City of Mercer Island

BID PROPOSAL, CONTRACT DOCUMENTS AND TECHNICAL SPECIFICATIONS FOR:

North and South Reservoir Improvements 2022

Bid Number 22-40, Project Number WU0103

RH2 Project No. M-I 21-0200

December 2022

Volume I of II

City of Mercer Island 9611 SE 36th Street Mercer Island, WA 98040 Phone: (206) 275-7722 Contact: Patrick Yamashita, PE	RH2 Engineering, Inc. 22722 29th Drive SE, STE 210 Bothell, WA 98021 Phone: (425) 951-5352 Contact: Jon Conner, PE

City of Mercer Island

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Volume I of II

Jon Conner, SE
Project Manager
Signed: 12/05/2022

Shannon Emerick, PE
Civil Engineer
Signed: 12/05/2022

Alex Fussell, PE
Cathodic Protection
Signed: 12/05/2022

CITY OF MERCER ISLAND
NORTH AND SOUTH RESERVOIR IMPROVEMENTS 2022
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Advertisement for Bids
City of Mercer Island

Project Title: North and South Reservoir Improvements 2022
Bid Number: 22-40, Project Number WU0103
Engineers Estimated Cost (range): $4.5 M to $5.4 M

Sealed bids will be received, not sent, electronically by the city until **2:00 PM** on **December 20, 2022.** Bidders shall submit their bids in PDF format to the Public Works email address at publicworks@mercerisland.gov. There will be no public bid opening for this project; bid results will be posted on the City's webpage at: https://www.mercerisland.gov/rfps.

Work to be performed under this contract includes the coatings and other improvements at two existing 4.0-million-gallon steel drinking water storage tanks, the North Tank, constructed in 1962, and the South Tank, constructed in 1975. Both tanks have a diameter of 148 feet and a height of 32 feet. The roof of each tank is supported by columns, rafters, and beams. The work includes:

- Interior seal welding at the tank roof,
- Interior blasting and recoating,
- Replacement of the tanks' cathodic protection systems,
- Exterior spiral stairs additions,
- Full exterior containment,
- Exterior preparation and overcoating, with underlying lead-based coatings to remain mostly undisturbed, and
- Other improvements as described in the plans and specifications.

A single contract is to be awarded to the responsible bidder submitting the lowest responsive total bid. See Specifications Division 9 - Finishes for coatings applicator experience/qualifications. The City reserves the right to reject any and all bids and to waive minor irregularities.

The work must be completed in two separate phases. The City has two water storage tanks in all, both of which are to be improved and recoated as part of this project. To provide adequate water supply to its customers while simultaneously having adequate fire flow storage available, **at least one tank must be in service at all times, and both tanks must be in service from May 15 to October 15 annually**. See Specification Section 1.32.13 for more information on scheduling.

Plans, specifications, addenda, and bidders list are available on-line through Builders Exchange of Washington, Inc. at http://www.bxwa.com. Click on "Posted Projects", "Public Works", "City of Mercer Island", "Projects Bidding". Builders Exchange manages the official bidders list. Bidders are encouraged to register in order to receive automatic email notification of future addenda and to be placed on the official bidders list.

See Instructions to Bidders, element 9, for information regarding the optional Pre-Bid Walkthrough at 10:00 am December 12, 2022.

Plans and specifications are also available at the City of Mercer Island website https://www.mercerisland.gov/rfps. Addenda may not be available or updated on this website.

A bid deposit in the amount of five percent (5%) of the bid total price must accompany each bid.

Bidders questions are to be directed to Mr. Jon Conner, SE, by email only, at jconner@rh2.com. Mr. Conner will receive questions until **Noon,** on **December 15, 2022**. Questions received after this date will not be answered. All questions and responses will be posted in an addendum by **December 16, 2022** to the Builders Exchange site.

The City of Mercer Island, in accordance with Title VI of the Civil Rights Act of 1964, 78 Stat. 252, 42 U.S.C. 2000d to 2000d-4 and Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted programs of the Department of Transportation issued pursuant to such Act, hereby notifies all bidders that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, disadvantaged business enterprises as defined at 49 CFR Part 23 will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, national origin, or sex in consideration for an award.

Andrea Larson, City Clerk

Published: Seattle Daily Journal of Commerce December 6, 2022 and December 13, 2022.

City of Mercer Island
Instructions to Bidders

1. ELIGIBILITY TO BID:

It is the intent of the City to award a contract to the low responsible bidder. Before award, the bidder must meet the following bidder responsibility criteria to be considered a responsible bidder. To be eligible to bid, each Bidder must, at the time of the bid submittal:

A. Have a current certificate of registration as a contractor in compliance with chapter 18.27 RCW; and

B. Have a current Washington Unified Business Identifier (UBI) number; and

C. If applicable:
   i. Have Industrial Insurance (workers' compensation) coverage for the bidder's employees working in Washington, as required in Title 51 RCW; and
   ii. Have a Washington Employment Security Department number, as required in Title 50 RCW; and
   iii. Have a Washington Department of Revenue state excise tax registration number, as required in Title 82 RCW; and
   iv. Have an electrical contractor license, if required by Chapter 19.28 RCW; and
   v. Have an elevator contractor license, if required by Chapter 70.87 RCW; and

D. Not be disqualified from bidding on any public works contract under RCW 39.06.010, 39.12.050, RCW 39.12.055, or 39.12.065 (3); and

E. Not be disqualified or debarred or ineligible to be awarded contracts for which Federal funds have been requested or received.

F. Completed the L&I online training or meet the prior experience requirements in RCW 39.04.350(1)(f); and

G. Within the three-year period immediately preceding the date of the bid solicitation, not have been 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 to have willfully violated, as defined in RCW 49.48.082, any provision of chapter 49.46, 49.48 or 49.52 RCW.

A contract shall only be awarded to a Bidder that demonstrates to the City's satisfaction that the Bidder is qualified to perform the Work and is, therefore, a responsible bidder.

2. SUBCONTRACTOR RESPONSIBILITY CRITERIA:

The Bidder must verify responsibility criteria for each first-tier subcontractor, and each subcontractor of any tier that hires other subcontractors must verify responsibility criteria for each of its subcontractors.

Upon request of the City the Bidder shall promptly provide documentation to the City demonstrating that the subcontractor(s) meets the subcontractor responsibility criteria below. The requirements of this section apply to all subcontractors regardless of tier.

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

A. Have a current certificate of registration in compliance with chapter 18.27 RCW; and

B. Have a current Washington Unified Business Identifier (UBI) number; and

C. If applicable:
   i. Have Industrial Insurance (workers' compensation) coverage for the subcontractor's employees working in Washington, as required in Title 51 RCW; and
   ii. Have a Washington Employment Security Department number, as required in Title 50 RCW; and
   iii. Have a Washington Department of Revenue state excise tax registration number as required in Title 82 RCW; and
   iv. Have an electrical contractor license, if required by Chapter 19.28 RCW; and
   v. Have an elevator contractor license, if required by Chapter 70.87 RCW; and

D. Not be disqualified from bidding on any public works contract under RCW 39.06.010, RCW 39.12.050, RCW 39.12.055, or RCW 39.12.065 (3); and

E. Not be disqualified or debarred or ineligible to be awarded contracts for which Federal funds have been requested or received.

F. Completed the L&I online training or meet the prior experience requirements in RCW 39.04.350(1)(f); and

G. Within the three-year period immediately preceding the date of the bid solicitation, not have been 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 to have willfully violated, as defined in RCW 49.48.082, any provision of chapter 49.46, 49.48 or 49.52 RCW.

H. Key personnel must hold an appropriate license in the applicable discipline.

3. EXAMINATION OF PLANS, SPECIFICATIONS AND SITE:

Each bidder is instructed to examine the Plans, Specifications, Addenda, the site of the proposed improvements, and conduct any other examination and investigation which the bidder may desire to make as to the accuracy of the nature of the work and the difficulties to be encountered. The Bidder shall be responsible for all costs associated with these additional examinations including all restoration work and damages which may be a result of such investigation. Bidders shall consider Federal, State, and local laws and regulations that may affect cost, progress, or performance of the work.

4. ADDITIONAL INFORMATION:

All questions about the meaning or intent of the Contract Documents are to be directed to Mr. Jon Conner, SE, in writing or by email to jconner@rh2.com. No telephone questions will be accepted or considered. Bidders should include a reference to the specification section and paragraph number and/or drawing number in the Contract Documents.

All questions and responses will be posted by December 16, 2022 to the Builders Exchange site. Bidder names will be deleted from the text of question(s) and answers being sent.

Interpretations or clarifications considered necessary by the City in response to such questions will be issued by Addenda, mailed or delivered to all parties recorded by the Engineer or City as having received the Contract Documents. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

5. WAGES:

This Contract is subject to Chapters 39.12 and 49.28 RCW, amendments thereto and regulations issued thereunder, relating to prevailing wages, benefits and other requirements. Bidders shall examine and be familiar with such requirements. No claim for additional compensation will be allowed which is based upon a lack of knowledge or a misunderstanding of any such requirements by the Bidder or a failure to include in Bidder's price adequate increases in such wages during the performance of this Contract. Current prevailing wage rates for King County can be obtained from the Washington State Department of Labor and Industries at https://lni.wa.gov/licensing-permits/public-works-projects/prevailing-wage-rates/.

If this Contract is for a project that receives Federal funds, the labor and wage and benefits standards in 29 CFR part 5 may also apply, so Bidders shall examine and be familiar with such requirements.

6. PROGRESS AND COMPLETION:

Time is of the essence for this Project. Progress and completion of the Work shall comply with all requirements herein, and intermediate and final completion dates as may be set forth in the specifications. The submission of a bid constitutes the Bidder's acknowledgement that such progress and completion requirements have been taken into account in formulating a price for this Work.

7. PREVENTION OF ENVIRONMENTAL POLLUTION AND PRESERVATION OF PUBLIC NATURAL RESOURCES:

If awarded the Contract, the Bidder shall fully comply with all such environmental protection laws, ordinances and regulations dealing with prevention and environmental pollution and the preservation of public natural resources that may be applicable to this Project. The cost of such compliance shall be included in the bid prices.

8. BID FORM:

The Bid Form is included in the Contract Documents. The Bid Form must be completed in ink. Bids that contain omissions, erasures or irregularities of any kind may be rejected. Any qualification, addition,

limitation or provision attached to or contained in a bid may render the bid non-responsive and not eligible for award. No oral, facsimile, telegraphic or telephonic bids or modifications will be considered.

All bids shall be signed by the Bidder, or the Bidder's authorized representative. If the bid is made:

A. By an individual, the Bidder's name, signature, and address must be shown;

B. By a partnership or joint venture, it shall contain the names of each partner, the mailing address of the partnership or joint venture and shall be signed in the firm name, followed by the signature of the person signing, indicating that person's position in the partnership or joint venture;

C. By a corporation or limited liability company ("LLC"), the name of the state under the laws of which the corporation or LLC is chartered, the name and post office address of the corporation or LLC and the title of the person who signs on behalf of the corporation or LLC must be shown.

Upon the City's request, the Bidder shall provide copies of the articles of incorporation, bylaws, resolutions of board of directors, partnership papers, joint venture agreements, and any other documents evidencing the legal status of the Bidder and the authority of the Bidder's officer or representative who signed the bid on behalf of the Bidder.

The City is not responsible for any cost incurred in responding to this Call for Bids.

9. PRE-BID MEETING/WALK THROUGH:

An optional Pre-Bid Meeting/Walk Through is scheduled on December 12, 2022, at 10:00 AM. Meet at 4350 88th Avenue SE, Mercer Island, WA 98040. The City, at its sole discretion, may schedule an additional pre-bid meeting/walk through. If interested, contact Mr. Jon Conner, SE, at jconner@rh2.com.

The City does not provide fall protection or confined space equipment. Access inside the tanks will not be provided. Photos of both tanks' interiors are available in Appendix A of the Specifications.

During the pre-bid meeting/walk through, all conversations are considered informal and are not contractually binding unless stated in the contract bid package, contract drawings, or modified by a written addendum. The order of precedence is written addendum, contract drawings, and lastly contract specifications.

10. ACKNOWLEDGEMENT OF ADDENDA:

Each Bidder shall include on the Bid Form specific acknowledgment of receipt of each Addendum issued by the City during the bidding period. If the Bidder does not specifically acknowledge each addendum, the City may reject the bid as non- responsive unless the City determines from delivery records or from inclusion of information in the bid of information contained in the addenda that the Bidder received constructive notice of the addenda.

11. BID SECURITY:

The Bid shall be accompanied by a bid deposit in the amount equal to at least 5% of the Total Bid Price. The bid deposit shall be in one of the following formats and made payable to the City:

A. A bid guaranty bond, in accordance with and using a form acceptable to the City which contains provisions substantially similar to those in the bid bond form included with the Contract Documents, duly completed by a guaranty company authorized to carry on business in the state of Washington; or

B. A postal money order, a certified check, or cashier's check drawn upon a banking institution with a branch office in the state of Washington.

The surety signing the bid guaranty bond shall be registered with the Washington State Insurance Commissioner, and the surety's name shall appear in the current Authorized Insurance Company List in the State of Washington published by the Office of the Insurance Commissioner. A Power of Attorney must accompany the bid guaranty bond and must appoint the surety's true and lawful attorney-in-fact to make, execute, seal and deliver the bid guarantee bond. Failure to submit the required bid security with the Bid shall render the bid non-responsive and the Bid shall be rejected.

12. NON-COLLUSION:

Each bid shall be accompanied by a signed Non-Collusion Declaration in accordance with, and using the form provided by the City. Failure to submit a signed Declaration with the Bid shall render the bid non-responsive and the Bid shall be rejected.

More than one Bid from an individual, firm, partnership, corporation, or association under the same or different names will not be considered. If the City believes that any Bidder is interested in more than one Bid for the work contemplated, all Bids in which such Bidder is interested will be rejected. If the City believes that collusion exists among the Bidders, all Bids will be rejected.

13. DELIVERY OF BID:

Each Bid shall be submitted in PDF format via electronic transmission to the Public Works email address at: publicworks@mercerisland.gov. The City will not consider bids received after the time fixed for opening bids in the Advertisement for Bids. A Bid is deemed submitted as evidenced by the receipt date and time shown in the source code of the email received by the City's computer system. Contractors accept all risk of late delivery, regardless of fault. Any submittal received after the due date and time shall be deemed non-responsive and will eliminate their Bid from any further consideration. All respondents will receive an email confirmation within the next business day indicating their submittal has been successfully received.

The submission of a Bid will constitute an incontrovertible representation by the Bidder that the Bidder has complied with every requirement of these instructions, that without exception the Bid is premised upon performing the work required by the Contract Documents and such means, methods, techniques, sequences, or procedures of construction as may be indicated in or required by the Contract Documents, and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of the work.

14. MODIFICATION OF BID:

A modification of a Bid will be considered only if the modification is received prior to the time announced for the opening of Bids. All modifications shall be made in writing executed and submitted in the same form and manner as the original Bid.

15. RETURN OF BID SECURITY:

After the bid prices have been compared, the City may return the bid security if, in the City's judgment, the Bidder would not be considered for award. All other Proposal Guarantees will be held until the Contract and the Performance Bond of the successful bidder have been executed.

16. EVALUATION OF BIDS AND BID ERRORS:

After opening the Bids, the City will check them for correctness of extensions of the prices per unit and the total price. If a discrepancy exists between the price per unit and the extended amount of any bid item, the price per unit will control. The total of extensions, corrected where necessary, will be used by the City for award purposes.

Irregular Bids:

A. A Bid will be considered irregular and will be rejected if:

i. The authorized Bid Form furnished by the City is not used or is materially altered;
ii. The completed Bid Form contains any unauthorized additions, deletions, alternate bids, or conditions;
iii. The bidder adds provisions reserving the right to reject or accept the Award, or enter into the Contract;
iv. A price per unit cannot be determined from the Bid Form;
v. The Bid Form is not properly executed;
vi. An executed non-collusion certificate is not provided; or
vii. Proper bid security does not accompany the Bid.

B. A Bid may be considered irregular and may be rejected if:

i. The Bid Form does not include a unit price for every Bid item;
ii. Any of the unit prices are excessively unbalanced (either above or below the amount of a reasonable Bid) to the potential detriment of the City;
iii. Receipt of Addenda is not acknowledged;
iv. A member of a joint venture or partnership and the joint venture or partnership submit Bid Forms for the same project (in such an instance, both Bids may be rejected); or
v. If Bid Form entries are not made in ink.

Bids will be evaluated by the City to determine which bid is the apparent lowest, responsive bid.

Bid results will be posted on the City's website at https://www.mercerisland.gov/rfps.

The City, in its sole discretion, reserves the right to waive minor bid errors, informalities, and immaterial irregularities when it is in the City's best interest to do so.

17. EVALUATION OF BIDDER RESPONSIBILITY:

A Contract shall only be awarded to a Bidder that demonstrates to the City's satisfaction that the Bidder is qualified to perform the Work and is, therefore, a responsible bidder. See also Specifications Division 9 - Finishes for Coatings Applicator Qualifications.

A. Bidder Responsibility Criteria. To be determined responsible, the Bidder must, in addition to satisfying the bidder responsibility criteria listed in Section 1. ELIGIBILITY TO BID above:
   i. Have adequate financial resources to perform the contract, or the ability to obtain them;
   ii. Have a satisfactory performance record;
   iii. Have a satisfactory record of integrity and business ethics;
   iv. Have the necessary production, construction, and technical equipment and facilities or the ability to obtain them;
   v. Be otherwise qualified and eligible to receive an award under applicable laws and regulations;
   vi. Be in compliance with training requirements in RCW 39.04.350(1)(f); and
   vii. Provide a statement in accordance with RCW 9A.72.085 verifying compliance with responsible bidder criteria requirement of RCW 39.04.350(1)(g).

B. Reference Checking. To assist the City in the review of the Bidder's qualifications, the Bidder shall, within five (5) days of being requested to do so by the City, provide the following information:

   i. Past Experience in Similar Projects. Provide a list of all construction contracts (whether completed or in progress) entered into or performed by the Bidder within the past five (5) years for projects similar in scope, time and complexity to the work called for under this Contract. Provide the names of the contracts, the total contract price, the name of the foreman, the foreman's previous project experience as a foreman on 3 similar construction contracts, and the names and phone numbers of the owners. See also Specifications Division 9 regarding coatings applicator requirements.

   ii. References. Provide a list of five (5) references. References will be asked to rate performance on the following items: overall impression of the company; firm experience and technical knowledge; foreman experience and quality of work, effective coordination of subcontractors; ability to coordinate and work with utility companies and governmental entities; responsiveness to owner requests; attention to safety; quality and timeliness of submittals, change order proposals, project schedule, schedule updates and other applicable paperwork.

If the Bidder is a joint venture, the Bidder shall submit information for the joint venture if the members have worked together in the past and also information about each member of the joint venture. The Joint Venture Agreement shall be included in the submission.

If the Bidder fails to supply information requested concerning responsibility within the time and the manner specified, the City may base its determination of responsibility upon any available information related to the responsibility criteria or may find the Bidder is not responsible.

The City reserves the right to inspect records, reports and other information which may be maintained by or for the Bidder to the extent necessary, as determined by the City to verify, clarify or otherwise consider the information provided by the Bidder.

18. DETERMINATION OF NON-RESPONSIBILITY:

If the City determines a Bidder to be not responsible, the City will provide, in writing, the reasons for the determination. The Bidder may appeal the determination within ten (10) days of its receipt of the City's determination of non-responsibility by presenting additional information to the City. The City shall consider the additional information before issuing its final determination. If the City's final determination affirms that the Bidder is not responsible, the City shall not execute a contract with any other bidder until two (2) business days after the Bidder determined to be not responsible has received the final determination.

19. CONTRACT AWARD:

If a Contract is awarded, the City will award the contract to the responsible bidder that submits the lowest total responsive bid for the schedule(s) selected by City after bid opening and prior to award.

If the Contract is to be awarded, City will give the successful Bidder a Notice of Award within sixty (60) days after the day of the Bid opening. No other act of the City or others will constitute acceptance of a Bid.

The City reserves the right to request bidders to extend the effective period of their bids.

20. REJECTION OF ALL BIDS:

The City reserves the right to reject any or all Bids at any time up to actual execution of the Public Works Contract, even if there has been an award of the Contract.

Any or all Bids will be rejected if the City has reason to believe that collusion exists among the Bidders.

21. EXECUTION OF PUBLIC WORKS CONTRACT:

The Bidder to whom award is made shall execute a written Public Works Contract with the City on the form provided, including any Addenda and any other Exhibits attached thereto, shall secure all insurance, and shall furnish all certificates, endorsements and bonds required by the Contract Documents within ten (10) calendar days after receipt of the forms from the City. Failure or refusal to execute the Public Works Contract, including any Addenda and any other Exhibits attached thereto, as herein provided or to conform to any of the stipulated requirements in connection therewith shall be

just cause for annulment of the award and forfeiture of the Bid security. If the lowest responsive, responsible Bidder refuses or fails to execute the Public Works Contract, including any Addenda and any other Exhibits attached thereto, the City may award the Contract to the second lowest responsive, responsible Bidder. If the second lowest responsive, responsible Bidder refuses or fails to execute the Public Works Contract, including any Addenda and any other Exhibits attached thereto, the City may award the contract to the third lowest responsive, responsible Bidder. On the failure or refusal of such second or third lowest Bidder to execute the Agreement, including any Addenda and any other Exhibits attached thereto, each such Bidder's Bid securities shall be likewise forfeited to the City.

22. BID PROTEST PROCEDURES:

A. Form of Protest. In order to be considered, a Protest shall be in writing, addressed and delivered to the attention of the project manager at the City of Mercer Island, 9611 SE 36th Street, Mercer Island, WA, 98040. The Protest shall include the following:

i. The name, address, and phone number of the Bidder protesting, or the authorized representative of the Bidder;
ii. A complete, detailed statement of all grounds for protest, supporting authority, and any supporting documentation. Supplemental information will not be considered unless the supplementation contains information not available at the time of protest;
iii. The specific ruling or relief requested; and
iv. Evidence that all persons with a financial interest in the procurement have been given notice of the Protest or if such persons are unknown, a statement to that effect.

B. Who May Protest:

i. Protests based on specifications: Any prospective Bidder.
ii. Protests following Bid opening: Any Bidder with a substantial financial interest in the award of a Contract.

C. Time to Protest:

i. Protests based on specifications or other terms in the Contract Documents must be received by the City no later than ten (10) calendar days prior to the date established for submittal of Bids.
ii. The City must receive protests based on other circumstances within five (5) calendar days after the bids are opened and publicly read.
iii. In no event shall a Protest be considered if all bids are rejected or after execution of the Contract.

D. Determination of Protest. Upon receipt of a timely written Protest, the City shall investigate the Protest and shall respond in writing to the Protest prior to the award of Contract. If protest is submitted in accordance with the procedures set forth above, the City will not execute a contract any sooner than two (2) business days after the City's decision on the Protest.

E. Failure to Comply. Failure to comply with the procedures set forth herein may render a Protest untimely or inadequate and may result in rejection thereof by the City.

F. Exhaustion of Administrative Remedies. By submitting a bid, the Bidder agrees the Bidder's compliance with the protest procedures set forth herein are a mandatory condition precedent to the Bidder initiating a lawsuit against the City.

G. Venue. By submitting a bid, the Bidder acknowledges and agrees that a lawsuit or action related to or arising out of this procurement shall be brought in the Superior Court of King County, Washington.

Bidder's Checklist

ALL BIDDERS must properly complete, execute and submit the following with their bids:

1. NON-COLLUSION DECLARATION: Failure to submit the certificate shall make the bid non-responsive and not eligible for award.

2. BID FORM: Bidders must bid on all items contained in the Bid Form and the Form must be signed. The omission or deletion of any bid item may render the bid non-responsive and result in the rejection of the bid. Bidders are reminded to comply with RCW 39.30.060.

3. CONTRACTOR DECLARATION PURSUANT TO RCW 39.04.350(2): Failure to submit the declaration shall make the bid non-responsive and not eligible for award.

4. BID GUARANTY BOND: Failure to furnish a bid deposit of a minimum of five percent (5%) shall make the bid non-responsive and not eligible for award.

5. BIDDERS QUALIFICATION CERTIFICATE: To be completed and signed. The City reserves the right to check all statements and to judge the adequacy of the bidder's qualifications.

To assist the City in the review of the responsible Bidder's qualifications, the Bidder(s) shall, within five (5) days of being requested to do so by the City, provide the information required in Evaluation of Bidder Responsibility of the Instructions to Bidders, including a statement in accordance with RCW 9A.72.085 verifying compliance with responsible bidder criteria requirement of RCW 39.04.350(1)(g).

The **SUCCESSFUL BIDDER** shall properly complete, execute (as required) and submit the following after receiving notice of the award of the Project.

1. Public Works Contract,

2. Performance Bond,

3. Payment Bond,

4. Certificate of Insurance,

5. Retainage Agreement,

6. Statement of Intent to Pay Prevailing Wages,

7. Other documents requested by City.

BIDDING REQUIREMENTS

Bidder's Qualification Certificate

The undersigned hereby certifies and submits the following:

Company Name _____

Address _____

_____

Owner Name _____

Contact Person _____

Contact Person's Title _____

Phone _____

E-mail _____

Washington State Contractor Registration # _____

Washington State Unified Business Identifier (UBI) # _____

Federal Tax ID # _____

City of Mercer Island Business License #
(required prior to award of contract) _____

	Yes or No	Account / Registration Number (as applicable)
Does the contractor have industrial insurance coverage for its employees working in Washington as required by Title 51 RCW?	_____	_____
Does the contractor have a Washington State excise tax registration number as required by Title 82 RCW?	_____	_____
Does the contractor have a Washington State Employment Security Department number as required by Title 50 RCW?	_____	_____
Has the contractor been disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065(3)?	_____	_____
Has the contractor received training on the requirements related to public works contracts and prevailing wage requirements pursuant to RCW 39.04.350(f) and chapter 39.12 RCW, or is the contractor otherwise exempt from this requirement by the department of labor and industries?	_____	_____
Within the three-year period immediately preceding the date of the bid solicitation, has the contractor been 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 to have willfully violated, as defined in RCW 49.48.082, any provision of Chapters 49.46, 49.48, or 49.52 RCW?	_____	_____

By:

_____ _____

Signature **Print Name**
Title **Date**

Non-Collusion Declaration

Project Name: North and South Reservoir Improvements 2022

Bidder/Contractor: _____

I, _____, declare under penalty of perjury under the laws of the State of Washington that the following statements are true and correct:

1. I am the representative for the above-named bidder/contractor, and as its _____, I am authorized to make the declaration herein on its behalf.

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

_____ _____

Date and Place Signature

Contractor Declaration Pursuant to RCW 39.04.350(2)

Project Name: NORTH AND SOUTH RESERVOIR IMPROVEMENTS 2022

Bidder/Contractor:

I, , declare under penalty of perjury under the laws of the State of Washington that the foregoing is true and correct:

1. I am the representative for the above-named bidder/contractor, and as its , I am authorized to make the declaration herein on its behalf.

2. Within the three-year period immediately preceding the date of the bid solicitation for the above-named project, the above-named bidder/contractor has not been 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 to have willfully violated, as defined in RCW 49.48.082, any provision of chapter 49.46, 49.48, or 49.52 RCW.

Date and Place

Signature

BID FORM

(NOTE TO BIDDER: This BID FORM shall be completed in ink or typewritten)

TO: City of Mercer Island

ADDRESS: 9611 SE 36th Street
Mercer Island, Washington 98040

PROJECT TITLE: North and South Reservoir Improvements 2022

Bidder Declaration and Understanding

The undersigned Bidder hereby declares that they have carefully examined the Contract Documents for the construction of the project, that they have personally inspected the site, that they have satisfied themselves as to the quantities involved, including materials and equipment, and conditions of work involved, including the fact that the description of the quantities of work and materials, as included herein, is brief and is intended only to indicate the general nature of the work and to identify the quantities with the detailed requirements of the Contract Documents, and that this Proposal is made according to the provisions and under the terms of the Contract Documents, which Documents are hereby made a part of this Proposal. The Bidder further declares that they have exercised their own judgment regarding the interpretation of subsurface information and has utilized all data, which they believe pertinent from the Engineer, Owner, and other sources and have made such independent investigations as the Bidder deems necessary in arriving at their conclusions.

The Bidder is hereby notified that no goal for disadvantaged business enterprise utilization has been established for this project. As part of the City's affirmative action effort, however, the City encourages participation of certified disadvantaged businesses and women business enterprises to act as prime contractors as well as subcontractors on this project.

The undersigned Bidder hereby declares that they have carefully examined the Contract Documents including the following addenda, receipt of all is hereby acknowledged:

Addendum Number	_____	Date	_____
	_____		_____
	_____		_____
	_____		_____

Start of Construction and Contract Completion Time

The Bidder agrees that they will begin work within 10 calendar days of the Notice to Proceed, and Final Completion of the entire project will be achieved by the Final Completion Date (except for extensions of time granted in accordance with the General Terms and Conditions). The Bidder further agrees he/she will, if necessary, accelerate their work, provide additional workers and equipment, and expedite materials delivery to meet these dates, all at no additional expense to the OWNER.

By submitting this bid, the bidder agrees that, if awarded this contract, they will achieve Final Completion prior to February 15, 2025 and meet the other project milestones described in Specification section 1.32.13., and as described in the following summary. The Substantial Completion Date will be five (5) calendar days prior to the Final Completion Date.

The project timeline and work limitations for this contract are as follows:

-Contract scheduled to be awarded at the City's January 17, 2023 council meeting.

-Limited Notice to Proceed allowing submittals, RFIs, and permit applications will be provided after contract award. Working days will not commence at this time.

-Within 30 working days from contract award, the Contractor shall apply for a Commercial Tenant Improvement Building Permit for the access improvements (stairs, landings, guardrails, and ladder) including PE-stamped calculations for those contractor-designed elements. The City has been advised to expect approximately two weeks for the first review and one week for a second review. The Contractor's shop drawings, PE-stamped calculations, and permit effort will be considered incidental to Bid Items 4A – and 4B – Tank Accessories.

-Full Notice to Proceed will be issued and construction start date will be determined once a building permit has been issued.

-The contractor will need to provide access to City employees to reservoirs in service and all other on-site facilities, including but not limited to the booster pump station, at all times.

-The Contractor must install either permanent or temporary fencing at the tank base at the start of stair installation.

The order of completion shall be as follows:

1. Building permit submittal including PE-stamped calculations for the stairs, guardrails, platforms, and ladder shall occur withing 30 days from contract award.
2. Exterior non-tank elements including conduit trenching, concrete landing slabs, and fencing around the base of proposed stairs may be constructed prior to tank work.
3. Exterior welding on the tanks may occur while the tanks are in service but must occur prior to coatings application. A Building permit is required prior to installation of the stairs, platforms, and guardrails.
4. Interior welding and Interior and exterior coatings at the South Tank shall be completed between October 1, 2023 and April 15, 2024, while the tank is drained. Coatings must be cured per the manufacturer's recommendations prior to tank disinfection. The tank must be disinfected, filled, and pass bacteriological testing successfully prior to being returned to service.
5. Interior welding and interior and exterior coatings at the North Tank are planned between October 16, 2024 and April 14, 2025, while the tank is drained. Coatings must be cured per the manufacturer's recommendations prior to tank disinfection. The tank must be disinfected, filled, and pass bacteriological testing successfully prior to being returned to service.

   An accelerated schedule for the North Tank (Schedule B) may be allowed, at the sole discretion of the City, if the Contractor demonstrates sufficient speed in completing work on the South Tank (Schedule A). For example, if the Contractor completes work on the South Tank between October 16, 2023 and January 15, 2024, the City may allow work on the North Tank between January 16, 2024 and April 2024.
6. Only 1 tank can be out of service at a time, and both tanks must be in service between May 15 and October 15 annually.
7. All work must be complete with both tanks back in service by February 15, 2025.
8. Elements that do not damage the coatings, such as electrical/controls elements and the cathodic protection system replacement, may be completed after coating application.

Milestone completion deadlines:

- **May 15, 2024** – **Schedule A – South Tank** complete and back in service. North tank still in service.
- **February 15, 2025** – All work complete, including **Schedule B – North Tank**, with both tanks in service

Lump Sum or Unit Price Work

The Bidder proposes to accept as full payment for the work proposed herein the amounts computed under the provisions of the Contract Documents and based on the following lump sum or unit price amounts, it being expressly understood that the unit prices are independent of the exact quantities involved. The Contractor shall be compensated for the actual unit quantities performed in accordance with the General Terms and Conditions set forth in these Contract Documents. The Bidder agrees that the lump sum prices and the unit prices represent a true measure of the labor, services, and materials required to perform the work, including all allowances for Contractor-paid taxes, overhead, and profit for each type and unit of work, as well as any auxiliary costs associated with completing a unit of work called for in these Contract Documents. The City does not guarantee the quantities estimated for unit price items, nor does the City limit itself to the estimated number.

If any material, item, or service required by the Contract Documents has not been mentioned specifically, the same shall be furnished and placed with the understanding that the full cost to the Owner has been merged with the prices named in the Proposal.

To the extent possible, standard bid items have been utilized for the work listed in the Proposal. The Bidder is directed to review the Standard Specifications and the City of Mercer Island's Amendments (Special Provisions herein) for descriptions of bid item work, measurement, and payment.

SCHEDULE OF PRICES

SCHEDULE A – SOUTH TANK

Item	Description	Units	Quantity	Unit Price	Total Price
1A	Mobilization, Demobilization, Site Preparation, and Clean-up	LS	1	= $_____	= $_____
2A	Site Work	LS	1	= $_____	= $_____
3A	Interior Seal Welding	LS	1	= $_____	= $_____
4A	Tank Accessories	LS	1	= $_____	= $_____
5A	Environmental Control	LS	1	= $_____	= $_____
6A	Interior Finishes	LS	1	= $_____	= $_____
7A	Exterior Containment	LS	1	= $_____	= $_____
8A	Exterior Spot Repair	SF	100	= $_____	= $_____
9A	Exterior Preparation and Overcoat	LS	1	= $_____	= $_____
10A	Cathodic Protection System	LS	1	= $_____	= $_____
11A	Electrical	LS	1	= $_____	= $_____
12A	Tank Disinfection and Testing	LS	1	= $10,000	= $10,000
13A	Construction Records and O&M Manuals	LS	1	= $5,000	= $5,000

SCHEDULE OF PRICES

SCHEDULE A – SOUTH TANK

Item	Description	Units	Quantity	Unit Price	Total Price
14A	Minor Changes	FA	1	= $25,000	= $25,000

SUBTOTAL (Items 1A – 14A)	$_____
Sales Tax @ 10.1% See General Conditions Section 59 or Special Provisions 1-07.2 for more information.	$_____
TOTAL BID AMOUNT SCHEDULE A	$_____

SCHEDULE OF PRICES

SCHEDULE B – SOUTH TANK

Item	Description	Units	Quantity	Unit Price	Total Price
1B	Mobilization, Demobilization, Site Preparation, and Clean-up	LS	1	= $_____	= $_____
2B	Site Work	LS	1	= $_____	= $_____
3B	Interior Seal Welding	LS	1	= $_____	= $_____
4B	Tank Accessories	LS	1	= $_____	= $_____
5B	Environmental Control	LS	1	= $_____	= $_____
6B	Interior Finishes	LS	1	= $_____	= $_____
7B	Exterior Containment	LS	1	= $_____	= $_____
8B	Exterior Spot Repair	SF	100	= $_____	= $_____
9B	Exterior Preparation and Overcoat	LS	1	= $_____	= $_____
10B	Cathodic Protection System	LS	1	= $_____	= $_____
11B	Electrical	LS	1	= $_____	= $_____
12B	Tank Disinfection and Testing	LS	1	= $10,000	= $10,000
13B	Construction Records and O&M Manuals	LS	1	= $5,000	= $5,000

SCHEDULE OF PRICES SCHEDULE B – SOUTH TANK					
Item	Description	Units	Quantity	Unit Price	Total Price
14B	Management Reserve	FA	1	= $25,000	= $25,000
				SUBTOTAL (Items 1B – 14B)	$_____
				Sales Tax @ 10.1% See General Conditions Section 59 or Special Provisions 1-07.2 for more information.	$_____
				TOTAL BID AMOUNT SCHEDULE B	$_____

SCHEDULE OF PRICES TOTAL BID AMOUNT	
TOTAL BID AMOUNT SCHEDULE A	$_____
TOTAL BID AMOUNT SCHEDULE B	$_____
TOTAL BID AMOUNT SCHEDULE A AND SCHEDULE B	$_____

PROPOSAL SIGNATURE SHEET

If Sole Proprietor, Partnership or Joint Venture

IN WITNESS hereto the undersigned have set their hands this

_____ day of _____, 20_____.

Name of Bidder (name each partner or joint venture partner) _____

Washington Contractor's Registration No. _____

Address _____

_____

Authorized Signature _____

Position/Title _____

If Corporation or Limited Liability Company (LLC)

IN WITNESS WHEREOF the undersigned corporation has caused this instrument to be executed and its seal affixed by its duly authorized officers this

_____ day of _____, 20_____.

Name of Corporation or Limited Liability Company (LLC) _____

Washington Contractor's Registration No. _____

Address _____

_____

State of Incorporation or Organization _____

Authorized Signature _____

Position/Title _____

Subcontractor Listing – RCW 39.30.060

Pursuant to RCW 39.30.060, the Bidder shall list as part of its Bid either itself of the names of the subcontractors with whom the Bidder, if awarded the contract, will subcontract for performance of the work of heating, ventilation and air conditioning ("HVAC"), plumbing as described in chapter 18.106 RCW, and electrical as described in chapter 19.28 RCW. The Bidder shall not list more than one subcontractor for each category of work.

Failure of the Bidder to submit as part of the Bid the names of such subcontractors or to name itself to perform such work or the naming of two or more subcontractors to perform the same category of work shall render the Bidder's Bid nonresponsive and therefore, void.

The requirement of this section to name the Bidder's proposed HVAC, plumbing, and electrical subcontractors applies only to proposed HVAC, plumbing, and electrical subcontractors who will contract directly with the general contractor submitting the Bid to the City.

Electrical work must be performed by a licensed electrical contractor. Bidders are cautioned that installation of electrical equipment (PVC or metal conduit, junction boxes or similar work) may be considered electrical work even if for future use and no electrical current is involved.

If the subcontract work categories as described above are not applicable to the work being bid, the bidder must indicate that the subcontract category is "NOT APPLICABLE."

HVAC

Subcontractor Name: _____

UBI Number: _____

Plumbing

Subcontractor Name: _____

UBI Number: _____

Electrical

Subcontractor Name: _____

UBI Number: _____

BID GUARANTY BOND

KNOW ALL BY THESE PRESENTS: That we, _____,
as Principal, and _____, as Surety, are jointly and severally held and firmly bound unto the City of Mercer Island, hereinafter called the Obligee, each in the penal sum of five percent *(5%)* of the Principal's Total Bid Price for the work, this sum not to exceed _____ DOLLARS ($_____) (hereinafter referred to as "penal sum") of lawful money of the United States, for the payment whereof unto the Obligee.

WHEREAS, the Principal is herewith submitting its bid proposal for the

North and South Reservoir Improvements 2022

NOW, THEREFORE, the condition of this obligation is such that if the Principal is awarded the Contract, and if the Principal, within the time specified, fulfills all of the requirements of the Contract Documents which are conditions precedent to the execution of the Agreement, enters into, executes and delivers to the Obligee an agreement on the form provided herein complete with evidences of insurance, and if the Principal, within the time specified, gives to the Obligee the performance and payment bond on the forms provided herein, then this obligation shall be void; otherwise, the Principal and Surety shall pay unto the Obligee the penal sum; provided however, in no event shall the Surety's liability exceed the penal sum. Provided further, if the difference in money between the Principal's Total Bid Price and the amount for which the Obligee legally contracts with another party to fulfill the Contract is greater than the penal sum, the Principal shall pay unto the Obligee the difference between the penal sum and the amount the Obligee pays another to fulfill the Contract.

AND IT IS HEREBY DECLARED AND AGREED that the Surety shall be liable under this obligation as Principal, and that nothing of any kind or nature whatsoever that will not discharge the Principal shall operate as a discharge or a release of liability of the Surety.

IT IS HEREBY FURTHER DECLARED AND AGREED that this obligation shall be binding upon and inure to the benefit of the Principal, the Surety and the Obligee and their respective heirs, executors, administrators, successors and assigns.

SIGNED this _____ day of _____, 20 _____.

Principal: _____	Surety: _____
By: _____	By: _____
Title: _____	Title: _____
Address: _____	Address: _____
Telephone: ( ) _____	Telephone: ( ) _____

Note: A power of attorney must be provided which appoints the Surety's true and lawful attorney-in-fact to make, execute, seal and deliver this bid guaranty bond.

AGREEMENT FORMS

CITY OF MERCER ISLAND, WASHINGTON
PUBLIC WORKS CONTRACT
FOR
NORTH AND SOUTH RESERVOIR IMPROVEMENTS 2022

THIS PUBLIC WORKS CONTRACT ("Contract") dated [insert date agreement drafted], is effective on the date the Contract is fully executed by the Parties. The Parties to this Contract are the CITY OF MERCER ISLAND, a Washington municipal corporation ("City" or "Owner"), and [INSERT FULL LEGAL NAME OF CONTRACTOR], a [insert state where formed] [choose type of person or entity] ("Contractor").

A. The City desires to retain an independent contractor to furnish all labor and materials necessary to perform work at [insert address], Mercer Island, Washington ("Property"); and

B. The Contractor has the requisite skill and experience to perform such work and has submitted a proposal dated [insert date proposal received] to complete such work ("Proposal").

NOW, THEREFORE, the parties ("Parties") agree to the following terms and conditions:

1. SERVICES BY CONTRACTOR

1.1 Description of Work. Contractor shall perform all work and furnish all tools, materials, supplies, equipment, labor and other items incidental thereto necessary for the construction and completion of the work, more particularly described in the Contract Documents for the North and South Reservoir Improvements 2022 Project, including this Public Works Contract, the Contractor's completed Bid Form, the City's General Terms and Conditions (May 2020 ed.), any Supplemental and/or Special Conditions, Technical Specifications, Drawings and Addenda, which documents are incorporated by this reference, ("Work"), which Work shall be completed to the City's satisfaction, within the time period prescribed by the City and pursuant to the direction of the City Manager or his or her designee.

