



DEPARTMENT OF FINANCE AND PURCHASING

345 South Main Street
Harrisonburg, VA 22801

Table with 3 columns: ISSUE DATE (May 13, 2013), INVITATION TO BID NUMBER (2013002-PU-B), FOR (Repairing & Repainting Water Tanks), DEPARTMENT (Public Utilities), DATE/TIME OF CLOSING (Fri. May 31, 2013 at 2:00pm local time), CONTRACT ADMINISTRATOR (David Gray, P.E., Public Utilities Engineer Superintendent)

Proposals - In accordance with the following and in compliance with all terms and conditions, unless otherwise noted, the undersigned offers and agrees, if the proposal is accepted, to furnish items or services for which prices are quoted, , delivered or furnished to designated points within the time specified. It is understood and agreed that with respect to all terms and conditions accepted by the City of Harrisonburg the items or services offered and accompanying attachments shall constitute a contract.

NAME AND ADDRESS OF FIRM:

Telephone/Fax No.:

Federal Employer Identification # :

State Corporation Commission #:

E-mail:

Prompt Payment Discount: ___% for payment within ___days/net ___ days

By signing this proposal, Vendor(s) certifies, acknowledges, understands, and agrees to be bound by the conditions set forth in this RFP.

CHECK ONE: [] INDIVIDUAL [] PARTNERSHIP [] CORPORATION [] LLC

Vendor's Legally Authorized Signature

Date

Print Name

Title

Sealed proposals, subject to terms and conditions of this Request for Proposal will be received by the City of Harrisonburg Public Utilities Department, Attention David Gray, 2155 Beery Road, Harrisonburg, VA 22801 until the date/ time specified above for furnishing items or services delivered or furnished to specified destinations within the time specified or stipulated by the vendor(s).

The City does not discriminate against small and minority businesses or faith-based organizations.

CONTRACT DOCUMENTS AND SPECIFICATIONS

for

Repairing and Repainting the Interior and Exterior of

One 100,000 Gallon Steel Ground Storage Tank

“Coopers Mountain Tank”

and Modifications to One 75,000 Gallon Steel Elevated Tank

“Park View Tank”

and One 500,000 Gallon Steel Ground Storage Tank

“Ridgeville Tank”

Harrisonburg, Virginia

for

CITY OF HARRISONBURG

Harrisonburg, Virginia

Prepared by

**Tank Industry Consultants
7740 West New York Street
Indianapolis, Indiana 46214**

TIC 12.168.E450.013

May 13, 2013

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NOTICE TO BIDDERS

Notice is hereby given that City of Harrisonburg, hereinafter referred to as the OWNER, shall receive sealed bids for the following waterworks improvements:

Coopers Mountain Tank (TIC E450.013): Bids will be solicited for the complete cleaning and repainting of the tank on the interior surfaces, and the complete cleaning and repainting of the exterior surfaces with containment. Additional Work items include: repair of concrete; installation of second shell manhole, davits for shell manhole covers, overflow pipe, exterior shell ladder, ladder safe-climbing device, vandal deterrent, roof safety railing, and clog-resistant vent; removal of interior painter's rail and interior ladder; including other miscellaneous repairs and incidental items such as coordination with the OWNER, first anniversary evaluation, disposal of debris, site restoration, etc.

Park View Tank (TIC E450.004): A Bid Item will be solicited for the furnishing and installation of a new overflow pipe, concrete splash pad, antenna mounting bracket, roof manhole, and clog-resistant vent; modification of the revolving shell and roof ladder to be stationary; and spot cleaning and spot coating new items and areas damaged during the work; including other miscellaneous repairs and incidental items such as coordination with the OWNER, first anniversary evaluation, disposal of debris, site restoration, etc.

Ridgeville Tank (TIC E450.005): A Bid Item will be solicited for the furnishing and installation of a new angled overflow pipe section, elastomeric check valve, concrete splash pad, roof manhole, and clog-resistant vent; modification of the revolving roof ladder to be stationary; and spot cleaning and spot coating new items and areas damaged during the work; including other miscellaneous repairs and incidental items such as coordination with the OWNER, first anniversary evaluation, disposal of debris, site restoration, etc.

OWNER prefers work be performed in July/August 2013.

The Bidders attention is directed to the Detailed Technical Specifications for a complete description of the Work and the Project.

Bids will be received by City of Harrisonburg, 2155 Beery Road, Harrisonburg, Virginia 22801 until the **31st day of May, 2013 at 2:00 p.m., local time**. Bids will be received by City of Harrisonburg, Attention David Gray. **One paper hardcopy and one digital copy of the completed bid documents shall be provided by Bidder**. Said bids will at that time be publicly opened and read aloud. Any bid received later than the above time will be returned unopened.

The contract documents, plans, specifications, and evaluation report will be on file at the office of Mr. David H. Gray, P.E., City of Harrisonburg, 2155 Beery Road, Harrisonburg, Virginia 22801; and in the office of the ENGINEER, Tank Industry Consultants - Headquarters: 7740 West New York Street, Indianapolis, Indiana 46214-2988, telephone 317/271-3100, FAX 317/271-3300, until the bid opening. The contract documents, plans, specifications, and evaluation report may be reviewed at the above locations by appointment only.

Bidding Documents are made available online on the City's website at www.harrisonburgva.gov/bids-proposals and also on eVA at www.eva.virginia.gov.

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Color copies of the photographs contained in the evaluation reports may be obtained from Tank Industry Consultants by United States Priority Mail Service, for a non-refundable sum of one hundred fifty dollars (\$150) per set. Next day delivery service by United States Express Mail Service, Federal Express, or UPS Next Day Mail will be available from Tank Industry Consultants for a non-refundable surcharge of twenty-five dollars (\$25) above the cost of the photographs. Checks for color copies of the photographs are to be made out to and delivered to Tank Industry Consultants, 7740 West New York Street, Indianapolis, Indiana 46214.

All materials furnished and labor performed incident to and required for the proper and satisfactory execution of the contracts shall be furnished and performed in accordance with the requirements of the drawings and specifications, and any addenda thereto, prepared by Tank Industry Consultants, 7740 West New York Street, Indianapolis, Indiana 46214, FAX 317/271-3300.

Submitting a Bid on the forms that will be bound with the Contract Documents shall acknowledge that the tanks and sites have been inspected by the BIDDER or that the right to do so has been waived.

The Bidder's attention is directed to the Instructions to Bidders for the following information:

1. Requirements for Bid Security
2. Qualifications of Bidders

The Bidder's attention is directed to the Agreement for Time of Completion and Liquidated Damages requirements.

The Bidder's attention is directed to the General Conditions for the requirements of the Qualifications of Insurers and Sureties.

Mr. David H. Gray, P.E.
City of Harrisonburg
2155 Beery Road
Harrisonburg, Virginia 22801

INSTRUCTIONS TO BIDDERS

1. DEFINED TERMS

- 1.1. Terms used in these Instructions to Bidders will have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof:
 - A. *Bidder* – The individual or entity who submits a bid directly to the OWNER, as distinct from a Sub-Bidder, who submits a bid to the BIDDER.
 - B. *Successful Bidder* – The lowest responsible Bidder submitting a responsive Bid to whom OWNER (on the basis of the OWNER'S evaluation as herein provided) makes an award.
 - C. *Bidding Documents* – The Bidding Requirements (Notice to Bidders, Instructions to Bidders, Bid Form with any supplements, and Bid Security) and the proposed Contract Documents (including all Addenda issued prior to the receipt of Bids).

2. COPIES OF BIDDING DOCUMENTS

- 2.1. No refund shall be given for returned sets of Bidding Documents or color photographs.
- 2.2. Complete sets of Bidding Documents must be used in preparing Bids; neither OWNER nor ENGINEER assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.3. OWNER and ENGINEER in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids for the Work and do not confer a license or grant for any other use.

3. QUALIFICATIONS OF BIDDERS

- 3.1. To demonstrate qualifications to perform the Work, each BIDDER must complete the Bid Form in its entirety and submit with the Bid a completed Bidder's Financial Statement. Each Bid must contain evidence of Bidder's qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the contract.
- 3.2. **Each BIDDER must demonstrate that they have been in business under their current business name for a minimum of 5 years prior to the date of receipt of bids. Failure to comply with this requirement may entitle the OWNER to reject the Bid.**
- 3.3. **Each BIDDER shall submit information on the 5 most recently completed, similar projects, including tank size, cost, and schedule. Failure to comply with this requirement may entitle the OWNER to reject the Bid.**

4. **EXAMINATION OF CONTRACT DOCUMENTS AND SITE**

4.1. Subsurface and Physical Conditions

A. The Supplementary Conditions identify:

1. Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that ENGINEER has used in preparing the Bidding Documents.
2. Those drawings of physical conditions in or relating to existing surface and subsurface structures at or contiguous to the Site (except Underground Facilities) that ENGINEER has used in preparing the Bidding Documents.

B. Copies of reports and drawings referenced in paragraph 4.1.A will be made available by OWNER to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the “technical data” contained therein upon which Bidder is entitled to rely as provided in paragraph 4.02 of the General Conditions has been identified and established in paragraph 4.02 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any “technical data” or any other data, interpretations, opinions or information contained in such reports or shown or indicated in such drawings.

4.2. Underground Facilities

A. Information and data reflected in the Contract Documents with respect to existing Underground Facilities at or contiguous to the site is based upon information furnished to OWNER and ENGINEER by Owners of such Underground Facilities, including OWNER, or others.

4.3. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated conditions appear in Paragraphs 4.02, 4.03, and 4.04 of the General Conditions.

4.4. On request in advance and after submittal of Bidder’s evidence of insurance coverage meeting the limits designated in the Supplementary Conditions, OWNER will provide each BIDDER access to the site to conduct such examinations, investigations, explorations, tests, and studies as BIDDER deems necessary for submission of a Bid. BIDDER shall fill all holes, clean up and restore the site to its former condition upon completion of such explorations, investigations, tests and studies.

4.5. Reference is made to Article 7 of the General Conditions for the identification of the general nature of other work that is to be performed at the Site by the OWNER or others (such as utilities and other prime contractors) that relates to the Work for which a Bid is to be submitted. On request, OWNER will provide to each Bidder for examination access to or copies of the Contract Documents (other than portions thereof related to price) for such other work.

- 4.6. It is the responsibility of each BIDDER before submitting a Bid to:
- A. examine and carefully study the Bidding Documents, including any Addenda and the other related data identified in the Bidding Documents;
 - B. visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
 - C. become familiar with and satisfy Bidder as to all federal, state and local Laws and Regulations that may affect cost, progress, or performance of the Work;
 - D. obtain and carefully study (or assume responsibility for doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by the Bidder, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto;
 - E. agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times and in accordance with the other terms and conditions of the Bidding Documents;
 - F. become aware of the general nature of the work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Bidding Documents;
 - G. correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;
 - H. promptly give ENGINEER and OWNER written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by ENGINEER is acceptable to Bidder; and
 - I. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.
- 4.7. The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by the ENGINEER are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

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5. SITE AND OTHER AREAS

- 5.1. The Site is identified in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by the CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by OWNER unless otherwise provided in the Bidding Documents.

6. INTERPRETATIONS AND ADDENDA

- 6.1. All questions about the meaning or intent of the Bidding Documents are to be submitted to ENGINEER and OWNER in writing. Interpretations or clarifications considered necessary by ENGINEER in response to such questions will be issued by Addenda posted on the City's website at www.harrisonburgva.gov/bids-proposals and on eVA at www.eva.virginia.gov. Questions received less than ten (10) days prior to the opening of Bids may not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 6.2. Addenda may also be issued to clarify, correct, or change the Bidding Documents as deemed advisable by OWNER or ENGINEER.

7. BID SECURITY

- 7.1. A bid must be accompanied by Bid security made payable to OWNER in an amount of five percent (5%) of the BIDDER'S Total Amount Bid and in the form of a Bid Bond issued by a surety meeting the requirements of Paragraph 5.01 and 5.02 of the General Conditions or a certified or bank check.
- 7.2. The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract Documents, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within fifteen (15) days after the Notice of Award, OWNER may annul the Notice of Award and the Bid security of that Bidder will be forfeited up to the difference in bids between the Successful Bidder and the next acceptable Bidder. The Bid security of other Bidders whom the OWNER believes to have reasonable chance of receiving the award may be retained by the OWNER until the earlier of seven days after the Effective Date of the Agreement or the expiration of the period that bids are subject to acceptance, whereupon Bid security furnished by such Bidders will be returned.
- 7.3. Bid security with Bids which are not competitive will be returned within seven (7) days after the Bid opening.

8. LETTER OF SURETY

- 8.1. Each bid must be accompanied by a letter of surety executed by the BIDDER'S surety company stating that if the Bidder is awarded the project, the surety will execute a performance bond and a

labor & material payment bond each in the amount equal to one hundred percent (100%) of the contract.

9. CONTRACT TIME

9.1. The numbers of days within which, or the dates by which, the Work is to be (a) substantially completed and (b) also completed and ready for final payment are set forth in the Agreement.

10. LIQUIDATED DAMAGES

10.1. Provisions for liquidated damages are set forth in the Agreement.

11. SUBSTITUTE AND "OR-EQUAL" ITEMS

11.1. The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration of possible substitute or "or-equal" items. Whenever it is specified or described in the Bidding Documents that a substitute or "or-equal" item of material or equipment may be furnished or used by CONTRACTOR if acceptable to ENGINEER, application for such acceptance will not be considered by ENGINEER until after the Effective Date of the Agreement. The procedure for submission of any such application by CONTRACTOR and consideration by ENGINEER is set forth in the General Conditions and may be supplemented in the General Requirements.

12. SUBCONTRACTORS, SUPPLIERS AND OTHERS

12.1. The identity of certain Subcontractors, Suppliers and other persons and organizations (including those who are to furnish the principal items of material and equipment) shall be submitted with the Bid Form. Such a list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, person or organization if requested by OWNER. If OWNER or ENGINEER after due investigation has reasonable objection to any proposed Subcontractor, Supplier, other person or organization, either OWNER or ENGINEER may, before the Notice of Award is given, require the apparent Successful Bidder to submit an acceptable substitute, in which case the apparent Successful Bidder shall submit an acceptable substitute, Bidder's price will be increased (or decreased) by the difference in cost occasioned by such substitution, and OWNER may consider such price adjustment in evaluating Bids and making the contract award.

12.2. If apparent Successful Bidder declines to make any such substitution, OWNER may award the Contract to the next lowest responsive and responsible Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which OWNER or ENGINEER makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to OWNER and ENGINEER subject to revocation of such acceptance after the Effective Date of the Agreement as provided in paragraph 6.06 of the General Conditions.

12.3. CONTRACTOR shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom CONTRACTOR has reasonable objection.

13. **BID FORM**

- 13.1. The Bid Form is included with the Bidding Documents. Additional copies may be obtained from the ENGINEER or OWNER at the cost stipulated in the Notice to Bidders.
- 13.2. All blanks on the Bid Form must be completed by printing in black or blue ink or by typewriter with a black or blue ribbon and the Bid signed. A Bid price shall be indicated for each Bid Item listed therein, or the words "No Bid," "No Change," or "Not Applicable" entered.
- 13.3. A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.
- 13.4. A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown below the signature.
- 13.5. A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown below the signature.
- 13.6. A Bid by an individual shall show the Bidder's name and official address.
- 13.7. A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid form. The official address of the joint venture shall be shown below the signatures.
- 13.8. All names shall be typed or printed in ink below the signatures.
- 13.9. The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form, and return of all signed Addenda with the Bid Documents.
- 13.10. The address and telephone number for communications regarding the Bid shall be shown.
- 13.11. All items and questions in the Bid Form shall be answered completely and accurately prior to submitting the Bid. Failure to provide the information requested in the Bid Form may entitle the OWNER to reject the Bid.
- 13.12. The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the Contract. Bidder's state contractor license number for the state of the Project, if any, shall also be shown on the Bid Form.

14. **BASIS OF BID; EVALUATION OF BIDS**

- 14.1. Lump Sum
 - A. Bidders shall submit a Bid on a lump sum basis for the Base Bid and include a separate price for each alternate, if any, described in the Bidding Documents as provided for in the

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Bid Form. The price for each alternate will be the amount added to the Base Bid if OWNER selects the alternate.

14.2. Unit Price

- A. Bidders shall submit a Bid on a unit price basis for each unit price item of Work listed in the Bid Form.
- B. The total of all estimated prices will be determined as the sum of the products of the estimated quantity of each item and the unit price Bid for the item. The final quantities and Contract Price will be determined in accordance with paragraph 11.03 of the General Conditions.
- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

15. **SUBMITTAL OF BID**

- 15.1. One paper hardcopy and one digital copy of the completed bid documents shall be provided by Bidder. A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the advertisement or invitation to Bid and shall be enclosed in an opaque sealed envelope plainly marked with the Project title, the name and address of the Bidder, and shall be accompanied by the Bid security and other required documents. If the Bid is sent through the mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate envelope plainly marked on the outside with the notation "BID ENCLOSED." The Bidder is solely responsible for the timely arrival of all bids, whether hand delivered or forwarded by mail. City of Harrisonburg and Tank Industry Consultants accept no responsibility for lost or misdirected bids. Prospective Bidders are furnished one copy of the Bidding Documents. The Bidder shall return the bound copy of the Bidding and Contract Documents completely executed in accordance with the advertisement or invitation to Bid and Instructions to Bidders as well as all signed Addenda documents.

16. **MODIFICATION AND WITHDRAWAL OF BID**

- 16.1. A Bid may be modified or withdrawn by an appropriate document duly executed in the manner that a Bid must be executed and delivered to the place where the Bids are to be submitted prior to the date and time for the opening of Bids.
- 16.2. If, within twenty-four hours after Bids are opened, any Bidder files a duly signed written notice with OWNER and promptly thereafter demonstrates to the reasonable satisfaction of OWNER that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further Bidding on the Work.

17. **OPENING OF BIDS**

- 17.1. Bids will be opened at the time and place indicated in the advertisement or invitation to Bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

18. **BIDS TO REMAIN SUBJECT TO ACCEPTANCE**

- 18.1. All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but OWNER may, in its sole discretion, release any Bid and return the Bid security prior to that date.

19. **AWARD OF CONTRACT**

- 19.1. OWNER reserves the right to reject any and all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. OWNER further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to be non-responsible. OWNER may also reject the Bid of any Bidder if OWNER believes that it would not be in the best interest of the Project to make an award to that Bidder. OWNER also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder.

- 19.2. More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.

- 19.3. In evaluating Bids, OWNER will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.

- 19.4. In evaluating Bids, OWNER will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.

- 19.5. OWNER may conduct such investigations as OWNER deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the Contract Documents.

- 19.6. If the contract is to be awarded, OWNER will award the Contract to the lowest responsive and responsible Bidder whose Bid is in the best interests of the Project.

20. **CONTRACT SECURITY AND INSURANCE**

- 20.1. Article 5 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth OWNER'S requirements as to performance and payment Bonds and insurance. When the Successful Bidder delivers the executed Agreement to OWNER, it must be accompanied by the required performance and payment bonds and necessary insurances.

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21. **SIGNING OF AGREEMENT**

- 21.1. When OWNER gives a Notice of Award to the Successful Bidder, it shall be accompanied by the required number (4) of unsigned counterparts of the Agreement with the other Contract Documents which are identified in the Agreement as attached thereto. Within fifteen (15) days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to OWNER with the required Bonds. Within fifteen (15) days thereafter OWNER shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Specifications and Drawings with appropriate identification.

END OF INSTRUCTIONS TO BIDDERS

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BID FORM

PROJECT IDENTIFICATION: Repairing and Repainting the Interior and Exterior of One 100,000 Gallon Steel Ground Storage Tank, “Coopers Mountain Tank,” and Modifications to One 75,000 Gallon Steel Elevated Tank, “Park View Tank,” and One 500,000 Gallon Steel Ground Storage Tank, “Ridgeville Tank,” in Harrisonburg, Virginia. The BIDDER is referred to the following Detailed Technical Specifications for the complete Scope of Work.

CONTRACT IDENTIFICATION AND NUMBER: 2013002-PU-B

THIS BID IS SUBMITTED TO: City of Harrisonburg
2155 Beery Road
Harrisonburg, Virginia 22801
Hours of Operation: Monday through Friday, 7:30 am to 4:30 pm

ATTENTION: Mr. David H. Gray, P.E.

- 1.01 The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into an agreement with OWNER in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices indicated in this Bid and within the times indicated in the Contract Agreement and in accordance with the other terms and conditions of the Bidding Documents.
- 2.01 BIDDER accepts all of the terms and conditions of the Notice to Bidders, and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of OWNER.
- 3.01 In submitting this Bid, BIDDER represents, as more fully set forth in the Agreement, that:
 - A. BIDDER has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of all which is hereby acknowledged.

<u>Addendum Number</u>	<u>Addendum Date</u>
_____	_____
_____	_____
_____	_____
_____	_____

- B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.

- D. BIDDER has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions, and (2) reports and drawings of a Hazardous Environmental Condition, if any, which has been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions.
 - E. BIDDER has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the work or which relate to any aspect of the means, methods, techniques, sequences, and procedures or construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.
 - F. Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.
 - G. Bidder is aware of the general nature of work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Bidding Documents.
 - H. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.
 - I. Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by ENGINEER is acceptable to Bidder.
 - J. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.
- 4.01 Bidder further represents that this Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any individual or entity to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

5.01 In submitting this bid, BIDDER provides the following history of BIDDER company experience.

A. What year did the Bidder start operating under its present name? _____

B. What similar public works projects has your organization completed?

CONTRACT AMOUNT	CLASS OF WORK	WHEN COMPLETED	NAME, ADDRESS & PHONE # OF OWNER

C. What similar public works projects is your organization now in process of construction?

CONTRACT AMOUNT	CLASS OF WORK	WHEN COMPLETED	NAME, ADDRESS & PHONE # OF OWNER

D. Have you ever failed to complete any work awarded to you? _____

If so, when, where, and why? _____

E. List references from private firms for which you have performed similar work.

6.01 BIDDER will supply sufficient and detailed information to the following statements and questions on the pages supplied.

- A. Explain your plan or layout for performing proposed work. Describe crew size and equipment necessary to complete project in required time.

- B. If you intend to sublet any portion of the Work, state the name and address of each Subcontractor, equipment to be used by the Subcontractor, and whether you expect to require a performance bond.

C. What equipment do you intend to use for the proposed project?

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D. Have you made contracts or received offers for all materials within prices used in preparing your proposal?

(CIRCLE ONE) YES NO

7.01 Attachment of BIDDER'S most recent twelve-month financial statement is mandatory. Any bid submitted without said financial statement as required shall thereby be rendered invalid. The financial statement provided hereunder to the governing body awarding the contract must be specific enough in detail so that said governing body can make a proper determination of the BIDDER'S capability for completing the project if awarded.

8.01 Bidder will complete the Work for the following listed Work items for the prices listed on the BIDDER'S PROPOSAL:

Bid Item 1: (Base Bid for Coopers Mountain Tank)
(Lump Sum)

The complete cleaning and repainting of the 100,000 gallon steel ground storage tank on the interior surfaces, and the complete cleaning and repainting of the exterior surfaces with containment. Additional Work items include: repair of concrete; installation of second shell manhole, davits for shell manhole covers, overflow pipe, exterior shell ladder, ladder safe-climbing device, vandal deterrent, roof safety railing, and clog-resistant vent; removal of interior painter's rail and interior ladder; including other miscellaneous repairs and incidental items. All of this Work shall be in accordance with the **Detailed Technical Specifications**.

Bid Item 2: (Unit Price)
(Add or Deduct from the **Total Amount Bid**)

Repair Welding: After the initial abrasive blast cleaning, any pits defined for pit welding by the FIELD OBSERVER shall be repaired by welding. All areas of apparent seam deterioration shall be initially abrasive blast cleaned, and any seam corrosion or undercut defined by the FIELD OBSERVER shall be repaired by arc-gouging and welding. **The number of man-hours of repair welding shall be paid for by the unit price per man-hour listed on the BIDDER'S PROPOSAL.**

Bid Item 3: (Unit Price)
(Add or Deduct from the **Total Amount Bid**)

Pit Filling and Surfacing: After the specified surface preparation, any pits, rough areas or seams defined for pit filling or surfacing by the FIELD OBSERVER shall be filled with solventless polyamide epoxy seam sealer of the type recommended by the supplier of the interior paint system. Costs for all labor, equipment, supplies, rigging, and other

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associated costs for application of the solventless polyamide epoxy seam sealer shall be included in the unit price per gallon. **The number of gallons of pit filling shall be paid for by the unit price per gallon listed on the BIDDER'S PROPOSAL.**

Bid Item 4: (Unit Price)
(Add or Deduct from the **Total Amount Bid**)

Interior Chipping and/or Grinding: Any irregular surfaces, including but not limited to surface protrusions, burrs, fitting scars, sharp edges or corners, weld spatter, weld overlap and rough weld beads shall be removed from all interior surfaces of the tank in accordance with the **Detailed Technical Specifications**. **The number of chipping and/or grinding man-hours on the tank interior shall be paid for by the unit price per man-hour listed on the BIDDER'S PROPOSAL.**

Bid Item 5: (Unit Price)
(Add or Deduct from the **Total Amount Bid**)

Roof Rafter Replacement: After the initial abrasive blast cleaning of the interior, the roof rafters shall be evaluated, and those rafters which are deteriorated or bowed as defined by the OWNER and ENGINEER shall be replaced with a slightly larger channel. The existing rafters are approximately 4 in. channels; the new channels shall be C4 x 7.25. The size shall be verified prior to fabrication. The sequence and performance of this repair shall be such that the structural integrity of the roof is not compromised. **The cost for rafter replacement shall be paid for by the unit price per rafter listed on the BIDDER'S PROPOSAL.**

Bid Item 6: (Unit Price)
(Add or Deduct from the **Total Amount Bid**)

Additional Work: It is felt that the **Detailed Technical Specifications** adequately describe the work to be performed; however, in the event that during the course of the work it is found that additional work is required and it is authorized in writing by the ENGINEER and the OWNER, this work shall be paid for at the following price per single man-hour, including all welding, equipment, normal rigging, labor, supplies, overhead, insurance, and profit. **The number of unanticipated additional work man-hours shall be paid for by the unit price per man-hour listed on the BIDDER'S PROPOSAL.**

Bid Item 7: (Lump Sum)
(Add or Deduct from the **Total Amount Bid**)

Base Bid for Park View Tank: The furnishing and installation of a new overflow pipe, concrete splash pad, antenna mounting bracket, roof manhole, and clog-resistant vent; modification of the revolving shell and roof ladder to be stationary; and spot cleaning and spot coating new items and areas damaged during the work; including other miscellaneous repairs and incidental items. All of this Work shall be in accordance with the **Detailed Technical Specifications**.

Bid Item 8: (Lump Sum)
(Add or Deduct from the **Total Amount Bid**)

Base Bid for Ridgeville Tank: The furnishing and installation of a new angled overflow pipe section, elastomeric check valve, concrete splash pad, roof manhole, and clog-resistant vent; modification of the revolving roof ladder to be stationary; and spot cleaning and spot coating new items and areas damaged during the work; including other miscellaneous repairs and incidental items. All of this Work shall be in accordance with the **Detailed Technical Specifications**.

Note: The BIDDER shall use either black or blue ink or typewriter (black ribbon) in completing the Proposal Form. Each line item amount must be given. Failure to do so will result in disqualification of BIDDER.

BIDDERS are reminded that they must bid on the issued plans and specifications, as amended. Any deviation, conditions or attachments made by the BIDDER himself thereto may render the Bid nonresponsive and be cause for its rejection.

Bid Security to be based on the **TOTAL AMOUNT BID** and shall be the percentage indicated in the Instructions to Bidders.

BIDDER'S PROPOSAL

**Repairing and Repainting the Interior and Exterior of
 One 100,000 Gallon Steel Ground Storage Tank
 "Coopers Mountain Tank"
 and Modifications to One 75,000 Gallon Steel Elevated Tank
 "Park View Tank"
 and One 500,000 Gallon Steel Ground Storage Tank
 "Ridgeville Tank"
 Harrisonburg, Virginia**

Statement of Estimated Quantities and Proposal Prices

Item No.	Item Description	Est. Qnty.	Unit	Unit Price	Bid Amount
1	Base Bid for Coopers Mountain Tank	1	Lump Sum	N.A.	\$ _____
2	Repair Welding <u>If Required</u>	40	man-hour	\$ _____	\$ _____
3	Pit Filling and Surfacing <u>If Required</u>	3	gallon	\$ _____	\$ _____
4	Interior Chipping & Grinding <u>If Required</u>	80	man-hour	\$ _____	\$ _____
5	Roof Rafter Replacement <u>If Required</u>	12	rafter	\$ _____	\$ _____
6	Additional Work <u>If Required</u>	60	man-hour	\$ _____	\$ _____
7	Base Bid for Park View Tank	1	Lump Sum	N.A.	\$ _____
8	Base Bid for Ridgeville Tank	1	Lump Sum	N.A.	\$ _____

TOTAL AMOUNT BID \$ _____
 (Items 1 through 8 inclusive)

TOTAL AMOUNT BID _____
 (written in words)

PROPOSED START DATE _____

Unit Prices have been computed in accordance with paragraph 11.03.B of the General Conditions.

Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities provided, determined as provided in the Contract Documents.

The proposed REPAIR SUBCONTRACTOR is:

name

street

city

state

zip

The proposed HAZARDOUS DISPOSAL SUBCONTRACTOR is:

name

street

city

state

zip

9.01 Bidder agrees that the Work will be substantially completed, and completed and ready for final payment in accordance with paragraph 14.07.B. of the General Conditions on or before the dates and within the number of calendar days indicated in the Agreement.

10.01 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the time specified in the Agreement.

11.01 The following documents are attached and made part of this Bid:

- A. Bid Cover Page;
- B. Required Bid security in the form of a Bid Bond issued by a surety meeting the requirements of Paragraph 5.1 of the General Conditions, or in the form of a certified or bank check. Bid security shall list Virginia Agent for Service of Process;
- C. Required Letter from Surety;
- D. A tabulation of Subcontractors, Suppliers and other individuals and entities required to be identified in this Bid;
- E. Required BIDDER'S most recent twelve-month financial statement;
- F. Required Non-Collusion Affidavit;
- G. Proposed cleaning and painting methods;

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- H. Proposed method of containing all cleaning and painting debris on the tank site;
- I. Certification to document the CONTRACTOR'S compliance with the medical surveillance program requirement;
- J. Name(s) of the CONTRACTOR'S COMPETENT PERSON(S);
- K. State Corporation Commission Form;
- L. All items and questions in this Bid Form shall be answered completely and accurately prior to submitting this Bid. Failure to provide the information requested in this Bid Form may entitle the OWNER to reject the Bid.

12.01 Communications concerning this Bid shall be addressed to:

City of Harrisonburg
 2155 Beery Road
 Harrisonburg, Virginia 22801
 Attention: Mr. David H. Gray, P.E.

13.01 The terms used in this Bid with initial capital letters have the meanings indicated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

SUBMITTED on _____, 20_____

State Contractor License No. _____. (If applicable)

If Bidder is:

An Individual

Name (typed or printed): _____

By: _____ (SEAL)
(Individual's signature)

Doing Business as: _____

Business Address: _____

Phone No.: _____ FAX No.: _____

A Partnership

Partnership Name: _____ (SEAL)

By: _____
(Signature of general partner – attach evidence of authority to sign)

Name (typed or printed): _____

Business Address: _____

Phone No.: _____ FAX No.: _____

A Corporation

Corporation Name: _____ (SEAL)

State of Incorporation: _____

Type (General Business, Professional, Service, Limited Liability): _____

By: _____ (SEAL)
(Signature – attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____ (CORPORATE SEAL)

Attest: _____
(Signature of Corporate Secretary)

Business Address: _____

Phone No.: _____ FAX No.: _____

Date of Qualification to do business is _____

A Joint Venture

Joint Venturer Name: _____ (SEAL)

By: _____
(Signature of joint venturer partner – attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business Address: _____

Phone No.: _____ FAX No.: _____

Joint Venturer Name: _____ (SEAL)

By: _____
(Signature of joint venturer partner – attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business Address: _____

Phone No.: _____ FAX No.: _____

Phone and FAX Number, and Address for receipt of official communications:

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

LETTER FROM SURETY

TO: City of Harrisonburg
2155 Beery Road
Harrisonburg, Virginia 22801

RE: Repairing and Repainting the Interior and Exterior of One 100,000 Gallon Steel Ground Storage Tank, "Coopers Mountain Tank," and Modifications to One 75,000 Gallon Steel Elevated Tank, "Park View Tank," and One 500,000 Gallon Steel Ground Storage Tank, "Ridgeville Tank," in Harrisonburg, Virginia

Gentlemen:

_____ of _____
(CONTRACTOR) (ADDRESS)

_____ is submitting a proposal for the above captioned project. If _____ is awarded the contract for this Work, _____ will execute a Performance Bond and Labor & Material Payment Bond each in the amount equal to 100% of the said contract.
(CONTRACTOR)
(SURETY)

Yours very truly,

(SURETY)
by _____
(Typed or Printed)

(Signature)

(Title)

(Date)

Surety's Virginia Agent for Service of Process:

LISTING OF SUPPLIERS

The undersigned, bidding on the Repairing and Repainting the Interior and Exterior of One 100,000 Gallon Steel Ground Storage Tank, "Coopers Mountain Tank," and Modifications to One 75,000 Gallon Steel Elevated Tank, "Park View Tank," and One 500,000 Gallon Steel Ground Storage Tank, "Ridgeville Tank," in Harrisonburg, Virginia, plans to use the material suppliers and materials as follows: (Deviations from specified materials are allowed only in accordance with paragraph 6.05 of the General Conditions.)

Paint Manufacturer: _____

Address: _____

Local Representative: _____

Exterior Surfaces: Epoxy/Polyurethane System

First Coat: _____

Second Coat: _____

Third Coat: _____

Interior Surfaces: Epoxy System

First Coat: _____

Second Coat: _____

Solventless Epoxy Seam Sealer Manufacturer: _____

Address: _____

Local Representative: _____

Solventless Epoxy Seam Sealer Material: _____

Flexible Sealant Manufacturer: _____

Address: _____

Local Representative: _____

Flexible Sealant Material: _____

Containment/Enclosure Material Supplier: _____

Address: _____

Local Representative: _____

BIDDER

Signature

Date

NON-COLLUSION AFFIDAVIT

The BIDDER, _____, by its officers, Agents, representatives present at the time of filing this Bid, being duly sworn, on their oaths say that neither they nor any of them have in any way, directly or indirectly, entered into any agreement or agreements with any other BIDDER, or with any public official. Whereby such affiant or affiants or either of them, has paid or is to pay to such BIDDER or public official, any sum of money, or has given or is to give to such other BIDDER or public official anything of value whatever, or such affiant or affiants or either of them has not directly or indirectly entered into any agreement or agreements or arrangements with any other BIDDER or BIDDERS which tends to or does lessen or destroy free competition in the letting of the Contract sought for by the attached bids; that no inducement of any form or character other than that which appears upon the face of the bids will be suggested, offered, paid or delivered to any person whomsoever to influence the acceptance of said bid or awarding of the Contract; nor has this BIDDER any agreement or understanding of any kind whatsoever, with any other person whomsoever to pay, deliver to, or share with any other person in any way or manner, any of the proceeds of the contract sought by this bid.

(SEAL)

BIDDER

By: _____

Title

Subscribed and sworn to before me by

This _____ day of _____, 20____.

(SEAL)

My Commission Expires _____.

Notary Public

In and For _____ County, _____.

STATE CORPORATION COMMISSION FORM

Virginia State Corporation Commission ("SCC") registration information: The undersigned Offeror:

is a corporation or other business entity with the following SCC identification number: _____ **-OR-**

is not a corporation, limited liability company, limited partnership, registered limited liability partnership, or business trust **-OR-**

is an out-of-state business entity that does not regularly and continuously maintain as part of its ordinary and customary business any employees, agents, offices, facilities, or inventories in Virginia (not counting any employees or agents in Virginia who merely solicit orders that require acceptance outside Virginia before they become contracts, and not counting any incidental presence of the Offeror in Virginia that is needed in order to assemble, maintain, and repair goods in accordance with the contracts by which such goods were sold and shipped into Virginia from bidder's out-of-state location) **-OR-**

is an out-of-state business entity that is including with this bid an opinion of legal counsel which accurately and completely discloses the undersigned Offeror's current contacts with Virginia and describes why those contacts do not constitute the transaction of business in Virginia within the meaning of § 13.1-757 or other similar provisions in Titles 13.1 or 50 of the Code of Virginia.

****NOTE**** >> Check the following box if you have not completed any of the foregoing options but currently have pending before the SCC an application for authority to transact business in the Commonwealth of Virginia and wish to be considered for a waiver to allow you to submit the SCC identification number after the due date for proposals (the Commonwealth reserves the right to determine in its sole discretion whether to allow such waiver):

Signature: _____ **Date:** _____

Name: _____
(Print)

Title: _____

Name of Firm: _____

NOTICE OF AWARD

Dated _____, 20__

TO: _____

(Bidder)

ADDRESS: _____

OWNER'S Contract No. 2013002-PU-B
Contract For:

ENGINEER'S Project No.: TIC __.__.E450.013

**Repairing and Repainting the Interior and Exterior of
One 100,000 Gallon Steel Ground Storage Tank
"Coopers Mountain Tank"
and Modifications to One 75,000 Gallon Steel Elevated Tank
"Park View Tank"
and One 500,000 Gallon Steel Ground Storage Tank
"Ridgeville Tank"
Harrisonburg, Virginia**

You are notified that your Bid dated _____, 20__ for the above Contract has been considered. You are the apparent Successful Bidder and have been awarded the contract for the above named Project, which specifically includes the following Bid Item Numbers:

- 1. Base Bid for Coopers Mountain Tank (Lump Sum)..... \$
- 2. Repair Welding (40 man-hours * \$_____ per man-hour)..... \$
- 3. Pit Filling and Surfacing (3 gallons * \$_____ per gallon)..... \$
- 4. Interior Chipping & Grinding (80 man-hours * \$_____ per man-hour)..... \$
- 5. Roof Rafter Replacement (12 rafters * \$_____ per rafter) \$
- 6. Unanticipated Additional Work (60 man-hours * \$_____ per man-hour)..... \$
- 7. Base Bid for Park View Tank (Lump Sum)..... \$
- 8. Base Bid for Ridgeville Tank (Lump Sum) \$

The Contract Price of your Contract is _____
_____ and 00/100 Dollars (\$ _____).

Four copies of each of the proposed Contract Documents accompany this Notice of Award.

You must comply with the following conditions precedent within fifteen days of the date of this Notice of Award, that is by _____, 20__.

- 1. Deliver to Tank Industry Consultants four fully executed counterparts of the Contract Documents. Each of the Contract Documents must bear your signature on the signature page of the Agreement.

2. Deliver with the executed Contract Documents the Contract Security (Bonds) as specified in the Instructions to Bidders (Article 20), and General Conditions (paragraph 5.01).
3. The OWNER (City of Harrisonburg) and ENGINEER (Tank Industry Consultants) shall be endorsed as additional insured on all General Liability, Automobile Liability & Excess Liability policies per paragraph SC-5.04.7 of the Supplementary Conditions.
4. Furnish a W-9 form.
5. (List other conditions precedent.)

Failure to comply with these conditions within the time specified will entitle OWNER to consider your Bid in default, to annul this Notice of Award and to declare your Bid security forfeited.

Within fifteen days after you comply with the above conditions, OWNER will return to you one fully executed counterpart of the Contract Documents.

Tank Industry Consultants
(Engineer)

BY: _____
(Authorized Signature)

(Title)

FOR: City of Harrisonburg
(Owner)

Copy to OWNER

AGREEMENT

THIS AGREEMENT is by and between City of Harrisonburg (hereinafter called OWNER), and _____ (hereinafter called CONTRACTOR).

OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1 -- WORK

- 1.01. CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

The complete cleaning and repainting of the 100,000 gallon steel ground storage tank on the interior surfaces, and the complete cleaning and repainting of the exterior surfaces with containment. Additional Work items include: repair of concrete; installation of second shell manhole, davits for shell manhole covers, overflow pipe, exterior shell ladder, ladder safe-climbing device, vandal deterrent, roof safety railing, and clog-resistant vent; removal of interior painter's rail and interior ladder; including other miscellaneous repairs and incidental items.

ARTICLE 2 – THE PROJECT

- 2.01. The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

Repairing and Repainting the Interior and Exterior of One 100,000 Gallon Steel Ground Storage Tank, "Coopers Mountain Tank," and Modifications to One 75,000 Gallon Steel Elevated Tank, "Park View Tank," and One 500,000 Gallon Steel Ground Storage Tank, "Ridgeville Tank," in Harrisonburg, Virginia.

ARTICLE 3 -- ENGINEER

- 3.01. The Project has been designed by Tank Industry Consultants who is hereinafter called ENGINEER and who is to act as OWNER'S representative, assume all duties and responsibilities and have the rights and authority assigned to ENGINEER in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

ARTICLE 4 -- CONTRACT TIME

4.01. Time of the Essence

- A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02. Days to Achieve Substantial Completion and Final Payment

- A. The Work on the 100,000 gallon steel elevated tank (and including the work of Bid Items 7 and 8 if accepted) shall be Substantially Completed within seventy-five (75) calendar days after the date when the Contract Times commence to run as provided in paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with paragraph 14.07 of the General Conditions within ninety (90) calendar days after the date when the Contract Times commence to run.

4.03. Liquidated Damages

- A. OWNER and CONTRACTOR recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss and the OWNER'S ability to provide the public with a safe drinking water supply may be impaired if the Work is not completed within the times specified in paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by OWNER if the Work is not completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as penalty) CONTRACTOR shall pay the OWNER seven hundred dollars (\$700) for each calendar day that expires after the time specified in paragraph 4.02 for Substantial Completion until the Work is substantially complete. After Substantial Completion, if CONTRACTOR shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by OWNER, CONTRACTOR shall pay the OWNER one hundred twenty-five dollars (\$125) for each calendar day that expires after the time specified in paragraph 4.02 for completion and readiness for final payment until the Work is completed and ready for final payment.

ARTICLE 5 -- CONTRACT PRICE

5.01. OWNER shall pay CONTRACTOR for completion of the Work in accordance with the Contract Documents an amount in current funds as follows:

- A. For all Work, at the prices state in CONTRACTOR'S Bid, attached hereto as an exhibit.

ARTICLE 6 -- PAYMENT PROCEDURES

6.01. Submittal and Processing of Payments

- A. CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications will be processed by ENGINEER as provided in the General Conditions. **No separate payment shall be made for bonds, insurance, design, drawings, mobilization, containment of the cleaning and/or painting debris, or paint materials not incorporated into the Work.** Applications for Payment shall be submitted on a suitable form acceptable to ENGINEER and OWNER such as the form bound in these Contract Documents or AIA Documents G702 and G703.

6.02. Progress Payments; Retainage

- A. OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR'S Applications for Payment each month during performance of the Work as provided in paragraph 6.02.A.1. below. All such payments will be measured by the schedule of values established in paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements:
 - 1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below, but, in each case, less the aggregate of payments previously made and less such amounts as ENGINEER shall determine, or OWNER may withhold, in accordance with paragraph 14.02 of the General Conditions.
 - a. 95% of Work completed.

6.03. Final Payment

- A. Upon final completion and acceptance of the Work in accordance with paragraph 14.07 of the General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER as provided in said paragraph 14.07.

ARTICLE 7 -- CONTRACTOR'S REPRESENTATION

7.01. In order to induce OWNER to enter into this Agreement, CONTRACTOR makes the following representations:

- A. CONTRACTOR has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
- B. CONTRACTOR has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work
- C. CONTRACTOR is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.

00510-3

- D. CONTRACTOR has studied carefully all reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions.
- E. CONTRACTOR has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR, including applying the specific means, methods, techniques, sequences, and procedures of construction, if any, expressly required by the Contract Documents to be employed by CONTRACTOR, and safety precautions and programs incident thereto.
- F. CONTRACTOR does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
- G. CONTRACTOR is aware of the general nature of work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. CONTRACTOR has correlated the information known to CONTRACTOR, information and observations obtained from visits to the Site, reports and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.
- I. CONTRACTOR has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that CONTRACTOR has discovered in the Contract Documents, and the written resolution thereof by the ENGINEER is acceptable to the CONTRACTOR.
- J. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 8 -- CONTRACT DOCUMENTS

8.01. Contents

- A. The Contract Documents consist of the following:
 - 1. This Agreement (pages 00510-1 to 00510-7, inclusive);
 - 2. Performance Bond;
 - 3. Labor & Material Payment and all other required Bonds;

00510-4

4. Certificate of Insurance;
 5. Supplementary Conditions;
 6. General Conditions;
 7. Specifications as listed in the table of contents of the Project Manual;
 8. Drawings bound with the specifications;
 9. Signed Addenda (inclusive);
 10. Exhibits to this Agreement:
 - a. Notice of Award;
 - b. Notice to Proceed;
 - c. Bid Form (pages 00300-1 to 00300-14, inclusive);
 - d. Documentation submitted by CONTRACTOR prior to Notice of Award;
 11. The following which may be delivered or issued after the Effective Date of the Agreement and are not attached hereto:
 - a. Written Amendments;
 - b. Work Change Directives;
 - c. Change Order(s);
 12. Bid Cover Page;
 13. State Corporation Commission Form.
- B. The documents listed in paragraph 8.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 8.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in paragraph 3.05 of the General Conditions.

ARTICLE 9 -- MISCELLANEOUS

9.01. Terms

- A. Terms used in this Agreement will have the meanings indicated in the Supplementary Conditions, or if not contained in the Supplementary Conditions they will have the meanings indicated in the General Conditions.

