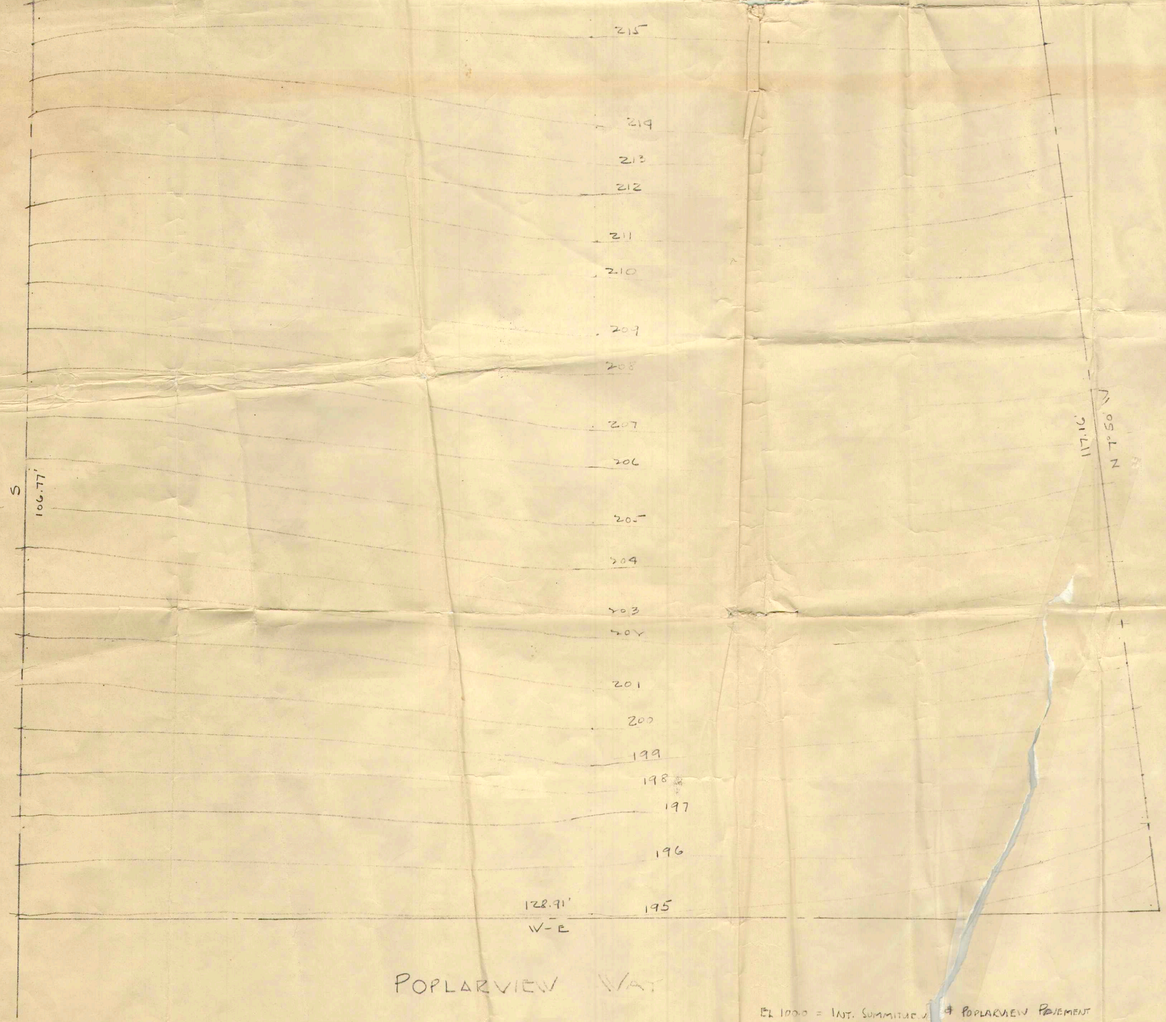




JOIST BAR BENDING
NO SCALE



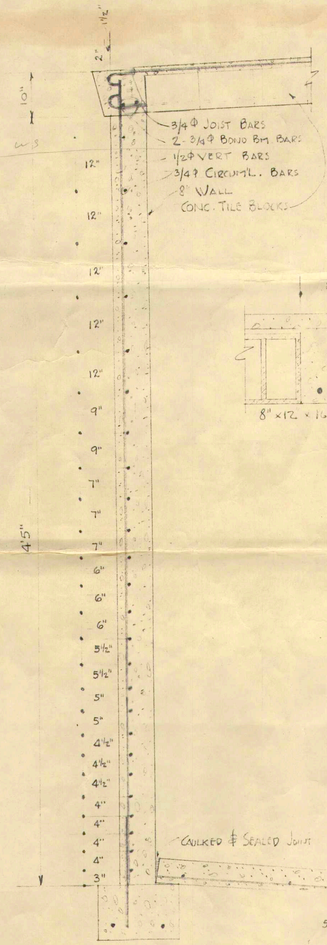
HATCH COVER DETAILS
1" = 1'-0"



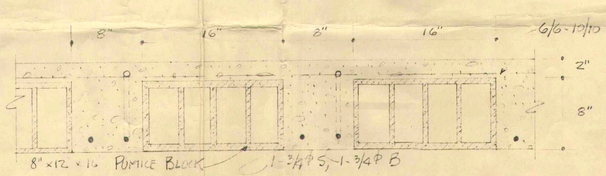
POPLARVIEW WAY

PLOT PLAN
1/8" = 1'-0"

EL 1000 = VAT. SUMMIT AT POPLARVIEW PAVEMENT



DETAILED WALL SECTION
3/4" = 1'-0"



TYPICAL ROOF SLAB SECTION
1 1/2" = 1'-0"

W. M. YEAMAN	
GEN. CONT.	YAKIMA, WN.
500,000 GAL. RESERVOIR FOR NOB HILL WATER CO.	
SHEET 2	DRWN BY- HTL
	CHECKED BY-
	DATE - 6-27-52