1.2 Completion Date. The Work shall be commenced within ten (10) days of receipt by the Contractor of the City's Notice to Proceed and shall be Substantially Completed by February 15, 2025, (the "Contract Time") as may be extended in accordance with the Contract Documents. In the event the Work is not completed within the time specified, Contractor agrees to pay to the City liquidated damages in the amount set forth in Section 1.3 of this Contract.

1.3 Liquidated Damages. TIME IS OF THE ESSENCE OF THIS CONTRACT. Delays inconvenience the residents of Mercer Island and cost taxpayers undue sums of money, adding time needed for administration, engineering, inspection and supervision. It is impractical for the City to calculate the actual cost of delays. Accordingly, the Contractor agrees to pay liquidated damages as follows: Liquidated damages for failure to achieve timely Substantial Completion shall be in the amount of $1,670 for every day it causes either reservoir is out of service between the dates of April 15 and October 15 of any year, per day.

1.4 Performance Standard. Contractor shall perform the Work in a manner consistent with accepted practices for highly skilled and competent contractors performing this type of work in this area.

1.5 Compliance with Laws. Contractor shall perform the Work in accordance with all applicable

federal, state and City laws, including but not limited to all City ordinances, resolutions, standards, or policies, as now existing, or hereafter adopted or amended, and obtain all necessary permits and pay all permit, inspection, or other fees, at its sole cost and expense.

1.6 Utility Location. Contractor is responsible for locating any underground utilities affected by the Work and is deemed to be an excavator for purposes of Chapter 19.122 RCW, as amended. Contractor shall be responsible for compliance with Chapter 19.122 RCW, including utilization of the "one call" locator system before commencing any excavation activities.

1.7 Air Environment. Contractor shall fully cover any and all loads of loose construction materials including without limitation, sand, dirt, gravel, asphalt, excavated materials, construction debris, etc., to protect said materials from air exposure and to minimize emission of airborne particles to the ambient air environment within the City of Mercer Island.

2. TERM

This Contract shall commence on the effective date of this Contract and continue until the Work is complete, and formally accepted by City, and all warranties have expired.

3. REQUISITE SKILL

The Contractor warrants that it has the requisite skill to complete the Work and is appropriately accredited and licensed by all applicable agencies and governmental entities, including but not limited to being registered to do business in the City of Mercer Island by obtaining a City of Mercer Island business registration. Contractor represents that it has visited the site and is familiar with all of the plans and specifications in connection with the completion of the Work.

4. COMPENSATION

4.1 Total Compensation. In consideration of the Contractor performing the Services, the City agrees to pay the Contractor an amount not to exceed [insert maximum value of contract in words] Dollars ($[insert $ amount in figures]), based on the Proposal submitted by Contractor dated [insert date proposal received] and as may be adjusted under the Contract Documents.

4.2 Contractor Responsible for Taxes. Except as otherwise stated in the Contract Documents, the Contractor shall be solely responsible for the payment of any taxes imposed by any lawful jurisdiction as a result of the performance and payment of this Contract.

4.3 Method of Payment. Payment by the City for the Work will only be made after the Work has been completed, a voucher or invoice is submitted in a form satisfactory to the City, and such invoice is approved by the appropriate City representative. Payment shall be made within thirty (30) days of receipt of such invoice or voucher unless otherwise set forth in the Bid Form. The Contractor's acceptance of such payment for the Work shall constitute full compensation for the performance of the Work. Invoices shall be submitted to:

City of Mercer Island
ATTN: [enter City's project manager name, title]
9611 SE 36th Street
Mercer Island, WA 98040

4.4 Retainage. Pursuant to Chapter 60.28 RCW, five percent (5%) of the Total Compensation shall be retained by the City to assure payment of Contractor's state taxes as well as payment of subcontractors, suppliers, and laborers. Upon execution of this Contract, Contractor shall complete, execute, and deliver to the City the Contractor's Retainage Agreement set forth in the Contract Documents. No payments shall be made by the City from the retained percentage fund ("Fund") nor shall the City release any retained percentage escrow account to any person, until the City has received from the Department of Revenue a certificate that all taxes, increases, and penalties due from the Contractor and all taxes due and to become due with respect to the Contract have been paid in full or that they are, in the Department's opinion, readily collectible without recourse to the State's lien on the retained percentage. Upon non-payment by the general contractor, any supplier or subcontractor may file a lien against the retainage funds, pursuant to Chapter 60.28 RCW. Subcontractors or suppliers are required to give notice of any lien within thirty (30) days of the completion of the Work and in the manner provided in RCW 39.08.030. Within sixty (60) days after completion of all Work on this Contract, the City shall release and pay in full the money held in the Fund, unless the City becomes aware of outstanding claims made against this Fund.

5. EQUAL OPPORTUNITY EMPLOYER

In all Contractor services, programs or activities, and all Contractor hiring and employment made possible by or resulting from this Contract, there shall be no discrimination by Contractor or by Contractor's employees, agents, subcontractors or representatives against any person because of sex, sexual orientation, age (except minimum age and retirement provisions), race, color, creed, national origin, marital status or the presence of any disability, including sensory, mental or physical handicaps, unless based upon a bona fide occupational qualification in relationship to hiring and employment. This requirement shall apply, but not be limited to the following: employment, advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. Contractor shall not violate any of the terms of Chapter 49.60 RCW, Title VII of the Civil Rights Act of 1964, the Americans With Disabilities Act, Section 504 of the Rehabilitation Act of 1973 or any other applicable federal, state, or local law or regulation regarding non-discrimination. Any material violation of this provision shall be grounds for termination of this Contract by the City and, in the case of the Contractor's breach, may result in ineligibility for further City agreements.

6. INDEPENDENT CONTRACTOR/CONFLICT OF INTEREST

It is the intention and understanding of the Parties that the Contractor shall be an independent contractor and that the City shall be neither liable nor obligated to pay Contractor sick leave, vacation pay or any other benefit of employment, nor to pay any social security or other tax which may arise as an incident of employment. The Contractor shall pay all income and other taxes as due. Industrial or any other insurance which is purchased for the benefit of the City, regardless of whether such may provide a secondary or incidental benefit to the Contractor, shall not be deemed to convert this Contract to an employment contract. It is recognized that Contractor may perform work during the Term of this Contract for other third parties; provided, however, that such performance of other work shall not conflict with or interfere with the Contractor's ability to perform the Work. Contractor agrees to resolve any such conflicts of interest in favor of the City.

7. INDEMNIFICATION

7.1 Indemnification and Hold Harmless.

A. The Contractor shall protect, defend, indemnify, and hold harmless City, its elected officials, officers, agents, volunteers, and employees, from any and all claims, demands, suits, penalties, losses, damages, judgments, or costs of any kind whatsoever, including attorneys' fees (hereinafter "claims"), arising out of or in connection with the performance of this Contract except for injuries and damages caused by the sole negligence of the City. However, should a court of competent jurisdiction determine that this Contract is subject to RCW 4.24.115, then, in the event of liability for damages arising out of bodily injury to persons or damages to property caused by or resulting from the concurrent negligence of the Contractor and the City, its officers, officials, employees, and volunteers, the Contractor's liability hereunder shall be only to the extent of the Contractor's negligence.

B. The Contractor's obligations under this section shall include, but not be limited to,

i. The duty to promptly accept tender of defense and provide defense to City at the Contractor's own expense.

ii. The duty to indemnify and defend City, its elected officials, officers, agents, and employees, from any claim, demand, and/or cause of action brought by or on behalf of any of its employees, or agents. The foregoing duty is specifically and expressly intended to constitute a waiver of the Contractor's immunity under Washington's Industrial Insurance Act, RCW Title 51, as respects City with a full and complete indemnity and defense of claims made by the Contractor's employees. The parties acknowledge that these provisions were mutually negotiated upon by them.

iii. To the maximum extent permitted by law, the Contractor shall indemnify and defend City, its elected officials, officers, agents and employees, from and be liable for all damages and injury which shall be caused to owners of property on or in the vicinity of the work or which shall occur to any person or persons or property whatsoever arising out of the performance of this Contract, whether or not such injury or damage is caused by negligence of the Contractor or caused by the inherent nature of the work specified.

C. City may, in its sole discretion, (1) withhold amounts sufficient to pay the amount of any claim for injury, and/or (2) pay any claim for injury of which City may have knowledge, regardless of the formalities of notice of such claim, arising out of the performance of this Contract.

D. Any amount withheld will be held until the Contractor secures a written release from the claimant, obtains a court decision that such claim is without merit, or satisfies any judgment on such claim. In addition, the Contractor shall reimburse and otherwise be liable for claims costs incurred by City, including, without limitation, costs for claims adjusting services, attorneys, engineering, and administration.

E. In the event City incurs any judgment, award, and/or costs arising therefrom, including attorneys' fees, to enforce the provisions of this article, all such fees, expenses, and costs shall be recoverable from the Contractor.

F. This provision has been mutually negotiated by the City and the Contractor.

7.2 Survival. The provisions of this Section 7 shall survive the expiration or termination of this Contract with respect to any event occurring prior to such expiration or termination.

8. INSURANCE

8.1 The Contractor agrees to carry without interruption from commencement of the Contractors work through the term of the contract and for thirty (30) days after Physical Completion, unless otherwise indicated herein, the following insurance against claims for injuries to persons or damage to property which may arise from or in connection with the performance of the Work by Contractor, its agents, representatives, employees or subcontractors with a carriers having a current A.M. Best rating of not less than A:VII. The City, at its discretion, may require additional types and greater limits of insurance coverage commensurate with the risk associated with the performance of the Work.

A. Workers' Compensation and Employer's Liability Insurance in amounts sufficient pursuant to the laws of the State of Washington.

B. Commercial general liability insurance shall be written on a form at least as broad as Insurance Services Office (ISO) occurrence form CG 00 01 and shall cover liability arising from premises, operations, independent contractors, products-completed operations for three years following substantial completion of the Work, stop gap liability, personal injury and advertising injury, and liability assumed under an insured contract. The Commercial General Liability insurance shall be endorsed to provide the Aggregate Per Project Endorsement ISO form CG 25 03 05 09. There shall be no exclusion for liability arising from explosion, collapse, or underground property damage. The City shall be named as an additional insured under the Commercial General Liability insurance policy with respect to the Work performed for the City using ISO Additional Insured endorsement CG 20 10 10 01 and Additional Insured Completed Operations endorsement CG 20 37 10 01 or substitute endorsements providing coverage at least as broad, with limits of no less than $2,000,000 each occurrence, $2,000,000 general aggregate, and a $2,000,000 products-completed operations aggregate limit.

C. Automobile liability insurance covering all owned, non-owned, hired, and leased vehicles. Coverage shall be written on ISO form CA 00 01 or a substitute form providing equivalent liability coverage. If necessary, the policy shall be endorsed to provide contractual liability coverage with combined single limits for bodily injury and property damage of not less than $1,000,000 per accident.

D. Asbestos Abatement or Hazardous Materials. If asbestos abatement or hazardous materials work is performed, Contractor shall review coverage with the City Attorney's office and provide scope and limits of coverage that are appropriate for the scope of Work and are satisfactory to the City. Contractor shall not commence any Work until its coverage has been approved by the City Attorney's office.

E. Builders Risk insurance covering interests of the City, the Contractor, Subcontractors, and Sub-subcontractors in the work. Builders Risk insurance shall be on a special perils 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 shall include coverage for temporary buildings, debris removal, and damage to materials in transit or stored off-site. This Builders Risk insurance covering the work will have a deductible of $5,000 for each occurrence, which will be the responsibility of the Contractor. Higher deductibles for flood and earthquake perils may be accepted by the City upon written request by the Contractor and written acceptance by the City. Any increased deductibles accepted by the City will remain the responsibility of the Contractor. The Builders Risk insurance shall be maintained until the City has granted substantial completion of the project. An installation floater may be acceptable in lieu of Builders Risk for renovation projects only if approved in writing by the City. Builders Risk insurance shall be written in the amount of the completed value of the project with no coinsurance provisions.

8.2 The City shall be named as additional insured on all such insurance policies, with the exception of workers' compensation coverages. The Contractor's insurance coverage shall be primary insurance as respect the City. Any insurance, self-insurance, or insurance pool coverage maintained by the City shall be excess of the Contractor's insurance and shall not contribute with it. If the Contractor maintains higher insurance limits than the minimums shown above, the City shall be insured for the full available limits of Commercial General and Excess or Umbrella liability maintained by the Contractor, irrespectively of whether such limits maintained by the Contractor are greater than those required by this Contract or whether any certificate of insurance furnished to the City evidences limits of liability lower than those maintained by the Contractor. Contractor shall provide certificates of insurance and amendatory endorsements, concurrent with the execution of this Contract, evidencing such coverage and, at City's request, furnish the City with copies of all insurance policies and with evidence of payment of premiums or fees of such policies. The Contractor shall provide the City and all Additional Insureds for this work with written notice of any policy cancellation within two business days of their receipt of such notice.

8.3 The Contractor shall cause each and every Subcontractor to provide insurance coverage that complies with all applicable requirements of the Contractor-provided insurance as set forth herein, except that the Contractor shall have sole responsibility for determining the limits of coverage required to be obtained by Subcontractors. The Contractor shall ensure that the City is an additional insured on each and every Subcontractor's Commercial General Liability insurance policy using an endorsement at least as broad as ISO CG 20 10 10 01 for ongoing operations and CG 20 37 10 01 for completed operations.

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

8.5 Waiver of Subrogation. The Contractor and the City waive all rights against each other, any of their Subcontractors, Sub-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 obtained pursuant to the Insurance Requirements Section of this Contract or other property insurance applicable to the work. The policies shall provide such waivers by endorsement or otherwise.

8.6 The Contractor's maintenance of insurance, its scope of coverage and limits as required herein shall not be construed to limit the liability of the Contractor to the coverage provided by such insurance, or otherwise limit the City's recourse to any remedy available at law or in equity.

8.7 The provisions of this Section shall survive the expiration or termination of this Contract with respect to any event occurring prior to such expiration or termination.

9. PERFORMANCE/PAYMENT BOND OR ADDITIONAL RETAINAGE

Pursuant to RCW 39.08.010, Contractor shall provide Performance Bond and Payment Bond each in an amount equal to 100% of the amount of this Contract to cover the performance of all provisions of this Contract and the payment of all laborers and suppliers. The Contract bonds shall be in a form set forth in the Contract Documents. The Contract bond shall assure that the Contractor will faithfully perform all of the provisions of the Contract as well as pay all laborers, mechanic subcontractors, materialmen, and suppliers. Contractor's obligations under this Contract shall not be limited to the bond amount.

Alternatively, pursuant to RCW 39.08.010, on contracts of Fifty-Five Thousand Dollars ($55,000) or less, at the option of the Contractor, the City may, in lieu of a bond, retain ten percent (10%) of the Contract amount for a period of thirty (30) days after the date of final acceptance, or until receipt of all necessary releases from the Department of Revenue and the Department of Labor and Industries and settlement of any liens filed under Chapter 60.28 RCW, whichever is later.

10. SAFETY

Contractor shall take all necessary precautions for the safety of its employees on the work site and shall comply with all applicable provisions of federal, state, and municipal safety and health laws and codes, including without limitation, all OSHA/WISHA requirements, Safety and Health Standards for Construction Work (Chapter 296-155 WAC), General Safety and Health Standards (Chapter 296-24 WAC), and General Occupational Health Standards (Chapter 296-62 WAC). Contractor shall erect and properly maintain, at all times, all necessary guards, barricades, signals, and other safeguards at all unsafe places at or near the Work for the protection of its employees and the public, safe passageways at all road crossings, crosswalks, street intersections, post danger signs warning against known or unusual hazards and do all other things necessary to prevent accident or loss of any kind. Contractor shall protect from damage all water, sewer, gas, steam or other pipes or conduits, and all hydrants and all other property that is likely to become displaced or damaged by the execution of the Work. The Contractor shall, at its own expense, secure and maintain a safe storage place for its materials and equipment and is solely responsible for the same.

11. PREVAILING WAGES

11.1 Wages of Employees. This Contract is subject to the minimum wage requirements of Chapter 39.12 of the Revised Code of Washington, as now existing or hereafter amended or

supplemented. In the payment of hourly wages and fringe benefits to be paid to any of Contractor's laborers, workpersons and/or mechanics, Contractor shall not pay less than the "prevailing rate of wage" for an hour's work in the same trade or occupation in the locality within the State of Washington where such labor is performed, as determined by the Industrial Statistician of the Department of Labor and Industries of the State of Washington. Prevailing wages paid pursuant to this Agreement shall be the prevailing wage rates which are in effect on the date when the bids, proposals, or quotes were required to be submitted to the City.

The State of Washington prevailing wage rates applicable for this public works project, which is located in King County, may be found at the following website address of the Department of Labor and Industries: https://lni.wa.gov/licensing-permits/public-works-projects/prevailing-wage-rates/. A copy of the applicable prevailing wage rates is also available for viewing at the office of the City located at 9611 SE 36th St, Mercer Island, WA 98040. Upon request, the City will mail a hard copy of the applicable prevailing wages for this project.

11.2 Reporting Requirements. Contractor shall comply with all reporting requirements of the Department of Labor and Industries of the State of Washington. Upon the execution of this Contract, Contractor shall complete and file a Statement of Intent to Pay Prevailing Wages with the Department of Labor and Industries. If requested by the City, the Contractor shall provide certified payroll records for its employees and the employees of its subcontractors. Upon completion of the Work, Contractor shall complete and file an Affidavit of Wages Paid with the Department of Labor and Industries. Contractor shall deliver copies of both the Statement of Intent to Pay Prevailing Wages and the Affidavit of Wages Paid, certified by the Department of Labor and Industries, to the City.

12. SUBCONTRACTOR RESPONSIBILITY

Contractor shall verify responsibility criteria for each first-tier subcontractor, and a subcontractor of any tier that hires other subcontractors must verify responsibility criteria for each of its subcontractors. Verification shall include that each subcontractor, at the time of subcontract execution, meets the responsibility criteria listed in the Instructions to Bidders and possesses an electrical contractor license, if required by chapter 19.28 RCW, or an elevator contractor license, if required by chapter 70.87 RCW. This verification requirement must be included in every public works subcontract or every tier.

13. OWNERSHIP OF DOCUMENTS

All originals and copies of work product, including plans, sketches, layouts, designs, design specifications, records, files computer disks, magnetic media, all finished or unfinished documents or material which may be produced or modified by Contractor while performing the Work shall become the property of the City and shall be delivered to the City at its request.

14. CONFIDENTIALITY

If it is necessary to provide proprietary information, the Contractor shall clearly mark the information on each page of the document(s) as “Proprietary and Confidential”. The City is subject to laws regarding the disclosure of public records and document. Proposals and other materials, submitted by the Contractor become public record and may be subject to public disclosure, in whole or in part, and may be released by the City in the event of a request for disclosure. In the event the City receives a public record request for information and the Contractor has marked the requested document as “Proprietary and

Confidential", the City shall notify the Contractor of such request and withhold disclosure of such information for not less than five (5) business days, to permit the Contractor to seek judicial protection of such information; provided that the Contractor shall be solely responsible for all attorney fees and costs in such action and shall save and hold harmless the City from any costs, attorneys fees or penalty assessments under Chapter 42.56 RCW for withholding or delaying public disclosure of such information.

15. BOOKS AND RECORDS

The Contractor agrees to maintain books, records, and documents which sufficiently and properly reflect all direct and indirect costs related to the performance of this Contract and such accounting procedures and practices as may be deemed necessary by the City to assure proper accounting of all funds paid pursuant to this Contract. These records shall be subject at all reasonable times to inspection, review or audit by the City, its authorized representative, the State Auditor, or other governmental officials authorized by law to monitor this Contract.

16. CLEAN UP

At any time ordered by the City and immediately after completion of the Work, the Contractor shall, at its own expense, clean up and remove all refuse and unused materials of any kind resulting from the Work. In the event the Contractor fails to perform the necessary clean up, the City may, but in no event is it obligated to, perform the necessary clean up and the costs thereof shall be immediately paid by the Contractor to the City and/or the City may deduct its costs from any remaining payments due to the Contractor.

17. GENERAL PROVISIONS

This Contract, the Contract Documents and any supporting contract documents contain all of the agreements of the Parties with respect to any matter covered or mentioned in this Contract and no prior agreements or understandings shall be effective for any purpose. No provision of this Contract may be amended except by written agreement of the Parties. Any provision of this Contract which is declared invalid, void or illegal shall in no way affect, impair, or invalidate any other provision hereof and such other provisions shall remain in full force and effect. The Contractor shall not transfer or assign, in whole or in part, any or all of its obligations and rights hereunder without the prior written consent of the City. In the event the City consents to any such assignment or transfer, such consent shall in no way release the Contractor from any of its obligations or liabilities under this Contract. Subject to the preceding sentence, this Contract shall be binding upon and inure to the benefit of the Parties' successors in interest, heirs, and assigns. In the event the City or the Contractor defaults on the performance of any terms in this Contract, and the Contractor or City places the enforcement of the Contract or any part thereof, or the collection of any monies due, in the hands of an attorney, or files suit, each Party shall pay all its own attorneys' fees and expenses. The venue for any dispute related to this Contract shall be King County, Washington. Failure of the City to declare any breach or default immediately upon occurrence thereof, or delay in taking any action in connection with, shall not waive such breach or default. This Contract shall be governed by and interpreted in accordance with the laws of the State of Washington. Each individual executing this Contract on behalf of the City and Contractor represents and warrants that such individuals are duly authorized to execute this Contract. Time is of the essence of this Contract and each and all of its provisions in which performance is a factor. Adherence to completion dates is essential to the Contractor's performance of this Contract.

IN WITNESS WHEREOF, the Parties have executed this Contract the day of , 20 .

CONTRACTOR:

[INSERT FULL LEGAL NAME OF CONTRACTOR]

By: _____
[insert full legal name and title of signator]

Address:

Phone:
Email:

CITY:

CITY OF MERCER ISLAND

By: _____
Jessi Bon, City Manager

Attest:

By: _____
Andrea Larson, City Clerk

Approved as to form:

By: _____
Bio Park, City Attorney

CITY OF MERCER ISLAND
CONTRACT CHANGE ORDER AGREEMENT

PROJECT TITLE	
DATE	
CHANGE ORDER NUMBER	
PROJECT NUMBER	
CONTRACTOR NAME	
CONTRACTOR ADDRESS	

CONTRACT CHANGE SUMMARY (all prices include tax)	
Original contract amount	$
Previous change orders total	$
This change order	$
New contract amount	$

SUMMARY OF PROPOSED CHANGES:

TIMING: The time provided for completion in the contract is ☐ UNCHANGED ☐ INCREASED ☐ DECREASED by ____ calendar days.

INSURANCE: Will this change affect expiration or extent of insurance coverage? ☐ YES ☐ NO
If 'yes', will the policies be extended? ☐ YES ☐ NO

COST: The total cost for the changes specified in this change order will ☐ INCREASE ☐ DECREASE ☐ NOT CHANGE the total contract cost by $ _____ (must match net total from page 2). Cost changes are broken down on page 2 of this document.

STATEMENT: Payment for the above work will be in accordance with the applicable portions of the standard specifications, and with the understanding that all materials, workmanship, and measurements shall be in accordance with the provisions of the standard specifications, the contract plans, and the special provisions governing the types of construction. This document shall become an amendment to the contract and all provisions of the contract not amended herein will apply to this change order.

CONTRACTOR

SIGNATURE DATE

PRINTED NAME TITLE

CITY OF MERCER ISLAND

CITY MANAGER SIGNATURE DATE

CHANGE ORDER COST BREAKDOWN

UNIT COST ITEMS

BID ITEM NUMBER	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	ITEM TOTAL	ADD or DELETE
SALES TAX (10.1%) if applicable						
NET TOTAL FOR UNIT COST ITEMS						

LUMP SUM ITEMS

ITEM	DESCRIPTION	COST	ADD or DELETE
SALES TAX (10.1%) if applicable			
NET TOTAL FOR LUMP SUM ITEMS			

NET TOTAL FOR ALL UNIT COST & LUMP SUM ITEMS (includes applicable tax)	$

`

PERFORMANCE BOND

To City of Mercer Island, WA

Bond No._____

The City of Mercer Island, Washington has awarded to _____(Principal), a contract for the construction of the project designated as _____, Project No._____, in Mercer Island, Washington (Contract), and said Principal is required 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 City, in the sum of _____US Dollars ($_____) 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 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 force and effect.

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 office executing on behalf of the surety.

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

Name, address, and telephone of local office/agent of Surety Company is:

PAYMENT BOND
to City of Mercer Island, WA

Bond No _____

The City of Mercer Island, Washington has awarded to _____(Principal), a contract for the construction of the project designated as_____, Project No._____, in Mercer Island, 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 City, in the sum of_____ US Dollars ($_____) 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 39.08, 39.12, and 60.28 including all workers, laborers, mechanics, subcontractors, and materialmen, and all person 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 Titles 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 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 changes, 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 office executing on behalf of the surety.

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

Name, address, and telephone of local office/agent of Surety Company is:

LIABILITY ENDORSEMENT

These conditions apply to Commercial General Liability, Automobile Liability, Worker's Compensation and Employer's Liability, and Builder's Risk policies. Fill in the Policy Information and Signature sections if the information is not already provided on the ACORD or Certificate of Insurance forms.

Policy Amendments

This endorsement is issued in consideration of the policy premium. Notwithstanding any inconsistent statement in the policy to which this endorsement is attached or any other endorsement attached thereto, it is agreed as follows:

1. INSURED. Owner, its elected or appointed officials, employees or volunteers are included as insureds with regard to damages and defense of claims arising from (a) activities performed by or on behalf of the Named Insured, (b) products and completed operations of the Named Insured, or (c) premises owned, leased or used by the Named Insured.

2. CONTRIBUTION NOT REQUIRED. As respects (a) work performed by the Named Insured for or on behalf of Owner, or (b) products sold by the Named Insured to Owner; or (c) premises leased by the Named Insured from Owner, the insurance afforded by this policy shall be primary insurance respects Owner, its elected or appointed officials, employees or volunteers; or stand in an unbroken chain of coverage excess of the Named insureds scheduled underlying primary coverage. In either event, any other insurance maintained by Owner, its elected or appointed officials, employees or volunteers shall be excess of this insurance and shall not contribute with it.

3. SCOPE OF COVERAGE. This policy: (1) if primary, affords coverage at least as broad as Insurance Services Office form number GL 0001, Comprehensive General Liability Insurance and (2) if excess, affords coverage which is at least as broad as the primary insurance forms referenced in the preceding section (1). This policy requires Insurance Service Office Form CA 0001 or equivalent covering Automotive Liability, Symbol 1 (any auto).

4. SEVERABILITY OF INTEREST. The insurance afforded by this policy applies separately to each insured who is seeking coverage or against whom a claim is made or a suit is brought, except with respect to the Company's limit of liability.

5. PROVISIONS REGARDING THE INSURED'S DUTIES AFTER ACCIDENT OR LOSS. Any failure to comply with reporting of the policy shall not affect coverage provided to Owner, its elected or appointed officials, employees or volunteers.

6. CANCELLATION NOTICE. The insurance afforded by this policy shall not be suspended, voided, canceled, reduced in coverage or in limits except after forty-five (45) days prior written notice by Certified Mail Return Receipt requested has been given to Owner. Such notice shall be addressed as shown in the heading of this endorsement.

Signature of Insurer or Authorized Representative of the Insurer

I, _____ (print/type), warrant that I have authority to bind the below listed insurance company and by my signature hereon do so bind this company.

Signature of_____

Authorized Representative (original signature required on endorsement furnished to the Owner)

Organization _____

Title _____

Address _____

Telephone _____

RETAINAGE AGREEMENT

Contract Title _____

_____

Contract Date _____

Contractor Name _____

Contractor Address _____

_____

Contractor Phone _____

Contractor Federal ID # _____

State Law on How Contract Retainage Monies can be Reserved:

RCW 60.28.010 Retained percentage, labor and material Contracts for public improvements or work other than for professional services, provides that there shall be reserved by the city from the monies earned by the contractor on estimates during the progress of the improvement or work, a sum of five percent of such estimates, said sum to be retained by the city as a trust fund for the protection and payment of any persons performing work or supplying provisions or supplies during the work. The monies reserved for contract retainage may be reserved by the contractor choosing one of the following four options:

All investments selected below are subject to City approval.

Contractor Options (Contractor shall place an "x" in one of the boxes below.)

[ ] (a) Retained in a non-interest bearing fund by the public body until released in accordance with applicable state statutes;

[ ] (b) Deposited by the public body in an interest bearing account in a bank, mutual savings bank, or savings and loan association, not subject to withdrawal until released in accordance with applicable state statutes, provided that interest on such account shall be paid to the contractor;

[ ] (c) Placed in escrow with a bank or trust company by the public body until released in accordance with applicable state statutes. The cost of the investment program and the risk thereof is to be borne entirely by the contractor.

[ ] (d) Contractor may submit a Retainage Bond equal to 5% of the total awarded bid amount for all schedules to be held by the public body until released in accordance with applicable state statutes.

Contractor's Bank

If Contractor selects options (b) or (c) above, Contractor shall designate below the bank in which the retainage is to be deposited:

ACCOUNT NO. _____

BANK NAME _____

BANK ADDRESS _____

_____

BANK PHONE # _____

Agreement

Contractor and City agree that all or part of the monies in the account can only be approved for disbursement by Bank to Contractor upon written authorization of the City Finance Director, or his/her authorized designee.

By _____ By _____

City of Mercer Island Contractor

Date _____ Date _____

GENERAL TERMS AND CONDITIONS

CITY OF MERCER ISLAND
GENERAL TERMS AND CONDITIONS
MAY 2020 EDITION
TABLE OF CONTENTS

ARTICLE 1: GENERAL PROVISIONS

1.1 DEFINITIONS

A. "**Addendum**" or "**Addenda.**" Alteration or clarification of the plans or specifications provided to bidders by City prior to bid time, which becomes part of the Contract Documents when the Contract is executed.

B. "**Claim.**" A written demand by the Contractor seeking (1) a change to Contract Price; (2) a change of Contract Time; (3) a payment of money or damages; and/or, (4) any other relief arising out of or relating to this Contract.

C. "**Change Order.**" A written instrument designated to be a Change Order which alters the Contract, and identifies the following: (1) a change in the Work; (2) a change in Contract Price; and/or (3) a change in Contract Time.

D. "**Change Proposal.**" A document prepared by the Contractor at the request of City, which proposes changes to the Work and/or changes to the Contract Price and/or Contract Time. City initiates all requests for Change Proposals.

E. The "**Contract**" or "**Contract Documents.**" The entire integrated agreement between City and the Contractor for the performance of the Work in accordance with the Contract Documents. The Contract Documents include the following:

1. The signed Agreement between City and Contractor (the "Public Works Contract");
2. The Contractor's completed Bid Form;
3. The City's General Terms and Conditions (May 2020 ed.);
4. Any Supplemental or Special Conditions.
5. Technical Specifications;
6. Drawings;
7. Addenda; and
8. Any Change Orders.

F. "**Contract Execution**." occurs when City Manager or his/her designee signs the Contract, which shall only occur after the Contractor signs the Contract.

G. "**Contract Price**" means the total amount payable by City to the Contractor for performance of the Work in accordance with the Contract.

H. "**Contract Time.**" The number of days or the specific date set forth in the Contract to achieve Substantial Completion of the Work.

I. "**Contract Work**" or "**Work.**" The labor, supervision, materials, equipment, supplies, services, other items, and requirements of the Contract necessary for the execution, completion and performance of all requirements of the Contract by the Contractor to the satisfaction of City.

J. "**Contractor.**" The individual, association, partnership, firm, company, corporation, or combination thereof, including joint ventures, contracting with City to do the Contract Work.

K. "**Critical Path.**" The longest, continuous sequence of interrelated activities that begins at the start of the Project (Notice to Proceed) and extends to Substantial Completion of the Project. These activities are critical because delay to an activity on this path will extend Contract Time.

L. "**Day.**" A calendar day, unless otherwise specified.

M. "**Differing Site Conditions.**" (1) Subsurface or latent physical conditions at the site which differ materially from those indicated in the Contract Documents (Type I), or (2) Unknown physical conditions at the Site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inherent in the construction activities of the character provided for in the Contract (Type II).

N. "**Engineer**." The City representative who administers the Contract for the City.

O. "**Final Acceptance.**" Written acceptance of the Project by City.

P. "**Force Majeure.**" An event that is unforeseeable at the time of Contract Execution and that is beyond the reasonable control of the Contractor and City and includes:

1. Natural Disaster declared by Governor of Washington or President of the United States, including but not limited to earthquakes;
2. Acts or omissions of any government entity acting within its governmental capacity;
3. Fire and/or flood for which the Contractor or its Subcontractors is not responsible;
4. Quarantine or epidemic;
5. Strike or defensive lockout;
6. Unusually Severe Weather Conditions; and
7. Acts of terrorism.

Q. "**Hazardous Material.**" Any pollutant, contaminant, toxic or hazardous waste, dangerous substance, potentially dangerous substance, noxious substance, toxic substance, flammable material, explosive material, radioactive material, urea formaldehyde foam insulation, asbestos, PCBs, or any other substances the removal of which is required, or the manufacture, preparation, production, generation, use, maintenance, treatment, storage, transfer, handling, or shipment of which is restricted, prohibited, regulated, or penalized by any and all federal, state, City, or municipal statutes or laws and regulations promulgated thereunder, now or at any time hereafter in effect, including, but not limited to, the Comprehensive Environmental Response, Compensation, and Liability Act (42 U. S. C. §§ 9601, *et seq.*), the Hazardous Materials Transportation Act (49 U. S. C. §§ 1801, *et seq.*), the Resource Conservation and Recovery Act (42 U. S. C. §§ 6901, *et seq.*), the Federal Water Pollution Control Act (33 U. S. C. §§ 1251, *et seq.*), the Clean Air Act (42 U. S. C. §§ 7401, *et seq.*), the Toxic Substances Control Act, as amended (15 U. S. C. §§ 2601, *et seq.*), the Occupational Safety and Health Act (29 U. S. C. §§ 651, *et seq.*, and the Model Toxics Control Act (RCW 70.105), or similar state or local statute or code), as the laws have been amended and supplemented.

R. "**City**" or "**Owner**" may be used interchangeably and refer to the City of Mercer Island.

S. "**Notice.**" A written document issued by the Engineer or Contractor's Representative which is submitted to the other party and delivered by:

1. Depositing in the U. S. Mail (or other method of commercial express mail), which notice shall be effective on the date of receipt;

2. Service on the Parties' representative or at the Contractor's home office or field office, which notice shall be effective on the date of service; or,

3. Facsimile to the Parties' representative or Contractor's home office or field office, which notice shall be effective upon receipt.

T. "**Notice To Proceed.**" A written directive issued by City authorizing the Contractor to perform some or all of the Work.

U. "**Overhead.**" Charges that may be incurred or allocated in support of the Contract but are not part of the cost of directly performing the physical Contract construction activity. Overhead includes Site or Field Overhead and Home Office Overhead.

1. **Site or Field Office Overhead**

   Site or Field Overhead costs are typically those costs that are related to, but are not limited to supervision, including general foremen and their supervisors, planners, schedulers, engineers, managers, etc. and the direct payroll costs of their project-related service, clerical salaries and their direct payroll costs, the costs of all vehicles, travel, meal and lodging costs associated with those personnel, Site or Field office and utility expense, expenses associated with all regulatory compliance, Hand and Other Small Tools provided by the Contractor for the use of its forces, all expendable supplies, and all other items incidental to or integral in supporting the physical completion of the Work.

2. **Home Office Overhead**

   Home office Overhead costs are typically those that include all general office expenses. Such costs include, but are not limited to those associated with officer and office salaries and related payroll taxes and benefits, costs of office occupancy and maintenance, all supporting services (such as utilities, office machines computers, and related items and support) related to the home office function, business taxes and licenses, and all such other costs necessary to operate the business entity. Home office overhead includes unabsorbed home office overhead.

3. In addition to the above, whether treated as Site or Field Overhead or as Home Office Overhead, costs of any and all bonds, insurance(s), and taxes associated with this Contract are to be considered as Overhead. All items as those identified above are to be treated as Overhead for this purpose regardless of how the Contractor chooses to account for them in its books of account.

4. Under no circumstances shall City pay the Contractor for direct or allocated costs or charges for officer bonus and profit sharing, project personnel bonuses, charitable contributions, income taxes, or any costs relating to illegal activity.

V. **"Parties.**" The Contractor and City.

W. "**Project.**" All activity relative to this Contract including activity of the Contractor, its Subcontractors, and City.

X. "**Request for Change Order.**" A document, designated as a Request for a Change Order, prepared by the Contractor requesting either (1) a change in Contract Price; (2) a change in Contract Time; (3) a change in t Work; (4) a payment of money or damages; and/or, (5) any other relief arising out of or relating to this Contract.

Y. "**Request for Information.**" A request from the Contractor to City seeking an interpretation or a clarification of some requirement of the Contract Documents.

Z. "**Site**" or "**Project Site.**" The location, at which construction, equipment or services furnished by the Contractor under the Contract will be performed, completed and/or delivered.

AA. "**Subcontractor.**" An individual, firm, partnership, or corporation having a contract, purchase order, or agreement with the Contractor, or with any Subcontractor of any tier for the performance of any part of the Contract. When City refers to Subcontractor(s) in this document, for purposes of this document and unless otherwise stated herein, the term Subcontractor(s) includes, at every level and/or tier, all subcontractors and subconsultants.

BB. "**Supplier(s).**" Any person or firm who is not performing work or supplying labor on Site and is engaged in the business of supplying a manufactured product or resource to City, Contractor, or Subcontractors. The term Suppliers includes materialmen, manufacturers, and fabricators.

CC. "**Substantial Completion.**" That stage in the progress of the Work where:

1. City has full and unrestricted use and benefit of the Project for the purpose intended;
2. All the systems and parts of the Contract Work are functional;
3. Utilities are connected and operate normally;
4. Only minor incidental work or correction or repair remains to complete all Contract requirements; and
5. The City has received all certificates of occupancy and any other permits, approvals, licenses and other documents from any governmental authority with jurisdiction necessary for beneficial occupancy of the project.

1.2 INTENT AND INTERPRETATION OF THE DOCUMENTS

A. The Contract Documents constitute the entire and integrated agreement between the parties hereto and supersede all prior negotiations, representations, or agreements, either written or oral.

B. The Contract Documents shall not be construed to create a contractual relationship between any parties other than City and the Contractor. No contract between City and a third party shall be construed to create any duty on the part of City or such third party to the Contractor. The Contractor is not an intended or incidental beneficiary of any promises made in City's contract with a third party, if any.

C. The Contract Documents are intended to be complementary. What is required by one part of the Contract shall be as binding as if required by all. Should any conflict or inconsistency be found in the Contract Documents, the provision imposing the more expensive duty or obligation on the Contractor shall take precedence.

D. The words “similar,” “typical” (or other equivalents) shall mean nearly corresponding or having a likeness. Such words shall not be construed to mean that all parts of the Work referred to are identical or substantially identical, or that such elements of the Work are connected identically or substantially identically to the rest of the Work. The Contractor has the responsibility to determine all details of the Work in relation to their location and connection to other parts of the Work. The singular includes the plural and vice versa. Male includes female and vice versa.

E. The organization of the specifications into divisions, provisions and articles and the organization of the drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

1.3 CLARIFICATION OF DRAWINGS AND DETAIL DRAWINGS

A. Where on any drawing a portion of the Work is drawn out and the remainder is indicated in outline, the drawn out parts shall apply also to other similar portions of the Work. Where ornament or other detail is indicated by starting only, such detail shall be continued throughout the courses or parts in which it occurs and shall apply to all other similar parts of the Work, unless otherwise indicated.

B. With regard to drawings the following shall apply:

1. Written dimensions shall be followed; drawings may not be to scale.
2. Figure dimensions on drawings shall govern over scale dimensions; and detail drawings shall govern over general drawings.

ARTICLE 2: CITY

2.1 AUTHORITY

A. Unless City, in writing, indicates otherwise, the authority to (1) commit to or bind City to any Change Orders or change in the Work, Contract Price and/or Contract Time; or (2) sign the Contract or Change Orders rests solely in the City Manager or his or her designee.

B. The Engineer shall have the authority to administer the Contract. Administration of the Contract by the Engineer includes but is not limited to:

1. Receiving all correspondence and information from the Contractor;
2. Issuing request for Change Proposals;
3. Responding to Requests For Information;
4. Reviewing the schedule of values, project schedules, submittals, testing and inspection reports, substitution requests, and other documentation submitted by the Contractor;
5. Negotiating Change Proposals and Change Orders;
6. Recommending Change Orders for approval by the City Manager or its designee;
7. Issuing decisions with respect to Requests for Change Orders and Claims;
8. Processing payment requests submitted by the Contractor, and recommending payment;

9. Monitoring the quality of the Work, rejecting noncompliant Work, and recommending acceptance of the Work;

10. Transmitting executed Change Orders, amendments, and other Contract correspondence to the Contractor; and

11. Performing all other contract administrative functions.

C. All correspondence, questions, and/or documentation shall be submitted to the Engineer.

D. The Engineer may designate representatives to perform functions under the Contract, such as review and/or inspection and acceptance of supplies, services, including construction, and other functions of a technical or administrative nature.

2.2 INFORMATION SUPPLIED BY CITY

A. Unless otherwise specifically provided in the Contract, surveys and site information provided by City are intended to describe the general physical characteristics of the Site. City does not represent that this information is complete or sufficient for the Contractor's performance of the Work.

B. City shall furnish to the Contractor a copy of the Contract Documents. The Contractor shall pay City for any additional copies of Contract Documents.

2.3 WORK BY CITY OR SEPARATE CONTRACTORS

City reserves the right to perform work not included in the Contract or to let other contracts in connection with this Project. The Contractor shall coordinate its Work with City and other City contractors and, at City's request, participate in meetings for the purpose of coordinating the Contractor's construction schedule with those of other contractors at no additional cost to City.

ARTICLE 3: CONTRACTOR

3.1 CONTRACTOR REPRESENTATIONS

The Contractor makes the following representations to City:

A. Before submission of its bid, the Contractor has:

1. Carefully reviewed the Contract Documents, and visited and examined the Site;

2. Become familiar with the general and local conditions in which the Work is to be performed, and satisfied itself as to the nature, location, character, quality and quantity of Contract Work, the labor, materials, equipment, goods, supplies, work, services and other items to be furnished and all other requirements of the Contract Documents, as well as the surface and reasonably ascertainable subsurface conditions and other matters that may be encountered at the Site or affect performance of the Work or the cost or difficulty thereof;

3. Become familiar with and satisfied itself as to the conditions bearing upon transportation, disposal, handling, and storage of materials; and

4. Become familiar with and satisfied itself as to the availability of labor, water, electric power, and roads; and the uncertainties of access, traffic, parking and weather. Any failure of the Contractor to take the action described in this provision (3.0) or elsewhere in the Contract Documents will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of

successfully performing the Work, or for proceeding to successfully perform the Work without additional expense to City.