9.02. Assignment of Contract

- A. No assignment by a party hereto of any rights under or interest in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

9.03. Successors and Assigns

- A. OWNER and CONTRACTOR each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

9.04. Severability

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon OWNER and CONTRACTOR, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provisions.

9.05. Other Provisions

- A. The CONTRACTOR agrees to protect, defend, and save harmless the OWNER and ENGINEER against any demand for payment for the use of any patented material, process, article, or device that may enter into the manufacture, construction, or form a part of the Work covered by this agreement; and the CONTRACTOR further agrees to indemnify and save harmless the OWNER and ENGINEER from suits or actions of every nature and description brought against them for, or on account of any injuries or damages received or sustained by any party or parties, by, or from the acts of the CONTRACTOR, his servants, or agents.

IN WITNESS WHEREOF, OWNER and CONTRACTOR have signed this Agreement in quadruplicate. One counterpart each has been delivered to OWNER and CONTRACTOR, and two counterparts have been delivered to ENGINEER. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR or by ENGINEER on their behalf.

This Agreement will be effective on _____, 20____ (which is the Effective Date of the Agreement).

OWNER

CONTRACTOR

City of Harrisonburg

By: _____

[CORPORATE SEAL]

Attest: _____

Address for giving notices

City of Harrisonburg

2155 Beery Road

Harrisonburg, Virginia 22801

(If OWNER is a corporation, attach evidence of authority to sign. If OWNER is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of Owner-Contractor Agreement.)

Designated Representative:

Name: _____

Title: _____

Address: _____

Phone: _____

Facsimile: _____

By: _____

[CORPORATE SEAL]

Attest: _____

Address for giving notices

License No.: _____

(Where applicable)

Virginia Agent for Service of Process:

(If CONTRACTOR is a corporation or partnership, attach evidence of authority to sign.)

Designated Representative:

Name: _____

Title: _____

Address: _____

Phone: _____

Facsimile: _____

NOTICE TO PROCEED

Dated _____, 20__

TO: _____

(Bidder)

ADDRESS: _____

OWNER'S Contract No. _____ ENGINEER'S Project No.: TIC __.__.E450.013

Contract For:

**Repairing and Repainting the Interior and Exterior of
One 100,000 Gallon Steel Ground Storage Tank
"Coopers Mountain Tank"
and Modifications to One 75,000 Gallon Steel Elevated Tank
"Park View Tank"
and One 500,000 Gallon Steel Ground Storage Tank
"Ridgeville Tank"
Harrisonburg, Virginia**

You are notified that the Contract Time under the above contract will commence to run on _____, 20__. By that date, you are to start performing your obligations under the Contract Documents. In accordance with Article 4 of the Agreement, the date of Substantial Completion is _____, 20__ and the date of readiness for final payment is _____, 20__.

Before you may start any Work at the site, you must Submit a Proposed Construction Bar Chart or Schedule indicating the various start and finish dates of the different phases of the project. This chart should also include the estimated dollar amount of each phase. The estimated dollar amount of mobilization, bonds, and insurance shall be pro-rated into respective phases. The Bar Chart or Schedule shall, as a minimum, include the following phases:

1. Move onto site and rig tank, including containment
2. Repair Work
3. Interior cleaning and priming
4. Interior finish coating
5. Tank disinfection
6. Exterior cleaning and priming
7. Exterior intermediate coating
8. Exterior finish coating
9. Site clean-up

Tank Industry Consultants

(Engineer)

BY: _____

(Authorized Signature)

(Title)

FOR: City of Harrisonburg

(Owner)

Copy to OWNER

00520-1

CHANGE ORDER

Distribution to: OWNER X
ENGINEER X
CONTRACTOR X
FIELD X
OTHER _____

PROJECT: Coopers Mountain Tank
Harrisonburg, Virginia

CHANGE ORDER NUMBER:

TO: (Contractor)

INITIATION DATE:

ENGINEER'S PROJECT NO: _____.E450.013

CONTRACT DATE:

You are directed to make the following changes in the Contract Documents:

No other work is changed by this Change Order. All materials shall be as specified and approved.

Not valid until signed by both the Owner and Engineer.

Signature of the Contractor indicates his/her agreement herewith, including any adjustment in the Contract Sum or Contract Time.

The original Contract Sum was \$
Net change by previously authorized Change Orders \$
The Contract Sum prior to this Change Order was..... \$
The Contract Sum will be (increased) (decreased) (unchanged) by this Change Order. \$
The new Contract Sum including this Change Order will be \$
The Contract Time will be (increased)(decreased)(unchanged) by () Days
The Date of Substantial Completion as of the date of this Change Order therefore is... _____

Authorization:

RECOMMENDED by Engineer:

Tank Industry Consultants
7740 West New York Street
Indianapolis, Indiana 46214

APPROVED by Owner:

City of Harrisonburg
2155 Beery Road
Harrisonburg, Virginia 22801

ACCEPTED by Contractor:

By: _____
ENGINEER (Authorized Signature)

By: _____
OWNER (Authorized Signature)

By: _____
CONTRACTOR (Authorized Signature)

Date: _____

Date: _____

Date: _____

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the Controlling Law.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and



AMERICAN CONSULTING
ENGINEERS COUNCIL

Issued and Published Jointly By
 **National Society of
Professional Engineers**
Professional Engineers in Private Practice

ASCE
AMERICAN SOCIETY OF
CIVIL ENGINEERS

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE
a practice division of the
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

AMERICAN CONSULTING ENGINEERS COUNCIL

AMERICAN SOCIETY OF CIVIL ENGINEERS

This document has been approved and endorsed by

The Associated General



Contractors of America

Construction Specifications Institute



These General Conditions have been prepared for use with the Owner-Contractor Agreements (No. 1910-8-A-1 or 1910-8-A-2) (1996 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the EJDC User's Guide (No. 1910-50). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (No. 1910-17) (1996 Edition).

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GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Contract Documents and printed with initial or all capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof.

1. *Addenda*--Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the Contract Documents.

2. *Agreement*--The written instrument which is evidence of the agreement between OWNER and CONTRACTOR covering the Work.

3. *Application for Payment*--The form acceptable to ENGINEER which is to be used by CONTRACTOR during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Asbestos*--Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. *Bid*--The offer or proposal of a bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. *Bidding Documents*--The Bidding Requirements and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

7. *Bidding Requirements*--The Advertisement or Invitation to Bid, Instructions to Bidders, Bid security form, if any, and the Bid form with any supplements.

8. *Bonds*--Performance and payment bonds and other instruments of security.

9. *Change Order*--A document recommended by ENGINEER which is signed by CONTRACTOR and OWNER and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the

Contract Times, issued on or after the Effective Date of the Agreement.

10. *Claim*--A demand or assertion by OWNER or CONTRACTOR seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. *Contract*--The entire and integrated written agreement between the OWNER and CONTRACTOR concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*--The Contract Documents establish the rights and obligations of the parties and include the Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR's Bid (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Notice to Proceed, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all Written Amendments, Change Orders, Work Change Directives, Field Orders, and ENGINEER's written interpretations and clarifications issued on or after the Effective Date of the Agreement. Approved Shop Drawings and the reports and drawings of subsurface and physical conditions are not Contract Documents. Only printed or hard copies of the items listed in this paragraph are Contract Documents. Files in electronic media format of text, data, graphics, and the like that may be furnished by OWNER to CONTRACTOR are not Contract Documents.

13. *Contract Price*--The moneys payable by OWNER to CONTRACTOR for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times*--The number of days or the dates stated in the Agreement to: (i) achieve Substantial Completion; and (ii) complete the Work so that it is ready for final payment as evidenced by ENGINEER's written recommendation of final payment.

15. *CONTRACTOR*--The individual or entity with whom OWNER has entered into the Agreement.

16. *Cost of the Work*--See paragraph 11.01.A for definition.

17. *Drawings*--That part of the Contract Documents prepared or approved by ENGINEER which graphically shows the scope, extent, and character of the Work to be performed by CONTRACTOR. Shop Drawings and other CONTRACTOR submittals are not Drawings as so defined.

18. *Effective Date of the Agreement*--The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

19. *ENGINEER*--The individual or entity named as such in the Agreement.

20. *ENGINEER's Consultant*--An individual or entity having a contract with ENGINEER to furnish services as ENGINEER's independent professional associate or consultant with respect to the Project and who is identified as such in the Supplementary Conditions.

21. *Field Order*--A written order issued by ENGINEER which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

22. *General Requirements*--Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

23. *Hazardous Environmental Condition*--The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

24. *Hazardous Waste*--The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

25. *Laws and Regulations; Laws or Regulations*--Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

26. *Liens*--Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

27. *Milestone*--A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

28. *Notice of Award*--The written notice by OWNER to the apparent successful bidder stating that upon timely compliance by the apparent successful bidder with the conditions precedent listed therein, OWNER will sign and deliver the Agreement.

29. *Notice to Proceed*--A written notice given by OWNER to CONTRACTOR fixing the date on which the Contract Times will commence to run and on which CONTRACTOR shall start to perform the Work under the Contract Documents.

30. *OWNER*--The individual, entity, public body, or authority with whom CONTRACTOR has entered into the Agreement and for whom the Work is to be performed.

31. *Partial Utilization*--Use by OWNER of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work.

32. *PCBs*--Polychlorinated biphenyls.

33. *Petroleum*--Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

34. *Project*--The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part as may be indicated elsewhere in the Contract Documents.

35. *Project Manual*--The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

36. *Radioactive Material*--Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

37. *Resident Project Representative*--The authorized representative of ENGINEER who may be assigned to the Site or any part thereof.

38. *Samples*--Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

39. *Shop Drawings*--All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for CONTRACTOR and submitted by CONTRACTOR to illustrate some portion of the Work.

40. *Site*--Lands or areas indicated in the Contract Documents as being furnished by OWNER upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by OWNER which are designated for the use of CONTRACTOR.

41. *Specifications*--That part of the Contract Documents consisting of written technical descriptions of materials, equipment, systems, standards, and workmanship as applied to the Work and certain administrative details applicable thereto.

42. *Subcontractor*--An individual or entity having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the Site.

43. *Substantial Completion*--The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

44. *Supplementary Conditions*--That part of the Contract Documents which amends or supplements these General Conditions.

45. *Supplier*--A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with CONTRACTOR or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by CONTRACTOR or any Subcontractor.

46. *Underground Facilities*--All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases,

steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

47. *Unit Price Work*--Work to be paid for on the basis of unit prices.

48. *Work*--The entire completed construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

49. *Work Change Directive*--A written statement to CONTRACTOR issued on or after the Effective Date of the Agreement and signed by OWNER and recommended by ENGINEER ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

50. *Written Amendment*--A written statement modifying the Contract Documents, signed by OWNER and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the nonengineering or nontechnical rather than strictly construction-related aspects of the Contract Documents.

1.02 Terminology

A. Intent of Certain Terms or Adjectives

1. Whenever in the Contract Documents the terms "as allowed," "as approved," or terms of like effect or import are used, or the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of ENGINEER as to the Work, it is intended that such action or determination will be solely to evaluate, in general, the completed Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The

use of any such term or adjective shall not be effective to assign to ENGINEER any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.10 or any other provision of the Contract Documents.

B. *Day*

1. The word "day" shall constitute a calendar day of 24 hours measured from midnight to the next midnight.

C. *Defective*

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it does not conform to the Contract Documents or does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER's recommendation of final payment (unless responsibility for the protection thereof has been assumed by OWNER at Substantial Completion in accordance with paragraph 14.04 or 14.05).

D. *Furnish, Install, Perform, Provide*

1. The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words "perform" or "provide," when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. When "furnish," "install," "perform," or "provide" is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of CONTRACTOR, "provide" is implied.

E. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 - PRELIMINARY MATTERS

2.01 *Delivery of Bonds*

A. When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds as CONTRACTOR may be required to furnish.

2.02 *Copies of Documents*

A. OWNER shall furnish to CONTRACTOR up to ten copies of the Contract Documents. Additional copies will be furnished upon request at the cost of reproduction.

2.03 *Commencement of Contract Times; Notice to Proceed*

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 *Starting the Work*

A. CONTRACTOR shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 *Before Starting Construction*

A. *CONTRACTOR's Review of Contract Documents:* Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error, ambiguity, or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless CONTRACTOR knew or reasonably should have known thereof.

B. *Preliminary Schedules:* Within ten days after the Effective Date of the Agreement (unless otherwise specified

in the General Requirements), CONTRACTOR shall submit to ENGINEER for its timely review:

1. a preliminary progress schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

2. a preliminary schedule of Shop Drawing and Sample submittals which will list each required submittal and the times for submitting, reviewing, and processing such submittal; and

3. a preliminary schedule of values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

C. *Evidence of Insurance:* Before any Work at the Site is started, CONTRACTOR and OWNER shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which CONTRACTOR and OWNER respectively are required to purchase and maintain in accordance with Article 5.

2.06 *Preconstruction Conference*

A. Within 20 days after the Contract Times start to run, but before any Work at the Site is started, a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in paragraph 2.05.B, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

2.07 *Initial Acceptance of Schedules*

A. Unless otherwise provided in the Contract Documents, at least ten days before submission of the first Application for Payment a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to review for acceptability to ENGINEER as provided below the schedules submitted in accordance with paragraph 2.05.B. CONTRACTOR shall have an additional ten days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to CONTRACTOR until acceptable schedules are submitted to ENGINEER.

1. The progress schedule will be acceptable to ENGINEER if it provides an orderly progression of the Work to completion within any specified Milestones and the Contract Times. Such acceptance will not impose on ENGINEER responsibility for the progress schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve CONTRACTOR from CONTRACTOR's full responsibility therefor.

2. CONTRACTOR's schedule of Shop Drawing and Sample submittals will be acceptable to ENGINEER if it provides a workable arrangement for reviewing and processing the required submittals.

3. CONTRACTOR's schedule of values will be acceptable to ENGINEER as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

A. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to OWNER.

C. Clarifications and interpretations of the Contract Documents shall be issued by ENGINEER as provided in Article 9.

3.02 *Reference Standards*

A. *Standards, Specifications, Codes, Laws, and Regulations*

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids),

except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of OWNER, CONTRACTOR, or ENGINEER, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall any such provision or instruction be effective to assign to OWNER, ENGINEER, or any of ENGINEER's Consultants, agents, or employees any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. If, during the performance of the Work, CONTRACTOR discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, CONTRACTOR shall report it to ENGINEER in writing at once. CONTRACTOR shall not proceed with the Work affected thereby (except in an emergency as required by paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in paragraph 3.04; provided, however, that CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any such conflict, error, ambiguity, or discrepancy unless CONTRACTOR knew or reasonably should have known thereof.

B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

a. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways: (i) a Written Amendment; (ii) a Change Order; or (iii) a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways: (i) a Field Order; (ii) ENGINEER's approval of a Shop Drawing or Sample; or (iii) ENGINEER's written interpretation or clarification.

3.05 *Reuse of Documents*

A. CONTRACTOR and any Subcontractor or Supplier or other individual or entity performing or furnishing any of the Work under a direct or indirect contract with OWNER: (i) shall not 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 ENGINEER's Consultant, including electronic media editions; and (ii) shall not reuse any of 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 adaption by ENGINEER. This prohibition will survive final payment, completion, and acceptance of the Work, or termination or completion of the Contract. Nothing herein shall preclude CONTRACTOR from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

4.01 *Availability of Lands*

A. OWNER shall furnish the Site. OWNER shall notify CONTRACTOR of any encumbrances or restrictions not of general application but specifically related to use of the Site with which CONTRACTOR must comply in performing the Work. OWNER will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If CONTRACTOR and OWNER are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in OWNER's furnishing the Site, CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

B. Upon reasonable written request, OWNER shall furnish CONTRACTOR with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and OWNER's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 *Subsurface and Physical Conditions*

A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that ENGINEER has used in preparing the Contract Documents; and

2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that ENGINEER has used in preparing the Contract Documents.

B. *Limited Reliance by CONTRACTOR on Technical Data Authorized:* CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER, or any of ENGINEER's Consultants with respect to:

1. the completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

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

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If CONTRACTOR believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which CONTRACTOR is entitled to rely as provided in paragraph 4.02 is materially inaccurate; or

2. is of such a nature as to require a change in the Contract Documents; or

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.A), notify OWNER and ENGINEER in writing about such condition. CONTRACTOR shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *ENGINEER's Review:* After receipt of written notice as required by paragraph 4.03.A, ENGINEER will promptly review the pertinent condition, determine the necessity of OWNER's obtaining additional exploration or tests with respect thereto, and advise OWNER in writing (with a copy to CONTRACTOR) of ENGINEER's findings and conclusions.

C. *Possible Price and Times Adjustments*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in CONTRACTOR's cost of, or time required for, performance of the Work; subject, however, to the following:

a. such condition must meet any one or more of the categories described in paragraph 4.03.A; and

b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of paragraphs 9.08 and 11.03.

2. CONTRACTOR shall not be entitled to any adjustment in the Contract Price or Contract Times if:

a. CONTRACTOR knew of the existence of such conditions at the time CONTRACTOR made a final commitment to OWNER in respect of Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for CONTRACTOR prior to CONTRACTOR's making such final commitment; or

c. CONTRACTOR failed to give the written notice within the time and as required by paragraph 4.03.A.

3. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in paragraph 10.05. However, OWNER, ENGINEER, and ENGINEER's Consultants shall not be liable to CONTRACTOR for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by CONTRACTOR on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to OWNER or ENGINEER by the owners of such Underground Facilities, including OWNER, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. OWNER and ENGINEER shall not be responsible for the accuracy or completeness of any such information or data; and

2. the cost of all of the following will be included in the Contract Price, and CONTRACTOR shall have full responsibility for:

a. reviewing and checking all such information and data,

b. locating all Underground Facilities shown or indicated in the Contract Documents,

c. coordination of the Work with the owners of such Underground Facilities, including OWNER, during construction, and

d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to OWNER and ENGINEER. ENGINEER will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility.

2. If ENGINEER concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that CONTRACTOR did not know of and could not reasonably have been expected to be aware of or to have anticipated. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, OWNER or CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

4.05 *Reference Points*

A. OWNER shall provide engineering surveys to establish reference points for construction which in ENGINEER's judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work, shall protect and preserve the established reference points and property

monuments, and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to ENGINEER whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 *Hazardous Environmental Condition at Site*

A. *Reports and Drawings:* Reference is made to the Supplementary Conditions for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the ENGINEER in the preparation of the Contract Documents.

B. *Limited Reliance by CONTRACTOR on Technical Data Authorized:* CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER or any of ENGINEER's Consultants with respect to:

1. the completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
3. any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

C. CONTRACTOR shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. CONTRACTOR shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by CONTRACTOR, Subcontractors, Suppliers, or anyone else for whom CONTRACTOR is responsible.

D. If CONTRACTOR encounters a Hazardous Environmental Condition or if CONTRACTOR or anyone for whom CONTRACTOR is responsible creates a Hazardous

Environmental Condition, CONTRACTOR shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by paragraph 6.16); and (iii) notify OWNER and ENGINEER (and promptly thereafter confirm such notice in writing). OWNER shall promptly consult with ENGINEER concerning the necessity for OWNER to retain a qualified expert to evaluate such condition or take corrective action, if any.

E. CONTRACTOR shall not be required to resume Work in connection with such condition or in any affected area until after OWNER has obtained any required permits related thereto and delivered to CONTRACTOR written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If OWNER and CONTRACTOR cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by CONTRACTOR, either party may make a Claim therefor as provided in paragraph 10.05.

F. If after receipt of such written notice CONTRACTOR does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then OWNER may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If OWNER and CONTRACTOR cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in paragraph 10.05. OWNER may have such deleted portion of the Work performed by OWNER's own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, OWNER shall indemnify and hold harmless CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and the officers, directors, partners, employees, agents, other consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by CONTRACTOR or by anyone for whom CONTRACTOR is responsible. Nothing

in this paragraph 4.06.E shall obligate OWNER to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

H. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, other consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by CONTRACTOR or by anyone for whom CONTRACTOR is responsible. Nothing in this paragraph 4.06.F shall obligate CONTRACTOR to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

I. The provisions of paragraphs 4.02, 4.03, and 4.04 are not intended to apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 - BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

A. CONTRACTOR shall furnish performance and payment Bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract Documents. These Bonds shall remain in effect at least until one year after the date when final payment becomes due, except as provided otherwise by Laws or Regulations or by the Contract Documents. CONTRACTOR shall also furnish such other Bonds as are required by the Contract Documents.

B. All Bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.

C. If the surety on any Bond furnished by CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements

of paragraph 5.01.B, CONTRACTOR shall within 20 days thereafter substitute another Bond and surety, both of which shall comply with the requirements of paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

A. All Bonds and insurance required by the Contract Documents to be purchased and maintained by OWNER or CONTRACTOR shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue Bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 *Certificates of Insurance*

A. CONTRACTOR shall deliver to OWNER, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by OWNER or any other additional insured) which CONTRACTOR is required to purchase and maintain. OWNER shall deliver to CONTRACTOR, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by CONTRACTOR or any other additional insured) which OWNER is required to purchase and maintain.

5.04 *CONTRACTOR's Liability Insurance*

A. CONTRACTOR shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from CONTRACTOR's performance of the Work and CONTRACTOR's other obligations under the Contract Documents, whether it is to be performed by CONTRACTOR, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
2. claims for damages because of bodily injury, occupational sickness or disease, or death of CONTRACTOR's employees;
3. claims for damages because of bodily injury, sickness or disease, or death of any person other than CONTRACTOR's employees;

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained: (i) by any person as a result of an offense directly or indirectly related to the employment of such person by CONTRACTOR, or (ii) by any other person for any other reason;

5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance so required by this paragraph 5.04 to be purchased and maintained shall:

1. with respect to insurance required by paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insureds (subject to any customary exclusion in respect of professional liability) OWNER, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering CONTRACTOR's indemnity obligations under paragraphs 6.07, 6.11, and 6.20;

5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least thirty days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the CONTRACTOR pursuant to paragraph 5.03 will so provide);

6. remain in effect at least until final payment and at all times thereafter when CONTRACTOR may be

correcting, removing, or replacing defective Work in accordance with paragraph 13.07; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment (and CONTRACTOR shall furnish OWNER and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to OWNER and any such additional insured of continuation of such insurance at final payment and one year thereafter).

5.05 *OWNER's Liability Insurance*

A. In addition to the insurance required to be provided by CONTRACTOR under paragraph 5.04, OWNER, at OWNER's option, may purchase and maintain at OWNER's expense OWNER's own liability insurance as will protect OWNER against claims which may arise from operations under the Contract Documents.

5.06 *Property Insurance*

A. Unless otherwise provided in the Supplementary Conditions, OWNER shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an additional insured;

2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by OWNER prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by ENGINEER;

5. allow for partial utilization of the Work by OWNER;

6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by OWNER, CONTRACTOR, and ENGINEER with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

B. OWNER shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with paragraph 5.07.

D. OWNER shall not be responsible for purchasing and maintaining any property insurance specified in this paragraph 5.06 to protect the interests of CONTRACTOR, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by CONTRACTOR, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

E. If CONTRACTOR requests in writing that other special insurance be included in the property insurance policies provided under paragraph 5.06, OWNER shall, if possible, include such insurance, and the cost thereof will be charged to CONTRACTOR by appropriate Change Order or Written Amendment. Prior to commencement of the Work

at the Site, OWNER shall in writing advise CONTRACTOR whether or not such other insurance has been procured by OWNER.

5.07 Waiver of Rights

A. OWNER and CONTRACTOR intend that all policies purchased in accordance with paragraph 5.06 will protect OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. OWNER and CONTRACTOR waive all rights against each other and their respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by OWNER as trustee or otherwise payable under any policy so issued.

B. OWNER waives all rights against CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to OWNER's property or the Work caused by, arising out of, or resulting from fire or other peril whether or not insured by OWNER; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by OWNER during partial utilization pursuant to paragraph 14.05, after Substantial Completion

pursuant to paragraph 14.04, or after final payment pursuant to paragraph 14.07.

C. Any insurance policy maintained by OWNER covering any loss, damage or consequential loss referred to in paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against CONTRACTOR, Subcontractors, ENGINEER, or ENGINEER's Consultants and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

A. Any insured loss under the policies of insurance required by paragraph 5.06 will be adjusted with OWNER and made payable to OWNER as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of paragraph 5.08.B. OWNER shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order or Written Amendment.

B. OWNER as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to OWNER's exercise of this power. If such objection be made, OWNER as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, OWNER as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, OWNER as fiduciary shall give bond for the proper performance of such duties.

5.09 *Acceptance of Bonds and Insurance; Option to Replace*

A. If either OWNER or CONTRACTOR has any objection to the coverage afforded by or other provisions of the Bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by paragraph 2.05.C. OWNER and CONTRACTOR shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the Bonds and insurance required

of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent Bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

A. If OWNER finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

A. CONTRACTOR shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of OWNER or ENGINEER in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents. CONTRACTOR shall be responsible to see that the completed Work complies accurately with the Contract Documents.

B. At all times during the progress of the Work, CONTRACTOR shall assign a competent resident superintendent thereto who shall not be replaced without written notice to OWNER and ENGINEER except under extraordinary circumstances. The superintendent will be CONTRACTOR's representative at the Site and shall have authority to act on behalf of CONTRACTOR. All communications given to or received from the superintendent shall be binding on CONTRACTOR.

6.02 *Labor; Working Hours*

A. CONTRACTOR shall provide competent, suitably qualified personnel to survey, lay out, and construct the Work as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, and CONTRACTOR will not permit overtime work or the performance of Work on Saturday, Sunday, or any legal holiday without OWNER's written consent (which will not be unreasonably withheld) given after prior written notice to ENGINEER.

6.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the General Requirements, CONTRACTOR shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of OWNER. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 *Progress Schedule*

A. CONTRACTOR shall adhere to the progress schedule established in accordance with paragraph 2.07 as it may be adjusted from time to time as provided below.

1. CONTRACTOR shall submit to ENGINEER for acceptance (to the extent indicated in paragraph 2.07) proposed adjustments in the progress schedule that will not result in changing the Contract Times (or Milestones). Such adjustments will conform generally to the progress schedule then in effect and additionally will comply with

any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the progress schedule that will change the Contract Times (or Milestones) shall be submitted in accordance with the requirements of Article 12. Such adjustments may only be made by a Change Order or Written Amendment in accordance with Article 12.

6.05 *Substitutes and "Or-Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to ENGINEER for review under the circumstances described below.

1. "*Or-Equal*" Items: If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by ENGINEER as an "or-equal" item, in which case review and approval of the proposed item may, in ENGINEER's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment ENGINEER determines that: (i) it is at least equal in quality, durability, appearance, strength, and design characteristics; (ii) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole, and;

b. CONTRACTOR certifies that: (i) there is no increase in cost to the OWNER; and (ii) it will conform substantially, even with deviations, to the detailed requirements of the item named in the Contract Documents.

2. *Substitute Items*

a. If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR does not qualify as an "or-equal" item under

paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. CONTRACTOR shall submit sufficient information as provided below to allow ENGINEER to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR.

c. The procedure for review by ENGINEER will be as set forth in paragraph 6.05.A.2.d, as supplemented in the General Requirements and as ENGINEER may decide is appropriate under the circumstances.

d. CONTRACTOR shall first make written application to ENGINEER for review of a proposed substitute item of material or equipment that CONTRACTOR seeks to furnish or use. The application shall certify that the proposed substitute item will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified, and be suited to the same use as that specified. The application will state the extent, if any, to which the use of the proposed substitute item will prejudice CONTRACTOR's achievement of Substantial Completion on time, whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute item and whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute item from that specified will be identified in the application, and available engineering, sales, maintenance, repair, and replacement services will be indicated. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change, all of which will be considered by ENGINEER in evaluating the proposed substitute item. ENGINEER may require CONTRACTOR to furnish additional data about the proposed substitute item.

B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is shown or indicated in and expressly

required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by ENGINEER. CONTRACTOR shall submit sufficient information to allow ENGINEER, in ENGINEER's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The procedure for review by ENGINEER will be similar to that provided in subparagraph 6.05.A.2.

C. *Engineer's Evaluation:* ENGINEER will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to paragraphs 6.05.A and 6.05.B. ENGINEER will be the sole judge of acceptability. No "or-equal" or substitute will be ordered, installed or utilized until ENGINEER's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." ENGINEER will advise CONTRACTOR in writing of any negative determination.

D. *Special Guarantee:* OWNER may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety with respect to any substitute.

E. *ENGINEER's Cost Reimbursement:* ENGINEER will record time required by ENGINEER and ENGINEER's Consultants in evaluating substitute proposed or submitted by CONTRACTOR pursuant to paragraphs 6.05.A.2 and 6.05.B and in making changes in the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) occasioned thereby. Whether or not ENGINEER approves a substitute item so proposed or submitted by CONTRACTOR, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER's Consultants for evaluating each such proposed substitute.

F. *CONTRACTOR's Expense:* CONTRACTOR shall provide all data in support of any proposed substitute or "or-equal" at CONTRACTOR's expense.

6.06 *Concerning Subcontractors, Suppliers, and Others*

A. CONTRACTOR shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to OWNER as indicated in paragraph 6.06.B), whether initially or as a replacement, against whom OWNER may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or

entities to be submitted to OWNER in advance for acceptance by OWNER by a specified date prior to the Effective Date of the Agreement, and if CONTRACTOR has submitted a list thereof in accordance with the Supplementary Conditions, OWNER's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. CONTRACTOR shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued or Written Amendment signed. No acceptance by OWNER of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of OWNER or ENGINEER to reject defective Work.

C. CONTRACTOR shall be fully responsible to OWNER and ENGINEER for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as CONTRACTOR is responsible for CONTRACTOR's own acts and omissions. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between OWNER or ENGINEER and any such Subcontractor, Supplier or other individual or entity, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

D. CONTRACTOR shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR.

E. CONTRACTOR shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with ENGINEER through CONTRACTOR.

F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for CONTRACTOR by a Subcontractor or Supplier will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor

or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and ENGINEER. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in paragraph 5.06, the agreement between the CONTRACTOR and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against OWNER, CONTRACTOR, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, CONTRACTOR will obtain the same.

6.07 *Patent Fees and Royalties*

A. CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of OWNER or ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in the Contract Documents. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees or agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 *Permits*

A. Unless otherwise provided in the Supplementary Conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits

and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility owners for connections to the Work, and OWNER shall pay all charges of such utility owners for capital costs related thereto, such as plant investment fees.

6.09 *Laws and Regulations*

A. CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor ENGINEER shall be responsible for monitoring CONTRACTOR's compliance with any Laws or Regulations.

B. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, CONTRACTOR shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work; however, it shall not be CONTRACTOR's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve CONTRACTOR of CONTRACTOR's obligations under paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work may be the subject of an adjustment in Contract Price or Contract Times. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in paragraph 10.05.

6.10 *Taxes*

A. CONTRACTOR shall pay all sales, consumer, use, and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.11 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas*

1. CONTRACTOR shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not

unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultant, and the officers, directors, partners, employees, agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against OWNER, ENGINEER, or any other party indemnified hereunder to the extent caused by or based upon CONTRACTOR's performance of the Work.

B. *Removal of Debris During Performance of the Work:* During the progress of the Work CONTRACTOR shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. *Cleaning:* Prior to Substantial Completion of the Work CONTRACTOR shall clean the Site and make it ready for utilization by OWNER. At the completion of the Work CONTRACTOR shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading Structures:* CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 *Record Documents*

A. CONTRACTOR shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work

Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to ENGINEER for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to ENGINEER for OWNER.

6.13 *Safety and Protection*

A. CONTRACTOR shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;
2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. CONTRACTOR shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property. All damage, injury, or loss to any property referred to in paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of OWNER or ENGINEER or ENGINEER's Consultant, or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of CONTRACTOR or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them). CONTRACTOR's duties and

responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

A. CONTRACTOR shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

A. CONTRACTOR shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, CONTRACTOR is obligated to act to prevent threatened damage, injury, or loss. CONTRACTOR shall give ENGINEER prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If ENGINEER determines that a change in the Contract Documents is required because of the action taken by CONTRACTOR in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 *Shop Drawings and Samples*

A. CONTRACTOR shall submit Shop Drawings to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. All submittals will be identified as ENGINEER may require and in the number of copies specified in the General Requirements. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show ENGINEER the services, materials, and equipment CONTRACTOR proposes to provide and to enable ENGINEER to review the information for the limited purposes required by paragraph 6.17.E.

B. CONTRACTOR shall also submit Samples to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample

submittals. Each Sample will be identified clearly as to material, Supplier, pertinent data such as catalog numbers, and the use for which intended and otherwise as ENGINEER may require to enable ENGINEER to review the submittal for the limited purposes required by paragraph 6.17.E. The numbers of each Sample to be submitted will be as specified in the Specifications.

C. Where a Shop Drawing or Sample is required by the Contract Documents or the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER as required by paragraph 2.07, any related Work performed prior to ENGINEER's review and approval of the pertinent submittal will be at the sole expense and responsibility of CONTRACTOR.

D. *Submittal Procedures*

1. Before submitting each Shop Drawing or Sample, CONTRACTOR shall have determined and verified:

a. all field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

b. all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;

c. all information relative to means, methods, techniques, sequences, and procedures of construction and safety precautions and programs incident thereto; and

d. CONTRACTOR shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

2. Each submittal shall bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's obligations under the Contract Documents with respect to CONTRACTOR's review and approval of that submittal.

3. At the time of each submittal, CONTRACTOR shall give ENGINEER specific written notice of such variations, if any, that the Shop Drawing or Sample submitted may have from the requirements of the Contract Documents, such notice to be in a written communication separate from the submittal; and, in addition, shall cause a specific notation to be made on each Shop

Drawing and Sample submitted to ENGINEER for review and approval of each such variation.

E. *ENGINEER's Review*

1. ENGINEER will timely review and approve Shop Drawings and Samples in accordance with the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER. ENGINEER's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. ENGINEER's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. ENGINEER's review and approval of Shop Drawings or Samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to each such variation at the time of each submittal as required by paragraph 6.17.D.3 and ENGINEER has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for complying with the requirements of paragraph 6.17.D.1.

F. *Resubmittal Procedures*

1. CONTRACTOR shall make corrections required by ENGINEER and shall return the required number of corrected copies of Shop Drawings and submit as required new Samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous submittals.

6.18 *Continuing the Work*

A. CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except

as permitted by paragraph 15.04 or as OWNER and CONTRACTOR may otherwise agree in writing.

6.19 *CONTRACTOR's General Warranty and Guarantee*

A. CONTRACTOR warrants and guarantees to OWNER, ENGINEER, and ENGINEER's Consultants that all Work will be in accordance with the Contract Documents and will not be defective. CONTRACTOR's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors, Suppliers, or any other individual or entity for whom CONTRACTOR is responsible; or
2. normal wear and tear under normal usage.

B. CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents:

1. observations by ENGINEER;
2. recommendation by ENGINEER or payment by OWNER of any progress or final payment;
3. the issuance of a certificate of Substantial Completion by ENGINEER or any payment related thereto by OWNER;
4. use or occupancy of the Work or any part thereof by OWNER;
5. any acceptance by OWNER or any failure to do so;
6. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by ENGINEER;
7. any inspection, test, or approval by others; or
8. any correction of defective Work by OWNER.

6.20 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them from

and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage:

1. is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom; and

2. is caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not caused in part by any negligence or omission of an individual or entity indemnified hereunder or whether liability is imposed upon such indemnified party by Laws and Regulations regardless of the negligence of any such individual or entity.

B. In any and all claims against OWNER or ENGINEER or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for CONTRACTOR or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of CONTRACTOR under paragraph 6.20.A shall not extend to the liability of ENGINEER and ENGINEER's Consultants or to the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them arising out of:

1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

ARTICLE 7 - OTHER WORK

7.01 *Related Work at Site*

A. OWNER may perform other work related to the Project at the Site by OWNER's employees, or let other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to CONTRACTOR prior to starting any such other work; and

2. if OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in paragraph 10.05.

B. CONTRACTOR shall afford each other contractor who is a party to such a direct contract and each utility owner (and OWNER, if OWNER is performing the other work with OWNER's employees) proper and safe access to the Site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work and shall properly coordinate the Work with theirs. Unless otherwise provided in the Contract Documents, CONTRACTOR shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of ENGINEER and the others whose work will be affected. The duties and responsibilities of CONTRACTOR under this paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between OWNER and such utility owners and other contractors.

C. If the proper execution or results of any part of CONTRACTOR's Work depends upon work performed by others under this Article 7, CONTRACTOR shall inspect such other work and promptly report to ENGINEER in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of CONTRACTOR's Work. CONTRACTOR's failure to so report will constitute an acceptance of such other work as fit and proper for integration with CONTRACTOR's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

A. If OWNER intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;

2. the specific matters to be covered by such authority and responsibility will be itemized; and

3. the extent of such authority and responsibilities will be provided.

B. Unless otherwise provided in the Supplementary Conditions, OWNER shall have sole authority and responsibility for such coordination.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, OWNER shall issue all communications to CONTRACTOR through ENGINEER.

8.02 *Replacement of ENGINEER*

A. In case of termination of the employment of ENGINEER, OWNER shall appoint an engineer to whom CONTRACTOR makes no reasonable objection, whose status under the Contract Documents shall be that of the former ENGINEER.

8.03 *Furnish Data*

A. OWNER shall promptly furnish the data required of OWNER under the Contract Documents.

8.04 *Pay Promptly When Due*

A. OWNER shall make payments to CONTRACTOR promptly when they are due as provided in paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

A. OWNER's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.01 and 4.05. Paragraph 4.02 refers to OWNER's identifying and making available to CONTRACTOR copies of reports of explorations

and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by ENGINEER in preparing the Contract Documents.

8.06 *Insurance*

A. OWNER's responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

A. OWNER is obligated to execute Change Orders as indicated in paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

A. OWNER's responsibility in respect to certain inspections, tests, and approvals is set forth in paragraph 13.03.B.

8.09 *Limitations on OWNER's Responsibilities*

A. The OWNER shall not supervise, direct, or have control or authority over, nor be responsible for, CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. OWNER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

A. OWNER's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

A. If and to the extent OWNER has agreed to furnish CONTRACTOR reasonable evidence that financial arrangements have been made to satisfy OWNER's obligations under the Contract Documents, OWNER's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *OWNER'S Representative*

A. ENGINEER will be OWNER's representative during the construction period. The duties and responsibilities and the limitations of authority of ENGINEER as OWNER's representative during construction are set forth in the Contract Documents and will not be changed without written consent of OWNER and ENGINEER.

9.02 *Visits to Site*

A. ENGINEER will make visits to the Site at intervals appropriate to the various stages of construction as ENGINEER deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of CONTRACTOR's executed Work. Based on information obtained during such visits and observations, ENGINEER, for the benefit of OWNER, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. ENGINEER will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. ENGINEER's efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, ENGINEER will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against defective Work.

B. ENGINEER's visits and observations are subject to all the limitations on ENGINEER's authority and responsibility set forth in paragraph 9.10, and particularly, but without limitation, during or as a result of ENGINEER's visits or observations of CONTRACTOR's Work ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

A. If OWNER and ENGINEER agree, ENGINEER will furnish a Resident Project Representative to assist ENGINEER in providing more extensive observation of the Work. The responsibilities and authority and limitations thereon of any such Resident Project Representative and assistants will be as provided in paragraph 9.10 and in the Supplementary Conditions. If OWNER designates another

representative or agent to represent OWNER at the Site who is not ENGINEER's Consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Clarifications and Interpretations*

A. ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents as ENGINEER may determine necessary, which shall be consistent with the intent of and reasonably inferable from the Contract Documents. Such written clarifications and interpretations will be binding on OWNER and CONTRACTOR. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a written clarification or interpretation, a Claim may be made therefor as provided in paragraph 10.05.

9.05 *Authorized Variations in Work*

A. ENGINEER may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on OWNER and also on CONTRACTOR, who shall perform the Work involved promptly. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of a Field Order, a Claim may be made therefor as provided in paragraph 10.05.

9.06 *Rejecting Defective Work*

A. ENGINEER will have authority to disapprove or reject Work which ENGINEER believes to be defective, or that ENGINEER believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. ENGINEER will also have authority to require special inspection or testing of the Work as provided in paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.07 *Shop Drawings, Change Orders and Payments*

A. In connection with ENGINEER's authority as to Shop Drawings and Samples, see paragraph 6.17.

B. In connection with ENGINEER's authority as to Change Orders, see Articles 10, 11, and 12.

C. In connection with ENGINEER's authority as to Applications for Payment, see Article 14.

9.08 *Determinations for Unit Price Work*

A. ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. ENGINEER will review with CONTRACTOR the ENGINEER's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). ENGINEER's written decision thereon will be final and binding (except as modified by ENGINEER to reflect changed factual conditions or more accurate data) upon OWNER and CONTRACTOR, subject to the provisions of paragraph 10.05.

9.09 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work, the quantities and classifications of Unit Price Work, the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, and Claims seeking changes in the Contract Price or Contract Times will be referred initially to ENGINEER in writing, in accordance with the provisions of paragraph 10.05, with a request for a formal decision.

B. When functioning as interpreter and judge under this paragraph 9.09, ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by ENGINEER pursuant to this paragraph 9.09 with respect to any such Claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.07) will be a condition precedent to any exercise by OWNER or CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such Claim, dispute, or other matter.

9.10 *Limitations on ENGINEER's Authority and Responsibilities*

A. Neither ENGINEER's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority

or responsibility or the undertaking, exercise, or performance of any authority or responsibility by ENGINEER shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by ENGINEER to CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. ENGINEER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

C. ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. ENGINEER's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.

E. The limitations upon authority and responsibility set forth in this paragraph 9.10 shall also apply to ENGINEER's Consultants, Resident Project Representative, and assistants.

ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

A. Without invalidating the Agreement and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Written Amendment, a Change Order, or a Work Change Directive. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If OWNER and CONTRACTOR are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change

Directive, a Claim may be made therefor as provided in paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

A. CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in paragraph 3.04, except in the case of an emergency as provided in paragraph 6.16 or in the case of uncovering Work as provided in paragraph 13.04.B.

10.03 *Execution of Change Orders*

A. OWNER and CONTRACTOR shall execute appropriate Change Orders recommended by ENGINEER (or Written Amendments) covering:

1. changes in the Work which are: (i) ordered by OWNER pursuant to paragraph 10.01.A, (ii) required because of acceptance of defective Work under paragraph 13.08.A or OWNER's correction of defective Work under paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by ENGINEER pursuant to paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 6.18.A.

10.04 *Notification to Surety*

A. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR's responsibility. The amount of each applicable Bond will be adjusted to reflect the effect of any such change.

10.05 *Claims and Disputes*

A. *Notice:* Written notice stating the general nature of each Claim, dispute, or other matter shall be delivered by the claimant to ENGINEER and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. Notice of the amount or extent of the Claim, dispute, or other matter with supporting data shall be delivered to the ENGINEER and the other party to the Contract within 60 days after the start of such event (unless ENGINEER allows additional time for claimant to submit additional or more accurate data in support of such Claim, dispute, or other matter). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to ENGINEER and the claimant within 30 days after receipt of the claimant's last submittal (unless ENGINEER allows additional time).

B. *ENGINEER's Decision:* ENGINEER will render a formal decision in writing within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any. ENGINEER's written decision on such Claim, dispute, or other matter will be final and binding upon OWNER and CONTRACTOR unless:

1. an appeal from ENGINEER's decision is taken within the time limits and in accordance with the dispute resolution procedures set forth in Article 16; or

2. if no such dispute resolution procedures have been set forth in Article 16, a written notice of intention to appeal from ENGINEER's written decision is delivered by OWNER or CONTRACTOR to the other and to ENGINEER within 30 days after the date of such decision, and a formal proceeding is instituted by the appealing party in a forum of competent jurisdiction within 60 days after the date of such decision or within 60 days after Substantial Completion, whichever is later (unless otherwise agreed in writing by OWNER and CONTRACTOR), to exercise such rights or remedies as the appealing party may have with respect to such Claim, dispute, or other matter in accordance with applicable Laws and Regulations.

C. If ENGINEER does not render a formal decision in writing within the time stated in paragraph 10.05.B, a decision denying the Claim in its entirety shall be deemed to have been issued 31 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.

D. No Claim for an adjustment in Contract Price or Contract Times (or Milestones) will be valid if not submitted in accordance with this paragraph 10.05.

ARTICLE 11 - COST OF THE WORK; CASH ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to CONTRACTOR will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items, and shall not include any of the costs itemized in paragraph 11.01.B.

1. Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Such employees shall include without limitation superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by OWNER.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.

3. Payments made by CONTRACTOR to Subcontractors for Work performed by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from subcontractors acceptable to OWNER and CONTRACTOR and shall deliver such bids to OWNER, who will then determine, with the advice of ENGINEER, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as CONTRACTOR's Cost of the Work and fee as provided in this paragraph 11.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

a. The proportion of necessary transportation, travel, and subsistence expenses of CONTRACTOR's employees incurred in discharge of duties connected with the Work.

b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of CONTRACTOR.

c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of ENGINEER, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

d. Sales, consumer, use, and other similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable,

and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by CONTRACTOR in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expressage, and similar petty cash items in connection with the Work.

i. When the Cost of the Work is used to determine the value of a Change Order or of a Claim, the cost of premiums for additional Bonds and insurance required because of the changes in the Work or caused by the event giving rise to the Claim.

j. When all the Work is performed on the basis of cost-plus, the costs of premiums for all Bonds and insurance CONTRACTOR is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnerships and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by CONTRACTOR, whether at the Site or in CONTRACTOR's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 11.01.A.1 or specifically covered by paragraph 11.01.A.4, all of which are to be

considered administrative costs covered by the CONTRACTOR's fee.

2. Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the Site.

3. Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.

4. Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraphs 11.01.A and 11.01.B.

C. *CONTRACTOR's Fee:* When all the Work is performed on the basis of cost-plus, CONTRACTOR's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, CONTRACTOR's fee shall be determined as set forth in paragraph 12.01.C.

D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to paragraphs 11.01.A and 11.01.B, CONTRACTOR will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to ENGINEER an itemized cost breakdown together with supporting data.

11.02 Cash Allowances

A. It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums as may be acceptable to OWNER and ENGINEER. CONTRACTOR agrees that:

1. the allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

2. CONTRACTOR's costs for unloading and handling on the Site, labor, installation costs, overhead, profit, and other expenses contemplated for the allow-

ances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

B. Prior to final payment, an appropriate Change Order will be issued as recommended by ENGINEER to reflect actual amounts due CONTRACTOR on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 Unit Price Work

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by CONTRACTOR will be made by ENGINEER subject to the provisions of paragraph 9.08.

B. Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR's overhead and profit for each separately identified item.

C. OWNER or CONTRACTOR may make a Claim for an adjustment in the Contract Price in accordance with paragraph 10.05 if:

1. the quantity of any item of Unit Price Work performed by CONTRACTOR differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

2. there is no corresponding adjustment with respect any other item of Work; and

3. if CONTRACTOR believes that CONTRACTOR is entitled to an increase in Contract Price as a result of having incurred additional expense or OWNER believes that OWNER is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 - CHANGE OF CONTRACT PRICE;
CHANGE OF CONTRACT TIMES

12.01 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order or by a Written Amendment. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the ENGINEER and the other party to the Contract in accordance with the provisions of paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of paragraph 11.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in paragraph 11.01) plus a CONTRACTOR's fee for overhead and profit (determined as provided in paragraph 12.01.C).

C. *CONTRACTOR's Fee:* The CONTRACTOR's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. for costs incurred under paragraphs 11.01.A.1 and 11.01.A.2, the CONTRACTOR's fee shall be 15 percent;

b. for costs incurred under paragraph 11.01.A.3, the CONTRACTOR's fee shall be five percent;

c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no

fixed fee is agreed upon, the intent of paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and CONTRACTOR will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

d. no fee shall be payable on the basis of costs itemized under paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

e. the amount of credit to be allowed by CONTRACTOR to OWNER for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in CONTRACTOR's fee by an amount equal to five percent of such net decrease; and

f. when both additions and credits are involved in any one change, the adjustment in CONTRACTOR's fee shall be computed on the basis of the net change in accordance with paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

A. The Contract Times (or Milestones) may only be changed by a Change Order or by a Written Amendment. Any Claim for an adjustment in the Contract Times (or Milestones) shall be based on written notice submitted by the party making the claim to the ENGINEER and the other party to the Contract in accordance with the provisions of paragraph 10.05.

B. Any adjustment of the Contract Times (or Milestones) covered by a Change Order or of any Claim for an adjustment in the Contract Times (or Milestones) will be determined in accordance with the provisions of this Article 12.

12.03 *Delays Beyond CONTRACTOR's Control*

A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of CONTRACTOR, the Contract Times (or Milestones) will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in paragraph 12.02.A. Delays beyond the control of CONTRACTOR shall include, but not be limited to, acts or neglect by OWNER, acts or neglect of utility owners or other contractors performing other work as contemplated by

Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

12.04 *Delays Within CONTRACTOR's Control*

A. The Contract Times (or Milestones) will not be extended due to delays within the control of CONTRACTOR. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of CONTRACTOR.

12.05 *Delays Beyond OWNER's and CONTRACTOR's Control*

A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of both OWNER and CONTRACTOR, an extension of the Contract Times (or Milestones) in an amount equal to the time lost due to such delay shall be CONTRACTOR's sole and exclusive remedy for such delay.

12.06 *Delay Damages*

A. In no event shall OWNER or ENGINEER be liable to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization, or to any surety for or employee or agent of any of them, for damages arising out of or resulting from:

1. delays caused by or within the control of CONTRACTOR; or
2. delays beyond the control of both OWNER and CONTRACTOR including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God, or acts or neglect by utility owners or other contractors performing other work as contemplated by Article 7.

B. Nothing in this paragraph 12.06 bars a change in Contract Price pursuant to this Article 12 to compensate CONTRACTOR due to delay, interference, or disruption directly attributable to actions or inactions of OWNER or anyone for whom OWNER is responsible.

ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 *Notice of Defects*

A. Prompt notice of all defective Work of which OWNER or ENGINEER has actual knowledge will be given

to CONTRACTOR. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 *Access to Work*

A. OWNER, ENGINEER, ENGINEER's Consultants, other representatives and personnel of OWNER, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. CONTRACTOR shall provide them proper and safe conditions for such access and advise them of CONTRACTOR's Site safety procedures and programs so that they may comply therewith as applicable.

13.03 *Tests and Inspections*

A. CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. OWNER shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by paragraphs 13.03.C and 13.03.D below;
2. that costs incurred in connection with tests or inspections conducted pursuant to paragraph 13.04.B shall be paid as provided in said paragraph 13.04.B; and
3. as otherwise specifically provided in the Contract Documents.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, CONTRACTOR shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish ENGINEER the required certificates of inspection or approval.

D. CONTRACTOR shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for OWNER's and ENGINEER's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to CONTRACTOR's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to OWNER and ENGINEER.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by CONTRACTOR without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation.

F. Uncovering Work as provided in paragraph 13.03.E shall be at CONTRACTOR's expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR's intention to cover the same and ENGINEER has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

A. If any Work is covered contrary to the written request of ENGINEER, it must, if requested by ENGINEER, be uncovered for ENGINEER's observation and replaced at CONTRACTOR's expense.

B. If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment. If it is found that such Work is defective, CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, OWNER may make a Claim therefor as provided in paragraph 10.05. If, however, such Work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Times (or Milestones), or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

13.05 *OWNER May Stop the Work*

A. If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop

the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

A. CONTRACTOR shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by ENGINEER, remove it from the Project and replace it with Work that is not defective. CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

13.07 *Correction Period*

A. If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for CONTRACTOR's use by OWNER or permitted by Laws and Regulations as contemplated in paragraph 6.11.A is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER's written instructions: (i) repair such defective land or areas, or (ii) correct such defective Work or, if the defective Work has been rejected by OWNER, remove it from the Project and replace it with Work that is not defective, and (iii) satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or repaired or may have the rejected Work removed and replaced, and all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by CONTRACTOR.

B. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that

item may start to run from an earlier date if so provided in the Specifications or by Written Amendment.

C. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

D. CONTRACTOR's obligations under this paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, OWNER (and, prior to ENGINEER's recommendation of final payment, ENGINEER) prefers to accept it, OWNER may do so. CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to OWNER's evaluation of and determination to accept such defective Work (such costs to be approved by ENGINEER as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by CONTRACTOR pursuant to this sentence. If any such acceptance occurs prior to ENGINEER's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and OWNER shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, OWNER may make a Claim therefor as provided in paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by CONTRACTOR to OWNER.

13.09 *OWNER May Correct Defective Work*

A. If CONTRACTOR fails within a reasonable time after written notice from ENGINEER to correct defective Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 13.06.A, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven days written notice to CONTRACTOR, correct and remedy any such deficiency.

B. In exercising the rights and remedies under this paragraph, OWNER shall proceed expeditiously. In

connection with such corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the Site, take possession of all or part of the Work and suspend CONTRACTOR's services related thereto, take possession of CONTRACTOR's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER's representatives, agents and employees, OWNER's other contractors, and ENGINEER and ENGINEER's Consultants access to the Site to enable OWNER to exercise the rights and remedies under this paragraph.

C. All Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by OWNER in exercising the rights and remedies under this paragraph 13.09 will be charged against CONTRACTOR, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, OWNER may make a Claim therefor as provided in paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of CONTRACTOR's defective Work.

D. CONTRACTOR shall not be allowed an extension of the Contract Times (or Milestones) because of any delay in the performance of the Work attributable to the exercise by OWNER of OWNER's rights and remedies under this paragraph 13.09.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

A. The schedule of values established as provided in paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to ENGINEER. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A. *Applications for Payments*

1. At least 20 days before the date established for each progress payment (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that OWNER has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect OWNER's interest therein, all of which must be satisfactory to OWNER.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of CONTRACTOR stating that all previous progress payments received on account of the Work have been applied on account to discharge CONTRACTOR's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. *Review of Applications*

1. ENGINEER will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to OWNER or return the Application to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application.

2. ENGINEER's recommendation of any payment requested in an Application for Payment will constitute a representation by ENGINEER to OWNER, based on ENGINEER's observations on the Site of the executed Work as an experienced and qualified design professional and on ENGINEER's review of the Application for Payment and the accompanying data and schedules, that to the best of ENGINEER's knowledge, information and belief:

a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under paragraph 9.08, and to any other qualifications stated in the recommendation); and

c. the conditions precedent to CONTRACTOR's being entitled to such payment appear to have been fulfilled in so far as it is ENGINEER's responsibility to observe the Work.

3. By recommending any such payment ENGINEER will not thereby be deemed to have represented that: (i) inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to ENGINEER in the Contract Documents; or (ii) that there may not be other matters or issues between the parties that might entitle CONTRACTOR to be paid additionally by OWNER or entitle OWNER to withhold payment to CONTRACTOR.

4. Neither ENGINEER's review of CONTRACTOR's Work for the purposes of recommending payments nor ENGINEER's recommendation of any payment, including final payment, will impose responsibility on ENGINEER to supervise, direct, or control the Work or for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for CONTRACTOR's failure to comply with Laws and Regulations applicable to CONTRACTOR's performance of the Work. Additionally, said review or recommendation will not impose responsibility on ENGINEER to make any examination to ascertain how or for what purposes CONTRACTOR has used the moneys paid on account of the Contract Price, or to determine that title to any of the Work, materials, or equipment has passed to OWNER free and clear of any Liens.

5. ENGINEER may refuse to recommend the whole or any part of any payment if, in ENGINEER's opinion, it would be incorrect to make the representations to OWNER referred to in paragraph 14.02.B.2. ENGINEER may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests,

revise or revoke any such payment recommendation previously made, to such extent as may be necessary in ENGINEER's opinion to protect OWNER from loss because:

- a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
- b. the Contract Price has been reduced by Written Amendment or Change Orders;
- c. OWNER has been required to correct defective Work or complete Work in accordance with paragraph 13.09; or
- d. ENGINEER has actual knowledge of the occurrence of any of the events enumerated in paragraph 15.02.A.

C. *Payment Becomes Due*

1. Ten days after presentation of the Application for Payment to OWNER with ENGINEER's recommendation, the amount recommended will (subject to the provisions of paragraph 14.02.D) become due, and when due will be paid by OWNER to CONTRACTOR.

D. *Reduction in Payment*

1. OWNER may refuse to make payment of the full amount recommended by ENGINEER because:

- a. claims have been made against OWNER on account of CONTRACTOR's performance or furnishing of the Work;
- b. Liens have been filed in connection with the Work, except where CONTRACTOR has delivered a specific Bond satisfactory to OWNER to secure the satisfaction and discharge of such Liens;
- c. there are other items entitling OWNER to a set-off against the amount recommended; or
- d. OWNER has actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.02.B.5.a through 14.02.B.5.c or paragraph 15.02.A.

2. If OWNER refuses to make payment of the full amount recommended by ENGINEER, OWNER must give CONTRACTOR immediate written notice (with a copy to ENGINEER) stating the reasons for such action and promptly pay CONTRACTOR any amount remaining after deduction of the amount so withheld.

OWNER shall promptly pay CONTRACTOR the amount so withheld, or any adjustment thereto agreed to by OWNER and CONTRACTOR, when CONTRACTOR corrects to OWNER's satisfaction the reasons for such action.

3. If it is subsequently determined that OWNER's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by paragraph 14.02.C.1.

14.03 *CONTRACTOR's Warranty of Title*

A. CONTRACTOR warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

14.04 *Substantial Completion*

A. When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall notify OWNER and ENGINEER in writing that the entire Work is substantially complete (except for items specifically listed by CONTRACTOR as incomplete) and request that ENGINEER issue a certificate of Substantial Completion. Promptly thereafter, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers the Work substantially complete, ENGINEER will prepare and deliver to OWNER a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. OWNER shall have seven days after receipt of the tentative certificate during which to make written objection to ENGINEER as to any provisions of the certificate or attached list. If, after considering such objections, ENGINEER concludes that the Work is not substantially complete, ENGINEER will within 14 days after submission of the tentative certificate to OWNER notify CONTRACTOR in writing, stating the reasons therefor. If, after consideration of OWNER's objections, ENGINEER considers the Work substantially complete, ENGINEER will within said 14 days execute and deliver to OWNER and CONTRACTOR a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as ENGINEER believes justified after consideration of any objections from OWNER. At the time of delivery of the tentative certificate of Substantial Completion ENGINEER will deliver to OWNER and CONTRACTOR a written recommendation as to division of responsibility.

ties pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless OWNER and CONTRACTOR agree otherwise in writing and so inform ENGINEER in writing prior to ENGINEER's issuing the definitive certificate of Substantial Completion, ENGINEER's aforesaid recommendation will be binding on OWNER and CONTRACTOR until final payment.

B. OWNER shall have the right to exclude CONTRACTOR from the Site after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

14.05 *Partial Utilization*

A. Use by OWNER at OWNER's option of any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which OWNER, ENGINEER, and CONTRACTOR agree constitutes a separately functioning and usable part of the Work that can be used by OWNER for its intended purpose without significant interference with CONTRACTOR's performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work subject to the following conditions.

1. OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees that such part of the Work is substantially complete, CONTRACTOR will certify to OWNER and ENGINEER that such part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. CONTRACTOR at any time may notify OWNER and ENGINEER in writing that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers that part of the Work to be substantially complete, the provisions of paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

2. No occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

A. Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, ENGINEER will promptly make a final inspection with OWNER and CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. *Application for Payment*

1. After CONTRACTOR has, in the opinion of ENGINEER, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, Bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in paragraph 6.12), and other documents, CONTRACTOR may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by: (i) all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by subparagraph 5.04.B.7; (ii) consent of the surety, if any, to final payment; and (iii) complete and legally effective releases or waivers (satisfactory to OWNER) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in paragraph 14.07.A.2 and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full and an affidavit of CONTRACTOR that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or OWNER's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

B. *Review of Application and Acceptance*

1. If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR's other obligations under the Contract Documents have been fulfilled, ENGINEER will, within ten days after receipt of the final Application for Payment, indicate in writing ENGINEER's recommendation of payment and present the Application for Payment to OWNER for payment. At the same time ENGINEER will also give written notice to OWNER and CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.09. Otherwise, ENGINEER will return the Application for Payment to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application for Payment.

C. *Payment Becomes Due*

1. Thirty days after the presentation to OWNER of the Application for Payment and accompanying documentation, the amount recommended by ENGINEER will become due and, when due, will be paid by OWNER to CONTRACTOR.

14.08 *Final Completion Delayed*

A. If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed, and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by OWNER against CONTRACTOR, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from CONTRACTOR's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by CONTRACTOR against OWNER other than those previously made in writing which are still unsettled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 *OWNER May Suspend Work*

A. At any time and without cause, OWNER may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to CONTRACTOR and ENGINEER which will fix the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR shall be allowed an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if CONTRACTOR makes a Claim therefor as provided in paragraph 10.05.

15.02 *OWNER May Terminate for Cause*

A. The occurrence of any one or more of the following events will justify termination for cause:

1. CONTRACTOR's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.07 as adjusted from time to time pursuant to paragraph 6.04);

2. CONTRACTOR's disregard of Laws or Regulations of any public body having jurisdiction;

3. CONTRACTOR's disregard of the authority of ENGINEER; or

4. CONTRACTOR's violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in paragraph 15.02.A occur, OWNER may, after giving CONTRACTOR (and the surety, if any) seven days written notice, terminate

the services of CONTRACTOR, exclude CONTRACTOR from the Site, and take possession of the Work and of all CONTRACTOR's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case, CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by OWNER arising out of or relating to completing the Work, such excess will be paid to CONTRACTOR. If such claims, costs, losses, and damages exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such claims, costs, losses, and damages incurred by OWNER will be reviewed by ENGINEER as to their reasonableness and, when so approved by ENGINEER, incorporated in a Change Order. When exercising any rights or remedies under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

C. Where CONTRACTOR's services have been so terminated by OWNER, the termination will not affect any rights or remedies of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

15.03 *OWNER May Terminate For Convenience*

A. Upon seven days written notice to CONTRACTOR and ENGINEER, OWNER may, without cause and without prejudice to any other right or remedy of OWNER, elect to terminate the Contract. In such case, CONTRACTOR shall be paid (without duplication of any items):

1. for completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
2. for expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
3. for all claims, costs, losses, and damages (including but not limited to all fees and charges of

engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. for reasonable expenses directly attributable to termination.

B. CONTRACTOR shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *CONTRACTOR May Stop Work or Terminate*

A. If, through no act or fault of CONTRACTOR, the Work is suspended for more than 90 consecutive days by OWNER or under an order of court or other public authority, or ENGINEER fails to act on any Application for Payment within 30 days after it is submitted, or OWNER fails for 30 days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven days written notice to OWNER and ENGINEER, and provided OWNER or ENGINEER do not remedy such suspension or failure within that time, terminate the Contract and recover from OWNER payment on the same terms as provided in paragraph 15.03. In lieu of terminating the Contract and without prejudice to any other right or remedy, if ENGINEER has failed to act on an Application for Payment within 30 days after it is submitted, or OWNER has failed for 30 days to pay CONTRACTOR any sum finally determined to be due, CONTRACTOR may, seven days after written notice to OWNER and ENGINEER, stop the Work until payment is made of all such amounts due CONTRACTOR, including interest thereon. The provisions of this paragraph 15.04 are not intended to preclude CONTRACTOR from making a Claim under paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to CONTRACTOR's stopping the Work as permitted by this paragraph.

ARTICLE 16 - DISPUTE RESOLUTION

16.01 *Methods and Procedures*

A. Dispute resolution methods and procedures, if any, shall be as set forth in the Supplementary Conditions. If no method and procedure has been set forth, and subject to the provisions of paragraphs 9.09 and 10.05, OWNER and CONTRACTOR may exercise such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any dispute.

ARTICLE 17 - MISCELLANEOUS

17.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Agreement.

17.05 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

SUPPLEMENTARY CONDITIONS TO THE STANDARD

GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (No. 1910-8, 1996 Edition) and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions will have the meanings indicated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings indicated below, which are applicable to both the singular and plural thereof.

SC-1.01 DEFINITIONS

A.43 The term SUBSTANTIAL COMPLETION is amended to mean the tank is cleaned, painted, cured, disinfected, and ready for service.

The term FINAL COMPLETION is amended to mean the tank is cleaned, painted, cured, disinfected, and ready for service and all site work, clean-up, disposal, etc. is completed.

SC-2.02 COPIES OF DOCUMENTS

Amend the first sentence of paragraph 2.02 of the General Conditions to read as follows:

A. OWNER shall furnish to CONTRACTOR up to five (5) copies of the Contract Documents as are reasonably necessary for the execution of the Work. Additional copies may be obtained from the ENGINEER for the cost of printing and delivery of the additional copies so obtained.

and as so amended paragraph 2.02 remains in effect.

SC-2.03 COMMENCEMENT OF CONTRACT TIMES; NOTICE TO PROCEED

Amend the last two sentences of paragraph 2.03 of the General Conditions to read as follows:

A. A Notice to Proceed may be given at any time after the Effective Date of the Agreement.

and as so amended paragraph 2.03 remains in effect.

SC-3.03 RESOLVING DISCREPANCIES

Add the following language at the end of paragraph 3.03.B.1.b of the General Conditions to read as follows:

B.1.c In resolving conflicts, errors and discrepancies, the ENGINEER shall give precedence in the following order, except as may be otherwise specifically stated:

1. Agreement
2. Modifications
3. Addenda
4. Supplementary Conditions
5. General Conditions
6. Detailed Technical Specifications
7. Drawings
8. CONTRACTOR'S Bid Form
9. Figure Dimensions
10. Scale Dimensions

SC-4.02 SUBSURFACE AND PHYSICAL CONDITIONS

In the preparation of Drawings and Specifications, ENGINEER has utilized:

A. The following report of exploration of conditions at the site of the Work:

- A.2 Summarized Tank Information Sheets will be made available for review and an evaluation report of the 100,000 gallon steel ground storage tank, "Coopers Mountain Tank," dated August 17, 2011; an evaluation report of the 75,000 gallon steel elevated tank, "Park View Tank," dated August 17, 2011; and an evaluation report of the 500,000 gallon steel ground storage tank, "Ridgeville Tank," dated August 18, 2011, each complete with color photographs prepared by Tank Industry Consultants covering the evaluations of the tanks are available for review in the office of the OWNER and in the office of the ENGINEER. The information contained in such sheets and reports is not considered technical in nature, rather the ENGINEER'S opinion of the condition of the site and structure. Therefore, CONTRACTOR is not entitled to rely on any information contained in such sheets and reports. Such information and reports are made available to BIDDER as a courtesy only.

It is further agreed and understood that the BIDDER or the CONTRACTOR will not use any information made available to him/her, or obtained by any examination made by him/her, in any manner as a basis or ground of claim or demand of any nature against the OWNER or ENGINEER arising from or by reason of any variance which may exist between the information offered and the actual materials and structures encountered during the construction work.

SC-5.03 CERTIFICATES OF INSURANCE

Add the following language at the end of paragraph 5.03.A. of the General Conditions to read as follows:

CONTRACTOR shall furnish a copy of the actual endorsement document to OWNER.

SC-5.04 CONTRACTOR'S LIABILITY INSURANCE

Add the following new paragraph immediately after paragraph 5.04.B:

C. Insurance Requirements

1. The CONTRACTOR will maintain a general liability policy with \$1,000,000 combined single limits. Coverage is to be on an occurrence basis with an insurer licensed to conduct business in the Commonwealth of Virginia. The insurer must have an A. M. Best rating of A- or better. The insurer must list the member locality as an additional insured. The endorsement must be issued by the insurance company. A notation on the certificate of insurance is not sufficient.
2. The CONTRACTOR will maintain workers' compensation coverage in compliance with the laws of the Commonwealth of Virginia. The coverage must have statutory limits and be with an insurer licensed to conduct business in the Commonwealth of Virginia. The insurer must have an A. M. Best rating of A- or better. As an alternative, it is acceptable for the contractor to be insured by a group self insurance association that is licensed by the Virginia Bureau of Insurance. The contractor will also carry employers liability insurance with a limit of at least \$1,000,000 bodily injury by accident/\$1,000,000 bodily injury by disease policy limit/\$1,000,000 bodily injury by disease each employee.
3. The CONTRACTOR will maintain automobile liability insurance with limits of at least \$1,000,000. The coverage is to be written with a symbol "1". The insurer must be licensed to conduct business in the Commonwealth of Virginia. The insurer must have an A. M. Best rating of A- or better.
4. The CONTRACTOR will maintain a surety bond in an amount not less than the total amount payable to the contractor for the terms of this contract. The bond will be issued by a company licensed to issue surety bonds in the Commonwealth of Virginia and has an A. M. Best rating of A- or better.
5. With all policies listed above, the insurer or agent of the insurer must issue a certificate of insurance to show evidence of coverage.

6. The following and each of their officers, directors, agents, and employees must be endorsed as additional insured on all General Liability, Automobile Liability, and Excess Liability policies.
 - a. City of Harrisonburg; and
 - b. Tank Industry Consultants
7. The Completed Operations Liability Insurance coverage required by SC-5.04 shall be provided for a period of at least two years after completion of the Project.

SC-5.07 WAIVER OF RIGHTS

Delete paragraph 5.07. of the General Conditions in its entirety.

SC-6.03 SERVICES, MATERIALS AND EQUIPMENT

Add the following sentence at the end of paragraph 6.03.A of the General Conditions to read as follows:

CONTRACTOR shall be responsible for all material furnished by OWNER and shall replace at CONTRACTOR'S expense all such material damaged in handling.

SC-6.03 QUALITY AND INSTALLATION OF MATERIALS AND EQUIPMENT

Add the following sentences at the end of paragraph 6.03.B of the General Conditions to read as follows:

In addition, all chemicals used during project construction, or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant or other classification, must show approval of either EPA or USDA. Use of all such chemicals and disposal of residues shall be in strict conformance with the instructions of the applicable Supplier except as otherwise provided in the Contract Documents.

SC-6.06 CONCERNING SUBCONTRACTORS, SUPPLIERS AND OTHERS

Add the following sentences at the beginning of paragraph 6.06.A of the General Conditions to read as follows:

- A. Subcontracting of the cleaning and/or painting shall not be allowed. If a SUBCONTRACTOR is used for other Work, the name and address of the proposed SUBCONTRACTOR shall be stated in the **Bid Form**.

00800-4

SC-6.07 PATENT FEES AND ROYALTIES

Delete the second sentence of paragraph 6.07 of the General Conditions in its entirety.

SC-6.11 USE OF SITE AND OTHER AREAS

Amend the second sentence of paragraph 6.11.C of the General Conditions to read as follows:

- C. At the completion of the Work CONTRACTOR shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition or to the satisfaction of OWNER all property not designated for alteration by the Contract Documents before final payment will be issued.

and as so amended paragraph 6.11.C remains in effect.

SC-6.11.C.1, 6.11.C.2, 6.11.C.3, 6.11.C.4 USE OF SITE AND OTHER AREAS

Add the following four (4) paragraphs immediately after paragraph 6.11.C of the General Conditions to read as follows:

- C.1. In addition to the cleaning up requirements set forth in the General Conditions, CONTRACTOR shall keep the working areas free at all times of tools, materials and equipment not essential to the progress of the work. Debris, waste materials, and rubbish shall be properly disposed of and not allowed to accumulate. If CONTRACTOR should fail to do this, OWNER will make necessary arrangements to effect the cleanup by others and will back charge the cost to CONTRACTOR. If such action becomes necessary on the part of and in the opinion of OWNER, OWNER will not be responsible for the inadvertent removal of material which CONTRACTOR would not have disposed of had CONTRACTOR effected the required cleanup.
- C.2. Where material or debris has washed or flowed into or been placed in watercourses, ditches, gutters, drains, catch-basins, or elsewhere as result of CONTRACTOR'S operations, such material or debris shall be entirely removed and satisfactorily disposed of during progress of the Work, and the ditches, channels, drains, etc., kept in a clean and neat condition.
- C.3. CONTRACTOR shall restore or replace; when and as directed, any public or private property damaged by his/her work, equipment, or employees to a condition at least equal to that existing immediately prior to the beginning of operations. Suitable materials, equipment, and methods shall be used for such restoration. Final payment for this Contract shall be withheld until all claims are resolved.
- C.4. CONTRACTOR shall provide chemical toilet and wash-up facilities immediately adjacent to the tank. The facilities shall be kept clean, in sanitary working condition, and shall be free of offensive odors. Upon completion of the work, the facilities shall be removed from the site.

00800-5

SC-6.13 SAFETY AND PROTECTION

Amend the first sentence of paragraph 6.13.B of the General Conditions to read as follows:

- B. CONTRACTOR shall comply with all applicable Laws and Regulations (including, but not limited to all rules and regulations promulgated under OSHA and the State where the Work is to be performed) relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection.

and as so amended paragraph 6.13.B remains in effect.

SC-6.20 INDEMNIFICATION

Add the following paragraphs immediately after paragraph 6.20.C of the General Conditions to read as follows:

- C.3. Limitation of Liability: The CONTRACTOR and all Subcontractors agree to limit the liability of the OWNER and ENGINEER, due to the ENGINEER'S professional negligent acts, errors, or omissions, such that the total aggregate liability of the OWNER and ENGINEER to those named shall not exceed fifty thousand dollars (\$50,000), or 5% of the contract award amount, whichever is greater.
- C.4. The CONTRACTOR agrees to protect, defend, and save harmless the OWNER and ENGINEER against any demand for payment for the use of any patented material, process, article, or device that may enter into the manufacture, construction, or form a part of the work covered by this agreement; and the CONTRACTOR further agrees to indemnify and save harmless the OWNER and ENGINEER from suits or actions of every nature and description brought against them for, or on account of any injuries or damages received or sustained by any party or parties, by, or from the acts or omissions of the CONTRACTOR, his/her servants, or agents.

SC-14.02 APPLICATIONS FOR PAYMENTS

Delete paragraph 14.02.A.1 of the General Conditions in its entirety and insert the following in its place:

- A.1. At least twenty days before each progress payment is scheduled (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. Payment for bonds, insurance, design, drawings, mobilization, containment of the cleaning and/or painting debris, and materials and equipment not incorporated into the Work shall not be allowed.

00800-6

SC-14.04 SUBSTANTIAL COMPLETION

Amend the first sentence of paragraph 14.04.A. of the General Conditions to read as follows:

When CONTRACTOR considers the tank ready for its intended use (the structure is painted, the paint is cured, the structure is disinfected, and the structure is ready for service) CONTRACTOR shall notify OWNER and ENGINEER in writing that the tank is substantially complete (except for items specifically listed by CONTRACTOR as incomplete) and request that ENGINEER issue a certificate of Substantial Completion for the tank. Substantial completion date shall be considered when disinfection is accomplished. However if the laboratory test results are not satisfactory, then the additional days required to re-disinfect and purge the tank of bacteria or any VOC's shall be considered as calendar days until additional samples are submitted for laboratory testing. One tank of water for the disinfection shall be furnished by the OWNER at no charge to the CONTRACTOR. Additional water shall be furnished at current municipal water rates charged by the OWNER and shall be paid for by the CONTRACTOR.

and as so amended paragraph 14.04.A. remains in effect.

END OF SUPPLEMENTARY CONDITIONS

00800-7

GENERAL TERMS AND CONDITIONS FOR THE CITY OF HARRISONBURG, VA

PURCHASING AND CONTRACTING MANUAL: This solicitation is subject to the provisions of The Purchasing and Contracting Policy Manual for the City of Harrisonburg (City) and any revisions thereto, which are hereby incorporated into this contract in their entirety. A copy of the manual is available for review at www.Harrisonburgva.gov/bids.

APPLICABLE LAWS AND COURTS: This solicitation and any resulting contract shall be governed in all respects by the laws of the Commonwealth of Virginia and any litigation with respect thereto shall be brought in the courts of the Commonwealth. The contractor shall comply with all applicable federal, state and local laws, rules and regulations.

ANTI-DISCRIMINATION: By submitting their (bids/proposals), (bidders/offerors) certify to the City that they will conform to the provisions of the Federal Civil Rights Act of 1964, as amended, as well as the Virginia Fair Employment Contracting Act of 1975, as amended, where applicable, the Virginians With Disabilities Act, the Americans With Disabilities Act and 2.2-4311 of the *Virginia Public Procurement Act*.

In every contract over \$10,000 the provisions below apply:

1. During the performance of this contract, the contractor agrees as follows:
 - a. The contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the contractor. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
 - b. The contractor, in all solicitations or advertisements for employees placed by or on behalf of the contractor, will state that such contractor is an equal opportunity employer.
 - c. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting these requirements.

The contractor will include the provisions of 1. above in every subcontract or purchase order over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.

2. The City does not discriminate against small and minority businesses or faith based organizations.

ETHICS IN PUBLIC CONTRACTING: By submitting their (bids/proposals), (bidders/offerors) certify that their (bids/proposals) are made without collusion or fraud and that they have not offered or received any kickbacks or inducements from any other (bidder/offeror), supplier, manufacturer or subcontractor in connection with their (bid/proposal), and that they have not conferred on any public employee having official responsibility for this procurement transaction any payment, loan, subscription, advance, deposit of money, services or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value was exchanged.

IMMIGRATION REFORM AND CONTROL ACT OF 1986: By submitting their (bids/proposals), (bidders/offerors) certify that they do not and will not during the performance of this contract employ illegal alien workers or otherwise violate the provisions of the federal Immigration Reform and Control Act of 1986.

DEBARMENT STATUS: By submitting their (bids/proposals), (bidders/offerors) certify that they are not currently debarred by the Commonwealth of Virginia from submitting bids or proposals on contracts for the type of goods and/or services covered by this solicitation, nor are they an agent of any person or entity that is currently so debarred.

ANTITRUST: By entering into a contract, the contractor conveys, sells, assigns, and transfers to the City all rights, title and interest in and to all causes of action it may now have or hereafter acquire under the antitrust laws of the United States and the Commonwealth of Virginia, relating to the particular goods or services purchased or acquired by the City under said contract.

MANDATORY USE OF CITY FORM AND TERMS AND CONDITIONS FOR IFBs AND RFPs

1. **(For Invitation For Bids(ITB):)** Failure to submit a bid on the form provided, (if provided) shall be a cause for rejection of the bid. Modification of or additions to any portion of the Invitation for Bids may be cause for rejection of the bid; however, the City reserves the right to decide, on a case by case basis, in its sole discretion, whether to reject such a bid as nonresponsive. As a precondition to its acceptance, the City may, in its sole discretion, request that the bidder withdraw or modify nonresponsive portions of a bid which do not affect quality, quantity, price, or delivery. No modification of or addition to the provisions of the contract shall be effective unless reduced to writing and signed by the parties.
2. **(For Request For Proposals(RFP):)** Failure to submit a proposal on the form provided, (if provided) shall be a cause for rejection of the bid. Modification of or additions to the General Terms and Conditions of the solicitation may be cause for rejection of the proposal; however, the City reserves the right to decide, on a case by case basis, in its sole discretion, whether to reject such a proposal.

REVISIONS TO THE OFFICIAL ITB/RFP: No offeror shall modify, revise, edit or make any unauthorized change(s) to the original Official Invitation to Bid (ITB) or Official Request for Proposal (RFP). The Official solicitation document and the Addenda(s) are the documents posted on the City of Harrisonburg's web site and/or authorized by the City

of Harrisonburg's Purchasing Agent. Any such violation as stated above may result in rejection of the ITB/RFP response. In addition, violations may result in the debarment of the offeror by the City of Harrisonburg.

CLARIFICATION OF TERMS: If any prospective (bidder/offeror) has questions about the specifications or other solicitation documents, the prospective (bidder/offeror) should contact the person whose name appears on the face of the solicitation no later than five working days before the due date. Any revisions to the solicitation will be made only by addendum issued by the buyer.

PAYMENT:

1. **To Prime Contractor:**

- a. Invoices for items ordered, delivered and accepted shall be submitted by the contractor directly to the payment address shown on the purchase order/contract. All invoices shall show the purchase order number; social security number (for individual contractors) or the federal employer identification number (for proprietorships, partnerships, and corporations).
- b. Any payment terms requiring payment in less than 30 days will be regarded as requiring payment 30 days after invoice or delivery, whichever occurs last. This shall not affect offers of discounts for payment in less than 30 days, however.
- c. All goods or services provided under this contract or purchase order, that are to be paid for with public funds, shall be billed by the contractor at the contract price.
- d. The following shall be deemed to be the date of payment: the date of postmark in all cases where payment is made by mail, or the date of offset when offset proceedings have been instituted as authorized under the Virginia Debt Collection Act.
- e. Individual contractors shall provide their social security numbers, and proprietors, partnerships, and corporations shall provide the City with a federal employer identification number, prior to receiving any payment from the City.
- f. **Unreasonable Charges.** Under certain emergency procurements and for most time and material purchases, final job costs cannot be accurately determined at the time orders are placed. In such cases, contractors should be put on notice that final payment in full is contingent on a determination of reasonableness with respect to all invoiced charges. Charges which appear to be unreasonable will be researched and challenged, and that portion of the invoice held in abeyance until a settlement can be reached. Upon determining that invoiced as to those charges which it considers unreasonable and the basis for the

determination. A contractor may not institute legal action unless a settlement cannot be reached within thirty (30) days of notification. The provisions of this section do not relieve the City of its prompt payment obligations with respect to those charges which are not in dispute (*Code of Virginia, 2.2.4363*).

2. To Subcontractors:

a. A contractor awarded a contract under this solicitation is hereby obligated:

(1) To pay the subcontractor(s) within seven (7) days of the contractor's receipt of payment from the City for the proportionate share of the payment received for work performed by the subcontractor(s) under the contract; or

(2) To notify the City and the subcontractor(s), in writing, of the contractor's intention to withhold payment and the reason.

b. The contractor is obligated to pay the subcontractor(s) interest at the rate of one percent per month (unless otherwise provided under the terms of the contract) on all amounts owed by the contractor that remain unpaid seven (7) days following receipt of payment from the City, except for amounts withheld as stated in (2) above. The date of mailing of any payment by U. S. Mail is deemed to be payment to the addressee. These provisions apply to each sub-tier contractor performing under the primary contract. A contractor's obligation to pay an interest charge to a subcontractor may not be construed to be an obligation of the City.

PRECEDENCE OF TERMS: General Terms and Conditions shall apply in all instances. In the event there is a conflict between any of the other General Terms and Conditions and any Special Terms and Conditions in this solicitation, the Special Terms and Conditions shall apply.

QUALIFICATIONS OF (BIDDERS/OFFERORS): The City may make such reasonable investigations as deemed proper and necessary to determine the ability of the (bidder/offeror) to perform the services/furnish the goods and the (bidder/offeror) shall furnish to the City all such information and data for this purpose as may be requested. The City reserves the right to inspect (bidder's/offeror's) physical facilities prior to award to satisfy questions regarding the (bidder's/offeror's) capabilities. The City further reserves the right to reject any (bid/ proposal) if the evidence submitted by, or investigations of, such (bidder/offeror) fails to satisfy the City that such (bidder/offeror) is properly qualified to carry out the obligations of the contract and to provide the services and/or furnish the goods contemplated therein.

TESTING AND INSPECTION: The City reserves the right to conduct any test/inspection it may deem advisable to assure goods and services conform to the specifications.

ASSIGNMENT OF CONTRACT: A contract shall not be assignable by the contractor in whole or in part without the written consent of the City.

CHANGES TO THE CONTRACT: Changes can be made to the contract in any of the following ways:

1. The parties may agree in writing to modify the scope of the contract. An increase or decrease in the price of the contract resulting from such modification shall be agreed to by the parties as a part of their written agreement to modify the scope of the contract.
2. The Purchasing Agent or City delegated agent may order changes within the general scope of the contract at any time by written notice to the contractor. Changes within the scope of the contract include, but are not limited to, things such as services to be performed, the method of packing or shipment, and the place of delivery or installation. The contractor shall comply with the notice upon receipt. The contractor shall be compensated for any additional costs incurred as the result of such order and shall give the City a credit for any savings.

DEFAULT: In case of failure to deliver goods or services in accordance with the contract terms and conditions, the City, after due oral or written notice, may procure them from other sources and hold the contractor responsible for any resulting additional purchase and administrative costs. This remedy shall be in addition to any other remedies, which the City may have.

CANCELLATION OF THE CONTRACT: The City may terminate any agreement resulting from this solicitation at any time, for any reason or for no reason, upon thirty days advance written notice to the Contractor. In the event of such termination the Contractor shall be compensated for services and work performed prior to termination.

TAXES: Sales to the City of Harrisonburg are normally exempt from State sales tax. State sales and use tax certificates of exemption, Form ST-12, will be issued upon request.

(NOT NORMALLY REQUIRED FOR SERVICE CONTRACTS)

USE OF BRAND NAMES: Unless otherwise provided in this solicitation, the name of a certain brand, make or manufacturer does not restrict (bidders/offerors) to the specific brand, make or manufacturer named, but conveys the general style, type, character, and quality of the article desired. Any article which the public body, in its sole discretion, determines to be the equal of that specified, considering quality, workmanship, economy of operation, and suitability for the purpose intended, shall be accepted. The (bidder/offeror) is responsible to clearly and specifically identify the product being offered and to provide sufficient descriptive literature, catalog cuts and technical detail to enable the City to determine if the product offered meets the requirements of the solicitation. This is required even if offering the exact brand, make or manufacturer specified. Normally in competitive sealed bidding only the information furnished with the bid will be considered in the evaluation. Failure to furnish adequate data for evaluation purposes may result in declaring a bid nonresponsive. Unless the (bidder/offeror) clearly indicates in its (bid/proposal) that the product offered is an "equal" product, such (bid/proposal) will be considered to offer the brand name product referenced in the solicitation.**(NOT NORMALLY REQUIRED FOR SERVICE CONTRACTS)**

TRANSPORTATION AND PACKAGING: By submitting their (bids/proposals), all (bidders/offerors) certify and warrant that the price offered for FOB destination includes only the actual freight rate costs at the lowest and best rate and is based upon the actual weight of the goods to be shipped. Except as otherwise specified herein, standard commercial packaging, packing and shipping containers shall be used. All shipping containers shall be legibly marked or labeled on the outside with purchase order number, commodity description, and quantity.**(NOT NORMALLY REQUIRED FOR SERVICE CONTRACTS)**

INSURANCE: By signing and submitting a bid or proposal under this solicitation, the bidder or offeror certifies that if awarded the contract, it will have insurance coverages per the solicitation document at the time the contract is awarded. For construction contracts, if any subcontractors are involved, the subcontractor will have workers' compensation insurance in accordance with 2.2-4332 and 65.2-800 et seq. of the *Code of Virginia*. The bidder or offeror further certifies that the contractor and any subcontractors will maintain these insurance coverages during the entire term of the contract and that all insurance coverages will be provided by insurance companies authorized to sell insurance in Virginia by the Virginia State Corporation Commission. **(NOT NORMALLY REQUIRED FOR GOODS CONTRACTS. INSURANCE IS REQUIRED WHEN WORK IS TO BE PERFORMED ON CITY OWNED OR LEASED FACILITIES OR PROPERTY.)**

AVAILABILITY OF FUNDS: Agreements are made subject to the appropriation of funds by the Harrisonburg City Council and are null and void in the event of non-appropriation by the City Council. Non-appropriation of funds shall not be deemed a cancellation and shall terminate this agreement without recourse and with no liability on the part of the City.

SELECTION PROCESS/AWARD: Upon the award or the announcement of the decision to award a contract as a result of this solicitation, the department will publicly post such notice for a minimum of ten (10) days, or will notify all responsive bidders/offerors.

BID/PROPOSAL ACCEPTANCE PERIOD: Any bid/proposal resulting from this solicitation shall be valid for (30) days. At the end of the (30) days the bid/proposal may be withdrawn at the written request of the Bidder/Offeror. If the bid or proposal is not withdrawn at that time it remains in effect until an award is made or the solicitation is canceled.

EXCUSABLE DELAY: The City shall not be in default of any failure in performance of this agreement in accordance with its terms if such failure arises out of causes beyond its reasonable control and without the fault of or negligence of the City. Such causes may include, but are not restricted to acts of God or the public enemy, fires, flood, epidemics, quarantine restrictions, strikes, freight embargoes, and usually severe weather, but in every case the failure to perform must be beyond the reasonable control and without the fault or negligence of the City.

DRUG-FREE WORKPLACE: During the performance of this contract, the contractor agrees to (i) provide a drug-free workplace for the contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement

notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the contractor that the contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.

SAFETY and OSHA STANDARDS: All parties performing services for the City shall comply with all Occupational Safety and Health Administration (OSHA), State Occupational Health Standards, and any other applicable rules and regulations. All parties shall be held responsible for the training, supervision, and safety of their employees. Any unsafe acts or hazardous conditions that may cause injury or damage to any persons or property within and around the work site areas under this contract shall be remedied per the regulatory agency's guidelines.

PERMITS AND FEES: All proposals submitted shall have included in price the cost of any business or professional licenses, permits or fees required by the City of Harrisonburg or the Commonwealth of Virginia. The offeror must have all necessary licenses to perform the services in Virginia and, if practicing as a corporation, be authorized to do business in the Commonwealth of VA.

COOPERATIVE PROCUREMENT: This procurement is being conducted on behalf of other public bodies, in accordance with 2.2-4304 (A) of the Code of VA. The successful bidder has the option to provide these same items (services), except architectural and engineering services, at the same prices, awarded as a result of this solicitation to any public body within the Commonwealth of Virginia. If any other Public body decides to use the final contract, the contractor(s) must deal directly with that public body concerning the placement of orders, issuance of the purchase orders, contractual disputes, invoicing and payment. Failure to extend a contract to any public body will have no effect on consideration of your bid.

STATE CORPORATION COMMISSION IDENTIFICATION NUMBER: Pursuant to Code of VA 2.2-4311.2 subsection B, a bidder or offeror organized or authorized to transact business in the Commonwealth pursuant to Title 13.1 or Title 50 is required to include in its bid or proposal the identification number issued to it by the State Corporation Commission (SCC). Any bidder or offeror that is not required to be authorized to transact business in the Commonwealth as a foreign business entity under Title 13.1 or Title 50 or as otherwise required by law is required to include in its bid or proposal a statement describing why the bidder or offeror is not required to be so authorized. Link to the SCC site is <http://www.scc.virginia.gov>.

DETAILED TECHNICAL SPECIFICATIONS

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Repairing and Repainting the Interior and Exterior of One 100,000 Gallon Steel Ground Storage Tank “Coopers Mountain Tank” and Modifications to One 75,000 Gallon Steel Elevated Tank “Park View Tank” and One 500,000 Gallon Steel Ground Storage Tank “Ridgeville Tank” Harrisonburg, Virginia

A. Terminology

Whenever a reference is made to the "tank" or "tanks" in these specifications, the reference shall be considered made to all tanks unless specifically excluded or stipulated otherwise.

