



One City Plaza, Suite B
P.O. Box 1287
Cabot, Arkansas 72023
Phone 501 843-4654

**Cabot WaterWorks
Bid Documents & Specifications
Tank Painting and Rehab**

2 MG Ground Tank @ Willie Ray Dr.

August 1, 2024



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INVITATION TO BID (ITB)

Cabot WaterWorks (CWW) is accepting Sealed Bids for the following Services.

Tank Painting and Rehab 2 MG Ground Tank @ Willie Ray Dr.

Sealed, written responses to this invitation must be received at Cabot WaterWorks Administrative Office, at the address above no later than 1:00 p.m. August 22nd, 2024, for consideration. **THE SEALED ENVELOPE, INCLUDING EXPRESS ENVELOPES, MUST BE LABELED AS A SEALED BID AND SHOW ITEM.**

Questions and Site Visits should be directed to Tim Joyner, General Manager.

Cabot Waterworks encourages the participation of small, minority, and woman owned business enterprises in the procurement of goods and services.

Bidders must be prepared, if requested by Cabot Waterworks, to provide additional information within 10 business days so that Cabot Waterworks can determine Bidder's ability to meet requirements of this ITB. **Cabot Waterworks reserves the right to reject any or all bids** and to waive any formalities or minor exceptions.

Bids will be opened, and the dollar amount read at the stated time and is open to the public. Bidders are welcome at the bid opening, but their presence is not required. Bid tabulations and the bids will be available for public viewing and inspection after Cabot Waterworks has prepared such tabulation after the bid opening. A decision will not be made at the bid opening as to bid award. Cabot Waterworks staff will take bids under consideration. After evaluation, CWW staff will prepare a recommendation to present to the Cabot Water and Wastewater Commission for their consideration at an upcoming Commission meeting. Once the Commission approves the bid, Cabot Waterworks will issue a Notice of Award. Cabot Waterworks will not formally notify unsuccessful bidders.

This invitation does not constitute an order for the service/product named.

ACKNOWLEDGEMENT

ACKNOWLEDGEMENT OF THIS “INVITATION TO BID” (ITB) MUST BE RECEIVED BY CABOT WATERWORKS IN ORDER FOR YOU TO RECEIVE ADDENDUMS.

PLEASE COMPLETE BELOW AND RETURN TO CABOT WATERWORKS IMMEDIATELY UPON RECEIPT OF THIS PACKET. Email: Tim@CabotWaterWorks.com, Fax 501-605-1743

Services requested in Invitation to Bid:

**Tank Painting and Rehab
2 MG Ground Tank @ Willie Ray Dr.**

DATE RECEIVED: _____

RECIPIENT: _____ (Business Name)

_____ (Address)

_____ (Phone)

_____ (Email)

Printed Name

Signature

INFORMATION FOR BIDDERS

Bids will be received by Cabot WaterWorks, Cabot, Arkansas at the time and place as designated in the Advertisement for Bids, and then at said time and place publicly opened and read aloud.

Each Bid must be submitted in a sealed envelope addressed to Cabot WaterWorks. Each sealed envelope containing a Bid must be plainly marked on the outside as:

Bid For Tank Painting and Rehab

The sealed envelope must also bear on the outside the name of the Bidder, his address, and his Arkansas Contractor's License Number.

If forwarded by mail, the sealed envelope containing the Bid must be enclosed in another covering envelope addressed to:

Tim Joyner, P.E., General Manager
One City Plaza, Suite B
Cabot, Arkansas 72023

All Bids must be made on the required Bid Form. All blank spaces for Bid prices must be filled in, in ink or typewritten, and the Bid Form must be fully completed and executed when submitted. Only one copy of the Bid Form is required.

The Owner may waive any informalities or minor defects or reject any and all Bids. Any Bid may be withdrawn prior to the scheduled time for the opening of Bids or authorized postponement thereof. Any Bid received after the time and date specified shall not be considered. No Bidder may withdraw a Bid within 60 days after the actual date of the opening thereof. Should there be reasons why the contract cannot be awarded within the specified period, the time may be extended by mutual agreement between the Owner and Bidder.

Bidders must satisfy themselves as to the quantity and nature of the required work by examination of the site and review of the Drawings and Specifications, including Addenda. After Bids have been submitted, the Bidder shall not assert that there was a misunderstanding concerning the quantities of Work or of the nature of the Work to be done. Bidders shall acknowledge receipt of Addenda in the space provided on the Bid Form.

The Contract Documents contain the provisions required for the construction of the project. Information obtained from an officer, agent, or employee of the Owner or any other person shall not affect the risk or obligations assumed by the Contractor or relieve him from fulfilling any of the conditions of the Contract.

Each Bid must be accompanied by a Bid Bond payable to the Owner for five percent of the total amount of the Bid. The Bid Bond of the Successful Bidder will be retained until the Performance and Payment Bonds have been executed and approved, after which the Bid Bond will be returned. A certified check may be used in lieu of a Bid Bond.

A Performance Bond and Payment Bond each in the amount of 100 percent (100%) of the Contract Price, with a corporate surety approved by the Owner, will be required for the faithful performance of the Contract. Attorneys-in-fact who sign Bonds must file with each Bond a certified and effective dated copy of their Power of Attorney.

The party to whom the contract is awarded will be required to execute the Contract Agreement and obtain the Performance and Payment Bonds within 10 calendar days from the date when Notice of Award is delivered to the Bidder. The Notice of Award shall be accompanied by the necessary Agreement and Bond forms. In case of failure of the Bidder to execute the Contract Agreement, the Owner may at his option consider the Bidder in default, in which case the Bid Bond accompanying the Proposal shall become the property of the Owner. The Owner within 10 days of receipt of acceptable Performance and Payment Bonds and Contract Agreement signed by the party to whom the Contract was awarded shall sign the Contract Agreement and return to such party an executed duplicate of the Contract Agreement. Should the Owner not execute the Contract Agreement within such period, the Bidder may by written notice withdraw his signed Contract Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the Owner.

The Notice to Proceed shall be issued within 10 days of the execution of the Contract Agreement by the Owner. Should there be reasons why the Notice to Proceed cannot be issued within such period, the time may be extended by mutual agreement between the Owner and the Contractor. If the Notice to Proceed has not been issued within the 10-day period or within the period mutually agreed upon, the Contractor may terminate the Contract Agreement without further liability on the part of either party.

The Owner may make such investigations as he deems necessary to determine the ability of the Bidder to perform the Work, and the Bidder shall furnish, to the Owner, all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any Bid if the evidence submitted by, or investigations of, such Bidder fails to satisfy the Owner that such Bidder is properly qualified to carry out the obligations of the Contract Agreement and to complete the Work contemplated therein. Bidders must be licensed and legally qualified in all respects to do business in the State of Arkansas.

All applicable laws, ordinances, and rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout.

Each bidder is responsible for inspecting the site and for reading and being thoroughly familiar with the Contract Documents. The failure or omission of any Bidder to do any of the foregoing shall in no way relieve any Bidder from any obligation in respect to his Bid.

The Low Bidder must supply the names and addresses of the major material suppliers when requested to do so by the Owner.

A conditional or qualified Bid will not be accepted.

The Contract will be awarded based upon the Bidder's "Total Bid". The "Total Bid" shall be inclusive of the cost of all materials, equipment, labor, insurance, profit, taxes, and overhead. The "Total Bid" shall be inclusive of all categories of work including all site work, electrical work, mechanical work, and all other work of the several kinds called for in the Drawings and Specifications.

BID FORM

Date: _____

PROPOSAL of _____, (hereinafter called "Bidder"),

organized and existing under the laws of the State of _____, doing business as

* _____,

*(Insert "a Corporation", "a Partnership", or "an Individual", as applicable)

to the Cabot WaterWorks, Cabot, Arkansas (hereinafter called "Owner"):

In compliance with your Advertisement for Bids, Bidder hereby proposes to perform all Work for: Tank Painting and Rehab: 2 MG Ground Tank @ Willie Ray Dr.

in strict accordance with the Contract Documents, within the time set forth therein, and for the prices stated below.

By submission of this Bid, each Bidder certifies, and in the case of a joint bid, each Party thereto certifies as to his own organization, that this Bid has been arrived at independently, without consultation, communication or agreement as to any matter relating to this Bid with any other Bidder or with any competitor.

Bidder hereby agrees to commence work under this contract on or before a date to be specified in the Notice to Proceed and to fully complete the Project within 120 consecutive calendar days thereafter. Bidder further agrees to pay, as liquidated damages, the sum of \$350.00 for each consecutive calendar day thereafter as provided in Section 15 of the General Conditions to these Specifications.

Bidder shall submit a letter from Tank Mixing System manufacturer affirming they will meet the 120 calendar day completion requirements.

Bidder hereby acknowledges receipt of the following ADDENDA: (Insert No. & Date of each Addendum):

Bidder, having examined the Drawings and Specifications with related documents and the site of the proposed work, and being familiar with the conditions surrounding the project; including the availability of materials and labor, hereby proposes to furnish all materials, labor, equipment, and supplies to construct the Project in full accordance with the Contract Documents, within the time set forth therein, and for the Prices stated herein below. The prices are to cover all expenses incurred in performing the work of the several kinds called for in the Contract Documents, of which this Proposal is a part.

Bidder to Initial Here: _____

Bidder hereby agrees to perform all Work described in the Specifications, called for in the Contract Documents, and shown on the Drawings for the following Prices:

BID SCHEDULE Bid For Tank Painting and Rehab 2 MG Ground Tank @ Willie Ray Dr.			
Item No.	Description	Quantity	Amount
1	Mobilization, Demobilization, Bonds, Insurance	Lump Sum	\$
2	Containment system	Lump Sum	\$
3	Blast and Paint Exterior of 2 MG Ground Tank	Lump Sum	\$
4	Blast and Paint Interior of 2 MG Ground Tank	Lump Sum	\$
5	Repairs 2 MG Ground Tank	Lump Sum	\$
6	Tank Mixing System	Lump Sum	\$
7	Disinfection	Lump Sum	\$
Total Bid			\$

The above stated Total Bid shall include all labor, materials, equipment, overhead, profit, insurance, taxes, and incidentals to cover the cost of the finished work of the various kinds called for to complete the Project in a manner in full accordance with the Specifications and Contract Documents; to be fully acceptable to the Owner. Bidder understands the Contract will be awarded based upon the Bidder's "Total Bid."

The Bidder understands that the Owner reserves the right to reject any or all bids, and to waive informalities in the bidding.

The Bidder agrees that this Bid shall be good and may not be withdrawn for a period of 60 calendar days after the scheduled closing time for receipt of bids.

Bidder to Initial Here: _____

Upon receipt of written notice of the acceptance of this Bid, Bidder will execute the formal Contract Agreement attached within 10 days and deliver a Surety Bond or Bonds as required in Section 22 of the General Conditions to the Specifications.

Bid Security attached in the sum of 5 percent of the total amount bid is to become the property of the Owner in the event the Contract Agreement and Bonds are not executed within the time set forth, as liquidated damages for the delay and additional expense to the Owner caused thereby; as in accordance with Section 15 of the General Conditions to the Specifications.

Respectfully submitted,

SEAL (If Bidder is a Corporation)

Bidder: _____

Signature: _____

Title: _____

Print Name and Title: _____

Address: _____

Arkansas Contractor's Lic. No.: _____

Telephone Number: _____

Email: _____

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we the undersigned,

_____,

as Principal, and _____, as Surety, are hereby held and firmly bound unto Cabot WaterWorks, Cabot, Arkansas as Owner in the penal sum of five (5) percent of the Principal's Total Bid in the largest amount as stated in the Bid Form, for the payment of which well and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns.

Signed this _____ day of _____, 2024.

The condition of the above obligation is such that whereas the Principal has submitted to the Owner a certain Bid, attached hereto and hereby made a part hereof to enter into a contract in writing, for; Tank Painting and Rehab: 2-MG Ground Tank @ Willie Ray Dr., together with ancillary and incidental work.

NOW THEREFORE,

- (a) If said Bid shall be rejected, or in the alternate,
- (b) If said Bid shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said Bid) and shall furnish a bond for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said Bid, then this obligation shall be void, otherwise the same will remain in force and effect, it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the Owner may accept such bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

Principal: _____

Signature: _____

Surety: _____

By: _____

* Surety must attach valid Power of Attorney.

CONTRACT AGREEMENT

THIS AGREEMENT, made this _____ day of _____, 2024, by and between the Cabot WaterWorks, Cabot, Arkansas, hereinafter called "Owner", and

_____,

doing business as * _____,
**(Insert "an Individual," or "a Partnership," or "a Corporation" as applicable)*

hereinafter called "Contractor", WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned:

1. The Contractor will commence and complete the Tank Painting and Rehab on the 2 MG Ground Tank @ Willie Ray Dr. in full accord with the Contract Documents and at the price as stated in the Contract Documents attached hereto and made a part hereof.
2. The Contractor will furnish all materials, supplies, tools, equipment, labor, and other services necessary for the construction and completion of the work described in the Contract Documents.
3. The Contractor will commence the work required in the Contract Documents on or before the date to be specified in a written Notice to Proceed from the Owner and will complete the same within the time stated unless the period for completion is extended otherwise by the Contract Documents.
4. The Contractor agrees to perform all of the work described in the Contract Documents and comply with the terms therein for the amounts as shown in the Bid Form.
5. The term "Contract Documents" means and includes the Advertisement for Bids, Information for Bidders, Bid, Bid Bond, Contract Agreement, General Conditions, Performance Bond, Payment Bond, Notice of Award, Notice to Proceed, Change Orders, Drawings, Specifications and Addenda prepared or issued by the Owner.
6. The Owner will pay to the Contractor in the manner and at such times as set forth in the General Conditions such amounts as required by the Contract Documents.
7. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in three counterparts, each of which shall be deemed an original on the date first above written.

OWNER: Cabot WaterWorks
1 City Plaza, Suite B
Cabot, AR 72023

By: _____
Tim Joyner, General Manager

Attest: _____

Name: _____

Title: _____

CONTRACTOR: _____

*Attest: _____

Signature

Signature

Name: _____

Name: _____

Title: _____

Title: _____

Address: _____

** If a corporation, the Secretary of the Corporation should Attest.*

SEAL (If Corporation)

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That _____,

_____,
(State whether Individual, Partnership, or Corporation)

hereinafter called Principal, and _____, as Surety, hereinafter called "Surety", are held and firmly bound unto the Cabot WaterWorks, Cabot, Arkansas, as obligee, hereinafter called "Owner", in the amount of

_____ Dollars (\$ _____), for payment whereof the Principal and Surety bind themselves, their heirs, personal representatives, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas the Principal entered into a certain contract with the Owner, dated _____, 2024, a copy of which is hereto attached and made a part hereof for Tank Painting and Rehab on the 2 MG Ground Tank @ Willie Ray Dr.

NOW, THEREFORE, if the Principal shall well, truly, and faithfully perform its duties, all undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the Owner, with or without notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such Contract, and shall fully indemnify and save harmless the Owner from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the Owner all outlay and expense which the Owner may incur in making good any default, then this obligation shall be void; otherwise, to remain in full force and effect.