B. The Contract Price is reasonable compensation for the Work and the Contract Time is adequate for the performance of the Work as represented by the Contract, site visit, and the general conditions (including but not limited to weather, site, soil) known or reasonably anticipated for the Site.

3.2 GENERAL DUTIES

A. The Contractor shall give sufficient supervision to the Work, using its best skill and attention. The Contractor is on notice that City will be relying on the accuracy, competence and completeness of the Work. The Contractor shall supervise and be solely responsible for the proper performance of the Work in accordance with the Contract, including the construction means, methods, techniques, sequences, procedures, and for coordination of all portions of the Work.

B. Unless specified elsewhere in the Contract, the Contractor shall provide and pay for all labor, materials, equipment, tools, construction machinery, utilities, transportation, and other facilities and services (including federal and state tax, industrial insurance, social security liability and all other applicable taxes) necessary for the proper execution and completion of the Work.

C. The Contractor shall also provide sufficient staffing and supervision to process Requests for Information, Change Proposals, Submittals, Change Orders, close out documentation, and to perform all other requirements of the Contract and all Work.

D. The Contractor shall lay out its Work from baselines and benchmarks indicated in the Contract, if any, and shall be responsible for the accuracy of all field measurements and surveys used in the lay out.

3.3 DUTY TO INSPECT CONTRACT DOCUMENTS

A. The Contractor shall carefully study and compare all Contract Documents and check the conditions, dimensions, and instructions as stated therein. Contractor will not be required to provide professional services which constitute the practice of architecture and engineering except to the extent provided for in the technical specifications and drawings.

B. The Contractor shall immediately notify City in writing of any:

1. Error, inconsistency, or omission in the Contract Documents that a reasonable contractor knew or through the exercise of reasonable diligence should have discovered under the same and similar circumstances;

2. Requirement in the Contract Documents that conflict with any local, state, and federal laws, regulations and/or permits, licenses, and easement conditions that a reasonable contractor knew or through the exercise of reasonable diligence should have discovered under the same and similar circumstances.

C. The Contractor should not proceed with the work in question until the Contractor receives written direction from the Engineer.

D. If the Contractor proceeds with the work in question without written direction from the Engineer, the Contractor shall be responsible for any costs or damages associated with:

1. Fines or penalties;
2. Demolition, tear out, removal, cleanup, remediation, or fixing the work in question; and
3. Delay, disruption, and loss of productivity.

3.4 CONTRACTOR'S SUPERVISION AND EMPLOYEES

A. Contractor shall provide qualified and competent people to administer the contract and perform all the Work.

B. During performance of the Work the Contractor shall have supervisory personnel on-site and available to administer, manage and coordinate the Work. City shall not be responsible for the acts or omissions of the supervisory personnel or their assistants.

C. The Contractor shall at all times enforce good order among all persons furnishing labor or materials on-site and shall only employ workers skilled in the work assigned. If requested by the Project Representative, Contractor shall provide the Project Representative with copies of licenses, registrations, and certifications.

1. City shall have the right to require the Contractor to remove personnel from the Site that do not have the appropriate qualifications and experience to meet or uphold the requirements of the Contract. City shall also have the right to order the Contractor to replace personnel who demonstrate unprofessional behavior.
2. Failure by City to require removal of any Contractor personnel shall not be deemed an admission that any such personnel are satisfactory, nor shall such failure relieve the Contractor from any contractual responsibility.

3.5 SUBCONTRACTORS AND SUPPLIERS

A. This Contract is between City and the Contractor.

1. The Contractor's subcontracting shall not create a contract between City and the Subcontractor and Suppliers. Subcontractors and Suppliers are not intended as incidental third party beneficiaries to the Contract. The Subcontractor and Suppliers shall have no rights against City by reason of their agreements with the Contractor.
2. The Contractor is responsible for performing all work required by the Contract. The Contract has not been written with the intent of, and City shall not be a party to, defining the division of work between the Contractor and its Subcontractors and Suppliers.

B. **Selection of Subcontractors and Suppliers**

1. Subcontractors and Suppliers shall be properly licensed, registered or certified, as applicable, and capable to perform the assigned work.
2. If requested by City, the Contractor shall provide documentation that the proposed Subcontractors and Suppliers have adequate experience and skill.
3. The Contractor shall require each Subcontractor and Supplier to comply with all provisions of this Contract. At the request of Subcontractors or Suppliers, Contractor shall make available for copying all Contract Documents.

C. **Responsibility for Work of Subcontractors and Suppliers**

The Contractor shall be responsible for the acts and omissions of Subcontractors and Suppliers. The Contractor shall also be responsible for the suitability of any materials, components, equipment or supplies furnished by a Subcontractor and/or Supplier irrespective of whether such were designated or approved by City.

3.6 SCHEDULE OF WORKING HOURS

A. As specified in the Contract, the Contractor shall submit a schedule of working hours, including overtime to City for acceptance. This schedule shall comply with all Contract requirements. Except as permitted elsewhere in the Contract Documents or in the case of an emergency, all Work at the Site shall be performed between the hours of 7am and 6 pm Monday through Friday.

B. The schedule of working hours accepted by City shall be the only schedule used by the Contractor during performance of the Contract, unless amended to maintain Work progress.

C. The Contractor shall provide 48 hours advance written Notice of any intent to work outside of approved working hours. Any work at the Site performed outside approved working hours shall be performed without additional expense to City, except as otherwise provided in the Contract Documents. Contractor shall comply with Mercer Island Code Section 8.24.020 (Q) which prohibits construction related noise outside designated hours except in cases of emergency or demonstrated necessity.

3.7 RECORD DOCUMENTS

A. The Contractor shall maintain an accurate, readable, and orderly set of drawings and specifications, updated as the job progresses to show all approved changes, options, alternates, and all actual deviations from the original Contract Documents. This set of drawings and specifications shall be the Record Documents.

1. The Record Documents shall be maintained in hard copy.

2. In addition to all approved changes, options, alternates, and all actual deviations from the original Contract Documents, the Record Documents shall be marked as follows:

   a. Record all materials used where options, alternates and/or change orders were indicated, specified and/or authorized;

   b. Accurate measurements referenced as required by the technical specifications shall be recorded to show the exact location and changes in direction of all underground services and utilities, as well as their depth below finished grade; and

   c. Record all other requirements as specified in the Technical Specifications.

B. The Record Documents shall be kept up-to-date and be available for review by City at all times, including but not limited to at each job progress meeting. Failure to have the record set up-to-date shall be sufficient reason for City to withhold payment in accordance with paragraph 7.2, *Payments Withheld*, until all such information is recorded.

C. Record Documents may be used to assist City to verify the appropriate progress payment.

D. Neither Final Acceptance nor Final Payment will be issued until a complete set of Record Documents is submitted and the Engineer is satisfied as to its quality and accuracy.

3.8 COST RECORDS

A. The Contractor, Subcontractors, and Suppliers shall maintain Project cost records by cost codes and shall segregate and separately record at the time incurred all costs (1) directly associated with each work activity and (2) directly or indirectly resulting from any event or condition for which the Contractor seeks an adjustment in the Contract Price, Contract Time, and/or damages.

1. Any costs claimed to result from any such event or condition, including, but not limited to, delay and impact costs, acceleration costs, loss of productivity or efficiency, and increased or extended overhead shall be recorded at the time incurred and be fairly and reasonably allocated to each such event or condition and to other causes of such costs.

2. City shall be provided with a detailed description of all such costs and the basis of allocation. The Contractor, Subcontractors, and Suppliers shall maintain a monthly summary of all costs and shall make all underlying cost records and monthly summary of costs available for review, inspection, and copying by City upon request.

3. Any work performed for which the Contractor intends to seek an adjustment in Contract Price and/or Contract Time shall be recorded on the same day the work is performed and kept separate so as to distinguish it from Contract Work.

B. In addition to the requirements set forth in Article 5, *Changes to the Contract*, and Article 6, *Time and Price Adjustments*, the Contractor shall be entitled to extra compensation for an event or condition and/or the recovery of damages only to the extent that the Project cost records are kept in full compliance with all Contract requirements and the cost allocations support entitlement to such compensation.

3.9 MAINTENANCE AND INSPECTION OF DOCUMENTS

A. All Contractor's, Subcontractors', and Suppliers' documents and records relating to the Contract shall be open to inspection, audit, and/or copying by City or its designee:

1. During the Contract Time; and

2. For a period of not less than six years after the date of Final Acceptance of the Contract ("Preservation Period"); or if any Claim, audit or litigation arising out of, in connection with, or related to this Contract is initiated, all documents shall be retained until such Claim, audit or litigation involving the records is resolved or completed, whichever occurs later.

B. The Contractor shall also guarantee that all Subcontractor and Supplier documents shall be retained and open to similar inspection, audit and/or copying during the Contract Time and also the Preservation Period. The Contractor, Subcontractor, and Supplier shall use its best efforts to cooperate with the inspection, auditing, and/or copying.

C. Inspection, audit, and/or copying of all documents described herein, may be performed by City or its designee at any time with not less than seven (7) days' Notice. Provided however, if an audit or inspection is to be commenced more than sixty (60) days after the Final Acceptance date of the Contract, the Contractor will be given twenty (20) days' Notice of the date of the audit.

D. The Contractor, Subcontractors, and Suppliers shall provide adequate facilities, acceptable to City, for inspection, auditing, and/or copying during normal business hours.

E. If the Contractor is formally dissolved, assigns or otherwise divests itself of its legal capacity under this Contract, then it shall immediately notify City and preserve such records, at its expense, as directed by City.

F. The Contractor, Subcontractor, and Supplier, shall be subject to audit at any time with respect to this Contract. Failure to maintain and retain sufficient records to allow City to verify all costs or damages or failure to permit City access to the books and records shall constitute a waiver of the rights of the Contractor Subcontractor and Supplier to Claim or be compensated for any damages, additional time or money under this Contract.

G. At a minimum, the following documents, including the machine readable electronic versions, shall be available for inspection, audits, and/or copying:

1. Daily time sheets and all daily reports, Supervisor's reports, and inspection reports;
2. Collective bargaining agreements;
3. Insurance, welfare, and benefits records;
4. Payroll registers;
5. Earnings records;
6. All tax forms, including payroll taxes;
7. Material invoices and requisitions;
8. Material cost distribution worksheet;
9. Equipment records (list of Contractor's, Subcontractors', and Suppliers' equipment, rates, etc.);
10. Contracts, purchase orders and agreements between the Contractor and each Subcontractor and Supplier;
11. Subcontractors' and Suppliers' payment certificates;
12. Correspondence, including email, with Subcontractors and/or Suppliers;
13. All meeting notes by and between Contractor, Subcontractors, Suppliers and/or any third parties related to the Project;
14. Canceled checks (payroll and vendors);
15. Job cost reports, including monthly totals;
16. Job payroll ledger;
17. Certified payrolls;

18. General ledger;
19. Cash disbursements journal;
20. Take off sheets, and calculations used to prepare the bid and/or quotes;
21. Take off sheets, calculations, quotes, other financial data to support change proposals, request for change order and/or claims;
22. Financial statements for all years during the Contract Time. In addition, City may require, if it deems appropriate, additional financial statements for 3 years preceding execution of the Contract and 6 years following Final Acceptance of the Contract;
23. Depreciation records on all Contractor's, Subcontractor's, and Supplier's equipment, whether these records are maintained by the Contractor, Subcontractors, and Suppliers involved, its accountant, or others;
24. If a source other than depreciation records is used to develop costs for the Contractor's internal purposes in establishing the actual cost of owning and operating equipment, all such other source documents;
25. All documents which relate to each and every Claim together with all documents which support the amount of damages as to each Claim;
26. Worksheets or software used to prepare the Claim establishing the cost components for items of the Claim including but not limited to labor, benefits and insurance, materials, equipment, Subcontractors, Suppliers, all documents which establish time periods, individuals involved, the hours for the individuals, and the rates for the individuals;
27. Worksheets, software, and all other documents used (a) by the Contractor to prepare its bid and schedule(s) and/or (b) to prepare quotes and bids to the Contractor;
28. All schedule documents, including electronic versions, planned resource codes, or schedules and summaries;
29. All submittals; and
30. All other documents, including email, related to the Project, Claims, or Change Orders.

H. The Contractor shall mark any documentation it considers proprietary or confidential accordingly. Such information will be treated as such by City; however, City cannot ensure that this information will not be subject to release pursuant to a public records request. In the event City receives a request for such information, City will advise the Contractor and will not release the requested information for a period of not less than ten (10) days in order to give the Contractor an opportunity to obtain a court order prohibiting the release of the information in response to the public records request.

3.10 MAINTENANCE AND SITE CLEANUP

A. The Contractor shall at all times keep the Site, access points, and public rights-of-way free from accumulation of dirt, mud, waste materials or rubbish caused by the Contractor or Subcontractors. At the completion of the Contract Work, the Contractor shall remove and lawfully dispose of all its dirt, mud, waste materials,

rubbish, tools, scaffolding and surplus or partly used materials from the Site and shall leave the Site broom clean unless some stricter standard is specified in the Contract.

B. The Contractor shall obey all applicable laws and regulations relating to the storage, use, and disposal of Hazardous Materials. The Contractor shall promptly notify City of all Contractor or Subcontractor caused spills or releases of Hazardous Materials, and pay the cost to promptly clean up all such spills or releases and any associated fines or penalties. The Contractor shall maintain documentation of the clean up and disposal all Contractor or Subcontractor caused spills or releases of Hazardous Materials.

C. If the Contractor fails to adequately maintain or cleanup the Site, City may, after written Notice to the Contractor, sweep surfaces or remove the dirt, mud, waste materials, rubbish, or hazardous materials and charge all reasonable costs of such work to the Contractor.

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

A. Contractor shall protect from damage all existing structures, curbs, gutters, sidewalks, equipment, improvements, utilities, trees, and vegetation not shown in the Contract Documents to be removed or modified at or near the Site. Contractor shall repair, at no cost to City, any such damage resulting from failure to comply with the requirements of the Contract or failure to exercise reasonable care in performing the Work. If Contractor fails or refuses to repair the damage promptly, City may have the necessary work performed and deduct or charge the cost to Contractor or exercise its rights under the Performance and Payment Bond. If there are insufficient funds remaining, excluding retention, the Contractor shall pay City for the costs associated with protection and repairing the damages.

3.12 PERMITS, LAWS, REGULATIONS AND TAXES

A. Except those permits, easements, and variances specified in the Contract as having been previously obtained by City, all permits, licenses, easements and variances necessary for the execution of the Work shall be secured and paid for by the Contractor. The Contractor shall identify, apply for, and pay for such permits and licenses at the earliest possible time so as to avoid any delay to the Work arising from the permitting and/or licensing process. No actions taken by City to aid the Contractor in securing any permit or license shall relieve the Contractor of any obligations to secure any such permit or license.

B. The Contractor shall maintain all stamped permit sets of documents at the Site during construction, in good condition and as required by local ordinances.

C. The Contractor shall perform the Work in full compliance with local, state and federal laws, ordinances, resolutions and regulations, and with permit, license, easement, and variance conditions pertaining to the conduct of the Work. The Contractor shall defend, indemnify, and hold City, its elected officials, officers, agents and employees harmless from any assessment of fines, penalties, or damages arising from violations of the same by the Contractor or Subcontractors. The Contractor shall pay and provide proof of payment for any assessments of fines, penalties or damages. The Contractor shall cooperate with all governmental entities regarding inspection of the Work and compliance with such requirements.

D. The bid form may include a line item for sales tax on the whole amount, or on items which are not exempt from tax under Washington State Department of Revenue rules, including WAC 458-20-170 and WAC 458-20-171. Unless there are separate line items in the bid form for Washington State sales tax, Contractor shall include all sales tax in its lump sum bid or unit prices. The Contractor should contact the Washington State Department of Revenue for answers to questions in this area. The City will not adjust its payment if the Contractor bases a bid on a misunderstood tax liability. Except as provided above, the Contractor is required to pay all applicable taxes. No adjustment will be made in the amount to be paid by City under the Contract because of any change in law or regulations covering any applicable taxes, or because of any misunderstanding by the Contractor as to its liability for or the amount of any taxes.

3.13 PATENTS AND ROYALTIES

A. The Contractor shall assume all costs or fees relating to royalties or claims for any patented invention, article, process or method that may be used upon or in a manner connected with the Work under this Contract or with the use of completed Work by City.

3.14 CONTRACTOR'S CERTIFICATION

A. Conflict of Interest

The Contractor certifies (and shall require each Subcontractor to certify) that it has no direct or indirect pecuniary or proprietary interest, and that it shall not acquire any such interest, which conflicts in any manner or degree with the work, services or materials required to be performed and/or provided under this Contract and that it shall not employ any person or agent having any such interest. In the event that the Contractor or its agents, employees or representatives acquires such a conflict of interest, the Contractor shall immediately disclose such interest to City and take action immediately to eliminate the conflict or to withdraw from this Contract, as City may require.

B. Contingent Fees and Gratuities

The Contractor, by entering into this Contract with City to perform or provide work, services or materials, has thereby covenanted:

1. That no person or selling agency except bona fide employees or designated agents or representatives of the Contractor has been or will be employed or retained to solicit or secure this Contract with an agreement or understanding that a commission, percentage, brokerage, or contingent fee may be paid; and

2. That no gratuities, in the form of entertainment, gifts or otherwise, have been or will be offered or given by the Contractor or any of its agents, employees or representatives, to any official member or employee of City or other governmental agency with a view toward securing this Contract or securing favorable treatment with respect to the awarding or amending thereof, or the making of any determination with respect to the performance of this Contract. The Contractor certifies that it has not made any contributions to any person or entity as a condition of doing business with City and it has disclosed to City all attempts by any person to solicit such payments.

3.15 DEVIATION FROM CONTRACT

A. The Contractor shall not make an alteration, variation, addition, deviation, or omission from the requirements of the Contract Documents without the prior written consent of the Engineer.

B. Any alteration, variation, addition, deviation, or omission by the Contractor shall not result in any extra compensation or extension of time.

3.16 OPERATIONS, MATERIAL HANDLING, AND STORAGE AREAS

A. **Temporary Buildings and Utilities**

Temporary buildings (including storage sheds, shops, and offices) and utilities may be erected by Contractor on the Site only with the consent of City and without expense to City. The temporary buildings and utilities shall remain the property of Contractor and shall be removed by the Contractor at its expense upon completion of the Work.

B. **Disposal/Removal of Materials**

The Contractor shall be responsible for compliance with all laws governing the storage and ultimate disposal of all materials and components. The Contractor shall provide City with a copy of all manifests and receipts evidencing proper disposal when required by City or applicable law.

C. **Protection and Care of Contractor's Materials and Equipment**

The Contractor shall be responsible for the proper care and protection of its materials and equipment delivered to the Site. Materials and equipment may be stored on the Site at the Contractor's own risk and with prior written approval from City. When the Contractor uses any portion of the Site as a shop, the Contractor shall be responsible for any repairs, patching, or cleaning arising from such use and for obtaining any necessary permits to establish such shop or temporary storage facilities.

3.17 CONTRACTOR'S OVERALL RESPONSIBILITY FOR PROTECTION OF WORK, PROPERTY, AND PERSONS

A. The Contractor shall be responsible for conditions of the Site, including safety of all persons and property, during performance of the Work. The Contractor shall maintain the Site and perform the Work in a manner which meets all statutory and common law requirements or other specific contractual requirements for the provision of a safe place to work and which adequately protects the safety of all persons and property on or near the Site. This obligation shall apply continuously and shall not be limited to normal working hours. City's inspection of the Work or presence at the Site does not and shall not be construed to include review of the adequacy of the Contractor's safety measures in, on or near the site of the Work.

B. The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs, including adequate safety training, in connection with the Work. The Contractor shall comply with all applicable laws, ordinances, rules, regulations and lawful orders of any public authority bearing on the safety of persons or property or their protection from damage, injury or loss.

C. The Contractor shall protect and be responsible for any damage or loss to the Work or to the materials and equipment associated with the Work until the date of

Substantial Completion. The Contractor remains responsible for any damage or loss caused directly or indirectly by the acts or omissions of the Contractor, Subcontractors, Suppliers, or third parties authorized or allowed on the Site by the Contractor until Final Acceptance.

D. The Contractor shall also be solely and completely responsible for damages arising from the Work that affect property adjacent to the Site.

E. The Contractor shall repair or replace without cost to City any damage or loss that may occur, except damages or loss caused by the acts or omissions of City.

F. The Contractor shall erect and maintain adequate steel plates, signs, fencing, barricades, lights or security measures and persons to protect the Work until the Engineer authorizes in writing the removal of signs, fencing, barricades, lights or security measures.

G. The Contractor shall conduct all operations with the least possible obstruction and inconvenience to the public. To disrupt public traffic as little as possible, the Contractor shall permit traffic to pass through the Project Site with the least possible inconvenience or delay. The Contractor shall maintain existing roads, streets, sidewalks and paths within the Project Site, keeping them open and in good, clean, safe condition at all times.

3.18 PROTECTION OF PERSONS

A. The Contractor shall take all reasonable precautions for the safety of all employees working on this Contract and all other persons who may be affected by such Work. The Contractor shall designate a responsible member of its organization at the Site whose duty shall be to manage and coordinate the safety programs and to prevent accidents of the Contractor and Subcontractors.

B. Except as otherwise stated in the Contract, if the Contractor encounters, on the Site, material reasonably believed to be Hazardous Material that Contractor shall immediately stop work in the area affected and give Notice of the condition to City. Work in the affected area shall not be resumed without written direction by City.

C. To protect the lives and health of persons performing work under this Contract, the Contractor shall comply with the Federal Occupational Safety and Health Act of 1970 (OSHA), including all revisions, amendments and regulations issued thereunder, and the provisions of the Washington Industrial Safety Act of 1973 (WISHA), including all revisions, amendments and regulations issued thereunder by the Washington State Department of Labor and Industries including, without limitation, all excavation, tunneling, trenching and ditching operations. In case of conflict between any such requirements, the more stringent regulation or requirement shall apply. There is no acceptable deviation from these safety requirements, regardless of practice in the construction industry. Any violation of OSHA, WISHA or other safety requirements applicable to the Work may be considered a breach of this Contract.

3.19 SAFETY PROGRAM

The Contractor shall prepare and maintain a written site specific “Safety Program” demonstrating the methods by which all applicable safety requirements of this Contract will be met. The Contractor shall ensure its Subcontractors and Suppliers have a written “Safety Program” or formally adopt the Contractor’s site specific “Safety Program.” The

Contractor shall conduct a weekly safety meeting with all Subcontractors and others on the Site to discuss general and specific safety matters.

3.20 ARCHAEOLOGICAL AND HISTORICAL PRESERVATION

The Contractor shall comply fully with the requirements set forth in Chapter 27.53 RCW entitled Archaeological Sites and Resources. The Contractor shall immediately notify the City if any artifacts, skeletal remains or other archaeological resources (as defined under RCW 27.53.040 now and as hereinafter amended) are unearthed during excavation or otherwise discovered on the Site.

3.21 WATER POLLUTION CONTROL REQUIREMENTS

The Contractor shall comply with and be liable for all penalties, damages and violations under Chapter 90.48 RCW including any regulations issued pursuant thereto in the performance of the Work.

3.22 EASEMENTS

If the Contractor makes arrangements for use of additional public and/or private property, the Contractor, prior to using such property, shall provide the Engineer with written permission of the landowner, or duly authorized agent of such landowner, for such use.

3.23 TITLE VI / NONDISCRIMINATION ASSURANCES

During the performance of this contract, the contractor/consultant, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. **Compliance with Regulations**
   The contractor shall comply with the Regulations relative to non-discrimination in federally assisted programs of United States Department of Transportation (USDOT), Title 49, Code of Federal Regulations, part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.

2. **Non-discrimination**
   The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, sex, or national origin in the selection and retention of sub-contractors, including procurement of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

3. **Solicitations for Sub-contracts, Including Procurement of Materials and Equipment**
   In all solicitations either by competitive bidding or negotiations made by the contractor for work to be performed under a sub-contract, including procurement of materials or leases of equipment, each potential sub-contractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to non-discrimination on the grounds of race, color, sex, or national origin.

4. **Information and Reports**
   The contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records,

accounts, other sources of information, and its facilities as may be determined by the contracting agency or the appropriate federal agency to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information, the contractor shall so certify to WSDOT or the USDOT as appropriate, and shall set forth what efforts it has made to obtain the information.

5. Sanctions for Non-compliance

In the event of the contractor's non-compliance with the non-discrimination provisions of this contract, the contracting agency shall impose such contract sanctions as it or the USDOT may determine to be appropriate, including, but not limited to:

- Withholding of payments to the contractor under the contract until the contractor complies, and/or,
- Cancellation, termination, or suspension of the contract, in whole or in part.

6. Incorporation of Provisions

The contractor shall include the provisions of paragraphs (1) through (5) in every sub-contract, including procurement of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The contractor shall take such action with respect to any sub-contractor or procurement as the contracting agency or USDOT may direct as a means of enforcing such provisions including sanctions for non-compliance.

Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a sub-contractor or supplier as a result of such direction, the contractor may request WSDOT enter into such litigation to protect the interests of the state and, in addition, the contractor may request the USDOT enter into such litigation to protect the interests of the United States.

ARTICLE 4: ADMINISTRATION OF THE CONTRACT

4.1 TIME OF ESSENCE

All time requirements set forth in the Contract Documents are of the essence.

4.2 WORK PROGRESS

A. The Contractor shall be required to:

1. Prosecute the Work diligently with adequate forces;
2. Plan, coordinate, and layout the Work in advance so as to avoid delay; and
3. Achieve Substantial Completion of the Work and Final Acceptance in accordance with the requirements of Contract Documents.

4.3 SCHEDULE OF VALUES

A. Unless otherwise specified, within fourteen (14) days after the date of Contract Execution, the Contractor shall submit to City a detailed Schedule of Values that identifies the various activities of the Work and their values and quantities, including the overhead and profit for each activity. The Contractor warrants that the values identified in its Schedule of Values accurately reflect the value of each work activity. The Schedule of Values shall be used as a basis for calculating all Progress

Payments. Payment for Contract Work shall be made only for and in accordance with those activities identified in the Schedule of Values.

B. The Contractor shall not be entitled to, nor shall City be required to make, payment for any Contract Work until the Schedule of Values has been accepted by City. Such acceptance shall not be unreasonably withheld.

C. City shall review and accept the Schedule of Values or provide the Contractor with a written explanation of why the Schedule of Values was not acceptable. City shall use reasonable efforts to review the Schedule of Values within thirty (30) days of City's receipt of the Contractor's submittal of its Schedule of Values. City's acceptance of the Schedule of Values shall not relieve the Contractor from its sole responsibility for the accuracy of the Schedule of Values and its compliance with all Contract requirements. The Contractor shall revise the Schedule of Values as necessary to accurately reflect Change Orders.

D. Each Application for Payment shall include a current status of the Schedule of Values. No Application for Payment will be considered until the current status of the Schedule of Values has been submitted and accepted.

E. The activities, which the Contractor identifies within its Schedule of Values, shall be specifically referenced within, and conform and be consistent with the activities set forth within the Project Schedule.

4.4 PROJECT SCHEDULE

A. Unless otherwise specified, within fourteen (14) days after the date of Contract Execution, the Contractor shall submit to City a Project Schedule. The Project Schedule shall show the sequence in which the Contractor proposes to perform the Work, indicate the Critical Path, identify the dates on which the Contractor proposes to start and finish the scheduled activities of the Contract Work, indicate Substantial Completion within the Contract Time, indicate a date for Final Acceptance, and meet all the requirements as may be set forth in the Contract Documents.

B. Within thirty (30) days of City's receipt of the Contractor's submittal of its Project Schedule or unless stated elsewhere in the Contract, City shall review the Project Schedule and provide the Contractor with written comments. City will review the Project Schedule only to determine whether the Project Schedule meets the requirements in the Technical Specifications on Project Schedule. To the extent the Project Schedule does not meet such Technical Specifications, the Contractor shall revise the Project Schedule to make it compliant.

C. By reviewing the Project Schedule and providing written comments, City is not approving or adopting the Contractor's plan, schedule, means, methods, techniques, sequences, or procedures required to perform the Work. Review and comment by City of the Project Schedule shall not relieve the Contractor from the sole responsibility for the accuracy of a Project Schedule, and its compliance with all Contract requirements, and its responsibility to meet all required Contract completion dates. Failure by City to indicate items on the Project Schedule that do not conform with the Contract requirements shall not alter or waive the Contract requirements or relieve the Contractor from complying with all Contract requirements.

D. The Contractor shall not be entitled to, nor shall City be required to make payment for any Contract Work until the Project Schedule complies with all Contract requirements.

E. The Contractor shall schedule the Contract Work so that the Contract Work is completed within the Contract Time. Float in the project Schedule shall be defined

as the period of time measured by the number of days each non-critical path activity may be delayed before it and its succeeding activities become part of the Critical Path. Contractor and Owner may both utilize float to offset delays to the Work.

F. The Contractor shall regularly enter the actual progress of the Work and Contract Time extensions, if any, approved by City on the Project Schedule. Updated Project Schedules shall reflect actual progress and completion within the Contract Time and shall be provided to City with each Application for Payment in format(s) as required by the Contract. Applications for Progress Payments will not be considered by City and the Contractor will not be paid until the Contractor complies with these requirements. The updated Project Schedule shall be used to assist City in verifying the appropriate payment.

G. If, in the opinion of City, the Contractor falls behind in its progress of the Work due to acts or omissions of the Contractor, Subcontractors, and Suppliers, the Contractor shall take all necessary steps to improve its progress and bring its progress back in-line with the accepted Project Schedule, without additional cost to City. In this circumstance the Contractor shall, as necessary, increase the number of shifts, overtime operations, and/or days of work, both on and off the Site, and submit for acceptance any supplementary schedule or schedules as City deems necessary to demonstrate how the accepted rate of progress will be regained. Failure of the Contractor to comply with the requirements under these provisions shall be grounds for a determination by City that the Contractor is not prosecuting the Work with sufficient diligence to ensure completion within the time specified in the Contract. Upon making this determination, City may pursue any right it has under the law or the Contract, including but not limited to default termination.

4.5 SUBMITTALS

A. Submittals include shop drawings, setting and erection drawings, schedules of materials, product data, samples, certificates and other information prepared for the Work by the Contractor or a Subcontractor as set forth in the Technical Specifications ("Submittals"). The Contractor shall perform no portion of the Work requiring Submittals until the Submittals have been reviewed and returned by City with one of the following annotations: (1) no exceptions taken, or (2) note markings.

B. When submitting information, the Contractor shall identify and state reasons for any alteration, variation, addition, deviation, or omission from the Contract. The Contractor shall not perform work that alters, varies, adds to, deviates from, or omits any requirement of the Contract Documents without prior specific written acceptance by City.

C. The Contractor shall provide Submittals with reasonable promptness and in such sequence as to facilitate the timely completion of the Contract.

D. City shall review the Contractor's Submittals and respond in writing with reasonable promptness so as not to unreasonably delay the progress of the Work. Unless otherwise agreed, no delay to the Work shall be attributable to the failure by City to respond to a Submittal until thirty (30) days after the Submittal is received by City, and then only if failure by City to respond is unreasonable and affects the Contract completion date.

E. If the Contractor is required to resubmit a Submittal, any revisions on resubmittals shall be specifically identified in writing and the resubmitted Submittal shall be sequentially alpha denoted (for example: 22A followed by 22B, etc.) and note revisions in numerical order. The cost of the review of the initial Submittal and the first revised

submittal shall be borne by City. The costs of all additional revised Submittals shall be charged to the Contractor. The cost of review shall include, without limitation, administrative, design, and engineering activities directly related to review of Submittals. City may deduct these costs from any amounts due the Contractor.

F. City shall review the Contractor's Submittals only for conformance with the design of the Work and compliance with the Contract. Review of the Submittals are not conducted to verify the accuracy of dimensions, quantities, or calculations, the performance of materials, systems, or equipment, or construction means, methods, techniques, sequences, or procedures, all of which remain the Contractor's responsibility. Failure by City to take exception to a Submittal shall not relieve the Contractor from any duty, including its responsibility for errors or omissions in Submittals, its duty to make Submittals and duty to perform the Work according to the requirements of the Contract. City's review of a Submittal shall not alter or waive the requirements of the Contract unless City has issued prior written approval of such change or alteration of the Contract requirements.

G. The Contractor's failure to identify any error, deviation, or omission and subsequent acceptance of the Submittal by City shall not relieve the Contractor from complying with the Contract requirements.

4.6 REQUESTS FOR INFORMATION

A. If the Contractor determines that some portion of the drawings, specifications or other Contract Documents require clarification or interpretation by City because of an apparent error, inconsistency, omission, or lack of clarity in the Contract, the Contractor shall promptly submit a Request For Information ("RFI") and, unless otherwise directed, shall not proceed with the affected work until City has responded to the RFI. The Contractor shall plan its work in an efficient manner so as to allow for timely responses to RFIs.

B. City shall respond in writing with reasonable promptness to Contractor's RFI.

1. At the request of the Engineer, the Contractor shall prioritize its RFIs, identify a date by which the Contractor prefers the RFI be answered, and reasons for such priority.

2. If the Contractor submits a RFI on an activity less than thirty (30) days prior to the commencement of that activity, the Contractor shall not be entitled to any time extension or adjustment in Contract Price due to the time it takes City to respond to the RFI provided that City responds within fifteen (15) days. No delay to the Work or damages to the Contractor shall be attributable to the failure by City to respond to the RFI until fifteen (15) days after City's receipt of the RFI, and then only if the failure by City to respond is unreasonable and affects the Contract completion date.

C. City's response to a RFI shall not be considered a change to the Contract requirements unless it is accompanied by a Request for Change Proposal. If the Contractor believes that City's response to the RFI constitutes changed work impacting Contract Price or Contract Time, the Contractor shall submit a Notice of Claim, Supplemental Information and a Request for Change Order to City in accordance with Articles 5, *Changes to the Contract*.

4.7 TESTS, INSPECTIONS, AND ACCESS TO THE WORK

A. Contractor shall be responsible for inspection and quality assurance of all the Work including all work performed by any Subcontractor. The Contractor shall document and maintain an adequate testing and inspection program and perform such tests and inspections as are necessary or required to ensure that the Work conforms to the requirements of the Contract. The Contractor shall maintain all documentation related to testing and inspection and make such documentation available to City at its request. Unless otherwise provided, Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to City, or with the appropriate public authority. If any governmental, regulatory, or permitting authority requires any portion of the Work to be inspected, tested, or approved, the Contractor shall make all arrangements for and cooperate with such inspections, tests, and approvals so as not to delay completion of the Work. The Contractor shall bear all related costs of tests, inspections, and approvals. The Contractor shall give City at least three (3) days' Notice of: (1) when the work is ready to be tested and inspected and (2) when and where tests and inspections are to be made. Contractor shall maintain complete inspection records and make them available to City upon request.

B. The Contractor shall cooperate with City in the performance of any tests and inspections of the Work. The Contractor has the duty to coordinate all tests and inspections in a manner, which does not negatively impact Contractor's compliance with the Contract.

C. If any Work required to be inspected, tested, or approved is covered without such inspection, testing or approval being obtained, it must, if requested by City, be uncovered for observation, and such uncovering shall be at Contractor's expense.

D. City may, at any reasonable time and at its own cost, conduct inspections and tests as it deems necessary to ensure that the Work is in accordance with the Contract. City shall promptly notify Contractor if an inspection or test reveals that the Work is not in accordance with the Contract. City inspection and tests are for the sole benefit of City and do not:

   1. Constitute or imply acceptance;
   2. Relieve Contractor of responsibility for providing adequate quality control measures;
   3. Relieve Contractor of responsibility for risk of loss or damage to the Work, materials, or equipment;
   4. Relieve Contractor of its responsibility to comply with the requirements of the Contract; or
   5. Impair City's right to reject defective or nonconforming items, or to avail itself of any other remedy to which it may be entitled.

E. Neither observations by an inspector retained by City, the presence or absence of such inspector on the Site, nor inspections, tests, or approvals by others, shall relieve Contractor from any requirement of the Contract. Inspectors are not authorized to change any term or condition of the Contract.

F. Contractor shall promptly furnish, without additional charge, all facilities, labor, material and equipment reasonably needed for performing such safe and convenient inspections and tests as may be required by City. City may charge

Contractor any additional cost of inspection or testing when Work is not ready at the time specified by Contractor for inspection or testing, or when prior rejection makes reinspection or retest necessary. City shall perform its inspections and tests in a manner that will cause no undue delay in the Work.

4.8 CORRECTION OF WORK OR DAMAGED PROPERTY

A. If material, equipment, workmanship, or work proposed for, or incorporated into the Work, does not meet the Contract requirements or fails to perform satisfactorily, City shall have the right to reject such work by giving the Contractor written notice and may require the Contractor to promptly repair, replace or correct it at no cost to the City.

B. If the Contractor does not repair, replace or correct and/or remove defective or non-conforming Work or repair damaged property as required by City, in manner and/or schedule, City or City's designee may repair, replace or correct and/or remove it and deduct the cost of such effort from any payment due the Contractor.

   1. If the remaining payments due the Contractor are not sufficient to cover City's cost of remedying the defective or non-conforming Work, the Contractor shall pay the difference to City.

C. The Contractor shall be liable for all damages and costs incurred by City caused by defective or non-conforming work or workmanship, including but not limited to all special, incidental, or consequential damages incurred by City.

4.9 SUBSTITUTION OF PRODUCTS & PROCESSES

A. Substitutions requested by the Contractor will be subject to City's prior written acceptance and at City's sole discretion.

B. Requests for substitution must specifically identify:

   1. Material, equipment, and labor costs included in the Contractor's bid associated with the original item to be substituted;

   2. All costs for material, equipment, labor associated with the proposed substitution, including any impact costs;

   3. Proposed change to the Contract Price and/or Contract Time; and

   4. Compatibility with or modification to other systems, parts, equipment or components of the Project and Contract Work.

C. Contractor shall provide all documentation supporting its request as requested by City.

D. All costs of any redesign or modification to other systems, parts, equipment or components of the Project or Contract Work, which result from the substitution, shall be borne by the Contractor.

E. When City approves a substitution proposed by the Contractor, the Contractor shall guarantee the substituted article or materials to be equal to, or better than, those originally specified and shall be compatible with all other systems, parts, equipment or components of the Project and Contract Work. City has the right to order an unaccepted, substituted article removed and replaced without additional cost to City.

F. City has a right to a deductive Change Order if the substituted product or process is less costly than the contractually required product or process.

G. If City does not accept the substitution proposal the Contractor shall proceed, without delay or cost to City, with the Contract Work as originally specified.

4.10 INCREASED OR DECREASED QUANTITIES

A. 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 proposal 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 proposal quantity. In that case, payment for contract work may be adjusted as described herein:

1. 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. The price for excessive quantities will be determined by agreement of the parties, or, where the parties cannot agree, the price will be determined by the City based upon the actual costs to perform the work, including markup for overhead and profit in accordance with Paragraph 6.3, *Allowable Costs*.

   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. The equitable adjustment shall be based upon and limited to three factors:

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

      ii. 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

      iii. 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% of the original plan quantity.

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

1. Labor, materials and equipment rates shall be actual costs but shall not exceed the rates set forth in Paragraph 6.3, *Allowable Costs* nor shall overhead and profit exceed the rates set forth in Paragraph 6.3, *Allowable Costs*.

2. 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, contact provisions, and contract plans.

3. The total payment (including the adjustment amount and unit prices for work performed) for any item which experiences an equitable adjustment for decreased quantity shall not exceed 75% of the amount original bid for the item.

C. If the adjusted final quantity of any item does not vary from the quantity shown in the proposal by more than 25% then the Contractor and the City agree that all work under that item will be performed at the original contract unit price and within the original time for completion.

D. 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.

E. The Contractor and the City agree that there will be no cost adjustment for decreases if the City has entered the amount for the item in the proposal form only to provide a common proposal for bidders.

ARTICLE 5: CHANGES TO THE CONTRACT

5.1 GENERAL

A. No provisions of the Contract may be amended or modified except by written agreement signed by the City.

B. All Change Order work shall be performed in accordance with the original Contract requirements unless modified in writing by City.

C. Any response to a Request For Information, or other directive, direction, instruction, interpretation, or determination (hereinafter referred to as "Direction" for the purposes of Article 5), provided by City is not considered a Change Order, a change to Contract requirements, and shall not constitute, in and of itself, entitlement to an adjustment in Contract Price and/or Contract Time.

D. The Contractor shall not be entitled to any change in the Contract Price and/or Contract Time under the following conditions or events:

1. They were reasonably foreseeable at the time the Contractor submitted its bid;

2. They were caused by the acts of the Contractor, Subcontractor and/or Supplier, including but not limited to the choice of means, methods, techniques, sequences, or procedures for the Work, failure to provide labor, materials or equipment in a timely manner, and failure to take reasonable steps to mitigate delays, disruptions, or conditions encountered.

E. The Contract requirements for time and price impacts related to Change Orders are set forth in Article 6, *Time and Price Adjustments*.

F. If there is a bid item for "Minor Changes," payments or credits for changes that cost $5,000 or less and do not affect time, may, at the discretion of the City, be made under that bid item in lieu of the procedures set forth in Sections 5.1 – 5.6. A Minor Change will be documented by a written Order for a Minor Change or by a notation confirming an oral agreement.

5.2 CONTRACTOR'S REQUEST FOR A CHANGE ORDER

A. Notice of Claim and Supplemental Information. If the Contractor believes that it is entitled to additional compensation and/or time for any reason (other than for a differing site condition under Section 5.2), or if the Contractor disagrees with any written or oral direction, instruction, interpretation or determination from the City, the Contractor shall

(1) Provide the Engineer with a written Notice of Protest before doing any work or incurring any costs for which it may seek additional compensation or time from the City.

(2) Supplement the written Notice of Protest within 14 days with a written statement that includes the following:

a. The date, circumstances, and basis of entitlement to additional compensation and/or time;

b. The estimated dollar cost of the protested work and a detailed breakdown showing how that estimate was determined;

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

d. Substantive basis of the Request;

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

f. The Contractor waives all claims for additional compensation and time if it fails to provide both a timely Notice of Claim and Supplemental Information with the information required by this Section.

