



Department of Management Services  
Purchasing Division  
241 West South Street  
Kalamazoo, MI 49007-4796  
Phone: 269.337.8020  
Fax: 269.337.8500  
[www.kalamazoocity.org](http://www.kalamazoocity.org)

**NON- MANDATORY PRE-BID MEETING – Wednesday, March 13, at 10:00 a.m.  
Parchment Water Tower, 350 Park Ave, Parchment, MI 49004**

**INVITATION FOR BID (IFB)**

The City of Kalamazoo, Michigan is soliciting sealed bids for:

**Project Name: Parchment Water Storage Tank Project      BID REFERENCE #: 90900-019.0**

**IFB ISSUE DATE: March 5, 2024**

**BID DUE/OPENING DATE: March 27, 2024 @ 3:30 p.m. Local Time**

*Facsimile Bids Will Not Be Accepted.*

**MAILING ADDRESS & INSTRUCTIONS**

**Mail to:**

Purchasing Division  
241 W. South Street  
Kalamazoo, MI 49007

**Questions about this IFB should be directed to:**

Department Contact: Eric Sajtar, PE,  
at [sajtare@kalamazoocity.org](mailto:sajtare@kalamazoocity.org)

***Include on the Envelope the Project Name and Bid Reference Number. All Envelopes Must Be Sealed.***

You are invited to submit a bid for this project. Specifications, terms, conditions and instructions for submitting bids are contained herein. This Invitation for Bid with all pages, documents and attachments contained herein, or subsequently added to and made a part hereof, submitted as a fully and properly executed bid shall constitute the contract between the City and the successful bidder when approved and accepted on behalf of the City by an authorized official or agent of the City. Please review the bid document as soon as possible and note the **DEADLINE FOR QUESTIONS** in the Instructions to Bidders.

All bidders shall complete and return the Bid and Award page(s) and submit all information requested herein in order for a bid to be responsive. The bid document shall be returned in its entirety, in a properly identified and sealed envelope to the Purchasing Division at the above address. **BIDS MUST BE RECEIVED BEFORE THE DUE DATE - LATE BIDS WILL NOT BE CONSIDERED.** The City reserves the right to postpone the bid opening for its own convenience.

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**STATEMENT OF NO BID**

**NOTE: If you DO NOT intend to bid on this commodity or service, please complete and return this form immediately.** Your response will assist us in evaluating all responses for this important project and to improve our bid solicitation process.

The Purchasing Division of the City of Kalamazoo wishes to keep its bidders list file up-to-date. If, for any reason you cannot supply the commodity/service noted in this bid solicitation, this form must be completed and returned to remain on the particular bid list for future projects of this type.

**If you do not respond to this inquiry within the time set for the bid opening date and time noted, we will assume that you can no longer supply this commodity/service, and your name will be removed from this bid list.**

- \_\_\_\_\_ Specifications too "tight", i.e. geared toward one brand or manufacturer only (explain below).
- \_\_\_\_\_ Specifications are unclear (explain below).
- \_\_\_\_\_ We are unable to meet specifications.
- \_\_\_\_\_ Insufficient time to respond to the Invitation for Bid.
- \_\_\_\_\_ Our schedule would not permit us to perform.
- \_\_\_\_\_ We are unable to meet bond requirements.
- \_\_\_\_\_ We are unable to meet insurance requirements.
- \_\_\_\_\_ We do not offer this product or service.
- \_\_\_\_\_ Remove us from your bidders list for this commodity or service.
- \_\_\_\_\_ Other (specify below).

REMARKS: \_\_\_\_\_

SIGNED: \_\_\_\_\_ NAME: \_\_\_\_\_  
(Type or Print)

TITLE: \_\_\_\_\_ DATE: \_\_\_\_\_

FIRM NAME: \_\_\_\_\_  
(If any)

ADDRESS: \_\_\_\_\_  
(Street address) (City) (State) (Zip)

PHONE: \_\_\_\_\_ FAX: \_\_\_\_\_

EMAIL: \_\_\_\_\_

**SECTION I  
INSTRUCTIONS TO BIDDERS**

1. **EXAMINATION OF BID DOCUMENT**-Before submitting a bid, bidders shall carefully examine the specifications and shall fully inform themselves as to all existing conditions and limitations. The bidder shall indicate in the bid the sum to cover the cost of all items included on the bid form.
2. **PREPARATION OF BID**-The bid shall be legibly prepared in ink or typed. If a unit price or extension already entered by the bidder on the Bid and Award form is to be altered, it shall be crossed out and the new unit price or extension entered above or below and initialed by the bidder with ink. The bid shall be legally signed and the complete address of the bidder given thereon.

All bids shall be tightly sealed in an envelope plainly marked SEALED BID and identified by project name, bid opening date and time. Bids opened by mistake, due to improper identification, will be so documented and resealed. The Purchasing Division will maintain and guarantee confidentiality of the contents until the specified opening date and time. Bids submitted electronically will not be accepted.