RESERVOIR 2

E.R. COMPANY

WASHINGTON

LOOKOUT RESERVOIR NO. 2

DIRECTORS

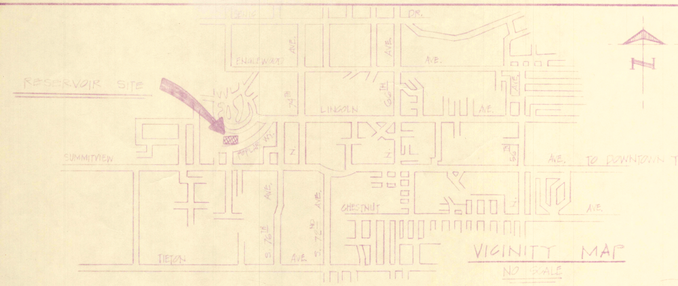
TERRY O. HAYES

EDWARD H. MARBLE
DIRECTOR

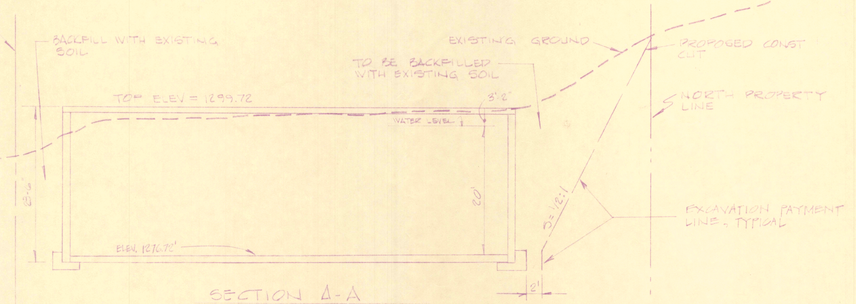
ROY A. JOHNSON, JR.
DIRECTOR

SHEPHERD, P.E.
ENGINEER

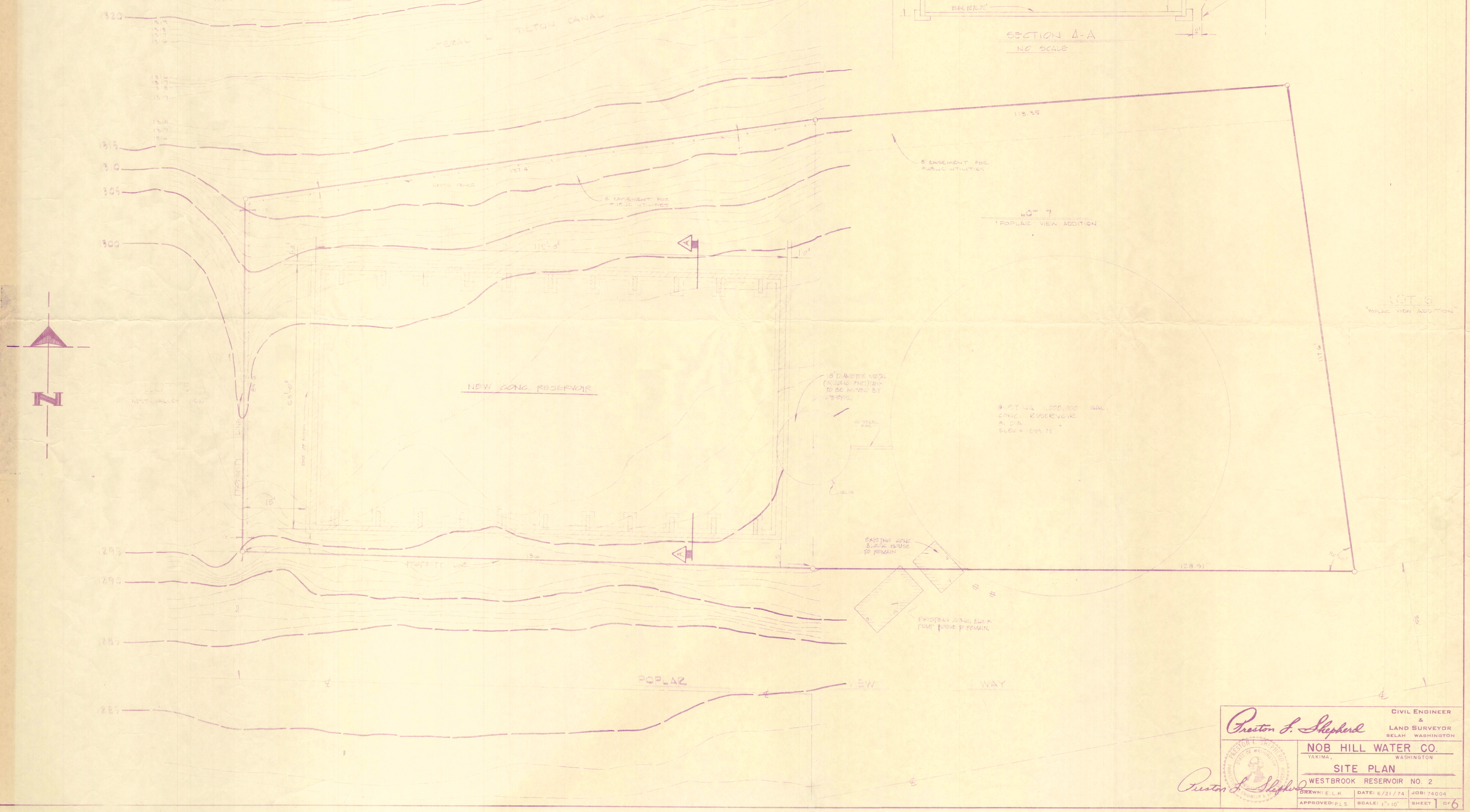
TERRY A. BROOKS
ATTORNEY



VICINITY MAP
NO SCALE



SECTION A-A
NO SCALE

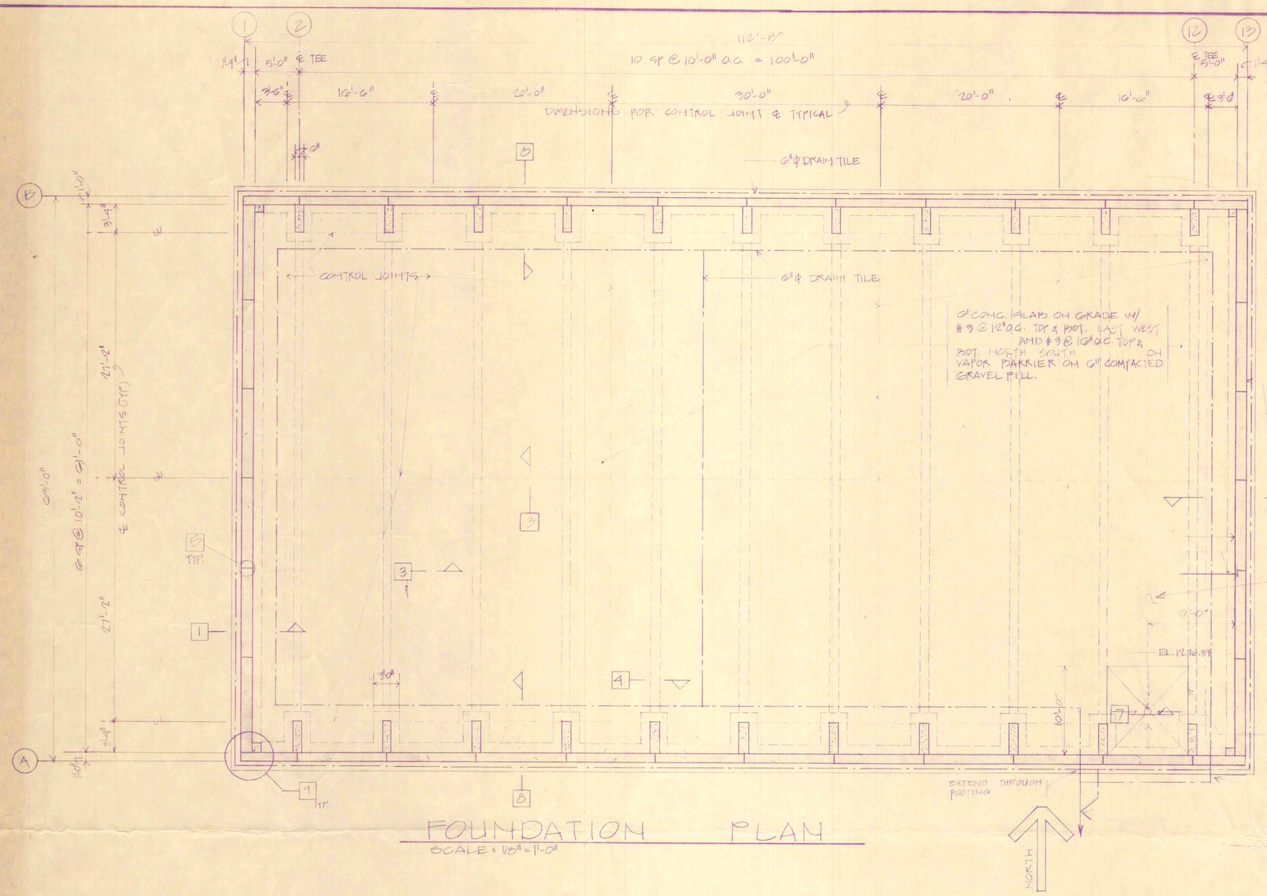


Preston L. Shepherd
CIVIL ENGINEER & LAND SURVEYOR
SELAH WASHINGTON

NOB HILL WATER CO.
YAKIMA, WASHINGTON

SITE PLAN
WESTBROOK RESERVOIR NO. 2

DRAWN: E.L.H.	DATE: 6/21/74	JOB: 74004
APPROVED: P.L.S.	SCALE: 1"=10'	SHEET 6 OF 6



FOUNDATION PLAN

SCALE: 1/8" = 1'-0"