B. Request for Change Order.

1. A Request for a Change Order must be submitted in writing to the Engineer no later than thirty-five (35) days after the Contractor submitted its supplemental information pursuant to Paragraph 5.1(A)(2).

2. The Request for a Change Order shall include:

a. Specific dollar amount covering all costs associated calculated in accordance with Article 6, *Time and Price Adjustments*;

b. Specific request for time extension (number of days) calculated in accordance with Article 6, *Time and Price Adjustments*;

c. A copy of the written Notice of intent, including all attachments;

d. All documentation supporting the Request for a Change Order, including but not limited to a cost proposal prepared using the forms provided by City, all cost records, schedule analysis, and the documents identified in §00700, ¶3.10, *Maintenance and Inspection of Documents*, that are in any way relevant to the Contractor's Request for Change Order; and

e. The Contractor waives all claims for additional compensation and time if it fails to provide a timely Request for Change Order with the information required by this Section

C. City's Response to Contractor's Request for Change Order.

1. City will make a written determination with respect to the Contractor's Request for Change Order within thirty (30) days of receipt of said Request, unless one of the following activities occurs.

   a. City may request additional information and specify a time period for receipt of the information. The Contractor shall comply with City's request for additional information.

   b. City may inform the Contractor that additional time is needed to review the Contractor's Request for Change Order and identify a date certain when a decision will be rendered.

2. If City requests additional information, City will make a written determination within thirty (30) days receipt of Contractor's additional information.

3. If City does not make a determination within the applicable time period, the Request For Change Order is deemed denied.

D. Approval of Request for Change Order and Execution of Change Order. If City determines that a Change Order is necessary, the parties may negotiate acceptable terms and conditions and execute a Bilateral Change Order or City may issue a Unilateral Change Order.

E. Contractor Procedure upon Denial or Deemed Denial of a Request for a Change Order. If the Contractor disagrees with the denial, the Contractor's sole remedy shall be to file a fully documented Claim within thirty (30) days of deemed denial or the Contractor's receipt of the denial in accordance with Article 9, *Claims and Litigation*.

F. Contractor's Obligation to Continue to Work. Pending resolution of the Contractor's Request for a Change Order, the Contractor shall continue to perform all Work including, at the written request of City that work associated with the pending Request for Change Order. The Contractor shall maintain its progress with the Work.

G. Waiver. Failure to follow the provisions set forth herein shall constitute a waiver of the Contractor's right to receive any additional time or money as a result of any alleged direction, instruction, interpretation, determination by City and/or the event or impact to the Project.

5.3 DIFFERING SITE CONDITIONS

A. Immediate Written Notice to City. If the Contractor encounters a Differing Site Condition as defined in Article 1.0 the Contractor shall immediately, and before the conditions are disturbed, give written Notice to City of Differing Site Conditions.

B. Request for Change Order based on Differing Site Condition. Unless otherwise agreed upon in writing by the Engineer, within forty-five (45) days of the Contractor's initial written notification of the Differing Site Condition to City, the Contractor shall provide a Request for Change Order that includes all elements required for such a request, including:

1. A detailed description of the Differing Site Condition; and

2. Substantive, contractual, and technical basis supporting the existence of the Differing Site Condition and its impacts.

C. Waiver.

1. If the Contractor's actions disturb the Site such that City or City's designee cannot adequately and fully investigate the alleged differing site condition, the Contractor waives its right to receive any additional time or money as a result of the Differing Site Condition.

2. Failure by the Contractor to provide either (a) immediate Notice or (b) Request for Change Order shall constitute a waiver of the Contractor's right to receive any additional time or money as a result of the Differing Site Condition.

3. The Contractor shall be responsible for any and all costs or damages incurred by City resulting from the Contractor's failure to provide appropriate notice and/or the Detailed Description and Request for Change Order.

D. City's Response to the Differing Site Condition Request for Change Order. City shall investigate the alleged Differing Site Conditions and respond to the Differing Site Condition in accordance with the Request for Change Order procedures set forth above.

E. Contractor's Obligation to Continue to Work. The Contractor shall not disturb the condition until receipt of written authorization from the Engineer that work can resume at the location of the alleged Differing Site Condition. The Contractor shall continue with performance of all other Work.

5.4 SUSPENSION OF WORK

A. City Issues Directive Suspending Work

1. City may order the Contractor, in writing, to suspend all or any part of the Work of this Contract for the period of time that City determines appropriate for the convenience of City. The Contractor shall not suspend the Work without written direction from City specifically authorizing the Suspension of Work.

2. Upon receipt of a written Notice suspending the Work, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize costs attributable to such suspension. Within a period up to 120 days after the suspension notice is received by the Contractor, or within any extension of that period which City requires, City shall either:

   a. Cancel the written notice suspending the Work; or

   b. Terminate the Work for either default or convenience.

3. If a written notice suspending the Work is canceled or the period of the Suspension or any extension thereof expires, the Contractor shall resume Work as required by City.

4. If the performance of all or any part of the Work is, for an unreasonable period of time, suspended by the written direction of City, the Contractor may be entitled to an adjustment in the Contract Time, or Contract Price, or both, for increases in the time or cost of performance directly attributable to the suspension and provided that the Contractor sufficiently documents all costs and time impacts attributable to the suspension. No adjustments to Contract Price and/or Contract Time shall be allowed unless the Contractor can demonstrate that the period of suspension caused by City impacted Critical Path and delayed the Contractor from completing the Work on time.

B. Constructive Suspension of Work

1. If the Contractor believes that some action or omission on the part of City constitutes constructive suspension of Work, the Contractor shall immediately notify City in writing that the Contractor considers the actions or omission a constructive suspension of Work.

C. To the extent the Contractor believes it is entitled to any additional money or time as a result of the suspension of Work or constructive suspension, Contractor shall submit a Notice of Protest, Supplemental Information and Request for Change Order to City in accordance with Article 5, *Changes to the Contract*.

D. Failure to comply with these requirements shall constitute a waiver of Contractor rights to any adjustment in Contract Time and/or Contract Price.

E. No adjustment shall be made under this provision for any suspension to the extent that Contractor's performance would have been suspended, delayed, or interrupted as a result of actions, omissions, fault or negligence caused, in whole or in part, by the Contractor or any of its Subcontractors.

5.5 FORCE MAJEURE

A. To the extent the Contractor believes it is entitled to any additional time as a result of Force Majeure, Contractor shall submit a Notice of Protest, Supplemental Information and Request for Change Order to City in accordance with Article 5, *Changes to the Contract*.

B. Contractor shall not be entitled to a change in Contract Price resulting from an act of Force Majeure.

C. Contractor is not entitled to an adjustment in Contract Time if the act of Force Majeure did not impact progress of the Work on the Critical Path and delay the Contractor from completing the Work within the Contract Time.

D. When a Contractor experiences concurrent delay caused by either City or Contractor and an act of Force Majeure, the Contractor shall only be entitled to an change in Contract Time. No change to the Contract Price shall be allowed as a result of such concurrent delay.

5.6 CHANGE ORDERS

A. Bilateral Change Orders

1. If City and Contractor reach agreement on the terms and conditions of any change in the Work, including any adjustment in the Contract Price and Contract Time, such agreement shall be incorporated into a Change Order and signed by both Parties. Such Bilateral Change Orders shall represent full and complete payment and final settlement of all changes, Claims, damages or costs for all (a) time; (b) direct, indirect, and overhead costs; (c) profit; and (d) any and all costs or damages associated with delay, inconvenience, disruption of schedule, impact, ripple effect, loss of efficiency or productivity, acceleration of work, lost profits, stand-by, and any other costs or damages related to any work either covered or affected by the Change Order, or related to the events giving rise to the Bilateral Change Order.

B. Unilateral Change Order

1. City's Right to Issue Unilateral Change Order.

   a. City may unilaterally issue a Change Order at any time, without invalidating the Contract and without notice to the sureties, making changes within the general scope of this Contract.

   b. If any such Change Order causes an increase or decrease in the cost of, or time required for, performance of any part of the Work, City may make an adjustment in the Contract Price, Contract Time, or both, in accordance with Articles 5, *Changes to the Contract*, and 6, *Time and Price Adjustments*.

2. Contractor Disagreement with Unilateral Change Order. If the Contractor disagrees with the adjustment to the Contract Price and/or Time as indicated in the Unilateral Change Order, the Contractor must submit a Notice of Protest, Supplemental Information and Request for Change Order to City in accordance with Article 5, *Changes to the Contract*.

3. Contractor's Obligation to Continue to Work. The Contractor is required to continue with performance of all Work, including work associated with the Unilateral Change Order.

5.7 CITY REQUEST FOR A CHANGE PROPOSAL

A. Request. City may request a written Change Proposal from the Contractor for a change in the Work.

B. Contractor's Proposal. Contractor shall submit its written Change Proposal within the time specified in City's request with the costs shown in a form acceptable to the City. The Change Proposal shall represent the Contractor's offer to perform the requested work, and the pricing set forth within the proposal shall represent full, complete, and final compensation for the proposed change and any impacts to any other Work, including any adjustments in the Contract Time.

C. City's Acceptance of Contractor Proposal. If City accepts the Change Proposal as submitted by the Contractor or as negotiated by the parties, City shall notify the Contractor in writing of its acceptance of the Proposal and direct that the change in the Work be performed.

D. Execution of a Bilateral Change Order. After acceptance of the Change Proposal or acceptance of the negotiated Change Proposal, City shall direct the Contractor to perform the work in accordance with the agreed upon terms; thereafter, the Parties shall execute a bilateral Change Order in accordance with the terms of the Change Proposal or negotiated Change Proposal.

E. Execution of Unilateral Change Order. If City does not accept the Change Proposal or the Parties cannot agree upon the appropriate price or terms for the Change Proposal, City may issue a unilateral Change Order.

ARTICLE 6: TIME AND PRICE ADJUSTMENTS

6.1 CHANGE IN THE CONTRACT TIME

A. The Contract Time shall only be changed by a Change Order.

B. No change in the Contract Time shall be allowed to the extent the time of performance is changed due to the fault, act, or omission of Contractor, or anyone for whose acts or omissions the Contractor is responsible.

C. Contractor is not entitled to a change in Contract Time unless the progress of the Work on the Critical Path is delayed and completion of the Contract Work within Contract Time is delayed.

D. When a Contractor experiences concurrent delays which impact the Critical Path and are caused by (1) City and the Contractor; (2) City and an act of Force Majeure; or, (3) the Contractor and an act of Force Majeure, the Contractor shall only be entitled to a change in Contract Time. No change to the Contract Price shall be allowed as a result of such concurrent delay.

E. A Request for Change Order that includes a request for an adjustment in the Contract Time shall:

1. Be in writing and delivered to City within the appropriate time period specified in Article 5, *Changes in the Contract.*

2. Include a clear explanation of how the event or conditions specifically impacted the Critical Path and overall Project Schedule and the amount of the adjustment in Contract Time requested.

3. Be limited to the change in the Critical Path of a Contractor's Project Schedule, and any updates, attributable to the event or conditions, which caused the request for adjustment. No extension of time or compensation for damages resulting from delay will be granted unless the delay affects the timely completion of all Work under the Contract or timely completion of a portion of the Work for which time of completion is specific. Contractor shall be responsible for showing clearly on the Project Schedule, and any updates, that the event or conditions:

   a. Had a specific impact on the Critical Path and was the sole cause of such impact;

   b. Could not have been avoided by resequencing of the Work or other reasonable alternatives; and

   c. Will prevent the Contractor from completing the Project within the current Contract completion date.

F. Contractor shall make all reasonable efforts to prevent and mitigate the effects of any delay, whether occasioned by an act of Force Majeure or otherwise.

6.2 CHANGE IN THE CONTRACT PRICE

A. The Contract Price shall only be changed by a Change Order.

B. No change in the Contract Price shall be allowed when:

1. Contractor's changed cost of performance is due to the fault, acts, or omissions of Contractor, or anyone for whose acts or omissions Contractor is responsible, including its subcontractors and suppliers;

2. The change is concurrently caused by Contractor and City; or

3. The change is caused by an act of a third party or Force Majeure.

C. City shall not be responsible for, and the Contractor shall not be entitled to any compensation for unallowable costs. Unallowable costs include, but are not limited to:

1. Interest or attorney's fees of any type other than those mandated by Washington state statute;

2. Claim preparation or filing costs;

3. The cost of preparing or reviewing Change Proposals or Requests for Change Orders;

4. Lost profits, lost income or earnings;

5. Costs for idle equipment when such equipment is not at the Site, has not been employed in the Work, or is not scheduled to be used at the Site;

6. Lost earnings or interest on unpaid retainage;

7. Claims consulting costs;

8. The costs of corporate officers or staff visiting the Site or participating in meetings with City;

9. Loss of other business; and/or

10. Any other special, consequential, or incidental damages incurred by the Contractor, Subcontractor, or Suppliers.

D. A Request for Change Order that includes a request for an adjustment in Contract Price shall:

1. Be in writing and delivered to City within the applicable time period specified in Article 5, *Changes to the Contract*.

2. Identify the following information:

a. The event or condition which caused the Contractor to submit its request for an adjustment in the Contract Price;

b. The nature of the impacts to Contractor and its Subcontractors, if any; and

c. The amount of the adjustment in Contract Price requested calculated in accordance with Paragraph 6.3, *Allowable Costs*, and using forms provided by City.

3. Any requests by Contractor for an adjustment in the Contract Price and in the Contract Time that arise out of the same event or conditions shall be submitted together.

E. The adjustments to the Contract Price provided for in this Article represent full, final, and complete compensation for all work done in connection with the request for an adjustment in Contract Price and all costs related to, resulting from, or affected by such change in Work including, but not limited to, all direct and indirect costs, overhead, profit, and all costs or damages associated with delay, inconvenience, disruption of schedule, impact, dilution of supervision, inefficiency, ripple effect, loss of efficiency or productivity, acceleration of work, lost profits, and any other costs or damages related to any work either covered or affected by the change in the Work, or related to the events giving rise to the change.

6.3 METHOD TO CALCULATE ADJUSTMENTS TO CONTRACT PRICE

A. One of the following methods shall be used to calculate damages and/or adjustments to the Contract Price that result from or relate to Change Proposal, Request for Change Order, and/or Claim.

B. Determination of the method to be used to calculate adjustments in the Contract Price shall be at the sole discretion of City.

C. One of the following methods shall be used:

1. Unit Price Method;
2. Firm Fixed Price Method (also known as Lump Sum); or
3. Time and Materials Method.

D. **Unit Price Method**

1. The City may direct the Contractor to perform extra work on a Unit Price basis. Such authorization shall clearly state the:
   a. Scope of work to be performed;
   b. Applicable Unit Price; and
   c. Not to exceed amount of reimbursement as established by City.
2. The applicable unit price shall include reimbursement for all direct and indirect costs of the work, including Overhead and profit, as limited by paragraph 6.3, *Allowable Costs*.
3. Contractor shall only be paid under this method for the actual quantity of materials incorporated in or removed from the Work and such quantities must be supported by field measurement statements verified by City.

E. **Firm Fixed Price Method**

1. The Contractor and City may mutually agree on a fixed amount as the total compensation for the performance of changed work.
2. The Contractor shall provide a detailed cost breakdown supporting the Contractor's requested adjustment to Contract Price and any other financial documentation requested by the Engineer, as limited by paragraph 6.3, *Allowable Costs*.
3. Any adjustments to the Contract Price using the Firm Fixed Price Method shall include, when appropriate all reasonable costs for labor, equipment, material, Overhead and profit. Such labor, equipment, material, Overhead and profit shall be calculated in accordance with paragraph 6.3, *Allowable Costs*.
4. Whenever City authorizes Contractor to perform changed work on a Firm Fixed Price Method, City's authorization shall clearly state:
   a. Scope of work to be performed; and
   b. Total Fixed Price payment for performing such work.

F. **Time and Materials Method**

1. Whenever City authorizes the Contractor to perform work on a Time and Material basis, City's authorization shall clearly state:

a. Scope of work to be performed; and

b. A not to exceed amount of reimbursement as established by City.

2. Contractor shall:

a. Cooperate with City and assist in monitoring the work being performed;

b. Substantiate the labor hours, materials and equipment charged to work under the Time and Materials Method by detailed time cards or logs completed on a daily basis before the close of business each working day;

c. Present the time card and/or log at the close of business each day to the Engineer so that City may review and initial each time card/log;

d. Perform all work in accordance with this provision as efficiently as possible;

e. Not exceed any cost limit(s) without City's prior written approval; and

f. Maintain all records of the work, including all records of the Subcontractor, Supplier, and Materialmen, and make such records available for inspection as required in paragraphs 3.8, *Record Documents*, 3.9, *Cost Records*, and 3.10, M*aintenance and Inspection of Document.*

3. Contractor shall submit costs and any additional information requested by City to support Contractor's requested price adjustment.

4. The Contractor shall only be entitled to be paid for reasonable costs actually incurred by the Contractor. The Contractor has a duty to control costs. If City determines that the Contractor's costs are excessive or unreasonable, City, at its discretion, shall determine the reasonable amount for payment.

G. **Deductive Changes to the Contract Price**

1. A deductive change to the Contract Price may be determined by taking into account:

a. Costs incurred and saved by the Contractor as a result of the change, if any;

b. The costs of labor, material, equipment, and overhead saved and profit unearned by the deleted work. These costs shall be calculated following as closely as possible with the provisions identified in Article 6, Time and Price Adjustments; and/or,

c. At the discretion of City, costs set forth in the documents used by the Contractor to develop its bid.

2. Where City has elected not to correct incomplete or defective Work, the adjustment in the Contract Price shall take into account:

a. The costs the City would have to expend to correct the Work;

b. The decreased value to City resulting from the incomplete or defective Work; and,

c. The increased future costs which City may incur by reason of the incomplete or defective Work.

H. **Full Compensation**

An adjustment calculated in accordance with the provisions of this Article shall be full and complete payment and final settlement of all changes, claims, damages and costs for all (a) time; (b) direct, indirect, and overhead costs; (c) profit; and (d) any and all costs or damages associated with delay, inconvenience, disruption of schedule, impact, ripple effect, loss of efficiency or productivity, acceleration of work, lost profits, standby, and/or any other costs or damages related to any Work either covered or affected by the changed Work, or related to the events giving rise to the change.

6.4 ALLOWABLE COSTS

A. Any adjustments to the Contract Price shall be based on the following categories and shall incorporate markups for Overhead and profit as provided herein.

1. **Labor**. For all labor, including foreman supervision but excluding superintendents and other project management and consultants, the Contractor shall be reimbursed for labor costs provided herein. The labor cost of an event or condition shall be calculated as the sum of the following:

   a. **Labor Rate**. The Labor Rate is the actual reasonable wage paid to the individual plus the actual reasonable costs incurred by the Contractor to cover costs associated with Federal Insurance Compensation Act (FICA), Federal Unemployment Tax Act (FUTA), State Unemployment Tax Act (SUCA), industrial insurance, fringe benefits, and benefits paid on behalf of labor by the Contractor. The applicable Labor Rates shall be multiplied by the number of hours reasonably expended in each labor classification because of the event or condition to arrive at a total cost of labor.

   b. **Travel Allowance and/or Subsistence**. The labor calculation shall include the actual costs of travel and/or subsistence paid to the Contractor's employees engaged upon the Work when said payments are required by a labor agreement.

2. **Materials**. The cost of materials resulting from an event or condition shall be calculated in one or more of the following methods, at City's election:

   a. **Invoice Cost**. The Contractor may be paid the actual invoice cost of materials including actual freight and express charges and applicable taxes less all available discounts, rebates, and back-charges,. This method shall be considered only to the extent the Contractor's invoice costs are reasonable and the Contractor provides copies of vendor invoices, freight and express bills, and other evidence of cost accounting and payment satisfactory to City. As to materials furnished from the Contractor's stocks for which an invoice is not available, the Contractor shall furnish an affidavit certifying its actual cost of such materials and such other information as City may reasonably require;

   b. **Wholesale Price**. The Contractor may be paid the lowest current wholesale price for which the materials are available in the quantities required, including customary costs of delivery and all applicable taxes less all available discounts, rebates, and back-charges; or

c. **City Furnished Material**. City reserves the right to furnish such materials as it deems advisable, and the Contractor shall have no Claim for any costs, Overhead or profit on such materials. However, should the Contractor be required to pick up, transport and/or unload such materials the Contractor will be reimbursed for reasonable costs thereof.

3. **Equipment**. The additional cost, if any, of machine-power tools and equipment usage shall be calculated in accordance with the following rules:

a. **Equipment Rates**. The Contractor's own charge rates may be used if verified and approved by City and based on the Contractor's actual ownership and operating cost experience. Rental rates contained in published rate guides may be used if their cost formulas and rate factors are identifiable, reflect the Contractor's historical acquisition costs, utilization, and useful life, and do not include replacement cost, escalation contingency reserves, general and administrative expense, or profit. Rates shall be based on the Contractor's actual allowable costs incurred or the rates established according to the Rental Rate Blue Book for Construction Equipment, published by Equipment Watch, PRIMEDIA, whichever is less. The Rental Rate Blue Book established hourly equipment rate shall be the monthly rental rate for the equipment plus the monthly rental rate for required attachments, divided by 176 work hours per month, multiplied by the appropriate regional adjustment factor, plus the hourly operating cost. The established equipment rate shall apply for actual equipment usage up to eight hours per day. For all hours in excess of eight hours per day or 176 hours per month, the established equipment rate shall be the monthly rental rate plus the monthly rental rate for required attachments, divided by 352, multiplied by the regional adjustment factor, plus the hourly operating cost.

b. **Transportation**. If the necessary equipment is not already at the Site and it is not anticipated that it would be required for the performance of other work under the terms of the Contract, the calculation shall include a reasonable amount for the costs of the necessary transportation of such equipment.

c. **Standby**. The Contractor shall only be entitled to standby equipment costs if (a) the equipment is ready, able, and available to do the Work at a moment's notice; (b) Contractor is required to have equipment standby because of an event or condition solely caused by City and (c) the Contractor can demonstrate that it could have and intended to use the equipment on other projects/jobs. The Contractor shall be compensated at 50% of the monthly rental rate for the equipment, divided by 176, and multiplied by the appropriate regional adjustment factor, as identified in the Rental Rate Blue Book for Construction Equipment, published by Machinery Information Division of PRIMEDIA Information Inc. Standby shall not be paid during periods of Contractor-caused delay, concurrent delay, Force Majeure, during any seasonal shutdown, routine maintenance, down-time or broken equipment, late delivery of equipment or supplies, or other anticipated occurrence specified in the Contract Documents. No payment shall be made for standby on any piece of equipment, which has been used on the Project in any 24 hour period. Standby costs shall not be paid for weekends, holidays, and any time the equipment was not intended to be used on the Project as demonstrated by the Project Schedule**.**

4. **Subcontractor & Supplier**. Direct costs associated with Subcontractors and Suppliers shall exclude Overhead and Profit markups and shall be calculated and itemized in the same manner as prescribed herein for Contractor. Contractor shall provide detailed breakdown of Subcontractor and Supplier invoices.

5. **Overhead and Profit Markup**.

   a. On a change to the Contract Price or any other claim for money by the Contractor, City will only pay Overhead, including Home Office Overhead, Site or Field Office Overhead, and unabsorbed home office overhead, and Profit pursuant to the Overhead and Profit Markups set forth herein. The Overhead and Profit Markups cover all overhead regardless of how the Contractor chooses to account for various costs in its books of account.

   b. Overhead and Profit markups shall not be applied to freight, delivery charges, express charges, and sales tax.

   c. The allowed Overhead and Profit markup shall not exceed the following:

      i. If the Contractor is self-performing work: 18% combined Overhead and Profit markup on the Contractor's Direct Costs;

      ii. If a Subcontractor or Supplier is performing work: 18% for the Subcontractor's Direct Cost for performing the work and 7% on the Direct Costs of the Subcontractors' or Suppliers'; provided that the 7% is to be divided among upper tier Subcontractors and the Contractor when a Subcontractor or Supplier is performing the work;

      iii. If the value of material and equipment is greater than 50% of the total value of the change, the Overhead and Profit Markup shall only be 10% for material and equipment; and

      iv. In no event shall the total combined Overhead and Profit markup for the Contractor and all Subcontractors and Suppliers of any tier exceed 25% of the Direct Cost to perform the Change Order work.

ARTICLE 7: PAYMENT AND COMPLETION

7.1 APPLICATIONS FOR PAYMENT

A. On or about the first day of each month, the Contractor shall submit to City an Application for Payment. Each application shall be completed on a form acceptable to City and designated as an "Application for Payment."

B. The Contractor is not entitled to payment for any work unless the Application for Payment includes all required documentation. City reserves the right to withhold payment pursuant to paragraph 7.2, *Payments Withheld* if it is subsequently determined that all required documentation was not provided by the Contractor or is in error.

C. The application shall correlate the amount requested with the Schedule of Values and with the state of completion of the Work.

D. The Contractor shall submit a breakdown of the cost of lump sum items to enable the Engineer to determine the Work performed on a monthly basis. Lump sum breakdowns shall be submitted prior to the first progress payment that includes

payment for the Bid Item. Absent a lump sum breakdown, the Engineer will make a determination based on information available.

7.2 PAYMENTS

A. City shall comply with RCW 39.76, as amended, and promptly review each Application for Payment and identify in writing any cause for disapproval within 8 working days. In addition to withholding payment for unsatisfactory performance or failure to comply with Contract requirements, if the Contractor's Application for Payment fails to recognize any back-charges, off-sets, credits, change orders, or deductions in payment made in accordance with paragraph 7.2, *Payments Withheld*, City shall have the right to revise or disapprove Contractor's Application For Payment because the Application for Payment is not considered a properly completed invoice.

B. The City shall withhold retainage from each Application for Payment as required by RCW 60.28, as amended.

C. If an Application for Payment is accepted by City, it shall be paid within thirty (30) days of City's receipt of the properly prepared invoice (Application for Payment).

7.3 PAYMENT WITHHELD

A. In addition to retainage withheld pursuant to RCW 60.28 and without waiver of any other available remedies, City has the right to withhold, nullify, or back-charge, in whole or in part, any payment or payments due or that have been paid to the Contractor as may be necessary to cover City's costs or to protect City from loss or damage for reasons including but not limited to:

1. Failure of the Contractor to submit or obtain acceptance of a Progress Schedule, Schedule of Values, and any updated Schedules;
2. Defective or non-conforming Work;
3. Costs incurred by City to correct, repair or replace defective or non-conforming Work, or to complete the Work;
4. A reasonable doubt that the Contract can be completed for the balance then unpaid;
5. A reasonable concern by City that the materials, equipment or component parts are not in proper operating condition;
6. Assessment of Liquidated Damages;
7. Failure to perform in accordance with the Contract;
8. Cost or liability that may occur to City as the result of the Contractor's or Subcontractor's acts, omissions, fault, or negligence;
9. Deduction in the Work;
10. Failure of Contractor to repair damaged materials, equipment, property, or Work;
11. Failure of the Contractor to obtain approval of Submittals pertinent to the work accomplished;
12. Failure to pay Subcontractors, Suppliers, employees or other obligations arising out of the Work;

13. Failure to keep Record Documents up to date;
14. Failure to comply with all applicable federal, state, and local laws, statutes, regulations, codes, licenses, easements, and permits;
15. Failure to obtain and maintain applicable permits, insurance, and bonds; and
16. Failure to provide Statement of intent to Pay Prevailing Wage and/or Affidavits of Wages Paid and, if requested, Certified Payroll Records for the Contractor and for Subcontractors of any tier.

B. The withholding, nullification, or back-charge of any payment(s) by City shall in no way relieve the Contractor of any of its obligations under this Contract.

7.4 TITLE

Title to all Work and materials covered by an accepted and paid Application For Payment shall pass to City at the time of such payment, free and clear of all liens, claims, security interest, and encumbrances. Passage of title shall not, however, (1) relieve Contractor from any of its duties and responsibilities for the Work or materials, including protection thereof, (2) waive any rights of City to insist on full compliance by Contractor with the Contract requirements, or (3) constitute acceptance of the Work or materials.

7.5 SUBSTANTIAL COMPLETION

A. When the Contractor has achieved Substantial Completion (as defined in Section 1 above), the Contractor shall give written Notice to City.
   1. City shall promptly inspect the Work and prepare a Punch List (list of items to be completed or corrected).
      a. City reserves the right to add to, modify, or change the Punch List.
      b. Failure by City to include any items on such list does not alter the responsibility of the Contractor to complete or correct the Work in accordance with the Contract.

B. At the Contractor's request, City may identify those Punch List items that must be completed or corrected in order for the Contractor to achieve Substantial Completion.
   1. When City determines that those Punch List items have been completed or corrected by the Contractor, City shall make a determination that the Work is Substantially Complete.
   2. A Certificate of Substantial Completion will be issued by City, which shall establish the date of Substantial Completion.
   3. This Certificate of Substantial Completion shall state the responsibilities of City and the Contractor for security, maintenance, heat, utilities, damage to the Work, and insurance.

C. City shall assess liquidated damages for the Contractor's failure to Substantially Complete the Work within the Contract Time. The liquidated damage amounts, set forth elsewhere in the Contract Documents, will be assessed for Contractor's failure to achieve Substantial Completion within the Contract Time. These Liquidated Damages are not a penalty, but will be assessed against the Contractor for failure to achieve these Contract requirements. These Liquidated Damage amounts are

fixed and agreed upon by and between the Contractor and City because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages City would in such events sustain. These amounts shall be construed as the actual amount of damages sustained by City, and may be retained by City and deducted from payments to the Contractor. Assessment of Liquidated Damages shall not release the Contractor from any further obligations or duties pursuant to the Work.

D. As provided in the Contract Documents, City may grant Substantial Completion to specific subsystems or portions of the Work. The dates of Substantial Completion shall be determined, in writing, by City.

7.6 FINAL INSPECTION

A. The Contractor shall correct all remaining Punch List items and complete all remaining Work within the time period stated in the Certificate of Substantial Completion or within 30 days, whichever is less. When all Punch List items have been successfully corrected and the work is complete the Contractor's shall give written notice to the City that the Work ready for final inspection. After verification by City that such completion was satisfactory, the Contractor shall submit a Final Application for Payment.

7.7 REQUIREMENTS FOR FINAL APPLICATION FOR PAYMENT

A. In addition to any other requirement identified in the Contract Documents, the Final Application for Payment shall include the following documents:

1. Affidavit of Wages Paid for Contractor and all Subcontractors in accordance with state law;
2. Contractor's release of claims against City, except for Claims specifically described in the release document and submitted in accordance with Article 9, *Claims and Litigation*; and
3. Contractor certification that all Subcontractors and Suppliers have been paid and there are no outstanding liens.

7.8 COMPLETION/FINAL ACCEPTANCE

A. Completion/Final Acceptance shall be achieved when all the obligations of the Contract have been successfully performed by the Contractor in accordance with the Contract and accepted by City. Should Contractor fail to achieve Final Acceptance within the required time the City may assess actual damages caused by its failure to do so.

B. Neither Final Acceptance, nor Final Payment, shall release Contractor or its sureties from any obligations under this Contract or the Performance and Payment Bonds, or constitute a waiver of any claims by City arising from or related to Contractor's performance or failure to perform the Work and to meet all Contractual obligations in accordance with the Contract, including but not limited to:

1. Unsettled liens, security interests or encumbrances;
2. Damaged, non-conforming, or defective Work discovered by City;
3. Terms of any warranties or guarantees required by the Contract; and
4. Payments made in error.

C. Except for any Claims properly submitted in accordance with Article 9, *Claims and Litigation*, acceptance of Payment on the Final Application for Payment by the Contractor shall, on behalf of itself and its Subcontractors or Sureties, forever and unconditionally release and discharge City, it officers, agents, employees, from:

1. Any and all disputes or claims, including but not limited to claims for damages, fines, interest, taxes, attorney fees, or costs, demands, rights, actions or causes of actions, known or unknown, arising out of or in any way related to the parties' performance under the Contract and/or Project; and

2. Any and all known and/or unknown liabilities, obligations, demands, actions, suits, debts, charges, causes of action, requests for money and/or payment under the Contract, outstanding invoices, or claims directly or indirectly arising out of or related to the Contract and/or Project.

7.9 WARRANTY AND GUARANTY

A. In addition to any special warranties provided elsewhere in the Contract, Contractor warrants that all Work conforms to the requirements of the Contract and is free from any defect in equipment, material, design, or workmanship performed by Contractor or its Subcontractors and Suppliers.

B. The warranty period shall be for the longer period of: one year from the date of Final Acceptance of the entire Project or the duration of any special extended warranty offered by a supplier or common to the trade.

C. With respect to all warranties, express or implied, for Work performed or materials furnished according to the Contract, Contractor shall:

1. Obtain all warranties that would be given in normal commercial practice from the supplier and/or manufacturer;

2. Prior to Final Acceptance require all warranties be executed, in writing, for the benefit of City;

3. Enforce all warranties for the benefit of City; and

4. Be responsible to enforce any warranty of a Subcontractor, manufacturer, or Supplier, should they extend beyond the period specified in the Contract.

D. If, within an applicable warranty period, any part of the Work is found not to conform to the Contract, the Contractor shall correct it promptly after receipt of written Notice from City to do so. In the event City determines that Contractor corrective action is not satisfactory and/or timely performed, then City has the right to either correct the problem itself or procure the necessary services, recommendations, or guidance from third parties. All damages incurred by City and all costs for City's remedy shall be reimbursed by the Contractor.

E. The warranty provided in this provision shall be in addition to any other rights or remedies provided elsewhere in the Contract or by applicable law.

7.10 PRIOR OCCUPATION

City shall have the right to occupy such part or parts of the Project in or upon which the Work is being done, as it may see fit, and such occupation shall not be construed as acceptance by City of the Work or constitute Substantial Completion of the Work.

ARTICLE 8: TERMINATION

8.1 CITY'S RIGHT TO TERMINATE CONTRACT

A. **Termination for Default**

1. City may terminate, without prejudice to any right or remedy of City the Work, or any part of it, for cause upon the occurrence of any one or more of the following events:

   a. Contractor fails to prosecute the Work or any portion thereof with sufficient diligence to ensure Substantial Completion of the Work within the Contract Time;

   b. Contractor fails to prosecute the Work or any portion thereof with sufficient diligence to ensure Final Acceptance of the Work in a timely manner;

   c. Contractor is adjudged bankrupt, makes a general assignment for the benefit of its creditors, or a receiver is appointed on account of its insolvency;

   d. Contractor fails in a material way to repair, replace or correct Work not in conformance with the Contract;

   e. Contractor repeatedly fails to supply skilled workers or proper materials or equipment;

   f. Contractor repeatedly fails to make prompt payment to its employees or Subcontractors;

   g. Contractor materially disregards or fails to comply with laws, ordinances, rules, regulations, permits, easements or orders of any public authority having jurisdiction;

   h. Contractor fails to comply with all Contract safety requirements; or

   i. Contractor is otherwise in material breach of any provision of the Contract, including but not limited to quality control, environmental requirements, administrative requirements, coordination and supervision.

2. If City reasonably believes that one of the aforementioned events has occurred, City will provide the Contractor with written Notice of its intent to terminate the Contractor for default, specifying within such notice the ground(s) for such termination. City, at its option, shall require the Contractor to either promptly correct the deficiencies noted in City's intent to terminate or provide City with a corrective action plan as to how such deficiencies will be remedied or cured in a timely fashion. However, if after receipt of the proposed remedy, City has a reasonable basis for concluding that the Contractor has (a) failed or is unwilling to repair, replace or correct the deficiencies, or (b) failed or is unwilling to provide a reasonable and satisfactory corrective action plan, City shall thereafter have the right to terminate this Contract for default.

3. Upon termination, City may at its option:

   a. Take possession of the Site and possession of or use of all materials, equipment, tools, and construction equipment and machinery thereon owned by Contractor; and/or

b. Finish the Work by whatever other reasonable method it deems expedient; or

c. Call upon the surety to perform its obligations under the performance and payment bonds, if applicable.

4. The Contractor and its sureties shall be liable for all damages and costs, including but not limited to: (1) compensation for architect and engineering services and expenses made necessary thereby; (2) any other costs or damages incurred by City in completing and/or correcting the Work; and (3) any other special, incidental or consequential damages incurred by City which results or arises from the breach or termination for default.

5. In the event of termination for default City shall only pay the Contractor for Work successfully completed and accepted by City prior to the date of termination. City shall not be responsible for any other Contractor costs, expenses, or damages including any consequential, special, or incidental damages or lost profits associated with this Contract. In no event shall City reimburse the Contractor for any costs directly or indirectly related to the cause of this termination for default.

6. If, after termination for default, it is determined that the Contractor was not in default, the rights and obligations of the parties will be the same as if the termination had been issued for the convenience of City.

7. The rights and remedies of City in this provision are in addition to any other rights and remedies provided by law or under this contract.

B. **Termination for Convenience**

1. Upon written Notice City may terminate the Work, or any part of it, without prejudice to any right or remedy of City, for the convenience of City.

2. If City terminates the Work or any portion thereof for convenience, Contractor shall recover as its sole remedy:

a. Reasonable costs for all Work completed prior to the effective date of the termination and not previously paid for by City; and

b. A reasonable allowance for Overhead and profit for Work actually performed prior to the date of termination and accepted by City, at a rate not to exceed the percentage amount set forth in the Contract and in paragraph 6.3, *Allowable Costs*, subparagraph A.5, *Overhead and Profit*. The Contractor waives all other claims for payment and damages including without limitation, anticipated profit and overhead on work not performed and accepted by City.

3. The Contractor shall not be entitled to any other costs or damages, whatsoever. The total sum payable upon termination shall not exceed the Contract Price reduced by prior payments. Contractor shall be required to make its request for adjustment in accordance with Article 5, *Changes to the Contract*, and Article 6, *Time and Price Adjustments*.

4. If it appears that the Contractor would have sustained a loss on the entire Contract had it been completed, City shall not reimburse Contractor any profit for the Work completed and shall reduce the settlement to reflect the indicated rate of loss.

C. **Contractor's Obligations During Termination**

Unless City directs otherwise, after receipt of a written Notice of termination for default or termination for convenience, Contractor shall promptly:

1. Stop performing Work on the date and as specified in the Notice of termination;
2. Place no further orders or subcontracts for materials, equipment, services or facilities, except as may be necessary for completion of such portion of the Work not terminated;
3. Cancel all orders and subcontracts, upon terms acceptable to City, to the extent that they relate to the performance of Work terminated;
4. Assign as specifically requested by City all of the rights, title, and interest of Contractor in all orders and subcontracts;
5. Take such action as may be necessary or as directed by City to preserve and protect the Work, Site, and any other property related to this Project in the possession of Contractor in which City has an interest;
6. Continue performance of Work only to the extent not terminated; and
7. Take any other steps required by City with respect to this Project.

8.2 CITY'S RIGHT TO STOP THE WORK FOR CAUSE

A. If Contractor fails or refuses to perform its obligations in accordance with the Contract, City may order Contractor, in writing, to stop the Work, or any portion thereof, until satisfactory corrective action has been taken.

B. Contractor shall not be entitled to any adjustment in the Contract Time and/or Contract Price for any increased cost or time of performance attributable to Contractor's failure or refusal to perform its obligations under the Contract.

ARTICLE 9: CLAIMS AND LITIGATION

9.1 CONTRACTOR CLAIMS

A. Condition Precedent to Filing a Claim.

1. The following actions are a condition precedent to filing a Claim:
   a. The Contractor submitted a timely Notice of Protest, Supplemental Information and Request for Change Order as required by paragraph 5.1;
   b. The Request for Change Order has been denied or deemed denied by City; or
   c. A Unilateral Change Order is issued by City.

B. Failure to file a Timely Claim.

1. At least seven (7) days prior to appropriate time to file a Claim, the Contractor may request an extension of time for filing its Claim. The Contractor shall state the reasons for the request and identify a date certain when the Contractor shall provide a fully documented Claim. Unless otherwise agreed to in writing by the Engineer, a fully documented Claim shall be received by the City within thirty (30) days after:
   a. Denial or deemed denial of a Request for Change Order; or

b. Contractor's receipt of an Executed Unilateral Change Order.

2. Failure to comply with the time requirements set for filing a Claim shall constitute acceptance by the Contractor, on behalf of itself and its Subcontractors and Suppliers, of the Unilateral Change Order and/or City's denial or deemed denial of a Request for Change Order. Such acceptance shall be considered complete, full, and final settlement of all costs, damages, and Claims related to or arising from the Request for Change Order and/or Unilateral Change Order.

C. Contractor's Obligation to Continue to Work. Pending final decision of a Claim hereunder, the Contractor shall proceed diligently with the performance of the Contract Work, including that work associated with the Claim, and maintain its progress with the Work.

D. Information required in a Fully Documented Claim. Every Claim must be submitted by the Contractor, in writing and clearly designated by the Contractor as a fully documented Claim. At a minimum, a fully documented Claim must contain the following information:

1. A detailed factual statement of the Claim providing all necessary details, locations, and items of Contract Work affected;

2. The date on which facts arose that gave rise to the Claim;

3. The name of each person employed or associated with the Contractor, Subcontractor, Supplier, and/or City with knowledge about the event or condition which gave rise to the Claim;

4. Copies of documents and a written description of the substance of any oral communications that concern or relate to the Claim;

5. The specific provisions of the Contract Documents on which the Claim is based;

6. If an adjustment in the Contract Price is sought, the exact amount sought, calculated in accordance with the Contract including paragraph 6.3, *Allowable Cost* and accompanied by (a) all records supporting the Claim and (b) all records meeting the requirements of paragraph 3.10, *Cost Records*;

7. If an adjustment in the Contract Time is sought, the specific days and dates for which it is sought; the specific reason the Contractor believes an adjustment in the Contract Time should be granted; and the Contractor's analyses of its Progress Schedule, any specific Schedule analysis as required by the Contract Documents, and all updates to demonstrate the reason for the adjustment in Contract Time; and

8. A statement certifying, under penalty of perjury, that after the exercise or reasonable diligence and investigation the Claim is made in good faith, that the supporting cost and pricing data are true and accurate to the best of the Contractor's knowledge and belief, that the Claim is fully supported by the accompanying data, and that the amount requested accurately reflects the adjustment in the Contract Price or Contract Time for which the Contractor believes City is liable.