PROVIDED, FURTHER, that the said surety for value received hereby stipulated and agrees that no change, extension of time, alteration or addition to the terms of the contract or to Work to be performed thereunder or the Specifications accompanying the same shall in any way affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to Work or to the Specifications.

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in three counterparts, each of which shall be deemed an original.

Executed this _____ day of _____, 2024.

(Principal)

(Surety)

By: _____

By: _____

Name & Title _____

(Name/Attorney-in-Fact)

Address: _____

Address: _____

Telephone: _____

NOTE:

1. This Bond Form is mandatory; no other form will be acceptable.
2. The date of the Bond must not be prior to the date of the Contract.
3. This Bond must be issued in quadruplicate with the issuing agent's Power of Attorney attached to each copy.
4. Attorney-In-Fact to indicate appropriate mailing address and telephone numbers.

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: THAT _____

* _____,
(*State whether an Individual, a Partnership, or a Corporation)

hereinafter called Principal, and _____, as Surety, hereinafter called "Surety", are held and firmly bound unto the Cabot WaterWorks, Cabot, Arkansas, as obligee, hereinafter called "Owner", in the amount of:

_____ Dollars (\$ _____),

for payment whereof the Principal and Surety bind themselves, their heirs, personal representatives, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas the Principal entered into a certain contract with the Owner, dated _____, 2024, a copy of which is hereto attached and made a part hereof for the Tank Painting and Rehab: 2 MG Ground Tank @ Willie Ray Dr.

NOW, THEREFORE, if the Principal shall promptly make payments to all persons, firms, Subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the Work provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such Work, and all insurance premiums on said Work, and for all labor, performed in such Work whether by Subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said surety for value received hereby stipulated and agrees that no change, extension of time, alteration or addition to the terms of the contract or to Work to be performed thereunder or the Specifications accompanying the same shall in any way affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to Work or to the Specifications.

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in three counterparts, each of which shall be deemed an original.

Executed this _____ day of _____, 2024.

(Principal)

(Surety)

By: _____

By: _____

Name & Title _____

(Name/Attorney-in-Fact)

Address: _____

Address: _____

Telephone: _____

NOTE:

1. This Bond Form is mandatory; no other form will be acceptable.
2. The date of the Bond must not be prior to the date of the Contract.
3. This Bond must be issued in quadruplicate with the issuing agent's Power of Attorney attached to each copy.
4. Attorney-In-Fact to indicate appropriate mailing address and telephone numbers.

CONTRACT GENERAL CONDITIONS

1. Definitions
2. Additional Instructions and Detail Drawings
3. Schedules, Reports and Records
4. Drawings and Specifications
5. Shop Drawings
6. Materials, Services and Facilities
7. Inspection and Testing
8. Substitutions
9. Patents
10. Surveys, Permits, Regulations
11. Protection of Work, Property, Persons
12. Supervision by Contractor
13. Changes in the Work
14. Changes in Contract Price
15. Time for Completion and Liquidated Damages
16. Correction of Work
17. Subsurface Conditions
18. Suspension of Work, Termination and Delay
19. Payments to Contractor
20. Acceptance of Final Payment as Release
21. Insurance
22. Contract Security
23. Assignments
24. Indemnification
25. Separate Contracts
26. Subcontracting
27. Engineer's Authority
28. Land and Rights-of-Way
29. Guaranty
30. Taxes

1. DEFINITIONS

- 1.1 Wherever used in the Contract Documents, the following terms shall have the meanings indicated which shall be applicable to both the singular and plural thereof:
- 1.2 ADDENDA - Written or graphic instruments issued prior to the execution of the Agreement which modify or interpret the Contract Documents, Drawings and Specifications, by additions, deletions, clarifications or corrections.
- 1.3 BID - The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
- 1.4 BIDDER - Any person, firm or corporation submitting a Bid for the Work.
- 1.5 BONDS - Bid, Performance, and Payment Bonds and other instruments of security, furnished by the Contractor and his surety in accordance with the Contract Documents.
- 1.6 CHANGE ORDER - A written order to the Contractor authorizing an addition, deletion or revision in the Work within the general scope of the Contract Documents or authorizing an adjustment in the Contract Price or Contract Time.
- 1.7 CONTRACT DOCUMENTS - The contract, including Information for Bidders, Bid, Bid Bond, Agreement, Payment Bond, Performance Bond, Notice-of-Award, Notice-to-Proceed, Change Order, Drawings, Specifications, and Addenda.
- 1.8 CONTRACT PRICE - The total monies payable to the Contractor under the terms and conditions of the Contract Documents.
- 1.9 CONTRACT TIME - The dates stated in the Contract Documents for the completion of the Work.
- 1.10 CONTRACTOR - The person, firm or corporation with whom the Owner has executed the Agreement.
- 1.11 DRAWINGS - The part of the Contract Documents which show the characteristics and scope of the Work to be performed and which have been prepared or approved by the Engineer.
- 1.12 ENGINEER – Cabot Waterworks authorized Engineer or through the CWW Inspector.
- 1.13 FIELD ORDER - A written order affecting a change in the Work not involving an adjustment in the Contract Price or an extension of the Contract Time, issued by the Engineer to the Contractor during construction.
- 1.14 NOTICE OF AWARD - The written notice of the acceptance of the Bid from the Owner to the successful Bidder.
- 1.15 NOTICE TO PROCEED - Written communication issued by the Owner to the Contractor authorizing him to proceed with the Work and establishing the date of commencement of the Work.
- 1.16 OWNER – Cabot WaterWorks, (CWW).
- 1.17 PROJECT - The undertaking to be performed as provided in the Contract Documents.
- 1.18 RESIDENT PROJECT REPRESENTATIVE - The authorized representative of the Owner who is assigned to the Project site or any part thereof.
- 1.19 SHOP DRAWINGS - All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the Contractor, a Subcontractor, Manufacturer, Supplier or Distributor, which illustrate how specific portions of the Work shall be fabricated or installed.

- 1.20 SPECIFICATIONS - A part of the Contract Documents consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards and workmanship.
- 1.21 SUBCONTRACTOR - An individual, firm or corporation having a direct contract with the Contractor or with any other Subcontractor for the performance of a part of the Work at the site.
- 1.22 SUBSTANTIAL COMPLETION - That date as certified by the Engineer when the construction of the Project or a specified part thereof is sufficiently completed, in accordance with the Contract Documents, so that the Project or specified part can be utilized for the purposes for which it is intended.
- 1.23 SUPPLIERS - Any person, supplier or organization who supplies materials or equipment for the Work, including that fabricated to a special design, but who does not perform labor at the site.
- 1.24 WORK - All labor necessary to produce the construction required by the Contract Documents, and all materials and equipment incorporated or to be incorporated in the Project.
- 1.25 WRITTEN NOTICE - Any notice to any party of the Agreement relative to any part of this Agreement in writing and considered delivered and the service thereof completed, when posted by certified or registered mail to the said party at his last given address or delivered in person to said party or his authorized representative on the Work.

2. ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS

- 2.1 The Contractor may be furnished additional instructions and detail drawings, by the Engineer, as necessary to carry out the Work required by the Contract Documents.
- 2.2 The additional drawings and instructions thus supplied will become a part of the Contract Documents. The Contractor shall carry out the Work in accordance with the additional detail drawings and instructions.

3. SCHEDULES, REPORTS AND RECORDS

- 3.1 The Contractor shall submit to the Owner such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data as the Owner may request concerning Work performed or to be performed.
- 3.2 Prior to the first partial payment estimate the Contractor shall submit schedules showing the order in which he proposes to carry on the Work, including dates at which he will start the various parts of the Work, estimated date of completion of each part and, as applicable:
 - 3.2.1. the dates at which special detail drawings will be required; and
 - 3.2.2. respective dates for submission of Shop Drawings, the beginning of manufacture, the testing and the installation of materials, supplies and equipment.
- 3.3 The Contractor shall also submit a schedule of payments that he anticipates he will earn during the course of the Work.

4. DRAWINGS AND SPECIFICATIONS

- 4.1 The intent of the Drawings and Specifications is that the Contractor shall furnish all labor, materials, tools, equipment, and transportation necessary for the proper execution of the Work in accordance with the Contract Documents and all incidental work necessary to complete the Project in an acceptable manner, ready for use, occupancy or operation by the Owner.

- 4.2 In case of conflict between the Drawings and Specifications, the Specifications shall govern. Figure dimensions on Drawings shall govern over scale dimensions, and detailed Drawings shall govern over general Drawings.
- 4.3 Any discrepancies found between the Drawings and Specifications and site conditions or any inconsistencies or ambiguities in the Drawings or Specifications shall be immediately reported to the Engineer, in writing, who shall promptly correct such inconsistencies or ambiguities in writing. Work done by the Contractor after his discovery of such discrepancies, inconsistencies or ambiguities shall be done at the Contractor's risk.

5. SHOP DRAWINGS

- 5.1 The Contractor shall provide Shop Drawings as may be necessary for the prosecution of the Work as required by the Contract Documents. The Engineer shall promptly review all Shop Drawings. The Engineer's approval of any Shop Drawing shall not release the Contractor from responsibility for deviations from the Contract Documents. The approval of any Shop Drawings which substantially deviates from the requirement of the Contract Documents shall be evidenced by a Change Order.
- 5.2 When submitted for the Engineer's review, Shop Drawings shall bear the Contractor's certification that he has reviewed, checked and approved the Shop Drawings and that they are in conformance with the requirements of the Contract Documents.
- 5.3 Portions of the Work requiring a Shop Drawing or sample submission shall not begin until the Shop Drawing or submission has been approved by the Engineer. A copy of each approved Shop Drawing and each approved sample shall be kept in good order by the Contractor at the site and shall be available to the Engineer.

6. MATERIALS, SERVICES AND FACILITIES

- 6.1 It is understood that, except as otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, supervision, temporary construction of any nature, and all other services and facilities of any nature whatsoever necessary to execute, complete, and deliver the Work within the specified time.
- 6.2 Materials and equipment shall be so stored as to insure the preservation of their quality and fitness for the Work. Stored materials and equipment to be incorporated in the Work shall be located so as to facilitate prompt inspection.
- 6.3 Manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the manufacturer.
- 6.4 Materials, supplies and equipment shall be in accordance with samples submitted by the Contractor and approved by the Engineer.
- 6.5 Materials, supplies or equipment to be incorporated into the Work shall not be purchased by the Contractor or the Subcontractor subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller.

7. INSPECTION AND TESTING

- 7.1 All materials and equipment used in the construction of the Project shall be subject to adequate inspection and testing in accordance with generally accepted standards.
- 7.2 The Contractor shall provide at his expense the necessary testing and inspection services required by the Contract Documents, unless otherwise provided.

- 7.3 The Owner shall provide all other inspection and testing services not required by the Contract Documents.
- 7.4 If the Contract Documents, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any Work to specifically be inspected, tested, or approved by someone other than the Contractor, the Contractor will give the Engineer timely notice of readiness. The Contractor will then furnish the Engineer the required certificates of inspection, testing or approval.
- 7.5 Neither observations by the Engineer nor inspections, tests or approvals by persons other than the Contractor shall relieve the Contractor from his obligations to perform the Work in accordance with the requirements of the Contract Documents.
- 7.6 The Engineer and his representatives will at all times have access to the Work. In addition, authorized representatives and agents of any participating Federal or State agency shall be permitted to inspect all work, materials, payrolls, records of personnel, invoices of materials, and other relevant data and records. The Contractor will provide proper facilities for such access and observation of the Work and also for any inspection or testing thereof.
- 7.7 If any Work is covered contrary to the written request of the Engineer it must, if requested by the Engineer, be uncovered for his observation and replaced at the Contractor's expense.
- 7.8 If any Work has been covered which the Engineer has not specifically requested to observe prior to its being covered, or if the Engineer considers it necessary or advisable that covered Work be inspected or tested by others, the Contractor at the Engineer's request, will uncover, expose or otherwise make available for observation, inspection or testing as the Engineer may require, that portion of the Work in question, furnishing all necessary labor, materials, tools, and equipment. If it is found that such Work is defective, the Contractor will bear all expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction. If, however, such Work is not found to be defective, the Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction and an appropriate Change Order shall be issued.

8. SUBSTITUTIONS

- 8.1 Whenever a material, article or piece of equipment is identified on the Drawings or Specifications by reference to brand name or catalogue number, it shall be understood that this is referenced for the purpose of defining the performance or other salient requirements and that other products of equal capacities, quality and function shall be considered. The Contractor may recommend the substitution of a material, article, or piece of equipment of equal substance and function for those referred to in the Contract Documents by reference to brand name or catalogue number, and if, in the opinion of the Engineer, such material, article, or piece of equipment is of equal substance and function to that specified, the Engineer may approve its substitution and use by the Contractor. Any cost differential shall be deductible from the Contract Price and the Contract Documents shall be appropriately modified by Change Order. The Contractor warrants that if substitutes are approved, no major changes in the function or general design of the Project will result. Incidental changes or extra component parts required to accommodate the substitute will be made by the Contractor without a change in the Contract Price or Contract Time.

9. PATENTS

- 9.1 The Contractor shall pay all applicable royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and save the Owner harmless from loss on account thereof, except that the Owner shall be responsible for any such loss when particular process, design, or the product of a particular manufacturer or manufacturers is specified, but if the Contractor has reason to believe that the design, process or product specified is an infringement of a patent, he shall be responsible for such loss unless he promptly gives such information to the Engineer.

10. SURVEYS, PERMITS, REGULATIONS

- 10.1 The Owner shall furnish all land surveys and establish all base lines for locating the principal component parts of the Work together with a suitable number of benchmarks adjacent to the Work as shown in the Contract Documents. From the information provided by the Owner, unless otherwise specified in the Contract Documents, the Contractor shall develop and make all detail surveys needed for construction such as slope stakes, batter boards, stakes for pile locations and other working points, lines, elevations and cut sheets.
- 10.2 The Contractor shall carefully preserve benchmarks, reference points and stakes and, in case of willful or careless destruction, he shall be charged with the resulting expense and shall be responsible for any mistakes that may be caused by their unnecessary loss or disturbance.
- 10.3 Permits and licenses of a temporary nature necessary for the prosecution of the Work shall be secured and paid for by the Contractor. Permits, licenses and easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by the Owner, unless otherwise specified. The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the Work as drawn and specified. If the Contractor observes that the Contract Documents are at variance therewith, he shall promptly notify the Engineer in writing, and any necessary changes shall be adjusted as provided in Section 13, Changes in The Work.