B. Description of Tanks

Coopers Mountain Tank (TIC E450.013): The 100,000 gallon steel ground storage tank is located at 9111 Rawley Pike in Harrisonburg, Virginia. The tank is approximately 26 ft in diameter and has an approximately 25 ft 6 in. shell height. The tank is of welded steel construction with a column and rafter supported roof and sphericon knuckle.

Park View Tank (TIC E450.004): The 75,000 gallon steel elevated tank is located at 979 Summit Avenue in Harrisonburg, Virginia. The tank is approximately 50 ft to bottom capacity level and approximately 30 ft in diameter. It is a 4-column double-ellipsoidal elevated tank of welded steel construction. The tank was erected by R. D. Cole Mfg. Co. in 1960.

Ridgeville Tank (TIC E450.005): The 500,000 gallon steel ground storage tank is located off of Blue Stone Hills Drive in Harrisonburg, Virginia. The tank is approximately 60 ft in diameter and has an approximately 24 ft shell height. The tank is of welded steel construction with a column and rafter supported roof.

C. Scope of Work

Coopers Mountain Tank (TIC E450.013): Bids will be solicited for the complete cleaning and repainting of the tank on the interior surfaces, and the complete cleaning and repainting of the exterior surfaces with containment. Additional Work items include: repair of concrete; installation of second shell manhole, davits for shell manhole covers, overflow pipe, exterior shell ladder, ladder safe-climbing device, vandal deterrent, roof safety railing, and clog-resistant vent; removal of interior painter's rail and interior ladder; including other miscellaneous repairs and incidental items such as coordination with the OWNER, first anniversary evaluation, disposal of debris, site restoration, etc.

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Park View Tank (TIC E450.004): A Bid Item will be solicited for the furnishing and installation of a new overflow pipe, concrete splash pad, antenna mounting bracket, roof manhole, and clog-resistant vent; modification of the revolving shell and roof ladder to be stationary; and spot cleaning and spot coating new items and areas damaged during the work; including other miscellaneous repairs and incidental items such as coordination with the OWNER, first anniversary evaluation, disposal of debris, site restoration, etc.

Ridgeville Tank (TIC E450.005): A Bid Item will be solicited for the furnishing and installation of a new angled overflow pipe section, elastomeric check valve, concrete splash pad, roof manhole, and clog-resistant vent; modification of the revolving roof ladder to be stationary; and spot cleaning and spot coating new items and areas damaged during the work; including other miscellaneous repairs and incidental items such as coordination with the OWNER, first anniversary evaluation, disposal of debris, site restoration, etc.

The above descriptions shall serve as general information only and shall not be construed to limit the contractor's responsibility or obligation to comply with the Contract Documents and Detailed Technical Specifications. The Bidder is referred to the following Detailed Technical Specifications for the complete scope of Work.

D. Definition of Parties

The term OWNER in this specification shall mean the City of Harrisonburg, 2155 Beery Road, Harrisonburg, Virginia 22801.

The term PROJECT REPRESENTATIVE in this specification shall mean Mr. David H. Gray, P.E., City of Harrisonburg, 2155 Beery Road, Harrisonburg, Virginia 22801, telephone 540/434-9959, FAX 540/434-9769. The OWNER may be contacted through the PROJECT REPRESENTATIVE.

The term ENGINEER in this specification shall mean Tank Industry Consultants - Headquarters: 7740 West New York Street, Indianapolis, Indiana 46214-2988, telephone 317/271-3100, FAX 317/271-3300.

The term FIELD OBSERVER in this specification shall mean Tank Industry Consultants - Headquarters: 7740 West New York Street, Indianapolis, Indiana 46214-2988, telephone 317/271-3100, FAX 317/271-3300; or another designated representative of the OWNER.

The term CONTRACTOR'S COMPETENT PERSON(S) in this specification shall mean a representative of the CONTRACTOR who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to

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employees, and who has authorization to take prompt corrective measures to eliminate them. The name(s) of the CONTRACTOR'S COMPETENT PERSON(S) shall be submitted for review prior to performing any Work.

E. Evaluation Reports and Site Inspections by Bidder

Summarized Tank Information Sheets shall be made available to all Bidders. An evaluation report of the 100,000 gallon steel ground storage tank, “Coopers Mountain Tank,” dated August 17, 2011; an evaluation report of the 75,000 gallon steel elevated tank, “Park View Tank,” dated August 17, 2011; and an evaluation report of the 500,000 gallon steel ground storage tank, “Ridgeville Tank,” dated August 18, 2011, each complete with color photographs, may be reviewed at the office of the PROJECT REPRESENTATIVE; or at the office of the ENGINEER, by appointment. Interpretation of this data is the responsibility of the Bidder. Although reasonable care was used in making and reporting these evaluations and the Summarized Tank Information Sheets, conditions may be encountered which vary from those as reported therein. **Submitting a Bid on the forms bound with the Contract Documents shall acknowledge that the tanks and sites have been inspected by the Bidder and the evaluation reports have been reviewed by the Bidder or that the right to do so has been waived.** Persons desiring to access the tank must provide evidence of insurance coverage to the OWNER as outlined in the Supplementary Conditions of the Contract Documents. Any bidder wishing to setup a date and time for inspection of the site(s) must contact the PROJECT REPRESENTATIVE.

F. Additional Insured

The CONTRACTOR shall list 1) City of Harrisonburg; 2) Tank Industry Consultants; and each of their officers, agents, and employees as additional insured on all insurance policies (except worker's compensation and employers' liability) and coverage which are required by the OWNER as specified in the Contract Documents. CONTRACTOR must provide Certificate of Insurance and copy of the actual endorsement to the OWNER.

G. General Specifications for Repairing and Repainting the Tank

1. Submittals: Five sets of Submittals shall be submitted to the ENGINEER for review at least two weeks prior to performing any Work. Submittals shall at a minimum include the items listed on the Submittal Check List included with these Specifications. A separate cover sheet such as the form bound in these Specifications, including the Item Number from the Submittal Check List, the Specification Section of reference for each submittal, and a brief description of each submittal included, shall be provided by the CONTRACTOR for each

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separate item submitted. Review of these submittals shall not relieve the CONTRACTOR from responsibility for compliance with the specifications or for the adequacy of the repair, cleaning, and/or painting methods. The CONTRACTOR shall incorporate the submittal review process time and make the necessary scheduling adjustments so that completion of the Work within the Contract Time is not affected.

2. Repair Standards: All design and repairs shall be in accordance with the local building code. All design and welding shall be done in accordance with AWWA D100-11 Standard for Welded Steel Tanks for Water Storage. Where tolerances, stresses, details, and modifications are not limited or provided by the AWWA Standard, the applicable sections of the following American Petroleum Institute (API) Standards shall apply. Unless otherwise specified, all steel structural and bar components shall be fabricated from new ASTM A-36 material, all steel plate components shall be fabricated from new ASTM A-36 material, and all steel pipe shall be fabricated from new ASTM A-53 material.
 - a. API Standard 650, 11th Edition (Addendum 2 – May 2010) – “Welded Steel Tanks for Oil Storage”
 - b. API Standard 653, 4th Edition (Addendum 2 – January 2012) – “Tank Inspection, Repair, Alteration, and Reconstruction”

3. Painting Standards: All Work shall be done in accordance with the following requirements. The SSPC-Vis 1-02, the SSPC-Vis 3-93, and the SSPC-Vis 4-01 shall also be used taking into account staining from prior paint applications. The SSPC Standards SSPC-SP 6, Commercial Blast Cleaning and SSPC-SP 10, Near-White Blast Cleaning shall be modified to apply to each square inch instead of the approximately 9 square inch area indicated in paragraph 2.6 of each of these standards and shall be referred to hereinafter as SSPC-SP 6, Commercial Blast Cleaning (modified) and SSPC-SP 10, Near-White Blast Cleaning (modified). Where the foregoing standards, recommendations, and specifications are conflicting, said conflicts shall be brought to the attention of the ENGINEER. Manufacturer's published product data shall be adhered to unless changed in writing by the home office of the manufacturer.
 - a. SSPC: The Society for Protective Coatings (SSPC)
 - (1) Steel Structures Painting Manual (Volume 1, 3rd Edition - 1993 and Volume 2, 8th Edition - 2000, including Commentary Sections and Appendices).
 - (2) SSPC-AB 1 “Mineral and Slag Abrasives”

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- (3) SSPC-AB 2 “Specification for Cleanliness of Recycled Ferrous Metallic Abrasives”
 - (4) SSPC-AB 3 “Newly Manufactured or Re-Manufactured Steel Abrasives”
 - (5) SSPC-VIS 1-02 "Visual Standard for Abrasive Blast Cleaned Steel"
 - (6) SSPC-VIS 3-93 "Visual Standard for Power- and Hand-Tool Cleaned Steel"
 - (7) SSPC-VIS 4-01 "Guide and Reference Photographs for Steel Surfaces Prepared by Waterjetting"
 - (8) SSPC-VIS 5-01 "Guide and Reference Photographs for Steel Surfaces Prepared by Wet Abrasive Blast Cleaning"
 - (9) SSPC-Guide 6 (CON) “Guide for Containing Debris Generated During Paint Removal Operations”
 - (10) SSPC-PA 2 “Measurement of Dry Paint Thickness with Magnetic Gages”
 - (11) SSPC-PA Guide 3 “A Guide to Safety in Paint Application”
 - (12) SSPC-SP 12, Surface Preparation and Cleaning of Steel and Other Hard Materials by High- and Ultrahigh-Pressure Water Jetting Prior to Recoating
 - (13) SSPC-SP 13, Surface Preparation of Concrete
 - (14) SSPC-SP 14, Industrial Blast Cleaning
 - (15) SSPC-SP 15, Commercial Grade Power Tool Cleaning
- b. American Water Works Association Standards
- (1) AWWA D100-11, Standard for Welded Steel Tanks for Water Storage
 - (2) AWWA D102-11, Standard for Coating Steel Water-Storage Tanks
 - (3) AWWA C652-11, Disinfection of Water-Storage Facilities
- c. NSF International (NSF)
- (1) ANSI/NSF Standard 61 "Drinking Water System Components - Health Effects"

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- d. the paint manufacturer's published product data
 - e. these Detailed Technical Specifications
4. Welder's Certification: All welders and welding operators shall be certified in accordance with ASME, Section IX or AWS D1.1-96 (tests as described in AWS B2.1) to the procedures and processes required to accomplish the Work. Welder's certification papers shall be furnished to the FIELD OBSERVER for review prior to the commencement of welding on the tank.
 5. Verification of Dimensions: CONTRACTOR shall verify all dimensions prior to fabrication or ordering any materials or parts needed for this Project. No additional compensation will be made to the CONTRACTOR for items that have to be modified, cut, or replaced because of inadequate dimensions used in ordering or fabricating items.
 6. Subcontracting: Subcontracting of the cleaning and/or painting shall not be allowed. If a SUBCONTRACTOR is used for other Work, the name and address of the proposed SUBCONTRACTOR shall be stated in the **Bid Form**.
 7. Schedule Submittal: Within two weeks after receipt of the Notice to Proceed and prior to starting the Work, the CONTRACTOR shall submit a bar chart or progress schedule indicating the anticipated schedule of the following functions:
 - a. move onto site and rig tank, including containment
 - b. repair Work (concrete and steel)
 - c. cleaning and priming interior surfaces
 - d. finish painting interior surfaces
 - e. cleaning and priming exterior surfaces
 - f. intermediate painting exterior surfaces
 - g. finish painting exterior surfaces
 - h. tank disinfection
 - i. site clean-up.

Also indicated on the bar chart or progress schedule shall be the anticipated progress payment schedule of values. The bar chart and payment request schedule shall be updated monthly and submitted with the payment request. **No separate payment shall be made for bonds, insurance, design, drawings, mobilization, containment of the cleaning and/or painting debris, or paint materials not incorporated into the Work.**

8. Notification: The CONTRACTOR shall notify the PROJECT REPRESENTATIVE and the ENGINEER at least seven (7) days before starting the Work at the site. The

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CONTRACTOR shall reconfirm the commencement of Work with the PROJECT REPRESENTATIVE and ENGINEER twenty-four (24) hours prior to starting Work at the site.

9. Work Schedule: The repairing, cleaning and painting of the tank shall be accomplished in such a way as to minimize the length of time the tank is out of service and to minimize the number of days required for observing the repairing, cleaning and painting operations. **The CONTRACTOR'S attention is directed to the Agreement concerning Contract Time and Liquidated Damages.**
10. Times for Work: No repairing, cleaning or painting is to be done in the night period between sunset and sunrise. The times for Work shall also comply with local, state, and federal regulations and laws regarding days of week, noise, and interference with activities of surrounding property owners. The following exceptions may apply:
 - a. Repair Work: Should tank interior temperatures be excessive for personnel welfare during daylight hours or should other job conditions make nighttime Work beneficial to the CONTRACTOR and OWNER, written permission may be granted by the ENGINEER and OWNER to conduct repair Work at night. This permission shall only be granted if the CONTRACTOR provides the proper lighting and safety equipment and informs the neighboring occupants and property owners.
 - b. Cleaning and Painting Work: Should tank interior temperatures be excessive for paint application or personnel welfare during daylight hours or should other job conditions make nighttime Work beneficial to the CONTRACTOR and OWNER, written permission may be granted by the ENGINEER and OWNER to conduct Work at night. This permission shall only be granted if the necessary steel temperature, air temperature, humidity and dew point conditions are present and recorded during the application and initial drying or curing of the coatings. Also, the CONTRACTOR must provide the proper lighting and safety equipment and informs the neighboring occupants and property owners.
11. Tank Empty for Painting: The tank shall be drained during all surface preparation, application, and curing of the coating.
12. Operation of Valves and Equipment: All operations which would include closing valves, switching, starting, stopping, or removal from service of any equipment shall be done by the OWNER'S personnel. If the CONTRACTOR desires the OWNER to close valves, operate switches, start, stop, or remove any equipment from service, the CONTRACTOR shall submit a written request to the OWNER, and if the OWNER determines that such action will not adversely affect the operations of the OWNER to provide water, then the OWNER

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may close valves, operate switches, start, stop, or remove the equipment from service. Such requests shall be directed to the PROJECT REPRESENTATIVE so interruptions, if any, of the OWNER'S operations or systems will be no longer than necessary. The CONTRACTOR shall have a full complement of personnel working on a daily basis until the Work causing the interruption is completed. All Work performed under this Agreement shall be performed in close cooperation with the OWNER.

13. Site Security: When not working on the tank or site (such as during the evening, weekends, holidays, or rain days), the CONTRACTOR shall secure all openings in the tank (greater than 8 in.), the exterior ladder, and access or rigging devices. Openings in the tank needed during ventilation of the tank shall be secured with bars, grating, or other means to allow sufficient air flow through the opening. The CONTRACTOR shall lock the site fence to prevent unauthorized personnel from gaining access to the site, the interior of the tank, and the CONTRACTOR'S equipment and supplies. The CONTRACTOR shall be solely responsible for the security of the site, tank, equipment, and supplies during both working and non-working hours.
14. Public Safety: CONTRACTOR shall protect the public from harm caused by the CONTRACTOR'S actions and performance of the work. Prior to start of work or mobilization on site, the CONTRACTOR shall submit a site-specific Public Safety Plan based on the CONTRACTOR'S selected work methods. The Public Safety Plan shall include necessary plans and procedures to protect the general public from harm. The Plan should include such items, but not be limited to, requirements for safety exclusion zones, warning sign type and placements, protective barriers, safety and warning devices, devices for daylight and nighttime protection, and all devices required by state and local requirements. CONTRACTOR shall include a site plan summarizing the requirements of the Public Safety Plan for the specific work on the tank. CONTRACTOR'S Plan shall include the name of the Competent Person responsible for enforcing the Public Safety Plan.
15. Traffic Control Plan: The CONTRACTOR shall permit traffic to pass around the Project site with the least possible inconvenience or delay. The CONTRACTOR shall maintain existing roads and streets within the Project limits, keeping them open, and in good, clean, and safe condition at all times. If any traffic lane closures are necessary, the CONTRACTOR shall provide all flaggers, signs, and other traffic control devices necessary to warn and protect the public at all times from injury or damage as a result of the CONTRACTOR'S operations that may occur on highways, roads, and streets. The CONTRACTOR shall submit a traffic control plan. If no disruption of traffic is anticipated, then the CONTRACTOR shall submit a statement indicating this.
16. Water Supply: Water for the purpose of this contract, other than filling the tank upon completion, must be obtained by the CONTRACTOR through direct local arrangements

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with the OWNER. The CONTRACTOR shall furnish and install all necessary temporary piping and valves in connection with such water supply. Water shall be furnished from the OWNER at no cost to the CONTRACTOR as long as the amount of water used remains within reason. All connections to the public water system shall contain a back-flow prevention device approved by the OWNER. One tank of water for the disinfection shall be furnished by the OWNER at no charge to the CONTRACTOR. Additional water for disinfection shall be furnished at current municipal water rates charged by the OWNER and shall be paid for by the CONTRACTOR.

17. Electrical Supply: The CONTRACTOR shall pay all fees, obtain necessary permits, and have meters installed for power and lights as may be required for the prosecution of this Work. The CONTRACTOR shall furnish and install all necessary temporary service drops, wiring, connections, etc. necessary for temporary service required by the CONTRACTOR. All costs associated with any temporary electric service required by the CONTRACTOR shall be included in the Base Bid.
18. OWNER Performed Repairs: The CONTRACTOR shall cooperate with the OWNER who may be conducting other operations on or near the tank. The CONTRACTOR shall clean and paint all areas added or disturbed by the OWNER on the tank and attached accessories.
19. Furnishing and Installation of Items: Any reference in these specifications to furnishing an item or installing an item shall mean the item shall be both furnished and installed by the CONTRACTOR, unless specifically stated otherwise. Replacement shall mean the removal and legal disposal of the existing items, and furnishing and installation of the new items specified.
20. Contractor Supervision: The CONTRACTOR shall provide a competent superintendent, satisfactory to the OWNER, for the Work at all times during working hours with full authority to act for him/her. The on-site superintendent shall not be replaced without prior written notification and written approval of the ENGINEER. The CONTRACTOR shall also provide an adequate staff for the proper coordination and expedition of his/her Work. Should, in the opinion of the OWNER, any language barrier exist between the on-site superintendent and the OWNER or FIELD OBSERVER, the CONTRACTOR shall employ a qualified full-time interpreter or provide a new on-site superintendent at no additional cost to the OWNER. The on-site superintendent shall be bi-lingual if any workers are not proficient in English.
21. Observation: The OWNER plans to engage Tank Industry Consultants or another designated representative of the OWNER, to perform full-time observation of the repair Work, cleaning, and painting. However, the OWNER reserves the right to engage only intermittent observation services. The CONTRACTOR shall notify and make available to

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the FIELD OBSERVER for observation of the fit-up of any new and/or replacement parts prior to welding and following post-weld cleanup. The CONTRACTOR shall notify and make available to the FIELD OBSERVER for observation all surfaces to be coated. The dry film thickness (DFT) of each coat shall be measured in accordance with SSPC Paint Application Specification No. 2 (SSPC-PA 2-97). However, if it is determined to be in the best interest of the OWNER, the FIELD OBSERVER may make DFT measurements in excess of the amounts stated in SSPC-PA 2.

22. Destructive Testing of Coatings: If disputes arise concerning the quality of the applied coatings, adhesion tests, Tooke Gage analysis, or some other form of destructive testing may be used to resolve the dispute.
23. Accessibility for Observation: All Work shall be made accessible to the FIELD OBSERVER using the CONTRACTOR'S rigging and equipment. If assistance is required for the FIELD OBSERVER to safely access the Work, the CONTRACTOR shall furnish labor to assist the FIELD OBSERVER. The cost of this labor shall be included in the base contract amount.
24. First Anniversary Inspection: A First Anniversary Inspection shall be performed as provided for in paragraph 13.07 of the General Conditions for each tank. The CONTRACTOR'S Performance Bond or a separate Maintenance Bond shall be in force until after any remedial work is performed. The First Anniversary Inspection as described in Section 5.2 of AWWA D102-11 shall apply. The CONTRACTOR shall perform the following duties at the First Anniversary Inspection:
 - a. The CONTRACTOR shall perform the inspection, and shall furnish an experienced foreman, laborer, and rigging for the inspection.
 - b. Washout: The CONTRACTOR shall washout the interior of the tank for the one year evaluation the day prior to the evaluation. All debris from the interior of the tank shall be legally disposed of by the CONTRACTOR at no additional cost to the OWNER.
 - c. The CONTRACTOR shall be prepared to perform minor touch-up operations.
 - d. The CONTRACTOR shall have at least one gallon of each of the exterior primer, intermediate coating, and finish coating at the time of the inspection along with power cleaning tools and "Scotch-Brite" abrasive disks for spot cleaning.
 - e. The CONTRACTOR shall also have at least one new, unopened, quart kit of AquataPoxy A-61 Paint (manufactured by Raven Lining Systems, Tulsa, Oklahoma, telephone 800/324-2810) to touch up the interior surfaces. The FIELD OBSERVER

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shall determine if the coating failures are extensive enough to require the use of the specified epoxy coatings to touch up the interior surfaces.

- f. Repairs: Spot repairs shall be made by the CONTRACTOR before returning the tank to service. Repairs requiring extensive Work and rigging may be delayed until a time mutually agreeable to the OWNER and CONTRACTOR.
 - g. Disinfection: It is the CONTRACTOR'S responsibility to flush and disinfect the tank until two consecutive satisfactory water samples (collected at least 24 hours apart) are reported from the OWNER'S selected laboratory. Method Two (Part III, Article 5, Section 12 VAC 5-590-1080, Paragraph O 1 b) or Method Three (Part III, Article 5, Section 12 VAC 5-590-1080, Paragraph O 1 c) of the Virginia Department of Health Waterworks Regulations shall be used. The OWNER shall take and send in the samples to the laboratory, but shall assume no responsibility for the sampling technique or the care of the samples. The stored tank water shall comply with current VDH and USEPA standards for organic, inorganic, and biological contaminants as influenced by the operations of the CONTRACTOR.
 - h. Costs: All costs associated with the First Anniversary Inspection, including the wash-out and disinfection, shall be included in the Base Bid price. The performance of this inspection and/or any remedial work shall not relieve the CONTRACTOR of any responsibility for defects in materials or workmanship that may or may not be evident during the anniversary inspection.
 - i. Date of Inspection: Failure of OWNER to establish a First Anniversary Inspection date will not relieve the CONTRACTOR of the responsibility to repair the interior and exterior coating system.
25. Welding Repairs: All welding to the interior or exterior of the tank is to be made prior to all painting operations. Any resulting burrs, weld spatter, sharp edges, corners, or rough welds which would cause difficulty in applying a holiday-free coating shall be ground smooth. This grinding is considered incidental to the welding work and is to be included in the Base Bid. After grinding, these areas shall be cleaned to produce the profile recommended by the manufacturer of the coating system. (See Welding and Cutting Precautions paragraph in the GENERAL HEALTH, SAFETY, AND ENVIRONMENTAL REQUIREMENTS Section of these specifications for more requirements on welding.)
26. Cleaning Areas of Welding and/or Grinding: It shall be necessary to remove the coating prior to the welding of the new items to the tank. All areas that have been welded and/or ground smooth shall be cleaned prior to painting to provide proper profile for the coating system. Areas to be welded shall be welded prior to the final cleaning and painting of

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surfaces within the heat-affected zone. The heat-affected zone includes the opposite side of the plate or member being welded. Even if not specifically mentioned as a part of the Work under this Agreement, those areas of paint or coatings in the heat-affected zone of areas not specified to be painted shall be cleaned and painted in accordance with the requirements listed in these Detailed Technical Specifications.

27. Quality of Paint Application: All cleaning and painting shall be done in a workmanlike manner. **Curing times and ventilation requirements of the paint manufacturer shall be strictly adhered to by the CONTRACTOR.** In addition to the minimum and maximum dry film requirements, all sags, runs, dry spray, pinholes, craters, roller nap, or other irregularities shall be removed and repaired. CONTRACTOR shall perform all necessary inspections and quality control required by the coating manufacturer and obtain certification from the coating manufacturer for honoring coating manufacturer warranties.
28. Protection of Cabinets: Before cleaning on any portion of the tank, all cabinets on the site shall be covered to prevent the entry of blasting abrasive, dust or paint and so they can continue to function as required. Any cabinets which cannot be covered will be designated by the OWNER. Any blasting, cleaning, or paint debris inside these cabinets shall be removed by the CONTRACTOR prior to completion of the Work.
29. Protecting Equipment: The electric meter, antennas, sensors, telemetering, other electrical apparatus, and other equipment in the valve vaults, on the tank, and on the site, including all wiring, shall be protected from all damage and dust or other deleterious material infiltration during the operations of the CONTRACTOR. Any items damaged by the operations of the CONTRACTOR shall be replaced in kind or acceptably repaired by the CONTRACTOR at no cost to the OWNER.
30. Fire Watch: All equipment and wiring shall be protected from sparks, fire, weld spatter or other potential heat and/or ignition sources. CONTRACTOR shall have a trained employee equipped with proper fire suppression equipment stationed on the ground at all times that personnel are cutting, welding, or grinding on the tank or structure.
31. Painting Environment: All temperature and humidity requirements of the paint manufacturer's published product data shall be followed. In addition, no painting shall be done when: 1) the relative humidity is greater than 85%; or 2) the temperature of the steel is or is expected to be less than 5°F above the dew point temperature during the application and until the coating has cured to resist moisture in accordance with the manufacturer's published product data; or 3) the ambient or steel temperature is below 35°F or is expected to drop below 35°F during the initial cure of the coating. The CONTRACTOR shall have wet bulb-dry bulb measuring equipment and steel temperature measuring equipment on the job at all times. Readings shall be recorded at the beginning and end of each painting

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session and at no less than 2-hour intervals. Wind velocities during exterior painting shall be compatible for the quality application of the exterior coatings.

32. Minimum Temperature of Coatings to be Mixed: Prior to mixing, each component shall be a minimum of 75° F. The mixed coatings shall also be maintained at a minimum of 65° F during application. All costs associated with keeping the coating material at the minimum specified temperature shall be included in the Base Bid.
33. Mixing of Coatings: Each component shall be thoroughly mixed on-site with a power agitator to ensure no solids or settled material remains on the bottom of the container before combining the components together. Accurate measuring apparatus shall be used to carefully measure each component by volume into a clean container in accordance with the manufacturer's published product data. The container shall be large enough to hold all components to be mixed, including thinner. **The combined material shall be thoroughly mixed with a power agitator to achieve a uniform consistency. Adherence to proper induction times for the combined coating material in accordance with the manufacturer's published product data shall be accomplished by the CONTRACTOR. No coating shall be applied until the minimum induction time has been reached.**
34. Application and Damages: The materials shall be applied in accordance with the manufacturer's published product data and such that the end results are in compliance with these specifications (including all others inferred by reference). Application equipment (including air and airless sprayers, rollers and brushes) shall be good quality, in good condition and shall be as recommended by the coating manufacturer. Techniques shall be used which will not allow coating droplets, etc. to travel more than 30 ft from the base of the tank. **Spray painting of exterior surfaces shall be utilized only with the containment fully raised and the roof covered, and only when the wind velocity and direction, and temperature and humidity are such that paint damage will not occur to real estate or personal property. Brush or roller painting of the exterior surfaces shall be done only with the containment fully raised (with or without the roof covered) and shall be performed only when the wind velocity and direction, and temperature and humidity are such that paint damage will not occur to real estate or personal property.** Prior to the cleaning or coating of any surface, the CONTRACTOR shall present a written plan for review by the ENGINEER and PROJECT REPRESENTATIVE concerning how abrasive and/or paint damage to automobiles and property will be handled, including a process for quick removal of the abrasive or paint, and who will do the Work. This review in no way shall relieve the CONTRACTOR from the responsibility of settling claims for damage, but is intended as an avenue to expedite and minimize said claims.
35. Approval of Coatings: All coatings shall be acceptable to the US EPA, VDH, and/or the controlling local health and environmental regulatory agencies. All interior coating

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materials, solvents, and other additives shall comply with the ANSI/NSF Standard 61 "Drinking Water System Components - Health Effects." If the manufacturer's product data sheets indicate that the interior coating materials comply with ANSI/NSF Standard 61, then a separate letter from the manufacturer is not required. All coatings to be used shall be listed as to manufacturer and number or description on the Listing of Suppliers, which shall be included with the Bid. The interior and exterior coatings shall be furnished by the same manufacturer unless specifically stated otherwise in these Detailed Technical Specifications. Only thinners recommended and furnished by the paint manufacturer shall be used. The specified coatings are intended to be standards of quality. Alternate coatings, materials, and manufacturers will only be considered after award of the Contract in accordance with the Instructions to Bidders. If alternate coatings are submitted for review, the submittal shall include the following information:

- a. A complete description of the proposed substitute,
 - b. The material for which it is to be substituted,
 - c. A letter from the coating manufacturer certifying that the coating meets or exceeds the coatings specified,
 - d. Price,
 - e. Performance and test data from the laboratory and field (including QUV/UVB testing for the exterior finish coat),
 - f. Coverage,
 - g. Life,
 - h. Manufacturer's field support capabilities.
36. Coating Materials and Thinners: All coatings and thinners shall be new and furnished for this job. They shall be delivered from the coating manufacturer to the job site in the original factory sealed containers which are clearly and properly labeled by the coating manufacturer showing the manufacturer's name, product number, type of coating, batch number, and expiration date. The materials shall be stored, handled, and used in accordance with all manufacturer's published product data, including all requirements listed on the Material Safety Data Sheets (MSDS). Provide adequate storage facilities. Store coating materials within minimum and maximum ambient temperatures in accordance with the manufacturer's recommendations. Temperature of the coating prior to and during mixing shall be within the range stated in the manufacturers published product data. The amounts delivered shall provide the proper coverage rates, taking into account normal application loss.
37. Coating Thickness: The thickness of each type coating is essential to the system's integrity. The addition of mils in a succeeding coat of a different generic type or formulation to make up for thin preceding coat(s) shall not be allowed. If a thicker finish coat is needed to hide

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the underlying darker color on the exterior of the tank, a thicker coat may be applied, but it shall not exceed the maximum allowable thickness recommended by the coating manufacturer. When undercoats or other conditions show through the final coat, additional coats shall be applied until the coating film is of uniform finish, color, and appearance. Under no circumstances shall the dry film thickness of an individual coat or of the total coating system exceed the coating manufacturer's maximum allowable thickness limit. Dry mil thickness greater than the coating manufacturer's maximum allowable thickness shall be considered unacceptable and shall be removed by the CONTRACTOR at no additional cost to the OWNER.

38. Lead and Other Heavy Metal Restrictions in Coatings: Coatings which contain more than 0.06% by weight of lead (or any lead compounds), cadmium, or chromium in the cured coating for each coat applied shall not be used. The CONTRACTOR shall submit documentation from the coating manufacturer stating that their coatings are in compliance with this requirement in addition to other requirements of these specifications.
39. Surface Conditions: The surfaces to be painted shall be free from mud, oil, grease, dust, moisture, salts, and other foreign material which would cause adhesion or other problems in the finished product. The manufacturer's published product data concerning the time between coats and the preparation of the previously painted surfaces shall be followed. If field tests by the FIELD OBSERVER find questionable amounts of contamination on the steel surfaces or painted surfaces to be topcoated, a representative of the home office of the paint manufacturer may be called to examine the surfaces in question and determine if the surfaces are in accordance with these Detailed Technical Specifications and the manufacturer's published product data.
40. Schedule of Coating Application: The entire tank shall be cleaned and primed prior to the start of the intermediate painting to avoid damage to the topcoats from adjacent cleaning operations. The primer shall not be applied closer than 6 in. to the edge of an uncleaned surface. If the recoat cycle of the primer prevents completely cleaning and priming the tank before applying the intermediate coat, then the CONTRACTOR shall submit, in writing, a schedule for coating application which will avoid damage to the intermediate and finish coats when applied close to uncleaned surfaces.
41. Restoration: The CONTRACTOR shall restore and/or replace paving, curbing, sidewalks, gutters, shrubbery, fences, sod, or other disturbed surfaces and structures to a condition equal to that before the Work began and to the satisfaction of the ENGINEER and shall furnish all labor and materials incidental thereto.
42. Closeout Procedures: Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract

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Documents and ready for ENGINEER'S observation. Provide submittals to ENGINEER that are required by governing or other authorities. The CONTRACTOR shall submit all documentation to OWNER and ENGINEER necessary for proper completion of the Project. This documentation shall include, but not be limited to, all manifests, abrasive testing results, soil testing results, etc. Submit Application for Final Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

H. General Health, Safety, and Environmental Requirements

1. Compliance with Requirements: The CONTRACTOR shall comply with all applicable requirements of the Occupational Safety and Health Act of 1970 (Public Law 91-596) and will hold the OWNER and ENGINEER harmless from any civil or criminal penalties imposed as a result of the CONTRACTOR'S noncompliance with such requirements. No additional compensations for changes in the laws, regulations, or the interpretation thereof shall be granted by the OWNER. The CONTRACTOR shall be responsible for complying with all laws and regulations, even if not specifically listed in these Specifications.
2. Emergency Information: The CONTRACTOR shall construct a plywood sign covered with a weatherproof, clear plastic cover and supported by wood posts. The CONTRACTOR shall post information on the plywood sign concerning emergency medical, fire, rescue and hazardous waste phone numbers from which personnel on the site can obtain information if needed. The CONTRACTOR shall also list the name and number of a representative of the CONTRACTOR who can be reached 24 hours a day in case of an emergency. The emergency information shall be in a central position, located so it is visible and accessible 24 hours a day. The emergency information shall be posted the entire length of time that the CONTRACTOR is performing Work at the tank site.
3. Confined Space Entry: The CONTRACTOR shall comply with and have documented Confined Entry Space Procedures available at the tank site at all times as required by OSHA 29 CFR 1910.146. The CONTRACTOR shall also comply with any state and/or local requirements which are more restrictive than the federal requirements.
4. Material Safety Data Sheets: Material Safety Data Sheets (MSDS) shall be posted at the job site for each chemical product on the job site, including but not limited to coatings, thinners, other solvents, disinfecting agents, abrasives, welding materials, and flexible sealant material.
5. Safety and Health: The CONTRACTOR shall comply with safe working practices for abrasive blasting, cleaning, burning, welding, and handling lead-based and nonlead-based coated steel, and all health and safety regulations and requirements of Federal OSHA

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(specifically OSHA Standard for Construction Industry, 29 CFR 1926.62, “Lead Exposure in Construction; Interim Final Rule,” regarding occupational exposure to lead, and 29 CFR 1926.1126, entitled “Chromium (VI),” regarding occupational exposure to hexavalent chromium), state and local health regulatory agencies, Material Safety Data Sheets (MSDS), SSPC-PA Guide 3, and the paint and abrasive manufacturers. This compliance shall be accomplished without supervision from the OWNER, ENGINEER, FIELD OBSERVER, or other direct or indirect agents of the OWNER. Should vents, holes, rigging attachments, or any other modification, cutting, or welding be required to meet safety standards or otherwise accomplish the Work, they may be accomplished at the expense of the CONTRACTOR upon submitting of details in writing to, and with subsequent permission by the ENGINEER.

6. Rigging Attachments: All rigging attachments present on the tank shall be carefully evaluated by the CONTRACTOR immediately prior to use for the type and magnitude of loads which CONTRACTOR intends to impose on them. Any rigging attachments installed on the tank by the CONTRACTOR shall be removed at the completion of Work and areas damaged by the removal of these attachments shall be cleaned and painted in accordance with these specifications. The CONTRACTOR assumes all responsibility for use of any existing or added attachments.
7. Welding and Cutting Precautions: No welding or flame cutting through the existing coating system shall be permitted, unless adequate worker protection is provided in accordance with the instructions in ANSI Z49.1, "Safety in Welding and Cutting," OSHA Standard for Construction Industry, 29 CFR 1926.62 entitled "Lead Exposure in Construction; Interim Final Rule," and OSHA Standard for Construction Industry, 29 CFR 1926.1126, entitled “Chromium (VI),” regarding occupational exposure to hexavalent chromium.
8. Compliance with Environmental Regulations: Compliance with local, state and federal regulations concerning emissions, transportation or disposal of solid, particulate, liquid, or gaseous matter as a result of the cleaning, painting, or other operations under this Agreement shall be the responsibility of the CONTRACTOR. This compliance shall be accomplished without supervision from the OWNER, ENGINEER, FIELD OBSERVER, or other direct or indirect agents of the OWNER. No additional compensations for changes in the laws, regulations, or the interpretation thereof shall be granted by the OWNER. No burning of trash (including abrasive bags or other paper or wood products) on the site shall be permitted. All shielding, abrasive retrieval, or other methods of using precautions required by the regulating agencies shall also be accomplished at no additional cost to the OWNER unless otherwise provided herein. **Any fines or damages imposed on the OWNER, ENGINEER, or FIELD OBSERVER by any regulatory agency or court as a result of the CONTRACTOR'S noncompliance with environmental or nuisance regulations or any other applicable standard shall be paid or reimbursed by the CONTRACTOR.**

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9. Attractive Nuisances and Cleanup: The job site shall be kept in a clean and safe condition at all times. Hazards or attractive nuisances shall be protected at all times. Upon completion of the Work, the job site and all nearby sites impacted by the Work activities shall be left clean of all debris, cleaning residue, or any other items resulting from the operations of the CONTRACTOR. The cost of any cleanup that must be done by the OWNER shall be deducted from funds due the CONTRACTOR. Impervious drip pans or double layers of plastic sheeting (each at least 6 mil thick) shall be placed under any compressors, generators, paint pumps, mixers, welding machines, etc. to prevent oils, solvents, organic compounds, or other contaminants from leaching into the soil. Fuel storage tanks, thinners, and other potentially hazardous materials shall be placed inside secondary containment structures to prevent contaminants from leaching into the soil. **Any oils, solvents, organic compounds, or contaminants spilled on the site during the process of the Work shall be immediately removed and cleaned up by the CONTRACTOR. Any earth contaminated by a spill shall also be removed and replaced with new certified clean material to the satisfaction of the OWNER and the ENGINEER. If the OWNER has to remove the oils, solvents, organic compounds, contaminants, or earth, the OWNER may deduct the costs of removal and clean-up from the total contract amount owed the CONTRACTOR.**
10. Authority of CONTRACTOR'S COMPETENT PERSON(S): The CONTRACTOR'S COMPETENT PERSON(S) shall have the complete support of top management and written authority to ensure these operations are carried out in accordance with compliance plans and governmental regulations, independent of production pressures. The CONTRACTOR'S COMPETENT PERSON(S) may have additional responsibilities and carry out other work assignments, but shall not routinely be a member of the crew that actually performs paint removal work.
11. Responsibility of CONTRACTOR'S COMPETENT PERSON(S): The CONTRACTOR'S COMPETENT PERSON(S) shall be responsible for overseeing job site safety and hazardous paint removal operations without supervision of the OWNER, ENGINEER, and/or FIELD OBSERVER. Responsibilities shall include:
- a. Monitoring effectiveness and ensuring the continued integrity of environmental controls.
 - b. Supervising worker exposure monitoring.
 - c. Ensuring that a hazard communication program has been conducted for the CONTRACTOR'S personnel on site.
 - d. Ensuring that the Confined Entry Space Procedures are followed.

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- e. Ensuring that employees are wearing personal protective equipment and are trained in the use of such equipment in accordance with all OSHA and EPA regulations.
 - f. Ensuring that employees are utilizing fall protection and are trained in accordance with all OSHA regulations.
 - g. Daily inspection and approval of the rigging equipment and scaffolding utilized.
 - h. Ensuring that the engineering controls in use are in operating condition and functioning properly.
 - i. Ensuring that fugitive emissions to air, water, or soil are minimized and that handling of all waste streams is in compliance with applicable regulations and contract specifications.
 - j. Controlling access to the work site and ensuring that contaminated control boundaries are marked off.
 - k. Maintaining project documentation.
12. Safety Analysis Forms and Meetings: The CONTRACTOR is required to thoroughly review all phases of the project and complete and submit the “Job Safety Analysis” and the “Contractor Safety Checklist” prior to mobilizing to the site. Each subcontractor shall submit these forms for their work at the site as well. The CONTRACTOR shall update the forms as the project progresses or if there is a change of personnel at the site. Once the site work begins, the CONTRACTOR’S COMPETENT PERSON shall complete the “Daily Jobsite Safety Survey Report” and a “Contractor Daily Sign-in Form” to be presented to the FIELD OBSERVER at the end of each day. The CONTRACTOR shall hold daily safety meetings to discuss specific activities and events for the day and the safety ramifications. This shall be recorded each day, with a list of the attendees.
13. Sanitary Facilities: The CONTRACTOR shall, at the beginning of the Work, provide on the premises suitable temporary sanitary toilet, wash-up, decontamination facilities, and changing facilities for the use of workers and shall maintain same in a sanitary condition and remove same when directed by the OWNER. The cost of these sanitary facilities shall be included in the Base Bid. The CONTRACTOR is advised that the OWNER is in the business of providing potable water and the CONTRACTOR'S sanitary arrangements shall not endanger the OWNER’S facilities.
14. Medical Surveillance: The CONTRACTOR shall institute a medical surveillance program in complete accordance with OSHA Standard for Construction 1926.62 entitled "Lead

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Exposure in Construction; Interim Final Rule," and 29 CFR 1926.1126, entitled “Chromium (VI),” regarding occupational exposure to hexavalent chromium, or more restrictive regulations. As part of the program, the CONTRACTOR shall make available biological monitoring in the form of blood sampling and analysis for lead. The CONTRACTOR shall furnish certification with the Bid to the ENGINEER and OWNER to document the CONTRACTOR’S compliance with the medical surveillance program requirement. The costs of biological monitoring shall be paid for by the CONTRACTOR. The CONTRACTOR’S medical surveillance program shall be submitted to the ENGINEER and OWNER prior to award of the Contract.

15. Soil Sampling: The FIELD OBSERVER and CONTRACTOR shall remove one soil sample per 2000 sq. ft within the limits of the “Coopers Mountain Tank” site or as directed by the FIELD OBSERVER prior to the start of Work at the site, identify the soil samples, and deliver the soil samples to the ENGINEER to have atomic absorption testing (total lead) performed on the soil samples. For purposes of defining the tank site for soil sampling, the site shall consist of all land within 50 ft of the tank or otherwise determined by the FIELD OBSERVER. This will result in approximately 4 to 6 sets of samples both before the start of the Project and after completion of the Project. Each set of soil samples shall consist of five 3/4 in. diameter plugs by 1/2 in. deep taken from a 1 square foot area. The location where the soil samples were taken shall also be documented. After Substantial Completion of the Work, the FIELD OBSERVER and CONTRACTOR shall remove additional sets of soil samples from the same locations as before, identify the soil samples, and deliver the soil samples to the ENGINEER to have atomic absorption testing (total lead) performed on the soil samples. The cost of testing the initial and final soil samples shall be borne by the OWNER. The CONTRACTOR shall be responsible for seeing that the "Chain of Custody Form" is used on the initial and final sampling of the soil. If the initial and final total lead levels in the soil fall in a category which requires action by the CONTRACTOR, then the CONTRACTOR shall perform the required action as stipulated below.