E. Contractor's Duty to Cooperate. The Contractor shall cooperate with City or its designee in the evaluation of its Claim and provide all information and documentation requested by City, its auditors or its designee.

F. City's Evaluation of the Claim.

1. To assist City in the review of the Contractor's Claim, City or its designee may visit the Site, request additional information and/or documentation in order to fully evaluate the issues raised in the Claim and/or audit the Claim.

2. After the Contractor has submitted a fully documented Claim that complies with this provision, City shall respond, in writing, to the Contractor within sixty (60) days from the date the fully documented Claim is received with either:

   a. A decision regarding the Claim; or

   b. Written Notice extending for another thirty (30) days City's time to respond to the Claim.

3. Absent a thirty (30) day extension, the Claim shall be deemed denied upon the sixty-first (61st) day following receipt of the Claim by City. If City had a thirty (30) day extension, the Claim shall be deemed denied upon the ninety-first (91st) day following receipt of the Claim by City.

9.2 CONTRACTOR'S BURDEN OF PROOF ON CLAIM

A. The Contractor shall have the burden of proof to demonstrate entitlement and damages.

B. If the Contractor, on behalf of itself or its Subcontractors and Suppliers seeks an adjustment in the Contract Price or Contract Time not supported by Project cost records meeting the requirements of ¶3.10, *Cost Records,* the Claim is waived.

C. Compliance with the record keeping requirements set forth in this Contract is a condition precedent to recovery of any costs or damages related to or arising from performance of the Contract Work. If City establishes non-compliance of the record-keeping requirement set forth in ¶ 3.10, *Cost Records*, no adjustment shall be made to the Contract Price and/or Contract Time with respect to that Claim.

9.3 LITIGATION

A. As a mandatory condition precedent to the initiation of litigation by the Contractor against City, Contractor shall comply with all provisions set forth in this Contract including those stated in Article 5 and Article 9.

B. Any litigation brought against City shall be filed and served on City within 365 days from either the issuance of the Certificate of Substantial Completion for the entire Contract or Final Acceptance if no Certificate of Substantial Completion of the entire Contract is issued.

C. Venue and jurisdiction shall vest solely in the King County Superior Court.

D. Failure to comply with these mandatory condition time requirements shall constitute a waiver of the Contractor's right to pursue judicial relief from or against the City.

ARTICLE 10: MISCELLANEOUS

10.1 COMPENSATION, WAGES, BENEFITS AND TAXES

City assumes no responsibility for the payment of any compensation, wages, benefits, or taxes owed by the Contractor by reason of this Contract. The Contractor shall indemnify and hold City, its elected officials, officers, agents and employees, harmless

against all liability and costs resulting from the Contractor's failure to pay any compensation, wages, benefits or taxes.

10.2 PREVAILING WAGES

The Contractor shall comply with the minimum wage requirements of RCW 39.12, as amended, including the obligation to pay at least the hourly minimum wage and fringe benefits to workers as required by RCW 39.12. The Contractor shall also post all notices required by the Washington Department of Labor & Industries on forms provided by the Department of Labor & Industries. The Contractor shall timely provide a "Statement of Intent to Pay Prevailing Wages" and timely provide an "Affidavit of Prevailing Wages Paid."

10.3 SUCCESSORS AND ASSIGNS

City and the Contractor each binds itself, its partners, successors, assigns and legal representatives to the other with respect to all covenants, agreements and obligations contained in the Contract. Neither party to the Contract shall assign the Contract or sublet it as a whole without the written consent of the other, nor shall the Contractor assign any moneys due or to become due to it hereunder, without the previous written consent of City.

10.4 THIRD PARTY AGREEMENTS

Except as otherwise may be provided, the Contract shall not be construed to create a contractual relationship of any kind between: any architect, engineer, construction manager, Subcontractor, Supplier, or any persons other than City and Contractor.

10.5 NONWAIVER OF BREACH

No action or failure to act by City shall constitute a waiver of any right or duty afforded to City under the Contract; nor shall any such action or failure to act by City constitute an approval of or acquiescence in any breach hereunder, except as may be specifically stated by City in writing.

10.6 NOTICE TO CITY OF LABOR DISPUTES

A. If Contractor has knowledge that any actual or potential labor dispute is delaying or threatens to delay timely performance in accordance with the Contract, Contractor shall immediately give Notice, including all relevant information, to City.

B. Contractor agrees to insert a provision in its Subcontracts and to require insertion in all sub-subcontracts, that in the event timely performance of any such contract is delayed or threatened by any actual or potential labor dispute, all Subcontractor or lower-tiered Subcontractor shall immediately notify the next higher tier Subcontractor. Subcontractor or Contractor, as the case may be, of all relevant information concerning the dispute.

10.7 HEADINGS

The headings used in the Contract are for convenience only and shall not be considered a part of or affect the construction or interpretation of any contractual provision therein.

10.8 CHOICE OF LAW

In the event that either party shall bring a lawsuit or action related to or arising out of this Contract, such lawsuit or action shall be brought in the Superior Court, King County,

Washington. This Contract shall be governed by, and construed and enforced in accordance with the laws of the State of Washington.

10.9 SEVERABILITY

The provisions of this Contract shall be effective in all cases unless otherwise prohibited by Washington State Law or applicable Federal Law. The provisions of this Contract are separate and severable. The invalidity of any sentence, paragraph, provision, section, Article, or portion of this Contract shall not affect the validity of the remainder of this Contract.

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1.10 GENERAL

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

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

1.10.16 Definitions

[CSI 01 42 16]

Approximate: Generally as shown or described, but has not been verified, or may require adjustment. No level of accuracy is implied or should be assumed.

Or Equal (Or Approved Equal): An alternate product, assembly, or method that the Owner's Representative has reviewed based on information provided by the Contractor and determined to provide functional equivalence, or better, than that specified. Such determination does not relieve the Contractor from responsibility should the product, assembly, or method fail to perform as needed.

Owner's Representative: Person(s) authorized by the Owner to observe the work, administer the contract, approve tests, make decisions, and otherwise act as an agent of the Owner. The terms Engineer, Owner's Observer, Owner's Inspector, and Owner are generally interchangeable with the term Owner's Representative.

Proposed: The word refers to work that is part of the Contract, to be performed by the Contractor. The word "proposed" does not need to show up to indicate work by the Contractor. Unless work is specifically noted to be performed by others, all work is to be performed by the Contractor.

1.11.00 Summary of Work

[CSI 01 11 00]

The work consists of coatings and other improvements at two existing 4.0-million-gallon steel drinking water storage tanks, the North Tank, constructed in 1962, and the South Tank, constructed in 1975. Both tanks have a diameter of 148 feet and a height of 32 feet. The roof of each tank is supported by columns, rafters, and beams. The work includes:

- Interior seal welding at the tank roof
- Interior blasting and recoating
- Replacement of the tanks' cathodic protection systems
- Exterior spiral stairs additions
- Full exterior containment

- Exterior preparation and overcoating, with underlying lead-based coatings to remain mostly undisturbed, and
- Other improvements as described in the project plans and specifications.

The work will be bid and awarded under one contract but must be completed in two separate phases. The City has two water storage tanks in all, both of which are to be improved and recoated as part of this project. To provide adequate water supply to its customers while simultaneously having adequate fire flow storage available, **at least one tank must be in service at all times, and both tanks must be in service from May 15 to October 15 annually**. See Specification section 1.32.13 Scheduling of work for addition details regarding milestone completion dates.

1.11.02 Reuse of Documents

[CSI 01 11 30]

Contractor and any Subcontractor or Supplier shall not:

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

1.11.03 Electronic Data

[CSI 01 31 26]

1. Unless otherwise stated in the Supplementary Conditions, the data furnished by Owner to Contractor, or by Contractor to Owner, that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
2. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 30 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 30-day acceptance period will be corrected by the transferring party.
3. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents

resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

4. Computer Aided Design (CAD) files will not be made available to the Contractor. This includes AutoCAD™, Civil3D™, or other similar file types. Only printed hard copies or electronic representations of hard copies (e.g. PDF) will be provided.

1.13 Permits and Licenses

[CSI 01 41 26]

Building Permit (for stairs, landings, guardrails, and ladders) - Contractor to obtain.

1.14 Work Restrictions

[CSI 01 14 00]

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

Work hours and days are restricted to Monday through Friday 7am to 7pm, Saturday 9am to 6pm. No work will be permitted on Sundays or Holidays. A noise exception from the City will be required if work is proposed by the contractor beyond the work hours listed here.

1.20 PRICE AND PAYMENT PROCEDURES

[CSI 01 20 00]

1.21.55 Cost Increases for Materials

[CSI 01 21 55]

The Owner may adjust the contract price for materials if approved contract time extensions move the substantial completion date into the next calendar year. The Contractor must provide adequate documentation, acceptable to the Owner, that prices have changed from the time Notice to Proceed is given and the time that the materials are ordered. A cost increase will only be allowed for raw materials that are not practical to purchase early and stockpile such as concrete; asphalt; rock; landscaping plantings; and pipe or conduit runs of the same size and wall thickness over 5,000 lf.

1.25.00 Substitution Procedures

[CSI 1 25 00]

Any product or construction method that, in the opinion of the Owner, does not meet these specifications will be considered a substitution. Substitutions must be approved prior to incorporation into the project. The Owner has the right to reject any request for substitution. Incomplete requests will not be reviewed.

Requests shall include an explanation of why the request is being made along with drawings, details, specifications, and samples sufficient to allow the Owner to evaluate the proposed substitute. Requests shall include any change necessary in construction methods with a detailed

description and related drawings of the proposed methods. Provide an itemized comparison of each proposed substitution with the specified product or method. If the Contractor believes there are no variations from the bid documents, include a statement to that fact in the request for substitution.

In making a request for a substitution, the Contractor represents that they have investigated the proposed product or method and has determined that it provides equal or superior form and function to the product specified. The Contractor shall coordinate incorporation of accepted substitutions into the work, making changes that may be required for the work to be completed.

The Contractor waives all claims for additional costs and time related to substitutions. The Owner reserves the right to charge the Contractor for the Owner's time required for incorporating the substitution into the work which may include but not be limited to observation, requests for information, and commissioning.

No guarantee is made that product model numbers included in the specifications or on the plans are current at the time of bidding. The bidder shall provide pricing in their proposal for current versions of discontinued models. If the bidder is uncertain of the correct replacement model, or feels there is a price discrepancy, the bidder shall request a substitution following the requirements of section 1.25.13.10 Substitutions Prior to Bid Opening. Requests for price increases after award will not be accepted.

1.25.13.10 Substitutions Prior to Bid Opening

[CSI 1 25 13 10]

Before opening bids, the Owner may consider written requests from product suppliers or prime bidders for substitutions. All requests for substitution must be received by Owner a minimum of 7 working days prior to bid opening. Approval of substitutions will be only by addendum. The bidder shall include in their proposal all costs for any modifications required to adopt the substitute.

1.25.13.15 Substitutions After Contract Execution

[CSI 1 25 13 15]

After contract execution, the Owner will consider requests for a substitution of products or methods in place of those specified. Submit electronically, or two hard copies of each request for a substitution. Submit requests early enough for the Owner to review the request without affecting the schedule. The Owner will review with reasonable promptness and will provide a response within 15 working days after receipt of all information required for the review, unless the complexity of the proposed substitution requires, in the Owner's sole opinion, additional review time.

If the Owner approves a request for substitution, and the Contractor subsequently requests an alternate substitution for the same or similar work, the Owner reserves the right to charge the Contractor for the costs required to review the alternate substitution.

1.30 ADMINISTRATIVE

[CSI 01 30 00]

1.31 Project Management and Coordination

[CSI 01 31 00]

1.31.01 Contractor's Responsibility

[CSI 01 31 01]

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

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

Damage to existing utilities or property shall be repaired or replaced by the Contractor at the discretion of the Owner.

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

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

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

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

1.31.19 Progress Meetings

[CSI 01 31 19 23]

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

Contractor to provide an agenda covering the following items at a minimum, as applicable.

1. Review minutes of previous meetings.
2. Review of work progress.
3. Field observations, problems, and decisions.
4. Identification of problems that impede planned schedule.
5. Review of submittals schedule and status of submittals.
6. Review of off-site fabrication and delivery schedules.
7. Maintenance of progress schedule.
8. Corrective measures to regain projected schedules.
9. Planned progress during succeeding work period.
10. Coordination of projected progress.
11. Discussion of upcoming required inspections/approvals.
12. Maintenance of quality and work standards.
13. Effect of proposed changes on progress schedule and coordination.
14. Safety issues relating to work.
15. Other business relating to work.

1.32.13 Scheduling of Work

[CSI 01 32 13]

To provide adequate water supply to its customers while simultaneously having adequate fire flow storage available, at least one tank must be in service at all times, and both tanks must be in service from May 15 to October 15 annually. The project timeline and work limitations for this contract are as follows:

- Contract scheduled to be awarded at the City's January 17, 2023 council meeting.
- Limited Notice to Proceed allowing submittals, RFIs, and permit applications will be provided after contract award. Working days will not commence at this time.
- Within 30 working days from contract award, the Contractor shall apply for a Commercial Tenant Improvement Building Permit for the access improvements (stairs, landings, guardrails, and ladder) including PE-stamped calculations for those contractor-designed elements. The City has been advised to expect approximately two weeks for the first review

and one week for a second review. The Contractor's shop drawings, PE-stamped calculations, and permit effort will be considered incidental to Bid Items 4A – and 4B – Tank Accessories.

- Full Notice to Proceed will be issued and construction start date will be determined once a building permit has been issued.
- The contractor will need to provide access to City employees to reservoirs in service and all other on-site facilities, including but not limited to the booster pump station, at all times.
- The Contractor must install either permanent or temporary fencing at the tank base at the start of stair installation.

The order of completion shall be as follows:

1. Building permit submittal including PE-stamped calculations for the stairs, guardrails, platforms, and ladder shall occur withing 30 days from contract award.
2. Exterior non-tank elements including conduit trenching, concrete landing slabs, and fencing around the base of proposed stairs may be constructed prior to tank work.
3. Exterior welding to the tanks may occur while the tanks are in service but must occur prior to coatings application. A Building permit is required prior to installation of the stairs, platforms, and guardrails.
4. Interior welding and Interior and exterior coatings at the South Tank shall be completed between October 1, 2023 and April 15, 2024, while the tank is drained. Coatings must be cured per the manufacturer's recommendations prior to tank disinfection. The tank must be disinfected, filled, and pass bacteriological and other testing per specifications section 1.75.16 successfully prior to being returned to service.
5. Interior welding and interior and exterior coatings at the North Tank are planned between October 16, 2024 and April 14, 2025, while the tank is drained. Coatings must be cured per the manufacturer's recommendations prior to tank disinfection. The tank must be disinfected, filled, and pass bacteriological and other testing per specifications section 1.75.16 successfully prior to being returned to service.

   An accelerated schedule for the North Tank (Schedule B) may be allowed, at the sole discretion of the City, if the Contractor demonstrates sufficient speed in completing work on the South Tank (Schedule A). For example, if the Contractor completes work on the South Tank between October 16, 2023 and January 15, 2024, the City may allow work on the North Tank between January 16, 2024 and April 2024.
6. Only 1 tank can be out of service at a time, and both tanks must be in service between May 15 and October 15 annually.
7. All work must be complete with both tanks back in service by February 15, 2025.
8. Elements that do not damage the coatings, such as electrical/controls elements and the cathodic protection system replacement, may be completed after coating application.

Milestone completion deadlines:

- **May 15, 2024** – Schedule A – South Tank complete and back in service. North tank still in service.
- **February 15, 2025** – All work complete, including Schedule B – North Tank, with both tanks in service

1.32.16 Construction Progress Schedule

[CSI 01 32 16]

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

1.32.29 Periodic Work Observation

[CSI 01 32 29]

The Owner may elect to have a Consultant representative on site to monitor, observe and record construction progress. The Contractor maintains complete responsibility to verify construction is meeting the design intent and is being constructed in accordance with the plans and specifications. It is not the responsibility of the Consultant to address means and methods issues on site or to direct safety issues on site. The Consultant does not have the authority to stop the work.

1.33 Submittals

[CSI 01 33 00]

1.33.23 Shop Drawings, Product Data, and Samples

[CSI 01 33 23]

Submittals are required for all items installed on this contract. Address submittals to:

RH2 Engineering, Inc.
22722 29th Drive SE, Suite 210
Bothell, WA 98021
Attn: Jon Conner, SE
Email: jconner@rh2.com

Submittals may be provided in electronic format (preferred) or hard copy. Owner reserves the right to require the Contractor to provide hard-copy submittals at no additional cost to the Owner. When hard-copy submittals are provided, submit three (3) copies; one set will be returned to the Contractor after review.

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

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

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

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

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

- Project Name as it appears on the Document Cover.
- Prime Contractor and Applicable Subcontractor.
- RH2 Engineering.
- Owner's Name (City of Mercer Island).
- Applicable Specification and Drawings Reference.
- A stamp or statement that the Contractor has checked the equipment for conformance with the contract requirements, coordination with other work on the job, and dimensional suitability.
- A place for the Engineer to respond. (Engineer may elect to respond using the Engineer's standard forms.)

Submittals that do not comply with these requirements may be returned to the Contractor for re-submittal. The Contractor shall revise and resubmit as necessary. Acceptable submittals will be reviewed as promptly as possible and transmitted to the Contractor not later than 20 working days after receipt by the Engineer. Delays caused by the need for re-submittal shall not be a basis for an extension of contract time or delay damages.

Shop drawings and submittals shall contain the following information:

1. Drawings, dimensions, and weights.
2. Catalog information.
3. Model number, including descriptions for option and accessory codes.
4. Manufacturer's specifications.
5. Special handling instructions.

6. Maintenance requirements.
7. Wiring and control diagrams.
8. List of contract exceptions.

For integrated or package systems (see also 1.61.31), the components, shop drawings, instructions, and other elements may be submitted and reviewed individually. But the initial submittal must include the complete proposed system, and the final submittal must also be for the complete system clearly indicating all changes made during the submittal process.

The Contractor warrants that they have determined and verified all field measurements, field construction criteria, materials, catalog numbers, and similar data, and have checked and coordinated each submittal with the requirements of the work and of the contract documents.

The Owner will pay the costs and provide review services for a first and second review of each submittal item. Additional reviews shall be paid by Contractor by deducting up to $200 for each hour of review time from the next scheduled payment.

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

1.40 QUALITY REQUIREMENTS

[CSI 01 40 00]

1.42.19 Reference Standards

[CSI 01 42 19]

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

- Mercer Island Municipal Code
- IBC International Building Code
- UPC Uniform Plumbing Code
- IMC International Mechanical Code
- IFC International Fire Code
- NEC National Electrical Code
- AWWA American Water Works Association
- ANSI American National Standards Institute
- ASA American Standards Association
- ASTM American Society for Testing and Materials
- WSEC Washington State Energy Code

1.43.20 Warranty

[CSI 01 43 20]

The Contractor shall warrant all work and products for a period of one (1) year following the warranty start date except for those components and listed warrantees below.

The warranty start date shall be determined in accordance with section 7.9 of the General Provisions.

The warranty does not cover damage due to misuse by the Owner or conditions outside of the Owner or Contractor's control or exceptional events (force majeure) including war, strikes, floods (water exceeding normal high water mark), rainfall in excess of 100 year storm event, fire, earthquakes, high winds (over 108 mph for 3 seconds peak gust), freezes below 10 degrees Fahrenheit (Western Washington), governmental restrictions, vandalism, utility power failures, or utility power surges. The Contractor has control over workmanship, third party subcontractors and parts and materials used to complete the project.

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

- Division 8.34.2 Access hatches
- Division 9.98.1 Steel reservoir coating systems
- Division 13.47.13 Cathodic protection systems

1.45.16 Field Quality Control Procedures

[CSI 01 45 16]

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

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

- Special Inspections as required per IBC Division 17 and as noted on the drawings
- Any additional inspections required by the Building Department, or other approval agency
- Steel tank coatings
- Water quality testing

1.70 EXECUTION AND CLOSEOUT REQUIREMENTS

[CSI 01 70 00]

1.74 Cleaning and Waste Management

[CSI 01 74 00]

1.74.23 Final Cleaning

[CSI 01 74 23]

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

Clean up debris and unused material and remove from the site and any buildings. If vehicle traffic causes ruts, repair asphalt (new or existing) in paved areas. In non-traffic areas back track with dozer or excavator and repair to final surface condition including necessary hydroseed, mulch, and landscaping. Eliminate weeds within the construction area prior to project closeout.

Buildings shall be broom clean and all foreign damage or markings removed or repaired.

Equipment shall be washed clean using appropriate methods.

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

Remove existing equipment or materials identified in the contract documents or that interfere with the work. Dispose of all such existing equipment or materials unless the Owner requests items to be salvaged for their use. Owner has first right of salvage.

Should the Owner identify salvageable items of their property prior to removal, the Contractor shall protect said items from damage during the work and will be responsible for reimbursing the Owner should the Contractor damage the items.

1.74.30 Steel Reservoir Exterior Cleaning

[CSI 33 01 10 56]

Both reservoir exteriors shall be cleaned at Substantial Completion.

Application:

- 150 – 160-degree Fahrenheit hot water.
- Soft bristle brush all sharp edges including reservoir to foundation connections and access system to reservoir shell connections.
- Clean all reachable and smooth surfaces.
- Pressure NOT to exceed 500 psi.
- Apply at maximum of 1 foot from surface to be cleaned.
- 6 gpm application rate.
- 20-degree fan on nozzle.

Areas to be cleaned include:

- 0 to 32 feet above foundation (exterior shell wall).
- Roof

Contractor shall protect equipment from damage.

Owner representative shall inspect cleaning prior to demobilization of cleaning crew. Provide 24-hour notice to Owner representative. Surfaces shall be cleaned of all dust, dirt, debris, moss and other organic material to the Owner representative's satisfaction. Damage to the coating shall be repaired to existing or better condition.

1.75.16 Startup Procedures

[CSI 01 75 16]

1.75.16.10 Startup

[CSI 01 71 16 10]

See the Cathodic Protection section for cathodic protection system startup.

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

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

1.75.16.12 Startup and Testing Coordination

[CSI 01 75 16 12]

The Contractor shall conduct all testing and startup. Testing and startup shall not be a cause for claims for delay by the Contractor and all expenses for testing and startup shall be incidental to this contract.

The placing of all improvements in service shall consist of three parts: "testing", "startup", and "operation". Not less than 14 calendar days before the anticipated time for beginning testing, the Contractor shall notify and submit to the Owner for approval, a complete plan for the following:

1. Schedules for tests:
    A. Cathodic Protection System
    B. Field Sensors

Failure to provide proper notification to the Owner may lead to liquidated damages if schedule cannot be maintained. If rescheduling is required because components are not ready for testing, the notification requirements are reset as needed to provide 14 calendar days advance notice to reserve the Owner Representatives' time.

The Contractor shall arrange for all materials, supplies, and labor necessary to efficiently complete the testing, startup, and operation. Measuring devices must be functional, accurate, legible, and scaled appropriately for the test. The Owner has the right to reject or require verification for any measuring device the Owner suspects in its accuracy.

At a minimum, the Contractor shall provide:

- Calibrated pressure gauge(s) (max scale of 120% to 200% of test pressure)
- See Div. 9 Coatings for coatings-related testing equipment.

1.75.16.20 Testing

[CSI 01 75 16 20]

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

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

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

Not less than five working days before the anticipated time for beginning the testing, the Contractor shall provide a list of representatives that will be attending the testing. The Owner may request additional representatives at no additional cost if said representatives are identified in these specifications.

Qualified product representatives to be on site for the following equipment, at a minimum:

- Cathodic protection system

Additional representatives required may be identified elsewhere in these specifications.

1.75.16.22 Scheduling of Owner Review for Testing

[CSI 01 75 16 22]

See Division 1.75.16.10 for scheduling and notification requirements.

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

1.75.16.40 Electrical and Control Systems Testing

[CSI 01 75 16 40 or 25 08 00 or 26 08 00]

The following is a list of components that shall be tested prior to project completion. This list is intended as a general guide and is not necessarily complete:

- Level Transmitters
- Intrusion sensors and alarms

1.75.16.50 Reservoir Testing and Disinfection

[CSI 01 75 16 50 or 33 08 10 or 33 01 10.59]

It is estimated that it may take 24 hours to fill and 48 hours to drain the reservoir. Provide 48-hour notice for any operational needs. These time periods are included in the contract timeframe, assuming that the initial testing passes. Should a leak test or disinfection test fail and require draining, the contractor must anticipate these time periods during scheduling and understand that they may result in liquidated damages.

Prior to disinfection, hose down surfaces with potable water and sweep up debris and sediment. Do not wash debris into the drain pipe.

Follow the procedures of AWWA C652 Chlorination Method 2, as modified herein, before placing the facility in service. Disinfect all interior surfaces including walls, floor, piping, ceiling, columns, ladders, stairs, and appurtenances. Apply a chlorine solution containing not less than 200 PPM of chlorine using spray equipment or brushes. Chlorine solution may be re-circulated during disinfection unless it becomes contaminated or drops below 100 PPM. Open and close all valves several times during the chlorination. Liquid chlorine, sodium hypochlorite, or calcium hypochlorite may be used for disinfection purposes. Disinfected surfaces shall remain in contact with the strong chlorine solution for at least 30 minutes. Fill drain pipe with 10 ppm solution.

If it will be more than 24-hours (calendar) between initial disinfection and filling, wash chlorine solution off any stainless steel using potable water no less than 30 minutes nor more than 12 hours after disinfection.

Following initial disinfection, fill to overflow with potable water. Filling must occur as soon as practical after disinfection and the 30-minute waiting period. If filling is delayed for more than one week, the disinfection shall be repeated. Purge the water in the drain pipe prior to complete filling of the reservoir (dechlorinated if necessary). Water with a chlorine residual shall be stored and aerated or otherwise neutralized until it can be safely disposed of in accordance with all applicable regulations. All disposal shall be the responsibility of the Contractor. Water containing a chlorine residual shall not be disposed of into the water system, stormwater system, or any surface watercourse.

Let the water sit for 24 hours. A water sample will then be taken by the Owner from the reservoir and from the existing water supply for reference. A laboratory certified by the Washington State Department of Ecology will be retained by the Owner to perform a bacteriological test of the sample. The reservoir shall not be placed in service until passing test results have been received and approved by the Owner and the necessary documents have been submitted to the Washington State Health Department. Test for the following parameters, minimum.

- Chlorine residual (tested at the site).
    - After 24 hours, the water must have a chlorine residual of 2.0 ppm or 50% of the chlorine residual present in the distribution system when the tank was filled, whichever is less. If the value is less, the reservoir shall either be re-dosed with chlorine, or drained and re-sterilized, at the Owner's discretion.
- Coliform (absence required)
- pH (6.5 to 8.5)
- Alkalinity
- Turbidity
- Conductance (700 Umhos/cm max)
- See Reservoir Soak Test section for additional test parameters.

Alkalinity and turbidity do not have fixed values to meet but should be near those of the water used for filling. The Owner will determine if the values are acceptable.

The Owner will provide water for the initial testing of the reservoir at no cost to the Contractor. Should the initial test not pass, or the water sits in the reservoir and becomes unusable, the costs for additional water and tests shall be the responsibility of the Contractor. Exercise special care when draining the reservoir to avoid damage to surrounding properties.

1.75.16.54 Steel Reservoir Leakage Test

[CSI 01 75 16 54 or 33 08 10]

A leakage test of the completed tank installation shall be performed by the Contractor. The Contractor shall provide a watertight tank with no leakage. Any water appearing outside of the tank will not be accepted.

The Owner will provide water for the initial testing of the tank delivered through the tank inlet piping at no cost to the Contractor. The Contractor will be charged for additional water at the Owners unit rate for service. Disposal of test water, if required, shall be the responsibility of the Contractor.

For bolted tanks with factory-applied coating systems, the disinfection procedure may be performed concurrently with water testing. Test water shall be introduced into the distribution system rather than wasted subject to (1) a satisfactory leakage test, (2) satisfactory bacteriological testing and (3) the chlorine residual limitation of the particular disinfection method as described in AWWA C652.

1.75.16.56 Reservoir Soak Test

[CSI 01 75 16 56 or 33 08 10]

A soak test shall be performed to check the level of chemical contaminants in the field, in compliance with the Washington State Department of Health 2019 Water System Design Manual Appendix G.

Following a 7-day soaking period, the water in the reservoir shall be sampled by the Owner to determine the level of any leached chemicals. Samples of the water shall be analyzed by a laboratory certified by the Washington State Department of Ecology. Cost of initial test shall be borne by the Owner. The samples shall be tested for normal domestic water quality plus the following additional constituents.

- Complete Inorganic Chemical sample (IOC)
- Volatile Organic Chemical analysis (VOC)
- General Synthetic Organic Chemical analysis (SOC)

A report of the test results shall be sent to the Washington Department of Health regional office for evaluation and approval before delivering water from the reservoir. The report shall include the word "Investigative" in the title or purpose section.

Re-testing is required when contamination exceeding the maximum contaminant level or trigger level is found. At the Owner's discretion, the Owner may elect to put the facility in operation if the trigger level is exceeded but the maximum contaminant level is not.

The soaking period shall imitate actual operating conditions. Therefore, in some cases, longer or shorter soaking periods may be specified, depending upon an evaluation of field conditions encountered.

The Contractor shall pay for the water wasted due to soak test failure. Labor, expenses and laboratory certification for soak re-test shall be borne by the Contractor.

1.78 Closeout Submittals

[CSI 01 78 00]

1.78.23 Operation and Maintenance Data

[CSI 01 78 23]

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

Detailed requirements for specific equipment and systems may also be included in their respective specification sections.

Remove and preserve all tags and instructions that come packaged with or attached to equipment. Deliver all such documents to the Owner bound in a three-ring binder or with the O&M Manual. Insert documents in sleeves if they cannot be punched. Scan all such documents to Adobe PDF format and provide with the O&M Manual.

Prior to the receipt of payment for more than 90 percent of the work, deliver to the Owner acceptable manufacturer's instructions covering equipment and systems O&M procedures, for coatings furnished under this contract, and any additional items indicated by the Owner.

At a minimum, provide O&M information for the following:

- Cathodic Protection
- Electrical systems

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

Products

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

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

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

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

Maintenance

A. Recommended spare parts.

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

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

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

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

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

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

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

I. Provide USB flash drive or DVDs utilized in the manufacturer's instruction program.

Operation

A. Recommended trouble-shooting and startup procedures.

B. Recommended step-by-step operating procedures.

C. Emergency operation modes, if applicable.

D. Normal shutdown procedures.

E. Long term shutdown (mothballing) procedures.

F. Equipment specifications and guaranteed performance data.

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

All operations and maintenance manuals shall be in PDF electronic file format. The PDF files shall be based upon the following types of sources: original PDF files from the manufacturers and / or PDF files created directly from other electronic file formats such as .doc, .docx, .xls, .xlsx, or .dwg but not image formats such as .jpg or .TIF. The use of image formats may be approved, but on a case by case basis. In general, scanning hardcopies into PDF files is not acceptable. Doing so may be approved, but on a case by case basis.

Use standard page sizes which are:

- 8½ inches by 11 inches
- 11 inches by 17 inches
- 22 inches by 34 inches

Manuals shall be assembled and indexed so that information on each coating and piece of equipment can be readily found.

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

See Division 1.43.20 for details regarding required warranties for specific components.

1.78.39 Project Record Documents

[CSI 01 78 39]

Prior to receiving final payment for the work, deliver a complete set of "As-Constructed" records (also called as-built, or record plans) to the Owner. The Owner has sole discretion to determine if the records provided are legibly and accurately presented and may request revisions, which shall be provided by the Contractor at no additional cost. Records shall be made as follows or as approved by the Owner:

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

Records shall be provided in PDF format.

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

1.79 Demonstration and Training

[CSI 01 79 00]

1.79.10 Training

[CSI 01 79 10]

See the Special Construction for the cathodic protection systems training.

At the time that the facility is ready to be put into operation, the Contractor is to conduct an operation and maintenance training meeting with the Owner to explain in detail the operation and maintenance requirements of each of the facility's components. The training meeting shall not occur on the same days as a startup unless specifically approved by the Owner.

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

1.80 PERFORMANCE REQUIREMENTS

[CSI 01 80 00]

1.81 Facility Performance Requirements

[CSI 01 81 00]

1.81.30 Seismic Restraint and Anchorage

[CSI 01 81 30]

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

Ip = 1.5	Sds = 1.137	Seismic Design Category = D

A complete seismic restraint system shall be provided including struts, straps, bolts, nuts, washers, etc. as required for secure attachment to foundations, pads, ceilings, floors, and/or walls.

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

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

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

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

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

Install seismic restraints when called for in the contract or recommended by the product manufacturer. Install in accordance with the manufacturer's requirements as applicable.

Seismic restraint systems shall be installed so as not to interfere with normal operations and maintenance of the equipment and other components as shown on the plans. Interference with normal operations and maintenance shall be as determined by the Owner. Drilled-in anchors for non-rotating equipment shall be Concrete Anchors unless otherwise specified.

1.81.50 Materials in Contact with Domestic Water

[CSI 01 81 50]

All devices, components, and materials substantially in contact with potable water shall be certified by NSF International to comply with NSF/ANSI (leachable materials) and NSF/ANSI 372 (lead content). Certification of compliance shall be supplied in writing at the time of the submittal process. See exceptions in WAC 246-290-220(1).

2.00 GENERAL

[CSI 32 00 00]

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

2.05 Common Work for Exterior Improvements

[CSI 32 05 00]

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

Part 1 - General

Submittals

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

- Disposal Permits
- Pipe Bedding
- Trench Backfill
- Gravel Backfill for Drains
- Crushed Surfacing
- Fencing

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

2.30 SITE IMPROVEMENTS

[CSI 32 30 00]

2.31 Fencing and Gates

[CSI 32 31 00]

2.31.1 Common Work for Fencing

[CSI 32 31 05]

Part 1 – General

Related Sections

- Division 3 Concrete
- Division 10.14.23 Signage
- Division 11.40 Gates

Part 3 – Execution

Preparation

Clear the area along the fence path, remove surface irregularities and grade earth smooth and continuous prior to fence installation.

2.31.3 Chainlink Fence

[CSI 32 31 13]

See plans for proposed security fence at base of both tanks' proposed spiral stairs.

2.40 DEMOLITION AND STRUCTURE MOVING

[CSI 02 40 00]

2.60 CONTAMINATED & WASTE MATERIALS HANDLING

2.60.2 Waste Material Control

[CSI 01 74 19]

Part 1 – General

Quality Assurance

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

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

Part 3 – Execution

Installation/Construction

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

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

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

Minimize the amount of dust and other airborne particles caused by any demolition, excavation, stockpiling, or removal activities. Implement dust control measures prior to the beginning of work activities. Exposed soil may be wetted with water or covered to minimize

dust creation. Water runoff from the wetting procedure shall be accumulated and cleaned prior to disposal. Remove water runoff accumulation from the site prior to project completion.

Cleaning

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

2.61 Contaminated Materials

See Appendix A for the results chemical testing performed on both tank exterior coatings, which are to be washed and overcoated, and will therefore remain mostly intact and encapsulated.

In addition, coal tar coatings may be present in hard-to-reach areas of the tanks' interiors, such as between the tops of roof rafters and the bottom of roof plates. The Contractor shall take all necessary steps to protect its employees from related risks.

2.61.3 Hazardous Lead Materials

[CSI 02 83 00 (facility) 02 61 13 (soils)]

Part 1 - General

Quality Assurance

If the Contractor discovers hazardous lead or other hazardous materials not already identified below, they shall notify the Owner as to where those hazardous lead materials are located. Due to the OSHA Right to Know Laws, the Owner is required to notify the Contractor that hazardous lead materials exist or if not known but discovered, the Owner is required to mitigate the capsulization, where allowed, or removal of the hazardous lead materials.

Refer to 9.90.03 for additional information regarding containment requirements.

Site Conditions

The Contractor shall not allow the work to contaminate surrounding soils. Lead is included in both tanks' exterior underlying coatings, which are to be washed and overcoated as part of this project, therefore remaining mostly intact and encapsulated. However, the project also includes some removal of exterior accessories which may have underlying lead coatings, some spot repair to bare steel and some welding to the tank shell, where prep will involve removal of some small areas of lead-based coatings. The Contractor shall use full containment as described in Division 9 and protect workers and others as required, using vacuum attachments, ventilation, and/or other approved means, which are the responsibility of the Contractor.

Lead shall be encapsulated, where permitted, or removed and properly disposed of. The cost for this hazardous material removal made known to the Contractor as listed above shall be completed by the Contractor at their expense. See Division 18, Measurement and Payment, for information regarding coatings-related waste disposal.

Installers

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

3.00 GENERAL

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

3.05 Common Work for Concrete

[CSI 03 05 00]

Part 1 - General

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

References

Materials shall conform to the following standards:

- Cement - ASTM C150
- Fine aggregate - ASTM C33
- Admixtures - ASTM C494
- Air-entraining admixtures – ASTM C260
- Fly Ash – ASTM C618

Submittals

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

- Grouts

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

Part 2 - Products

Components

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

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

Water used in concrete shall be potable.

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

Mixes

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

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

Finishes

Coat all aluminum in contact with concrete as specified in Division 9.

Part 3 - Execution

Inspection

See Statement of Special Inspections on the Drawings for special inspection requirements. Provide two (2) full working day notice to Owner prior to needing the required inspections.

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

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

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

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

3.06 Maintenance of Concrete

[CSI 03 01 00]

3.06.30.71 Resurfacing of Cast-in-Place Concrete

[CSI 03 01 30.61]

Part 1 - General

This division covers that work necessary for repairing spalled and damaged concrete. Repair any areas with deterioration exceeding ½-inch, where rebar is exposed or where directed by the Owner.

Part 2 - Products

Materials

CONCRETE REPAIR MATERIAL: SikaTop 111 PLUS or equal cement-based repair mortar. Mortar shall be ANSI/NSF approved if in contact with potable water and contain a corrosion inhibitor. See Manufacturer's Literature for primer and auxiliary products appropriate for use with the repair material.

SILANE SEALER shall be alcohol based, 95 percent silane. No fillers, sterates or paraffins are allowed. Use DUR A PELL 100 as manufactured by Chemprobe Coating Systems or equal.

Part 3 - Execution

Preparation

The Contractor shall be familiar with the product and methods and be prepared to discuss the repair procedure at the Preconstruction Meeting.

High pressure power-wash the exposed structure to remove all loose, delaminated concrete to sound concrete.

Surface Preparation: Remove loose, delaminated concrete to sound concrete. Where corrosion of the reinforcement exists, continue bulk removal along the reinforcing steel and adjacent areas with evidence of corrosion-induced damage Under-cut all exposed reinforcing steel by a minimum of ¾-inch. The shape of the prepared cavity should be square or rectangular in shape. The edges of the patches shall be saw-cut perpendicular to the surface to a minimum depth of ½-inch. Repair area shall be a minimum of ½-inch deep throughout. Use abrasive blasting to remove residual dust, debris, fractured concrete, and contaminants that prevent proper bonding. Following abrasive blasting, blow out repair areas with oil-free compressed air. The final surface texture should be rough with minimum ⅛-inch amplitude.

Treatment of exposed reinforcement: All signs of corrosion should be removed from exposed reinforcing steel by an abrasive blasting, wire wheel or needle scaler. If the cross-sectional area of the reinforcing steel has been significantly reduced, the engineer should be consulted. Prime reinforcing as recommended by the repair material manufacturer.

Installation

Surface Saturation: Saturate surface with potable water. The base concrete shall be in a saturated surface dry (SSD) condition prior to application of repair material to prevent a rapid loss of moisture from the repair material and into the substrate.

Mixing and Application of Repair Material: Mixing and application shall be in strict accordance with the manufacturer's instructions. Apply the material with adequate pressure before the bond coat dries. Thoroughly consolidate the repair material into the corners of the patch and around any exposed reinforcement in the repair zone. If a second lift is required, thoroughly roughen the surface of the first lift by scoring the soft mortar to achieve an aggressive finish, similar in profile to the prepared concrete substrate. If the second lift will not be immediately applied, keep the first lift moist until application of the second lift. Finish to match existing surface. Cure using curing compound.

Apply silane sealer as specified to exposed surfaces and edges of roof slab.

3.60 GROUTING

[CSI 03 60 00]

3.62 Non-Shrink Grouting

[CSI 03 62 00]

3.62.13 Non-Metallic Non-Shrink Grout

[CSI 03 62 13]

Part 1 - General

Summary

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

Storage and Handling

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

Part 2 - Products

Materials

Precision Non-Shrink Grout:

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

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

A. Compressive Strength at fluid consistency (ASTM C109-Modified): 3500 psi (24 MPa) at 1 day, 7500 psi (52 MPa) at 28 days.

B. Passes ASTM C1107 as a grade B grout when tested as temperature minimum and maximums of 45 degrees Fahrenheit to 90 degrees Fahrenheit (8 degrees Celsius to 32 degrees Celsius) at a working time of 30 minutes. Grout must be tested at a fluid consistency per ASTM C939 and remain fluid at temperature range minimum and maximums for the 30-minute working time. All materials including water must be mixed and tested at temperature minimum/maximums.

C. Modulus of Elasticity at 28 days at fluid consistency (ASTM C469): 3.0 x 10^6 psi (20.7 GPa) minimum, 3.9 x 10^6 (27.0 GPa) maximum.

D. Coefficient of Thermal Expansion for fluid consistency (ASTM C531): 7.5 x 10^{-6}/ degrees Fahrenheit maximum (13.5 x 10^{-6}/ degrees Celsius).

E. Flexural strength at 28 days for fluid consistency (ASTM C78): 1300 psi (7.9 MPa).

F. Resistance to rapid freezing – thawing (ASTM C666, Procedure A): 300 cycles- min RDF 90 percent.

G. Split tensile strength at 28 days at fluid consistency (ASTM C496): 450 psi (3.1 MPa).

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

Precision non-shrink grout shall be MasterFlow 928 or 885 Grout or approved equal.

General Purpose Non-Shrink Grout:

General Purpose Non-shrink grout shall meet the compressive strength and nonshrink requirements of CRD-C 621, Grades B and C; Corp of Engineers Specification for Non-shrink grout; and ASTM C1107, Grades B and C. General Purpose Non-shrink grout shall be MasterFlow 713, Dayton Superior 1107 Advantage, or approved equal.

Provide curing compounds as recommended by the grout manufacturer.

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

Mixes

Comply with grout manufacturer's recommendations for mixing procedures.