11. PROTECTION OF WORK, PROPERTY AND PERSONS

- 11.1 The Contractor will be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. He will take all necessary precautions for the safety of, and will provide the necessary protection to prevent damage, injury or loss to all employees on the Work and other persons who may be affected thereby, all the Work and all materials or equipment to be incorporated therein, whether in storage on or off the site, and other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.
- 11.2 The Contractor will comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction. He will erect and maintain, as required by the conditions and progress of the Work, all necessary safeguards for safety and protection. He will notify owners of adjacent utilities when prosecution of the Work may affect them. The Contractor will remedy all damage, injury or loss to any property caused, directly or indirectly, in whole or in part, by the Contractor, any Subcontractor or anyone directly or indirectly employed by any of them or anyone for whose acts any of them be liable, except damages or loss attributable to the fault of the Contract Documents or to be acts or omissions of the Owner or the Engineer or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of the Contractor.
- 11.3 In emergencies affecting the safety of persons or the Work or property at the site or adjacent thereto, the Contractor, without special instruction or authorization from the Engineer or Owner, shall act to prevent threatened damage, injury or loss. He will give the Engineer prompt Written Notice of any significant changes in the Work or deviations from the Contract Documents caused thereby, and a Change Order shall thereupon be issued covering the changes and deviations involved.

12. SUPERVISION BY CONTRACTOR

- 12.1 The Contractor will supervise and direct the Work. He will be solely responsible for the means, methods, techniques, sequences and procedures of construction. The Contractor will employ and maintain on the Work a qualified supervisor or superintendent who shall have been designated in writing by the Contractor as the Contractor's representative at the site. The supervisor shall have full authority to act on behalf of the Contractor and all communications given to the supervisor shall be as binding as if given to

the Contractor. The supervisor shall be present on the site at all times as required to perform adequate supervision and coordination of the Work.

13. CHANGES IN THE WORK

- 13.1 The Owner may at any time, as the need arises, order changes within the scope of the Work without invalidating the Agreement. If such changes increase or decrease the amount due under the Contract Documents, or in the time required for performance of the Work, an equitable adjustment shall be authorized by Change Order.
- 13.2 The Engineer, also, may at any time, by issuing a Field Order, make changes in the details of the Work. The Contractor shall proceed with the performance of any changes in the Work so ordered by the Engineer unless the Contractor believes that such Field Order entitles him to a change in Contract Price or Time, or both, in which event he shall give the Engineer Written Notice thereof within fifteen (15) days after the receipt of the ordered change, and the Contractor shall not execute such changes pending the receipt of an executed Change Order or further instruction from the Owner.

14. CHANGES IN CONTRACT PRICE

- 14.1 The Contract Price may be changed only by a Change Order. The value of any Work covered by a Change Order or of any claim for increase or decrease in the Contract Price shall be determined by one or more of the following methods in the order of precedence listed below:
 - 14.1.1. Unit prices previously approved.
 - 14.1.2. An agreed lump sum.
 - 14.1.3. The actual cost for labor, direct overhead, materials, supplies equipment, and other services necessary to complete the work. In addition, there shall be added an amount to be agreed upon but not to exceed fifteen (15) percent of the actual cost of the Work to cover the cost of general overhead and profit.

15. TIME FOR COMPLETION AND LIQUIDATED DAMAGES

- 15.1 The date of beginning and the time for completion of the Work are essential conditions of the Contract Documents and the Work embraced shall be commenced on a date specified in the Notice-To-Proceed.
- 15.2 The Contractor will proceed with the Work at such rate of progress to insure full completion within the Contract Time. It is expressly understood and agreed, by and between the Contractor and the Owner, that the contract Time for the completion of the Work described herein is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the Work.
- 15.3 If the Contractor shall fail to complete the Work within the Contract Time, or extension of time granted by the Owner, then the Contractor will pay to the Owner the amount for liquidated damages as specified in the Bid for each calendar day that the Contractor shall be in default after the time stipulated in the Contract Documents.
- 15.4 The Contractor shall not be charged with liquidated damages or any excess cost when the delay in completion of the Work is due to the following, and the Contractor has promptly given Written Notice of such delay to the Owner or Engineer:
 - 15.4.1. To any preference, priority or allocation order duly issued by the Owner.
 - 15.4.2. To unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including but not restricted to, acts of God, or of the public enemy, acts of the Owner, acts of another

Contractor in the performance of a contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and abnormal and unforeseeable weather; and

15.4.3. To any delays of Subcontractors occasioned by any of the causes specified in paragraphs 15.4.1 and 15.4.2 of this article.

16. CORRECTION OF WORK

16.1 The Contractor shall promptly remove from the premises all Work rejected by the Engineer for failure to comply with the Contract Documents, whether incorporated in the construction or not, and the Contractor shall promptly replace and re-execute the Work in accordance with the Contract Documents and without expense to the Owner and shall bear the expense of making good all Work of other Contractors destroyed or damaged by such removal or replacement.

16.2 All removal and replacement Work shall be done at the Contractor's expense. If the Contractor does not take action to remove such rejected Work within ten (10) days after receipt of Written Notice, the Owner may remove such Work and store the materials at the expense of the Contractor.

17. SUBSURFACE CONDITIONS

17.1 The Contractor shall promptly, and before such conditions are disturbed, except in the event of an emergency, notify the Owner by Written Notice of:

17.1.1. Subsurface or latent physical conditions at the site differing materially from those indicated in the Contract Documents; or

17.1.2. Unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in Work of the character provided for in the Contract Documents.

17.2 The Owner shall promptly investigate the conditions, and if he finds that such conditions do so materially differ and cause an increase or decrease in the cost of, or in the time required for, performance of the Work, and equitable adjustment shall be made, and the Contract Documents shall be modified by a Change Order. Any claim of the Contractor for adjustment hereunder shall not be allowed unless he has given the required Written Notice; provided that the Owner may, if he determines the facts so justify, consider and adjust any such claims asserted before the date of final payment.

18. SUSPENSION OF WORK, TERMINATION AND DELAY

18.1 The Owner may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than ninety days or such further time as agreed upon by the Contractor, by Written Notice to the Contractor and the Engineer which notice shall fix the date on which Work shall be resumed. The Contractor will resume that Work on the date so fixed. The Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension.

18.2 If the Contractor repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment, or if he repeatedly fails to make prompt payments to Subcontractors for labor, material or equipment or if he disregards laws, ordinances, rules, regulations or orders of any public body having jurisdiction of the Work or if he disregards the authority of the Engineer, or if he otherwise violates any provision of the Contract Documents, then the Owner may, without prejudice to any other right or remedy and after giving the Contractor and his surety a minimum of ten (10) days from delivery of a Written Notice, terminate the services of the Contractor and take possession of the Project and of all materials, equipment, tools, construction equipment and machinery thereon owned by the Contractor, and finish the Work by whatever method he may deem expedient. In such case the Contractor shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct and indirect costs of completing the Project, including compensation for additional professional services, such excess shall be paid to the Contractor. If such costs exceed such unpaid

balance, the Contractor will pay the difference to the Owner. Such costs incurred by the Owner will be determined by the Engineer and incorporated in a Change Order.

- 18.3 Where the Contractor's services have been so terminated by the Owner, said termination shall not affect any right of the Owner against the Contractor then existing or which may thereafter accrue. Any retention or payment of monies by the Owner due the Contractor will not release the Contractor from compliance with the Contract Documents.
- 18.4 After ten (10) days from delivery of a Written Notice to the Contractor and the Engineer, the Owner may, without cause and without prejudice to any other right or remedy, elect to abandon the Project and terminate the Contract. In such case, the Contractor shall be paid for all Work executed and any expense sustained plus reasonable profit.
- 18.5 If, through no act or fault of the Contractor, the Work is suspended for a period of more than ninety (90) days by the Owner or under an order of court or other public authority, or the Engineer fails to act on any request for payment within thirty (30) days after it is submitted, or the Owner fails to pay the Contractor substantially the sum approved by the Engineer or awarded by arbitrators within thirty (30) days of its approval and presentation, then the Contractor may, after ten (10) days from delivery of a Written Notice to the Owner and the Engineer, terminate the Contract and recover from the Owner payment for all Work executed and all expenses sustained. In addition and in lieu of terminating the Contract, if the Engineer has failed to act on a request for payment or if the Owner has failed to make any payment as aforesaid, the Contractor may upon ten (10) days' notice to the Owner and the Engineer stop the Work until he has been paid all amounts then due, in which event and upon resumption of the Work, Change Orders shall be issued for adjusting the Contract Price or extending the Contract Time or both to compensate for the costs and delays attributable to the stoppage of the Work.
- 18.6 If the performance of all or any portion of the Work is suspended, delayed, or interrupted as a result of a failure of the Owner or Engineer to act within the time specified in the Contract Documents, or if no time is specified, within a reasonable time, an adjustment in the Contract Price or an extension of the Contract Time, or both, shall be made by Change Order to compensate the Contractor for the costs and delays necessarily caused by the failure of the Owner or Engineer.

19. PAYMENTS TO CONTRACTOR

- 19.1 At least ten days before each progress payment falls due (but not more often than once a month), the Contractor will submit to the Engineer a partial payment estimate filled out and signed by the Contractor covering Work performed during the period covered by the partial payment estimate and supported by such data as the Engineer may reasonably require. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at or near the site, the partial payment estimate shall also be accompanied by such supporting data, satisfactory to the Owner, as will establish the Owner's title to the material and equipment and protect his interest therein, including applicable insurance. The Engineer will, within ten days after receipt of each partial payment estimate, either indicate in writing his approval of payment and present the partial payment estimate to the Owner, or return the partial payment estimate to the Contractor indicating in writing his reasons for refusing to approve payment. In the latter case, the Contractor may make the necessary corrections and resubmit the partial payment estimate. The Owner will, within ten days of presentation to him of an approved partial payment estimate, pay the Contractor a progress payment on the basis of the approved partial payment estimate. The Owner shall retain ten (10) percent of the amount of each payment until that time, and upon certification by the Engineer, that the work is fifty (50) percent complete; after which time the Owner shall make no further retainage from any subsequent partial payment estimate. On completion and acceptance of a part of the Work on which the price is stated separately in the Contract Documents, payment may be made in full, including retained percentages, less authorized deductions.
- 19.2 The request for payment may also include an allowance for the cost of such major materials and equipment which are suitably stored either at or near the site.

- 19.3 All Work covered by partial payment made shall thereupon become the sole property of the Owner, but this provision shall not be construed as relieving the Contractor of the sole responsibility for the care and protection of the Work upon which payments have been made or the restoration of any damaged Work, or as a waiver of the right of the Owner to require the fulfillment of all terms of the Contract Documents.
- 19.4 Upon completion and acceptance of the Work, the Engineer shall issue a certificate attached to the final payment request that the Work has been accepted by him under the condition of the Contract Documents. The entire balance found to be due the Contractor, including the retained percentages, but except such sums as may be lawfully retained by the Owner, shall be paid to the Contractor within thirty (30) days of completion and acceptance of the Work.
- 19.5 The Contractor will indemnify and save the Owner or the Owner's agents harmless from all claims growing out of the lawful demands of Subcontractors, laborers, workmen, mechanics, materialmen, and furnishers of machines and parts thereof, equipment, tools, and all supplies, incurred in the furtherance of the performance of the Work. The Contractor shall, at the Owner's request, furnish satisfactory evidence that all obligations of the nature designated above have been paid, discharged, or waived. If the Contractor fails to do so the Owner may, after having notified the Contractor, either pay unpaid bills or withhold from the Contractor's unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the Contractor shall be resumed, in accordance with the terms of the Contract Documents, but in no event shall the provisions of this sentence be construed to impose any obligations upon the Owner to either the Contractor, his surety, or any third party. In paying any unpaid bills of the Contractor, any payment so made by the Owner shall be considered as a payment made under the Contract Documents by the Owner to the Contractor and the Owner shall not be liable to the Contractor for any such payments made in good faith.

20. ACCEPTANCE OF FINAL PAYMENT AS RELEASE

- 20.1 The Acceptance by the Contractor of final payment shall be and shall operate as a release to the Owner of all claims and all liability to the Contractor other than claims in stated amounts as may be specifically excepted by the Contractor for all things done or furnished in connection with this Work and for every act and neglect of the Owner and others relating to or arising out of this Work. Any payment, however, final or otherwise, shall not release the Contractor or his sureties from any obligations under the Contract Documents or the Performance Bond and Payment Bonds.

21. INSURANCE

- 21.1 Insurance Obtained by the Contractor. The Contractor and its subcontractors shall obtain and pay the premiums for the following policies of insurance for their protection and the protection of Owner, as their interests may appear, in connection with the Contractor duties and activities pursuant to this Agreement and at the Job Site. Owner and Trustee shall be specifically named as additionally insured ("Owner's and Contractor protective endorsement") on each of said policies of insurance and shall be acceptable to Owner. In this connection each of said policies of insurance: (1) shall be on an "additional insurance" basis (2) shall provide that there shall be no recourse against Owner for payment of premiums or other amounts with respect thereto; (3) shall require that the insurer provide Owner with at least 30 days prior written notice of reduction, cancellation or laps of such policy; (4) shall provide that all proceeds of such policy shall be paid into an account mutually agreed upon by Owner and Contractor; (5) shall waive any right of subrogation of the insurer against Owner and shall waive any right of the insurer to any setoff or counterclaim or any other deduction; and (6) shall provide that Owner may participate in adjusting any claims thereunder.

<u>Type of Coverage</u>	<u>Limits</u>
Worker's Compensation	Statutory
Employer's Liability	\$500,000 per occurrence
Comprehensive General and/or Property Damage	\$1,000,000 Combined Personal Liability, Injury per occurrence subject to a \$1,000,000 aggregate
Umbrella Liability	\$5,000,000

Automobile liability for:

bodily injury \$1,000,000 per person, \$1,000,000 per occurrence
property damage \$1,000,000 per occurrence

All of the above coverages will be obtained under policy terms and conditions and from companies reasonably acceptable to Owner with a rating by A.M. Best Company of not less than "A." The Contractor shall furnish to Owner a certified copy of Certificates of Insurance acceptable to Owner, prior to commencement of the Work. The Certificates of Insurance shall contain a provision to the effect that coverage afforded under the policies will not be canceled until at least 60 days prior written notice has been given to Owner. Insurance carriers must be licensed to conduct business in the State of Arkansas. The Contractor has included in the Contract Sum the cost of obtaining all insurance provided for herein.

- 21.2 Terms of Insurance. All policies shall remain in effect until Owner, or the Owner's Representative, gives the Contractor a "Certificate of Final Completion," which cannot be unreasonably withheld.
- 21.3 Returned Premiums. Returned premiums for insurance obtained by the Contractor and any dividends earned thereunder shall belong to and be payable to the Contractor.
- 21.4 Audit. The Contractor shall maintain and make available for audit by its insurance carrier, or its representative, payroll and other records relating to the Work reasonably necessary for the purpose of computing insurance premiums. The Contractor shall include a clause requiring this information be made available in each of its Subcontracts and Sub-subcontracts for work on the Project.

22. CONTRACT SECURITY

- 22.1 The Contractor shall within ten (10) days after the receipt of the Notice Of Award furnish the Owner with a Performance Bond and a Payment Bond in penal sums equal to the amount of the Contract Price, conditioned upon the performance by the Contractor of all undertakings, covenants, terms, conditions and agreements of the Contract Documents, and upon the prompt payment by the Contractor to all persons supplying labor and materials in the prosecution of the Work provided by the Contract Documents. Such Bonds shall be executed by the Contractor and a corporate bonding company licensed to transact such business in the state in which the Work is to be performed and named on the current list of "Surety Companies Acceptable on Federal Bonds" as published in the Treasury Department Circular Number 570. The expense of these Bonds shall be borne by the Contractor. If at any time a surety on any such bond is declared a bankrupt or loses its right to do business in the state in which the Work is to be performed or is removed from the list of Surety Companies accepted on Federal Bonds, Contractor shall within ten (10) days after notice from the Owner to do so, substitute an acceptable Bond (or Bonds) in such form and sum and signed by such other surety or sureties as may be satisfactory to the Owner. The premiums on such Bond shall be paid by the Contractor. No further payments shall be deemed due nor shall be made until the new surety or sureties have furnished an acceptable Bond to the Owner.