Initial Total Lead Levels in Soil, “Initial” (mg/kg)	Final Total Lead Levels in Soil, “Final” (mg/kg)	Required Action By Contractor
Initial < 800	Final < 800	none
Initial < 800	800 ≤ Final < 5,000	Interim Controls
800 ≤ Initial	Final < 5,000	none
Initial < 5,000	5,000 ≤ Final	Abatement of Soil
5,000 ≤ Initial	5,000 ≤ Final	none

- a. Interim Controls: Interim Controls, in accordance with EPA guidance document "Guidance on Residential Lead-Based Paint, Lead-Contaminated Dust, and Lead-Contaminated Soil," include, but are not limited to the following:

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- (1) Establish barriers between children and soil by planting ground cover and shrubbery, moving play equipment, restricting access through posting and fencing, and/or preventing further lead contamination of the area.
 - (2) Monitor condition of interim controls.
 - (3) Post public notice of contaminated common areas.
- b. Abatement of Soil: Abatement of Soil techniques include, but are not limited to the following:
- (1) Remove and legally dispose of the contaminated soil and place an OWNER approved topsoil and ground cover over the abated area or pave the site with asphalt.
 - (2) Post public notice of contaminated common areas.
16. Electrical Hazards: The CONTRACTOR shall at a minimum take the following safety measures to prevent accidents due to electrical hazards:
- a. Electric Service Deactivation: The OWNER shall deactivate and lock out the electric service to the tank. The CONTRACTOR shall verify the deactivated status of the electric service to the tank prior to beginning each day's Work functions and throughout the work day. The verification of the electric service deactivation is the sole responsibility of the CONTRACTOR and shall be accomplished without supervision from the OWNER, ENGINEER, FIELD OBSERVER, or other direct or indirect agents of the OWNER.
 - b. Electric Service Wiring: The CONTRACTOR shall be aware of the electric service wiring attached to and located adjacent to the tank. The CONTRACTOR shall relocate, deactivate, or provide necessary electric shock hazard protective devices to prevent exposure of workers and/or equipment to electric shock hazards. The CONTRACTOR shall verify that there is sufficient electric shock hazard protection for the workers and equipment prior to and throughout each working period on the job. The verification of the electric shock hazard protection is the sole responsibility of the CONTRACTOR and shall be accomplished without supervision from the OWNER, ENGINEER, FIELD OBSERVER, or other direct or indirect agents of the OWNER.
17. Abrasive: The approved abrasive for cleaning shall meet the following requirements:

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- a. The abrasive for the **exterior** and **interior** surfaces shall be a re-usable abrasive (such as steel grit) **or** a commercially available, non-metallic, expendable, abrasive, blended with Blastox™.
- b. All expendable abrasives shall meet the minimum requirements of SSPC-AB 1 and all abrasives meet the requirements of Class A (of SSPC-AB 1) for silica content (crystalline silica less than 1% by weight before blasting). The crystalline silica content shall be determined by the use of infrared spectroscopy or by other analytical procedures, such as wet chemical or X-ray diffraction analyses. The abrasive shall also be of a grit size to produce a 1.5 mil to 2.5 mil profile. If the profile exceeds this range, then the prime coat dry mil thickness shall be increased by the difference between the actual profile and the specified profile to prevent the peaks in the profile from rusting. However, the maximum coating thickness applied shall be in accordance with the coating manufacturer’s recommendations. The abrasive shall be properly stored, and it shall be free from contaminants, including but not limited to excessive fine particles, paint, earth, regulated heavy metals, moisture, oil, or chlorides, which can cause premature failure of the coating. Use of abrasive on the exterior of the tank shall be based not only on its compliance with the technical application of the coatings, but also on its lack of nuisance to surrounding property. The CONTRACTOR shall submit manufacturer's published product data sheets for the type of abrasive, grade, and the resulting profile of the abrasive to be used for review prior to the start of any cleaning operations. The CONTRACTOR shall also submit a letter from the coating manufacturer certifying that the resulting profile of the abrasive is acceptable for their coating product.
- c. All expendable abrasive shall be new and furnished for this job. All abrasive shall be properly stored on skids or in a covered container. The abrasive shall be covered to protect the abrasive from water and weather. Do not allow abrasive to rest directly in contact with the ground.
- d. The Blastox™ shall be manufactured by the TDJ Group, Inc., Cary, Illinois, telephone 708/639-1113, FAX 708/639-0499. The CONTRACTOR shall be aware that other heavy metals besides lead may be present in the existing coatings on the tank, supporting structure, and appurtenances. The CONTRACTOR shall perform or have TDJ Group perform all necessary testing to determine the ability of Blastox to effectively neutralize any chromium (or other hazardous materials) in the existing coatings prior to Blastox becoming an acceptable option. Any additional surface preparation or post-treatment of the surface required when using Blastox shall be done by the CONTRACTOR at no additional cost to the OWNER and with no extension to the Contract Time. The Blastox shall be premixed with the abrasive by the

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manufacturer before delivery to the site. The ratio of Blastox to abrasive shall be determined by the manufacturer. Written documentation that Blastox was added to the abrasive shall accompany all abrasive delivered to the job site. The CONTRACTOR shall also be responsible for determining the compatibility of Blastox with his/her proposed abrasive and the specified coating system and shall submit written documentation of the compatibility for review.

- e. The steel grit shall meet the requirements of SSPC-AB 3, Newly Manufactured or Re-Manufactured Steel Abrasives, and be approved for use by the manufacturer of the blasting, media recovery, and separation equipment. The initial quantity of grit shall consist of an artificial working mix determined by the CONTRACTOR to produce an acceptable profile in accordance with these specifications. **Any used steel grit used on this Project shall be sampled before use by the FIELD OBSERVER and the CONTRACTOR and the CONTRACTOR shall have the samples sent to a laboratory for atomic absorption testing for total lead. The steel grit shall not be used until the results of the atomic absorption testing are submitted to the OWNER and indicate that the total lead levels are less than 600 ppm (<0.06%).**

Blast Media Recovery and Separation System:

- (1) Equipment Requirements: The equipment provided for the spent abrasive recovery and media separation shall be a portable commercial recycling abrasive blast machine. The re-used abrasive shall comply with the requirements of SSPC-AB 2, Specification for Cleanliness of Recycled Ferrous Metallic Abrasives. The system shall be capable of recovering the abrasive, and returning the spent cleaning debris to a dust separator which shall be an integrated part of the machine. The waste material shall be placed in hazardous container drums in accordance with the Removal and Disposal of Cleaning Residue paragraph of this specification.
- (2) Equipment Characteristics: As a minimum, the vacuum system used to recover the spent blasting material shall contain the following:
 - i. A double-chambered ASME pressure vessel, which can effectively recycle blast media on a continuous basis, with no interruption, except for air filter back-flushing, media loading to the machine, and removal of collected dust and spent cleaning debris.
 - ii. A dust filter back-flushing system.

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- iii. An air drying system consisting of an air-cooled aftercooler, sling separator, and desiccant drier.
18. Containing Cleaning Debris and Overspray: The CONTRACTOR shall ensure that no spent cleaning/blasting debris, dust, overspray, coating droplets, or emissions of any kind escape to the atmosphere and travel farther than 30 ft from the base of the tank, or any lesser distance required to avoid contamination of adjacent buildings, work sites and parking lots.
- a. The containment system shall at a minimum meet the emission control requirements of a **Class 2 system**, as specified in Section 4.2.2.2 of the SSPC-Guide 6 (CON), Guide for Containing Debris Generated During Paint Removal Operations, dated October 1, 2004. The ground surrounding the tank shall be protected from all dust, emissions, debris, and other materials generated in the cleaning operations with a minimum of two layers of an impervious membrane covered with plywood.
- b. The CONTRACTOR shall be responsible for all materials that are used and for any apparatus used to contain dust, emissions, debris, overspray, and coating droplets. **The containment system attachments to the tank shall be designed by a Professional Engineer registered in the Commonwealth of Virginia not to impose excessive loading on the tank and tank appurtenances. The CONTRACTOR shall submit the P.E. designed, stamped, and signed details of the containment system and the attachment details for review prior to installation of the containment system on the tank. The containment system will place additional loads on the tank which the tank was not originally designed for. The CONTRACTOR shall reinforce the tank as necessary to assure no damage or permanent deformation occurs to the tank. Any damage done to the tank as a direct or indirect result of the containment system shall be repaired or sections replaced by the CONTRACTOR at no additional cost to the OWNER. Neither the ENGINEER or the OWNER assume any responsibility for the structural ability of the tank to support the containment system.**
- c. If tarps are used as part of the containment system, the tarps shall be an impervious, solid, flame-resistant material, reinforced with a fiber mesh and shall allow as much light as possible to pass through the material.
- d. If complete containment of the tank is utilized to contain all cleaning dust, emissions, debris, paint overspray, and paint droplets, the complete containment shall include a full roof bonnet.
- e. If robotic or creeper-type cleaning devices are used, the robotic or creeper-type cleaning device shall meet the same containment criteria (primarily lack of emissions)

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as that of other types of containment. All overspray and paint droplets shall be contained on the tank site within the distance listed above.

- f. The OWNER reserves the right to stop work or to require additional or different containment methods if the CONTRACTOR'S operations create a nuisance beyond the tank site property line in the sole opinion of the OWNER, the ENGINEER, the OWNER'S designated representative, any regulatory agency, or neighbor. All costs of providing an adequate containment system shall be included by the CONTRACTOR in the **Base Bid**.
- g. Review of the containment system for containing the spent cleaning dust, emissions, debris, overspray, and coating droplets shall not warrant the structural integrity of the containment system and shall not warrant the structural integrity of the tank to support the containment system. Nor shall review of the containment system warrant the ability of the system to contain spent cleaning dust, emissions, debris, overspray, and coating droplets.
- h. All attachments to the tank shall include a "reinforcing" pad designed to distribute the loads and prevent damage to the tank. The reinforcing pad may remain on the tank at the completion of the Project as long as the pad is completely seal welded, all edges ground to 1/8 in. minimum radius, and all corners rounded to 1 in. minimum radius. All other components of the containment system shall be removed by the CONTRACTOR at the completion of the exterior cleaning and painting, being careful to avoid damage to the coatings on the opposite side of steel plates. The containment submittal shall include, at a minimum, the following details and descriptions:
 - (1) Brackets (outriggers) to be attached to tank including size, material, etc.
 - (2) Bracket attachments to tank,
 - (3) Number of outriggers and spacing on tank container,
 - (4) Center roof "tree" and attachment details,
 - (5) Reinforcing pad between structure and attachments,
 - (6) Any additional roof support to prevent damage to or deformation of the tank roof or shell,
 - (7) Size of cables to be used and location,
 - (8) Anchorage details of hoist and location,
 - (9) Ground anchors,
 - (10) Catalog cuts of screen (tarp) material,
 - (11) Screen material connections & overlap,
 - (12) Operating/design parameters of containment, such as wind speed when containment shall be lowered or not used,
 - (13) Ground cover, material, etc.

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- (14) Other engineering controls & dust collection, and
 - (15) Any items desired to be left on the structure at the completion of the Project (subject to approval by OWNER).
19. Dust Collection: The CONTRACTOR shall furnish, operate, and maintain adequate dust collection during the Project to achieve negative pressure within the containment or adequate air flow within the tank interior. The dust collection system shall at a minimum meet the requirements of a **Type J1 Air Filtration system**, as specified in Section 5.4.5.1 of the SSPC-Guide 6 (CON), Guide for Containing Debris Generated During Paint Removal Operations, dated October 1, 2004. The dust collection shall be operated during all abrasive blast cleaning and after abrasive blast cleaning until the area is clean enough for coating application. The CONTRACTOR shall be responsible for all sizing, design of ductwork, etc., based upon the CONTRACTOR'S operations, number of blasters, duration of blasting, etc. The CONTRACTOR shall also take precautions to avoid a vacuum from developing inside the tank, as even a slight vacuum inside the tank may cause damage to the roof or shell.
20. Removal and Disposal of Cleaning Residue - Expendable Abrasive: If the CONTRACTOR uses a commercially available, non-metallic, expendable, abrasive, blended with Blastox™ to clean the **exterior** and/or **interior** surfaces, the removal and disposal of the **exterior** and/or **interior** cleaning residue shall be performed in accordance with this paragraph. The cleaning debris from each tank shall be kept separate from each other, and shall be cleaned up and stored daily in separate leak-proof covered dumpsters/containers lined with polyethylene. Each dumpster/container shall be labeled or marked clearly with the date the first waste is deposited in the dumpster/container and with the words "Hazardous Waste", and this labeling shall be visible for inspection. Each cover shall be designed and installed to keep all rainwater from entering the dumpster/container or the contents.
- a. Regardless of whether or not the material is determined to be a hazardous material according to the tests described in this Section, the following precautions shall be taken. All operations associated with this project shall be in conformance with the Occupational Safety and Health Act (OSHA) of 1970 and all regulations and standards promulgated under this Act, as well as all applicable state and local standards and regulations governing worker safety and health.
 - b. SAMPLING and TESTING: The CONTRACTOR shall hire a Virginia state licensed testing laboratory or disposal company (DISPOSAL SUBCONTRACTOR) to collect random representative samples of the combined paint and spent cleaning materials from each waste stream in accordance with US EPA regulations in the presence of the FIELD OBSERVER and the CONTRACTOR. Each separate sample shall contain at

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least 100 grams (approximately 1 cup) and shall be transported to an approved testing laboratory in accordance with all laws and regulations. The purpose of gathering these samples is to perform on each sample all necessary testing, such as Toxicity Characteristic Leaching Procedure Testing (TCLP Testing), or subsequent testing required by the Resource Conservation and Recovery Act (RCRA) or local or state regulations, to determine proper treatment and/or disposal requirements. All testing required by regulations or by the selected waste hauler or landfill, including any follow-up testing and the collection of the samples, shall be done at the CONTRACTOR'S expense. The number of samples from each waste stream will be determined by the degree of variation of the results of the initial samples. The cost of **all** disposal and/or recycling on this Project shall be paid for by the CONTRACTOR regardless if the material is considered **nonhazardous** or **hazardous**. **Copies of all testing results shall be sent to the ENGINEER and OWNER prior to the removal of any debris from the site.** Copies of all manifests, chain of custody forms, testing results, and treatment procedure documents shall be sent to the ENGINEER and OWNER prior to final payment on the Project. Certification that each sample was taken and tested properly, and that the combined paint and spent cleaning materials were treated and disposed of in accordance with all US EPA and state requirements shall be submitted to the ENGINEER and OWNER.

- c. Should the results of the random testing of the contents of a waste stream determine that the removed paint and spent cleaning material does not constitute a hazardous material, the material shall be legally disposed of by the CONTRACTOR in accordance with local, state, and federal laws. The CONTRACTOR shall be responsible for removing and properly transporting all the material from the project site. The material shall be transported in containers approved by the United States Environmental Protection Agency (USEPA) and local, state, and federal regulations.
- d. Should the results of the random testing of the contents of a waste stream determine that the combined paint and spent cleaning material does in fact constitute a hazardous material, the material must either be: treated by the disposal facility by an approved method to reduce the leachable concentration levels to below the regulatory limits and disposed of in accordance with all local and/or state regulations; or recycled and used as a raw material in a product approved by the appropriate regulatory agencies. Disposal, treatment or recycling of the material shall be in strict accordance with the federal, state and local laws including, but not limited to RCRA, Toxic Substance Control Act (TSCA), Hazardous Materials Transportation Act (HMTA), USEPA, and Virginia Department of Health, Solid & Hazardous Waste Management Division (VDH) regulations. The hauler shall obtain the necessary insurance and the necessary

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permits for transportation and shall provide evidence of such to the ENGINEER and OWNER.

- e. Included under this item is the furnishing of all materials, equipment, tools, utilities, labor, and supervision necessary for the completion of the work contained in this item in accordance with the drawings and specifications. The item generally includes the recycling, or treatment and transporting and deposition of all hazardous removed paint and spent abrasive material in an approved recycling facility or disposal site, including obtaining all the necessary insurance and the necessary permits for transportation and providing evidence of such to the ENGINEER and OWNER. On-site treatment of hazardous waste shall not be allowed.
- f. TRANSPORTATION: All material classified as hazardous, as determined by the aforementioned TCLP Testing or subsequent testing required by RCRA, shall be transported to an approved recycling facility or hazardous waste landfill. The hauler shall obtain the necessary insurance and the necessary permits for transportation and shall provide evidence of such to the additional insureds listed elsewhere in this specification. The CONTRACTOR shall submit copies of the transporter's "Spill Contingency Plan" to the ENGINEER and OWNER prior to transporting any material from the site. The "Spill Contingency Plan" shall detail how spills or leaks which occur during transport shall be dealt with. The hauler shall have or shall obtain an identification number from the USEPA, the VDH, and all other applicable state and local licenses and permits.
- g. All dumpsters/containers and labeling of the dumpsters/containers shall adhere to the US Department of Transportation's regulations (49 CFR Part 172) and the HMTA.
- h. TREATMENT and DISPOSAL of MATERIAL: All material classified as hazardous, as determined by the aforementioned TCLP Testing or subsequent testing required by RCRA, shall be transported to: an approved recycling facility; an approved treatment facility to reduce the leachable concentration levels to below the allowable regulatory limits and disposed in a local and/or state approved waste landfill. All transporting, recycling, treatment, and disposal shall be in strict accordance with federal and state laws including but not limited to RCRA, TSCA, HMTA, the USEPA, and the VDH regulations. The name of the recycling, treatment and/or disposal facility shall be submitted to the ENGINEER and OWNER for approval prior to removing any material from the project site. The disposal or recycling facility shall have or shall obtain an identification number from the USEPA, the VDH, and all other applicable state and local licenses and permits.

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- i. The CONTRACTOR shall be responsible for obtaining the proper signatures of the hauler and designated receiving facility on the "manifest" form. Payment will not be released for this item until this documentation has been received by the OWNER.
 - j. PAYMENT: All costs associated with the transporting, recycling of the material or treatment, and disposal of the material in an approved hazardous waste facility shall be included in the **Base Bid**.
21. Removal and Disposal of Cleaning Residue - Recyclable Abrasive: If the CONTRACTOR uses a recyclable abrasive to clean the **exterior** and/or **interior** surfaces, the removal and disposal of the **exterior** and/or **interior** cleaning residue shall be performed in accordance with this paragraph. The paint and cleaning debris from each tank shall be kept separate from each other, and shall be cleaned up and stored daily in separate leak-proof covered dumpsters/containers lined with polyethylene. Each container shall be labeled or marked clearly with the date the first waste is deposited in the container and with the words "Hazardous Waste", and this labeling shall be visible for inspection. Each cover shall be designed and installed to keep all rain water from entering the container or the contents.
- a. All operations associated with this project shall be in conformance with the Occupational Safety and Health Act (OSHA) of 1970 and all regulations and standards promulgated under this Act, as well as all applicable state and local standards and regulations governing worker safety and health.
 - b. The cost of all disposal on this Project shall be paid for by the CONTRACTOR. **Due to the high concentration of total lead or other regulated heavy metals in the paint, the material shall be disposed of as a hazardous material regardless if the material tests hazardous or not.** Where testing is required by US EPA or state regulations, the CONTRACTOR shall hire a Virginia state licensed testing laboratory or disposal company (DISPOSAL SUBCONTRACTOR) to collect random representative samples of the combined paint and spent cleaning materials from each waste stream in the presence of the FIELD OBSERVER and the CONTRACTOR. All testing required by regulations or by the selected waste hauler or landfill, including any follow-up testing and the collection of the samples, shall be done at the CONTRACTOR'S expense. **Copies of all testing results shall be sent to the ENGINEER and OWNER prior to the removal of any debris from the site. Copies of all manifests, chain of custody forms, testing results, and treatment procedure documents shall be sent to the ENGINEER and OWNER prior to final payment on the Project.** Certification that each sample was taken and tested properly, and that the combined paint and spent cleaning materials were treated and disposed of in accordance with all US EPA and state requirements shall be submitted to the ENGINEER and OWNER.

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- c. The combined paint and spent cleaning material shall either be: treated by the disposal facility by an approved method to reduce the leachable concentration levels to below the regulatory limits and disposed of in accordance with all local and/or state regulations; or recycled and used as a raw material in a product approved by the appropriate regulatory agencies. Disposal, treatment or recycling of the material shall be in strict accordance with the federal, state and local laws including, but not limited to RCRA, Toxic Substance Control Act (TSCA), Hazardous Materials Transportation Act (HMTA), USEPA, and VDH regulations. The hauler shall obtain the necessary insurance and the necessary permits for transportation and shall provide evidence of such to the ENGINEER and OWNER.
- d. Included under this item is the furnishing of all materials, equipment, tools, utilities, labor, and supervision necessary for the completion of the work contained in this item in accordance with the drawings and specifications. The item generally includes the recycling, or treatment and transporting and deposition of all hazardous removed paint and spent abrasive material in an approved recycling facility or disposal site, including obtaining all the necessary insurance and the necessary permits for transportation and providing evidence of such to the ENGINEER and OWNER. On-site treatment of hazardous waste shall not be allowed.
- e. TRANSPORTATION: All material, including, but not limited to, the material removed by the recyclable steel grit, shall be transported to an approved recycling facility or hazardous waste landfill. The hauler shall obtain the necessary insurance and the necessary permits for transportation and shall provide evidence of such to the additional insureds listed elsewhere in this specification. The CONTRACTOR shall submit copies of the transporter's "Spill Contingency Plan" to the ENGINEER and OWNER prior to transporting any material from the site. The "Spill Contingency Plan" shall detail how spills or leaks which occur during transport shall be dealt with. The hauler shall have or shall obtain an identification number from the USEPA, the VDH, and all other applicable state and local licenses and permits.
- f. All containers and the labeling of the containers shall adhere to the US Department of Transportation's regulations (49 CFR Part 172) and the HMTA.
- g. TREATMENT and DISPOSAL of MATERIAL: All material, including, but not limited to, the material removed by the recyclable steel grit, shall be transported to: an approved recycling facility; an approved treatment facility to reduce the leachable concentration levels to below the allowable regulatory limits and disposed in a local and/or state approved waste landfill. All transporting, recycling, treatment, and disposal shall be in strict accordance with federal and state laws including but not limited to RCRA, TSCA, HMTA, the USEPA and the VDH regulations. The name of

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the recycling, treatment and/or disposal facility shall be submitted to the ENGINEER and OWNER for approval prior to removing any material from the project site. The disposal or recycling facility shall have or shall obtain an identification number from the USEPA, the VDH, and all other applicable state and local licenses and permits.

- h. The CONTRACTOR shall be responsible for obtaining the proper signatures of the hauler and designated receiving facility on the "manifest" form.
- i. PAYMENT: All costs associated with the transporting, recycling of the material or treatment, and disposal of the material in an approved hazardous waste facility shall be included in the **Base Bid**.

I. Specifications for Repairs and Additions to the Coopers Mountain Tank

1. Construction Drawing Submittals: Five sets of Construction Drawings (or other information) of all fabricated items shall be submitted for review. Drawings submitted shall at a minimum include the following:
 - a. Details of the 30 in. diameter shell manhole and davit if different than that shown in Drawings SM1 and SM2.
 - b. Details of the overflow pipe if different than that shown in Drawing OFC.
 - c. Details of the new exterior shell ladder if different than that shown in Drawing LR.
 - d. Catalog cuts, installation, operation and maintenance instructions for the new ladder safe-climbing device.
 - e. Details of the new ladder vandal deterrent if different than that shown in Drawing LV.
 - f. Details of the safety railing at the top of the shell ladder if different than that shown in Drawing SR.
 - g. Details of the new aluminum roof vent and steel exhaust fan flange if different than that shown in Drawing CRV, Sheets 1-4.
2. Temporary Construction Openings (Door Sheet): If the CONTRACTOR desires to cut a temporary opening through the permanent structure (including the roof) for equipment and personnel access, the CONTRACTOR shall submit the following information for review by the OWNER and ENGINEER **prior** to cutting or welding on the shell. If the submittal is favorably reviewed by the OWNER and ENGINEER, the CONTRACTOR shall remove and

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replace the shell plate in accordance with American Petroleum Institute (API) Standard 653, API Standard 650, and AWWA D100. All required temporary stiffening shall be installed by the CONTRACTOR prior to cutting the temporary shell opening. The CONTRACTOR shall remove the temporary stiffening after the door sheet is welded back in place and repair any surface imperfections prior to coating those areas of the tank surfaces. The CONTRACTOR shall submit for review the following minimum information prior to performing any cutting or welding on the shell or pressure boundary:

- a. A detailed drawing showing the size and configuration of the proposed opening, including details at the intersections with the existing weld seams, corners of the opening, and cut back of corner welds or girth seams.
 - b. Details of the location of the proposed opening relative to existing shell openings or penetrations, weld seams, or other attachments to the shell, such as anchor bolts chairs (if any).
 - c. A detail drawing of the proposed temporary stiffening along each side and across the top of the opening, including the weld details.
 - d. The proposed method (i.e. plasma arc, saw, flame cut, carbon arc-gouge, etc.) and sequence for cutting the opening in the shell and making cut backs. The corner weld between the shell and the bottom shall be gouged on each side at least 12 in. beyond the opening.
 - e. Details of the weld joint preparation for the shell and door sheet, including process for grinding and beveling (how the bevel will be made).
 - f. Description of weld procedures of all joints and attachment welds, including any preheating or post weld heat treating requirements, rod size, etc.
 - g. Description of weld sequence for reinstalling the door sheet.
 - h. Details of the proposed non-destructive examination (NDE) plan with the number and location of x-rays, magnetic particle testing, visual testing, dye penetrant testing, etc.
 - i. Welder credentials and certifications.
 - j. Weld qualification procedures.
3. Man-Hours: For unit price work paid for per single man-hour, only time worked performing the specified action, i.e. welding or grinding, and only the time of the person performing the specified action shall be recorded as man-hours to be paid under the unit price item. Costs

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for all equipment, supplies, normal rigging and associated time required, supervision, Competent Person, overhead, insurance, and profit shall be included in the Base Bid or distributed within the unit price Bid Item to be based upon man-hours used in actual performance of the specified action.

4. Initial Abrasive Blast Cleaning for Evaluation of Pitting: All areas of apparent pitting shall be initially abrasive blast cleaned for evaluation of pitting by the FIELD OBSERVER. The cost of this initial abrasive blast cleaning shall be included in the **Base Bid**.
5. Repair Welding: After the initial abrasive blast cleaning, any pits defined for pit welding by the FIELD OBSERVER shall be repaired by welding. All areas of apparent seam deterioration shall be initially abrasive blast cleaned, and any seam corrosion or undercut defined by the FIELD OBSERVER shall be repaired by arc-gouging or grinding the deteriorated weld seam (if determined necessary by the FIELD OBSERVER) and welding. **The number of man-hours of repair welding shall be paid for by the unit price in Bid Item 2.**
6. Pit Filling and Surfacing: After the specified surface preparation, any pits, rough areas or seams defined for pit filling or surfacing by the FIELD OBSERVER shall be filled with solventless polyamide epoxy seam sealer of the type recommended by the supplier of the interior paint system. The epoxy seam sealer shall be applied neatly and smoothly to the steel surfaces and any rough areas of the seam sealer shall be sanded smooth prior to the application of the coating system. Costs for all labor, equipment, supplies, rigging, and other associated costs for application of the solventless polyamide epoxy seam sealer shall be included in the unit price per gallon. **The number of gallons of pit filling shall be paid for by the unit price in Bid Item 3.**
7. Interior Chipping and/or Grinding: Any irregular surfaces defined by the FIELD OBSERVER, including but not limited to surface protrusions, burrs, fitting scars, sharp edges or corners, weld spatter, weld overlap and rough weld beads shall be removed from the interior surfaces of the tank, including appurtenances, by chipping and/or grinding these irregular surfaces to a smooth curve. The protruding parts of lugs or brackets shall be removed and ground flush. The objective of chipping and/or grinding is to eliminate irregular surfaces to provide a surface that is sufficiently smooth for the application of a uniform thickness coating without voids and free from defects. This chipping and/or grinding is also intended to make it easier for the interior coating to pass the holiday test. **The number of chipping and/or grinding man-hours on the tank interior shall be paid for by the unit price in Bid Item 4.**
8. Roof Rafter Replacement: After the initial abrasive blast cleaning of the interior, the roof rafters shall be evaluated, and those rafters which are deteriorated or bowed as defined by

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the OWNER and ENGINEER shall be replaced with a slightly larger channel. The existing rafters are approximately 4 in. channels; the new channels shall be C4 x 7.25. The size shall be verified prior to fabrication. The sequence and performance of this repair shall be such that the structural integrity of the roof is not compromised. **The cost for rafter replacement shall be paid for by the unit price per rafter in Bid Item 5.**

9. Legal Disposal/Recycling of Removed Steel or Appurtenances: Any existing steel plate, members, or appurtenances of the tank specified to be removed or replaced shall be removed and legally disposed of or recycled by the CONTRACTOR. Any steel plate, members, or appurtenances that are coated with a lead-based coating shall not be disposed of, but shall be recycled. Documentation demonstrating that the material was properly recycled shall be provided to the OWNER.
10. Existing Target Gage: The CONTRACTOR shall protect the existing target gage including the cables and float during the work. The proper operation of the target gage shall be verified. Any items of the target gage damaged during the work shall be replaced by the CONTRACTOR at no additional cost to the OWNER.
11. Concrete Repair: Any chipped concrete corners (greater than 1 in. loss), cracks (greater than 1/16 in. wide), and other failed areas of concrete indicated by the FIELD OBSERVER shall be chipped to sound concrete so that the edge of the chipped-out area is at least 60° with the surface of the concrete. Then these areas shall be prepared by cleaning to remove all paint, coating materials, dust, laitance, grease, or other bond-inhibiting materials. The CONTRACTOR shall apply a patch of Emaco R350 from Master Builders, Euco Verticote from Euclid Chemical Company, SikaRepair 223 from Sika Corporation, or equal allowed in writing by the ENGINEER. The materials shall be prepared and applied in accordance with the manufacturer's instructions. The patched areas shall conform to the original contour of the concrete foundation $\pm 1/8$ in. After the patching material has hardened sufficiently for the removal of any forms, etc., a water-based curing compound shall be applied to the surfaces of the repaired area. The curing compound shall be a water-based material such as Masterkure 200W from Master Builders, Aqua-Cure from Euclid Chemical Company, or equal allowed in writing by the ENGINEER. This concrete repair shall be performed a minimum of 28 days prior to the cleaning and painting of the concrete to allow the concrete patching material to cure in accordance with the manufacturer's recommendations.
12. Exterior Concrete Foundation-to-Steel Bottom Plate Interface: The existing sealant along the concrete-to-steel bottom plate interface shall be removed. After curing of the exterior coatings, all concrete-to-steel bottom plate intersections shall be filled with a 3/8 in. (or the gap width if it is larger than 3/8 in.) 45° fillet of Sikaflex-1a from Sika Corporation, or equal allowed in writing by the ENGINEER, applied in a workmanlike manner.

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13. Second Shell Manhole: The CONTRACTOR shall furnish and install a 30 in. diameter shell manhole in compliance with AWWA D100-11 and Drawing SM1 at approximately 180° from the existing shell manhole. The manhole cover shall be supported by a davit in accordance with Drawing SM2. The location shall be as directed by the FIELD OBSERVER. The CONTRACTOR shall have the manhole reinforcing plate air leak tested at 15 psig maximum in accordance with API Standard 653, 4th Edition (Addendum 2 – January 2012) – “Tank Inspection, Repair, Alteration, and Reconstruction” and API Standard 650, 11th Edition (Addendum 2 – May 2010) – “Welded Steel Tanks for Oil Storage.” This testing shall be performed in the presence of the FIELD OBSERVER. The cost of this testing shall be included in the Base Bid. After the pressure test the tell tale holes shall be plugged.
14. Davit for Existing Shell Manhole: The CONTRACTOR shall furnish and install a davit on the existing 24 in. diameter bolted shell manhole to support the manhole cover in compliance with Drawing SM2.
15. New 8 in. Diameter Overflow Pipe: CONTRACTOR shall remove the existing overflow pipe from the interior of the tank, and furnish and install a new 8 in. diameter overflow pipe on the tank exterior. The existing pipe, funnel, and brackets shall be completely removed and remains ground flush. The opening in the bottom plate shall be covered with a circular 1/4 in. thick steel plate welded with a continuous 1/4 in. fillet weld. The patch plate shall extend 2 in. beyond the opening being covered on all sides, and the weld of the patch plate shall be a minimum of 3 in. from the existing welds. The edges of the circular plate shall be ground to a 1/8 in. radius to facilitate cleaning and painting. The abandoned pipe section under the tank shall be equipped with a cap or blind flange outside the tank foundation below grade, and the pipe shall be filled with a concrete slurry up to the tank bottom plate. The CONTRACTOR shall furnish labor and material to design, fabricate, install, clean, and paint a new 8 in. diameter overflow pipe on the exterior of the tank. The overflow pipe shall extend from the new overflow inlet down the outside of the tank and terminate between 12 in. and 24 in. above grade as shown in Drawing OFC. The overflow inlet shall be located to maintain the existing top capacity level/overflow level. A new overflow weir box shall be installed inside the tank as shown on the Drawing. The bottom of the weir box shall be sloped toward the pipe so as to drain properly. The pipe shall be attached to the shell with continuously welded steel brackets. The pipe shall be 1/4 in. minimum wall thickness. A new flange and an elastomeric check valve shall be furnished and installed on the termination of the overflow pipe as shown in Drawing OFC. Backup ring, bolts, and nuts used to secure the check valve shall be stainless steel. The check valve shall be constructed from Hypalon or EPDM. The steel flange shall be cleaned and painted, and the paint shall be cured, before final installation of the elastomeric check valve. The elastomeric check valve shall be installed so that the overflow effluent is directed into a new drainage basin.

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The CONTRACTOR shall furnish and install a new concrete drainage basin and connect it to the existing piping at the base of the tank. The concrete drainage basin shall be furnished and installed directly under the discharge end of the overflow pipe as shown on Drawing OFC. Concrete shall be placed in the bottom of the basin to slope the bottom of basin toward the drain line. A grate shall be furnished and installed on the top of the basin as shown on Drawing OFC.

16. Interior Painter’s Rail Removal: The existing painter’s rail and brackets located around the interior shell shall be removed. The rail and brackets shall be completely removed and remains ground flush. This grinding shall be included in the **Base Bid**. **The rail must not be used to support rigging, loads, or personnel.**
17. Remove Interior Ladder: The CONTRACTOR shall remove the existing interior ladder from inside the tank and legally dispose of the ladder and all brackets. The interior ladder and brackets shall be completely removed and remains ground flush. This grinding shall be included in the **Base Bid**.
18. New Exterior Shell Ladder: The existing exterior shell ladder, cage, and brackets shall be completely removed and any remains ground flush. A new ladder and brackets conforming to OSHA 1910.27, OSHA 1926.1053, AWWA D100-11, and Drawing LR shall be furnished and installed. Adequate clearance for the climber in accordance with OSHA 1910.27 Fixed Ladders (ANSI A14.3, Safety Code for Fixed Ladders) shall be provided. The ladder shall be secured to the adjacent structure with steel bar brackets welded to the side rail and to the structure with complete structural welds. **Any necessary temporary protective devices for compliance with Federal OSHA requirements, all state and local safety regulations, and safe working practices shall be furnished and maintained by the CONTRACTOR.** The approved exterior shell ladder shall extend from 12 ft above grade upward to 48 in. above the top of the shell, providing safe access to the roof.
19. Ladder Safe-Climbing Device: After the exterior finish coat of paint has cured, a new galvanized steel cable-type safe-climbing device shall be furnished and installed on the exterior shell ladder from 36 in. from the bottom of the ladder to 54 in. above the top of the shell. The cable shall be attached in such a manner to retain the specified tension of the manufacturer. Excess cable shall be trimmed off and not allowed to coil below the ladder. The CONTRACTOR shall submit catalog cuts, and installation, operation and maintenance instructions to the ENGINEER for approval prior to construction. **Any necessary temporary protective devices for compliance with Federal OSHA requirements, all state and local safety regulations, and safe working practices shall be furnished and maintained by the CONTRACTOR.**

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20. Vandal Deterrent: A new lockable shield shall be furnished and installed on the lower portion of the shell ladder in accordance with Drawing LV. The device shall be Ladder Gate Climb Preventative Shield, manufactured by R. B. Industries, Greensboro, NC, or equal allowed in writing by the ENGINEER. Additional plates, bars, and brackets shall be installed adjacent to the ladder gate in accordance with Drawing LV, so as to fill the area between the ladder side rails and the shell for the length of the ladder gate. Alternatively instead of the aluminum plates at CONTRACTOR’S option 3/16 in. steel plates may be welded to the ladder braces adjacent to the ladder gate, so as to fill the area between the ladder side rails and the shell for the length of the ladder gate. All intersections between these plates with the ladder side rails, ladder brackets, and shell shall be seal welded on all sides.
21. Existing Antenna and Cable: The existing antenna and cable on and along the ladder shall be temporarily supported during the work. The antenna shall be relocated to the new railing on the roof. The cable along the exterior ladder shall be located to provide a minimum clear spacing between the cable and the ladder side rails of 3 in. to allow adequate clearance of a climber's hands around the side rails. The antenna and cable shall be attached to the brackets and railing after the finish coat has cured.
22. Safety Railing at Ladder Access: The CONTRACTOR shall furnish and install two sections of safety railing, with handrails, two intermediate rails, and toe bars on the roof adjacent to the top of the shell ladder to comply with present OSHA standards. Type 304 stainless steel chains with hooks shall be furnished and installed at the handrail and midpoint levels to provide closure of the rail opening while personnel are on the roof. The links of the chain shall have a minimum cross-sectional diameter of 3/16 in. The safety railing installation and ladder opening shall be in accordance with Drawing SR.
23. Aluminum Roof Vent and Steel Exhaust Fan Flange: The present roof vent shall be removed and the present vent opening expanded to 24 in. diameter. A new 24 in. diameter combination aluminum clog-resistant screened vent assembly and 24 in. diameter steel exhaust flange shall be installed in this opening. It shall conform to the dimensions and installation details shown in Drawing CRV, Sheets 1-4. The aluminum vent shall be removable from the steel manhole/exhaust flange. The vent screen shall be supported to not produce a gap greater than 0.10 in. The vent shall have a minimum of 450 square inches of free vent area. The bolts and nuts utilized in the tank vent shall be of stainless steel or silicon-bronze material. The vent shall be designed to prevent clogging over and have provision for release of or prevention of any subsequent vacuum or pressure formed in the tank, prior to structural damage or deformation of the tank. The vent screens and pallets shall be designed to return to their original design locations without human effort after the release of any pressure or vacuum and the screens shall continue to provide screening of the vent during subsequent tank operation. The vent cap shall be designed with a vertical

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overhang to prevent the entrance of wind driven debris and precipitation. The new exhaust flange assembly shall be welded with 3/16 in. fillet welds around its circumference on the outside and inside of the tank. The exhaust flange neck shall be welded to an annular eight bolt flange with continuous 1/4 in. fillet welds on the exterior and interior surfaces. Rough edges and weld spatter shall be ground smooth prior to cleaning to properly receive paint.

24. Shell Manhole Bolts: The CONTRACTOR shall remove and legally dispose the existing bolts and nuts from the flanged and bolted shell manhole. 28 new 3/4 in. diameter x 2-1/2 in. long galvanized steel bolts and nuts shall be furnished and installed in the existing flanged and bolted manhole. In addition, galvanized steel washers shall be furnished and installed between the bolt and the manhole, and between the nut and the manhole. Prior to installation of the bolts, the bolt threads shall be coated with a food-grade antiseize lubricant.
25. Manhole Gasket: After the completion of the application and curing of the interior paint, a new 1/4 in. thick full-face gasket shall be furnished and installed in the existing 24 in. diameter flanged and bolted shell manhole. The gasket shall be made from commercial grade neoprene, meeting ASTM D2000-86E, Type BC, with a 70A durometer rating, and black color.
26. Locking Manhole and Ladder Vandal Deterrent: The roof manhole entering the container and the ladder vandal deterrent shall be locked at the completion of the Work, using padlocks furnished by the OWNER.

J. Specifications for Cleaning and Painting the Exterior of the Coopers Mountain Tank

1. Surfaces to be Cleaned and Painted: All exterior surfaces of the tank, including (but not limited to) the roof, shell, bottom plate projection, all piping and appurtenances, and all threads, bolts, nuts, pins, brackets, seams, corners, etc. including the manhole neck of the roof vent, but excluding the aluminum vent and the ladder safe-climbing device, shall be cleaned and painted in accordance with the paragraphs in this section. **The metal vault covers and frame surfaces shall also be cleaned and painted in accordance with this Section.**
2. Irregular Surfaces: Any burrs, weld spatter, rough welds, weld overlap, bolts, sharp edges, or corners or any areas disturbed or installed by the CONTRACTOR'S operations which would cause difficulty in achieving a defect-free coating shall be chipped and/or ground smooth. Any pinholes or voids in exterior welds (such as the overflow brackets, ladder brackets, etc.) shall be filled with an epoxy seam sealer. It is not the intent to have these

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irregular surfaces chipped and/or ground flush. The objective of the chipping, grinding and/or seam sealing is to eliminate irregular surfaces to provide a surface that is sufficiently smooth for the application of a uniform thickness coating without voids. This chipping, grinding and/or seam sealing is considered incidental to the exterior painting and is to be included in the Base Bid.

3. Cleaning and Debris Removal: The surfaces mentioned above in paragraph 1 of this Section shall be cleaned to a degree of cleanliness equivalent to SSPC-SP 6, Commercial Blast Cleaning (modified) by a method approved by the ENGINEER and OWNER. The paint and cleaning debris shall be promptly stored in leak-proof covered dumpsters/containers on the site and disposed of in accordance with the Removal and Disposal of Cleaning Residue paragraph of the GENERAL HEALTH, SAFETY, AND ENVIRONMENTAL REQUIREMENTS Section of these Detailed Technical Specifications.
4. Priming: Not later than during the same day and before the forming of rust, the cleaned surfaces (SSPC-SP 6) shall be primed with the specified primer.
5. Stripe Coat: After the application of the first coat, all seams, edges, lapped joints, rough areas, bolt heads and nuts, remains of erection lugs and scars, corners (including the intersection of the ladder rungs and the side rails), member intersections, and other deviations from smooth surfaces shall be primed by brush and/or roller using 10% thinned material in a contrasting color to the primer. The 10% thinned material shall be worked sufficiently into all cracks, crevices, and seams. Initial spray application of this stripe coat shall not be permitted.
6. Priming Inaccessible Areas: Should any areas exist where the intersection of two members does not allow the complete cleaning of the intersection and the members cannot be separated for cleaning (such as bottom plate-to-foundation intersection, etc.), these intersections shall be post-primed with a material suitable for marginally cleaned surfaces. The material shall be recommended by the manufacturer of the exterior paint system and shall be as follows:
 - a. Sherwin-Williams Epoxy Mastic Aluminum II,
 - b. Tnemec 135 Chembuild,
 - c. or other material favorably reviewed in writing by the ENGINEER.
7. Intermediate Coat: The surfaces mentioned above in paragraph 1 of this Section shall then be given one intermediate coat of paint. The color shall differ from the prime coat and shall be slightly darker than that chosen for the finish coat, being dark enough to visually assure application of the finish coat, and light enough to allow proper hiding. (An intermediate coat lighter than the finish coat shall not be permitted due to the inability to distinguish

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between the lighter intermediate and the highlights of the gloss finish.) The coating manufacturer shall recommend a darker color for the intermediate coat and this color shall be submitted for review.

8. Finish Coat: The surfaces mentioned above in paragraph 1 of this Section shall then be given a final coat of the selected paint in the color selected by the OWNER.
9. Coatings: Acceptable coating manufacturers and specifications for the exterior surfaces of the steel water storage tank follow; however, the CONTRACTOR is advised that all manufacturers presented below must certify that the coatings furnished are in compliance with these Specifications.

a. **The Sherwin-Williams Company, Cleveland, OH 44101**

(1) Macropoxy 646	3.0 - 4.0 mils
(2) Macropoxy 646	2.0 - 3.0 mils
(3) Acrolon 218 HS (semi-gloss)	2.0 - 4.0 mils
Total System Dry Thickness	7.0 - 11.0 mils

b. **Tnemec Company, Inc., Kansas City, MO 64141**

(1) Series N69 Hi-Build Epoxoline II	3.0 - 4.0 mils
(2) Series N69 Hi-Build Epoxoline II	2.0 - 3.0 mils
(3) 1075U Endura-Shield II (semi-gloss)	2.0 - 4.0 mils
Total System Dry Thickness	7.0 - 11.0 mils

K. Specifications for Cleaning and Painting the Interior of the Coopers Mountain Tank

1. Surfaces to be Cleaned and Painted: All interior surfaces of the tank, including (but not limited to) the roof, roof structure, shell, bottom plate, manholes, appurtenances, threads, bolts, nuts, pins, brackets, seams, corners, etc., and the inside of the roof vent flange (with the exception of all surfaces of the vent interior and exterior, all screens, and all clog-resistant pallet materials, i.e. polyethylene, teflon, etc.), shall be cleaned and painted in accordance with the paragraphs in this Section. The exterior of the attachment flange to the roof shall be cleaned and painted in accordance with Specifications for Cleaning and Painting the Tank Exterior. The vent screens and the clog-resistant pallet materials shall be protected from the application of all coatings. **The piping and ladder/rung surfaces in each of the vaults on site (3 valve vaults, 1 meter vault, and 1 basin) shall also be cleaned and painted in accordance with this Section.**

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2. Cleaning Tank and Debris Removal: The OWNER will remove all water from the tank which will drain by gravity through the drain line. The CONTRACTOR shall remove all standing water, mud, and debris from the tank prior to starting work. All loose rust, loose paint, and dirt shall be removed from the tank interior prior to the beginning of cleaning operations. This debris shall be promptly stored in leak-proof covered dumpsters/containers on the site and disposed of in accordance with the Removal and Disposal of Cleaning Residue paragraph of the GENERAL HEALTH, SAFETY, AND ENVIRONMENTAL REQUIREMENTS Section of these Detailed Technical Specifications. Any water that enters the tank through leaking valves throughout the course of the Project shall be collected and removed from the tank by the CONTRACTOR at no additional cost to the OWNER.

3. Cleaning and Painting: The interior surfaces mentioned above in paragraph 1 of this Section shall be cleaned to a degree of cleanliness equivalent to SSPC-SP 10, Near-White Blast Cleaning (modified) by a method approved by the ENGINEER and OWNER. The paint and cleaning debris shall be promptly stored in leak-proof covered dumpsters/containers on the site and disposed of in accordance with the Removal and Disposal of Cleaning Residue paragraph of the GENERAL HEALTH, SAFETY, AND ENVIRONMENTAL REQUIREMENTS Section of these Detailed Technical Specifications. This debris shall be kept separate from the exterior paint and cleaning debris. The sequencing and timing of the areas to be cleaned and painted shall be done in a manner to complete the Work in accordance with these Detailed Technical Specifications and within Contract Time.
 - a. Prime Coat: Before the formation of rust and after observation of the surface by the FIELD OBSERVER, all cleaned surfaces shall be primed with the first coat specified below.
 - b. Stripe Coat: After the application of the first coat, all seams, all edges, rods, rough areas, deviations from smooth surfaces, pits, bolt heads and nuts, remains of erection lugs and scars, and corners shall be primed by brush and/or roller using 10% thinned material in a contrasting color to the primer. The 10% thinned material shall be worked sufficiently into all cracks, crevices, and seams. Initial spray application of the stripe coat shall not be permitted.
 - c. Finish Coat: After the recommended drying period of the prime coat and stripe coat, a second full finish coat shall be applied.

4. Seam Sealer: After cleaning, seam sealer is to be applied to the roof vent intersection and roof manhole to seal these intersections from moisture. It shall be applied in a workmanlike manner, being beveled at approximately 45°. **The cost of this seam sealing is to be included in the Base Bid, separate from other applications using seam sealer which may be listed in the SPECIFICATIONS FOR REPAIRS AND ADDITIONS TO THE**

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TANK section of these Detailed Technical Specifications and included as a separate bid item. At the CONTRACTOR'S option, the seam sealer may be applied after the priming of the surface, providing no rust has formed on any uncoated surfaces (such as crevices between plates). This material shall be recommended by the manufacturer of the interior paint system.