Adjust water temperature to keep mixed grout temperature in the range of 45 degrees Fahrenheit (7 degrees Celsius) and 90 degrees Fahrenheit (32 degrees Celsius) minimum/maximum.

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

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

Part 3 - Installation

Preparation

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

Remove at least ¼-inch (6mm) of existing concrete facing and continue removal as required to expose sound aggregate.

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

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

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

Installation

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

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

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

Division 5
Metals

5.00 GENERAL

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

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

5.05 Common Work for Metals

[CSI 05 05 00]

Part 1 - General

Related Sections

- Division 1.81.45 Location Designations
- Division 9.90.00 Common Work for Painting and Coating
- Division 9.90.01 Color Schedule
- Division 9.91.13.12 Metals in contact with Concrete
- Division 9.91.13.01 Exterior metals
- Division 9.91.23.01 Metals interior
- Division 9.91.23.04 Galvanized iron and nonferrous
- Division 9.91.33 Submerged metals
- Division 1.81.30 Seismic Restraint

Submittals

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

- Shop Drawings showing details of Fabricated Metalwork including connections and welding
- Calculations and plans stamped by a professional engineer licensed in the State of Washington for all Contractor- or Manufacturer-designed components or assemblies including stairs, platforms, guardrails, and ladders.
- Welder certifications. For ASME Section IX certifications, and if requested by the Owner, provide a continuity log if the last certification was 6 months prior to the work being performed.

Inspections

Unless otherwise noted on the Plans, specifications, or building department requirements, special inspections related to metal fabrications, placement and welding shall be subject to 48-hour notice to the Engineer prior to the inspection time. 48-hour notice is defined in Division 1, Contractor Responsibility.

Any Field welding shown on the Plans will require special inspections in accordance with section 1704.3 of the IBC and AISC 360.

Quality Assurance

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

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

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

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

Welding of steel and stainless-steel fluid transport pipe that is not a structural member shall be performed by operators qualified for AWS B2.1, AWS D10.18 or the ASME Boiler and Pressure Vessel Code Section IX part A. Welders may also provide other certifications for review and approval by the Owner, though approval of other certifications should not be assumed.

Part 2 - Products

Materials

Structural Steel

Structural steel shall conform to the following requirements:

Plates, shapes, angles, rods - ASTM A36 and A992, Fy ≥ 36 ksi

Special shapes, plates - ASTM A572, Fy ≥ 50 ksi

Pipe Columns - ASTM A53, Grade B Type E or S, Fy ≥ 35 ksi (see Division 15.22 for steel pipe carrying fluids).

Structural Tubing - ASTM A500, Grade B, Fy ≥ 46 ksi

Stainless Steel

Stainless steel shall be type 304 (non-welded) or type 304L (welded) or as called out.

Plates - ASTM A240

Fasteners - ASTM F593

Extruded Structural Shapes - ASTM A276

Pipe - ASTM A240 or higher grade or as called out.

See Section 15.22.4 for information on pipe used for mechanical applications.

All stainless steel shall have a standard mill finish where concealed or No. 4 finish where exposed and shall be cleaned of all foreign matter before delivery to the job site.

Aluminum

Plates - ASTM B209, Type 6061-T6

Extruded Shapes - ASTM B308, Type 6061-T6

Pipe - ASTM B210 Type 6061

Architectural Applications - ASTM B210, Type 6063

Aluminum materials in contact with concrete or other metals or other masonry materials shall have surfaces coated per Division 9.

Galvanized Steel

Base metal shall be as specified for Mild Steel.

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

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

Manufactured Units

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

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

Finishes

All steel fabrications shall be surface prepped, shop primed and field coated in accordance with Division 9. Shop priming shall be protected as required to prevent damage to the coating during shipping. Hold back shop priming from areas to be field welded.

Isolate and coat dissimilar metals to prevent galvanic corrosion.

Non-exposed structural steel: Mill finish or as shown on Plans

Exposed structural steel (damp or wet locations): Division 9

Aluminum: Division 9

Galvanized steel: Division 9

Stainless steel: Division 9

Part 3 - Execution

Fabrication

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

All shop welds shall be ground smooth.

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

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

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

All stainless-steel shop welds shall be pickled after welding to remove heat damage and contaminants. Field welds must be passivated using an Engineer approved product (Citrisurf 2210 or equal). If the metal will be in contact with potable water, pickling and passivation products must be citric acid based and thoroughly removed, or use a product approved by USDA or NSF.

Installation

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

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

Temporary bracing, such as temporary guys, braces, false-work, cribbing, or other elements, shall be provided by the Contractor in accordance with the requirements of the "Code of

Standard Practice", wherever necessary to accommodate all loads to which the structure may be subjected, including construction loads. Such bracing shall be left in place as long as may be required for safety. As erection progresses, the work shall be securely bolted or welded to compensate for all loads during construction.

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

5.05.23 Bolts and Other Connectors For Structural Elements

[CSI 05 05 23, 06 05 23]

Part 2 - Products

Materials

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

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

Connection bolts, nuts and washers for all materials in wet, damp or corrosive locations shall be Stainless Steel, alloy 304 in raw domestic or treated domestic water, alloy 316 in treatment process and sewage applications, and alloy 317 for acidic transport. Bolts and nuts shall meet ASTM F593B (bolts ¼-inch to 1½-inch in diameter with 30 ksi yield) and F594B (nuts). Use Nitronic 60 bolts and nuts for strong chlorine environments.

Steel and cast-iron fabrications: Connection bolts for dry locations shall be ASTM A307 galvanized or zinc plated bolts.

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

Aluminum Fabrications: Connection bolts shall be ASTM A307 galvanized. Aluminum fasteners may be allowed where high strength is not needed (e.g. mounting expanded metal screens, or louver fins), confirm with Engineer prior to use. Steel screws must be galvanized, or zinc plated. 300 Series stainless steel fasteners allowed only with the use of isolating washers.

Stainless steel fabrications: Fasteners to match same stainless series as structure (e.g. 300 series fasteners with 300 series structure)

Bolts installed into hardened concrete and CMU shall be Concrete Anchors per section 3.15.19.

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

For pump anchor bolts, see Division 11.

For mechanical pipe (non-structural) connections, see Division 15.21, "Common Work for Pipe and Fittings".

Part 3 - Execution

Installation

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

Dissimilar metals:

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

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

5.50 METAL FABRICATIONS

[CSI 05 50 00]

5.51 METAL STAIRS

[CSI 05 51 00]

5.51.05 Common Work for Stairs and Ladders

[CSI 05 51 05]

Part 1 - General

Related Sections

This section also applies to section 6.72.23 Composite Stair Assemblies, and 6.72.33 Composite Ladders.

Design Requirements

Stair treads shall be pre- fabricated units that that attach to stair framing with approved removable fasteners. Stair treads shall meet all ASCE 7, IBC, and OSHA Section 1910.24 requirements.

Ladders shall meet the requirements set forth in the IBC, ASCE 7, OSHA 1910.27 and WAC 296-876.

Safety cages, platforms, and fall prevention devices shall be provided as shown on the Plans. They shall comply with WAC Section 296-876-60065 through 296-876-60080.

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

Part 2 - Products

Materials

All stairs, ladders and related accessories shall be coated per the project specifications, aluminum, or fiberglass as indicated on the Plans.

Fabrication

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

5.51.19 Metal Grating Stairs

[CSI 05 51 19]

Part 2 - Products

Materials

Width shall be as shown on the drawings. Materials shall match adjacent grating, or stair material. Bearing bar and cross bar configuration shall match adjacent grating. If no adjacent grating, minimum 1-inch by $^{3}/_{16}$-inch bearing bars with cross bars spaced at 4-inch on center, or as required to meet loading requirements.

5.52 METAL RAILINGS

[CSI 05 52 00]

5.52.05 Common Work for Railings

[CSI 05 52 05]

Part 1 - General

Related Sections

This section also applies to section 6.81.13 Fiberglass Reinforced Plastic (FRP) Handrails.

References

Handrail and Guardrail systems shall be designed to meet the requirements of the IBC, ASCE 7, OSHA, and shall comply with Section 296-24-750 of the Washington Administrative Code.

Performance Requirements

Handrails and guardrails shall be designed to withstand a 200 lbs. concentrated load applied in any direction at any point to the top rail. Handrails and guardrails shall also be designed to withstand a load of 50 lbs./foot applied horizontally to the top rail. The two loads will not be applied simultaneously. The completed handrail installation shall prevent the passage of a sphere not more than 4-inch in diameter in areas with public access or 19-inches in diameter at electrical, mechanical or plumbing access areas not open to the public.

Part 2 - Products

Components

Handrail and guardrail systems shall be supplied and installed complete with posts, rails, toeboards, connectors, plugs, end caps, bolts, nuts and washers, and other accessories as required for a complete installation. Post spacing shall be a maximum of 5 feet, 0 inches on horizontal runs and 4 feet, 0 inches on inclined runs, or as shown on the Plans. Post locations shall be no greater than 24 inches nor less than 9 inches from horizontal or vertical change in handrail direction.

Posts shall not interrupt the continuation of the top rail at any point along the railing, including corners and end terminations. The top surface of handrail or guardrail shall be smooth and shall not be interrupted by a projecting fitting. (OSHA 1910.29(b), WAC 296-24-75011(1))

Toeboard is required where shown on the Plans, and where there is a danger of tools, materials, or equipment falling and striking employees below and shall conform to OSHA standards. Toeboard shall be a minimum of 3.5-inches tall. Toeboard shall begin ¼-inch above the walking surface where the walking surface is a solid surface to allow for drainage (not required for grating walking surface).

Openings in the rail shall be guarded by a self-closing gate (OSHA 1910.23(e)(1)). Safety chains shall not be used unless specifically shown on the Plans.

Handrail shall be face mounted to concrete unless specifically shown otherwise on the Plans.

Finishes

Steel rail systems shall be coated with the coating system described in Division 9.98.03.10.

5.53 METAL GRATINGS

[CSI 05 53 00]

5.53.05 Common Work for Gratings

[CSI 05 53 05]

Part 1 - General

Related Sections

This section also applies to section 6.74.13 Fiberglass Reinforced Gratings.

Design Requirements

Grating shall be selected for a ¼-inch maximum deflection under a uniform live load of 100 psf or a point live load of 500 pounds at any point on the grating (whichever is more critical), unless otherwise shown on the Plans. Thickness shall be as needed to meet these requirements unless otherwise shown on the Plans.

Panels shall be sized such that any single grating piece shall not weigh more than 50 pounds.

The horizontal clearance between the grating and grating supports shall not be less than ¼-inch nor greater than ½-inch. Contractor shall field measure grating supports as required to achieve required fit. Shop drawings shall be based on field dimensions as appropriate.

Part 2 - Products

Materials

Unless shown otherwise, materials used for supporting members shall match the materials used for the grating except all embedded grating supports shall be stainless steel, and grating supports for FRP grating may be stainless steel.

Attachment between grating and supporting members below grating shall be made with a minimum of four clips per panel. All mechanical grating clips shall be manufactured of Type 316SS (stainless steel).

Fabrication

Grating shall be fabricated in such a manner that field cutting and drilling is not required. Panels shall be fabricated and installed in strict accordance with the manufacturer's recommendations.

Part 3 - Execution

Installation

Cut notches around pipes, conduits and other penetrations in such a way that panel removal/installation will not impinge on said objects. The horizontal clearance around grating panels shall not be less than 1/8-inch nor greater than 3/8-inch. File and de-burr cut edges. Contractor shall field measure grating supports as required to achieve required fit. Shop drawings shall be based on field dimensions as appropriate.

5.53.13 Bar Gratings

[CSI 05 53 13]

Part 2 - Products

Materials

Steel grating shall be welded rectangular bar grating, maximum 4-inch by $1\frac{3}{16}$-inch bar spacing unless otherwise noted on the Plans. Grating shall have a minimum bearing bar thickness of $\frac{3}{16}$-inch. All edges of metal grating shall be banded with $\frac{3}{16}$-inch banding matching the depth of the grating. Depth of bars shall be as shown, or as required for loads and spans.

Aluminum grating shall be swaged grating, maximum 4-inch by $1\frac{3}{16}$-inch bar spacing, unless otherwise noted on the Plans. Grating shall have a minimum bearing bar thickness of $\frac{3}{16}$-inch. All edges of metal grating shall be banded with $\frac{3}{16}$-inch banding matching the depth of the grating. Depth of bars shall be as shown, or as required for loads and spans.

Division 6
Wood, Plastics, and Composites

6.00 GENERAL

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

6.05 Common Work for Wood, Plastics, and Composites

[CSI 06 05 00]

Part 1 - General

Submittals

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

- FRP Data Sheets verifying specification requirements

Part 3 - Execution

Construction

Provide temporary bracing, such as temporary guys, braces, false-work, cribbing, or other elements, in accordance with the requirements of the "Code of Standard Practice", wherever necessary to accommodate all loads to which the structure may be subjected, including construction loads. Leave bracing in place for as long as required for safety. Securely fasten the work as erection progresses to compensate for all loads during construction.

Perform no permanent fastening until the structure has been properly aligned.

6.70 STRUCTURAL COMPOSITES

[CSI 06 70 00]

6.70.05 Common Work for Structural Composites

[CSI 06 70 05]

Part 1 – General

Related Sections

5.05.23 Bolts and Other Connectors

Design Requirements

Fiberglass reinforced plastic (FRP) structural shapes shall be produced using the pultrusion process. Submit mechanical and physical properties (from ASTM coupon specimens) the Owner for approval.

Minimum longitudinal mechanical properties for pultruded structural shapes:			
Property	**ASTM Method**	**Value**	**Units**
Tensile Strength	D-638	30,000 (206)	psi (MPa)
Tensile Modulus	D-638	2.5×10^6 (17.2)	psi (GPa)
Flexural Strength	D-790	30,000 (206)	psi (MPa)
Flexural Modulus	D-790	1.8×10^6 (12.4)	psi (GPa)
Flexural Modulus (Full Section)	N/A	2.8×10^6 (19.3)	psi (GPa)
Short Beam Shear (Transverse)	D-2344	4,500 (31)	psi (MPa)
Shear Modulus (Transverse)	N/A	4.5×10^5 (3.1)	psi (GPa)
Coefficient of Thermal Expansion	D-696	8.0×10^{-6}	in/in/°F
		(1.4×10^{-6})	(cm/cm/°C)
Flame Spread	E-84	25 or less	N/A

Seal cut edges and holes according to manufacturer's instructions with a polyester resin compatible with resin matrix of structural shape and corrosion resistance equal or superior to the grating.

All finished surfaces of FRP items and fabrications shall be resin-rich, free of voids, and without dry spots, cracks, crazes, or unreinforced areas. All glass fibers shall be well covered with resin to protect against their exposure due to wear or weathering.

All fiberglass products in contact with potable water shall be NSF approved for potable water contact.

Part 2 - Products

Manufacturers

All FRP components equal to that manufactured by Strongwell.

6.74.13 Fiberglass Reinforced Plastic (FRP) Grating

[CSI 06 74 13]

Part 1 - General

Related Sections

5.53.05 Common Work for Gratings also applies to this specification.

Design Requirements

Deflection with a 100 lb/sf distributed load or 500 lb concentrated load (whichever is more stringent) must be less than span length/100, and no more than 0.28-inch.

Gratings shall have tested burn time of less than 30 seconds and an extent of burn rate less than or equal to 10 millimeters per ASTM D635.

Supply a copy of the ICBO report or test report from an independent testing laboratory showing ASTM-E84 flame spread and structural properties, including deflection. Test results must be less than two years old. ASTM-E84 flame spread must be less than 30.

Part 2 - Products

Materials

FRP grating with a clear span of 48 inches or less may be molded grating with smooth mold surfaces. All bearing bars and cross-bars of the grating shall be molded at the same time into a one-piece construction.

FRP grating with a clear span of greater than 48 inches shall be pultruded structural load and tie bar components. Form the load bar using continuous strand roving and an outside covered with a continuous strand mat and a UV resistant synthetic surfacing veil. Provide mechanical and bonded intersection between the load and tie bar components. Every end of every load bar must be structurally supported.

Supporting members shall be FRP or stainless-steel structural shapes unless shown otherwise.

Finishes

Grating bars shall have a skid-resistant walking surface.

All finished surfaces of FRP items and fabrications shall be resin-rich, free of voids and without dry spots, cracks, crazes or unreinforced areas. All glass fibers shall be well covered with resin to protect against their exposure due to wear or weathering.

Seal all cut or damaged edges with a resin sealant of equal or superior corrosion resistance to the grating.

Division 7
Thermal and Moisture Protection

7.00 GENERAL

This division covers furnishing all labor, materials, and equipment for providing a structure that is completely weather-tight.

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

7.05 Common Work for Thermal and Moisture Protection

[CSI 07 05 00]

Part 1 - General

Submittals

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

- Foundation drainage
- Piping insulation
- Flashing and sheetmetal
- Vents
- Joint sealants
- Caulk

7.60 FLASHING AND SHEET METAL

[CSI 07 60 00]

7.62 Sheet Metal Flashing and Trim

[CSI 07 62 00]

Part 1 – General

Flashing shall be factory coated steel equal to *Construction Metals Inc. Professional Grade Flashing*. Gauge shall match flashing to be replaced or 26-guage minimum. Width shall match existing to be replaced.

Part 3 – Execution

Installation

Install drip tight per manufacturer's requirements.

7.90 JOINT PROTECTION

[CSI 07 90 00]

7.92.13 Elastomeric Joint Sealants

[CSI 07 92 13]

Part 1 – General

Submittals

Submit schedule for caulk used on the project for approval prior to application.

Part 2 – Products

Materials

Kitchen, Bath, Laboratory, and Other Wet Areas

DAP® KWIK SEAL PLUS® Premium Kitchen & Bath Adhesive Caulk w/MICROBAN® or equal.

Concrete and Masonry

DAP® Premium Polyurethane Concrete & Masonry Sealant or equal.

Wood or Concrete Board Siding

DAP® ALEX PLUS® Acrylic Latex Caulk Plus Silicone or equal.

Doors and Windows

DAP® DYNAFLEX 230® Premium Elastomeric Sealant or equal. Where necessary to provide a suitable backstop and bond breaker, tightly pack with polyethylene foam. Rope the back of grooves, leaving a minimum depth of ¼-inch for sealant. Prime surfaces as recommended by manufacturer.

Other Surfaces

Contractor shall provide caulk appropriate to surface and reason for caulk application. Caulk shall be the most durable available (longest warranty) by DAP®, or equal.

Part 3 – Execution

Installation

Caulk all joints and spaces necessary to provide a completely weather-tight product.

Apply caulking in strict accordance with manufacturer's directions with regard to temperature at application and curing times, surface condition, moisture, and cleanliness.

Apply after surfacing prime and prior to final coatings if surface is to be coated. If surface will not be coated, provide color choices to the Owner for approval prior to application.

Clean all adjoining surfaces of excess sealant, smears, or marking due to application and leave joints with neat, uniformly-filled surfaces.

7.92.15 Concrete Reservoir Joint Sealants

[CSI 07 92 15]

Part 1 – General

Submittals

Submit schedule for sealant used on the project for approval prior to application.

Part 2 – Products

Materials

Concrete Reservoir Joint Sealants

Joints not requiring waterstops or when so indicated on the Drawings, shall be sealed with a mastic joint sealer material of uniform, stiff consistency that does not contain solvents. The mastic shall adhere to primed concrete surfaces and shall be NSF approved for use in potable water. The material shall be of a type that will effectively and permanently seal joints subject to movements in concrete

The mastic joint sealer shall be an acceptable two-part, self-leveling (or gun grade), non-staining, polyurethane elastomeric sealant which cures at ambient temperature. Acceptable sealants shall conform to ASTM C920 or Federal Specification TT-S-00227E.

For sloping joints, vertical joints and overhead horizontal joints, only "non-sag" compounds shall be used; all such compounds shall conform to the requirements of ANSI/ASTM C920 Class 12-1/2, or Federal Specification TT-S-0027 E(3), Type II.

For plane horizontal joints, use self-leveling compounds which meet the requirements of ANSI/ASTM C920 Class 25, or Federal Specification TT-S-0027 E(3), Type I. For joints subject to either pedestrian or vehicular traffic, a compound providing non-tracking characteristics, and having a Shore "A" hardness range of 25 to 35, shall be used.

Primer materials, if recommended by the sealant manufacturer, shall conform to the printed recommendations of the sealant manufacturer.

Reservoir joint sealant shall be Sikaflex/2C polyurethane elastomeric sealant as manufactured by Sika Chemical Corp, PSI-270 reservoir sealant, as manufactured by Polymeric Systems, Inc., or approved equal.

Backing Rods

Backing rod shall be an extruded closed-cell, polyethylene foam rod. The material shall be compatible with the joint sealant material used and shall have a tensile strength of not less than 40 psi and a compression deflection of approximately 25 percent at 8 psi. The rod shall be ⅛-inch larger in diameter than the joint width except that a one-inch diameter rod shall be used for a ¾-inch wide joint.

Part 3 – Execution

Installation

Seal all joints and spaces necessary to provide a completely weather-tight product.

Joint sealed areas shall be blown clean of dust and sand with compressed air before the material may be applied. Apply sealant in strict accordance with manufacturer's directions with regard to temperature at application and curing times, surface condition, moisture, and cleanliness.

Apply after surfacing prime and prior to final coatings if surface is to be coated. If surface will not be coated, provide color choices to the Owner for approval prior to application.

Clean all adjoining surfaces of excess sealant, smears, or marking due to application and leave joints with neat, uniformly-filled surfaces.

9.00 GENERAL

This division covers work necessary for providing all materials, equipment, and labor to coat all items in accordance with these specifications.
Sections in these specifications titled *"Common Work for . . ."* shall apply to all following subsections whether directly referenced or not.

The project scope includes coatings and other improvements to two tanks on the same site, with the work on each tank performed separately. The work at each tank includes:

- Interior full recoat
- Exterior spot repair and overcoat
- Full containment

Related Sections

Division 9.98.01 for project-specific scope.

9.90 PAINTING AND COATING

[CSI 09 90 00]

9.90.05 Common Work for Painting and Coating

[CSI 09 90 05]

Part 1 – General

Scope

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

Submittals

- Prior to any painting or coating activities, submit applicator qualifications as required within this section.
- Prior to any painting or coating activities, submit a list of coatings and manufacturers intended for use for review by the Owner. Include the application each coating is intended for, any surface preparation, number of coats, method of application, and coating thickness.
- Provide Safety Data Sheets (SDS) for all materials to be used including solvents. Provide NSF certification for all finishes in potential contact with potable water. Submit this information in accordance with the requirements regarding shop drawings included herein.

- Provide physical swatches for the Owner's approval of the Owner's color choice(s).
- Provide owner with schedule of coating operations and inspection timing. Coating inspections will be scheduled based upon Contractor-provided schedule, update schedule weekly or as necessary.
- If product being used are manufactured by a company other than the specified reference standard, provide complete comparison of proposed products with specified projects including application procedures, coverage rates, and verification that product is designed for intended use. Information must also be provided that demonstrates that the manufacturer's products are equal to the performance standards of products manufactured by Tnemec Corporation, which is the reference standard.
- Provide submittals as required by 9.98.01.

Performance Requirements

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

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

Quality Assurance

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

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

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

Applicator Qualifications

Contractor is responsible for quality assurance including the retention of a coating Applicator with experience necessary to complete the work as specified. Applicator's personnel shall be adequately trained for application of specified coatings. Applicator must prove adequate experience with the coatings specified for this project.

1. The Applicator and personnel shall be in the business of applying protective coatings for a minimum of three (3) years.
2. The Applicator must provide a minimum of five (5) case histories of similar projects that have been applied within the past five (5) years representing similar scope and complexity to Project requirements, including coating removal and replacement of a lining system on a potable steel tank interior. A minimum of one (1) of the projects must include field application of an interior ultra-high solids lining system on a potable water tank. A minimum of two (2) of the projects must include removal of lead and/or hazardous coatings. Provide current contact information of past projects for confirmation of successful installations.
    a. Project name and location.
    b. Description of work including approximate area of coatings applied and management of lead removal.
    c. Name and phone number of owner.
    d. Name and phone number of Contractor.
    e. Name and phone number of engineer.
    f. Name and phone number of coating manufacturer.
    g. Date of completion.
3. Coatings Manufacturer must provide a letter of "Approval" that the Applicator is "Approved" to apply the coatings called out within the specification.

Storage and Handling

Bring all materials to the job site in the original sealed and labeled containers that clearly show the designated name, date of manufacture, color, batch number, and name of manufacturer. Materials shall be subject to inspection by the Owner.

Store paints in a suitable protected area that is temperature controlled to maintain paint temperatures within the storage range recommended by the paint manufacturer.

Coating materials found on site that are exposed to conditions outside the manufacturer's recommended temperature storage range will be rejected and removed from site at the Contractor's expense.

Part 2 – Products

Manufacturers

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

1. Tnemec Company
2. Sherwin Williams
3. Carboline
4. Or Equal

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

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

Part 3 – Execution

Examination

The Owner or Owner's representative must be provided the opportunity to inspect and approve all surface preparations prior to application of any coating. Provide 24-hour notice prior to surface inspection needs.

Preparation

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

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

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

Installation/Construction

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

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

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

Allow each coat to dry in accordance with the manufacturer's recommendations before applying next coat. Provide adequate ventilation to carry off solvents during dry phase.

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

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

Field Quality Control

The prime Contractor shall be completely responsible for coating quality.

The Contractor must attend a pre-coating meeting with Owner and coating inspectors.

The Contractor shall provide both wet and dry film gauges and make such available to the Engineer when requested.

If coating inspector finds anomalies and/or defects requiring further testing or blasting and recoating, a meeting shall be held by all involved parties (coatings manufacturer representative, coating applicator, and primary coating inspector) to come to a complete resolution as to the cause of the defect. All such remedies to repair defects shall be paid for by the Contractor. If prime Contractor does not agree with coating inspector's recommendations (i.e. there is no defect), the Contractor may hire a second coating inspector at Contractor's expense to review the work. If second coating inspector agrees with first, the decision is final. If there is disagreement, a third coating inspector shall be hired and paid for at split 50 percent cost between prime Contractor and owner and that decision shall be final and all such remedies to defects shall be paid for by the Contractor.

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

Contractor's Record

The Contractor shall maintain daily records showing:

1. Start date of work in each area
2. Date and time of application
3. Moisture content and surface temperature of substrate
4. Ambient air temperature, humidity, dew point

5. Provision utilized to maintain temperature and humidity of work area within coating manufacturer's recommended ranges
6. Mixing times, methods of application, thinning procedure, coating temperature, and induction time
7. Surface profile measurements
8. Wet Film Thickness (WFT) and DFT of each coat, perform DFT readings per SSPC-PA 2 (Level 3)

Manufacturer's Record

At a minimum, the coating manufacturer's technical representative shall be on site for the first 2 days of abrasive blast and coating application. Visits shall be coordinated with Engineer at least 3 days in advance.

The coating manufacturer's technical representative shall verify Contractor's surface preparation methods achieve the manufacturer's recommended cleanliness and surface profile for the coatings to be applied, instruct Contractor on coating mixing, thinning and application procedures, and all other relevant information to assure successful application of the specified coating systems.

Any defects found by the paint manufacturer's technical representative or the owner's representative shall be repaired to their satisfaction at Contractor's expense.

Manufacturer technical representative shall provide a written report that includes the following:

1. Verify coatings and other materials are as specified.
2. Verify surface preparation and application are as specified.
3. Verify DFT of each coat and total DFT of each coating system are as specified using a dry film thickness gauge.
4. Note defects that would adversely affect performance or appearance of coating systems.
5. Describe inspections made and actions taken to correct nonconforming work.
6. Report nonconforming work not corrected.
7. Submit copies of report to Engineer and Contractor.

Inspection

Surface temperature must be measured with a contact thermometer. Infrared thermometers are not acceptable.

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

Contractor shall inspect the completed and cured coating on metal surfaces in the presence of the Owner for pinholes and holidays with a low voltage (under 100 volts) holiday detector. Repair or recoat areas found to contain pinholes in accordance with the manufacturer's recommendations. Provide 72-hour notice to Owner prior to performing test.

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

Manufacturer's Inspection

Following surface preparation and coating application, Contractor shall furnish services of a qualified supplier/manufacturer's representative, subject to approval by the Engineer, to inspect the surface and coatings and inform Owner of any defects or concerns regarding condition of surface preparation or coating system at the job site. The Contractor shall repair any defects to the coating supplier/manufacturer's satisfaction at Contractor's expense. The finished painting system shall be free of flaking, peeling, bubbling, cracking, permanent discoloration, or other physical defect in the work for the warranty period.

AMPP Certified Inspector

For shop-applied/factory-applied coatings: for the project work shown below, inspection by an AMPP CIP Level 3 Inspector shall be provided by the **Contractor** and they shall inspect work related to:

- Sample tap pipe, fittings, and supports
- Interior and exterior ladders, platforms, guardrails, stairs and other proposed accessories and appurtenances

Contractor shall submit inspector's credentials for approval by the Engineer. Inspection report shall be approved for each coated component before shop/factory coated parts are shipped to the job site.

For field-applied coatings: an AMPP CIP Level 2/3 Inspector shall be paid for by the **Owner** and they shall inspect all field coatings related to:

- Steel Reservoir Interior, including sample tap piping, and all interior tank appurtenances and accessories
- Steel Reservoir Exterior, including overflow steel piping and all exterior tank appurtenances and accessories

For field-applied coatings, provide 14 calendar days' notice to the Owner's representative to schedule Owner-Provided Inspector. The Contractor shall provide safe access for inspection, via scaffolding or lift, and temporary shut-down of operations during inspection.

Inspector shall lead a mandatory on-site pre-job conference meeting with the contractor, applicator, and Owner's representative.

The Owner-Provided Inspector will be present, at a minimum, at the following hold points. Additional inspections and hold points may be elected at the Owner's discretion.

Interior:

- When environmental control systems are in place, prior to abrasive blasting, to evaluate environmental control system and preparation of surfaces prior to abrasive blasting, and at the beginning of abrasive blasting, to evaluate abrasive blasting
- Just prior to and at the beginning of each type of coating application, to evaluate the previous coating and the coating application that is beginning: primer, stripe coat, and finish coat
- Final system evaluation prior to removing access staging

Exterior:

- When containment system and environmental controls are in place, just prior to and to evaluate water jet washing
- Just prior to and to evaluate spot repair power tool cleaning and primer application
- Just prior to and at the beginning of each type of coating application: primer, stripe coat, and finish coat, to evaluate the previous coating and the coating application that is beginning: intermediate coat (at spot repairs), tie coat, and overcoat
- Final system evaluation prior to removing access staging

Initial inspection shall result in a written report. If defects are found not matching the specifications below for surface preparation, curing or coating type/thickness, remedies shall be completed by the contractor at their expense. After remedies are complete and approved by the AMPP Certified Inspector, shop coated items may be installed at the job site. If defects are found after the second inspection (initial and first defect remedy) for the same components by the AMPP Certified Inspector, subsequent AMPP Certified Inspector inspections shall be paid for by the Contractor.

The coatings shall be approved prior to demobilization of coating subcontractor and coating equipment.

Repair/Restoration

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

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

Cleaning

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

9.90.13 Unpainted Items

[CSI 09 90 13]

Part 1 – General

Do not coat aluminum or stainless-steel items unless specifically directed otherwise below or on the Plans. Field painting is not required for factory prefinished equipment items. Do not coat small diameter pilot systems such as galvanized iron, copper, or brass pipe and fittings associated with control valves or sensors unless noted otherwise on the Plans or herein. Stainless steel sample lines inside the tank shall be coated. See 9.98.02.01.

9.98 Steel Reservoir Coating

[CSI 09 97 13.24]

9.98.01 Common Work for Steel Reservoir Coating

[CSI 09 97 13.24]

Part 1 – General

Coating Schedule

	South Tank	North Tank
Interior	SSPC-SP 10 surface preparation Recoat	SSPC-SP 10 surface preparation Recoat
Exterior	Full Containment SSPC-WJ 4 surface preparation for tank exterior Bare Metal Power Tool Clean (SSPC-SP3 or SP11) for Spot Repairs Spot repair and overcoat full tank	Full Containment SSPC-WJ 4 surface preparation for tank exterior Bare Metal Power Tool Clean (SSPC-SP3 or SP11) for Spot Repairs Spot repair and overcoat full tank

Summary

The work of this section describes the materials and methods common to Steel Tank Coatings in addition to Section 9.90.05 Common Work for Painting and Coating. If provisions of this Section conflict or appear to conflict with provisions in other sections of this Division, the more restrictive, in the opinion of the Engineer, will prevail.

Related Sections

- 9.90.05 Common Work for Painting and Coating

References

- American Water Works Association (AWWA)
    - AWWA D-100 – Standard for Welded Steel Tanks for Water Storage
    - AWWA D-102 - Coating Steel Water Storage Tank
- ASTM International (ASTM)
    - ASTM D4541 - Test Method for Pull Off Strength of Coatings Using Portable Adesion-Testers
    - ASTM D1005 - Test for determining dry film thickness
    - ASTM D4417 - Test for determining surface profile
- NACE International (NACE)
    - NACE SP0188-2006 Discontinuity (Holiday) Testing of New Protective Coatings on Conductive Substrates
    - NACE SP0288-2004 Inspection of Linings on Steel and Concrete
- SSPC
    - SSPC Guide 6 – Containing Debris Generated During Paint Removal Operations
    - SSPC Guide 18 - Specifier's Guide for Determining Containment Class and Environmental Monitoring Strategies for Lead-Paint Removal Projects
    - SSPC TR 3 – Dehumidification and Temperature Control During Surface Preparation, Application, and Curing for Coatings/Linings of Steel Tanks, Vessels, and other Enclosed Spaces
    - SSPC:
        - SP1, Surface Preparation Specification No. 21, Solvent Cleaning
        - SP2, Hand Tool Cleaning
        - SP3, Power Tool Cleaning
        - SP6, Commercial Blast Cleaning
        - SP7, Brush-off Blast Cleaning
        - SP10, Near White Blast Cleaning
        - SP11, Power Tool Cleaning to Bare Metal
        - WJ4, Waterjet Cleaning of Metals, Light Cleaning

Submittals

- Shop Drawings and Calculations for Door Sheet and Door Sheet Repair, if utilized
- Lead Coating Removal Plan
- Environmental Monitoring Plan

- Non-Hazardous and Hazardous Waste Handling and Disposal Plan
- Containment Plan
    - Scaffolding Design
    - Containment Sheeting Material
- Dehumidification and Heating System Design Plan as required
    - Dehumidification equipment
        - Dehumidification and heating equipment supplier experience
        - Dehumidifier data sheets
        - Generator and Backup Generator data sheets and exhaust noise certification
    - Dehumidification Backup Plan
- Coatings Work plan; for each product submittal must include but is not limited to the following items:
    - Reference to the Coating System in these Specifications
    - Manufacturer's data sheet for each product used and material suitability
    - Manufacturer's instructions and recommendations on surface preparation and application
    - NSF Listing
    - Compatibility of shop and field applied coatings
    - Material safety data sheets (MSDS)
    - Manufacturer's recommended products and procedures for field coating repairs and surface preparation
- Abrasive Blasting Plan
    - Description of Equipment and Procedures
    - Abrasive Materials
        - Manufacturer's data sheet for each product used, including statements on the suitability of the material for the intended use.
        - ½-pound sample for each proposed.
        - Material Safety and Data Sheets
- Material Delivery Bill of Lading for All Materials Brought onto Site
- Project Closeout Submittals
    - Daily field quality control records (sent on a weekly basis).
    - Disposal documents for hazardous and non-hazardous waste

- Waste manifests
- Disposal weigh tickets
- Laboratory Analysis of for Non-hazardous and Hazardous Waste Streams

Background

The project site is a secure City of Mercer Island site within a residential neighborhood, surrounded by homes, a school, and a church.

The site has two (2) 4.0-million-gallon steel reservoir standpipe tanks. The North Tank was constructed in 1962, and the South Tank was constructed in 1975. Both tanks have a diameter of 148 feet and a height of 32 feet. The roof of each tank is supported by columns, rafters, and beams. The overflow for each tank is within inches of the roof rafters.

The interior coating systems of both tanks are approximately 21 years old. Construction records state the work was completed using Society for Protective Coatings (SSPC)-SP6 surface preparation, one coat of Tnemec Series FC20-1255 at 4 to 6 mils, and one coat of Tnemec Series 73 at 3-5 mils, with a minimum total dry film thickness (DFT) of 9 mils.

Both tank exteriors were washed and overcoated in 2000 with a tie coat of Tnemec Series N27 Typoxy at 3 to 5 mils and a top coat of Tnemec Series 73 at 3 to 5 mils. In certain areas, pitted or rusted areas were power tool cleaned in accordance with SSPC SP3, and areas welded as part of that project were abraded per SP-6 Commercial Blast Cleaning. The City does not have records of the coating products applied prior to 2000, but previous heavy-metals testing has showed that both tank exteriors are coated with a lead-based primer covered by multiple layers of mid- or top-coat. See Appendix B for existing coatings assessment, including chemical testing results.

Lead is included in both tanks' exterior underlying coatings, which are to be washed and overcoated as part of this project, therefore remaining mostly intact and encapsulated. However, the project also includes some repair of damaged coatings to bare steel, removal of exterior items which may have underlying lead coatings and some welding to the tank shell where small areas of coatings must be removed.

In addition, coal tar coatings may be present in hard-to-reach areas of the tanks' interiors, such as between the tops of roof rafters and the bottom of roof plates. The Contractor shall take all necessary steps to protect its employees from related risks.

See Appendix B for previous coatings evaluation and the results of chemical testing performed on both tank exterior coatings.

Contractor must provide protection to finished work and existing nearby surfaces not scheduled to receive coatings.

Lead Coatings

It is the Contractor's responsibility to verify lead concentrations and other potentially hazardous constituents of existing coatings. Lead concentrations in the existing coatings reported in this document are solely for identification of lead containing coatings and may not be representative of lead concentrations on all areas of the structures.

The Contractor shall protect workers and inspectors, etc. as required, using vacuum attachments, ventilation, and/or other approved means.

The Contractor is fully responsible for all costs associated with verifying, monitoring, personnel protection, containment, coating removal, waste handling, storage, testing, transportation and disposal of coatings and associated debris regardless of metal concentrations in the coating and associated waste.

It is the Contractor's responsibility to provide to prevent site contamination and contamination of adjacent properties. Contractor shall be solely liable for all costs, including clean-up, and claims resulting from contamination of the site and adjacent properties.

Lead shall be encapsulated, where permitted, or removed and properly disposed of. The cost for this hazardous material removal made known to the Contractor as listed above shall be completed by the Contractor at their expense. See Division 18, Measurement and Payment, for information regarding coatings-related waste disposal.

Containment

Contractor shall provide full containment of any wet or dry blasting of structures and/or components in the field. The following containment standards must be met during preparation and coatings.

Containment shall allow the space to be adequately heated and dehumidified for coatings application in the winter.

- Walls must meet at least the SSPC Class 3W minimum, A2 Flexible. The contractor is responsible for providing, by scaffolding or other OSHA- and WAC-approved means, safe access for the work and its related inspection/observation.
- The floor must meet at least the SSPC Class 4W minimum, A2 Flexible, B3b Water permeable, ground supported. Wall/floor seams or other means of containment at the floor must be provided to contain paint chips at the wall/floor interface with a geofilter fabric.

Work Plan for Surface Preparation of Lead Based Coatings

Provide procedures for abatement, including proposed surface preparation methods and equipment, containment, environmental monitoring (air, soil, etc.), worker protection, handling, storage, and disposal.

Non-Hazardous and Hazardous Waste Handling and Disposal Plan

At least 10 days prior to starting any surface preparation activities, submit Non-Hazardous and Hazardous Waste Handling and Disposal Plan to the Engineer for review and approval. This plan shall outline the wastes generation expected, the collection and containment methods, transportation methods, and disposal procedures. Information required in the plan includes, but is not limited to, surface preparation methods, surface preparation materials (i.e., types of abrasives, collection and containment methods for paint chips, spent abrasive materials, waste characterization procedures, and proposed transportation methods).

Provide a copy of the hazardous or dangerous waste manifests for any wastes designated as being or containing hazardous or dangerous constituents in accordance with the applicable

federal, state, and local regulations, including, but not limited to, 40 CFR 261 and 262 and WAC 173-303-070. In addition, provide a certification(s) of acceptance from all disposal sites to which any waste materials have been transported.

The Owner will have the right to approve or disapprove of the transportation and disposal methods and the disposal site selected by the Contractor.

Make arrangements for disposal, subject to submission of proof that the Owner(s) of the proposed site(s) has a valid fill permit issued by the appropriate governmental agency. Submit intended haul route plan, including a map of the proposed route(s). Provide watertight conveyance for liquids, semi-liquids, or saturated solids that tend to bleed during transport.

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

Work Plan and Design for Dehumidification and Temperature Control

Where required, provide Dehumidification and Temperature Control design and calculations, equipment information, procedures for operation and maintenance, process of verification of equipment effectiveness, and procedure for assuring operation of equipment outside of normal work hours.

Abrasive Blasting Plan

Provide qualifications, description of equipment and procedures, and product data for abrasive blast media. Provide TCLP test data for lead and other regulated heavy metals in non-recyclable abrasive blast media to be used on the project.

Acceptable abrasive test data shall indicate the abrasive manufacturer, location of manufacture, test date, and media gradation and type. Surface preparation will not be permitted to begin until acceptable test data has been submitted.

Coating Work Plan

Provide procedures for all phases of coating operations, including planned work, rework, repair, inspection, and documentation. Address mobilization and setup, surface preparation, coating application, coating initial cure, tracking and correction of non-compliant work, and demobilization. For each process, provide procedures that include appropriate work instructions, material and equipment requirements, personnel qualifications, controls, and process verification procedures. Provide procedures for inspecting work to verify and document compliance with contract requirements, including inspection forms and checklists, and acceptance and rejection criteria.

Provide procedures for correcting non-compliant work. Detailed procedures are required in advance to avoid delays in meeting overcoat windows as well as to avoid delays in production. Provide procedures for repairing defects in the coating film, such as runs, drips, sags, holidays, overspray, as well as how to correct coating thickness non-compliance, any other areas of repair or rework that might be adversely affected by delays in preparing and approving new procedures.

Design Requirements

All interior coatings are to be certified for contact with potable water per NSF 61/600. This includes coatings above the water line.

Warranty

Steel Reservoir Coating System provided under this contract shall be warranted against defects in workmanship for a period of two (2) years after date of project acceptance. Coating manufacturer shall warrant coating system from the end of year two (2) to the end of year five (5).