23. ASSIGNMENTS

- 23.1 Neither the Contractor nor the Owner shall sell, transfer, assign or otherwise dispose of the Contract or any portion thereof, or of his right, title or interest therein, or his obligations thereunder, without consent of the other party.

24. INDEMNIFICATION

- 24.1 The Contractor will indemnify and hold harmless the Owner and the Engineer and their agents and employees from and against all claims, damages, losses and expenses including attorneys' fees arising out of or resulting from the performance of the Work, provided that any such claims, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property, including the loss of use resulting therefrom; and is caused in whole or in part by any negligent or willful act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by

any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

- 24.2 In any and all claims against the Owner or the Engineer, or any of their agents or employees, by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under workmen's compensation acts, disability benefit acts or other employee benefits acts.
- 24.3 The obligation of the Contractor under this paragraph shall not extend to the liability of the Engineer, his agents or employees arising out of the preparation or approval of maps, Drawings, opinions, reports, surveys, Change Orders, designs or Specifications, or the giving of or failure to give directions or instructions by the Engineer, or his agents, or employees, provided such giving or failure to give is the primary cause of injury or damage.

25. SEPARATE CONTRACTS

- 25.1 The Owner reserves the right to let other contracts in connection with this Project. The Contractor shall afford other Contractors reasonable opportunity for the introduction and storage of their materials and the execution of their Work and shall properly connect and coordinate his Work with theirs. If the proper execution or results of any part of the Contractor's Work depends upon the Work of any other Contractor, the Contractor shall inspect and promptly report to the Engineer any defects in such Work that render it unsuitable for such proper execution and results.
- 25.2 The Owner may perform additional Work related to the Project by himself, or he may let other contracts containing provisions similar to these. The Contractor will afford the other Contractors who are parties to such Contracts (or the Owner, if he is performing the additional Work himself), reasonable opportunity for the introduction and storage of materials and equipment and the execution of Work and shall properly connect and coordinate his Work with theirs.
- 25.3 If the performance of additional Work by other Contractors or the Owner is not noted in the Contract Documents prior to the execution of the Contract, written notice thereof shall be given to the Contractor prior to starting any such additional Work. If the Contractor believes that the performance of such additional Work by the Owner or others involves him in additional expense or entitles him to an extension of the Contract Time, he may make a claim therefor as provided in Sections 14 and 15.

26. SUBCONTRACTING

- 26.1 The Contractor may utilize the services of specialty Subcontractors on those parts of the Work which, under normal contracting practices, are performed by specialty Subcontractors.
- 26.2 The Contractor shall not award Work to Subcontractor(s), in excess of fifty (50) percent of the Contract Price, without prior written approval of the Owner.
- 26.3 The Contractor shall be fully responsible to the Owner for the acts and omissions of his Subcontractors, and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.
- 26.4 The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the Work to bind Subcontractors to the Contractor by the terms of the Contract Documents insofar as applicable to the Work of Subcontractors and to give the Contractor the same power as regards terminating any subcontract that the Owner may exercise over the Contractor under any provision of the Contract Documents.
- 26.5 Nothing contained in this Contract shall create any contractual relation between any Subcontractor and the Owner.

27. ENGINEERS AUTHORITY

- 27.1 The Engineer shall act as the Owner's representative during the construction period. He shall decide questions which may arise as to quality and acceptability of materials furnished and Work performed. He shall interpret the intent of the Contract Documents in a fair and unbiased manner. The Engineer will make visits to the site and determine if the Work is proceeding in accordance with the Contract Documents.
- 27.2 The Contractor will be held strictly to the intent of the Contract Documents in regard to the quality of materials, workmanship and execution of the Work. Inspections may be made at the factory or fabrication plant of the source of material supply.
- 27.3 The Engineer will not be responsible for the construction means, controls, techniques, sequences, or construction safety.
- 27.4 The Engineer shall promptly make decisions relative to interpretation of the Contract Documents.

28. LAND AND RIGHTS-OF-WAY

- 28.1 Prior to issuance of Notice-To-Proceed, the Owner shall obtain all land and rights-of-way necessary for carrying out and for the completion of the Work to be performed pursuant to the Contract Documents, unless otherwise mutually agreed.
- 28.2 The Owner shall provide to the Contractor information which delineates and describes the lands owned and rights-of-way acquired.
- 28.3 The Contractor shall provide at his own expense and without liability to the Owner any additional land and access thereto that the Contractor may desire for temporary construction facilities, or for storage of materials.

29. GUARANTY

- 29.1 The Contractor shall guarantee all materials and equipment furnished and Work performed for a period of one (1) year from the date of Substantial Completion. The Contractor warrants and guarantees for a period of one (1) year from the date of Substantial Completion of the system that the completed system is free from all defects due to faulty materials or workmanship and the Contractor shall promptly make such corrections as may be necessary by reason of such defects including the repairs of any damage to other parts of the system resulting from such defects. The Owner will give notice of observed defects with reasonable promptness. In the event that the Contractor should fail to make such repairs, adjustments, or other Work that may be made necessary by such defects, the Owner may do so and charge the Contractor the cost thereby incurred. The Performance Bond shall remain in full force and effect through the guarantee period.

30. TAXES

- 30.1 The Contractor will pay all sales, consumer, use and other similar taxes required by the law of the place where the Work is performed.

BASIC REQUIREMENTS

1) DESCRIPTION AND SCOPE OF WORK

- a) The work included in this Contract consists of the furnishing of all tools, labor, equipment, materials, and supplies necessary to fully clean, repair and paint to the satisfaction of the Owner the tank together with all incidental and ancillary work as described herein including the telecommunications corrals.
- b) In these Documents where the word “Owner” appears, it shall be understood to mean Cabot WaterWorks. The word “Engineer” shall be understood to mean Cabot Waterworks Engineer, acting either directly or indirectly through field inspectors acting within the scope of the specific duties assigned to them by Cabot Waterworks.
- c) Work or material not specifically mentioned in the Specifications, but designated on the Drawings, or forming an essential part of the Work mentioned or designated, shall be furnished and installed by the Contractor as though specifically mentioned.
- d) The work shall be by one General Contractor, utilizing Subcontractors for those specialties and portions of the Work that the General Contractor chooses to subcontract. All Subcontractors are subject to approval by the Owner in accordance with applicable sections of the General Conditions to these Specifications. The General Contractor shall maintain a responsible representative on-site whenever his subcontractors are on-site and engaged in the Work.
- e) All work shall be performed by the Contractor in a thorough and workmanlike manner, in full accordance with the Drawings and Specifications by skilled and competent workmen well experienced in such painting methods and techniques.
 - i) Any reference in these Specifications to an engineering standard (such as ASTM or AWWA) shall be to the latest version or edition as of the Bid Date.
- f) The Contractor shall not be permitted to sublet, sell or assign this contract or sublet any of the work to be performed hereunder without the written consent of the Owner and any such assignment or subletting of any such work without said consent shall be null and void and without force and effect. The Owner shall have the right to assign in whole or in part its rights hereunder.

2) COPIES OF SPECIFICATIONS

- a) Additional sets may be obtained from the Engineer at the cost of the reproduction and delivery.

3) PERMIT(S)

- a) The Contractor shall be responsible for securing any required permit for the construction of the Project.

4) WRITTEN NOTICES

- a) Written notices, when required by the Contract Documents or for purposes of project administration, shall be mailed by Certified Mail, return receipt requested, as follows:

Owner: Cabot WaterWorks
PO Box 1287
City Plaza, Suite B
Cabot, Arkansas 72023

Contractor: At the address as stated in the Agreement.

5) SAFETY REQUIREMENTS

- a) Contractor shall be totally responsible for all necessary safety measures and precautions as stipulated in the General Conditions to these Specifications, and in compliance with the Occupational Safety and Health Administration's (OSHA) requirements applicable to the work of the various kinds as called for under this Contract.
- b) The Contractor shall be totally responsible for providing and maintaining any necessary and required hoists, rigging, ladders, electrical equipment, scaffolding, and hand or power tools, etc. to provide for the protection of workmen and the Owner's personnel during the duration of the Work under this Contract.

6) ENVIRONMENTAL ASPECTS

- a) The work shall be planned and executed in full compliance with the requirements of the Federal Environmental Protection Agency (EPA), the Arkansas Department of Environmental Quality (ADEQ), and all local authorities.
- b) Noise Control: The work shall be planned and executed to minimize noise on the construction site. All applicable measures for noise control as required by OSHA standards shall be used.
- c) Burning: Burning shall not be permitted. All trash, debris, scrap, or waste materials resulting from construction operations shall be hauled off-site for disposal. Contractor shall be responsible for disposal of all such debris in an approved disposal area.

7) CONSTRUCTION CONTROL, LAYOUT, AND SCHEDULING

- a) The Contractor shall prosecute the work with due diligence and such a rate and in such manner as in the opinion of the Owner is necessary for completion within a reasonable time. Contractor shall employ such number of construction crews as are necessary to construct said project within the allotted time provided.

8) APPLICATION FOR PAYMENT

- a) Submit an itemized list of quantities to the Owner utilizing Unit Prices and a schedule of values in Application for Payment.
- b) Pay Periods: Calendar Month.
- c) If requested, the Contractor shall submit to the Owner for review, a detailed schedule of progress indicating the sequence of work, time of starting and anticipated completion of each part, and any unusual or critical aspects of the scheduling. Schedule may be of graphic form indicating time elements for the various portions of work. Revise and resubmit schedule as required.

9) CONFERENCES

- a) Project progress meetings may be held periodically.

10) QUALITY ASSURANCE

- a) Maintain quality control over suppliers, manufacturers, products, services, site conditions, and workmanship to produce work of specified quality.
- b) Comply fully with manufacturer's instructions.
- c) Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

11) REFERENCES

- a) Conform to reference standard by date of issue current as of date of Contract.
- b) The applicable codes and standards referred to in these specifications shall establish minimum requirements for materials, equipment, and installation, except where more stringent requirements are called for on the Drawings or elsewhere in the Contract Documents. Any conflict between the referenced codes and standards and the Drawings and Specifications shall be resolved by the Owner, whose decision shall be binding upon all parties. All codes and standards referenced shall be the latest revision at the time of bidding.

12) TEMPORARY ELECTRIC POWER

- a) Single phase power is available on site for use by the Contractor at no cost. The Contractor shall be responsible for additional power needs.

13) SANITARY FACILITIES

- a) Contractor shall provide and maintain required sanitary facilities and enclosures for the appropriate handling and disposal of all human waste, solid waste, and construction waste.
- b) Maintain clean and sanitary conditions.

14) WATER FOR TESTING AND DISINFECTION

- a) The Owner will provide, at no cost to the Contractor, all water that is required for abrasive blasting, washdown, cleanup and initial disinfection of the tank.
- b) The Contractor is responsible for providing all fittings, valves, hoses, tank and incidentals necessary for the utilization of water furnished by the Owner.
- c) Owner shall charge the Contractor for water needlessly wasted at the current water rates of the Owner.

15) CONTRACT CLOSEOUT PROCEDURES

- a) Submit written certification that Contract Documents have been reviewed, Work has been inspected, and Work is complete in accordance with Contract Documents and ready for Owner's inspection.
- b) Submit final Application for Payment identifying total adjusted Contract Price, previous payments, and amount remaining due.

16) CLEANING AND DISPOSAL

- a) Maintain areas free of waste materials, debris, trash and rubbish. Maintain site in a clean and orderly condition. Do not allow paper, cans, food wrappers, or other debris to accumulate and blow onto adjacent property. No trash shall be burned or buried on the job site and shall be properly disposed of by the Contractor.
- b) Execute final cleaning prior to final inspection.
- c) Drainageways, street surfaces and shoulders, driveways, lawns and landscaping, culverts, and all areas affected by construction shall be restored to equal or better than original condition. Ditches and drainageways shall be left clean and unobstructed and restored to their original cross-section and grade. Culverts shall be left "open" and free flowing.

17) FENCE RESTORATION

- a) The Contractor shall be responsible for maintenance of fences during construction. The Contractor shall provide as necessary temporary fencing, gates, etc., as may be required to afford access to the construction site and maintain the full integrity of the fence.
- b) All fences disturbed by construction activity shall be restored to their original condition or better using fencing materials that are of the same size, metal gauge, and character as the original fence.

18) CHANGE ORDER PROCEDURES

- a) Submit itemized list of quantities and supporting data to Owner for preparation of change order.

END OF SECTION

CLEANING AND PAINTING

1. HISTORY AND DESCRIPTION OF 2MG WATER STEEL TANK

- A. The tank is located at 2601 Willie Ray Rd. and was built in 1996 by Pitt-Des Moines.
 - i. Overall Height: 66'- 7½"
 - ii. Shape: Ground Storage
 - iii. Diameter: 72'-0"
 - iv. Capacity: 2,000,000-gallons
 - v. Lead test negative for interior and exterior coatings. The exterior and interior coating systems installed in 1996 do not contain lead per Tnemec, the coating manufacturer.
- B. All federal, state, and local regulations shall be strictly adhered to for worker protection, environmental pollution control, handling of debris, determining if the debris is a hazardous waste and assuring proper disposal for work on interior and exterior surfaces.
- C. The Contractor is encouraged to inspect the tank and tank site prior to submitting his bid. See Appendix "A" for previous tank inspection report for general information. The Contractor shall be responsible for verifying all information provided in the Appendix.

2. GENERAL REQUIREMENTS

- A. The water storage tank shall be cleaned, coated and repaired in accordance with ANSI/AWWA D102-21 standard specification for Coating Steel Water Storage Tanks and AWWA D100 standard for Welded Steel Storage Tanks for Water Storage.
- B. Work includes preparation of surfaces which are to receive finishes; collection, handling and disposal of debris; tank repairs; finishes for surfaces; testing and cleaning.
- C. The Contractor shall clean the interior of the tank, removing all sludge accumulations and other materials. Dispose of material removed in accordance with applicable laws and ordinances.
- D. All exterior and interior tank surfaces shall be painted. All water shall be drained from the tank and riser prior to interior and/or exterior surface preparation and painting.
- E. Color selection shall be determined by the Owner.
- F. Intermediate coats should be slightly tinted to provide better definition of coverage by the final coat. All interior wet coatings shall be NSF approved for potable water supply.
- G. The Contractor shall schedule draining and removing the tank from service with the Owner. The Owner shall operate all distribution system valves. The Contractor shall not open or close any valves or otherwise affect the water distribution system without permission of the Owner.
- H. The Contractor shall be responsible for all costs associated with sampling, worker protection, environmental pollution control, handling of debris, laboratory analysis and waste disposal.