- a. Sherwin Williams Steel-Seam FT910,
 - b. Tnemec Series 215 Surfacing Epoxy,
 - c. or other material favorably reviewed in writing by the ENGINEER.
5. Compliance with ANSI/NSF Standard 61: The approval of potable water tank interior coatings and sealers shall be based on written certification of compliance with ANSI/NSF Standard 61 and compliance with the requirements of state agencies. Adequate manufacturer's published product data concerning the transportation, storage, mixing, thinning, pot life, application, and curing shall be furnished to ensure that the finished product complies with ANSI/NSF Standard 61.
6. Certification: Manufacturers presented below must certify that their coatings furnished are in compliance with the Specifications.
7. Coatings: Acceptable coating manufacturers and specifications for the interior wet surfaces of the steel water storage tank follow, and are intended to comply with the requirements of AWWA D102-11 Inside System No. 1, Two-Coat, Two-Component Catalyzed High Build Epoxy System with the exception that 10 mils total are required, and the brush post-priming of the seams and potential holiday areas is required.

a. **The Sherwin-Williams Company, Cleveland, OH 44101**

(1) Macropoxy 646 PW (Blue)	4.0	-	6.0 mils
(2) Macropoxy 646 PW (White)	5.0	-	6.0 mils
Total System Dry Thickness*	10.0	-	12.0 mils

*Although the minimum thickness per coat is 4.0 and 5.0 mils respectively, the minimum total system thickness shall be 10.0 mils.

b. **Tnemec Company, Inc., Kansas City, MO 64141**

(1) N140-1255 (Beige) Pota-Pox Plus	4.0	-	6.0 mils
(2) N140-15BL (Tank White) Pota-Pox Plus	5.0	-	6.0 mils
Total System Dry Thickness*	10.0	-	12.0 mils

*Although the minimum thickness per coat is 4.0 and 5.0 mils respectively, the minimum total system thickness shall be 10.0 mils.

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8. Underwater Epoxy: The following manufacturer's underwater curing epoxy paints/gels for use at the First Anniversary Inspection are acceptable for this Project:
 - a. **Raven Lining Systems, Tulsa, OK 74106**
 - (1) AquataPoxy A-61 Paint (White) 8.0 - 12.0 mils
9. Flexible Sealant: After the curing of the finish coat of paint, Sikaflex-1a flexible polyurethane sealant (or equal allowed in writing by the ENGINEER) shall be applied to the unwelded lapped container roof seams. It shall be applied in a workmanlike manner, being beveled at approximately 45°. The color of the sealant shall be white. The sealant shall have the approval for use in potable water from the US EPA, ANSI/NSF, and any applicable local health regulatory agency.
10. Holiday Testing: All interior coatings, including those above the top capacity level, shall be checked with a holiday detector by the CONTRACTOR. Testing shall be done in accordance with Section 5.1.3 of AWWA D102-11 and NACE SP0188 in the presence of the FIELD OBSERVER. Any voids indicated shall be repaired by applying more of the finish coat of paint by brush or roller. The repaired areas shall be retested after the appropriate curing time. The coating system must pass the holiday test regardless of the mil thickness existing.
11. Curing: **Each coat shall be properly cured before the application of any subsequent coats.** The interior area coating shall be completely cured and the tank shall not be filled with water until approved by the ENGINEER and OWNER. The exterior coating on the opposite side of water bearing surfaces shall be completely cured and the tank shall not be filled with water until approved by the ENGINEER and OWNER. CONTRACTOR shall perform solvent rub tests, pencil hardness tests, or other industry recognized testing procedures recommended by the coating manufacturer to determine the coatings have cured prior to filling the tank. A letter from the CONTRACTOR certifying their testing results and that the interior wet coating has cured such that it is ready for immersion service shall be submitted to the ENGINEER and OWNER prior to filling the tank. The CONTRACTOR shall monitor the tank bottom plate temperature during the interior coating curing to verify that minimum steel temperature requirements are satisfied.
12. Ventilation: Forced ventilation shall be supplied to the interior of the tank for a period of time equal to the paint manufacturer's recommended recoat times for the prime coat and for a continuous period of at least 48 hours after the final coat has been applied. Adequate ventilation of the container bottom and other low lying areas of the tank and container shall be provided by the CONTRACTOR as required for solvent release and coating cure. This

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ventilation shall, at a minimum, be in accordance with AWWA D102 and shall be submitted for review. The CONTRACTOR shall furnish, install, and operate the equipment that is necessary to provide forced ventilation to aid curing. If supplementary heating or dehumidification is required to effect curing, the CONTRACTOR shall furnish, install, and operate the equipment to perform the supplementary heating or dehumidification required at no additional cost to the OWNER.

13. Diesel Powered Equipment: Due to possible contamination of the surfaces to be painted, diesel powered equipment shall not be used inside the tank.
14. Recoat Cycle: The CONTRACTOR shall review the manufacturer's published product data for minimum and maximum recoat times for the interior coating system selected for use. No succeeding coat shall be applied prior to the minimum recoat time of the preceding coat. If the maximum recoat window is exceeded **prior** to application of the succeeding coat, then the CONTRACTOR shall prepare the interior surfaces in accordance with the manufacturer's published product data prior to the application of the next coat. The cost for this additional surface preparation shall be borne by the CONTRACTOR with no additional cost to the OWNER. The Contract Time shall not be increased as a result of this additional surface preparation.
15. Inlet/Outlet and Overflow Piping: The CONTRACTOR shall be responsible for assuring that no foreign material including, but not limited to paint, abrasive, rags, or tools enter the inlet/outlet or overflow piping during the execution of the Work. Any material found in this piping at the time the tank is placed back into service shall be removed at the expense of the CONTRACTOR. To aid in preventing the entrance of foreign material, the CONTRACTOR shall drain the pipe and either tack weld a plate over the inlet/outlet pipe or place an expandable plug in the pipe. If a plate is tack welded over the pipe, the plate shall completely cover the pipe and shall not be removed until the interior and exterior painting is complete. After the plate is removed the damaged areas of coating and weld burrs shall be ground smooth and recoated in accordance with the applicable paragraphs in these **Detailed Technical Specifications**. If an expandable plug is inserted in the pipe, the plug shall be placed approximately 18 in. down in the pipe to allow for proper coating of the inlet/outlet pipe. The inlet/outlet pipe interior shall be cleaned and painted approximately 1 pipe diameter below the top of the pipe.

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L. Specifications for Cleaning and Painting the Concrete Foundation and Exteriors of the Vaults at the Coopers Mountain Tank

1. Preparation: The CONTRACTOR shall dig down around the foundation to expose approximately 4 in. more of the concrete than is normally exposed (at least 10 in. from the top of concrete). The same is to be done with all other concrete within the tank site including the 3 valve vaults, 1 meter vault, and 1 basin. Prior to any digging, the CONTRACTOR shall contact the utility hot line, Virginia Miss Utility 1-800/257-7777, to have all utilities marked on the site. All concrete areas thus exposed (from the excavated ground to the bottom plate) shall be cleaned by blast cleaning to SSPC-SP 13, Surface Preparation of Concrete for Severe Service. Any existing coatings and other contaminants shall be removed without entirely removing the surface concrete. The aggregate shall not be exposed by the blasting operations. All efflorescence and laitance shall be removed from the surface. The cleaning operation shall be performed to open subsurface holes and voids and to produce a profile for the proper adherence of the specified coating system (equivalent to 40-60 grit sand paper). The abrasive used for the blast cleaning operations shall be a nonmetallic type abrasive. The color shall be approximately equivalent to the concrete surface to be cleaned.

2. Coating Application: All cleaned concrete areas (SSPC-SP 13) shall be given two roller-applied coats of the specified coating.

3. Approved Coatings: Acceptable coating manufacturers and specifications for the concrete surfaces follow; however, the CONTRACTOR is advised that all manufacturers presented below must certify that the coatings furnished are in compliance with these Specifications. The finish coat shall be in a color matching the Tnemec color listed below.

a. Sherwin Williams Company, Cleveland, OH 44115

(1) Macropoxy 646	3.0 - 5.0 mils
(2) Macropoxy 646	4.0 - 6.0 mils
Total System Dry Thickness	7.0 - 11.0 mils

b. Tnemec Company, Inc., Kansas City, MO 64141

(1) N140-15BL (Tank White) Pota-Pox Plus or Series N69 Hi-Build Epoxoline II	3.0 - 5.0 mils
(2) N140-15BL (Tank White) Pota-Pox Plus or Series N69 Hi-Build Epoxoline II	4.0 - 6.0 mils
Total System Dry Thickness	7.0 - 11.0 mils

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4. Backfill: After the coatings have cured and been approved by the ENGINEER, the earth is to be backfilled to the original grade or left as required by the OWNER.

M. Specifications for Repairs and Additions to the Park View Tank (Bid Item 7)

1. Construction Drawing Submittals: Five sets of Construction Drawings (or other information) of all fabricated items shall be submitted for review. Drawings submitted shall at a minimum include the following:
 - a. Details of the new overflow pipe if different than that shown in Drawings OFP1 and OFP2.
 - b. Details of the overflow splash pad if different than that shown in Drawing OS.
 - c. Details of the antenna mounting bracket if different than that shown in Drawing ABP.
 - d. Details of the new aluminum roof vent and steel exhaust fan flange if different than that shown in Drawing CRV, Sheets 1-4.
 - e. Details of the new 24 in. square roof manhole if different from that shown in Drawing RM.
2. Legal Disposal/Recycling of Removed Steel or Appurtenances: Any existing steel plate, members, or appurtenances of the tank specified to be removed or replaced shall be removed and legally disposed of or recycled by the CONTRACTOR. Any steel plate, members, or appurtenances that are coated with a lead-based coating shall not be disposed of, but shall be recycled. Documentation demonstrating that the material was properly recycled shall be provided to the OWNER.
3. New 8 in. Diameter Overflow Pipe: The CONTRACTOR shall trim the existing overflow pipe and furnish and install an extension to the existing overflow pipe to near grade. The remains of brackets shall be ground flush. The CONTRACTOR shall furnish labor and material to fabricate, install, clean, and paint a new 8 in. diameter overflow pipe extension. The overflow pipe shall extend from the existing overflow pipe at the roof knuckle and utilize the existing overflow inlet. The overflow pipe shall extend down the outside of the tank and column and terminate near grade as shown in Drawings OFP1 and OFP2. The pipe shall be attached to the column and shell with continuously welded steel brackets. The discharge end of the pipe shall be at least 2 ft away from the column. The pipe shall be 1/4 in. minimum wall thickness. An elastomeric check valve shall be furnished and installed on the termination of the overflow pipe as shown in Drawing OFP2. The check valve shall

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be installed to allow the overflow effluent to be directed onto a new concrete splash pad. The backup ring, bolts, and nuts used to secure the check valve to the end of the overflow pipe shall be stainless steel. The check valve shall be constructed from Hypalon or EPDM. The steel flange holding the check valve shall be cleaned and painted, and the paint shall be cured, before final assembly.

4. Overflow Splash Pad: A contoured splash pad (with broom finish) shall be furnished and installed directly under the discharge end of the overflow pipe to direct water away from the foundation. The concrete splash pad shall be reinforced with 10 gage, 6 X 6 wire mesh. The thinnest portion of the pad shall be no less than 6 in. thick. A 5 ft wide by 10 ft long by 1 ft deep area at the end of the overflow splash pad shall be filled with 4 in. to 6 in. minimum diameter stone rip rap. The splash pad shall be constructed as shown in Drawing OS.
5. Antenna Mounting Bracket: The existing antenna on the roof vent shall be relocated to the new antenna mounting bracket installed on the roof. The construction and installation of the new antenna mounting bracket shall be in accordance with Drawing ABP. New clamps shall be furnished and installed to secure the existing antenna to the new antenna mounting bracket. All electrical work shall be in accordance with the National Electric Code and all other governing specifications.
6. Revolving Shell and Roof Ladder Modifications: The existing 24 rung revolving shell and roof ladder shall be modified to a stationary ladder. The upper end of the ladder side rails shall be neatly trimmed to clear the new 24 in. diameter combination screened vent assembly and exhaust fan flange. The existing wheels shall be removed and new 4 in. x 3/8 in. steel bar brackets shall be installed at a maximum spacing of 10 ft on center. The brackets shall be of sufficient length to provide 7 in. minimum toe clearance in accordance with OSHA requirements. The brackets shall be completely seal welded with full 1/4 in. fillet welds to the ladder side rails and container. The field trimmed ends shall be ground smooth to accept the specified paint system. The ladder shall be located adjacent to the roof manhole, but in such a way that the manhole cover can fully open. **Any necessary temporary protective devices for compliance with Federal OSHA requirements, all state and local safety regulations, and safe working practices shall be furnished and maintained by the CONTRACTOR.**
7. Aluminum Roof Vent and Steel Exhaust Fan Flange: The present finial ball shall be removed and the present opening expanded to 24 in. diameter. A new 24 in. diameter combination aluminum clog-resistant screened vent assembly and 24 in. diameter steel exhaust flange shall be installed in this opening. It shall conform to the dimensions and installation details shown in Drawing CRV, Sheets 1-4. The aluminum vent shall be removable from the steel manhole/exhaust flange. The vent screen shall be supported to not

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produce a gap greater than 0.10 in. The vent shall have a minimum of 450 square inches of free vent area. The bolts and nuts utilized in the tank vent shall be of stainless steel or silicon-bronze material. The vent shall be designed to prevent clogging over and have provision for release of or prevention of any subsequent vacuum or pressure formed in the tank, prior to structural damage or deformation of the tank. The vent screens and pallets shall be designed to return to their original design locations without human effort after the release of any pressure or vacuum and the screens shall continue to provide screening of the vent during subsequent tank operation. The vent cap shall be designed with a vertical overhang to prevent the entrance of wind driven debris and precipitation. The new exhaust flange assembly shall be welded with 3/16 in. fillet welds around its circumference on the outside and inside of the tank. The exhaust flange neck shall be welded to an annular eight bolt flange with continuous 1/4 in. fillet welds on the exterior and interior surfaces. Rough edges and weld spatter shall be ground smooth prior to cleaning to properly receive paint.

8. New 24 in. Square Roof Manhole: The existing roof hatch and neck shall be replaced with a new 24 in. square roof manhole. The manhole, and its installation, shall be per Drawing RM. A 1/4 in. thick cover plate shall be utilized to fill any void in the roof plate adjacent to the new roof manhole neck. The 1/4 in. cover plate shall lap over the existing roof plates at least 1-1/2 in. but not more than 3 in., and be welded with 1/4 in. continuous fillet welds on the outside and inside.
9. Riser Manhole Bolts: The CONTRACTOR shall remove and legally dispose the existing bolts and nuts from the flanged and bolted riser manhole. 16 new approximately 13/16 in. diameter x 3-1/2 in. long galvanized steel bolts and nuts shall be furnished and installed in the existing flanged and bolted manhole. In addition, galvanized steel washers shall be furnished and installed between the bolt and the manhole, and between the nut and the manhole. Prior to installation of the bolts, the bolt threads shall be coated with a food-grade antiseize lubricant.
10. Manhole Gasket: After the completion of the application and curing of the interior paint, a new 1/4 in. thick full-face gasket shall be furnished and installed in the existing 14 in. diameter flanged and bolted riser manhole. The gasket shall be made from commercial grade neoprene, meeting ASTM D2000-86E, Type BC, with a 70A durometer rating, and black color.
11. Locking Manhole: The roof manhole entering the container shall be locked at the completion of the Work, using a padlock furnished by the OWNER.

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N. Specifications for Repairs and Additions to the Ridgeville Tank (Bid Item 8)

1. Construction Drawing Submittals: Five sets of Construction Drawings (or other information) of all fabricated items shall be submitted for review. Drawings submitted shall at a minimum include the following:
 - a. Details of the overflow pipe if different than that shown in Drawing OFR.
 - b. Details of the overflow splash pad if different than that shown in Drawing OS.
 - c. Details of the new aluminum roof vent and steel exhaust fan flange if different than that shown in Drawing CRV, Sheets 1-4.
 - d. Details of the new 24 in. square roof manhole if different from that shown in Drawing RM.
2. Legal Disposal/Recycling of Removed Steel or Appurtenances: Any existing steel plate, members, or appurtenances of the tank specified to be removed or replaced shall be removed and legally disposed of or recycled by the CONTRACTOR. Any steel plate, members, or appurtenances that are coated with a lead-based coating shall not be disposed of, but shall be recycled. Documentation demonstrating that the material was properly recycled shall be provided to the OWNER.
3. Modification of Overflow Pipe: The CONTRACTOR shall trim the lower section of the overflow pipe and install a new angled section of overflow pipe, flange, and elastomeric check valve as shown in Drawing OFR. The new angled section of pipe shall be attached to the shell with continuously welded steel brackets. The pipe section shall be 1/4 in. minimum wall thickness. A welded steel flange and an elastomeric check valve shall be furnished and installed on the termination of the overflow pipe as shown in Drawing OFR. The new flange shall be welded to the pipe on the interior and exterior with continuous fillet welds all around. The check valve shall be installed to allow the overflow effluent to be directed onto a new concrete splash pad. The backup ring, bolts, and nuts used to secure the check valve to the end of the overflow pipe shall be stainless steel. The check valve shall be constructed from Hypalon or EPDM. The steel flange holding the check valve shall be cleaned and painted, and the paint shall be cured, before final assembly.
4. Overflow Splash Pad: A contoured splash pad (with broom finish) shall be furnished and installed directly under the discharge end of the overflow pipe to direct water away from the foundation. The concrete splash pad shall be reinforced with 10 gage, 6 X 6 wire mesh. The thinnest portion of the pad shall be no less than 6 in. thick. A 5 ft wide by 10 ft long by 1 ft deep area at the end of the overflow splash pad shall be filled with 4 in. to 6 in.

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minimum diameter stone rip rap. The splash pad shall be constructed as shown in Drawing OS.

5. Revolving Roof Ladder Modifications: The existing 28 rung revolving roof ladder shall be modified to a stationary ladder. The upper end of the ladder side rails shall be neatly trimmed to clear the new 24 in. diameter combination screened vent assembly and exhaust fan flange. The existing wheels shall be removed and new 4 in. x 3/8 in. steel bar brackets shall be installed at a maximum spacing of 10 ft on center. The brackets shall be of sufficient length to provide 7 in. minimum toe clearance in accordance with OSHA requirements. The brackets shall be completely seal welded with full 1/4 in. fillet welds to the ladder side rails and container. The field trimmed ends shall be ground smooth to accept the specified paint system. The ladder shall be located adjacent to the roof manhole, but in such a way that the manhole cover can fully open. **Any necessary temporary protective devices for compliance with Federal OSHA requirements, all state and local safety regulations, and safe working practices shall be furnished and maintained by the CONTRACTOR.**

6. Aluminum Roof Vent and Steel Exhaust Fan Flange: The present vent shall be removed and the present opening expanded to 24 in. diameter. A new 24 in. diameter combination aluminum clog-resistant screened vent assembly and 24 in. diameter steel exhaust flange shall be installed in this opening. It shall conform to the dimensions and installation details shown in Drawing CRV, Sheets 1-4. The aluminum vent shall be removable from the steel manhole/exhaust flange. The vent screen shall be supported to not produce a gap greater than 0.10 in. The vent shall have a minimum of 450 square inches of free vent area. The bolts and nuts utilized in the tank vent shall be of stainless steel or silicon-bronze material. The vent shall be designed to prevent clogging over and have provision for release of or prevention of any subsequent vacuum or pressure formed in the tank, prior to structural damage or deformation of the tank. The vent screens and pallets shall be designed to return to their original design locations without human effort after the release of any pressure or vacuum and the screens shall continue to provide screening of the vent during subsequent tank operation. The vent cap shall be designed with a vertical overhang to prevent the entrance of wind driven debris and precipitation. The new exhaust flange assembly shall be welded with 3/16 in. fillet welds around its circumference on the outside and inside of the tank. The exhaust flange neck shall be welded to an annular eight bolt flange with continuous 1/4 in. fillet welds on the exterior and interior surfaces. Rough edges and weld spatter shall be ground smooth prior to cleaning to properly receive paint.

7. New 24 in. Square Roof Manhole: The existing roof hatch and neck shall be replaced with a new 24 in. square roof manhole. The manhole, and its installation, shall be per Drawing RM. A 1/4 in. thick cover plate shall be utilized to fill any void in the roof plate adjacent to the new roof manhole neck. The 1/4 in. cover plate shall lap over the existing

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roof plates at least 1-1/2 in. but not more than 3 in., and be welded with 1/4 in. continuous fillet welds on the outside and inside.

8. Shell Manhole Bolts: The CONTRACTOR shall remove and legally dispose the existing bolts and nuts from the flanged and bolted riser manhole. 28 new approximately 3/4 in. diameter x 2-1/2 in. long galvanized steel bolts and nuts shall be furnished and installed in the existing flanged and bolted manhole. In addition, galvanized steel washers shall be furnished and installed between the bolt and the manhole, and between the nut and the manhole. Prior to installation of the bolts, the bolt threads shall be coated with a food-grade antiseize lubricant.
9. Manhole Gasket: After the completion of the application and curing of the interior paint, a new 1/4 in. thick full-face gasket shall be furnished and installed in the existing 24 in. diameter flanged and bolted shell manhole. The gasket shall be made from commercial grade neoprene, meeting ASTM D2000-86E, Type BC, with a 70A durometer rating, and black color.
10. Locking Manhole: The roof manhole entering the container shall be locked at the completion of the Work, using a padlock furnished by the OWNER.

O. Specifications for Spot Cleaning and Spot Coating Exterior Areas of Repair and New Items for Park View Tank and Ridgeville Tank (Bid Items 7 and 8)

1. Surfaces to be Shop Cleaned and Shop Primed: Any new items for the exterior of the tank shall be shop cleaned and shop primed in accordance with the paragraphs in this Section.
2. Shop Preparation: Clean all steel surfaces of the new exterior accessories in the shop to SSPC-SP6, Commercial Blast Cleaning (modified).
3. Black Light in Shop: If the potential exists for grease or oil on the steel surfaces in the shop, the CONTRACTOR shall evaluate the steel in the shop by black light to verify any presence of grease or oil on the surface. If present, the grease and/or oil shall be properly removed from the steel surface.
4. Rough Areas: These paragraphs apply to rough areas created during the fabrication processes. This shall be included in each of the **Bid Items 7 and 8**.
 - a. Burrs, weld spatter, sharp edges, corners or rough welds which would cause difficulty in achieving a defect-free coating shall be chipped or ground smooth.

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- b. It is not the intent to have the welds or scars chipped and/or ground flush. The objective of the chipping and/or grinding is to eliminate sharp edges, corners, and overlaps in order to provide a surface for the application of a uniform thickness coating without voids.
 - c. These chipped and/or ground areas shall be cleaned to provide the proper surface profile for the paint.
5. Shop Priming: Within eight (8) hours of the shop cleaning and before the formation of rust, the exterior steel surfaces cleaned in the shop (SSPC-SP6) shall be primed with the specified shop primer, with the exception of a 2 in. wide margin at the edges to be field welded. After the application of the prime coat, any seams, plate edges, joints, rough areas, bolt heads and nuts, remains of erection lugs and scars, corners, member intersections, and other deviations from smooth surfaces shall be primed by brush using 10% thinned material in a contrasting color to the primer.
6. Field Surface Preparation and Debris Removal: All areas of coating damaged during the repairs, shall be spot cleaned to SSPC-SP 11, Power Tool Cleaning to Bare Metal. Coating surfaces surrounding the spot cleaned areas shall be sanded or scarified to provide a proper surface profile in the existing coating for the adherence of the spot prime coat. The paint and cleaning debris shall be promptly stored in leak-proof covered dumpsters on the site and disposed of in accordance with the Removal and Disposal of Cleaning Residue paragraph of these Specifications.
7. Spot Priming:
 - a. Not later than during the same day and before the formation of rust, the spot cleaned exterior surfaces (SSPC-SP 11) shall be spot primed with the specified primer.
 - b. Stripe Coat: Special attention shall be given to welds, lapped joints, bolt heads and nuts, threads, corners, member intersections, and other deviations from smooth surfaces. These areas shall be spot primed by brush with a 10% thinned coat, after the initial spot priming.
8. Spot Intermediate Coat: The spot primed areas shall then be given one spot intermediate coat of paint. The color shall differ from the primer and shall be slightly darker than that chosen for the finish coat, being dark enough to visually assure application of the finish coat, and light enough to allow proper hiding. (An intermediate coat lighter than the finish coat shall not be permitted due to the inability to distinguish between the lighter intermediate and the highlights of the finish).

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9. Spot Finish Coat: The spot intermediate coated areas shall then be given a final spot coat of the selected paint matching the color of the existing exterior finish coat.

10. New Item Coatings: Acceptable coating manufacturers and specifications for the new exterior items follow; however, the CONTRACTOR is advised that all manufacturers presented below must certify that the coatings furnished are in compliance with these Specifications.

a. **Sherwin Williams Company, Cleveland, OH 44115**

(shop)	Macropoxy 646	2.0 - 4.0 mils
(field)	Macropoxy 646	2.0 - 3.0 mils
(field)	Acrolon 218 HS (semi-gloss)	2.0 - 3.0 mils
	Total System Dry Thickness	6.0 - 10.0 mils

b. **Tnemec Company, Inc., Kansas City, MO 64141**

(shop)	Series N69 Hi-Build Epoxoline II	2.0 - 4.0 mils
(field)	Series 27 Typoxy	2.0 - 3.0 mils
(field)	Series 1075 Endura-Shield II (semi-gloss)	2.0 - 3.0 mils
	Total System Dry Thickness	6.0 - 10.0 mils

11. Coatings for Areas Damaged by Repairs: Acceptable coating manufacturers and specifications for the exterior surfaces damaged by the repairs follow; however, the CONTRACTOR is advised that all manufacturers presented below must certify that the coatings furnished are in compliance with these Specifications.

a. **Sherwin Williams Company, Cleveland, OH 44115**

(spot)	Epoxy Mastic Aluminum II	3.0 - 5.0 mils
(spot)	Macropoxy 646	2.0 - 3.0 mils
(spot)	Acrolon 218 HS (semi-gloss)	2.0 - 3.0 mils
	Total System Dry Thickness	7.0 - 11.0 mils

b. **Tnemec Company, Inc., Kansas City, MO 64141**

(spot)	135 Chembuild	3.0 - 5.0 mils
(spot)	Series 27 Typoxy	2.0 - 3.0 mils
(spot)	Series 1075 Endura-Shield II (semi-gloss)	2.0 - 3.0 mils
	Total System Dry Thickness	7.0 - 11.0 mils

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P. Specifications for Spot Cleaning and Spot Coating Interior Areas of Repair and New Items for Park View Tank and Ridgeville Tank (Bid Items 7 and 8)

1. Surfaces to be Shop Cleaned and Shop Primed: Any new items for the interior of the tank, including but not limited to the interior of the roof manhole and interior of the steel attachment flange for the vent, shall be shop cleaned and shop primed in accordance with the paragraphs in this Section.
2. Shop Preparation: Clean all steel surfaces of the new interior accessories in the shop to SSPC-SP 10, Near-White Blast Cleaning (modified).
3. Black Light in Shop: If the potential exists for grease or oil on the steel surfaces in the shop, the CONTRACTOR shall evaluate the steel in the shop by black light to verify any presence of grease or oil on the surface. If present, the grease and/or oil shall be properly removed from the steel surface.
4. Rough Areas: These paragraphs apply to rough areas created during the fabrication processes. This shall be included in each of the **Bid Items 7 and 8**.
 - a. Burrs, weld spatter, sharp edges, corners or rough welds which would cause difficulty in achieving a defect-free coating shall be chipped or ground smooth.
 - b. It is not the intent to have the welds or scars chipped and/or ground flush. The objective of the chipping and/or grinding is to eliminate sharp edges, corners, and overlaps in order to provide a surface for the application of a uniform thickness coating without voids.
 - c. These chipped and/or ground areas shall be cleaned to provide the proper surface profile for the paint.
5. Shop Priming: Within eight (8) hours of the shop cleaning and before the formation of rust, the interior steel surfaces cleaned in the shop (SSPC-SP10) shall be primed with the specified shop primer, with the exception of a 2 in. wide margin at the edges to be field welded. After the application of the prime coat, any seams, plate edges, joints, rough areas, bolt heads and nuts, remains of erection lugs and scars, corners, member intersections, and other deviations from smooth surfaces shall be primed by brush using 10% thinned material in a contrasting color to the primer.
6. Shop Finish Coat: The shop primed areas shall then be given a final shop coat of the selected paint.

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7. Field Surface Preparation and Debris Removal: All areas of coating damaged during the repairs, shall be spot cleaned to SSPC-SP 11, Power Tool Cleaning to Bare Metal. Coating surfaces surrounding the spot cleaned areas shall be sanded or scarified to provide a proper surface profile in the existing coating for the adherence of the spot prime coat. The paint and cleaning debris shall be promptly stored in leak-proof covered dumpsters on the site and disposed of in accordance with the Removal and Disposal of Cleaning Residue paragraph of these Specifications.
8. Field Spot Coating: Not later than during the same day and before the formation of rust, the spot cleaned interior surfaces (SSPC-SP 11) shall be spot coated with the specified coating.
9. New Item Coatings: Acceptable coating manufacturers and specifications for the new interior items follow; however, the CONTRACTOR is advised that all manufacturers presented below must certify that the coatings furnished are in compliance with these Specifications.

a. **The Sherwin-Williams Company, Cleveland, OH 44101**

(shop) Macropoxy 646 PW (Blue)	4.0	-	6.0 mils
(shop) Macropoxy 646 PW (White)	5.0	-	6.0 mils
Total System Dry Thickness*	10.0	-	12.0 mils

*Although the minimum thickness per coat is 4.0 and 5.0 mils respectively, the minimum total system thickness shall be 10.0 mils.

b. **Tnemec Company, Inc., Kansas City, MO 64141**

(shop) N140-1255 (Beige) Pota-Pox Plus	4.0	-	6.0 mils
(shop) N140-15BL (Tank White) Pota-Pox Plus	5.0	-	6.0 mils
Total System Dry Thickness*	10.0	-	12.0 mils

*Although the minimum thickness per coat is 4.0 and 5.0 mils respectively, the minimum total system thickness shall be 10.0 mils.

10. Coatings for Areas Damaged by Repairs: Acceptable coating manufacturers and specifications for the interior surfaces damaged by the repairs follow; however, the CONTRACTOR is advised that all manufacturers presented below must certify that the coatings furnished are in compliance with these Specifications.

a. **Raven Lining Systems, Tulsa, OK 74106**

(1) AquataPoxy A-61 Paint (White)	8.0	-	12.0 mils
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11. Curing: **Each coat shall be properly cured before the application of any subsequent coats.** The interior area coating shall be completely cured and the tank shall not be filled

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with water until approved by the ENGINEER and OWNER. The exterior coating on the opposite side of water bearing surfaces shall be completely cured and the tank shall not be filled with water until approved by the ENGINEER and OWNER. The CONTRACTOR shall monitor the tank temperature during the interior coating curing to verify that minimum steel temperature requirements are satisfied.

12. Diesel Powered Equipment: Due to possible contamination of the surfaces to be painted, diesel powered equipment shall not be used inside the tank.
13. Recoat Cycle: The CONTRACTOR shall review the manufacturer's published product data for minimum and maximum recoat times for the interior coating system selected for use. No succeeding coat shall be applied prior to the minimum recoat time of the preceding coat. If the maximum recoat window is exceeded **prior** to application of the succeeding coat, then the CONTRACTOR shall prepare the interior surfaces in accordance with the manufacturer's published product data prior to the application of the next coat. The cost for this additional surface preparation shall be borne by the CONTRACTOR with no additional cost to the OWNER. The Contract Time shall not be increased as a result of this additional surface preparation.
14. Inlet/Outlet and Overflow Piping: The CONTRACTOR shall be responsible for assuring that no foreign material including, but not limited to paint, abrasive, rags, or tools enter the inlet/outlet or overflow piping during the execution of the Work. Any material found in this piping at the time the tank is placed back into service shall be removed at the expense of the CONTRACTOR. The interiors of the pipe ends shall be cleaned and painted approximately 1 pipe diameter into the pipe end.

Q. Disinfection of the Tanks and Piping

1. Standards: The disinfection of the tank and piping shall comply with the following standards:
 - a. American Water Works Association (AWWA) - ANSI/AWWA C652-11, “Disinfection of Water-Storage Facilities.”
 - b. Virginia Department of Health (VDH), “Waterworks Regulations,” - Article 5, Section 12 VAC 5-590-1080, Paragraphs O. through O.2.
2. Cleaning: After curing and prior to disinfecting, the CONTRACTOR shall wash the tank interior with potable water. All equipment, including brooms, brushes, spray equipment, and worker's boots, shall be disinfected before they are used to clean the water storage

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facility. The CONTRACTOR shall supply an adequate flow of water (20 gpm minimum) with sufficient pressure (60 psi minimum at the nozzle) to wash thoroughly all the interior surfaces, including those surfaces above the top capacity level. All residue shall be removed from the tank and shall be disposed of properly.

3. Disinfection: It is the CONTRACTOR'S responsibility to flush and disinfect the tank until two consecutive satisfactory water samples (collected at least 24 hours apart) are reported from the OWNER'S selected laboratory. Method Two (Part III, Article 5, Section 12 VAC 5-590-1080, Paragraph O 1 b) or Method Three (Part III, Article 5, Section 12 VAC 5-590-1080, Paragraph O 1 c) of the Virginia Department of Health Waterworks Regulations shall be used. The OWNER shall take and send in the samples to the laboratory, but shall assume no responsibility for the sampling technique or the care of the samples. The stored tank water shall comply with current VDH and USEPA standards for organic, inorganic, and biological contaminants as influenced by the operations of the CONTRACTOR.

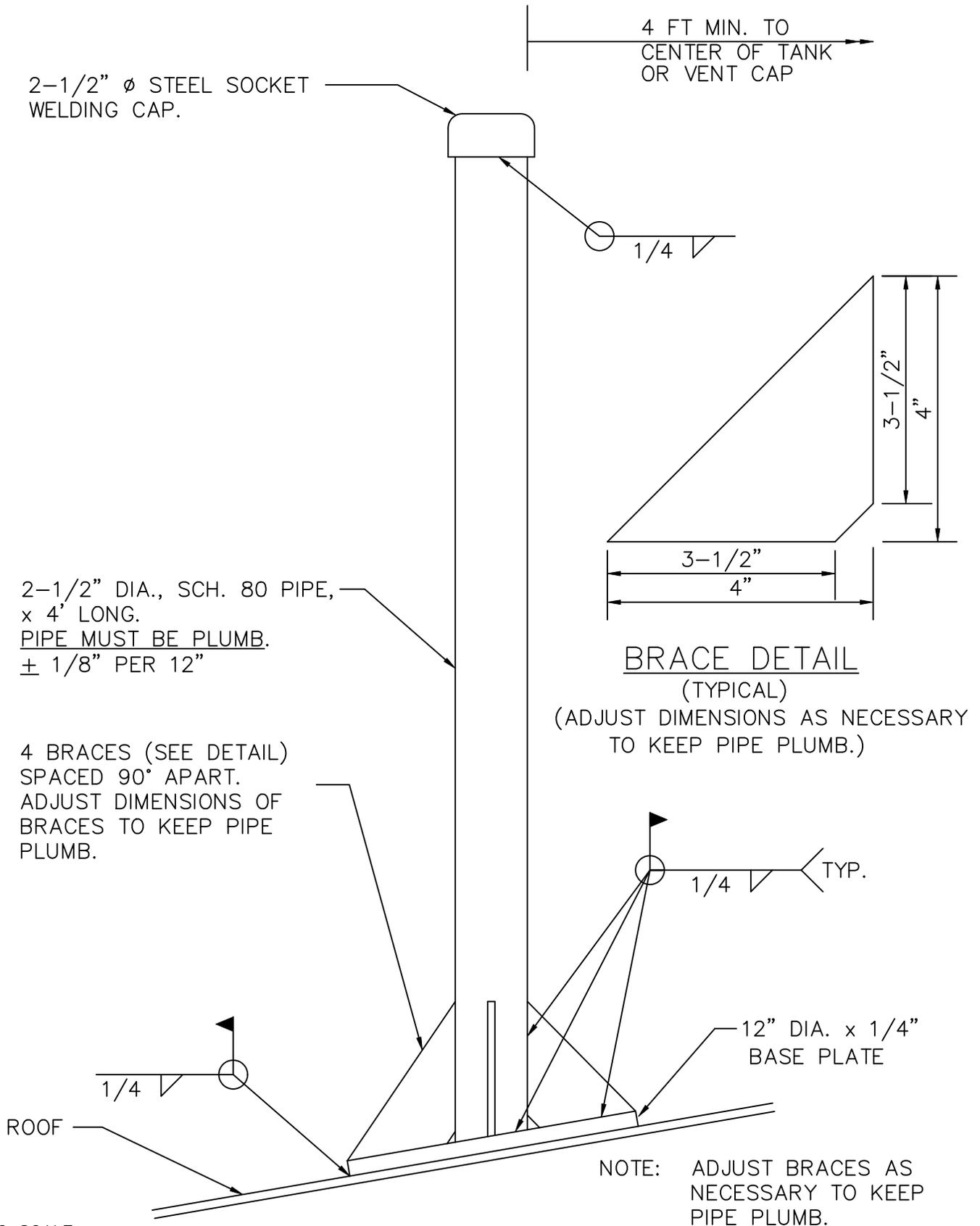
R. Unanticipated Additional Work (Bid Item 6)

It is believed that these Detailed Technical Specifications adequately describe the Work to be performed. If during the Work, it is found that additional Work is required and it is authorized in writing by the ENGINEER and OWNER, **this Work shall be paid for per single man-hour, including all welding, equipment, normal rigging, labor, supplies, overhead, insurance, and profit. The number of unanticipated additional work man-hours shall be paid for by the unit price in Bid Item 6.**

END OF DETAILED TECHNICAL SPECIFICATIONS

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ANTENNA MOUNTING SUPPORT



NOT TO SCALE

CLOG-RESISTANT ALUMINUM ROOF VENT 24 INCH DIAMETER

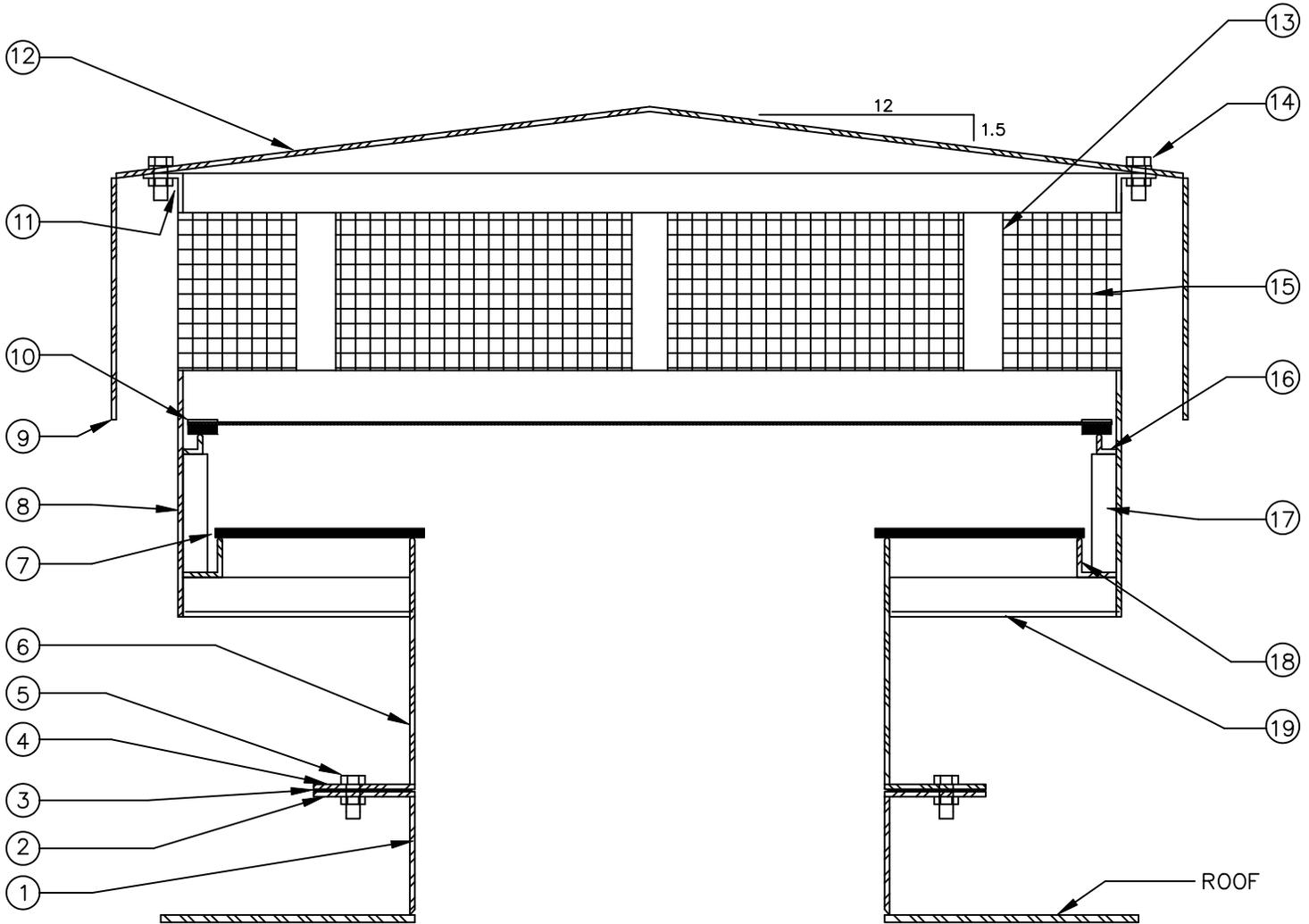


FIGURE - 1

NOTE: INSTALL VENT ASSEMBLY PLUMB $\pm 1/8$ IN. IN 12 IN.

24 IN. DIAMETER ALUMINUM VENT MATERIAL SPECIFICATION FOR FIG. 1

- 1 - Steel plate rolled to 24-1/2 in. O.D. X 6 in. high (min.) X 1/4 in. tk, must project 4 in. above roof (install plumb)
- 2 - Steel plate 34 in. O.D. X 1/4 in. X 24 in. I.D. (must be installed level)
Bolt Circle: (8) 7/16 in. dia. holes @ 15-1/8 in. rad.
- 3 - Rubber gasket 34 in. O.D. X 3/8 in. X 24-1/4 in. I.D.
Bolt Circle: (8) 7/16 in. dia. holes @ 15-1/8 in. rad.
- 4 - Aluminum plate 34 in. O.D. X 3/16 in. X 24 in. I.D.
Bolt Circle: (8) 7/16 in. dia. holes @ 15-1/8 in. rad.
- 5 - (8) 304 S.S. bolts w/ H.H. nuts and (2) flat washers per bolt, 3/8 in. dia.
X 1-1/2 in. long
- 6 - Aluminum plate rolled to 24 in. I.D. X 3/16 in. X 12-1/2 in. long (round one edge)
- 7 - Linear High Density Poly-Ethylene (HDPE) vacuum pallet 45 in. O.D. X 23 in. I.D.
X 1/2 in. tk
- 8 - Aluminum plate rolled to 48 in. O.D. X 12-1/2 in. high X 1/8 in. tk
- 9 - Aluminum plate rolled to 54 in. O.D. X 12 in. high X 1/8 in. tk
- 10 - Pressure pallet, refer to Fig. 2
- 11 - Aluminum 2 in. X 2 in. X 3/16 in., angle rolled to 47-3/4 in. I.D. leg out w/ (4) evenly spaced 9/16 in. dia. holes (refer to Fig. 3)
- 12 - Aluminum cone roof plate 54 in. dia. X 1/8 in. tk (may substitute pressed plate or flanged and dished head)
- 13 - (6) Aluminum bar 2 in. X 3/16 in. X 8 in. long (refer to Fig. 5)
- 14 - (4) 304 S.S. bolts 1/2 in. dia. X 1-1/2 in. long, with (1) flat washer, (1) lock washer, and (1) nut per bolt (refer to Fig. 3) May substitute 1 in. ϕ X 1/2 in. thick bar stock, drilled and tapped, and welded to angle for nut and lock washer.
- 15 - 3/4 in. X .125 in. flattened expanded aluminum (opening size .625 in. x 1.75 in.) formed to 48 in. I.D. X 11 in. high
- 16 - Aluminum angle 1 in. X 1 in. x 3/16 in. rolled to 45-3/4 in. I.D. leg out w/ (8) evenly spaced 3/16 in. dia. holes located midway on the horizontal leg
- 17 - (6) Aluminum bar 6 in. X 1-1/4 in. X 1/8 in.
- 18 - Aluminum angle 2 in. X 2 in. X 3/16 in. rolled to 43-3/4 in. I.D. leg out w/ (8) evenly spaced 3/16 in. dia. holes located midway on the horizontal leg
- 19 - (6) Aluminum angle 2 in. X 2 in. X 3/16 in. X 11-5/8 in. long, oriented leg-down

Operating Instructions:

- 1) Annually inspect and clean out the vent interior.
- 2) More frequent inspection and cleaning may be required if unusually severe dust conditions exist.
- 3) Severe icing could cause freezing of the pallets rendering the pallets inoperative. More frequent inspections are required during freezing conditions. The vent and pallets should be thawed if necessary.
- 4) The pallets and interior surfaces of the vent should not be painted. If the exterior surfaces are to be painted, TIC recommends these surfaces be hand-roughened with sand paper and solvent washed prior to coating. A primer acceptable for this type of surface should be used.
- 5) The vacuum and pressure-relief pallets should be removed during cleaning and painting of the tank to prevent them from clogging. The Owner's representative should verify the proper re-installation of the pallets prior to placing the tank back into service.