@ CONC. SLABS ON GRADE W/ #3 @ 12' O.C. TOP & BOT. EACH WAY AND #3 @ 18" O.C. TOP & BOT. NORTH SOUTH ON VAPOR BARRIER ON 6" COMPACTED GRAVEL FILL.

NOTE:
ROOF TO BE CONST. OF PRECAST, PRESTRESSED T BEAM SECTIONS.

ALL WALLS ARE PRECAST SECTIONS

FLOOR TO BE CAST IN PLACE

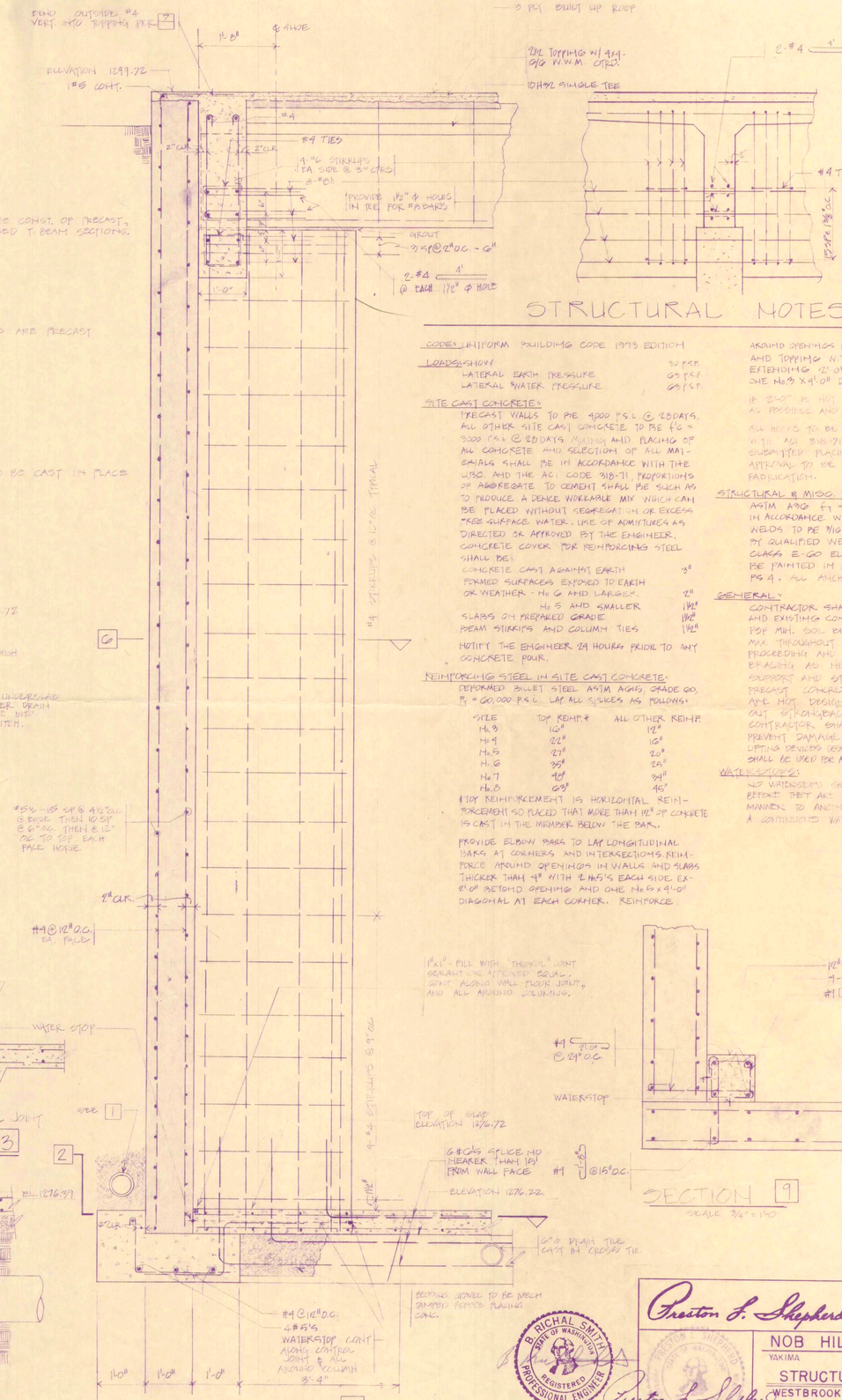
EL. 1276.72

EL. 1276.39

EXTEND THROUGH FOOTING

EXTEND THROUGH FOOTING

WARNING LIT UNDERGLASS @ PERIMETER DRAIN TO CONNECT INTO DRAIN DITCH.



STRUCTURAL NOTES

CODE: UNIFORM BUILDING CODE 1973 EDITION

LOADS SHOWN:
LATERAL EARTH PRESSURE 30 PSF
LATERAL EARTH PRESSURE 60 PSF
LATERAL WATER PRESSURE 60 P.S.F.

SITE CAST CONCRETE:
PRECAST WALLS TO BE 4000 P.S.I. @ 28 DAYS. ALL OTHER SITE CAST CONCRETE TO BE f'c = 3000 P.S.I. @ 28 DAYS. MIXING AND PLACING OF ALL CONCRETE AND SELECTION OF ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE USBC AND THE ACI CODE 318-71. PROPORTIONS OF AGGREGATE TO CEMENT SHALL BE SUCH AS TO PRODUCE A DENCE WORKABLE MIX WHICH CAN BE PLACED WITHOUT SEGREGATION OR EXCESS FREE SURFACE WATER. USE OF ADMIXTURES AS DIRECTED OR APPROVED BY THE ENGINEER.
CONCRETE COVER FOR REINFORCING STEEL SHALL BE:

CONCRETE CAST AGAINST EARTH	3"
FORMED SURFACES EXPOSED TO EARTH OR WEATHER - NO 6 AND LARGER	2"
NO 5 AND SMALLER	1½"
SLABS ON PREPARED GRADE	1½"
BEAM STIRRUPS AND COLUMN TIES	1½"

NOTIFY THE ENGINEER 24 HOURS PRIOR TO ANY CONCRETE POUR.

REINFORCING STEEL IN SITE CAST CONCRETE:
DEFORMED BILLET STEEL ASTM A615, GRADE 60, F_y = 60,000 P.S.I. LAP ALL SPLICES AS FOLLOWS:

SIZE	TOP REINF.*	ALL OTHER REINF.
No.3	16"	12"
No.4	22"	16"
No.5	27"	20"
No.6	35"	28"
No.7	40"	34"
No.8	63"	46"

*TOP REINFORCEMENT IS HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 12" OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR.