Applicator shall warrant their work in full for two (2) years starting after project acceptance. The coatings manufacturer shall warranty the coating system in full from the end of year two (2) to the end of year five (5). If defects are from application by applicator, the applicator shall pay for repair costs. If defects are from defective coating product the coating supplier shall pay for repair costs. If agreement is not found, a third-party coating inspector shall review defects and determine cause. Third party inspector's decision shall be considered final.

Maintenance

The Applicator shall provide, at no additional cost to the Owner, an inspection of the tank within the last month of the warranty period. Any defects, which are discovered during this inspection, shall be repaired by the Applicator in a manner acceptable to the Owner and coating supplier and at no additional cost to the Owner.

Part 2 – Products

Abrasive

All abrasive utilized on the project shall be new and arrive on site in sealed containers.

Abrasive shall be selected to meet the requirements of the specified coating systems, requirements of SSPC AB1, 2, and 3, and regulatory requirements.

The abrasive for interior surfaces shall be commercially available, non-metallic expendable abrasive or reusable steel grit.

All recyclable abrasive utilized on the project shall be tested and disposed of in accordance with local, State, and Federal regulations.

Mixes

Materials shall be mixed, thinned, and applied according to the manufacturer's printed instructions.

Colors

Where more than one coat of a material is applied within a given system, alternate color to provide a visual reference that the required number of coats has been applied, including the color of stripe coats Final coat color shall be as selected by Owner. Each coating color used inside the tanks shall be certified in accordance with NSF 61/600 for contact with potable water in water storage tanks.

Touch-up of interior and exterior coatings to be matched to existing coating color.

Inspection Equipment

Contractor shall provide new, calibrated coating inspection equipment and calibration standards for each active work site.

Provide a magnetic type or electronic dry film thickness gauge to test coating thickness specified in mils, as manufactured by:

- DeFelsko Corp., Anaheim, CA, Positector 6000
- Elcometer, Rochester Hills, MI, Model 345
- Test Coat, Gettysburg, PA, Quanix 1200
- Or equal

Provide an electrical low voltage, wet sponge holiday detector, with audible alarm, to test finish coats for holidays and discontinuities. Provide non-sudsing wetting agent as recommended by manufacturer. Holiday detectors shall be as manufactured by:

- Tinker and Rasor, San Gabriel, CA, Model M1-AC.
- Elcometer, Rochester Hills, MI, Model 269
- Or equal.

Part 3 – Execution

Tank Interior Access

Access to one tank interior at a time will be permitted.

The contractor may, at their option, cut a temporary door sheet in the shell to facilitate access, then repair the shell to meet the requirements of AWWA D100-21.

Preparation

Protect connected pipes from filling with abrasive blast material or dust.

Vent screens must not be coated unless otherwise noted, and then only in a manner that will not block or reduce the open area and rating of the vent screen.

For shop-primed steel and areas which are to remain coated: Prepare surface and touch up welds, burned, and abraded areas on shop primed steel with specified primer before applying field coats.

Where fabrication defects of new steel are found:

- Correct steel and fabrication defects revealed by surface preparation.
- Remove weld spatter and slag.
- Round sharp edges and corners of welds to a smooth contour.
- Smooth weld undercuts and recesses.
- Grind down porous welds to pinhole-free metal.

- Remove weld flux from surface.
- Ensure surfaces are dry.

Environmental Controls

A. Contractor shall assure that temperatures meet the coating application requirements for all work on the interior. Heat sources that emit carbon dioxide or carbon monoxide into areas to be coated are not allowed. Locate and vent all heat sources per the heater manufacturer's recommendation to prevent the coatings from being affected by exhaust products.

B. If required, dehumidification and heating equipment shall be used to control the environment 24 hours a day during blast cleaning, coating and curing application.

C. All equipment, power, and fuel necessary to operate environmental controls equipment must be provided by the contractor. Equipment, power, and fuel sources operational volume must be less than 60 dBA measured from 25 feet. If equipment is rated higher than the specification the Contractor must provide temporary sound attenuating barriers to reduce the volume to the required specification.

D. Do not apply paint when:

   a. Surface temperatures exceed the maximum or minimum temperature recommended by the paint manufacture.

   b. In dust, smoke-laden atmosphere, damp or humid weather, or under conditions which could cause icing on the metal surface.

   c. When it is expected that surface temperatures will drop below 5 degrees above dew point within 8 hours after application of coating.

   d. Ambient and steel temperatures are expected to increase above the maximum allowable coating temperatures, specified by the coating manufacturer, before the minimum recoat time is reached.

E. Coatings impacted by precipitation and environmental conditions outside the coating manufacturers application parameters, within 8 hours of application, shall be subject to full removal.

F. Surface preparation power tools and blast equipment shall contain dust collection equipment that will prevent discharge of dust particles into the atmosphere.

G. Ventilation shall be used to control potential dust and hazardous conditions within the tank. Ventilation flow rates shall be in accordance with OSHA regulations and as required to reduce air contamination to non-hazardous conditions. Contractor shall maintain adequate ventilation during coating curing as recommended by the coating manufacturer.

Dehumidification

As required, contractor shall provide and operate dehumidification control equipment to allow the tank interiors to be abrasive blasted and coated as specified.

A. The dehumidification and temperature control equipment shall be sized to maintain dew point temperature 5 degrees or more below surface temperature of the coldest part of the

reservoir where the work is underway. Relative humidity shall not exceed 45 percent unless specifically required by the pain manufacturer for coating application and cure. Air temperature and surface temperature shall be maintained at 50 degrees or greater.

B. Cleaned metal surfaces shall be prevented from flash rusting throughout the project duration, condensation or icing shall be prevented throughout surface preparation and coating application.

C. A minimum of two (2) air changes are required per hour.

D. Equipment size and power requirements shall be designed by personnel trained in the operation and setup of dehumidification equipment based on project requirements and anticipated weather conditions.

E. Dehumidification equipment shall operate 24 hours per day and continuously throughout surface preparation and coating application.

F. Contractor shall provide continuous monitoring equipment, at a minimum of three (3) areas inside the tank, with datalogging capability to record air temperature, surface temperature, relative humidity, and dew point. Daily logs of data shall be provided to the Owner and their representative.

G. Contractor to provide personnel properly trained in the operation and maintenance of the dehumidification equipment or provided training by the dehumidification equipment supplier.

H. Daily maintenance requirements of the equipment shall be documented in writing and posted near the equipment for review by the Engineer.

I. Re-blasting of flash rusted metal surfaces or removal of damaged coatings, as a result of equipment malfunction, shutdown, or other events that result in the loss of environmental control, will be at the sole expense of the Contractor.

Temperature Controls

As required, contractor shall provide and operate temperature control equipment to allow the tank interiors to be abrasive blasted and coated as specified.

Auxiliary heat may be necessary to maintain the surface temperature at an acceptable level for application of the coating. Auxiliary equipment shall be approved for use by the dehumidification equipment supplier and shall meet the following requirements:

A. Heaters shall be installed in the process air supply duct between, and/or blended with, the dehumidifier as close to the space as possible.

B. Electric, indirect fired combustion, or steam coil auxiliary heaters shall be used. Direct fired space heaters will not be allowed during the blasting, coating, or curing cycles. Combustion exhaust shall not come in contact with paint surfaces.

C. Heaters shall be equipped with controls that automatically turn the heater off if the airflow is interrupted or the internal temperature of the heater exceeds its design temperature or the design temperature of the supply duct.

D. The Contractor shall measure and record relative and reservoir wall temperature twice daily (beginning and end of work shifts) to verify that proper humidity and temperature

levels are achieved inside the reservoir after the dehumidification equipment is installed and operational. Field-measured test results shall be made available to the Owner's Representative upon request.

E. Interior space of the reservoir shall be sealed and a slight positive pressure maintained as recommended by the supplier of the dehumidification equipment. The filtration system used to remove dust from the air shall be designed so that it does not interfere with the dehumidification equipment's ability to control the dew point and relative humidity inside the reservoir. The air from the reservoir or dust filtration equipment shall not be recirculated through the dehumidifier during coating application or when solvent vapors are present.

Hazardous Waste

The Contractor is required to contain all debris associated with the cleaning of the exterior of the tank – specifically when cleaning and preparing the surface of the tank to prevent paint chips and debris from leaving the site. All paint chips and debris must be captured and contained.

A. Comply with the Contaminated Media and Hazardous Waste Abatement Plan.

B. Utilize containment to prevent paint chips and debris from leaving the site.

   a. The contractor will be required to use self-contained power tool and blast cleaning equipment using recycled abrasives for exterior coatings removal for spot repair.

   b. Prior to pressure washing the contractor shall place filter fabric around the exterior of the tank. The filter fabric shall be free draining and suited to collect paint chips. The used fabric shall be disposed of as contaminated media.

Field Quality Control

Following surface preparation and coating application, Contractor shall furnish services of a qualified supplier/manufacturer's representative to inspect the surface and coatings and inform Owner of any defects or concerns regarding condition of surface preparation or coating system at the job site. The Contractor shall repair any defects to the coating supplier/manufacturer's satisfaction at Contractor's expense. The finished painting system shall be free of flaking, peeling, bubbling, cracking, permanent discoloration or other physical defect in the work for the warranty period.

The Certified Paint Manufacturer's Technical Representative employed by the Paint Manufacturer shall be approved by the Owner. All test results shall be approved by the Paint Manufacturer's Representative in writing (with Copy sent to the Engineer for review) prior to shop painting and field painting.

Allow a minimum of seven (7) days at 70 degrees Fahrenheit curing or pass ASTM D 5402 test for assessing the solvent resistance of organic coatings using solvent rubs, after application of final coat to tank interior before flushing, sterilizing, or filling with water.

9.98.02 Steel Reservoir Interior Coatings

9.98.02.01 Stainless Steel Inside the Reservoir

Stainless Inside Tank (including the sample tap piping but excluding the Pax mixer) shall be coated with the same finish coat selected for the tank with prime coat as recommended by the manufacturer.

9.98.02.02 New Interior Shop-Fabricated Steel Elements

At the Contractor's option new interior steel elements may be coated in the field or during fabrication to either 1.) the prime coat (completing the finish coat in the field) or 2.) prime and finish coat. Surface preparation and coatings shall comply with the respective requirements of interior tank coatings as described in 9.98.02.03.

9.98.02.03 Steel Reservoir Interior Recoating

Part 1 – General

This section applies to all steel elements at the interior of both tanks: floor, shell, roof interior and supporting structural members; columns, ladders, platforms and related components, and exterior of steel and stainless steel piping within the tank. Do not disturb interior surfaces of overflow piping. Do not coat interior ductile iron pipe or fittings.

Part 2 – Products

Materials

All interior coatings must meet NSF 61/600, including underlying coats such as primers.

Interior system shall be in accordance with AWWA ICS 3: Primer (Optional) + High-Solids Two-Component Epoxy Finish Coat

The Contractor may propose a different but compatible system for the interior roof elements in accordance with AWWA ICS 5 (Zinc-Rich Primer and 2 Coats Epoxy) for consideration and acceptance at the sole election of the Owner. For bidding purposes, assume full interior recoat per AWWA ICS 3.

Coatings shall be the following, or equal.

1. Carboline
    a. Primer, Field: N/A (Tank Shield is a single coat system applied to bare steel)
    b. Stripe Coat: apply a spray stripe coat of Phenoline Tank Shield and brush augment per coating manufacturer's data sheet
    c. Finish Coat: Carboline Phenoline Tank Shield one coat at 20 mils DFT minimum (Tank Shield is a single coat system applied to bare steel)
2. Tnemec
    a. Primer, Field: one coat of Tnemec Series 94H2O at 2.5-3.5 mils DFT
    b. Stripe Coat: Tnemec Series N140 at 3.0-4.0 mils DFT

c. Finish Coat: Tnemec Series 22 at 20 mils DFT minimum

3. Sherwin Williams

   a. Primer, Field: Corothane I Galvapac 1K or 2K at 2.5-4.0 mils DFT

   b. Stripe Coat: Sherplate 600 at 3.0-5.0 mils DFT or SherPlate PW at 10.0-12.0 mils DFT

   c. Finish Coat: Sherplate PW, 20 mils DFT minimum

Contractor shall apply primer, first and finish coats utilizing different colors for ease of inspection.

Part 3 – Execution

Pre-Blast Cleaning Requirements

A. Cap or seal all inlet/outlet and overflow piping inside tanks prior to beginning any surface preparation or cleaning work to prevent entry of foreign material into the piping systems.

B. Remove oil, grease, welding fluxes, and other surface contaminants prior to blast cleaning.

C. Repair corrosion pits by arc welding and grinding flush with the metal surface as directed by the Engineer. Weld undercutting, pits, slag, holes, or splatter shall be removed or corrected before repairs are acceptable.

D. Grind metal protrusions, deformations, and welds on interior of tanks flush with the metal surface where directed by the Engineer.

Abrasive Blast Cleaning Requirements

Prepare all internal surfaces in accordance with SSPC-SP1, immediately followed by abrasive blast cleaning in accordance with SSPC-SP10 Near White Blast Cleaning.

It is the Contractor's responsibility to determine the original steel conditions in selecting the abrasive and equipment required for achieving the specified surface profile and cleanliness.

Blast profile shall be of a sharp, jagged nature, and angular, with no evidence of a polished surface. Peened surface patterns, such as those obtained from shot blasting, are not acceptable.

Post-Blast Cleaning

Clean surfaces of dust and residual particles prior to painting.

Vacuum-clean areas where dust settling is a problem. Horizontal surfaces subject to dust settlement, such as welds, floors, and flanges on rafters and girders, shall be cleaned again by dry air blast and vacuum immediately preceding paint application.

Remove all spent steel grit from floor, corners, and other areas as necessary using a magnetic broom and dry air blasting.

Blasted surfaces shall be carefully monitored and inspected for rusting immediately prior to painting. Under all conditions, re-blast surfaces that have started to rust before they are coated.

Contractor shall apply the prime coat at the specified thickness.

Application of Paint

Plan coating application to ensure that specified temperature, humidity, and condensation conditions are met. If conditions do not allow for orderly application of sealant, primer, stripe coat, intermediate coat and topcoat, use appropriate means of controlling air and surface temperatures, as required. Partial or total enclosures, insulation, heating or cooling, or other appropriate measures may be required to control conditions to allow for orderly application of all required coats.

Allow each coat to dry in accordance with the manufacturer's recommendations before applying next coat. Provide adequate ventilation for tank interior to carry off solvents during dry phase. The use of ventilation shall be in accordance with the requirements for any dehumidification and temperature control.

Stripe Coat

A. Brush a stripe coat of coating on all welds, bolted connections, bolt heads and nuts, corners, edges, angles, welds, member intersections, structural steel flanges, crevices, heavily pitted areas, top face of lower rafter flange, and all other deviations from smooth surfaces where paint application may not result in adequate paint thickness and coverage.

B. Stripe coat shall be worked into all cracks, crevices, and seams.

C. Mini-rollers or other tools may be required.

D. Alternate colors in a multiple coat system to provide a visual reference that the required number of coats has been applied, including stripe coats.

9.98.03 Steel Reservoir Rehabilitation Over-Coating

[CSI 09 97 13.40]

9.98.03.01 New Exterior Shop-Fabricated Steel Elements

At the Contractor's option new exterior steel elements may be coated in the field or during fabrication to either 1.) the prime coat (completing the finish coat in the field) or 2.) prime and finish coat. Surface preparation and coatings shall comply with the respective requirements of exterior tank coatings as described in 9.98.03.10.

9.98.03.02 Steel Tank Exterior Coating Spot Repairs

Part 1 – General

This section applies to damaged areas at the tank exterior, including areas of visible corrosion, areas where the coatings are damaged by welding of proposed improvements, areas where the coatings are lifting at exterior welds, and any other areas required to be repaired to bare metal.

Part 2 – Products

Materials

Provide zinc-rich primer and an intermediate coat recommended by the manufacturer of the approved exterior coating system.

Part 3 – Execution

Preparation

Area exhibiting coating failure down to the steel substrate or damaged by welding and which may or may not be exhibiting visible corrosion – These areas shall be prepared down to clean, bare steel by power tool cleaning (SSPC-SP 3 or SP 11) using equipment with HEPA Filter shroud suitable for lead-based paint removal.

All prepared areas shall extend at least (2) two inches into tightly adhering, intact paint. The edges of the existing paint surrounding the spot cleaned areas shall be feathered and no loose or abrupt edges or coating shall remain. The subsequent applied coating shall overlap the intact, performing coating by a minimum of (2) two inches. This overlap area of the intact coating shall be lightly sanded to provide a profile to which the subsequent repair coating can adhere.

Application

Backbrush all field welds, edges, angles, fasteners, and other irregular surfaces.

9.98.03.10 Steel Reservoir Rehabilitation Exterior Over-Coating

Part 1 – General

This section applies to the exterior of both tanks, including steel pipes, tank access appurtenances and accessories and all other steel tank elements. Do not disturb or coat ductile iron pipe or aluminum vent.

Part 2 – Products

Only the products and systems below, which have been demonstrated to be compatible with the underlying coating, will be accepted.

Materials

1) Tnemec

   a) Full Tie Coat: one coat Tnemec Series 2E62 at 1-2 mils DFT

   b) Full Finish Coat: one coat Tnemec Series 1095 at 3-5 mils DFT

2) Sherwin Williams

   a) Full Tie Coat: one coat of Sherwin Williams Macropoxy 920 Pre-Prime Fast Cure Epoxy at 1.5 - 2.0 mils DFT

   b) Full Finish Coat: one coat of Sherwin Williams Sherloxane 800 at 4.0 - 6.0 mils DFT

3) Carboline

   a) Full Tie Coat: one coat Carboline Carbomastic 615 at 4.0-6.0 mils DFT

   b) Full Finish Coat: one coat Carboline Carbothane 134 HG (gloss) at 2.0-3.0 mils DFT

Part 3 – Execution

Surface Preparation

Using a (SSPC-SP WJ-4 Waterjet Cleaning of Metals, Light Cleaning) and detergent and/or scrubbing as needed, remove all visible oil, grease, soil, dirt, mold and mildew, and other soluble contaminants. Remaining coatings shall have an adhesion of 3A or 3B or better when tested in accordance with ASTM D3359 and a chalk level of 9 or greater. If remaining intact coating is hard and glossy, uniformly dull and abrade it. Take precautions not to damage or remove tightly adherent paint or primer in preparing the exterior surface of the structure for painting.

Provide hand tool cleaning or power tool cleaning (SSPC SP2/SP3) as needed to remove any sharp projections.

13.00 GENERAL

This division covers that work necessary for supplying, fabricating and installing all furnishings and accessories as described in these specifications and as shown on the Plans.

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

13.47.13.17 Cathodic Protection for Storage Tank

[CSI 13 47 13.17]

Part 1 – General

Summary

Provide an impressed current cathodic protection system for the interior of the water tank in accordance with AWWA Standard D104-17 and as specified herein. Provide a cathodic protection system to include rectifier, anode array, reference cells, conduit, wire, hangers, grounding, and all additional components necessary for a complete installation.

The specifications and plans are intended to cover a complete cathodic protection system properly designed and installed, suitable for safe and satisfactory operation. Unless expressly excluded by these specifications, any and all equipment, materials and/or labor not included, but which may be necessary to produce said product are included in the Contractor's bid price. Any unfulfilled requirements of this nature which become apparent upon installation and/or testing of the equipment will be corrected by the Owner or the Owner's agent at the Contractor's expense if, upon notice, the Contractor fails to promptly correct the deficiency.

All work shall be in accordance with local electric code.

Qualifications

Installation of the cathodic protections systems shall be done under the direct supervision of an installer with a minimum experience of 10 comparable installations.

The rectifier shall be adjusted by a corrosion expert, and that person shall be a Professional Engineer with education and training in cathodic protection, or an AMPP (NACE) Certified CP/Corrosion Control Specialist.

The supplier of the cathodic protection rectifier system, anodes and other special cathodic protection materials and equipment shall have a minimum of five (5) continuous years of successful experience in the manufacture, installation, and service of cathodic protection systems for similar structures.

Field Conditions

The following data are provided:

1. Tank approximate dimensions: 150-foot diameter, 30-foot height.
2. Materials: Steel bottom, steel shell, steel roof.
3. Interior Lining: see Division 9 of the Technical Specifications

The Contractor is responsible for requesting any additional information as may be required to assure satisfactory design and Installation.

Submittals

Provide personnel qualifications of the installer and corrosion expert and provide catalog cuts and data sheets for all materials including rectifier, anodes, reference cells, wiring, insulation, handhole covers, hangers, and conduit. Provide drawings of proposed conduit routing and mechanical and electrical connections to structures.

Closeout Submittals

Provide 3 copies of the rectifier operating manual for each rectifier supplied.

Provide maintenance and operating instructions with sufficient detail to permit the Owner's operator to properly maintain and adjust the system. Include a description of the main components, their function, and a schematic drawing of the power/unit controller.

Warranty

In addition to other warranties required by the specifications, warrant the entire cathodic protection system against defects in materials and workmanship for a period of two (2) calendar years after date of project acceptance.

Part 2 – Products

Materials

All materials shall be new, be the standard product of manufacturers regularly engaged in the production of such equipment, and be the manufacturer's latest design. Materials and equipment supplied shall reflect the best and latest standard and practice for the intended application.

A.C. Power Service

Existing rectifier is 115V. Connect to existing power supply at existing rectifier location within Booster Pump Station.

Impressed Current Rectifiers

Rectifier: CP Sentinel Aqua-Line by Integrated Rectifier, or T.A.S.C. VIII rectifier by Corrpro, or approved equal.

The impressed current cathodic protection rectifier shall include the following functions and components:

1. Both manual mode and fully automatic, with "ON" potential control and automatic "IR-Free" (instant off) potential control to 100% rated output.
2. Digital rectifier meter with an LED display showing voltage, current, and potentials.
3. Automatic current limiting control and automatic shut down on loss of reference cell.
4. Rated output of 30VDC and 16ADC.
5. Transformer with 25 steps.
6. SCR/diode rectifier.

7. Overload and short protection shall include an AC circuit breaker, DC fuse, and AC/DC surge/lightning protection.
8. CSA- or NEC-approved with NEMA 4X stainless steel enclosure and padlock hasp.

Anodes and Anode Header Cable

Anodes: Anomet-40 2X by Anomet, or approved equal.

1. Platinized niobium anodes with 40% niobium cross-section clad on a copper core. The anode shall be 0.125-inch diameter, 0.013-inch Nb, 100 micro-in Pt.
2. Anodes: 10 ft length with silver soldered, epoxy potted connections to the lead wire.
    a. The lead wire shall be #8 AWG stranded copper wire with HMWPE insulation.
    b. The bottom ends of the anode assembly shall be weighted with a ceramic insulator.

Anode header cable: #8 AWG stranded copper wire with HMWPE insulation.

1. The header shall be un-spliced to the conduit junction box.
2. Make anode splices to the header cable with copper/bronze compression C-clamps or copper/bronze split bolt connectors with epoxy or heat shrink insulating kits, or C-clamps with 2 layers of half-lapped self-annealing butyl rubber tape and an outer wrap of 2 layers half lapped vinyl tape.

Reference Cells and Structure Sensing Leads

1. Reference cells: Copper/copper sulfate permanent reference cells for submerged potable water use.
2. Reference cells shall maintain plus/minus 10 mV potential with 3 microA current draw.
3. Reference cell leads: #14 AWG wire with HMWPE or RHW leads.
4. Each reference cell shall have a dedicated conductor. The leads shall be continuous length to the conduit junction box and the lead connection to the reference cell shall be silver-soldered and insulated.

Conduit

1. Run the wiring between the rectifier and the under-roof anode feeders in rigid steel conduit of a type and size conforming to N.E.C. and all other applicable codes.
2. Provide a service entrance with watertight conduit connections at the connection between conduit and underroof wiring.

Manufacturers

Suppliers include the following, among others, that advertise on the internet and in the NACE publication Material Performance, typically under corrosion control and/or cathodic protection.

- Farwest Corrosion Control Company: www.farwestcorrosion.com
- Norton Corrosion: www.nortoncorrosion.com

- Corrpro Companies: www.corrpro.com
- MESA: www.mesaproducts.com

Part 3 – Execution

Installation

Route all DC and reference cell/structure sensing wiring along the conduit run as shown. Make connections to the tank above the water line or onto welded appurtenances; do not damage the tank interior lining or exterior coating.

Impressed Current Rectifier Installation

1. Connect the AC/DC power and reference cell/structure sensing wiring.
2. Label the reference cells and use the manufacturer's preferred reference cell location for rectifier control.
3. Label and terminate the other reference cells on a block or rotary switch within the rectifier cabinet.

Handholes

1. Provide handholes at the locations shown on the drawings.
2. Handhole covers shall be stainless steel with a fiberglass clamping bar. The clamping bar shall have an NC stainless steel bolt threaded through the rod with an end retainer. The cover shall be NSF approved and equal to GMC. Handhole penetrations shall have an NSF approved water-tight grommet seal.
3. Provide porcelain insulator hanger with hot dipped galvanized pin, nut, and washer.

Anodes and Anode Header Cable Installation

1. Provide anodes at the hand-holes as shown on the drawings.
2. Hang anode vertically, at the elevations shown.
3. The anode lead wire shall be continuous, uncut, from anode to header cable. Do not cut the anode header cable at the anode splice connections.

Reference Cells and Structure Sensing Leads

1. Provide reference cells at the handholes where shown on the drawings.
2. Hang reference cells vertically, with a hanger and hand-hole similar to that for anodes.
3. The reference cell wiring shall be continuous, uncut, and connected to the rectifier lead in the service entrance.
4. The reference cell and structure sensing wiring from the rectifier to the tank shall be run in a dedicated conduit and the wiring shall be shielded and grounded at one end. At the contractor's option, provide continuous uncut wires from reference cells to rectifier in lieu of cable.

Conduit

1. **Provide separate conduit for DC and for reference cell/structure sensing wiring. Route the CP system in conduit separate from the instrumentation wiring.**
2. Run conduit as shown on the drawings and attach in a manner that does not interfere with safe use of access systems and does not damage the tank coating.

System Startup

1. The rectifier shall be adjusted by a corrosion expert, and that person shall be a Professional Engineer with education and training in cathodic protection, or an AMPP (NACE) Certified CP/Corrosion Control Specialist.
2. Record the potential of each reference cell prior to energizing.
3. Energize and adjust the rectifier in the instant-off/IR Free potential control mode, but do not set the maximum potential over (-)1.0V versus copper-copper sulfate reference cell. Record the polarized, instant-off potential of each reference cell at this setting. Perform an instant-off/IR Free potential profile at the tank top hatch at 5' intervals.
4. Set the tap setting to the minimum current output required for the selected potential.
5. Turn off rectifier after adjustment and temporarily disconnect anode wires until system is turned back on.
6. Record and submit a stamped/signed letter report of the rectifier settings and resulting instant-off/IR Free potentials.

15.00 GENERAL

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

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

15.05 Common Work for Mechanical

[CSI 33 05 00]

Part 1 - General

Summary

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

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

Related Sections

- Division 1.81.30 Seismic Restraint and Anchorage
- Division 1.81.40 Pressure Ratings
- Division 1.81.50 Materials in Contact with Drinking Water

References

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

Submittals

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

- Isolation valves
- Control valves

Part 2 – Products

Materials

All valves, meters, hydrants, specialties, appurtenances, and other such mechanical and plumbing components that are of similar purpose shall be of a single manufacturer and model line. Do not "mix and match" unless specifically stated otherwise or allowed by the Engineer.

The intention of this requirement is to maintain consistency across all components installed on the project for function, maintenance, aesthetics, and details of installation.

Part 3 - Execution

Field Quality Control

Pressure gauges used for testing and commissioning shall be in good working order and scaled appropriately for the test. Scale range shall not exceed 200% of the test pressure. For example, for a 250 psi test, the gauge scale shall not exceed 500 psi. The Owner has the right to reject any gauges that are suspect in their accuracy.

If any components that have been approved by the Owner are not rated for the specified system test pressure, remove or isolate those components during pressure testing in a method acceptable to the Owner. Said components must still be pressure tested in their permanent configuration at their individual test pressure rating.

Cleaning

Potable Water Systems

After preliminary purging of the system, chlorinate entire potable water system in accordance with AWWA C651 for flushing and disinfecting water mains, and in accordance with all other pertinent rules and regulations. Operate each valve during chlorination period to provide contact. Upon completion of sterilizing, thoroughly flush the entire potable water system at a velocity of 3 feet per second, allowing four complete exchanges of contents. Do not discharge chlorinated material to storm or surface water systems without thoroughly neutralizing the chlorine residual remaining in the water in accordance with AWWA C655 for field dechlorination.

For pipe and fittings that cannot be disinfected as described above, such as those used for final connections to live systems, swab or immerse in a 50 ppm chlorine solution.

After final flushing and before the water pipe is connected to or placed in service, the Contractor shall request that the Owner arrange to have samples collected for bacteriological testing. At least one sample will be collected from each branch of the pipe. A copy of the test results shall be delivered to the Contractor for review. The Contractor shall not connect the water pipe to the existing distribution system prior to acceptance of the bacteriological test by the Engineer.

The Owner will pay the laboratory fee for the initial bacteriological test. The Contractor will pay for future testing if the initial test results are unsatisfactory.

15.20 PIPE AND FITTINGS

15.21 Common Work for Pipe and Fittings

[CSI 33 05 00 or 40 05]

Part 2 - Products

Components

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

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

For submerged conditions, connection bolts shall be Nitronic 60 steel. Nuts and washers shall be Stainless Steel, minimum grade 304 in raw domestic or treated domestic water and minimum grade 316 in treatment processes and sewage applications. Minimum grade 317 for acidic transport. Bolts and nuts shall meet ASTM F593 and F594. Stainless steel shall not be used where in contact with chlorine or chlorine solutions. Stainless steel bolts may be used in lieu of Nitronic but must be assembled using appropriate lubricant or tape. For installations in domestic water, lubricant, or tape must be approved for domestic water service. Cobas Stainless Steel Thread Sealing Tape or approved equal.

Finishes

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

Part 3 - Execution

Construction

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

Steel and stainless steel threads shall be protected against galling using steel thread sealing tape equal to Cobas steel thread sealing tape. Tape shall be specific to the steel type used.

15.22 Metal Pipe and Fittings

15.22.04 Stainless Steel Pipe and Fittings

[CSI 33 05 23 or 40 05 23]

Part 1 - General

Related Sections

- Division 5.05 Common Work for Metals

Design Requirements

Welding shall withstand the hydrostatic testing pressure as stated in Division 1.81.40 without leakage.

The pipe wall thickness shall be as required by Division 1.81.40 and the following table.

Pipe Wall Thickness (inches)

Working Pressure	Nominal Pipe Diameter 1"	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	24"	30"
0 - 100 psi	0.109 (1)	0.109 (1)	0.120 (1)	0.120 (1)	0.134 (1)	0.148 (1)	0.165 (1)	0.180 (1)	0.188 (1)	0.188 (1)	0.188 (1)	0.250	0.312 (1)
101 - 200 psi	0.133 (2)	0.154 (2)	0.216 (2)	0.237 (2)	0.280 (2)	0.322 (2)	0.365 (2)	0.375 (2)	0.375	0.375	0.375	0.375	0.375
201 - 400 psi	0.179 (3)	0.218 (3)	0.300 (3)	0.337 (3)	0.432 (3)	0.500 (3)	0.500 (3)	0.500 (3)	0.500	0.500	0.500	0.500	0.625

(1) Per Schedule 10s; (2) Per Schedule 40s; (3) Per Schedule 80s

Part 2 - Products

Materials

All stainless-steel pipe and fittings shown on the Plans in direct bury applications shall meet ASTM A312, Type 304L, Welded. All heat tints and chromium depleted layers caused by welding shall be removed by pickling prior to on-site delivery.

Above-ground stainless steel piping and fittings shall meet ASTM A778 and A774 respectively, welded. ASTM A312 is also acceptable. Piping systems shall be pickled after welding and prior to on-site delivery. Fittings shall be beveled plain-end for welding, mechanical joint connection, or flange as shown on the Plans.

Part 3 - Execution

Installation

Welding of pipe shall be per ASME Welding Code.

Passivate field welds per Division 5.05.

15.30 VALVES

15.31 Common Work for Valves

[CSI 40 05 51 or 33 14 19]

Part 1 – General

Design and Performance Requirements

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

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

Pressure rating shall be per Division 1.81.40 unless shown otherwise.

Part 2 – Products

Components

If shear pins are installed with any valve, the manufacturer shall certify the shear pin(s) to fail between 95 to 99 percent of the operator shaft failure torque. Provide concrete supports for operators where required, as shown on the Plans.

Buried valves shall be equipped with an AWWA 2-inch wrench nut with a minimum of 10 turns required to close the valve, unless otherwise noted on the Plans. Exposed valves shall be equipped with lever actuator for valves 3 inches and smaller.

Buried valves where the operator nut is more than 3 feet below the valve box lid shall be provided with a solid shaft valve nut extension to reach between 18-inches and 30-inches of the ground surface. Extension shall attach to the nut with a set screw. Diameter of extension shall be appropriate for the valve size and length of extension, but under no circumstances shall be less than 1 inch for 4-foot-long extension rods, or 1.25 inch for rods longer than 4 feet. Extension shall function without excessive twisting.

Part 3 - Execution

Installation

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

15.32.07 Gate Valves – Small Diameter

[CSI 40 05 61.13]

Part 2 – Products

Manufactured Units

Gate valves 2 inches and smaller for steel or brass pipe shall be Crane No. 438 or equal with non-rising stem, screwed bonnet, solid wedge disc, bronze construction and threaded ends.

15.40.03 Pipe, Valve, and Conduit Supports

[CSI 40 05 07]

Part 1 - General

Summary

This section includes providing pipe supports, hangers, guides, and anchors.

Related Sections

- Division 1.81.30 Seismic Restraint
- Division 5.05.23 Bolts and other Connectors

Performance Standards

Piping systems, including connections to equipment, shall be properly supported to prevent deflection and stresses. Supports shall comply with ANSI/ASME B31.1, except as otherwise indicated.

Size hanger rods, supports, clamps, anchors, brackets, and guides in accordance with ANSI/MSS SP 58 and SP 69.

Support plumbing drainage and vents in accordance with the Uniform Plumbing Code.

Submittals

Pipe Hanger/Support Design Calculations

Shop drawings of engineered pipe hangers/supports, including details of concrete inserts. Drawings shall include location plan showing location of the hanger/support in relation to the structure and/or equipment.

Part 2 – Products

Components

Provide and install all equipment necessary for compete support systems including, but not limited to, base, riser pipe, anchor bolts, hanger rod, support cradle or clamp, and fasteners.

All supports, rods, clips, etc. shall be 304 L stainless steel. Bolts shall be in accordance with 05.05.23.

Except as otherwise noted, pipe support components shall comply with the types in ANSI/MSS SP-58.

Thermal Expansion: Wherever expansion and contraction of piping is expected, a sufficient number of expansion loops or joints shall be provided, with rolling or sliding supports, anchors, guides, pivots and restraints. They shall permit the piping to expand and contract freely in directions away from the anchored points and shall be structurally suitable to withstand all loads imposed.

Heat Transmission: Supports, hangers, anchors, and guides shall be designed and insulated so that excessive heat shall not be transmitted to the structure or other equipment.

Freestanding Piping: Freestanding pipe connections to equipment, including chemical feeders and pumps, shall be firmly attached to fabricated steel frames made of angles, channels or I-beams anchored to the structure. Exterior, freestanding overhead piping shall be supported on fabricated pipe stands, consisting of pipe columns anchored to concrete footings, with horizontal, welded steel angles, and U-bolts or clamps installed to secure piping.

Submerged Supports: Submerged piping shall be supported with hangers, brackets, clips, or fabricated supports and stainless-steel anchors.

Finishes

Unless otherwise noted, all fabricated pipe supports, other than stainless steel or non-ferrous supports, shall be blast-cleaned after fabrication and hot-dip galvanized in accordance with ASTM 123. Other than stainless steel and non-ferrous supports, supports shall be coated in accordance with Division 9.91.13.1.

Part 3 - Execution

Installation

Piping shall be rigidly anchored to walls, slabs, and ceilings by means of suitable pipe supports, wall brackets, or pipe hangers.

Pipe supports, hangers, brackets, anchors, guides, and inserts shall be installed in accordance with the manufacturer's installation instructions and ANSI/ASME B31.1. All concrete inserts for pipe hangers and supports shall be coordinated with the formwork.

Stand-on Pipe Support: Adjust support, secure to pipe and secure to floor as recommended by the manufacturer.

Riser Supports: Risers shall be supported on each floor with riser clamps and lugs, independent of the connected horizontal piping.

Support Spacing: Pipe supports shall be placed to meet the following maximum spacing, unless otherwise noted or shown on the Plans: maximum vertical support spacing of 5 feet, and maximum horizontal support spacing of 10 feet. Support shall be provided at horizontal bends, base of risers (vertical bends), floor penetrations, connections to pumps, blowers, and other equipment, valves and appurtenances. Support spacing shall meet the local plumbing code where applicable. Support spacing may be increased from that noted above provided adequate calculations are provided supporting the change.

Support Anchorage: Concrete anchors shall be as specified in Division 3, Concrete Anchors. All channel strut type supports shall have a minimum of 2 anchors per support.

Suspend pipe hangers from hanger rods, secure with double nuts.

Securely anchor plastic pipe, valves and headers to prevent movement during operation of valves. Anchor plastic pipe between expansion loops and direction changes to prevent axial movement through anchors.

Provide ductile iron elbows or tees supported from floors with base fittings. Support base fittings with metal supports, or when indicated on the Plans, concrete piers.

Do not use chains, plumbers' straps, wire, or similar devices for suspending, supporting or restraining pipes.

Install riser clamps at floor penetrations and where indicated on the Plans.

Field Quality Control

Pipe supports and hangers shall be positioned in such a way as to produce an orderly, neat piping system. All hanger rods shall be vertical, without offsets. Hangers shall be adjusted to line up groups of pipes at the proper grade for drainage and venting, as close to ceilings or roofs as possible, without interference with other work.

Properly support, suspend or anchor exposed pipe, fittings, valves and appurtenances to prevent sagging, overstressing or movement of piping and to prevent thrusts or loads on or against connected pumps, blowers or other equipment.

15.40.04 Dielectric Fittings and Adapters

[CSI 40 05 06.17]

Part 2 – Products

Dielectric Isolating (Insulating) Flange Joints

Flange insulation shall include a full-face insulating gasket, a full-length insulating sleeve for each bolt, and two insulating washers and two steel bearing washers for each flange bolt.

Sleeves and Washers

Insulating sleeves and washers shall be Pyrox G-10. Both the insulating washers and the steel washers shall fit over the outside diameter of the sleeve and shall fit within the bolt facing of the flange.

Gaskets

Gaskets shall be full faced Styrene Butadiene Rubber (SBR), Nitrile (Buna-N), Neoprene, polytetrafluoroethylene (PTFE), or compressed vegetable fiber. Gaskets shall have adequate dielectric properties, 200V/mil minimum, and shall be suitable for the operating and test pressures of the pipe system. Gaskets shall NSF-61 approved. No hard rigid gasket (e.g. phenolic or epoxy-fiberglass (G-10)), even if full-faced elastomeric coated (e.g. neoprene-coated phenolic) or with elastomeric sealing element such as an O-ring or flat band.

For gaskets used at ductile iron pipe flange joints, provide American Toruseal Flange Gasket (yellow only) has sufficient dielectric characteristics to meet the 200V/mil minimum requirement.

Dielectric Isolation Joint Assembly

An insulating joint assembly shall consist of 2 flange by plain end or 2 flange by mechanical joint (FLG x PE or FLG x MJ) adapters, a full face insulating gasket, with full length insulating sleeves, 2 insulating washers, and 2 steel bearing washers for each flange bolt.

Flange Connection

Submittals for flange connections shall address suitability of gasket, bolts, washers, nuts, and flange characteristics for the specified pipe type and pressure, considering gasket compression, bolt strength, and required torque.

Part 3 - Execution

Installation

Provide dielectric adapters between dissimilar types of metal pipes, valves and fittings (e.g. copper to stainless steel). Flange isolating kits shall be used when dissimilar metal flanged pipe is connected.

15.70 PLUMBING

[CSI 22 00 00]

15.70.05 Common Work for Plumbing

[CSI 22 05 00]

Part 2 – Products

Components

Joints and Connections

- Steel and Brass: Use factory-cut pipe threads where possible; otherwise, cut pipe ends square, remove all fins and burrs, and cut full-depth tapered threads. Apply joint compound to male threads only and engage so that no more than three threads remain exposed.
- Hubless: Install a neoprene gasket and stainless steel clamp and shield coupling joint assemblies with bolts alternatively and incrementally tightened to a minimum 60 inch-pounds torque. Use a single set-point torque wrench manufactured specifically for this purpose. Do not use screwdrivers or other types of wrenches. Re-torque bolts after 24 hours.
- Solvent cement: Use solvent cement approved by pipe and fitting manufacturer and apply in accordance with the manufacturer's installation procedures.

Fixtures and Trim

Use chromium-plated brass bolts, nuts and washers where exposed; otherwise, use brass or bronze bolts, nuts and washers. Make connections gas-tight and water-tight. Do not use bulk material, including putty and plastics, for gaskets.

Trim shall match metal parts used with fixtures. Trim shall be stainless steel, except when provided with plumbing fitting by the manufacturer. Exposed trim shall have a satin type finish. Escutcheons shall be provided at each point where pipe or other fittings enter the wall.

Part 3 - Execution

Examination

Prior to work of this section, carefully inspect installed work of other trades and verify that such work is complete to the point where this installation may properly commence. Verify that plumbing may be installed in strict accordance with all pertinent codes and regulations. In the event of a discrepancy, do not proceed with the installation and immediately notify the Owner.

Installation

Install and locate pipe, fittings and accessories as shown on the Plans.

Waste piping vents shall protrude through the roof. In framed walls, waste piping vents shall be concealed. Provide individual vents for each fixture.

Except for drain grates, do not embed plumbing in concrete or masonry, always surface mount. Where furring exists, conceal in furring unless shown otherwise on the plans. Where plumbing passes through concrete or masonry, provide a sleeve unless specifically shown otherwise on the plans.

Rigidly support wall hung fixtures by means of metal supporting members so that no stress is transmitted to connections.

Do not cut into or reduce the size of any load-carrying member without prior approval of the Engineer. Install pipes to clear all beams and obstructions.