Note: All steel items to be made from A36, or A283 Grades A, B, or C steel unless otherwise specified.

All aluminum items to be made from Grade 3003-H14 or H16 formable, unless otherwise specified.

All dimensions to \pm 1/8 in. tolerance except bolt hole diameters to \pm 1/32 in. tolerance.

SHEET 2 OF 4

PRESSURE PALLET – 24 INCH DIAMETER VENT

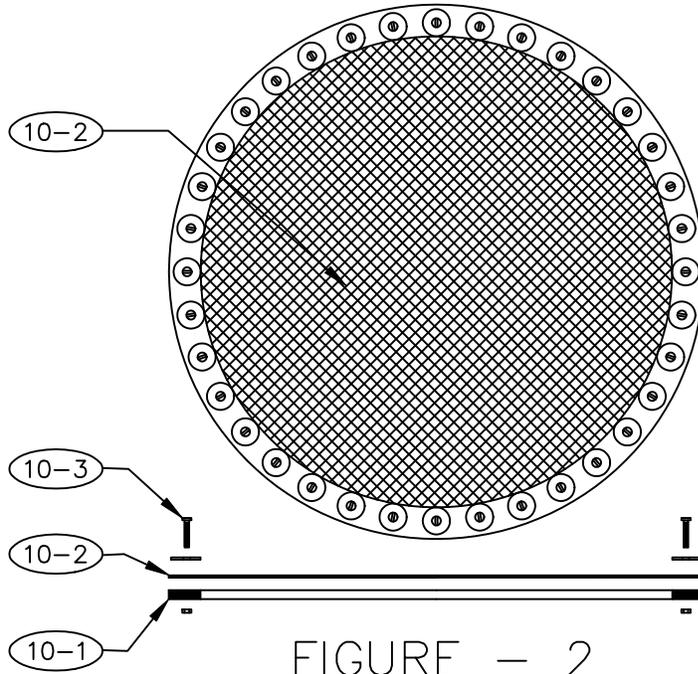


FIGURE – 2

- 10-1 – HDPE ring 47 in. O.D. X 43 in. I.D. X 1/2 in. tk
Bolt circle: (36) 1/4 in. dia. holes and evenly spaced @ rad. = 22-1/2 in.
- 10-2 – 16 X 16 316 stainless steel wire mesh 46 in. dia. (0.018 – 316 S.S. wire screen)
Bolt circle: (36) 1/4 in. dia. holes evenly spaced @ rad. = 22-1/2 in.
- 10-3 – (36) No. 12 pan head 316 S.S. machine screws w/ nuts and fender washers,
1-1/2 in. long

VENT COVER CONNECTION

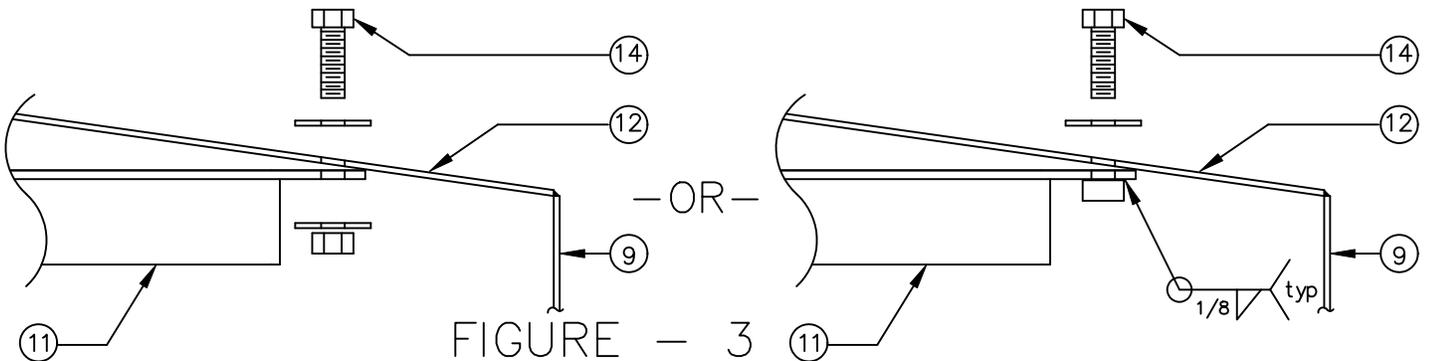


FIGURE – 3

- 9 – Aluminum plate rolled to 54 in. O.D. X 12 in. high X 1/8 in. tk
- 11 – Aluminum 2 in. X 2 in. X 3/16 in., angle rolled to 47-3/4 in. I.D. leg out w/ (4) evenly spaced 9/16 in. dia. holes
- 12 – Aluminum cone roof plate 54 in. dia. X 1/8 in. tk (may substitute pressed plate or flanged and dished head)
- 14 – (4) 304 S.S. bolts 1/2 in. dia. X 1-1/2 in. long, with (1) flat washer, (1) lock washer, and (1) nut per bolt (refer to Fig. 3) May substitute 1 in. ϕ X 1/2 in. thick bar stock, drilled and tapped, and welded to angle for nut and lock washer.

NOT TO SCALE

SHEET 3 OF 4

WELD SPECIFICATIONS – 24 INCH DIAMETER VENT

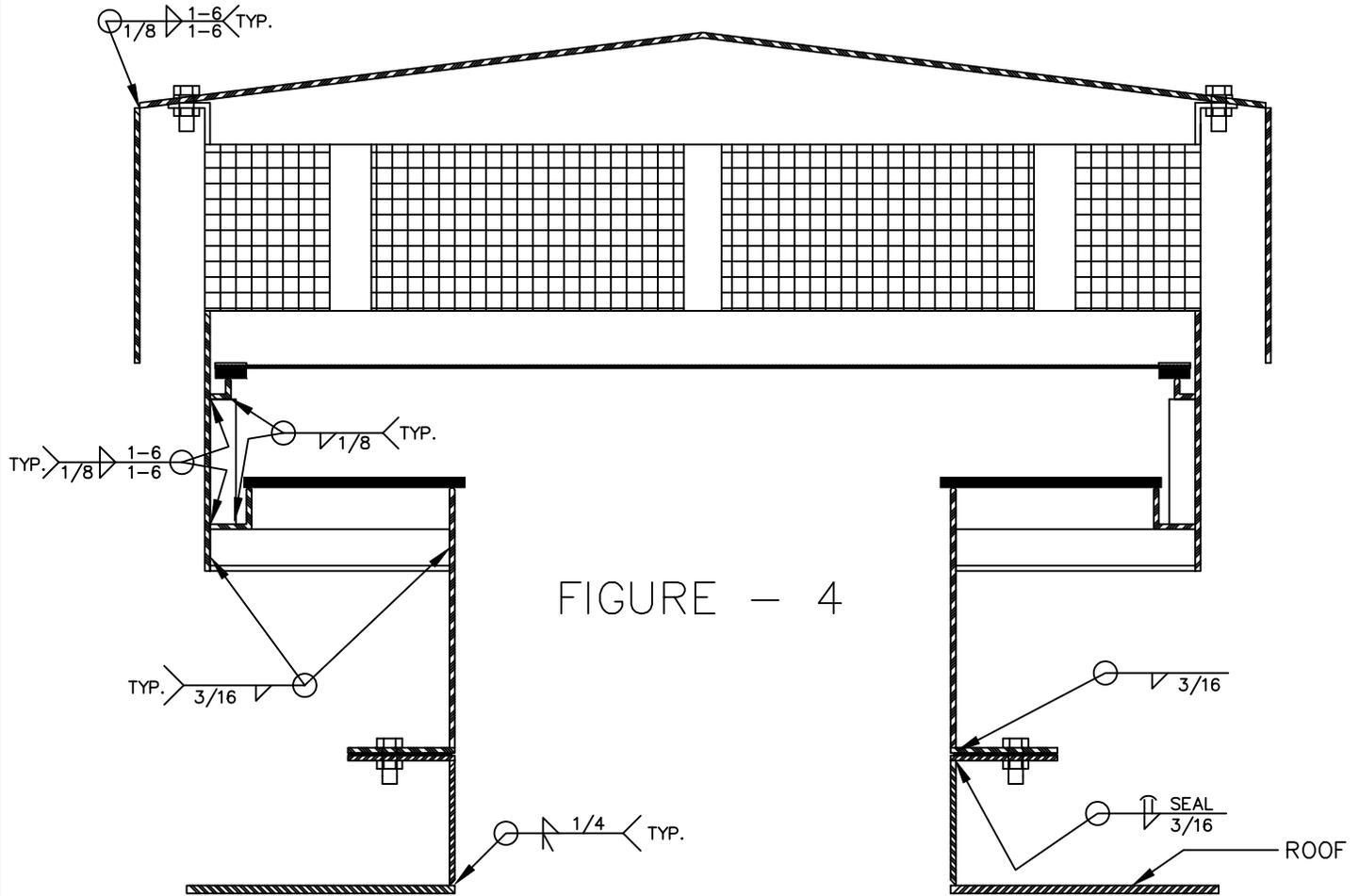


FIGURE – 4

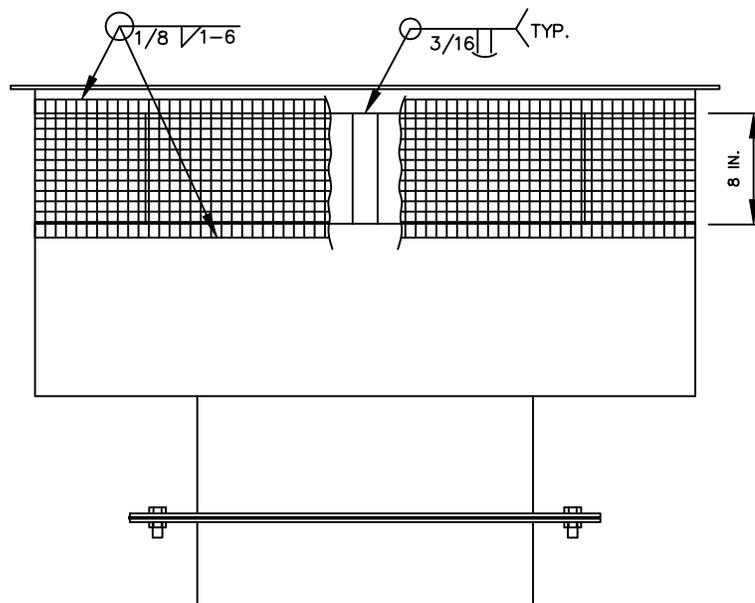


FIGURE – 5

NOT TO SCALE

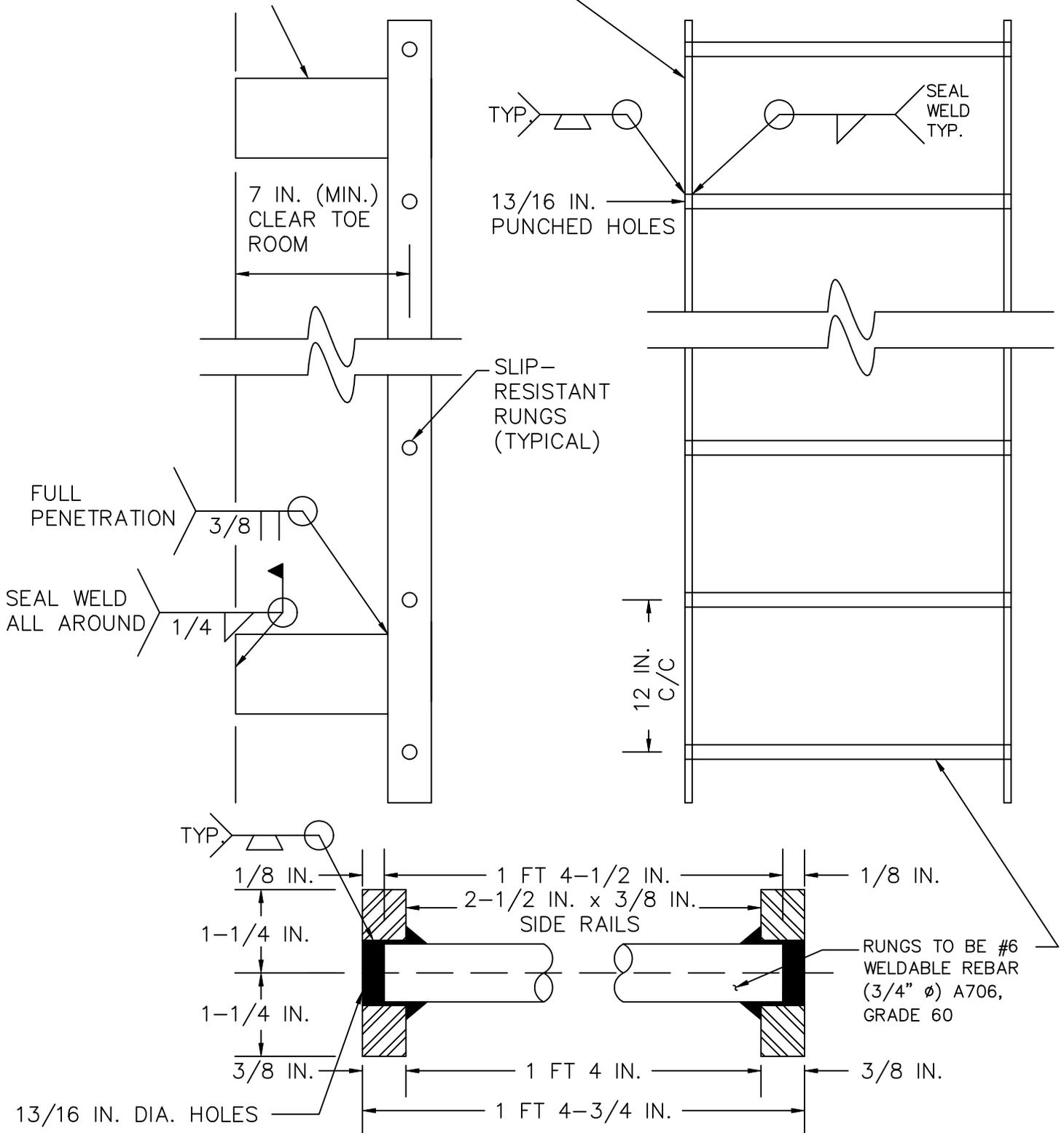
SHEET 4 OF 4

EXTERIOR SHELL LADDER

3 IN. x 3/8 IN. x
6-1/2 IN. (MIN.)
SPACED @ 10 FT (MAX.)

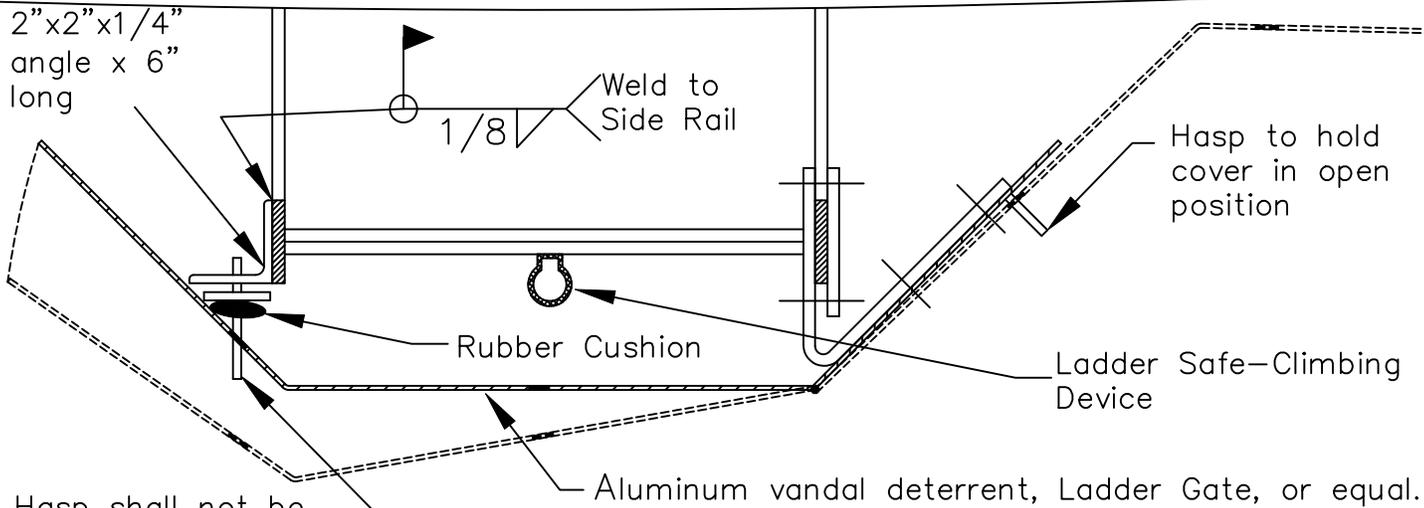
2-1/2 IN. x 3/8 IN.
SIDE RAILS

16 IN.
MIN.



NOT TO SCALE

Vandal Deterrent, Hasp, and Side Plates



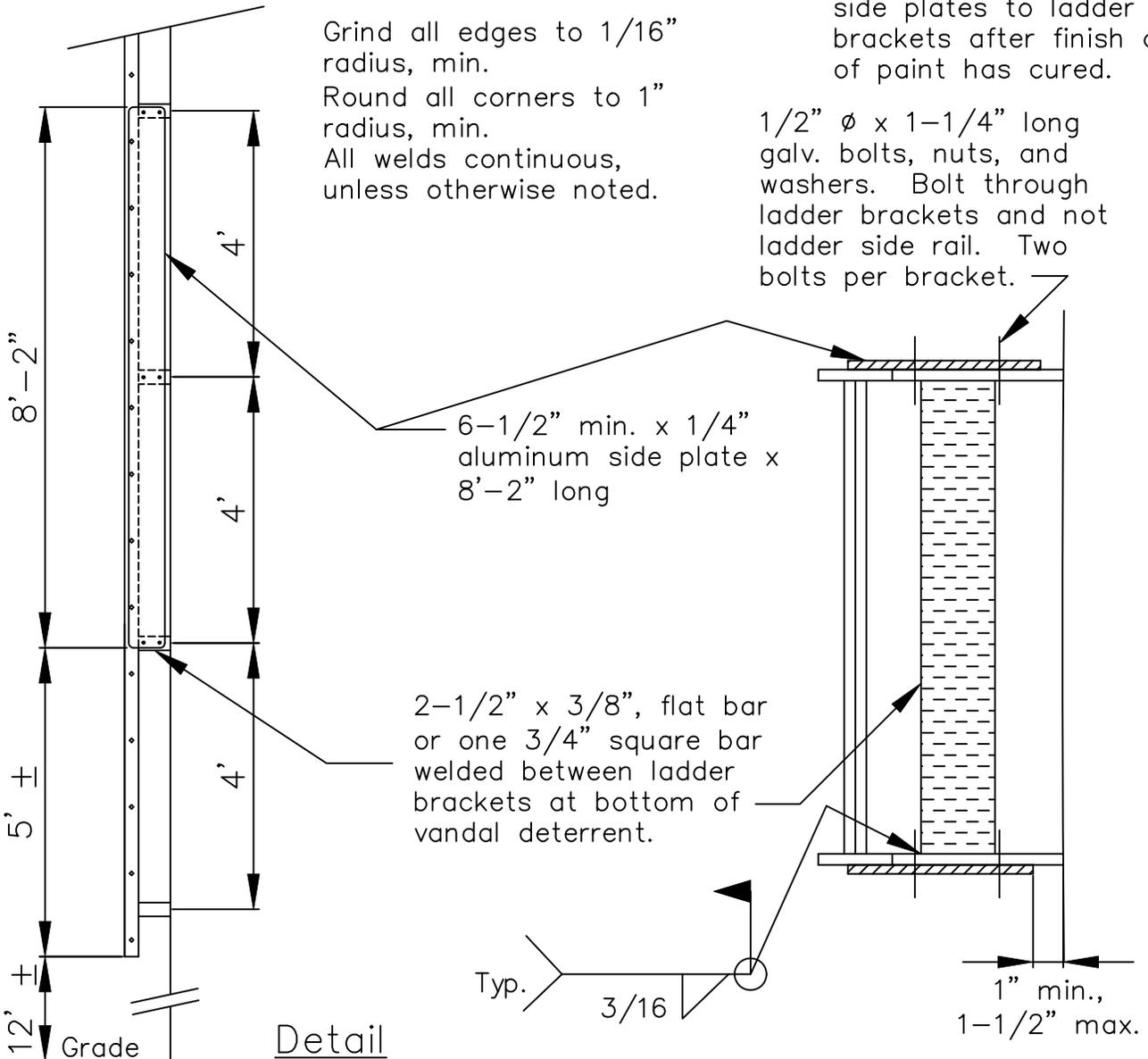
Hasp shall not be mounted on ladder rung.

Hasp

Bolt vandal deterrent and side plates to ladder and brackets after finish coat of paint has cured.

Grind all edges to 1/16" radius, min.
 Round all corners to 1" radius, min.
 All welds continuous, unless otherwise noted.

1/2" ϕ x 1-1/4" long galv. bolts, nuts, and washers. Bolt through ladder brackets and not ladder side rail. Two bolts per bracket.



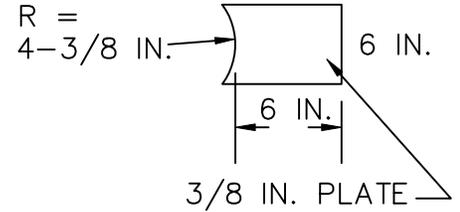
Detail

OVERFLOW

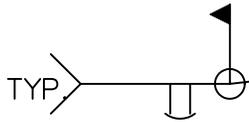
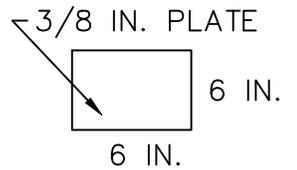
NEW 8 IN. (X-STRONG) LONG
RADIUS ELBOW
NEW 8 IN. STD. W.S.P. OVERFLOW

NEW WEIR BOX, 1/4 IN. THICK
26 IN. x 24 IN. x 24 IN. DEEP

HORIZONTAL SHELL BRACKETS



VERTICAL SHELL BRACKETS



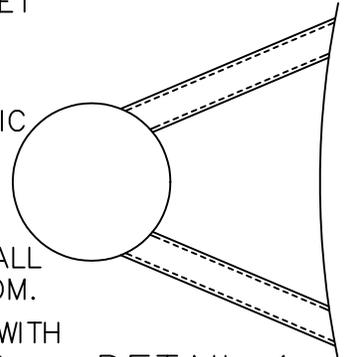
PIPE SUPPORT BRACKETS
ALTERNATE BETWEEN
VERTICAL AND
HORIZONTAL

10 FT MAX. PIPE SUPPORT SPACING

2-1/2 IN. ϕ PIPE x 1/4 IN.
THICK PIPE BRACKET
BELOW BEND. (2 REQ'D)
SEE DETAIL 1

2-1/2 IN. ϕ PIPE x 1/4 IN.
THICK PIPE BRACKET
ABOVE BEND

TIDEFLEX SERIES 35
FLANGED ELASTOMERIC
CHECK VALVE AS
MANUFACTURED BY
TIDEFLEX.
VALVE MATERIAL SHALL
BE HYPALON OR EPDM.
VALVE SHALL OPEN WITH
A MINIMUM OF 2" OF
LINE PRESSURE AND WITH
NO BACK PRESSURE
BACKUP RING, BOLTS &
NUTS SHALL BE 304 S.S.



DETAIL 1

CONTRACTOR TO
FURNISH & INSTALL
CONCRETE DRAINAGE
BASIN AND GRATE
(APPROX. 3 FT ϕ BASIN
AND CAST IRON GRATE,
NEENAH R-2251,
TYPE G OR EQUAL)

12 IN. MIN. TO
24 IN. MAX.

CONTRACTOR TO TIE BASIN TO
EXISTING UNDEGROUND PIPING

OVERFLOW

EXISTING 8 IN. ϕ
OVERFLOW PIPE

NEW 8 IN. SCH. 80 LONG
RADIUS ELBOW

NEW 8 IN. SCH. 40
W.S.P. OVERFLOW

PIPE SUPPORT BRACKETS
ALTERNATE BETWEEN
VERTICAL AND
HORIZONTAL

TYP $\frac{3}{16}$

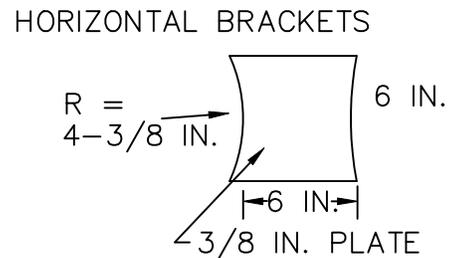
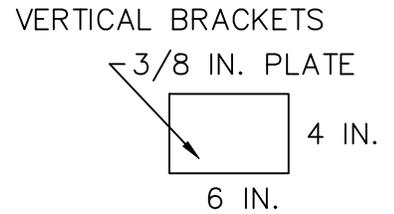
10 FT MAX. PIPE SUPPORT SPACING

TYP $\frac{3}{16}$

$\frac{3}{16}$

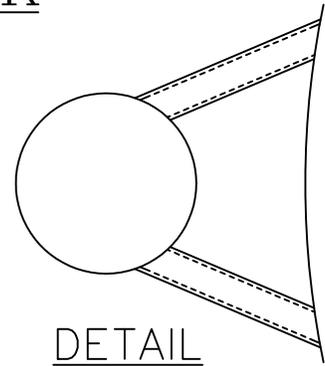
2 HALVES OF $\frac{1}{4}$ IN. THICK
PLATE \times 14 IN. O.D. MIN.
COVER RING AFTER PIPE
INSTALLATION

NEW 8 IN. SCH. 40
W.S.P. OVERFLOW

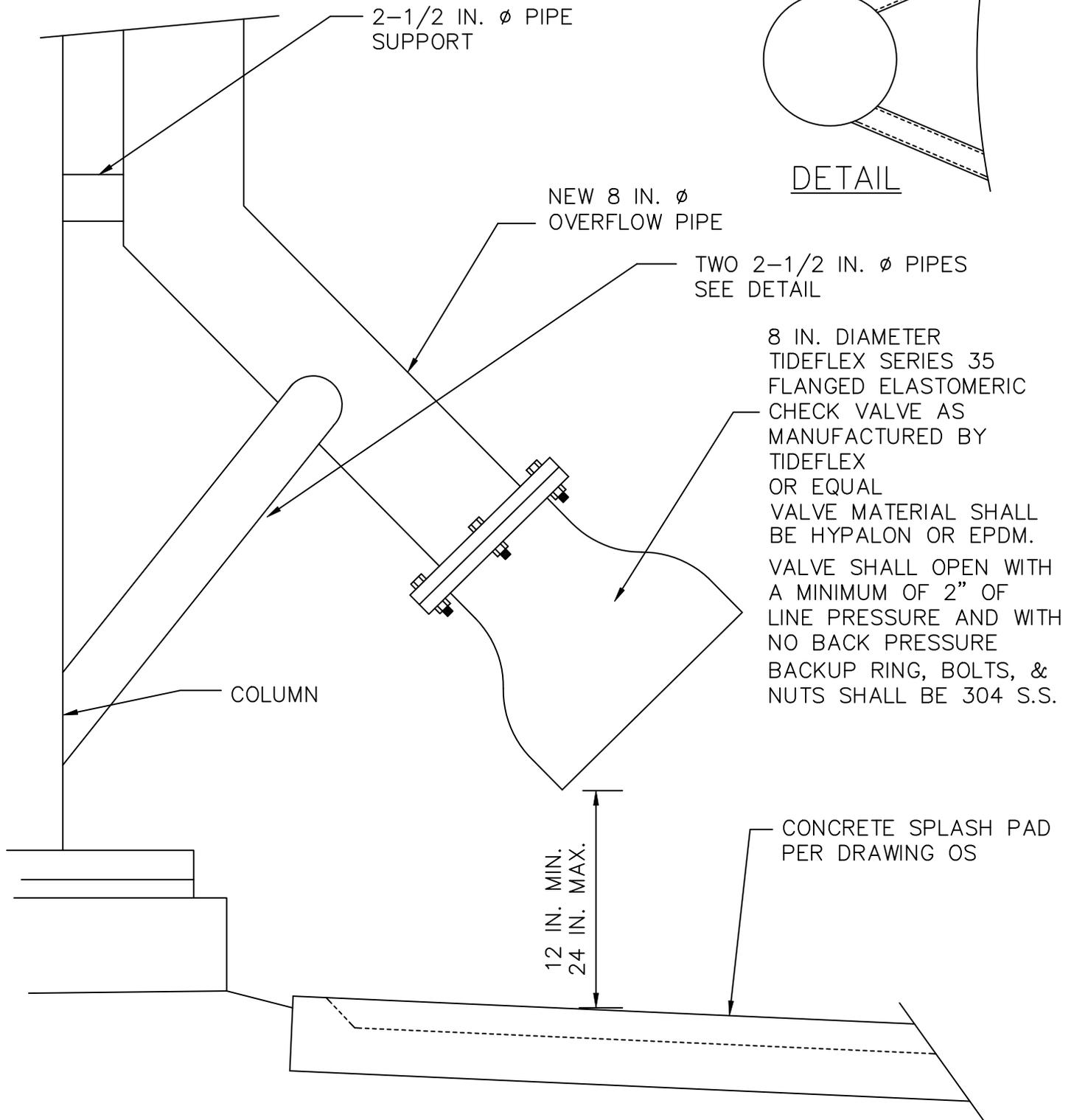


EXISTING
COLUMN

OVERFLOW AIR BREAK

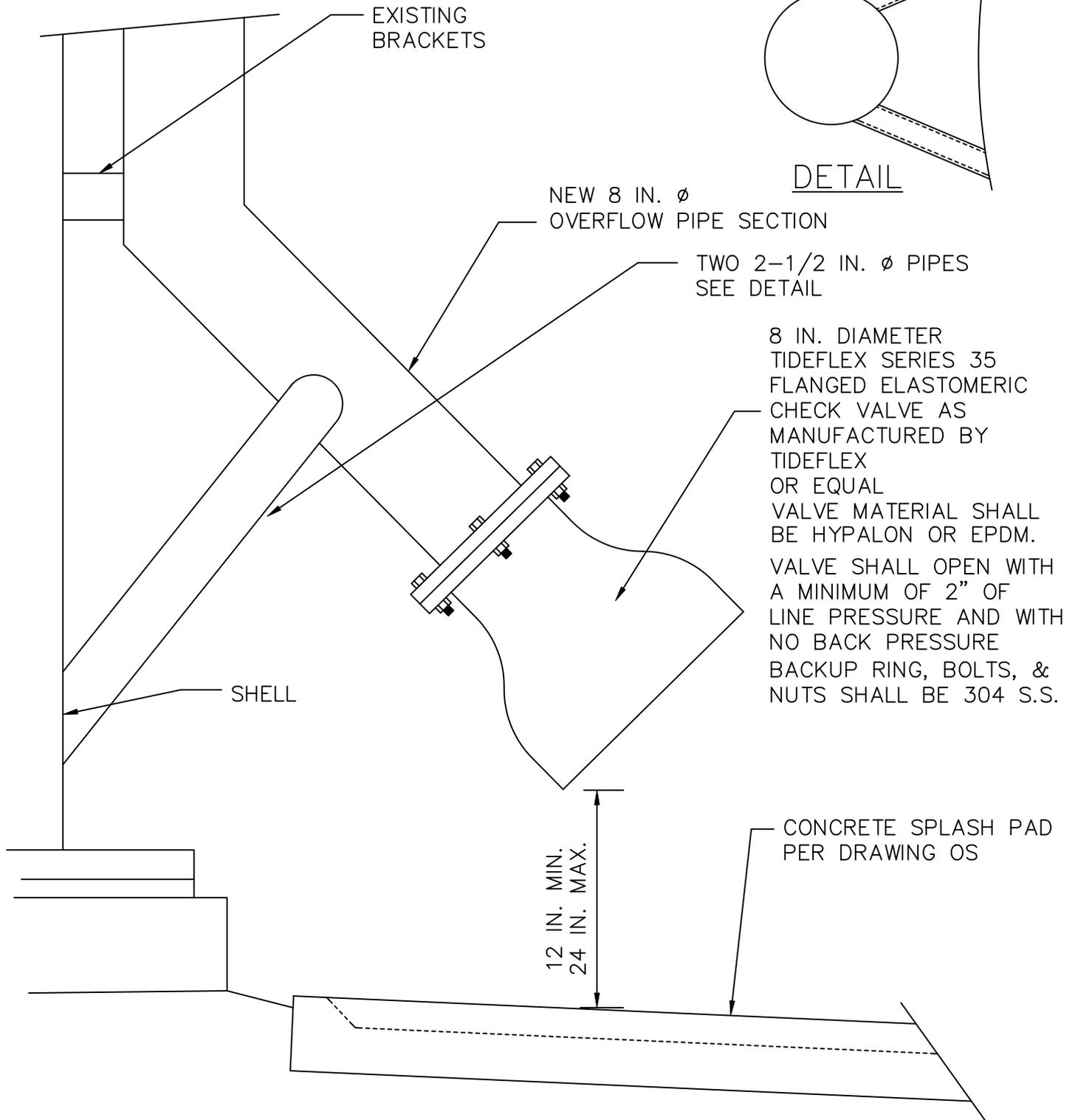
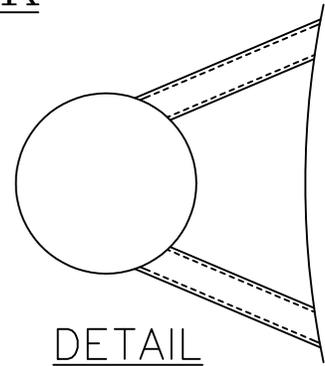


DETAIL



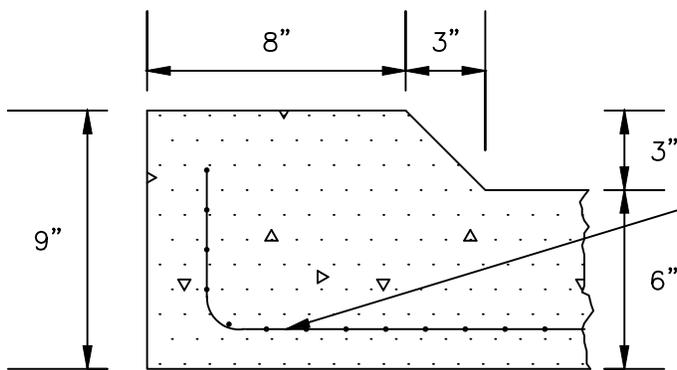
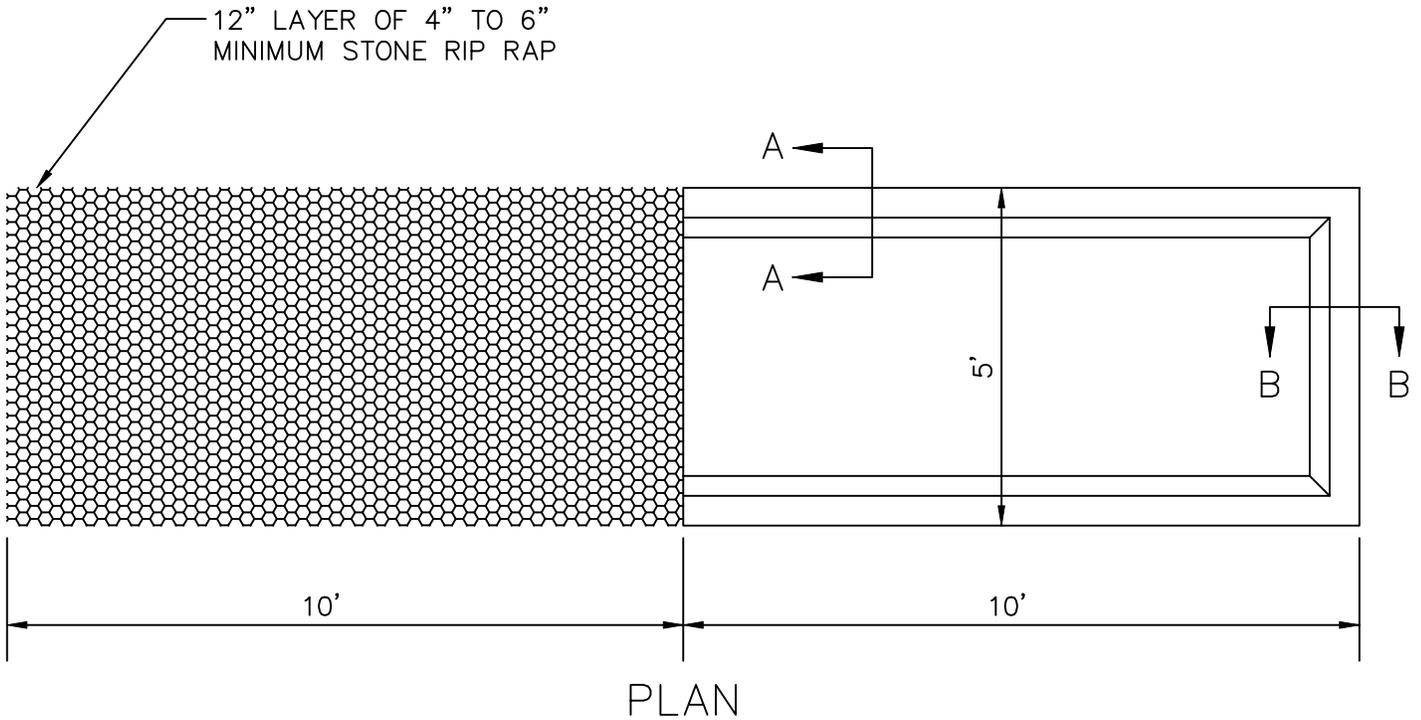
NOT TO SCALE

OVERFLOW AIR BREAK

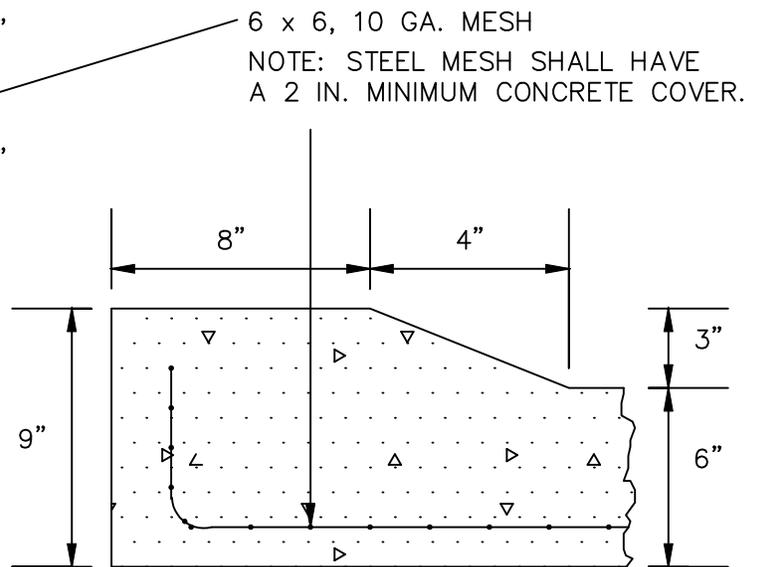


NOT TO SCALE

CONCRETE SPLASH PAD



SECTION A-A



6 x 6, 10 GA. MESH
 NOTE: STEEL MESH SHALL HAVE
 A 2 IN. MINIMUM CONCRETE COVER.

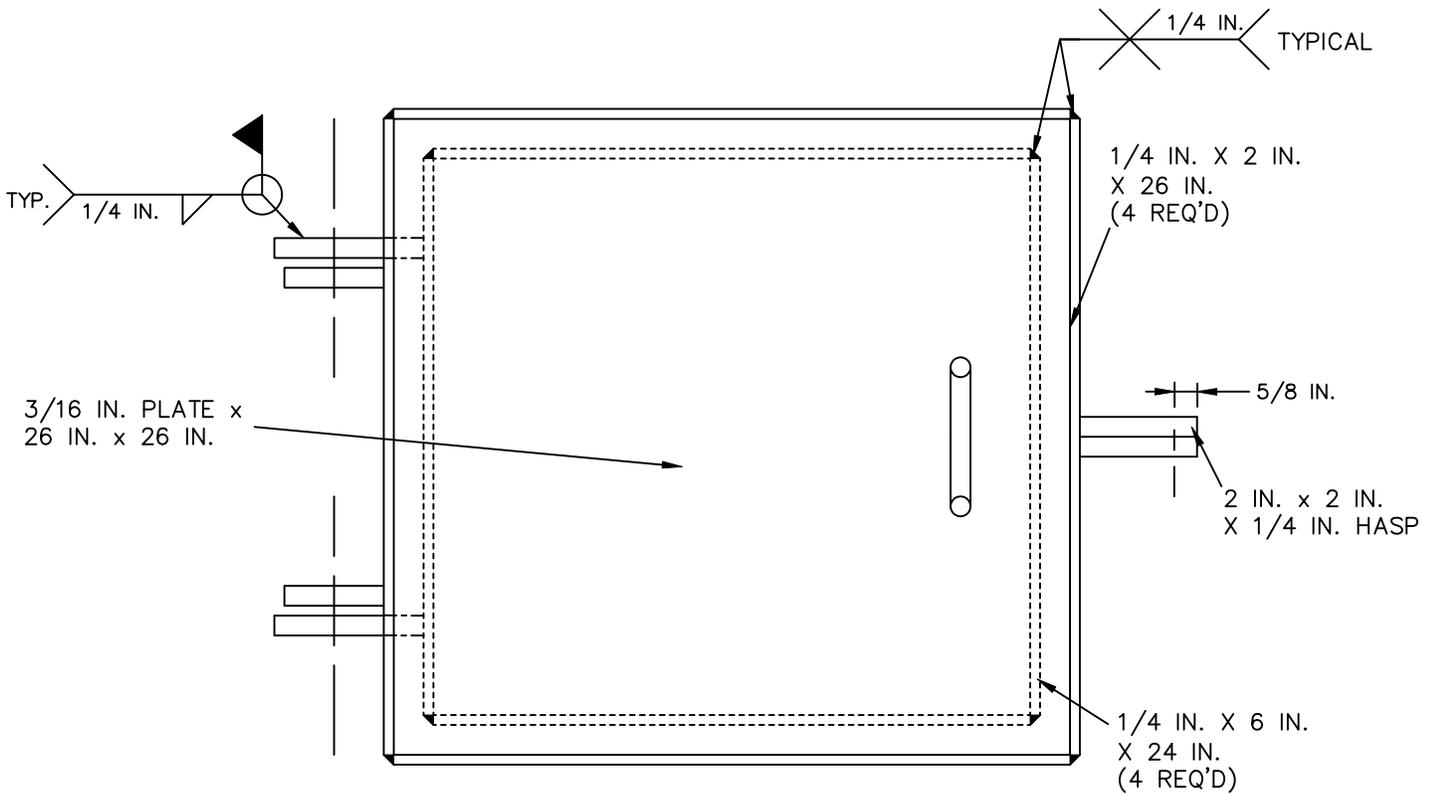
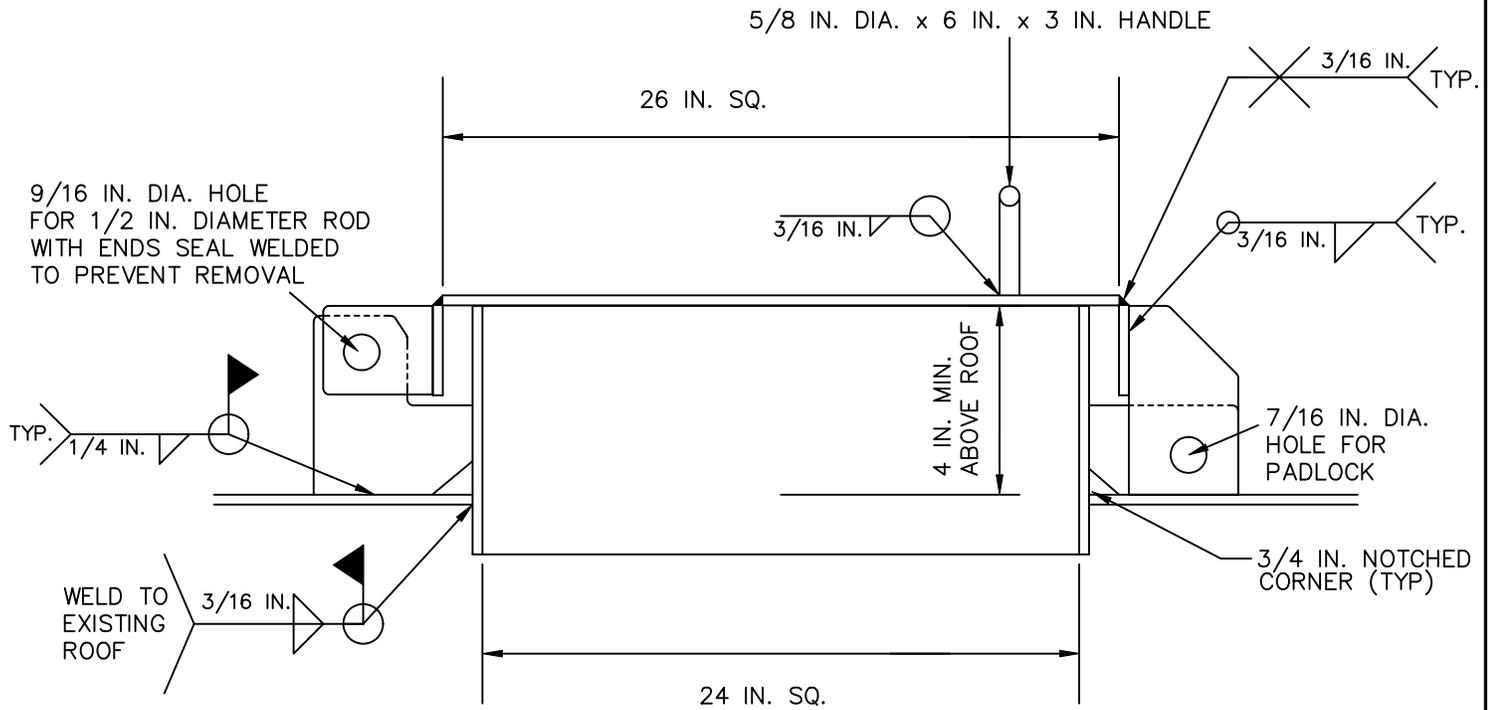
INSTALL PAD TO PITCH 1/2 IN.
 PER FOOT AWAY FROM TANK FOUNDATION.