3. PRODUCTS - ACCEPTABLE MANUFACTURERS

- A. Specified products are those manufactured by Tnemec Co., Inc. of Kansas City, Mo. and are specified as the standard of quality required for use on this project. The representative is as follows:

Eagle Rock Coatings, LLC
P.O. Box 24402
Little Rock, Arkansas 72221
Phone 501-231-7919 (Myron McWherter is local representative)

- B. Equivalent products by other manufacturers are acceptable, providing they meet or exceed all performance criteria of the specified materials. No products shall be considered that would decrease film thickness or offer a change in generic type of coating specified.
- C. In the event the Contractor submits a different paint, the Contractor shall submit complete data with the bid including performance data as determined by an independent testing laboratory.
- D. Products for each specified function and system shall be of a single manufacturer.

4. SUBMITTAL REQUIREMENTS

- A. The Contractor shall submit to the Engineer for review and approval the following items prior to initiating any work under this contract.
- i. Paint manufacturer's descriptive data sheets describing each and every product to be applied; to include solids volume, performance data, and recommendations for mixing, thinning, application, and curing. Interior paint must be NSF-61 & NSF 600 approved.
 - ii. Color cards showing the color availability for each prime and finish coat. The Owner will select the color from the standard range of colors; and no blending will be required.
 - iii. Environmental and worker protection plan.

5. PRODUCT DELIVERY, STORAGE AND SAFETY

- A. Deliver paint and other materials in sealed original-labeled containers, bearing the manufacturer's name, type of paint, brand name, color, lot number designations, and instructions for thinning and applying.
- B. Store all materials in a safe and protected place maintained at a temperature of 35° to 110°F or manufacturer's requirements, whichever are more stringent. Protect all materials from the elements.
- C. Contractor shall take all precautionary measures to prevent fire hazards and spontaneous combustion.

6. PROTECTION AND SAFETY

- A. The Contractor will ensure the following during tank painting.
- B. Take all precautions necessary to avoid adversely affecting the surrounding environment with blast media or paint particle drift or overspray. All of the Contractor's activities shall comply

with federal, state, and local requirements for environmental pollution control and employee safety.

- C. Plug and protect the tank's inlet/outlet and overflow pipe at all times during the execution of work to prevent damage or entrance of blasting media or debris.
- D. Protect the level controls from paint and damage. Repair damage as a result on inadequate or unsuitable protection.
- E. Protect non-metal surfaces from paint and debris, particularly concrete surfaces. Contractor shall repair any surfaces damaged from inadequate or unsuitable protection.
- F. All of the Contractor's equipment and activities on the job site must be in compliance with all applicable federal, state, and local laws and regulations. Defective or substandard equipment must not be used. Hoists, rigging, ladders, electrical equipment, scaffolding, and hand or power tools must be in conformance with applicable safety regulations and OSHA requirements.
- G. Inspect all tank surfaces, ladders, and rigging connections before they are used. Any excessively deteriorated parts shall be repaired or replaced before use.
- H. A detailed Worker Protection Plan must be maintained by the Contractor. The Plan must comply with the most current OSHA or other governmental agencies standards for workers exposed to blasting media, lead, a hostile environment, and working in confined spaces or at dangerous heights. The Plan shall include, but not be necessarily limited to, the following programs that the Contractor shall implement for this work:
 - a. Employee exposure monitoring
 - b. Respiratory protection
 - c. Personal Hygiene
 - d. Medical surveillance/blood lead level tests
 - e. Employee training
 - f. Protective work clothing
 - g. Housekeeping requirements
 - h. Verification and documentation of compliance
 - i. Warning Signs
- I. Submit Paint Manufacturer's product data sheets as well as Material Safety Data Sheets, (MSDS), and have these documents available for all employees on the job site.
- J. Ensure all employees are aware of hazards peculiar to this specific job site; and are aware of the location of first aid stations, hospitals, and doctor's clinics; and are informed of emergency phone numbers.
- K. Contractor shall immediately report to the Owner any condition or emergency that could pose a threat to the health or welfare to any employee or to the general public in the vicinity of the job site.

7. CONTAINMENT FOR TANK

- A. Contractor shall provide a containment system to prevent the migration of any blast media, dust, and paint residue onto or from the property of the Owner. The containment system shall meet SSPC Class 3A or Higher to provide the highest level of emission control required by governmental regulations and include the cover panels, screens, tarps, scaffolds, supports and shrouds used to enclose an entire work area. Refer to SSPC Guide 6 - Guide For Containing Surface Preparation Debris Generated During Paint Removal Operations. Containment and collection shall be in accordance with applicable federal, state, and local requirements.

8. SURFACE PREPARATION

- A. Interior - The interior surfaces of the tank shall be prepared for painting as follows: Remove all visible oil, grease, soil and other contaminants in accordance with SSPC-SP1 prior to blast cleaning. Then abrasive blast all interior surfaces to a near white metal finish in accordance with SSPC-SP10. Establish a blast profile of a minimum angular anchor profile of 1.5 mils.
- B. Exterior – The exterior surfaces of the tank shall be abrasive blast cleaned in accordance with SSPC-SP 6 Commercial Blast Cleaning to remove all visible oil, grease, dust, dirt, mill scale, rust, coating, oxides, corrosion, and any other foreign matter on the surface.
- C. After the tank interior is blasted and before it is painted, the Contractor shall inspect the interior welds. If the welds are not full so as to prevent a leak, the Contractor shall notify the Owner to determine what remedial action may be needed. If remedial action is needed, it will be addressed by a Change Order.
- D. Correct steel and fabrication defects revealed by surface preparation.
 - i. Remove weld spatter and slag.
 - ii. Round sharp edges and corners of welds to a smooth contour.
 - iii. Smooth weld undercuts and recesses.
 - iv. Grind down porous welds to pinhole-free metal.
 - v. Remove weld flux from surface.
- E. Abrasive material shall be selected to produce the desired profile, and there shall be no evidence of polished or peened surfaces. The depth of the profile shall be monitored and measured by the use of a Surface Profile Comparator or Profile Tape.
- F. Compressed air used for blasting shall be free of oil and water. Adequate traps and separators shall be used to ensure elimination of all contaminants. Blasting shall not be performed when the surface temperature is less than 5°F above the dew point to prevent formation of rust bloom. Dew point and surface temperature readings shall be taken routinely prior to blasting to help ensure this condition is met. All dust, blasting residual, debris, and contaminants shall be removed from surfaces by high pressure air blast or equal before any of the surfaces are coated.

9. APPLICATION OF COATINGS

- A. The painters shall mix, thin, and apply each coating at the rate and in the manner specified by the paint manufacturer. Deficiencies in film thickness shall be corrected by the application of additional coats. Coatings shall not be applied when temperatures are above or below paint manufacturer's recommendations. Coatings shall not be applied to damp or wet surfaces, or in rain, fog, or mist. Surface temperatures shall be at least 5°F above the dew point. Work areas shall be free from air borne dust or contaminants at the time of coating application, and when coating is drying. Painting shall be completed well in advance of the probable time of day when condensation will occur and/or the surface temperature is expected to drop below the minimum acceptable as recommended by the paint manufacturer.
- B. Do not use materials beyond manufacturer's recommended shelf life.
- C. Do not use mixed materials beyond manufacturer's recommended pot life.

- D. Prepare surface and touch-up welds, burned and abraded areas with specified primer before applying full field coats.
- E. Finish coats shall be uniform in color and sheen without streaks, runs, sags, laps, or missed areas. Any such defect shall be corrected by the painter with primer or finish coats as required to reach an acceptable condition as approved by the engineer.
- F. The paint manufacturer’s recommended curing time shall elapse before the application of subsequent coats. Adequate ventilation shall be provided for proper drying and curing of paint on the tank interior. A minimum of 10 days, or longer if recommended by the paint manufacturer, shall elapse before the tank is disinfected, flushed, or filled with water.

10. INTERIOR SURFACE COATING

- A. The interior coating shall conform to *Inside Coating System No. 6* as specified in Section 4.4.6 of AWWA D102. This is a three-coat system consisting of an inorganic zinc-rich primer and intermediate and finish coats of two-component epoxy. The materials in this coating system must be approved for potable water service. After the second coat has been applied and cured, the Contractor shall caulk any and all surface imperfections such as gapped, lapped, or skip weld seams. This is particularly applicable to the underside of the tank’s roof.
- B. Stripe paint with brush critical locations such as welds, corners, and edges using specified Stripe Coat.

<u>Coat</u>	<u>Tnemec Product</u>	<u>Dry Film Thickness (mils)</u>
Primer:	Series 94-H ₂ O Hydro-Zinc	2.5 – 3.5
Stripe Coat:	Series N140/N140F “Delft Blue” or Series 21	2 – 4
Filler/Surfacer:	Series 215 – Surfacing Epoxy	
Finish:	Series 21 Epoxoline	12 - 18

- C. The completed interior coating shall have a minimum acceptable DFT of 15–21.5 mils when checked with a calibrated magnetic mil thickness gauge.

11. EXTERIOR SURFACE COATING

- A. Exterior coating system shall consist of an inorganic zinc rich primer, the intermediate coat a two-component aliphatic urethane and a finish coat with two-component aliphatic fluorourethane.

<u>Coat:</u>	<u>Tnemec Product</u>	<u>Dry Film Thickness (mils)</u>
Primer:	Series 94-H ₂ O Hydro-Zinc	2.5 – 3.5
Intermediate:	Series 73/1075 Endura-Shield	2 - 4
Finish:	Series 700-color Hydroflon	2 - 3

- B. Urethane Accelerator: Tnemec Series 44-710 Urethane Accelerator may be used when the air, material or surface temperature is anticipated to be between 35° and 60°F during application and/or curing.

- C. The completed exterior coating shall have a minimum acceptable DFT of 6.5 – 10.5 mils when checked with a calibrated magnetic mil thickness gauge.

12. INSPECTION REQUIREMENTS

- A. The degree of surface cleanliness and blast profile of surfaces shall conform to the Specifications. The Contractor shall reference SSPC or NACE visual standards and consult Testex tape to verify anchor patterns.
- B. Wet film thickness readings of successive coats shall be taken as soon as possible at a frequency of at least one per 100 square feet.
- C. Dry film thickness readings shall be taken prior to application of the successive coat with a nondestructive magnetic mil gauge in accordance with SSPC-PA-2.
- D. All interior coated steel surfaces shall be tested with holiday test equipment in accordance with ASTM G62 and shall be witnessed by Owner's representative. Holiday test equipment shall be Tinker and Razor, or equivalent, low voltage holiday detector. Any areas failing this test shall be marked and receive an additional repair coat in accordance with Interior Surface Coating requirements of these specifications until satisfactory test results are achieved.
- E. The finish coat shall be visually inspected and shall be free of sags, runs, wrinkles, and other excessive film build characteristics and surface defects. Any and all such defects shall be repaired by the Contractor to the satisfaction of the Owner and at no additional cost to the Owner.

13. CLEANUP, COLLECTION AND DISPOSAL OF BLASTING RESIDUALS

- A. The Contractor shall prevent the migration of any blast media, dust, and paint residue onto adjacent property.
- B. Upon completion of the painting operations, the site shall be thoroughly cleaned up. All empty paint containers, debris, and trash shall be collected and transported to a suitable disposal site. No such trash or debris will be disposed of by placement on adjacent property or by burying on the tank site.
- C. Any fencing that is removed in order to facilitate painting and sandblasting shall be restored to equal or better than original condition.
- D. The Contractor shall collect and dispose of all blasting residuals and material in accordance with federal, state and local requirements in a licensed sanitary landfill, with full documentation of disposal provided to the Engineer and Owner.
- E. The Contractor shall be responsible for all costs associated with collection and disposal of blasting residuals that may result from the execution of this project.

14. GUARANTEE AND INSPECTION

- A. The Contractor will guarantee his work for a period of two years after the date of substantial completion of the work required under this Contract. The Contractor shall repair any defects

due to faulty material or workmanship which appear on the tank or accessories during the two-year warranty period after the date of substantial completion.

- B. The Contractor shall attend an inspection between 20-23 months after the date of substantial completion. No separate or special payment will be made to the Contractor for this inspection, or for any repairs needed.

15. BLASTING MEDIA FOR PAINT CONTAINING LEAD (if required)

- A. If existing paint lead levels require, the Contractor shall use an abrasive additive that renders lead immobile and is safe for long term sanitary landfill disposal of recycling/refuse, such as PreTox 2000, Blastox, or approved equal.
- B. An alternate method for immobilizing lead is a chemical stabilizing coating known as Enviroprep. It is applied to the surface prior to blast removal and renders the lead nonhazardous and stable for disposal in a subtitle D regular landfill.

16. COLLECTION AND DISPOSAL OF BLASTING RESIDUALS CONTAINING LEAD (if required)

- A. The Contractor shall collect and dispose of the blasting media as follows:
 - i. All paint particles and spent blasting media from the tank shall be collected and stored on the tank site in DOT approved 55-gallon drums or other substantial containments, in such a manner that the media is fully contained such that it is protected from rain and cannot blow or spill onto the ground. Media must be stored in such a manner that rainwater can't percolate through the media, thereby contaminating the ground at the site. The Contractor shall place waterproof plastic sheeting on the ground surrounding the exterior of the tank, which is bermed to contain all debris generated during the cleaning process.
 - ii. Residuals shall be collected and stored as stated above and shall be stored and maintained entirely separate from residuals from the exterior of the tank. Residuals must be kept entirely segregated at all times.
 - iii. The Contractor shall obtain representative samples of residuals from the Tank for laboratory testing. The samples shall be subjected to the Toxicity Characteristics Leaching Procedure (TCLP) by the laboratory. The Contractor shall transport the samples for the TCLP Testing to an independent laboratory. The Contractor shall pay for all TCLP testing. Blasting residuals will be classified as hazardous waste, if after testing by TCLP, the leachate contains any of the elements in the concentrations listed below, or greater:
 - iv. The Contractor shall dispose of all blasting residuals. If the waste is found by the TCLP testing to be "hazardous", all required documentation and chain of custody certifications for the transport and disposal of the material in a Hazardous Waste Disposal Facility shall be provided to the Engineer and Owner by the Contractor.
 - v. The Contractor shall be responsible for removing, handling, and disposal of any soil that is contaminated with lead from his operations and replacement with uncontaminated soil.