Locate water hammer arresters in accordance with the manufacturer's recommendation.

Provide uniform pitch of at least $^{1}/_{8}$-inch per foot, or as otherwise noted, for all horizontal waste and drain piping within the building. Pitch all vents for proper drainage.

Cushion all traps and bearings to minimize transfer of sound; firmly anchor all pipes in position.

Vertical stacks shall be supported at floors with clamp anchors as required to relieve joint stresses.

Conceal all piping unless otherwise shown on the Plans.

Provide and conceal air chambers the same size as the branch line at each water connection to a plumbing fixture.

Inspection

Test all plumbing fixtures for proper and smooth operation when in use.

Make sure fixtures are thoroughly clean and free of any foreign material.

15.75 Plumbing Fixtures

[CSI 22 40 00]

15.75.02 Backflow Prevention Assemblies (2-inch and Smaller)

[CSI 40 05 67.16]

Part 1 – General

Summary

The Contractor shall be responsible for maintaining cross flow prevention between approved and non-approved potable water systems. The Contractor shall supply and maintain products for use to prevent cross flow. Where required on the plans or by the local authority, a reduced pressure principal backflow device shall be provided.

Submittals

The Contractor shall obtain and pay for device testing by a certified backflow assembly and provide test report to the Owner.

Provide information showing the device is approved by the FCCC and listed with the State of Washington. Device used must be approved by the Washington State Department of Health.

Part 2 – Products

Manufacturers

Standard double check valve assembly shall be equal to Wilkins Model 350.

Reduced pressure principal double check valve assembly shall be equal to Wilkins Model 375.

Manufactured Unit

Double check valve assembly shall be a complete unit consisting of one body containing two independently-operating, spring-loaded check valves and two isolation valves. Testing shall be accomplished through the use of stop cocks installed in the unit. Spring loading of each check valve shall be sufficient to hold at least 1 psi in the normal direction of flow when outlet is at atmospheric pressure.

Internal parts of spring-loaded check valves shall be removable or replaceable without removing double check valve from the line. Provide double check valve fabricated from corrosion-resistant materials.

Reduced pressure (RP) backflow prevention assembly shall be a complete unit consisting of isolation valves on each end. Assembly shall be constructed of corrosion-resistant materials.

Part 3 – Execution

Installation

Install devices per the requirements of the PNWS-AWWA Cross Connection Control Manual. RP devices shall have daylight drainage.

Provide Department of Health certification and field testing of assembly at project completion in accordance with the Uniform Plumbing Code. Provide test report to Owner.

18.0 GENERAL

It is the intention of these specifications that performance of work under bid items shall result in complete construction, in proper operating condition, of improvements identified in these written specifications and accompanying plans. Work and material not specifically listed herein but required according to the plans and specifications and general practice shall be included in Contractor's bid price in the most closely applicable bid item.

If a minimum bid amount has been established for any item and the bidder's entry is less than the minimum specified amount, the Owner will unilaterally revise the price to the minimum specified amount and recalculate the total. The recalculated total will be used by the Owner for award purposes and to fix the contract price amount and the amount of the contract bond.

If a maximum or fixed bid amount has been established for any item and the bidder's entry exceeds the maximum or fixed specified amount, the Owner will reduce the bid item price to the maximum or fixed specified amount and relocate the offsetting amounts to bid items of the Owner's choosing.

Phased Construction Description

The work for both tanks will be bid and awarded under one contract but must be completed in two separate phases. The City has two water storage tanks in all, both of which are to be improved and recoated as part of this project. To provide adequate water supply to its customers while simultaneously having adequate fire flow storage available, at least one tank must be in service at all times, and both tanks must be in service from May 15 to October 15 annually. See Specifications Section 1.32.13 for additional scheduling information.

Employee Access During Construction

City employees will need full access to the in-service reservoir(s), on-site booster pump station, and other operable equipment on site at all times.

Schedule A: South Tank

Bid Item 1A – Mobilization, Demobilization, Site Preparation, and Cleanup

Lump sum price covers complete cost of furnishing, installing and testing, complete and in-place, all work and materials necessary to: move and organize equipment and personnel onto the job site; secure job site; traffic control for deliveries; provide and maintain necessary support facilities; obtain all necessary permits and licenses not specifically mentioned in other bid items; prepare site for construction operations; maintain site and surrounding areas during construction; move all personnel and equipment off site after contract completion, cleanup site prior to final acceptance; and accomplish all other items of work not specifically listed in other divisions.

No more than 80-percent of bid amount for this item will be paid before final payment request, and this bid amount may not be more than 10-percent of value of total contract.

Bid Item 2A – Site Work

Lump sum price shown shall cover the complete cost of providing all site work relating to construction of improvements as shown on the Plans and specified herein. Work includes, but is not limited to: conduit trenching; security fence; reinforced concrete slab at base of proposed spiral stairs; bollards; sealant or grout between foundation and base of tank; disposal of excess material; and all other work necessary for a complete installation of all site work.

Bid Item 3A – Interior Seal Welding

Lump sum price shown shall cover the complete cost of seal welding of all elements at the roof interior including bottom of roof plate laps, and roof plate to beams. In some areas the work will require closing the gap between elements that are currently too far apart to weld directly together, either by repositioning them or by adding flat bar plate to span the gap, welding the bottom of roof plate to the top of the bar plate and from the bottom of the bar plate to the supporting beam below. This work includes all safety and other precautions the contractor must take to protect its employees, City personnel, and City representatives tasked with observing the work. This also includes any precautions that should be taken regarding welding near remaining coal tar system that may exist between the top of beams and bottom of roof plate or in other hard-to-reach areas inside the tank.

Bid Item 4A – Tank Accessories

Lump sum price shown shall cover the complete cost of providing all materials, equipment and labor necessary for: constructing the spiral stairs, landing, guardrail, tie-off anchors near top of stairs, vent with 2-user lanyard similar to the existing vent at North Tank, sample lines and taps, and gutters and downspouts; removing the existing exterior ladder, cage, vandal shield, visual level indicators, and interior painter's rail; and replacing one existing access hatch with a larger hatch in the same location. Shop drawings, PE-stamped calculations, and permitting effort for the stairs, platforms, guardrails, and ladder are included as part of this bid item.

Bid Item 5A – Environmental Control

Lump sum price shown shall cover the complete cost of providing all labor and materials, necessary for heat, dehumidification, dust control and related waste disposal for both interior and exterior prep and coatings. It also includes all related required work plans, monitoring and reporting.

Bid Item 6A – Interior Finishes

Lump sum price shown shall cover the complete cost of providing all labor, materials, and equipment necessary for surface preparation and proposed coating system for the full interior of the tank, including the shell, accessories and appurtenances, and all supporting members. This bid item includes incidental repairs to the interior shell that may require welding.

Bid Item 7A – Exterior Containment

Lump sum price shown shall cover the complete cost of providing all labor, materials, and equipment necessary for full containment as described in Division 9 Finishes, including scaffolding, sealed entry and exits, containment barriers and all other containment-related elements.

Bid Item 8A – Exterior Spot Repair

Unit price shown shall cover the complete cost of repairing areas at the tank exterior damaged to bare steel including areas of visible corrosion, areas where the coatings are damaged by welding, areas where the coatings are lifting at exterior welds, and any other areas to be repaired to bare metal. Price shown shall cover the complete cost of providing all labor, materials, and equipment necessary to complete repairs and primer at those areas. For bidding purposes, assume a total of 100 square feet to be repaired. No isolated area of corrosion will be considered smaller than 1 square foot. Final square footage shall be by agreement between the Owner or Owner's representative and the contractor, following tank exterior cleaning per the specifications section 9.98.03.10, based on exterior tank conditions in the field.

Bid Item 9A – Exterior Preparation and Overcoat

Lump sum price shown shall cover the complete cost of providing all labor, materials, and equipment necessary for preparing, priming and coating the full exterior of the tank, including the shell, accessories and appurtenances, and supporting members. This bid item includes preparation and installation of the prime coat and finish coat. This bid item also includes corrosion removal from any stainless steel and aluminum items such as the existing vent and hatches. Any overspray or paint spillage will be repaired by the contractor at no additional cost. See Bid Items 2A and 5A regarding proper disposal of all waste products.

Bid Item 10A – Cathodic Protection System

Lump sum price shown shall cover the complete cost of providing all labor and materials, necessary for removal and replacement of the cathodic protection system as shown on the Plans and described in the specifications.

Bid Item 11A – Electrical

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

Bid Item 12A – Tank Disinfection and Testing

Lump sum price shown shall cover the complete cost of providing all labor and materials necessary for tank disinfection and testing per the project specifications section 1.75.16, including all elements inside the tank such as the overflow piping, sample tap piping, and mixer. A lump sum price of $10,000 has been included in the Proposal for this work. Partial payment will not be allowed.

Bid Item 13A – Construction Records and O&M Manuals

Lump sum price shown shall cover the complete cost of providing all labor, materials, and equipment necessary for the automatic control system as shown on the Plans and detailed in the contract specifications. The cost for this bid item shall be $5,000.

Bid Item 14A – Management Reserve

Payments or credits for changes amounting to $25,000 or less may be made under the Bid Item "Management Reserve". At the discretion of the City, this procedure for Management Reserve may be used in lieu of the more formal procedure as outlined in Section 1 04.4, Changes, in the Washington State Department of Standards and Specifications Manual.

The Contractor will be provided a copy of the completed order for changes under the Management Reserve process. The agreement for the Management Reserve change will be documented by signature of the Contractor, or notation of verbal agreement. If the Contractor is in disagreement with anything required by the order for Management Reserve, the Contractor may protest the order as provided in Section 1 04.5, Procedure and Protest by the Contractor, in the WSDOT Standard Specifications for Road, Bridge, and Municipal Construction.

Payment shall be by Force Account.

Schedule B: North Tank

Bid Item 1B – Mobilization, Demobilization, Site Preparation, and Cleanup

Lump sum price covers complete cost of furnishing, installing and testing, complete and in-place, all work and materials necessary to: move and organize equipment and personnel onto the job site; secure job site; traffic control for deliveries; provide and maintain necessary support facilities; obtain all necessary permits and licenses not specifically mentioned in other bid items; prepare site for construction operations; maintain site and surrounding areas during construction; move all personnel and equipment off site after contract completion, cleanup site prior to final acceptance; and accomplish all other items of work not specifically listed in other divisions.

No more than 80-percent of bid amount for this item will be paid before final payment request, and this bid amount may not be more than 10-percent of value of total contract.

Bid Item 2B – Site Work

Lump sum price shown shall cover the complete cost of providing all site work relating to construction of improvements as shown on the Plans and specified herein. Work includes, but is not limited to: conduit trenching, security fence; reinforced concrete slab at base of proposed spiral stairs; bollards; sealant or grout between foundation and base of tank; disposal of excess material (except coatings-related waste per Bid Item 5A); and all other work necessary for a complete installation of all site work.

Bid Item 3B – Interior Seal Welding

Lump sum price shown shall cover the complete cost of seal welding of all elements at the roof interior including bottom of roof plate laps, and roof plate to beams. In some areas the work will require closing the gap between elements that are currently too far apart to weld directly together, either by repositioning them or by adding flat bar plate to span the gap, welding the bottom of roof plate to the top of the bar plate and from the bottom of the bar plate to the supporting beam below. This work includes all safety and other precautions the contractor must take to protect its employees, City personnel, and City representatives tasked with observing the work. This also includes any precautions that should be taken regarding welding near remaining coal tar system that may exist between the top of beams and bottom of roof plate or in other hard-to-reach areas inside the tank.

Bid Item 4B – Tank Accessories

Lump sum price shown shall cover the complete cost of providing all materials, equipment and labor necessary for: constructing the spiral stairs, exterior landing, guardrail, interior landing, interior ladder, sample lines and taps, and gutters and downspouts; removing the existing exterior ladder, cage, vandal shield, visual level indicators, and interior painter's rail; replacing existing access hatch with larger hatch in the same location. Existing round bar lateral bracing between roof rafters may be removed after seal welding is complete between rafters and roof shell. Shop drawings, PE-stamped calculations, and permitting effort for the stairs, platforms, guardrails and ladder are included as part of this bid item.

Bid Item 5B – Environmental Control

Lump sum price shown shall cover the complete cost of providing all labor and materials, necessary for heat, dehumidification, dust control and related waste disposal for both interior and exterior prep and coatings. It also includes all related required work plans, monitoring and reporting.

Bid Item 6B – Interior Finishes

Lump sum price shown shall cover the complete cost of providing all labor, materials, and equipment necessary for surface preparation and proposed coating system for the full interior of the tank, including the shell, accessories and appurtenances, and all supporting members. This bid item includes incidental repairs to the interior shell that may require welding.

Bid Item 7B – Exterior Containment

Lump sum price shown shall cover the complete cost of providing all labor, materials, and equipment necessary for full containment as described in Division 9 Finishes, including scaffolding, sealed entry and exits, containment barriers and all other containment-related elements.

Bid Item 8B – Exterior Spot Repair

Unit price shown shall cover the complete cost of repairing areas at the tank exterior damaged to bare steel including areas of visible corrosion, areas where the coatings are damaged by welding, areas where the coatings are lifting at exterior welds, and any other areas to be repaired to bare metal. Price shown shall cover the complete cost of providing all labor, materials, and equipment necessary to complete repairs and primer at those areas. For bidding purposes, assume a total of 100 square feet to be repaired. No isolated area of corrosion will be considered smaller than 1 square foot. Final square footage shall be by agreement between the Owner or Owner's representative and the contractor, following tank exterior cleaning per the specifications section 9.98.03.10, based on exterior tank conditions in the field.

Bid Item 9B – Exterior Preparation and Overcoat

Lump sum price shown shall cover the complete cost of providing all labor, materials, and equipment necessary for preparing, priming and coating the full exterior of the tank, including the shell, accessories and appurtenances, and supporting members. This bid item includes preparation and installation of the prime coat and finish coat. This bid item also includes corrosion removal from any stainless steel and aluminum items such as the existing vent and hatches. Any overspray or paint spillage will be repaired by the contractor at no additional cost. See Bid Items 2A and 5A regarding proper disposal of all waste products.

Bid Item 10B – Cathodic Protection System

Lump sum price shown shall cover the complete cost of providing all labor and materials, necessary for removal and replacement of the cathodic protection system as shown on the Plans and described in the specifications.

Bid Item 11B – Electrical

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

Bid Item 12B – Tank Disinfection and Testing

Lump sum price shown shall cover the complete cost of providing all labor and materials necessary for tank disinfection and testing per the project specifications section 1.75.16; connection to water main, valve and mixer. A lump sum price of $10,000 has been included in the Proposal for this work. Partial payment will not be allowed.

Bid Item 13B – Construction Records and O&M Manuals

Lump sum price shown shall cover the complete cost of providing all labor, materials, and equipment necessary for the automatic control system as shown on the Plans and detailed in the contract specifications. The cost for this bid item shall be $5,000.

Bid Item 14B – Management Reserve

Payments or credits for changes amounting to $25,000 or less may be made under the Bid Item "Management Reserve". At the discretion of the City, this procedure for Management Reserve may be used in lieu of the more formal procedure as outlined in Section 1 04.4, Changes, in the Washington State Department of Standards and Specifications Manual.

The Contractor will be provided a copy of the completed order for changes under the Management Reserve process. The agreement for the Management Reserve change will be documented by signature of the Contractor, or notation of verbal agreement. If the Contractor is in disagreement with anything required by the order for Management Reserve, the Contractor may protest the order as provided in Section 1 04.5, Procedure and Protest by the Contractor, in the WSDOT Standard Specifications for Road, Bridge, and Municipal Construction.

Payment shall be by Force Account.

APPENDIX A - PREVAILING MINIMUM HOURLY WAGE RATES

PREVAILING WAGES

The State of Washington prevailing wage rates for King County apply to work performed under this contract. The applicable prevailing wage rates may be found at the following website address of the Department of Labor and Industries:

https://secure.lni.wa.gov/wagelookup/

Based on the bid submittal date for this project, the applicable date for prevailing wages for this project is December 20, 2022. A copy of the applicable prevailing wage rates are also available for viewing at the City of Mercer Island, Maintenance Department located at 9611 SE 36th Street.

APPENDIX B - TCLP

SPECTRA Laboratories
2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

06/11/2014

Custom Coatings Consultants, LLC
PO Box 23789
Federal, WA 98093
Attn: Mark Ficca

P.O.#: Pd CC H23112
Project: Mercer Island Tank Eval.
Client ID: South Tank Exterior
Sample Matrix: Paint Chips
Date Sampled: 06/04/2014
Date Received: 06/05/2014
Spectra Project: 2014060111
Spectra Number: 1

Analyte	Result	Units	Method
Total Arsenic	< 5	mg/Kg	SW846 6010B
Total Barium	5910	mg/Kg	SW846 6010B
Total Cadmium	< 0.3	mg/Kg	SW846 6010B
Total Chromium	189	mg/Kg	SW846 6010B
Total Lead	114	mg/Kg	SW846 6010B
Total Selenium	< 5	mg/Kg	SW846 6010B
Total Silver	< 0.7	mg/Kg	SW846 6010B
Total Mercury	<0.05	mg/Kg	SW846 7471B

SPECTRA LABORATORIES

Steve Hibbs, Laboratory Manager
a6/scj

SPECTRA Laboratories
2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

06/11/2014

Custom Coatings Consultants, LLC
PO Box 23789
Federal, WA 98093
Attn: Mark Ficca

P.O.#: Pd CC H23112
Project: Mercer Island Tank Eval.
Client ID: North Tank Exterior
Sample Matrix: Paint Chips
Date Sampled: 06/04/2014
Date Received: 06/05/2014
Spectra Project: 2014060111
Spectra Number: 2

Analyte	Result	Units	Method
Total Arsenic	< 5	mg/Kg	SW846 6010B
Total Barium	8290	mg/Kg	SW846 6010B
Total Cadmium	< 0.3	mg/Kg	SW846 6010B
Total Chromium	289	mg/Kg	SW846 6010B
Total Lead	2100	mg/Kg	SW846 6010B
Total Selenium	< 5	mg/Kg	SW846 6010B
Total Silver	< 0.7	mg/Kg	SW846 6010B
Total Mercury	<0.05	mg/Kg	SW846 7471B

SPECTRA LABORATORIES

Steve Hibbs, Laboratory Manager
a6/scj

SPECTRA Laboratories

2221 Ross Way, Tacoma, WA 98421
(253) 272-4850 Fax (253) 572-9838
www.spectra-lab.com info@spectra-lab.com

SPECIAL INSTRUCTIONS/COMMENTS:

CHAIN OF CUSTODY

SPECTRA PROJECT # 20140601 1

Return Samples: Y (N) Page _____ of _____ STANDARD [X] RUSH [ ]

CLIENT: Custom Coating Consultants ADDRESS: ADDRESS CHANGE [ ]

PROJECT: Mercer Isl. Tank eval

CONTACT: Mark Ficca

SAMPLED BY: Jame

PHONE: 253-222-9190 FAX:

e-MAIL: accifmarcus@hotmail.com Prefer FAX or e-MAIL [X]

PURCHASE ORDER # pdd H23112

	SAMPLE ID	DATE SAMPLED	TIME SAMPLED	MATRIX	NUMBER OF CONTAINERS	HYDROCARBONS: NWTPH-HCID	BTEX	BTEX/NWTPH-G	NWTPH-G	NWTPH-Dx	1664 SGT-HEM (TPH)	1664 HEM (FOG)	ORGANICS: 8260/624 VOA	8260 CHLOR SOLVENTS	8270-625 SEMI VOA	8270 PAH/PNA	8082/608 PCB	METALS: TOTAL METALS RCRA 8	TOTAL METALS (SPECIFY)	TCLP METALS RCRA 8	TCLP METALS (SPECIFY)	OTHER: PH 9040/9045	TX/TOX/EOX	TURBIDITY	FLASH POINT	BOD	SOLIDS (SPECIFY)
1	South tank exterior	6/4/14																X									
2	North tank exterior	6/4/14																X									
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											

LAB USE ONLY

Shipped Via: US Mail UPS Fed Ex Courier Client

Shipping Container: Cooler Box Envelope None

Tracking # _____

Custody Seals: Y N Intact: Y N

Cooler Temp. _____ Sample Temp. _____

	SIGNATURE	PRINTED NAME	COMPANY	DATE	TIME
RELINQUISHED BY	Mark Ficca	Mark Ficca	CCC	6/5/14	8:45 am
RECEIVED BY	RO	Randa Ross	Spectra	6/5/14	0843
RELINQUISHED BY					
RECEIVED BY					

Payment Terms: Net 30 days. Past due accounts subject to 1 1/2% per month interest. Customer agrees to pay all costs of collection including reasonable attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. *Spectra Laboratories, LLC*

APPENDIX C - NORTH TANK COATING EVALUATION 2021

P.O. BOX 73760, Puyallup, WA 98373
(253)904-8999 Office (253)904-8897 Fax
www.customcoatingconsultants.com

Ms. Alex Fussell – P.E.
RH2 Engineering, Inc.
22722 29th Dr. SE #210
Bothell, WA 98021

7/23/2021

Re: City of Mercer Island Reservoir Improvements Assessment & Design – N. Reservoir.

Ms. Fussell,

Per your request, I have visited the site and performed the visual evaluation of the interior, existing coatings within the noted potable water storage tank. An exterior visual inspection was also performed. I would offer the following test results of established interior Dry Film Thickness, Exterior adhesion testing and exterior DFT. At the conclusion of this report I will also offer an opinion as to future preservation work that could be considered by City of Mercer Island.

HISTORY – N. ***Reservoir***
150' diameter (approx.)
32' tall approximately
4.0 MG capacity
1965 – construction
N/A – fabricator/erector

The tank appears to be a ferrous steel, welded tank with a semi-flat roof that appears to be built soundly and professionally based on the date of manufacture and features/components viewed. The tank has an interior and exterior ladder system. There are 3 hatch/man-ways; two at ground level the other near the roof access ladder. Main access man-way (36" dia.) is of a "swing" type configuration that swings to the exterior of the reservoir. No, full "seal welds" at the interior side of the rafter/roof plates and other rafter/plate interfaces.

The roof has an access hatch, which is in the S. quad and is 24" X 24".

It's assumed that the current lining is of a generic epoxy/epoxy type coating system. Exterior system has lead (red lead) in places, based on past exterior coatings lab analysis – 6/2014.

TESTING

Random Dry Film Thickness (DFT) testing was performed from painted surfaces. The DFT testing was conducted using a Positector 6000, type II gage with detachable probe – serial #611106. Surfaces that were easily accessible were tested to calculate an overall average for the exterior and interior.

Interior upper shell – 15.7 mil DFT average, 22.0 mils highest spot reading & 9.4 mils lowest spot reading.
Exterior shell – 10.2 mils DFT average, 13.0 mils highest spot reading % 7.0 mils lowest spot reading.
Exterior roof – 9.5 mils DFT average, 12.6 mils highest spot reading & 6.6 mils lowest spot reading.

At the time of interior evaluation, the water level was approximately 10' below the overflow and the interior was "rafted" to view the interior surfaces.

APPEARANCE / DEFECTS

INTERIOR

The visual evaluation was made from a raft, with the water level approximately 10' below the overflow.

The interior coating system shows its age as active delamination and degradation is evident in the center ring and outer rings. Spotty corrosion is evident at typical locations – plate laps/edges, rafter edges and bolted connections as well as in the "field" – interior roof plates.

Spotty corrosion and cracks in film viewed at upper ring course. Heaviest corrosion is observed at painters rail, which is suspect of not being sound.

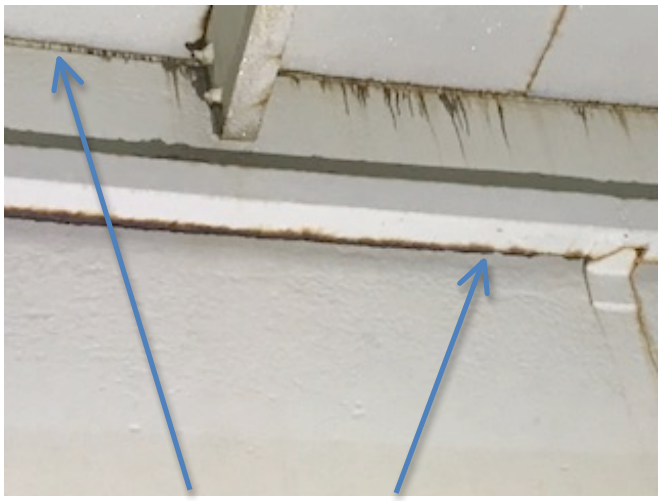
Cathodic Protection system and anode wires are evident – suspended from overhead surfaces.

Skip welds, edges and plate overlaps in the overhead areas, and bolted connections show the biggest extent of corrosion but this is common with this type of fabrication/construction. Future preservation could possibly include full seal welding to combat crevice corrosion.

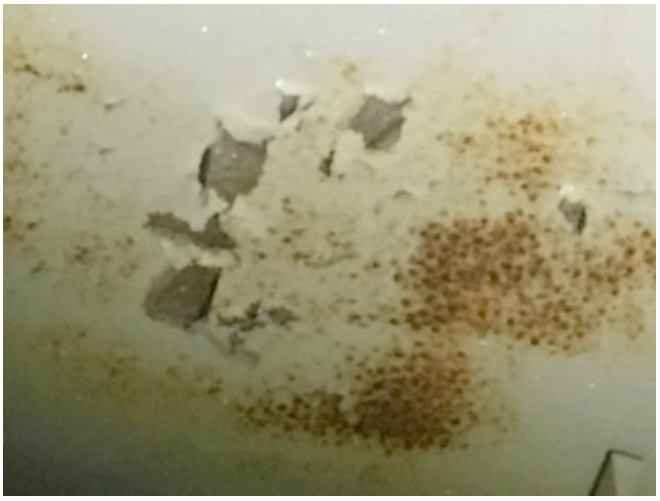
Some delamination of coatings is evident in the overhead. I would estimate that the total area failing is approximately less than 3% of the coated surface.

Interior overhead view showing surface corrosion And loosely adhered – failing coating at roof plate.

General condition of overhead near center.



View at "rim angle" and painters rail.



Localized corrosion and failed coating at overhead.

Corrosion noted at shell – upper ring.

View of overflow near rafters.

Adhesion testing was also performed at QTY-5 randomly selected locations that showed no real sign of failure. I purposely tested areas of the structure where the coatings appear sound. Test fixtures were affixed using epoxy adhesive and the test locations were cleaned and lightly abraded before placement of the test fixtures. Test locations were "scored" prior to the test procedure. The following results and test data was recorded:
Red (red colored) lead – primer – 1st layer
Off white – 2nd layer
Light green – 3rd layer
Silver – 4th layer
Dark green – finish coat

Test #1 (roof – S. quad)
9.5 mils DFT at test location
739 PSI – 100% cohesive failure of red primer.

Test #2 (roof – SW. quad)
8.4 mils DFT at test location
1,037 PSI – 100% cohesive failure of red primer

Test #3 (roof – W. quad)
8.3 mils DFT at test location
532 PSI – 50% glue failure, 35% cohesive failure – red primer & 15% adhesive failure of topcoat

Test #4 (3rd ring – S. quad)
9.0 mils DFT at test location
1,249 PSI – 98% cohesive failure of red primer & 2% glue failure.

Test #5 (1st ring – S. quad)

9.5 mils DFT at test location
1,070 PSI – 85% cohesive failure of red primer and 15% glue failure.

APPEARANCE/ DEFECTS

EXTERIOR

The exterior has a moderate layer of organic deposits during this evaluation, but the location of the reservoir is located off the street and is not immediately viewed from the street. The exterior coatings appear weathered with no gloss at the roof and minimal gloss at the shell.

Some sporadic coatings appear loosely adhered, however there is very little corrosion evident. The roof area shows the largest concentration of failed coatings, but this is to be expected. I would estimate lass than 1,000 square feet of topcoat actively delaminating at time of evaluation. It's expected that further topcoat delamination would occur during power washing/cleaning activities, and would be sporadic.

Some spalled concrete noted at the foundation and sealant/grout is failed at chime/foundation interface.

Exterior ladder assembly appears to be Hot Dip Galvanized (HDG) and cage, all appear sound.


Evidence of HDG underneath failed paint coatings.


Topcoat failing at shell exterior.

Piping at exterior with shroud.

Failed topcoat at roof, minimal corrosion evident.

Evidence of ponding water at roof plates, which Show a fair amount of inward bowing likely Between rafter spacing.

Adhesion testing equipment used.

Adhesion test location – cohesive failure of red "lead"
Based primer coat.

Exterior roof plates show a moderate degree of "oil can" inward bowing. Visual evidence of past water ponding at the roof plates.

Center vent looks recently replaced.

DISCUSSION

As it pertains to the existing coatings on the interior surfaces of this reservoir, I would recommend the City of Mercer Island to remove the entire existing liner – abrasive blast SSPC-SP10 and install an NSF approved lining system within the next 3 years. Some interior delamination is evident and is expected to progressively worsen over the coming years. The Cathodic Protection System will help mitigate corrosion in the interim if all the components are working properly.

Future preservation work could include full seal welding of the interior structure to eliminate the "skip welded" areas and close off any "gaps" and "back to back" locations that are susceptible to crevice corrosion. At that time, the entire interior would be completely re-blasted to SSPC-SP10 and a new NSF approved liner installed with a stand-alone stripe coat at welds and edges to help mitigate early corrosion. Because full seal welding will compromise the exterior coatings, this option could be considered at the time that the exterior coatings are planned for full removal in the future.

The exterior, in my opinion is a good candidate to have the existing coating system over-coated, based on the minimal active coating failure. Adhesion values were better than expected at sound locations tested. Adhesion testing shows adequate tensile strength of the individual paint layers as they work in unison as a "system". Any power washing via pressure washer should be rated at less than 2,000 psi and

I would strongly urge that a standoff distance be maintained to not compromise the exterior coatings if any maintenance is performed. Incorporating a nylon bristle scrub brush and a mild detergent to wash, scrub/clean the exterior would help minimize the potential for further delamination.

Because of the ponding water evident at the roof plates, I would recommend a high quality finish coat that would be exposed to constant submerged areas during the wetter time of year.

A "thin film" coating system would be beneficial at the exterior to provide good color retention, UV protection and would perform well. Thicker film systems, could fail earlier from thermal expansion and contraction of the steel substrate and because the corrosion is minimal, spot priming products are readily available from multiple paint manufacturers.

My opinion would be to budget capital funding and consider doing this work to provide a long-term solution for the City of Mercer Island and its customers.

Respectfully,

Mark C. Ficca
Owner/Member
NACE Certified Coating Inspector – Level III, Cert #9943
Custom Coating Consultants, LLC.

APPENDIX D - SOUTH TANK COATING EVALUATION 2021

P.O. BOX 73760, Puyallup, WA 98373
(253)904-8999 Office (253)904-8897 Fax
www.customcoatingconsultants.com

Ms. Alex Fussell – P.E.
RH2 Engineering, Inc.
22722 29th Dr. SE #210
Bothell, WA 98021

7/2/2021

Re: City of Mercer Island Reservoir Improvements Assessment & Design – S. Reservoir.

Ms. Fussell,

Per your request, I have visited the site and performed the visual evaluation of the interior, existing coatings within the noted potable water storage tank. An exterior visual inspection was also performed. I would offer the following test results of established interior Dry Film Thickness, Exterior adhesion testing and exterior DFT. At the conclusion of this report I will also offer an opinion as to future preservation work that could be considered by City of Mercer Island.

HISTORY – S. Reservoir
148' diameter
32' tall approximately
4.0 MG capacity
1975 – construction
N/A – fabricator/erector

The tank appears to be a ferrous steel, welded tank with a semi-flat roof that appears to be built soundly and professionally based on the date of manufacture and features/components viewed. Information provided by the owner, indicates that the reservoir received some degree of seismic retrofit in 1999 and that the interior was blasted/recoated around the same time. It's likely the exterior was over-coated possibly at the same time. The tank has an interior and exterior ladder system. There are 3 hatch/man-ways; two at ground level the other near the roof access platform. Main access man-way (36" dia.) is of a "swing" type configuration that swings to the exterior of the reservoir. No, full "seal welds" at the interior side of the rafter/roof plates and other rafter/plate interfaces.

The roof appears to have an access hatch, although no specific measurements were made for its dimensions. It appears to be approximately 18" to 22" in diameter.

It's assumed that the current lining is of a generic epoxy/epoxy type coating system. Exterior system has lead (red lead) in places, based on past exterior coatings lab analysis – 6/2014.

TESTING

Random Dry Film Thickness (DFT) testing was performed from painted surfaces. The DFT testing was conducted using a Positector 6000, type II gage with detachable probe – serial #611106. Surfaces that were easily accessible were tested to calculate an overall average for the exterior and interior.
Interior floor – 12.5 mil average, 17.1 mils highest spot reading & 8.3 mils lowest spot reading.
Interior shell – 14.9 mil average, 25.1 mils highest spot reading & 8.2 mils lowest spot reading.
Interior roof – 12.2 mil average, 20.6 mils highest spot reading & 6.5 mils lowest spot reading.
Exterior roof – 9.0 mil average, 19.9 mils highest spot reading & 6.0 mils lowest spot reading.
Exterior shell – 10.0 mil average, 23.9 mils highest spot reading & 6.8 mils lowest spot reading.

Adhesion testing was also performed at QTY-5 randomly selected locations that showed no real sign of failure. I purposely tested areas of the structure where the coatings appear sound. Test fixtures were affixed using epoxy adhesive and the test locations were cleaned and lightly abraded before placement of the test fixtures. Test locations were "scored" prior to the test procedure. The following results and test data was recorded:
Red (red colored) lead – primer – 1st layer
Off white – 2nd layer
Light green – 3rd layer
Dark green – finish coat

Test #1 (roof – E. quad)
7.5 mils DFT at test location
1,137 PSI – 100% cohesive failure of red primer.

Test #2 (roof – S. quad)
8.0 mils DFT at test location
1,136 PSI – 80% cohesive failure of red primer & 20% glue failure

Test #3 (roof – NW. quad)
7.5 mils DFT at test location
983 PSI – 95% cohesive failure of red primer & 5% glue failure

Test #4 (4th ring (top) – N quad)
11.0 mils DFT at test location
1,438 PSI – 55% cohesive failure of red primer & 45% glue failure.

Test #5 (1st ring – W quad)
9.0 mils DFT at test location
974 PSI – 45% cohesive failure of red primer and 55% glue failure.

APPEARANCE / DEFECTS

INTERIOR

The visual evaluation was made from the floor and with adequate illumination. Access to the overhead was via the interior ladder and inspection platform.

The interior coating system shows its age as active delamination and degradation is evident in the center ring near the vent and also at the outer ring in the NE quads.

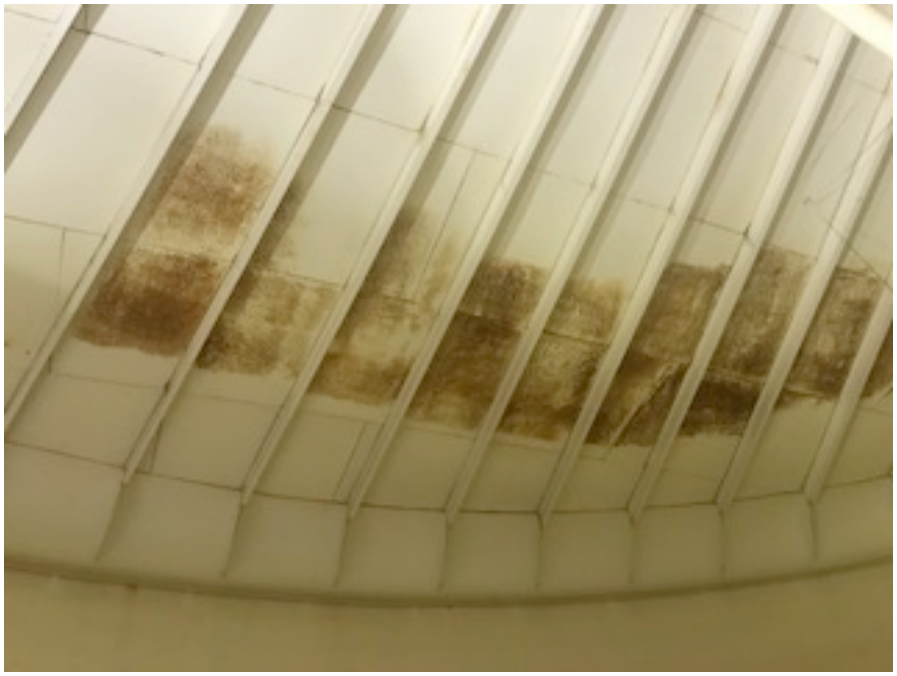
Shell/walls show some sporadic locations of runs/sags in the finish coat, however this is a workmanship issue. Minor corrosion is observed at some of the weld lanes, however they are minor.

Skip welds, edges and plate overlaps in the overhead areas, and bolted connections show the biggest extent of corrosion but this is common with this type of fabrication/construction. Future preservation could possibly include full seal welding to combat crevice corrosion.

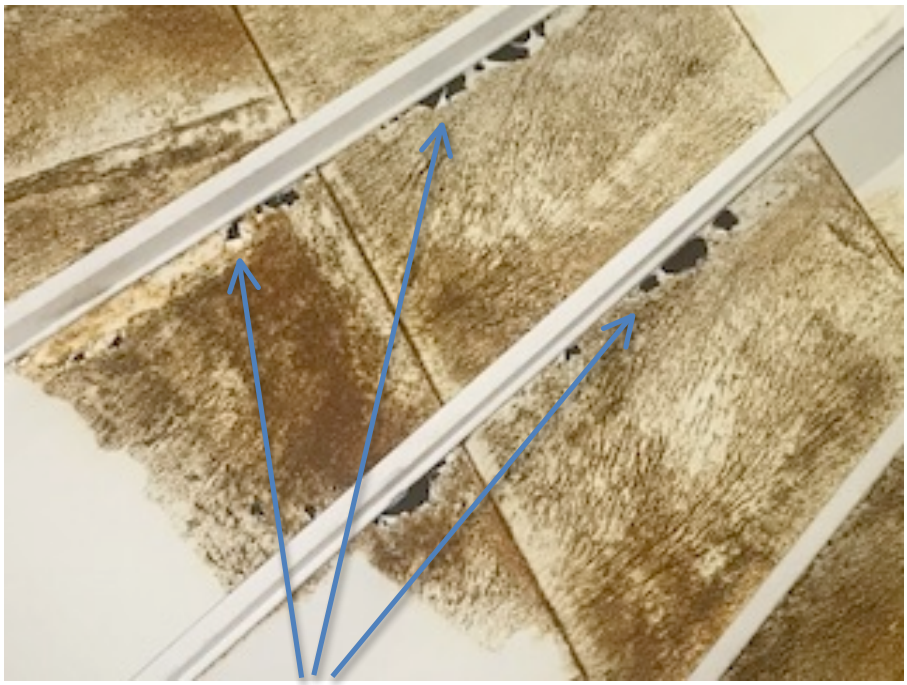
Some delamination of coatings is evident in the overhead. I would estimate that the total area failing is approximately 15% of the coated surface.

Osmotic blistering is sporadically dispersed at the floor. Some pitting of the floor plate steel is evident, but does not appear to be more than 1/8th of an inch, when measured via "pit gage".

Active coating failure in center ring.



Corrosion in North – Northeast quad of roof outer ring.



Coating failure at outer ring – North/NE quad.

Osmotic blistering at floor – expanding out from pitted steel – isolated corrosion cell.

Pitted steel location at floor – approximately 1/8” in depth.

General condition at “backside” of painter’s rail near “knuckle”.

Typical corrosion at edges of rafter, bracket and bolted connection.

Odd placement of overflow directly below roof rafter, thus making preservation And future coatings work problematic because of access.

APPEARANCE/ DEFECTS

EXTERIOR

The exterior has a moderate layer of organic deposits during this evaluation, but the location of the reservoir is located off the street and is not immediately viewed from the street. The exterior coatings appear weathered with no gloss at the roof and minimal gloss at the shell.

Some sporadic coatings appear loosely adhered, however there is very little corrosion evident. The roof area shows the largest concentration of failed coatings, but this is to be expected.

Exterior platform, ladder and cage all appear sound.

Roof landing – S. reservoir.

Typical areas at roof with coatings wear – very little corrosion.

Prepared area at roof and test fixture applied for adhesion testing.

Adhesion testing performed – Cohesive failure of red primer.

Adhesion test equipment used and digital display of test result.

DISCUSSION

As it pertains to the existing coatings on the interior surfaces of this reservoir, I would recommend the City of Mercer Island to remove the entire existing liner – abrasive blast SSPC-SP10 and install an NSF approved lining system.

If possible, I would suggest movement of the existing overflow to a location that will allow better access to the interior rafters that are in close proximity. Currently, the overflow is located directly below a rafter and there is metal loss at the lower flange (rafter) from poor access needed to properly prep and effectively coat the surfaces because of limited access.

Future preservation work could include full seal welding of the interior structure to eliminate the "skip welded" areas and close off any "gaps" and "back to back" locations that are susceptible to crevice corrosion. At that time, the entire interior would be completely re-blasted to SSPC-SP10 and a new NSF approved liner installed with a stand-alone stripe coat at welds and edges to help mitigate early corrosion. I would suggest relining this reservoir within the next 12 to 24 months. Because full seal welding will compromise the exterior coatings, this option could be considered at the time that the exterior coatings are planned for full removal in the future.

The exterior, in my opinion is a good candidate to have the existing coating system over-coated, based on the minimal active coating failure. Adhesion values were better than expected at sound locations tested. Adhesion testing shows adequate tensile strength of the individual paint layers as they work in unison as a "system". Any power washing via pressure washer should be rated at less than 2,000 psi and I would strongly urge that a standoff distance be maintained to not compromise the exterior coatings if any maintenance is performed. Incorporating a nylon bristle scrub brush and a mild detergent to wash, scrub/clean the exterior would help minimize the potential for further delamination.

A "thin film" coating system would be beneficial at the exterior to provide good color retention, UV protection and would perform well. Thicker film systems, could fail earlier from thermal expansion and contraction of the steel substrate and because the corrosion is minimal, spot priming products are readily available from multiple paint manufacturers.

My opinion would be to budget capital funding and consider doing this work to provide a long-term solution for the City of Mercer Island and its customers.

Respectfully,

Mark C. Ficca
Owner/Member
NACE Certified Coating Inspector – Level III, Cert #9943
Custom Coating Consultants, LLC.