PROVIDE ELBOW BARS TO LAP LONGITUDINAL BARS AT CORNERS AND INTERSECTIONS. REINFORCE AROUND OPENINGS IN WALLS AND SLABS THICKER THAN 4" WITH 2 #5'S EACH SIDE EXTEND 1'-0" BEYOND OPENING AND ONE No.6 x 4'-0" DIAGONAL AT EACH CORNER. REINFORCE AROUND OPENINGS IN 4" AND THINNER SLABS AND TOPPING WITH TWO #4 BARS EACH SIDE EXTENDING 12"-0" BEYOND OPENING AND ONE No.3 X 4'-0" DIAGONAL AT EACH CORNER.

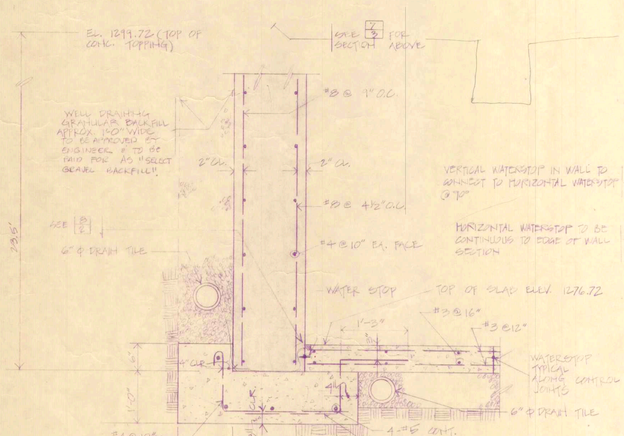
IF 3500 PSI IS NOT AVAILABLE EXTEND AS FAR AS POSSIBLE AND WORK.

ALL WORK TO BE STANDARD IN ACCORDANCE WITH ACI 318-71 UNLESS OTHERWISE NOTED. SUBMITTED PLACING PLANS FOR APPROVAL. APPROVAL TO BE RECEIVED PRIOR TO FABRICATION.

STRUCTURAL & MISC. STEEL:
ASTM A36 F_y = 36,000 PSI. FABRICATED IN ACCORDANCE WITH AISC SPECIFICATIONS. WELDS TO BE 5/16" CONTINUOUS FILLET WELDS BY QUALIFIED WELDERS USING ASTM A233 CLASS E-60 ELECTRODES. ALL STEEL TO BE PAINTED IN ACCORDANCE WITH SSPC-PS 4. ALL ANCHOR BOLTS TO BE GALVANIZED.

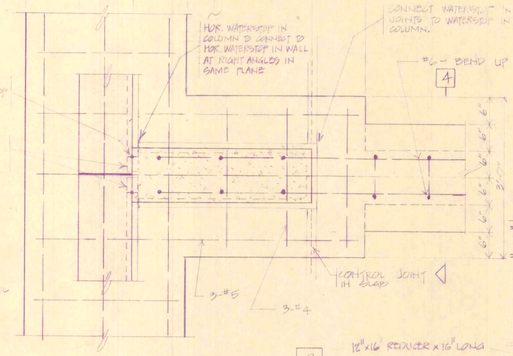
GENERAL:
CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS (INCLUDING 4000 PSF MIN. SOIL BEARING CAPACITY & 6000 PSF MAX. THROUGHOUT FOUNDATION AREA) BEFORE PROCEEDING AND SHALL PROVIDE ERECTION BRACING AS NECESSARY UNTIL PERMANENT SUPPORT AND STIFFENING IS INSTALLED. PRECAST CONCRETE WALLS (TILT UP WALLS) ARE NOT DESIGNED TO BE LIFTED WITH CAST STRONGBACK LIFTING PROVISIONS. CONTRACTOR SHALL MAKE PROVISIONS TO PREVENT DAMAGE TO WALLS. STANDARD LIFTING DEVICES DESIGNED SPECIFICALLY FOR THAT PURPOSE SHALL BE USED FOR ALL PRECAST PANELS.

WATERSTOPS:
NO WATERSTOPS SHALL BE ALLOWED TO DEADEND BEFORE THEY ARE JOINED IN THE APPROVED MANNER TO ANOTHER WATERSTOP TO FORM A CONTINUOUS WATERTIGHT STRUCTURE.

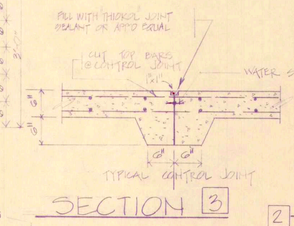


SECTION 1

SCALE: 3/4" = 1'-0" (TYP.)



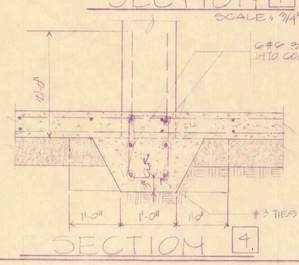
SECTION 2



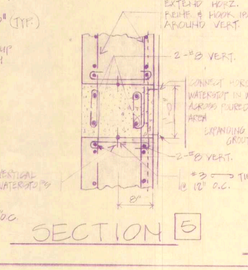
SECTION 3

SECTION 9

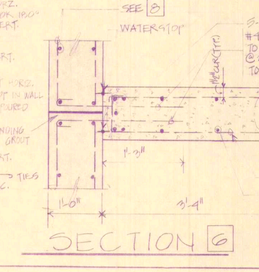
SCALE: 3/4" = 1'-0"