END OF SECTION

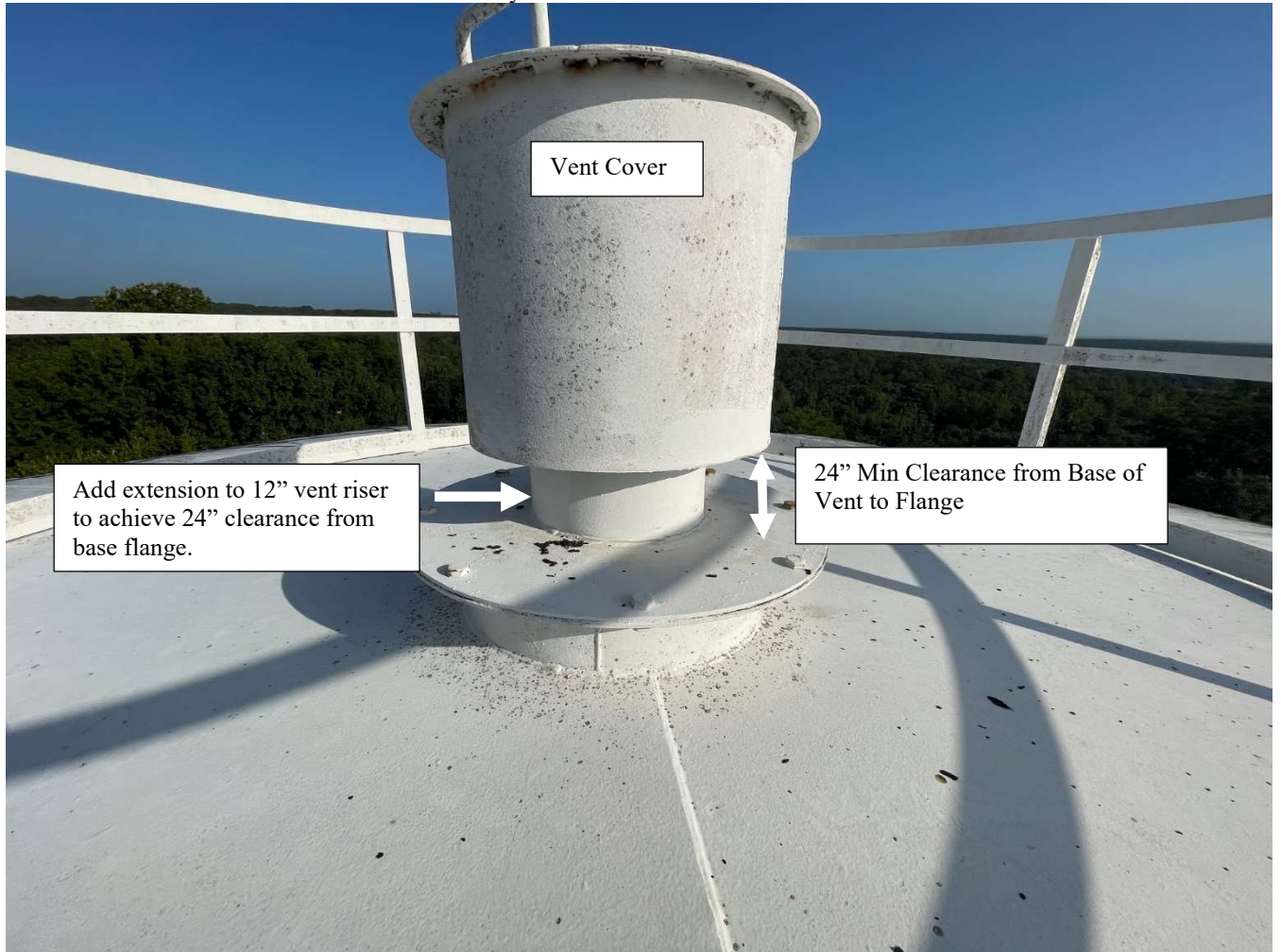
TANK REPAIRS AND IMPROVEMENTS

1. GENERAL REQUIREMENTS

- A. Immediately after the surface preparation of the tank surfaces, an inspection shall be made by the Contractor to determine if any additional repair items are needed. If the Contractor discovers the need for any additional tank repairs during the progress of his work, he shall immediately notify the Owner. The Owner will review identified repairs with the Contractor to determine a course of action. The Contractor will be paid for all additional repairs by contract change order.
- B. All repairs shall be made in a manner to affect a permanent repair. Welders must be certified by ASME requirements in all positions. Provide written documentation to the Engineer pertaining to the welder(s) current certification status. Care shall be taken to avoid damage to seams, plates, and pipe connections, which could result in leakage. The Contractor shall guarantee the water tank to be free from leakage upon completion of the work. Any welding on the tank shall be in conformance with the requirements of AWWA D100.
- C. Contractor shall remove existing antennas, mounting brackets and antenna cables and return to Owner.
- D. Caulk interior roof lapped seams and the stiffener angle to roof interfaces with SIKA FLEX-1A.
- E. All sharp edges, weld spatter and burrs shall be ground flush.
- F. Fill sharp edged pits and pits less than 1/8 inch with Tnemec Series 215 Surfacing Epoxy.
- G. Weld corrosion pits deeper than 1/8 inch to fill pit flush with steel plate.
- H. Where required, repair holes in tank with 4x4x1/4" steel plates welded on all edges on the interior and back welded at the hole from the exterior. Grind welds flush to tank shell on the exterior.
- I. Extend roof vent base pipe to achieve 24" separation from base flange to the vent inlet. Vent pipe and cover shall have all surfaces blasted in accordance with SSPC-SP10 and recoated per these specifications. Replace the tank vent screen with #24 mesh stainless steel screen. Alternatively, replace the tank vent with an aluminum vent meeting 10 States Standards for tank vents.
- J. Replace all manway bolts with new SS bolts & washers; and hatch gaskets with NSF approved gaskets.
- K. Sweep blast the concrete foundation in accordance with SSPC-SP7. Apply two coats of Tnemec Series 156 Enviro-Crete and seal the tank base to the concrete foundation with Dow Corning CWS caulk.
- L. Install a new interior tank ladder extending to roof access hatch that is suitable for chlorinated water and meeting current OSHA codes. If ladder is carbon steel then paint in accordance with these specifications. Install a stainless-steel fall prevention cable and associated hardware on the new interior ladder.
- M. Replace hinge on roof access hatch that is inoperable. Hatch lid must be easy to lock with pad lock. Install insect-proof gasket inside hatch lid.
- N. Plug rigging couplings on roof with 2" threaded stainless steel plugs.
- O. Install a flap valve on overflow pipe discharge. Install a #24 mesh stainless-steel insect screen between pipe flanges for the 10" diameter overflow pipe.
- P. Install removable stainless-steel chains across the opening in the platform at the top of the shell ladder. The chains shall be installed at the handrail and mid-rail heights.

END OF SECTION

2MG Willie Ray Tank – Air vent Modifications



WATER TANK MIXING SYSTEM

1. GENERAL

- A. The specifications in this section include all components that are NSF61 certified for a Passive Tank Mixing System. See Detail of Passive Mixing System at end of this section.
- B. Appurtenances include pipe, fittings, vertical pipe supports, wafer-style check valves, and any other equipment specified within this section of the specifications.

2. OUTLET CHECK VALVES

- A. The outlet flow valves shall be Onyx wafer-style check valves, NSF61 Certified, EPDM flapper, w/ stainless-steel flanged disc plate and stainless-steel hardware.

3. MIXING SYSTEM PIPING

- A. The mixing system piping shall be either PVC, HDPE, or Stainless Steel in accordance with the following requirements. All vertical piping shall be plumb.

- B. Polyvinyl Chloride (PVC) Pipe and Fittings

- i. All PVC pipe and PVC fittings shall be a minimum Schedule 80 in accordance with ASTM D1785-83.
- ii. PVC pipe and fittings and solvent shall be NSF61 approved for potable water.
- iii. All pipe joints that are to be field connected shall be PVC Van Stone-type flanges. Flange drilling to be in accordance with ANSI B16.1/B16.5.
- iv. All fittings shall have the same pressure rating as the pipe unless otherwise noted.

- C. High Density Polyethylene (HDPE) Pipe and Fittings

- i. Four (4) Inches and Larger - Pipe shall be manufactured from a PE4710 resin listed with the Plastic Pipe Institute (PPI) as TR-4. The resin material will meet the specifications of ASTM D3350-99 with a cell classification of PE345464C. Pipe shall have a manufacturing standard of ASTM F714. Pipe O.D. sizes 4" to 24" shall be available in steel pipe sizes (IPS) and ductile iron pipe sizes (DIPS). Pipe O.D. sizes 26" to 54" shall be available in steel pipe sizes (IPS). Pipe shall be DR 17 (100psi WPR) for pipe sizes up to 36" unless otherwise specified on the plans. The pipe shall contain no recycled compounds except that generated in the manufacturer's own plant from resin of the same specification from the same raw material. All pipes shall be suitable for use as pressure conduits, listed as NSF 14, and per AWWA C906 Pressure Class (PC) 100 have a nominal burst value of three and one-half (3 ½) times the Working Pressure Rating (WPR) of the pipe.
- ii. Pipe fittings and flanged connections, to be joined by thermal butt-fusion, shall be of the same type, grade, and class of polyethylene compound and supplied from the same raw material supplier.
- iii. Sidewall fusions for connections to outlet piping shall be performed in accordance with HDPE pipe and fitting manufacturer's specifications. The heating irons used for sidewall fusion shall have an inside diameter equal to the outside diameter of the HDPE pipe being fused. The size of the heating iron shall be ¼ inch larger than the size of the outlet branch being fused.

- iv. Field fusion welding will not be allowed unless specified or approved by the Engineer.
- v. Socket fusion, hot gas fusion, threading, solvents, and epoxies will not be used to join HDPE pipe.
- vi. Butt Fusion Fittings - Fittings shall be PE4710 HDPE, Cell Classification of PE345464C as determined by ASTM D3350-99 and approved for AWWA use. Butt Fusion Fittings shall have a manufacturing standard of ASTM D3261. Molded & fabricated fittings shall have a pressure rating equal to the pipe unless otherwise specified in the plans. Fabricated fittings are to be manufactured using Data Loggers. Temperature, fusion pressure and a graphic representation of the fusion cycle shall be part of the quality control records. All fittings shall be suitable for use as pressure conduits, and per AWWA C906, have nominal burst values of three and one-half (3 ½) times the Working Pressure Rating (WPR) of the fitting.
- vii. Electrofusion Fittings - Fittings shall be PE4710 HDPE, Cell Classification of PE345464C as determined by ASTM D3350-99. Electrofusion Fittings shall have a manufacturing standard of ASTM F1055. Fittings shall have a pressure rating equal to the pipe unless otherwise specified on the plans. All electrofusion fittings shall be suitable for use as pressure conduits, and per AWWA C906, have nominal burst values of three and one-half (3 ½) times the Working Pressure Rating (WPR) of the fitting.
- viii. Flanged pipe sections for mechanical joining shall be comprised of HDPE flange adapters and Stainless Steel 316 slip-on backup rings. Flange adapters shall conform to PE4710 HDPE, Cell Classification PE345464C as determined by ASTM D3350-99. Stainless Steel 316 slip-on backup rings shall conform to ASTM A351CF8M.

D. Stainless Steel Pipe and Fittings

- i. Dimensions for stainless steel fittings shall conform to AWWA C110, unless otherwise specified.
- ii. Piping shall be Schedule 10s stainless steel 304L fabricated from material per ASTM A240.
- iii. All flanges shall be plate ring flanges. Flange drilling pattern shall be in accordance with ANSI B16.1/B16.5 standards.
- iv. Ring flanges shall be continuously welded on both sides.
- v. All shop welds shall be manually scrubbed or brushed with non-metallic pads or stainless-steel wire brushes to remove weld discoloration. Welds to be chemically passivated with nitric or citric acid.
- vi. Field welding of stainless-steel pipe and fittings will not be allowed unless approved by the Engineer.

4. FLANGE GASKETS

- A. Flange gaskets shall be 1/8" thick, EPDM, full-faced and shall be in accordance with ASTM D1330. Flange gasket hole pattern shall conform to ANSI B16.1/B16.5

5. FASTENERS

- A. Hex head bolts and nuts shall be stainless steel 304 conforming to ANSI/ASME B18.2.1 and ANSI/ASME B18.2.2.
- B. Plastic insulating sleeve/washers shall be utilized to isolate dissimilar bolt and flange metals where required.

6. PIPE SUPPORTS

- A. Welding on the tank shall be in conformance with the requirements of AWWA D100.
- B. Pipe supports shall be carbon steel and welded directly to the tank shell as follows:
 - i. Pipe supports consist of structural channel and angle iron.
 - ii. A base plate shall be field welded to the tank floor or shell. The location of the base plate shall avoid welded joints in the floor or shell plates.
 - iii. A standoff channel iron shall be field cut to the required length and field welded to the base plate.
 - iv. The angle iron shall have predrilled holes for U-bolts to hold pipe secure with four hex nuts.
 - v. Wrap a 1/8" thick EPDM strip around the pipe between the angle iron and U-bolt.

7. COATINGS

- A. Following installation of the piping system, all carbon steel, fittings, bolted connections, pipe supports, and appurtenances shall have surface prepared and coated according to the interior tank paint specification as specified by the Engineer.
- B. **The Wafer style check valves shall not be coated.** The valves shall either be masked or be mounted after coating of the tank and piping. Contractor to ensure masking materials are removed after coating.

8. DELIVERY, STORAGE, AND MATERIAL HANDLING

- A. All flanges shall be protected by supports to prevent pipe deflection or damage to fittings or connections.
- B. All stainless-steel components shall be stored separately away from any carbon steel components or other materials that could stain or deface the stainless-steel finish from run-off of oxidized ferrous materials.
- C. All pipe shall be covered and stored in areas free from contact with construction site sediment erosion to prevent accumulation of materials within the pipe and fittings.

9. SUBMITTALS

- A. All pipe and fittings proposed for use in the mixing system.