REMOVE VEGETATION AND TOP SOIL
 PRIOR TO PLACING SPLASH PAD.
 SPLASH PAD TO BE PLACED ON
 FIRM COMPACTED SOIL OR SAND BED.

USE AIR-ENTRAINED CONCRETE, 3500 PSI
 MIN. IN 28 DAYS W/ BROOM FINISH.

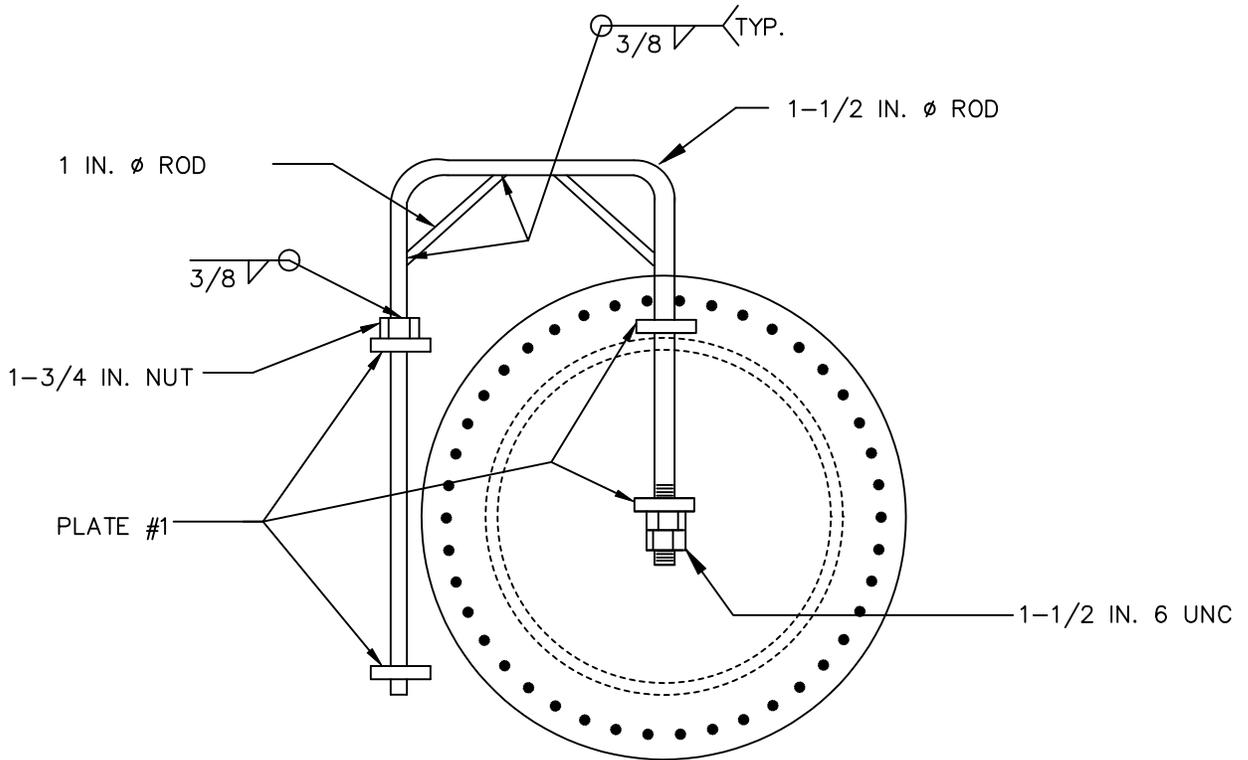
NOT TO SCALE

24 INCH SQUARE ROOF MANHOLE



COVER MUST OPEN 45° PAST VERTICAL
INSTALL BETWEEN ROOF RAFTERS

SHELL MANHOLE DAVIT



REINFORCING PLATE NOT SHOWN FOR CLARITY.

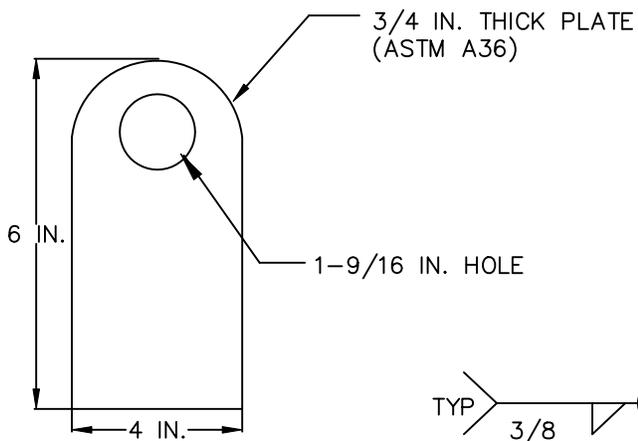
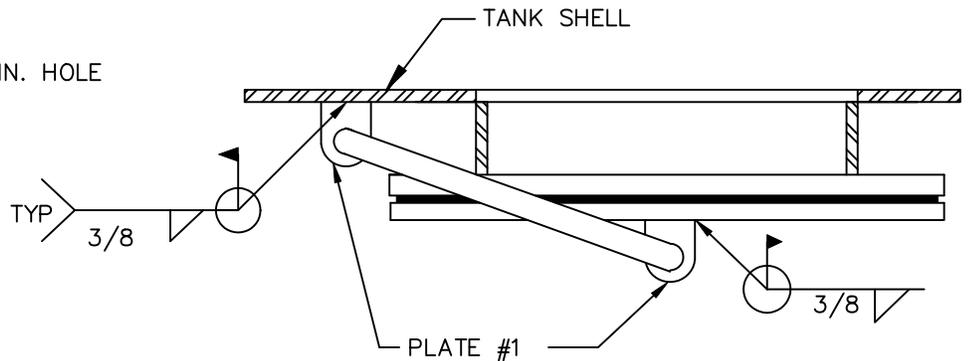


PLATE #1
(4 REQ'D)



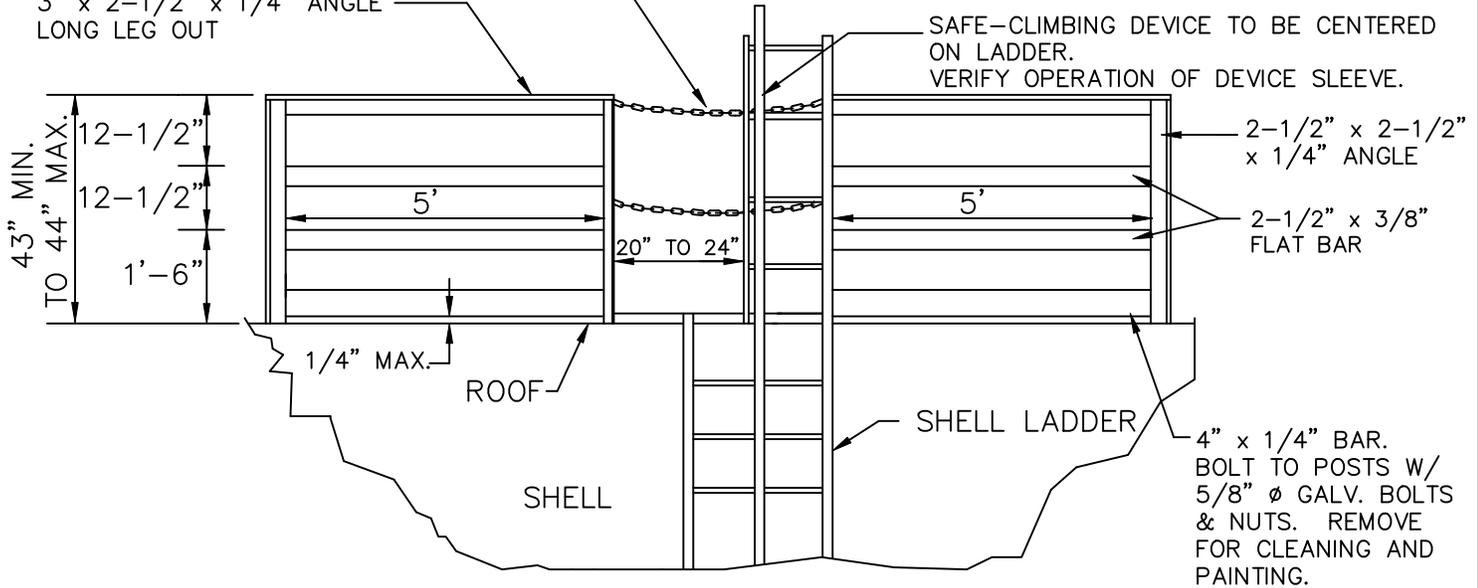
NOT TO SCALE

SAFETY RAILING AT ROOF ACCESS

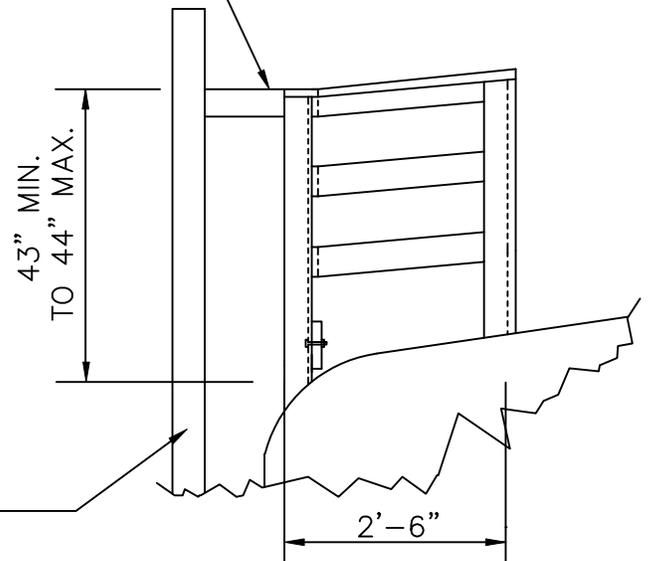
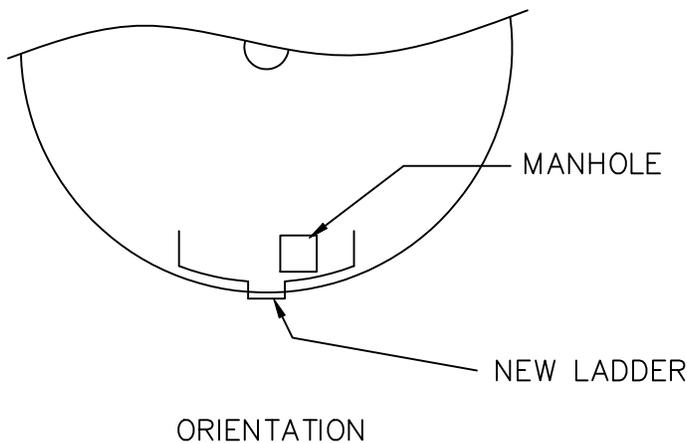
ALL WELDS 3/16 IN.
CONTINUOUS FILLETS

304 STAINLESS STEEL
SAFETY CHAINS AT HANDRAIL
AND MID-RAIL LEVELS. LINK
DIA. 3/16 IN. MIN. PROVIDE
HOOKS ON ONE END.

3" x 2-1/2" x 1/4" ANGLE
LONG LEG OUT



CHAIN HOOK DETAIL



ROLL HANDRAIL, MID-RAILS AND TOE BAR

NOT TO SCALE

SUMMARIZED TANK INFORMATION SHEET

“COOPERS MOUNTAIN TANK”

ENGINEER: Tank Industry Consultants
TANK OWNER: City of Harrisonburg
CAPACITY: 100,000 gallons
HEIGHT: approx. 25 ft 6 in. shell height
DIAMETER: approx. 26 ft
TYPE: welded ground storage tank with column and rafter supported roof including sphericon knuckle
TANK LOCATION: 9111 Rawley Pike in Harrisonburg, Virginia

PAINT SYSTEMS: **Generic Type** (appeared to be the following)

Exterior: alkyd
Interior: epoxy

Atomic Absorption:

	Cadmium		Chromium		Lead	
	mg/kg	percent	mg/kg	Percent	mg/kg	percent
Exterior	<25	<0.0025%	13,100	1.31%	70,600	7.06%
Interior	<25	<0.0025%	4,800	0.48%	16,200	1.62%

Samples of the exterior and interior coatings were sent to a laboratory for atomic absorption analyses only to determine if there is lead, chromium, and cadmium present in the coating samples. To limit the damage to the existing coatings, only small areas were tested. This small number of samples and the difficulty of retrieving all primer from the steel profile may cause the tests performed to not accurately represent the total coating system. Variations in thickness, types of coatings applied, and the interim cleaning and painting operations will also affect the actual readings. The reliability of the results is also dependent on the amount of primer included in the sample. The Consumer Product Safety Commission specifies that an amount greater than 600 mg/kg (0.06%) lead is considered potentially hazardous.

DISCLAIMER: The information contained in this Summarized Tank Information Sheet is not considered technical in nature. Therefore, the Contractor is not entitled to rely on any information contained in such reports. Interpretation of this data is the responsibility of the Bidder. Such information is made available to the Bidder as a courtesy only. It is further agreed and understood that the Bidder or the Contractor will not use any information made available to him, or obtained by any examination made by him, in any manner as a basis or ground of claim or demand of any nature against the Owner or Engineer arising from or by reason of any variance which may exist between the information offered and the actual materials and structures encountered during the construction work.

REFERENCES: A complete scope of Work can be found in the Detailed Technical Specifications. Additional information about the tank may be found in the evaluation report (TIC 11.104.E450.013) dated August 17, 2011. The information contained in this evaluation report is also not considered technical in nature.

SUMMARIZED TANK INFORMATION SHEET

“PARK VIEW TANK”

ENGINEER: Tank Industry Consultants
TANK OWNER: City of Harrisonburg
CAPACITY: 75,000 gallons
HEIGHT: approx. 50 ft to bottom capacity level
DIAMETER: approx. 30 ft
TYPE: welded steel 4-column elevated tank with ellipsoidal bottom and ellipsoidal roof
ERECTION DATE: 1960, R. D. Cole Mfg. Co.
TANK LOCATION: 979 Summit Avenue in Harrisonburg, Virginia

PAINT SYSTEMS: **Generic Type** (appeared to be the following)

Exterior: alkyd
Interior: epoxy

Atomic Absorption:

	Cadmium		Chromium		Lead	
	mg/kg	percent	mg/kg	Percent	mg/kg	Percent
Exterior	72.8	0.00728%	<250	<0.025%	737	0.0737%
Interior	<25	<0.0025%	<250	<0.025%	<250	<0.025%

Samples of the exterior and interior coatings were sent to a laboratory for atomic absorption analyses only to determine if there is lead, chromium, and cadmium present in the coating samples. To limit the damage to the existing coatings, only small areas were tested. This small number of samples and the difficulty of retrieving all primer from the steel profile may cause the tests performed to not accurately represent the total coating system. Variations in thickness, types of coatings applied, and the interim cleaning and painting operations will also affect the actual readings. The reliability of the results is also dependent on the amount of primer included in the sample. The Consumer Product Safety Commission specifies that an amount greater than 600 mg/kg (0.06%) lead is considered potentially hazardous.

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REFERENCES: A complete scope of Work can be found in the Detailed Technical Specifications. Additional information about the tank may be found in the evaluation report (TIC 11.104.E450.004) dated August 17, 2011. The information contained in this evaluation report is also not considered technical in nature.

SUMMARIZED TANK INFORMATION SHEET

“RIDGEVILLE TANK”

ENGINEER: Tank Industry Consultants
TANK OWNER: City of Harrisonburg
CAPACITY: 500,000 gallons
HEIGHT: approx. 24 ft shell height
DIAMETER: approx. 60 ft
TYPE: welded steel ground storage tank with column and rafter supported roof
TANK LOCATION: off of Blue Stone Hills Drive in Harrisonburg, Virginia

PAINT SYSTEMS: Generic Type (appeared to be the following)

Exterior: latex
Interior: epoxy

Atomic Absorption:

	Cadmium		Chromium		Lead	
	mg/kg	percent	mg/kg	percent	mg/kg	Percent
Exterior	<25	<0.0025%	3,340	0.334%	717	0.0717%
Interior	<25	<0.0025%	289	0.0289%	766	0.0766%

Samples of the exterior and interior coatings were sent to a laboratory for atomic absorption analyses only to determine if there is lead, chromium, and cadmium present in the coating samples. To limit the damage to the existing coatings, only small areas were tested. This small number of samples and the difficulty of retrieving all primer from the steel profile may cause the tests performed to not accurately represent the total coating system. Variations in thickness, types of coatings applied, and the interim cleaning and painting operations will also affect the actual readings. The reliability of the results is also dependent on the amount of primer included in the sample. The Consumer Product Safety Commission specifies that an amount greater than 600 mg/kg (0.06%) lead is considered potentially hazardous.

DISCLAIMER: The information contained in this Summarized Tank Information Sheet is not considered technical in nature. Therefore, the Contractor is not entitled to rely on any information contained in such reports. Interpretation of this data is the responsibility of the Bidder. Such information is made available to the Bidder as a courtesy only. It is further agreed and understood that the Bidder or the Contractor will not use any information made available to him, or obtained by any examination made by him, in any manner as a basis or ground of claim or demand of any nature against the Owner or Engineer arising from or by reason of any variance which may exist between the information offered and the actual materials and structures encountered during the construction work.

REFERENCES: A complete scope of Work can be found in the Detailed Technical Specifications. Additional information about the tank may be found in the evaluation report (TIC 11.104.E450.005) dated August 18, 2011. The information contained in this evaluation report is also not considered technical in nature.

TANK INDUSTRY CONSULTANTS
PRE-JOB SOIL SAMPLING PROCEDURE & CHAIN OF CUSTODY FORM

JOB NUMBER TIC . E450.013

OWNER City of Harrisonburg

PROJECT LOCATION Harrisonburg, Virginia **CONTRACTOR** _____

OBJECTIVE - To obtain sets of soil samples from the job site vicinity prior to the start of work at the site, identify the samples, and have atomic absorption testing for total lead performed. The actual number of samples required shall be in accordance with the Soil Sampling paragraph of the **Detailed Technical Specifications**.

SAMPLING PROCEDURE

1. Document in a diagram below the location of each of the soil sampling test sites with exact measurements from fixed objects such as tank foundation, corner of valve vault, fence post, etc. The locations should be sporadically located within the limits of the tank site in accordance with the Soil Sampling paragraph of the **Detailed Technical Specifications**.
2. One set of soil samples consists of (5) five 3/4 inch diameter plugs, by 1/2 inch deep, taken from a (1) one square foot area. All (5) five plugs are to be deposited in one zip-lock plastic bag.

SAMPLE NUMBER _____ **DATE** _____

I certify that the above samples were taken in compliance with the above sampling procedure, at the locations as drawn below.

PROJECT FOREMAN _____ **DATE** _____

FIELD OBSERVER _____ **DATE** _____

(Draw diagram of site and locations, with exact measurements)

CHAIN OF CUSTODY

I certify that the above samples were delivered to: _____

By _____ **DATE** _____

Received _____ **DATE** _____

TANK INDUSTRY CONSULTANTS
POST-JOB SOIL SAMPLING PROCEDURE & CHAIN OF CUSTODY FORM

JOB NUMBER TIC . E450.013

OWNER City of Harrisonburg

PROJECT LOCATION Harrisonburg, Virginia **CONTRACTOR** _____

OBJECTIVE - After the work is completed, obtain an additional set of soil samples from **each** of the original locations, identify the samples, and have atomic absorption testing for total lead performed.

SAMPLING PROCEDURE

1. Document in a diagram below the location of each of the soil sampling test sites with exact measurements from fixed objects such as tank foundation, corner of valve vault, fence post, etc. The locations should be sporadically located within the limits of the tank site in accordance with the Soil Sampling paragraph of the **Detailed Technical Specifications**.
2. One set of soil samples consists of (5) five 3/4 inch diameter plugs, by 1/2 inch deep, taken from a (1) one square foot area. All (5) five plugs are to be deposited in one zip-lock plastic bag.

SAMPLE NUMBER _____ **DATE** _____

I certify that the above samples were taken in compliance with the above sampling procedure, at the locations as drawn below.

PROJECT FOREMAN _____ **DATE** _____

FIELD OBSERVER _____ **DATE** _____

(Draw diagram of site and locations, with exact measurements)

CHAIN OF CUSTODY

I certify that the above samples were delivered to: _____

By _____ **DATE** _____

Received _____ **DATE** _____

TANK INDUSTRY CONSULTANTS
SPENT ABRASIVE SAMPLING PROCEDURE and CHAIN OF CUSTODY FORM

JOB NUMBER TIC . E450.

OWNER City of Harrisonburg

PROJECT LOCATION Harrisonburg, Virginia **CONTRACTOR** _____

OBJECTIVE - To obtain and track four (4) representative samples of the spent abrasive from each waste stream. The exterior and interior paint and cleaning debris shall be kept separate from each other and shall be stored in separate leak-proof covered dumpsters lined with polyethylene sheets.

SAMPLING PROCEDURE

1. Obtain a minimum of four (4) representative samples of the blasting residue from each waste stream.
2. Randomly select the location of each sample from the waste stream. Each sample shall contain at least 100 grams (approximately 1 cup) of the combined paint and spent cleaning materials.
3. The representative sample of the combined paint and spent cleaning materials shall be collected and deposited in a zip-lock plastic bag, and sealed.

SPECIFIC AREA OF TANK - - Exterior - - Interior

SAMPLE NUMBER _____ **DATE** _____

LOCATION OF SAMPLE _____
(From Container/Dumpster - i.e. - center, northeast corner, etc.)

I certify that the above sample was taken in compliance with the above sampling procedure.

PROJECT FOREMAN _____ **DATE** _____

FIELD OBSERVER _____ **DATE** _____

CHAIN OF CUSTODY - I certify that the sample was delivered to:

_____, **via** _____,
(i.e. - Contractor, Hauler, etc.) (i.e. - courier, Fed-X, Overnight Mail, etc.)

By _____ **DATE** _____

Received _____ **DATE** _____

I certify that the sample was delivered to:

_____, **via** _____,
(i.e. - Contractor, Hauler, etc.) (i.e. - courier, Fed-X, Overnight Mail, etc.)

By _____ **DATE** _____

Received _____ **DATE** _____

(Laboratory)

TCLP TEST W/ MATRIX SPIKE - RESULTS _____

ABCC-1

APPLICATION FOR PAYMENT NO. _____

To: City of Harrisonburg (OWNER)
From: _____ (CONTRACTOR)

Contract: Repairing and Repainting the Interior and Exterior of One 100,000 Gallon Steel Ground Storage Tank, "Coopers Mountain Tank," and Modifications to One 75,000 Gallon Steel Elevated Tank, "Park View Tank," and One 500,000 Gallon Steel Ground Storage Tank, "Ridgeville Tank"

OWNER'S Contract No. 2013002-PU-B ENGINEER'S Project No. ____.____.E450.____
For Work accomplished through the date of: _____.

1.	Original Contract Price:	\$ _____
2.	Net Change by Change Orders and Written Amendments (+ or -):	\$ _____
3.	Current Contract Price (1 plus 2):	\$ _____
4.	Total Completed and stored to date:	\$ _____
5.	Retainage (per Agreement):	
	_____ % of completed Work: \$ _____	
	_____ % of stored material: \$ _____	
	Total Retainage:	\$ _____
6.	Total completed and stored to date less retainage (4 minus 5):	\$ _____
7.	Less previous Application for Payments:	\$ _____
8.	DUE THIS APPLICATION (6 MINUS 7):	\$ _____

Accompanying Documentation:

CONTRACTOR'S Certification:

The undersigned CONTRACTOR certifies that (1) all previous progress payments received from OWNER on account of Work done under the Contract referred to above have been applied on account to discharge CONTRACTOR'S legitimate obligations incurred in connection with Work covered by prior Applications for Payment numbered 1 through _____ inclusive; (2) title of all Work, materials, and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to OWNER at time of payment free and clear of all Liens, security interests, and encumbrances (except such as are covered by a Bond acceptable to OWNER indemnifying OWNER against any such Lien, security interest or encumbrance); and (3) all Work covered by this Application for Payment is in accordance with the Contract Documents and not defective.

Dated _____
CONTRACTOR

By: _____
State of _____
County of _____
Subscribed and sworn to before me this _____
day of _____, _____

Notary Public
My Commission expires: _____

Payment of the above AMOUNT DUE THIS APPLICATION is recommended.

Dated _____
ENGINEER

By: _____

APPLICATION FOR PAYMENT

INSTRUCTIONS

A. GENERAL INFORMATION

The sample form of Schedule of Values is intended as a guide only. Many projects require a more extensive form with space for numerous items, descriptions of Change Orders, identification of variable quantity adjustments, summary of materials and equipment stored at the site, and other information. It is expected that a separate form will be developed by Engineer and Contractor at the time Contractor's Schedule of Values is finalized. Note also that the format for retainage must be changed if the Contract permits (or the law provides), and Contractor elects to deposit securities in lieu of retainage. Refer to Article 14 of the General Conditions for provisions concerning payments to Contractor.

B. COMPLETING THE FORM

The Schedule of Values, submitted and reviewed as provided in paragraphs 2.05.B.3 and 2.07 of the General Conditions, should be reproduced as appropriate in the space indicated on the Application for Payment form. Note that the cost of materials and equipment is often listed separately from the cost of installation. Also, note that each Unit Price is deemed to include Contractor's overhead and profit.

All Change Orders affecting the Contract Price should be identified and included in the Schedule of Values as required for progress payments.

The form is suitable for use in the Final Application for Payment as well as for Progress Payments; however, the required accompanying documentation is usually more extensive for final payment. All accompanying documentation should be identified in the space provided on the form.

C. LEGAL REVIEW

All accompanying documentation of a legal nature, such as Lien waivers, should be reviewed by an attorney, and Engineer should so advise Owner.

Contract No. 2013002-PU-B

Project _____

TIC Job Number .E450.

Period From _____ to _____

Application No. _____ Date: _____

Description of Work	Unit Price	Estimated Quantity	Scheduled Value	Work Completed		%	Total Completed & Stored to Date	Balance to Finish	Retainage
				Previous Application	This Period				
1.	\$		\$	\$	\$		\$	\$	\$
2.									
3.									
4.									
5.									
6.									
7.									
8.									
9.									
10.									
11.									
12.									
13.									
14.									
15.									
16.									
17.									
18.									
19.									
20.									
21.									
22.									
23.									
24.									
25.									
26.									
27.									
28.									
29.									
30.									
TOTAL			\$	\$	\$		\$	\$	\$

Note: Total Schedule of Values Amount should equal the current Contract Price.

Job Safety Analysis Form

INSTRUCTIONS FOR COMPLETING JOB SAFETY ANALYSIS FORM

Job Safety Analysis (JSA) is an important accident prevention tool that works by finding hazards and eliminating or minimizing them *before* the job is performed, and *before* they have a chance to become accidents. Use your JSA for job clarification and hazard awareness, as a guide in new employee training, for periodic contacts and for retraining of senior employees, as a refresher on

jobs which run infrequently, as an accident investigation tool, and for informing employees of specific job hazards and protective measures.

Set priorities for doing JSAs: jobs that have a history of many accidents, jobs that have produced disabling injuries, jobs with high potential for disabling injury or death, and new jobs with no accident history.

Here's how to do each of the three parts of a Job Safety Analysis:

SEQUENCE OF BASIC JOB STEPS	POTENTIAL HAZARDS	RECOMMENDED ACTION OR PROCEDURE
<p>Break the job down into steps. Each of the steps of a job should accomplish some major task. The task will consist of a <i>set</i> of movements. Look at the first set of movements used to perform a task, and then determine the next logical set of movements. For example, the job might be to move a box from a conveyor in the receiving area to a shelf in the storage area. How does that break down into job steps? Picking up the box from the conveyor and putting it on a handtruck is one logical set of movements, so it is one job step. Everything related to that one logical set of movements is part of that job step.</p> <p>The next logical set of movements might be pushing the loaded handtruck to the storeroom. Removing the boxes from the truck and placing them on the shelf is another logical set of movements. And finally, returning the handtruck to the receiving area might be the final step in this type of job.</p> <p>Be sure to list all the steps in a job. Some steps might not be done each time—checking the casters on a handtruck, for example. However, that task is part of the job as a whole, and should be listed and analyzed.</p>	<p>Identify the hazards associated with each step. Examine each step to find and identify hazards—actions, conditions, and possibilities that could lead to an accident.</p> <p>It's not enough to look at the obvious hazards. It's also important to look at the entire environment and discover every conceivable hazard that might exist.</p> <p>Be sure to list health hazards as well, even though the harmful effect may not be immediate. A good example is the harmful effect of inhaling a solvent or chemical dust over a long period of time.</p> <p>It's important to list <i>all</i> hazards. Hazards contribute to accidents, injuries and occupational illnesses.</p> <p>In order to do part three of a JSA effectively, you must identify potential and existing hazards. That's why it's important to distinguish between a hazard, an accident and an injury. Each of these items has a specific meaning:</p> <p>Hazard – A potential <i>danger</i>. Oil on the floor is a <i>hazard</i>. Accident – An unintended <i>happening</i> that may result in injury, loss or damage. Slipping on the oil is an <i>accident</i>. Injury – the <i>result</i> of an accident. A sprained wrist from the fall would be an <i>injury</i>.</p> <p>Some people find it easier to identify possible accidents and illnesses and work back from them to the hazards. If you do that, you can list the accident and illness types in parentheses following the hazard. But be sure you focus on the <i>hazard</i> for developing recommended actions and safe work procedures.</p>	<p>Using the first two columns as a guide, decide what actions are necessary to eliminate or minimize the hazards that could lead to an accident, injury, or occupational illness.</p> <p>Among the actions that can be taken are: 1) engineering the hazard out; 2) providing personal protective equipment; 3) job instruction training; 4) good housekeeping; and 5) good ergonomics (positioning the person in relation to the machine or other elements in the environment in such a way as to eliminate stresses and strains.)</p> <p>List recommended safe operating procedures on the form, and also list required or recommended personal protective equipment for each step of the job.</p> <p>Be specific. Say <i>exactly</i> what needs to be done to correct the hazard, such as "lift, using your leg muscles." Avoid general statements like "be careful."</p> <p>Give a recommended action or procedure for <i>every</i> hazard.</p> <p>If the hazard is a serious one, it should be corrected immediately. The JSA should then be changed to reflect the new conditions.</p>

APPENDIX

CONSTRUCTION - CONTRACTOR SAFETY CHECKLIST

Project: _____

Location: _____

General Contractor: _____

Date: _____

This safety checklist references the Code of Federal Regulations (CFR) Title 29 Part 1926.

Safety Submittals

- The Contractor shall submit the Contractor’s Company Safety Plan, Site Specific Safety Plan (IIPP), and Job Safety Analysis.

Worksite Safety

- The Contractor shall provide general and health provisions with environmental controls in accordance with CFR Title 29 Part 1926 Subpart A, Subpart B, Subpart C, Subpart D, and other applicable Subparts, including state and local requirements.
- The Contractor shall provide traffic control in accordance with Public agency requirements as shown on the approved Traffic Control Plan for the project.
- Will the Contractor have a first aid kit on the job site? **YES** **NO**
- Will the Contractor enforce a drug free workplace? **YES** **NO**

Personal Safety

- The Contractor shall provide personal protective and life saving equipment in accordance with CFR Title 29 Part 1926 Subpart E and other applicable Subparts, including state and local requirements.

Fire Protection and Prevention

- The Contractor shall provide fire protection and prevention equipment in accordance with CFR Title 29 Part 1926 Subpart F and other applicable Subparts, including state and local requirements.
- Has Contractor developed fire prevention program **YES** **NO**
29CFR 1926.24

Electrical Safety

- The Contractor shall ensure all electrical conductors and equipment are approved and in accordance with CFR Title 29 Part 1926 Subpart K and other applicable Subparts, including state and local requirements.
- Will contractor ensure all pull boxes, junction boxes, and fitting are covered. If metal covers are used, they shall be grounded. YES NO
29CFR 1926.405(b) (2)
- Will contractor maintain a Lockout and tagging of circuits? YES NO
29CFR 1926.417

Hazard Communication

- The contractor shall insure that the hazards of all chemicals produced or imported are evaluated, and that information concerning their hazards is transmitted to employers and employees. This transmittal of information shall include container labeling and other forms of warning, material safety data sheets (MSDS) and employee training.

Location of contractor MSDS on site: _____.

The Contractor shall conform with the provisions of CFR Title 29 Part 1910.1200 (e)(1), (e)(2), (f)(1),(g)(1),(h)(1) and (2)(i) through (iii) made applicable to construction by 1926.59, and other applicable Subparts, including state and local requirements.

Signs, Signals, and Barricades

- The Contractor shall provide signs, signals, and barricades in accordance with CFR Title 29 Part 1926 Subpart G and other applicable Subparts, including state and local requirements.

Material and Equipment Safety

- The Contractor shall handle, store, stack, rack, block, interlock, use and dispose of materials in accordance with CFR Title 29 Part 1926 Subpart H and other applicable Subparts, including state and local requirements.
- Will contractor use power industrial trucks (forklifts) on site? YES NO
- Have power industrial truck (forklift) operators received training? YES NO
29CFR 1910.178(I) (1)
- Where will the Contractor's materials, equipment and vehicles will be stored and parked?

Address

Address

Hand and Power Tool Safety

- The Contractor shall ensure all hand and power tools and similar equipment, whether furnished by the employer or the employee, shall be maintained in a safe condition in accordance with CFR Title 29 Part 1926 Subpart I and other applicable Subparts, including state and local requirements.

Welding and Cutting Safety

- The Contractor shall ensure suitable fire extinguishing equipment is available and maintained in accordance with CFR Title 29 Part 1926 Subpart J and other applicable Subparts, including state and local requirements.

Scaffolding Safety

- The Contractor shall ensure all scaffolding is designed, erected, and maintained in accordance with CFR Title 29 Part 1926 Subpart L and other applicable Subparts, including state and local requirements.
- Will contractor erect or dismantle scaffolding? YES NO
29CFR 1926.451(e) (9) (i)
- Contractor's scaffolding erection/ dismantling competent person for project is:

Name and Phone Number

Confined Space Entry

- The Contractor's working in confined spaces shall comply with CFR Title 29 Part 1910.146, Permit-required confined spaces.
- Contractor working in confined spaces? YES NO
- Contractor has a confined space program in place? YES NO
- Contractor's confined space competent person for project is:

Name and Phone Number

Fall Safety

- The Contractor shall provide fall protection in accordance with CFR Title 29 Part 1926 Subpart M and other applicable Subparts, including state and local requirements.
- Has a competent person trained affected employees? YES NO
29CFR 1926.503(a)(2)
- Contractor's fall safety competent person for this project is:

Name and Phone Number

Crane, Derricks, Hoists, Elevators, and Conveyor Safety

- The Contractor shall ensure hoisting equipment is inspected, maintained, and operated in accordance with CFR Title 29 Part 1926 Subpart N and other applicable Subparts, including state and local requirements.
- Contractor will use authorized, qualified employees to operate cranes, including mobile and tower cranes or hoisting apparatus. YES NO
8 CCR 5006, 5006.1

Trenching/Excavation Safety

- The Contractor shall conduct all excavations in accordance with CFR Title 29 Part 1926 Subpart P and other applicable Subparts including state and local requirements.
- Will a competent person be on site conducting inspections? YES NO
1926.651(k)(l)
- Contractor's excavation safety competent person for this project is:

Name and Phone Number

Steel Erection Safety

- The Contractor shall ensure steel erection is in accordance with CFR Title 29 Part 1926 Subpart R and other applicable Subparts including state and local requirements.
- Has Contractor provided a training program for all employees exposed to fall hazards? 1926.761(b)(2) YES NO

Other

- The Contractor shall incorporate all applicable Subparts of the CFR Title 29 Part 1926, including state and local requirements as required for the project.

The topics covered above are intended as generic, non-exhaustive overview of hazards related to plant construction. This checklist does not alter or absolve the Contractor from compliance responsibilities set forth in the OSHA standards themselves, and the Occupational Safety and Health Act. By signing below, the contractor is NOT absolved from full responsibility for complying with all local, state, federal regulations.

Authorized Contractor Representative (Sign and Date)

DAILY JOBSITE SAFETY SURVEY REPORT

To be completed by Contractor and submitted to Resident Project Representative on a daily basis

Job # _____ Job Name/Location _____ Date: _____ Time: _____

Contractor Competent
Person (Printed)

Contractor
Competent Person
(signature)

O.K.	Y	N	NA	C
Corrective Action Required				
Not Inspected, N/A				
Corrected				
1. Personal Protective Equipment Worn				
Hard Hats				
Eye Protection				
Hearing Protection				
Respirators				
Protective Clothing				
Protective Footwear				
Fall Protection				
2. Housekeeping				
Waste/Hazardous Waste Properly Stored				
Waste testing completed				
Debris Removal				
Daily Site Clean-Up				
3. Ladders/Stairs				
Ladders in good condition				
Ladders tied off				
Extends 36" above landing				
4. Open Floors and sides				
Perimeter guardrail in place				
Floor Openings covered / protected				
5. Scaffolds				
Guardrails, toeboards, access points in place.				
Rigged IAW OSHA requirements				
In good condition and inspect.				

O.K.	Y	N	NA	C
Corrective Action Required				
Not Inspected, N/A				
Corrected				
7. Fire Protection				
Adequate extinguishers in place.				
Flammable material properly stored.				
Fire watch in place for Welding/Cutting.				
8. Tools				
Good condition				
Tool guards in place.				
Power Cords in good condition.				
Temporary Power Boxes in good condition.				
9. Site/Public Protection				
Fences in place.				
Barricades in place.				
Safety signage posted.				
10. Weather Hazard				
High Winds				
Rain				
Temperature (Too High or Too Low)				
10. First Aid				
Trained Personnel on site.				
Kits/Supplies on site and maintained.				
Sanitation/Water available to workforce.				
11. Programs/Information				
JSA Reviewed with workforce.				
New Hire Orientation				
Hazardous Substances identified and MSDS sheets available.				
Safety Meetings conducted weekly.				
Safety Signs Posted.				

6. Electrical

Adequate Lighting				
Grounded/GFCI protected				
Cords, plugs & receptacles in good condition.				

12. Confined Space Entry:

Gas testing conducted.		
Permit Required confined space?		
Non permit required confined space?		

Number of Men in Crew: _____

Names of Crew Members:

Work Day Safety Comments:

Any safety accidents/incidents during the work day ?

Were the accidents/incidents reported to the appropriate parties ?



SUBMITTAL CHECK LIST

<u>Sub. No.</u>	<u>Item</u>	<u>Submit By</u>	<u>Date Received</u>	<u>Date Reviewed</u>	<u>Previous Sub. No.</u>	<u>Status</u>
1.	Insurance Certificate	CD				
2.	Proposed Method of Containment w/ P.E. Stamp	CD + 15 days				
3.	Details of Reinforcing Pads Between Tank and Attachments	CD + 15 days				
4.	Name of Competent Person	CD + 15 days				
5.	A letter (on company letterhead) from the Contractor stating/certifying that the Contractor's Competent Person(S) has/have received training in accordance with local, state, and federal regulations	CD + 15 days				
6.	Documentation of Training for Support Personnel	CD + 15 days				
7.	Welder(s) Certification (submitted at site)	prior to welding				
8.	Medical Surveillance Program	CD + 15 days				
9.	Work Safety Program	CD + 15 days				
10.	Personnel Air Monitoring Program	CD + 15 days				
11.	Confined Space Entry Procedure	CD + 15 days				
12.	Traffic Control Plan	CD + 15 days				
13.	Public Safety Plan	CD + 15 days				
14.	Bar Chart or Progress Schedule	CD + 15 days				
15.	Schedule of Values	CD + 15 days				
16.	Submittal for Times of Work	CD + 15 days				
17.	Descriptive written plan concerning how abrasive and/or paint damage to automobiles and property will be handled, including a process for quick removal of the abrasive or paint, and who will do the Work	CD + 15 days				
18.	Details of repairs if different from drawings	CD + 20 days				
19.	Exterior Prime Coat - Supplier, Type, PDS	CD + 20 days				
20.	Exterior Intermediate Coat - Supplier, Type, PDS	CD + 20 days				
21.	Exterior Finish Coat - Supplier, Type, PDS	CD + 20 days				
22.	Exterior Intermediate Color and Finish Color	CD + 20 days				
23.	Interior & Metal Piping Prime Coat - Supplier, Type, PDS	CD + 20 days				
24.	Interior & Metal Piping Finish Coat - Supplier, Type, PDS	CD + 20 days				
25.	Concrete First Coat - Supplier, Type, PDS	CD + 20 days				
26.	Concrete Second Coat - Supplier, Type, PDS	CD + 20 days				
27.	Inaccessible Area Prime Coat - Supplier, Type, PDS	CD + 20 days				
28.	Seam Sealer - Supplier, Type, PDS	CD + 20 days				
29.	Flexible Sealant - Supplier, Type, PDS	CD + 20 days				
30.	Solventless, Underwater-Curing Epoxy - Supplier, Type, PDS	CD + 20 days				
31.	Thinners - Supplier, Type, MSDS	CD + 20 days				
32.	Disinfectant - Supplier, Type, MSDS	CD + 20 days				
33.	Abrasives - Supplier, Type, MSDS, and Size	CD + 20 days				
34.	Abrasives - letter from coating manufacturer's HQ stating the Resulting Abrasive Profile is acceptable	CD + 20 days				
35.	Blastox - % of Mixture and PDS or MSDS	CD + 20 days				
36.	Concrete Repair Material - Supplier, Type, MSDS	CD + 20 days				
37.	Waste Hauler Spill Contingency Plan	CD + 20 days				

Status Abbreviations ** NEN = No Exceptions Noted, MCN = Make Corrections Noted, R&R = Revise & Resubmit, REJ = Rejected, See Comments, NAR = No Action Required by Engineer or Owner
 CD = Contract Date --- All Submittals Shall be Received Prior to Contractor Starting Work

SUBMITTAL CHECK LIST

<u>Sub. No.</u>	<u>Item</u>	<u>Submit By</u>	<u>Date Received</u>	<u>Date Reviewed</u>	<u>Previous Sub. No.</u>	<u>Status</u>
38.	Plan for Forced Ventilation for Interior Wet Coating Cure	CD + 20 days				
39.	Compliance with ANSI/NSF Standard 61 (if not stated on PDS)	CD + 20 days				
40.	Certification from manufacturer that Alternate Coating Materials Meet the Specifications	CD + 20 days				
41.	Certification from manufacturer that all coating materials contain less than 0.06% by weight of lead (or any lead compounds), cadmium, and chromium in the cured coating for each coat applied	CD + 20 days				
42.	Catalog Cuts, Installation, and Operation Instructions of Ladder Safe-Climbing Device	CD + 20 days				
43.	Catalog Cuts of New Vandal Deterrent	CD + 20 days				
44.	Steel Grit Total Lead Tests	CD + 20 days				
45.	Certification that the interior coating has cured such that it is ready for immersion service	prior to filling tank				

Status Abbreviations ** NEN = No Exceptions Noted, MCN = Make Corrections Noted, R&R = Revise & Resubmit, REJ = Rejected, See Comments,
 NAR = No Action Required by Engineer or Owner
 CD = Contract Date --- All Submittals Shall be Received Prior to Contractor Starting Work

Submittal Cover Sheet

Coopers Mountain Tank

(Name of Contractor)

City of Harrisonburg
2155 Beery Road
Harrisonburg, Virginia 22801

(Address)

(City, State Zip)

Tank Industry Consultants
7740 West New York Street
Indianapolis, Indiana 46214

5 Sets of Each Submittal Included
1 set of reviewed submittals returned to CONTRACTOR
1 set of reviewed submittals forwarded to OWNER

TIC Project No.: _____.E450.013

Submittal No.	Date

SUBMITTAL

Checklist Item No.	Specification Section	Description

**Review is for General Compliance with Contract Documents and Specifications.
No Responsibility is Assumed for Correctness of Dimensions or Details.**

- _____ **No Exceptions Noted**
- _____ **No Action Required by Engineer or Owner**
- _____ **Make Corrections Noted**
- _____ **Revise & Resubmit**
- _____ **Rejected – See Comments**

Tank Industry Consultants

By: _____ Date: _____

SCS