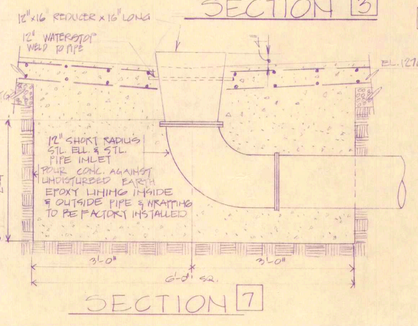
SECTION 4



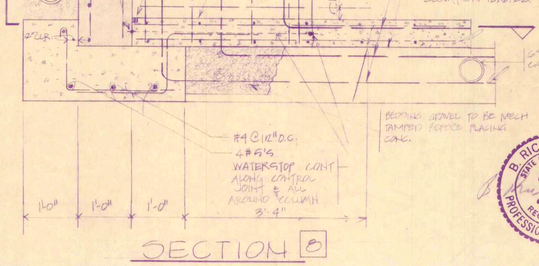
SECTION 5



SECTION 6



SECTION 7



SECTION 8

B. RICHAL SMITH STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER

Preston L. Shepherd

CIVIL ENGINEER & LAND SURVEYOR
SELAH WASHINGTON

NOB HILL WATER CO.
YAKIMA WASHINGTON

STRUCTURAL DETAILS
WESTBROOK RESERVOIR NO. 2

DRAWN:	DATE: 7-1-74	JOB: 74004
APPROVED: PLS	SCALE: NOTED	SHEET 2 OF 6

PRECAST CONCRETE NOTES

CONCRETE: f'_c = 5000 PSI ; f'_{ci} = 3750 PSI

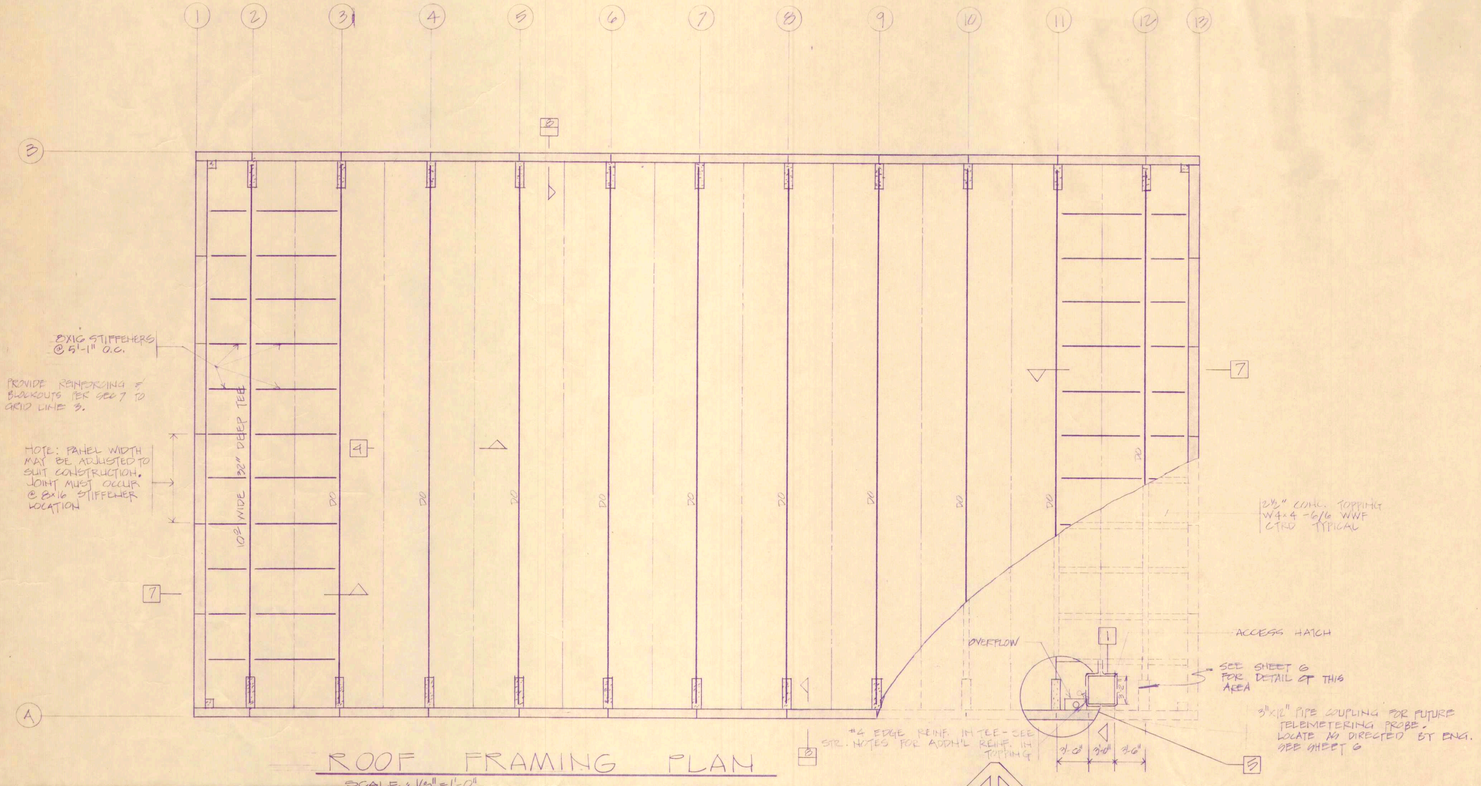
REINFORCING STEEL:

DEFORMED BILLET STEEL ASTM A615 GRADE 60, f_y = 60,000 PSI. ALL HOOKS & SPLICES TO BE IN ACCORDANCE WITH THE UNIFORM BUILDING CODE AND ACI CODE 318-71 FOR CLASS B SPLICES UNLESS OTHERWISE NOTED ON THE DRAWINGS. REINFORCE AROUND OPENINGS IN PRECAST CONCRETE W/ No. 3 OR No. 5 BARS AS DESCRIBED FOR REINFORCING STEEL IN SITE CAST CONCRETE.

PRESTRESSING STRAND TO BE ASTM A416, 270 GRADE 1/2" DIAMETER, UNCOATED 7 WIRE, STRESS - RELIEVED STRANDS. JACKING FORCE SHALL BE 28,900 POUNDS PER STRAND. CONCRETE COVER FOR PRESTRESSED AND NON PRESTRESSED REINFORCEMENT SHALL BE
STIRRUPS 1 1/2"
BARS IN TEE FLANGE 1"

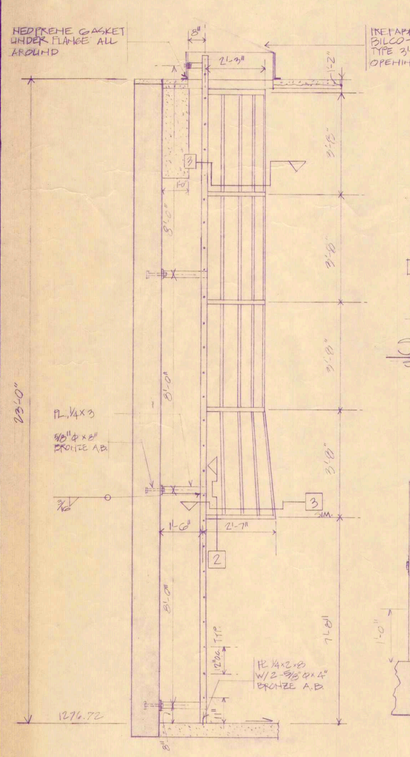
GENERAL: FABRICATION SHALL BE IN ACCORDANCE WITH ACI 318-71 AND 301-72 AND DIMENSIONAL TOLERANCES SHALL BE IN ACCORDANCE WITH THE LATEST PUBLISHED RECOMMENDATIONS BY "WASHINGTON PRESTRESSED CONCRETE ASSOCIATION"

HOLES FOR OPENINGS LARGER THAN 6" IN DIAMETER SHALL BE PRECAST BY THE FABRICATOR IN ACCORDANCE WITH APPROVED SHOP DRAWINGS. ALL OTHER HOLES MAY BE FIELD CUT BY TRADES REQUIRING THEM, PROVIDED REINFORCING STEEL AND PRESTRESS STRANDS ARE NOT LEFT WITH INSUFFICIENT COVER. SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO FABRICATION.