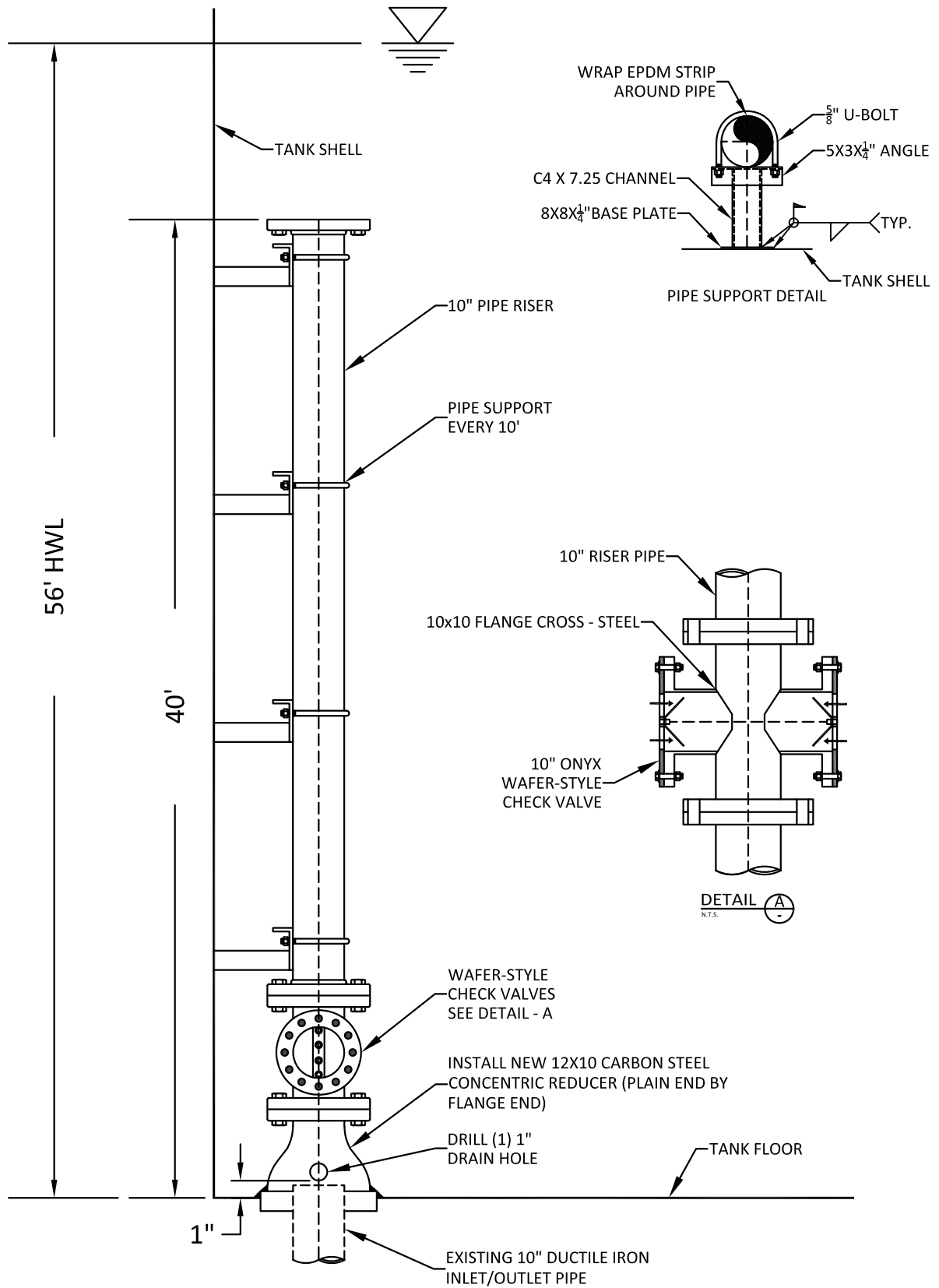
10. START-UP TESTING PROCEDURES

- A. Upon completion of all work and disinfection of the tank, the Contractor shall schedule with the Owner to begin filling the tank prior to closing access hatches. The contractor and Owner representative shall visually inspect the entire piping system for leakage and pipe support integrity.

11. WARRANTY

- A. All piping, pipe support brackets, joint connections, expansion joints, and anchors shall be warranted by the Contractor against failure under design conditions for a period of two years from the date of final installation approval by the Engineer.

END OF SECTION



TANK MIXING SYSTEM
2.0 MG GROUND TANK

WaterWorks
CABOT

NO.	DATE	BY	DESCRIPTION
XX	XXXXXX	CWW	XXXX
			NTS

TANK DISINFECTION

1. GENERAL REQUIREMENTS

- A. Cleaning and disinfection of the tank shall be performed after the tank coatings have been allowed to dry for the minimum time specified by the paint manufacturer. The minimum paint drying time shall not be less than 7 days.
- B. Tank disinfection shall be conducted in accordance with ANSI/AWWA C652-11.
- C. The Contractor shall provide all necessary chlorine bearing compounds, solution tank, pumps, hoses, mops, and other items required for cleaning, disinfecting, and flushing operations.

2. CLEANING

- A. After painting remove all scaffolding, planks, tools, rags, blast media and all other materials not part of the structural or operating facilities of the tank. Thoroughly clean and wash the walls, floor, roof and operating facilities of the tank by use of a high-pressure water jet, sweeping, scrubbing, or equally effective means. Flush out and remove from the tank all water, debris, dirt and foreign material accumulated during the cleaning operation. Thoroughly clean and flush out the bottom of the tank and the inlet/outlet pipe.

3. DISINFECTION

- A. After cleaning and before placing the tank into service, the tank interiors shall be disinfected in accordance with Chlorination Method 2 (spray disinfection by solution containing 200 mg/l available chlorine) as specified in Section 4.3.2 of AWWA C652-11.
- B. A solution of at least 200 mg/L available chlorine shall be applied to the surfaces of parts of the storage facility that would be in contact with water when the storage facility is full to the overflow elevation.
- C. The chlorine solution may be applied with suitable brushes or spray equipment. The solution shall thoroughly coat surfaces to be treated, including the inlet and outlet piping, and shall be applied to any separate drain piping such that it will have available chlorine of not less than 10 mg/L when filled with water. Overflow piping need not be disinfected.
- D. Retention: The disinfected surfaces shall remain in contact with the strong chlorine solution for a least 30 minutes, after which potable water shall be admitted, the drain piping purged of the 10 mg/L chlorinated water, and the storage facility then filled to its overflow level. Following this procedure and subject to satisfactory bacteriological testing, appropriate chlorine residual, and acceptable aesthetic water quality, the water may be delivered to the distribution system.

4. SAMPLING AND TESTING

- A. After the disinfection procedure above, water from the filled tank will be sampled by the Contractor and accompanied by a representative of the Owner or Engineer. Samples will be submitted to the Arkansas Department of Health (ADH). Samples will be tested by ADH in conformance with AWWA C652-11. Sample containers for bacteriological testing will be provided by the Owner, and all sample containers when submitted to the ADH must bear the appropriate identification number of the Owner.
- B. Two sets of bacteriological samples taken 24 hours apart will be submitted to the ADH for testing. Both sets must be tested and found acceptable before the tank is considered acceptable for use.

- C. If the tank cannot successfully pass the initial bacteriological testing as herein prescribed, the Contractor will drain the tank, and repeat the disinfection procedures until the tank is tested and found to be acceptable by the ADH.
- D. The Owner will provide the Contractor without charge the water as required for the initial filling of the tank. If additional fillings are found to be necessary to satisfactorily disinfect the tank, the Owner shall charge the Contractor for this additional water at the current water rates of the Owner.

END OF SECTION

Appendix A - 2MG Gallon Ground Tank Inspection Report.



MID-SOUTH
TANK CONSULTANTS

PRELIMINARY INSPECTION REPORT

WILLIE RAY DRIVE TANK

CABOT, ARKANSAS

November 16, 2023

2,000,000-Gallon Ground Storage



Prepared for:

**Cabot Water Works
One City Plaza, Suite B
Cabot, Arkansas 72023**

INSPECTION SUMMARY

INSPECTION SUMMARY

WILLIE RAY DRIVE TANK 2,000,000-GALLON GROUND STORAGE TANK

CABOT, ARKANSAS

November 15, 2023

Capacity:	2,000,000-Gallons	Type Const:	Welded Steel
Builder:	Pitt-Des Moines	Last Maintenance:	1996
Built:	1996	Elev. To HWL:	56'-0"
Tank:	Ground Storage	Tank Diameter:	72'-0"

GENERAL:

On November 15, 2023, Mid-South Tank Consultants washed out and inspected the 2,000,000-gallon ground storage water tank identified as the Willie Ray Drive Tank located in Cabot, Arkansas. The inspection was performed in accordance with the proposal approved by Mr. Tim Joyner of Cabot Water Works. Based on the areas that were accessed, the following report describes the structural, sanitary, safety and coating conditions. This report also includes recommendations for repair and maintenance.

STRUCTURAL:

Foundations: The top of the concrete foundation was exposed. Minor cracking but no significant signs of structural deficiencies were noted. The uncoated concrete remains in sound condition. Minor active corrosion was noted along the concrete to steel tank interface. The joint should be sealed with Dow Corning CWS caulk.

Ringwall: Structurally sound.

**Erosion and/or
Settling:** No erosion was noted around the tank.

Shell Flange: The flange was in sound condition. The joint between the flange and concrete base should be sealed with Styrofoam backer rod (were required) and Dow Corning CWS caulk to prevent moisture from getting to the bottom side of the tank floor.

Anchor Bolts: None.

Fill Pipe: The 10" steel fill pipe was in good condition with rust being noted along the edges and inside the pipe. The pipe has a 6" tall removable silt stop.

Tank Shell: Exterior ➔ The coating was in marginal condition. The white finish coat is heavily chalked and is covered with light mildew. Significant rust was noted on scattered shell panels. The coating has delaminated to the steel substrate in scattered areas. The finish coat is dull and brittle and is at the end of its life cycle. The dry film thickness (DFT) ranged from 8.5-17.3 mils and averaged 12.50 mils. The coating exhibits excellent adhesion in the test area with ratings of 5A and 5B and is a candidate for overcoating. However, due to the brittleness and areas of delamination in scattered areas we recommend all surfaces be blasted to bare metal per SSPC-SP6.

Interior ➔ The interior epoxy coating is in fair condition in some areas and in poor condition in others. Active crevice corrosion was visible along the roof to upper shell interface. Scattered areas of blotchy corrosion were noted on the shell panels. The coating is failing mainly along the weld seams with shallow pitting visible in some areas. The coating exhibits fair adhesion as very little of the coating was removed by the 4,000-psi pressure washer. The dry film thickness (DFT) ranged from 8.6-14.2 mils and averaged 11.26 mils.

Tank Floor: The floor coating was stained but in good condition overall. Scattered active corrosion cells were noted mainly along floor panel weld seams. Metal loss was active with several pits being noted that were deeper than 1/8" following pressure washing. The DFT ranged from 8.5-15.6 mils and averaged 12.14 mils.

Exterior Ladders: The shell ladder is structurally sound. Access from the ladder to the roof is safe as there is a platform at the top of the shell ladder that provides safe access to the roof access hatch and roof ladder. A swing gate or stainless-steel safety chains need to be installed at the handrail and mid-rail levels across the opening between the top of the shell ladder and the platform. A climb prevention gate should be installed at the base of the caged shell ladder to keep unauthorized individuals from accessing the tank.

Interior Ladders: None. A new ladder that meets current OSHA codes should be installed.

Safety Climbing

Devices: The exterior ladder has a galvanized fall prevention cable that remains in good condition. The new interior ladder should have a stainless-steel fall prevention cable and associated hardware.

Platforms: A 3' x 6' platform is located to the right of the shell ladder and adjacent to the roof ladder and access hatch.

Vents: The 12" diameter vent pipe cover is bolted to a 24" diameter flanged steel vent pipe and is in marginal condition. The existing 24" diameter flanged steel vent pipe is in good condition. A domed aluminum cover with

stainless-steel insect screens inside should be fabricated and bolted to the steel pipe's flange.

Roof: Exterior→The coating is chalky and dull and shows signs of erosion on 85% of the surfaces. The coating thickness ranged from 5.4-13.2 mils and averaged 8.69 mils. Heavy mildew and areas of delamination were visible. The 11 rigging couplings along the perimeter of the roof are open and need to be capped.

Interior→ The roof coating is in only fair condition. Metal loss is minor but active along the skip welded roof stiffener angles and along some lapped roof panel seams. The bolts along the center hub need to be closely checked for structural integrity following abrasive blast cleaning.

Overflow Pipe: The pipe extends through the upper shell and runs down the shell. The discharge point is approximately 2' above grade. The discharge point has a stainless-steel insect screen but no flap valve. Rip rap is located beyond the end of the pipe.

Spider Rods: N/A

Welds: No structurally unsound welds were observed.

Bolts: The bolts along the center hub need to be closely checked for structural integrity following abrasive blast cleaning.

Rivets: N/A

Pins: N/A

Manways: The tank has two 24" diameter bolted flange manways. The manways were secured with painted steel bolts and nuts. New stainless-steel bolts and washers and brass nuts and new rubber gaskets should be installed following the next maintenance event.

Level Indicator: None.

Leaks: None noted or reported by district personnel. Water district personnel were on site during the inspection.

SANTITARY:

- Fence:** An 8' tall chain link fence with three strands of barbed wire encompasses the tank site. The fence is in good condition.
- Gate:** There is one vehicle gate on the southeast side.
- Locks:** The gate was locked.
- Overflow Screen & Flap:** The overflow pipe discharges into a rip rap ditch. The end of the pipe has an insect screen but no flap valve.
- Vent Screen:** The insect screen is in fair condition. The frame that supports the screen is rusty.
- Access Hatch:** The hatch is 24" square. Minor rust was visible along the cover and on the frame. The hinge is sprung and needs to be repaired.
- Access Hatch Lock:** The roof hatch was NOT secured with a lock before or after the inspection.
- Evidence of Foreign Matter:** None in the water bearing area.
- Evidence of Vandalism:** None.
- Sediment:** The tank had about 1" of sediment and iron sludge in the floor. The shell had a light film that was removed by the pressure washing effort.
- Silt Stop:** The fill pipe extends ~6" above the floor and has a removable silt stop.

COATING:

Exterior Surfaces:

Exterior Coating

Condition: The tank does not appear to have been repainted since it was erected in 1996. All tank surfaces are chalky, dull, and are covered with mildew. The roof coating shows signs of erosion with some areas of delamination to the steel substrate being noted. The average coating thickness was 8.69 mils on the roof and 12.50 mils on the shell. The coating exhibits excellent adhesion with a rating of 5A in the test area. However, the brittleness of the coating and the scattered areas of delamination to the steel do not make the tank a candidate for overcoating. The existing coating does not contain lead at 80.73 ppm (see attached test results under tab #2). The existing coating should be completely removed by blasting to a Commercial Finish per SSPC-SP6.

Interior Surfaces:

Interior Coating

Condition: The tank does not appear to have been repainted since it was erected in 1996. The two-coat epoxy coating system is in fair condition on the ceiling and floor surfaces and is in marginal condition on the shell. The coating system is very close to the end of its life cycle. Active corrosion is visible along most roof seams. Blotchy corrosion covers many shell panels. Following pressure washing and removal of the rust nodules several shallow pits were visible in the floor. The coating has delaminated to the steel substrate in scattered sections of the shell. The average coating thickness was 11.26 mils on the shell. All surfaces should be blasted to near white metal per SSPC-SP10. Pitted surfaces may require repair by welding or filling with solventless epoxy.

SAFETY NOTES:

- 1. Install a new interior tank ladder that meets current OSHA codes. Install a stainless-steel fall prevention cable and associated hardware on the new interior ladder.**
- 2. Install a climb prevention gate at the base of the caged shell ladder to keep unauthorized individuals from accessing the tank.**
- 3. Install removable stainless-steel chains across the opening in the platform at the top of the shell ladder. The chains shall be installed at the handrail and mid-rail heights.**

EXTERIOR PHOTOS



Photo shows an overhead view of the tank. Mildew covers a large portion of the roof panels. Minimal rust is visible.



Photo shows the roof cap plate and handrail. The tank is equipped with a 12" diameter steel vent pipe bolted to a 24" flanged steel pipe. A new 24" diameter domed aluminum cover with stainless-steel insect screens inside should be bolted to the existing vent pipe.



Photo shows active corrosion cells on the inside of the vent cap. The fine mesh insect screen is intact.



Photo shows the east side of the roof. The coating appears chalky and dull but continues to protect the steel substrate.



Photo shows a rust formation where the coating has failed along the rim angle on the northeast side of the roof.



Photo shows deteriorated paint and early signs of corrosion near the center of the roof. The finish coat has started to erode.



Photo shows the north half of the roof. Mildew covers most surfaces. The threaded rigging couplings along the perimeter are not capped. The open couplings could allow small birds to enter the tank.