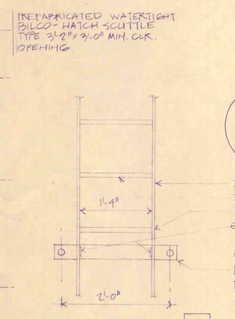
ROOF FRAMING PLAN

SCALE: 1/8" = 1'-0"



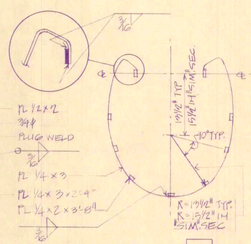
SECTION 1

SCALE: 3/8" = 1'-0"

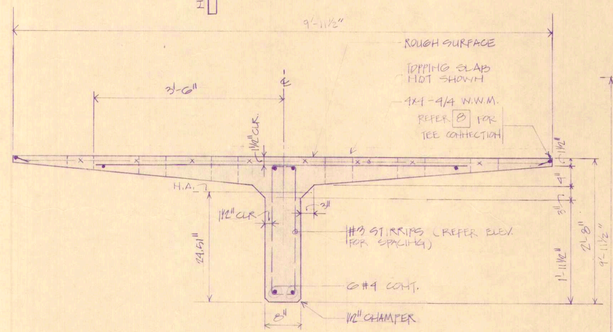


SECTION 2

SCALE: 3/4" = 1'-0"

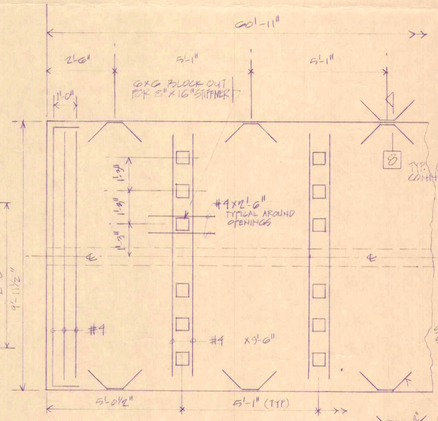


SECTION 3



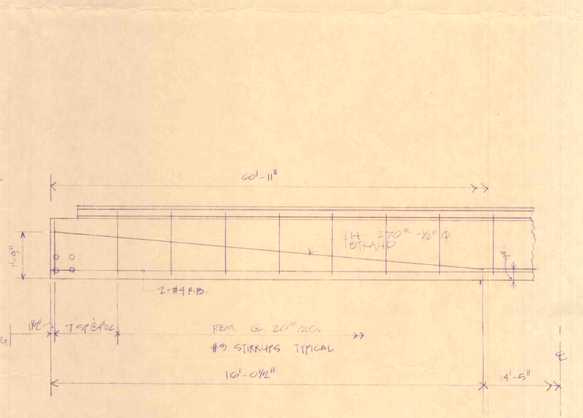
SECTION 4

SCALE: 3/4" = 1'-0"



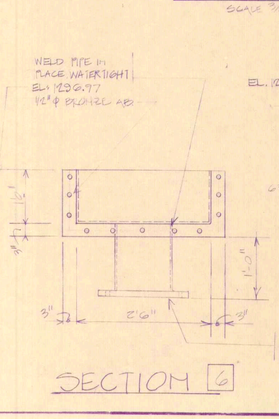
PARTIAL PLAN PRECAST TEE

SCALE: 3/8" = 1'-0"

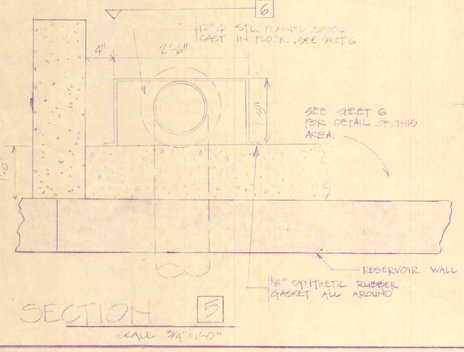


PARTIAL ELEVATION PRECAST TEE

SCALE: 3/8" = 1'-0"

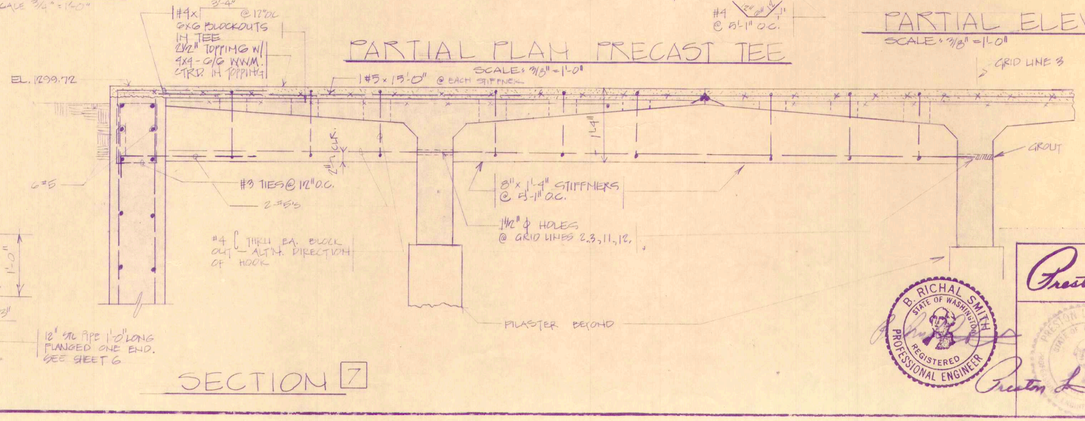


SECTION 6

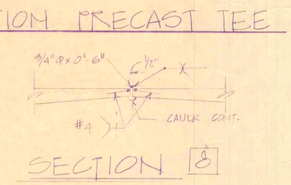


SECTION 5

SCALE: 3/4" = 1'-0"



SECTION 7



SECTION 8

Preston L. Shepherd
CIVIL ENGINEER & LAND SURVEYOR
SELAH WASHINGTON

P. RICHAL SMITH — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

NOB HILL WATER CO.
YAKIMA WASHINGTON
STRUCTURAL DETAILS
WESTBROOK RESERVOIR NO. 2

DRAWN:	DATE: 7-1-74	JOB: 74004
APPROVED: PLS	SCALE: NOTED	SHEET 3 OF 6

12" STL. INLET LINE, SEE SHEET 6 OR 5 FOR DETAIL. EXACT LOCATION TO BE SPECIFIED BY ENGINEER

PROVIDE FLANGED END.

EXISTING 1,000,000 GAL. CONC. RESERVOIR

3' ACCESS HATCH SEE SHEET 6 FOR LOCATION

OUTLET

12" OVERFLOW

SCREEN

SLOPE

PLOAT GUIDE CAGE, SEE SHEET 6.
PROVIDE FLANGED END

WATER LEVEL INDICATOR SEE SHEET 6.

NEW 12"x12" TEE F/F
NEW 12"x8" WYE
NEW 8" GV. F/F RT

12" GV. F/F RT

8"

12"x8" RT

NEW 12" GATE VALVE F/F

12" F/F sprool

NEW 12" CHECK VALVE

NEW MANHOLE

EXISTING PUMP HOUSE

LIMIT OF CONTRACT

PROVIDE FLANGED END

12" F/F RT

1295

1290

1285

℄

12" F/F RT

NEW 12"x8" TEE F/F/F

NEW 12" GV. F/F RT

NEW 8"x8" TEE F/F/F

℄ POPLAR VIEW WAY

Preston L. Shepherd

CIVIL ENGINEER
&
LAND SURVEYOR
SELAH WASHINGTON

PRESTON L. SHEPHERD
STATE OF WASHINGTON
REGISTERED
PROFESSIONAL ENGINEER
AND
LAND SURVEYOR

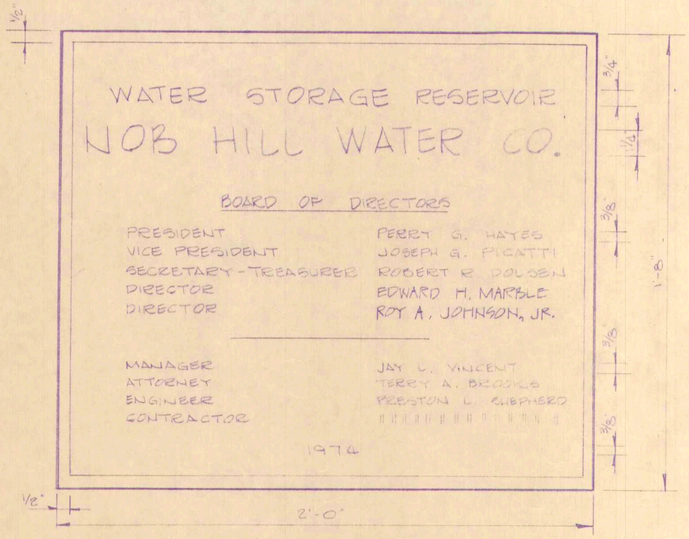
Preston L. Shepherd

NOB HILL WATER CO.

PIPING LAYOUT

WESTBROOK RESERVOIR NO. 2

DRAWN: E.L.H.	DATE: 6/21/74	JOB: 74004
APPROVED: P.L.S.	SCALE: 1" = 10'	SHEET 4 OF 6

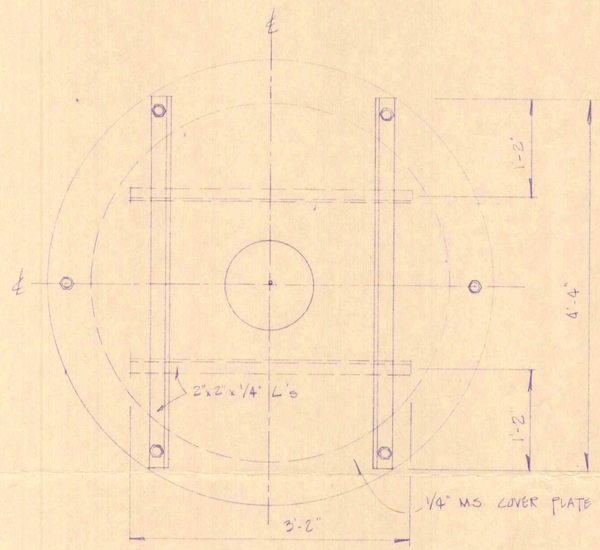


BRONZE PLAQUE DETAIL

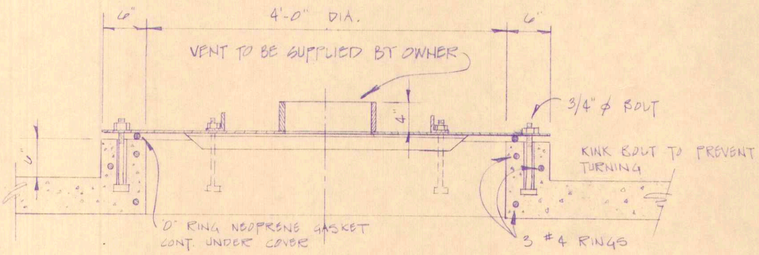
SCALE : 3" = 1'-0"

NOTES:
SUPPLIER TO FURNISH SHOP DRAWINGS FOR APPROVAL BEFORE FABRICATION.

PLAQUE TO HAVE RAISED ROMAN LETTERS. BACKGROUND TO BE OXIDIZED AND SHADED. LETTERS AND BORDER TO BE HAND BURNISHED. PLAQUE TO BE MOUNTED AS DIRECTED BY ENGINEER.

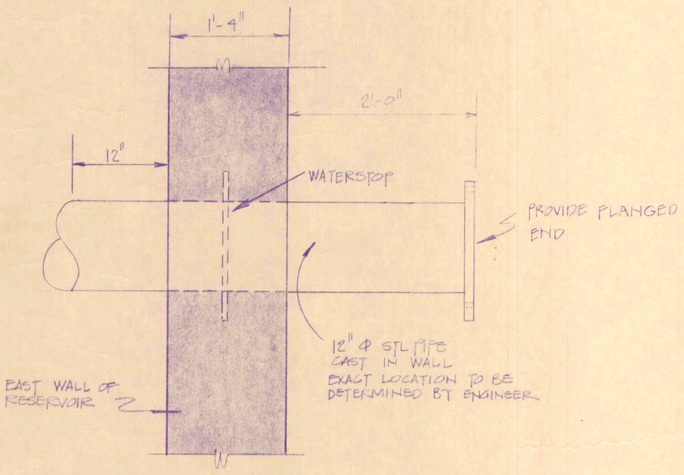


PLAN



CENTER VENT SUPPORT DETAIL

SCALE : 1" = 1'-0"

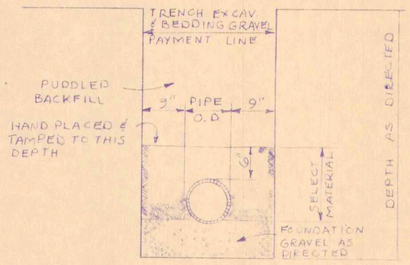


SECTION

INLET DETAIL

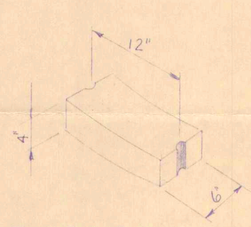
SCALE: 1" = 1'-0"