Photo shows another view of the north side roof panels. General corrosion is visible where the coating has eroded over time.



Photo shows another area near the center of the roof where the coating has degraded over time.



Photo shows the west side roof panels. The coating has lost its gloss indicating the urethane topcoat no longer provides UV protection for the coating system.



Photo shows more deteriorated paint and early signs of corrosion on the center roof panels.



Photo shows the southwest section of the roof. Several rust formations are visible where the coating has failed.



Photo shows a closer look at the active corrosion cells on the roof. Metal loss currently appears minimal.



Photo shows early signs of general corrosion on several of the south side roof panels.



Photo shows the southeast side of the roof. The tank is equipped with a stand-off platform, near the access hatch and a ladder to provide safe access to the center vent.



Photo shows another view of the southeast side of the roof and the handrails and steps.



Photo shows rust along the handrail mid-rails where the coating has failed.



Photo shows additional areas of general corrosion forming on the roof handrails.



Photo shows one of the threaded couplings on the outer edge of the roof. These should be sealed to prevent rainwater or unwanted birds and insects from entering the tank.



Photo shows the stairway to roof platform transition point. Consider installing an OSHA approved swing gate or removable stainless-steel chains across the opening to the shell ladder.

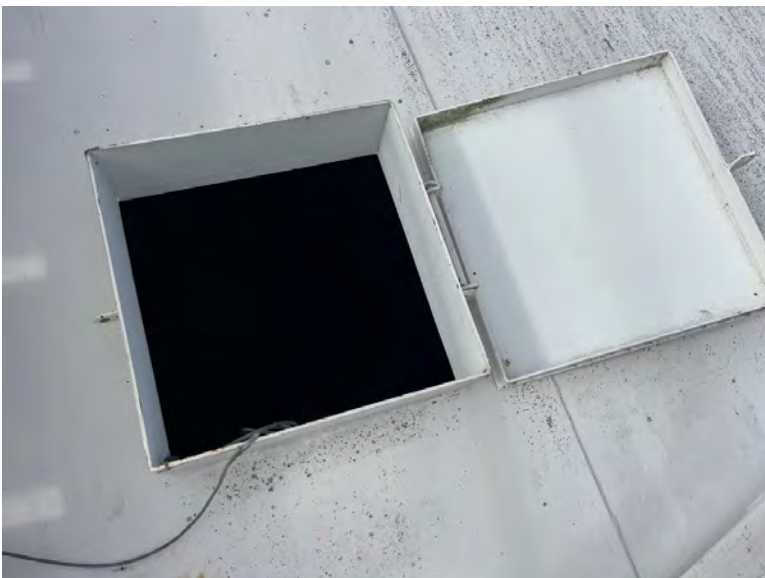


Photo shows the 24''x 24'' wet area access hatch. It was not secured with a lock before or after the inspection. The hinge was sprung making securing the hatch cover difficult.



Photo shows an additional view of the stand-off platform at the top of the shell ladder.



Photo shows the platform is supported by the rim angle and with 3" angle braces welded to the shell.



Photo shows a small amount of crevice corrosion between the floor plate and the rim angle. The joint should be sealed with Sika-Flex 1A flexible caulk.



Photo shows another view of the roof to upper shell connection.



Photo shows the roof access ladder and overflow pipe are located on the southeast side of the tank.



Photo shows a large area of active corrosion on the southeast shell.



Photo shows an overall view of the tank from the southeast.



Photo shows the shell ladder is equipped with safety climb cage and a galvanized fall prevention cable device. A hinged gate should be installed at the base of the ladder cage to prevent unauthorized access.



Photo shows the overflow pipe is equipped with a stainless-steel insect screen but no flap valve.



Photo shows rip-rap installed below the overflow pipe's discharge point.



Photo shows one of the two 24" diameter shell manways located on the southeast side of the tank. New stainless-steel bolts and washers and brass nuts should be installed following the next maintenance event to secure the cover.



Photo shows a closer look at the delaminating paint on the south shell that has left the steel substrate exposed to the elements.



Photo shows the concrete foundation and grout between it and the tank are in sound condition.



Photo shows an overall view of the south shell. The coating has eroded, and several areas of general corrosion have formed across the surface.



Photo shows another area where the brittle paint has failed revealing the steel substrate beneath.



Photo shows the west side of the structure. The coating is nearing the end of its useful life-cycle.



Photo shows several small coating failures located on the lower northwest shell panels.



Photo shows the northwest side of the tank. The coating is chalky and dull. The 2nd 24" diameter manway is located on this side.



Photo shows general corrosion has formed across most of the north side shell panels. Light mildew is visible.



Photo shows the 24” diameter bolted flange manway on the northwest side of the tank. Both shell manways are equipped with hinges.



Photo shows the north side of the structure. The tank has 7 ring sheets.



Photo shows nearby vegetation. This should be trimmed back away from the tank to prevent contact which can lead to premature coating failures.



Photo shows the lower north side shell panels. Heavy mildew covers the surfaces.



Photo shows unsound grout in several areas along the northeast side of the tank. The concrete foundation is in sound condition. The concrete to steel interface should be with Dow Corning CWS caulk.



Photo shows the lower east side shell panels and foundation. A few small rust formations are visible along the bottom of the lower shell panels.



Photo shows the upper east side shell panels. The coating is heavily chalked and has failed in scattered areas.



Photo shows another view of the tank's east shell. The nearby vegetation should be trimmed back from the tank.

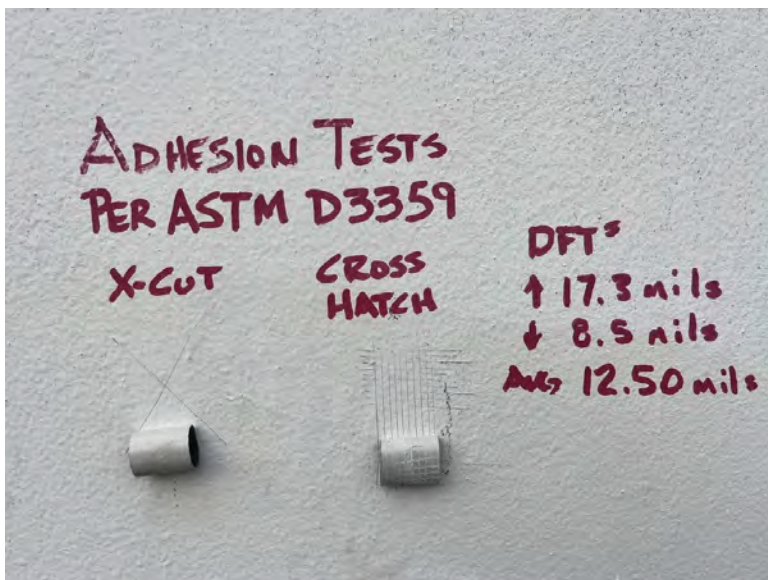


Photo shows the dry film thickness measurements and the adhesion tests conducted per the ASTM D3359 standard. Results are 5A and 5B which indicate the coating is tightly adhered to the substrate and between coats.



Photo shows the tank's name plate data. The 2MG tank was constructed in 1996 by Pitt-Des Moines, Inc.



Photo shows the drain line discharge located northwest of the tank.



Photo shows the PVC drain pipe is equipped with a steel flap valve to prevent unwanted entry.

INTERIOR PHOTOS



Photo shows an overall view of the tank ceiling. The ceiling has 32 stiffener beams.



Photo shows another view of the ceiling. Active corrosion is present along the skip welded roof beams and lapped seams.



Photo shows a closer view of the center hub. The bolted connections will need to be closely evaluated following abrasive blast cleaning.

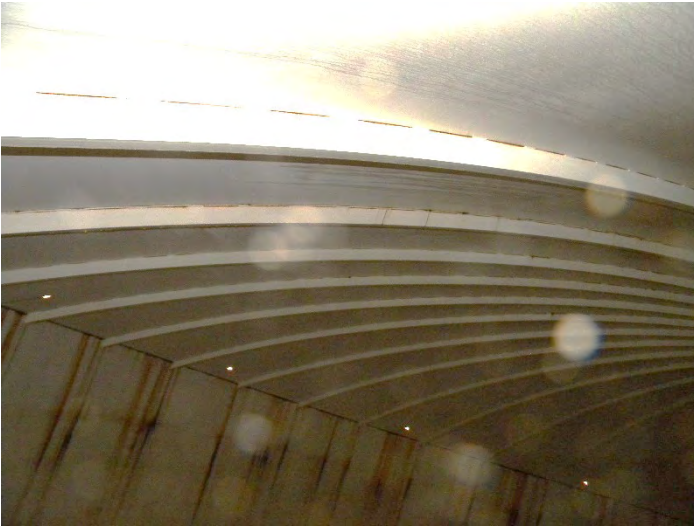


Photo shows another view of the ceiling. The beams are 4" x 3" steel angles.

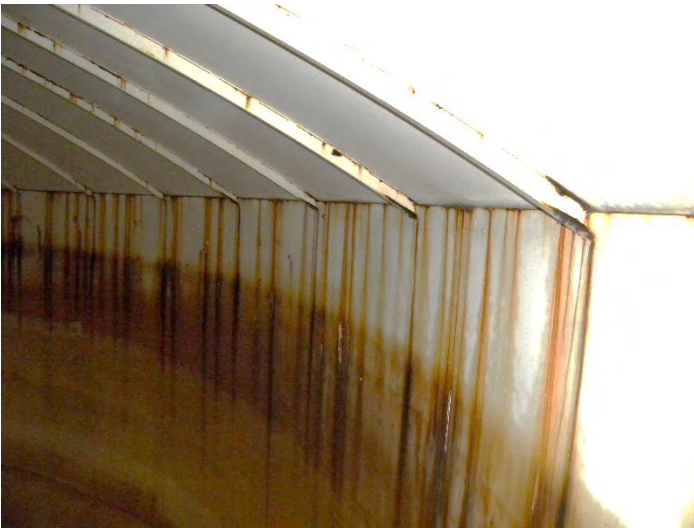


Photo shows active corrosion along the shell to roof interface. The joint should be sealed with Sika-Flex 1A at the new maintenance event following application of the finish coat of epoxy.



Photo shows a closer view of the shell to roof connection. The interface should be sealed with caulk to prevent crevice corrosion.



Photo shows active corrosion on the upper shell panels.



Photo shows another view of the outer ceiling panels and upper shell. The coating is at the end of its life cycle.



Photo shows a closer view of the roof beam connections at the shell. The beams are 4" vertical and 3" wide on the horizontal side. The skip welded beams are located along a lapped seam in the roof panels. The lapped roof panel seams need to be sealed with a flexible caulk such as Sika-Flex 1A.



Photo shows active corrosion on the upper shell.

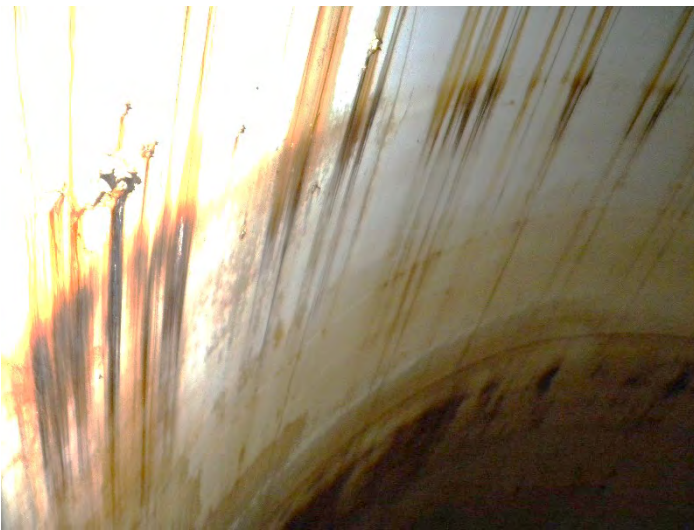


Photo shows a closer view of the active corrosion on the upper shell panels.



Photo shows the floor of the tank prior to cleaning. A thin layer of silt covers most surfaces.



Photo shows another view of the sludge on the floor and stains on the lower shell prior to pressure washing with 4,000-psi water and a rotating nozzle.



Photo shows the upper shell on the north side of the tank. Blotchy corrosion is visible.



Photo shows the north lower shell.



Photo shows the east upper shell. Widespread active corrosion is present.



Photo shows the east lower shell after cleaning.



Photo shows the upper shell on the south side of the tank. Blotchy corrosion is visible.



Photo shows the lower shell on the south side of the tank after pressure washing. The pressure washing effort removed most of the stains.



Photo shows the west upper shell. Scattered areas of rust are visible.

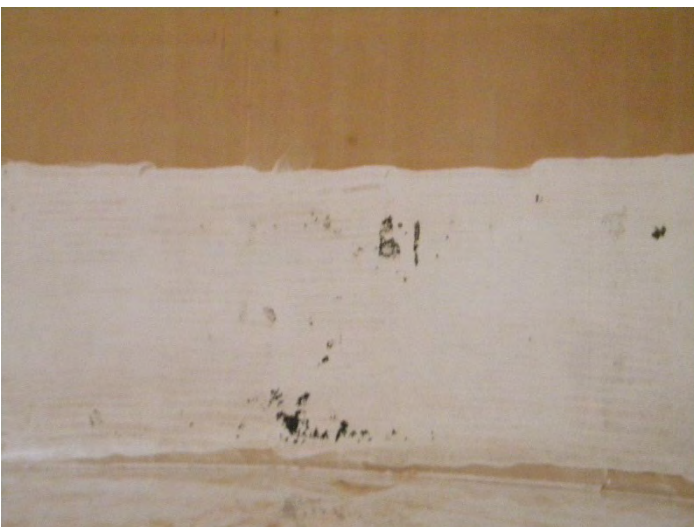


Photo shows the west lower shell after pressure washing. The coating delaminated to the steel substrate in several areas.



Photo shows coating delamination on the lower west shell. The steel substrate is exposed.



Photo shows another view of the west lower shell. The coating is fractured and delaminating due to blisters.



Photo shows the shell at the northwest manway. Scattered areas of coating failure are visible.



Photo shows another view of the northwest lower shell. The coating is delaminating to the steel substrate.



Photo shows a closer view of the blistering and fractured coating.



Photo shows a large area of delamination to the steel on the lower shell.



Photo shows the southeast shell manway. Active corrosion is visible.



Photo shows the center section of the floor. Staining and blotchy corrosion are visible.



Photo shows active corrosion at the rigging lug in the center of the floor.



Photo shows an active corrosion cell along a weld seam in the tank floor.



Photo shows a shallow pit at an active corrosion cell on the floor.



Photo shows another view of an active corrosion cell in the floor.



Photo shows a small active corrosion cell in the floor along a weld seam.



Photo shows the 10" diameter inlet/outlet pipe with a removable silt stop. Heavy corrosion is visible.



Photo shows the 6" tall silt stop in place on the pipe at the completion of the inspection and cleaning effort.

PRODUCT DATA

WATER TANK

PROTECTIVE COATINGS

PERFORMANCE THAT TOWERS ABOVE THE REST





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Standard zinc-rich urethane primer for water tanks used across North America.

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