NOT IN THIS CONTRACT



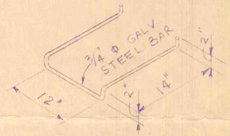
TYPICAL TRENCH DETAIL

NO SCALE



PRECAST CONC MANHOLE BLOCKS

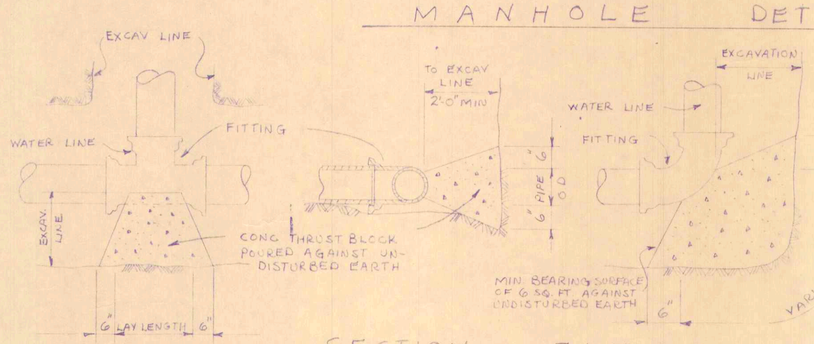
NO SCALE



MANHOLE STEP

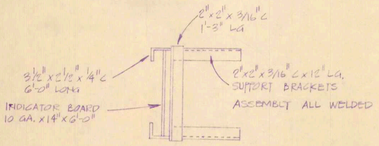
NO SCALE

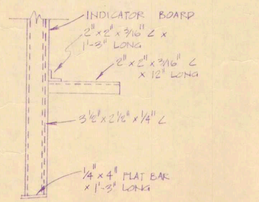
MANHOLE DET

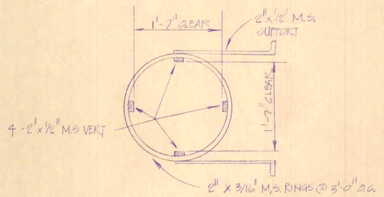


CONC THRUST BLOCK DETAILS

NO SCALE

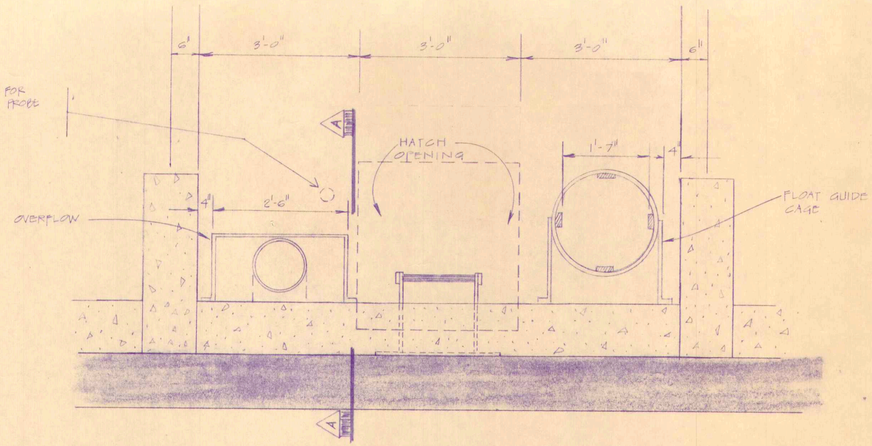






PLAN - FLOAT GUIDE CAGE

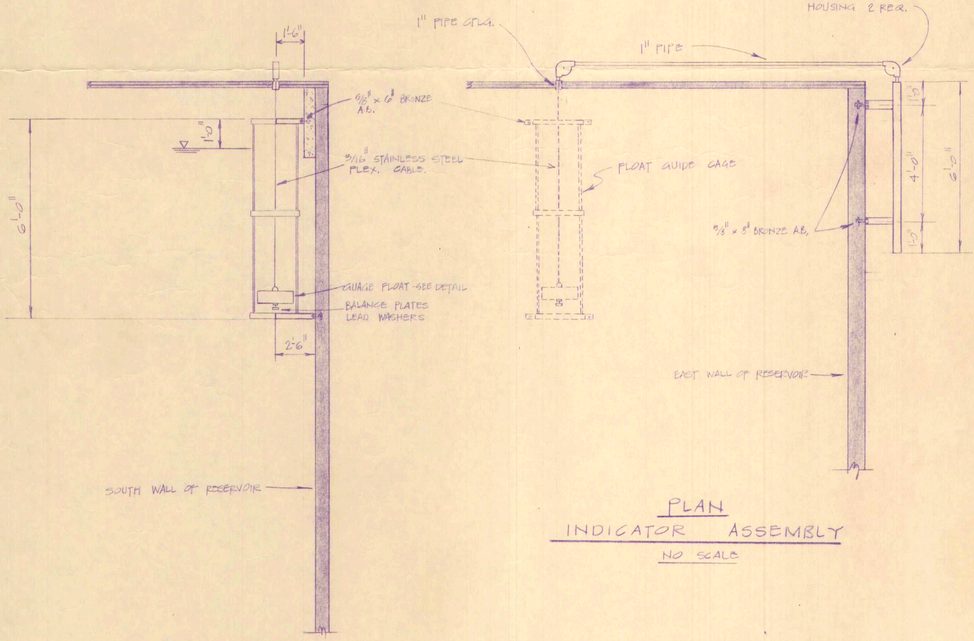
NO SCALE



PLAN VIEW

GRID 11-12 FOUNDATION PLAN

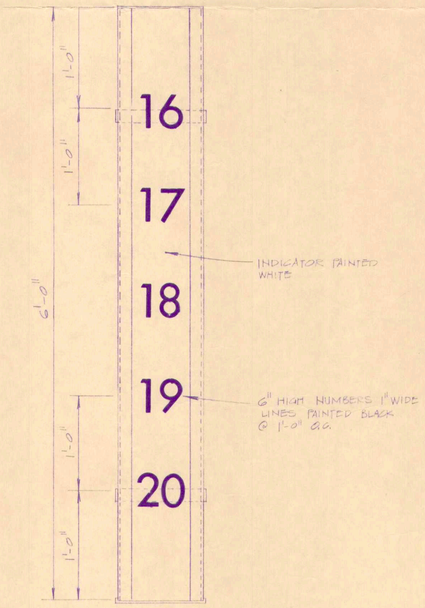
SCALE: 1" = 3/4"



SECTION

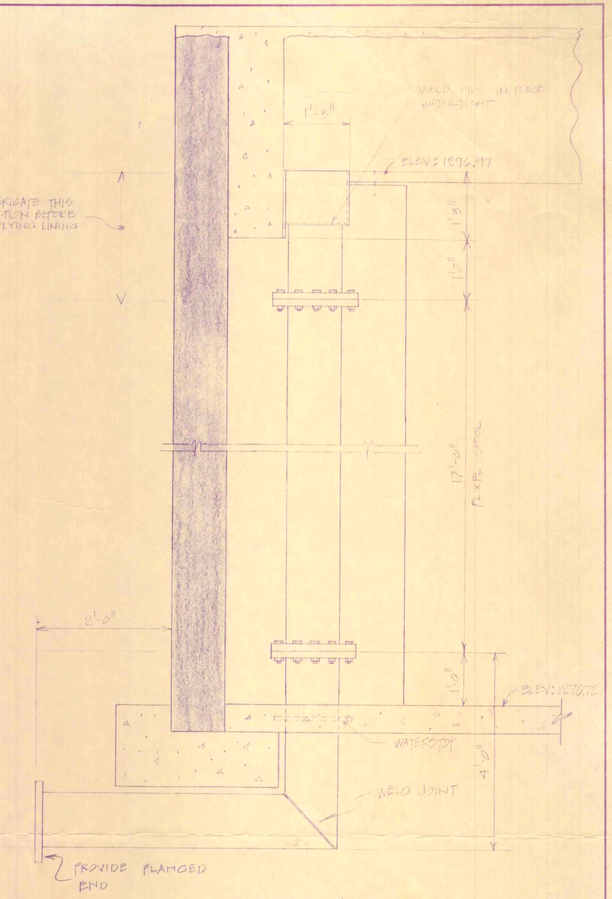
FLOAT GUIDE CAGE

NO SCALE



INDICATOR BOARD DETAIL

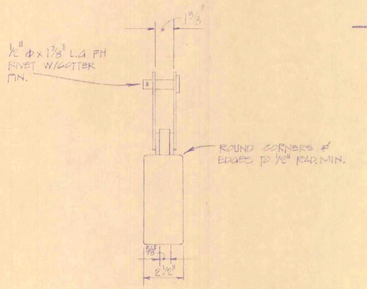
NO SCALE

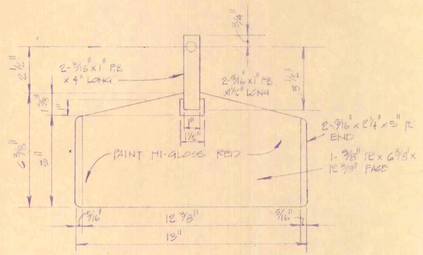


SECTION A-A

OVERFLOW DETAIL

NO SCALE

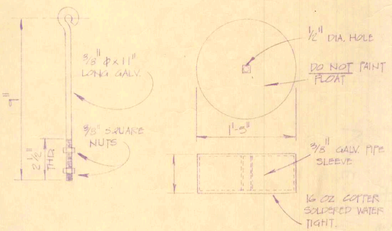




ELEVATION

TARGET DETAILS

SCALE: 3" = 1'-0"



ETEBOLT FLOAT

FLOAT DETAIL

NO SCALE

Preston L. Shepherd

CIVIL ENGINEER
&
LAND SURVEYOR
SELAH WASHINGTON

NOB HILL WATER CO.

YAKIMA WASHINGTON

MISC. DETAILS

WESTBROOK RESERVOIR NO. 2

DRAWN: DJW	DATE: 7-1-74	JOB: 74004	
APPROVED: PLS	SCALE: NOTED	SHEET 6 OF 6	