3. **EXPLANATION TO BIDDERS**-Any binding explanation desired by a bidder regarding the meaning or interpretation of the Invitation for Bids (IFB) and attachments must be requested in writing, **at least 5 business days before the bid opening** so a reply may reach all prospective bidders prior to the submission of bids. Any information given to a prospective bidder concerning the IFB will be furnished to all prospective bidders as an amendment or addendum to the IFB if such information would be prejudicial to uninformed bidders. Receipt of amendments or addenda by a bidder must be acknowledged in the bid by attachment, or by letter or fax received before the time set for opening of bids. Oral explanation or instructions given prior to the opening will not be binding.
4. **CASH DISCOUNTS**-Discount offered for payment of less than thirty (30) days will not be considered in evaluating bids for award. Offered discounts of less than thirty (30) days will be taken if payment is made within the discount period, even though not considered in evaluation of the bid.
5. **WITHDRAWAL OF BIDS**-Bids may be withdrawn in person by a bidder or authorized representative, provided their identity is made known and a receipt is signed for the bid, but only if the withdrawal is made prior to the exact time set for receipt of bid. No bid may be withdrawn for at least ninety (90) days after bid opening.
6. **ALTERNATE BIDS**-bidders are cautioned that any alternate bid, unless specifically requested or any changes, insertions or omissions to the terms and conditions, specifications or any other requirement of this IFB may be considered non-responsive, and at the option of the City, result in rejection of the alternate bid.
7. **LATE BIDS**-Any bid received at the office designated herein after the exact time specified for receipt will not be considered. (Note: The City reserves the right to consider bids that have been determined by the City to be received late due to mishandling by the City after receipt of the bid and no award has been made.)
8. **UNIT PRICES**-If there is a discrepancy between unit prices and their extension, unit prices shall prevail.
9. **BID SUBMITTAL**- Bidders can submit sealed bids in one of the following ways:
  - 9.1. **Mail your bid**, to be received before the bid due date and time indicated in the bid document, to the City of Kalamazoo at the following address:

**CITY OF KALAMAZOO – INVITATION FOR BIDS  
Parchment Water Storage Tank Project**

City of Kalamazoo  
Purchasing Division  
241 West South Street  
Kalamazoo, MI 49007

- 9.2. **Deliver your bid to City Hall In-Person** before the bid due date and time indicated in the bid document.
- 9.3. **Deliver your bid to the Treasurer’s Office Payment Drop Box** located in the northwest corner of City Hall (see photos below) before the bid due date and time indicated in the bid document.



1. Open drop box located at City Hall.

2. Insert SEALED BID here.



- 10. **BID TABULATIONS-** The Purchasing Division makes an effort to post bid tabulations to the City of Kalamazoo website within 24 hours after the bid opening date and time at: <https://www.kalamazocity.org/bidopportunities>. However, in certain cases the posting of the bid tabulation may extend beyond the 24-hour window.

**SECTION II**  
**BID AND AWARD**

The undersigned having become thoroughly familiar with all of the bid/contract documents incorporated herein, the project site and the location conditions affecting the work, hereby proposes to perform everything required to be performed in strict conformity with the requirements of these documents, and to provide and furnish all the equipment, labor and materials necessary to complete in a professional manner the furnishing and installing of all of the following, meeting or exceeding the specifications as set forth herein for the prices as stated below.

**PARCHMENT WATER STORAGE TANK PAINTING**

**PART 1 (per section 03 00 00 of Technical Specifications)**

<b>Pay Item</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Total Cost</b>
Spall Repair	1	LS	\$	\$
Splash pad	1	LS	\$	\$
			<b><u>PART 1 TOTAL</u></b>	\$

**PART 2 (per section 05 00 00 of Technical Specifications)**

<b>Pay Item</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Total Cost</b>
Wet Interior Roof Hatch	1	LS	\$	\$
Access Tube Roof Hatch	1	LS	\$	\$
Condensate Platform Ladder Extension	1	LS	\$	\$
Fill/Draw Pipe Deflector Bar	1	LS	\$	\$
Expansion Joint Replacement	1	LS	\$	\$
Mud Valve	1	LS	\$	\$
Condensate Drain Line	1	LS	\$	\$
Overflow Flap Gate	1	LS	\$	\$
Fall Prevention Device	1	LS	\$	\$
Roof Vent	1	LS	\$	\$
Access Tube Air Gap Seal	1	LS	\$	\$
Basebell Ventilation Opening	1	LS	\$	\$
			<b><u>PART 2 TOTAL</u></b>	\$

**PART 3 (per section 09 00 00 of Technical Specifications)**

<b>Pay Item</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Total Cost</b>
Exterior Overcoat	1	LS	\$	\$
Dry Interior Spot Repaint	1	LS	\$	\$
			<b><u>PART 3 TOTAL</u></b>	\$

**PART 4 (per section 11 00 00 of Technical Specifications)**

<b>Pay Item</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Total Cost</b>
Shutter Installation	1	LS	\$	\$
			<b><u>PART 4 TOTAL</u></b>	\$

**PART 5 (per section 12 00 00 of Technical Specifications)**

Pay Item	Quantity	Unit	Unit Price	Total Cost
Flow Meter Installation	1	LS	\$	\$
			<b><u>PART 5 TOTAL</u></b>	\$

**PART 6 (per section 16 05 02 of Technical Specifications)**

Pay Item	Quantity	Unit	Unit Price	Total Cost
Receptacle Installation - Ventilation	1	LS	\$	\$
Receptacle Installation - Flow Meter	1	LS	\$	\$
			<b><u>PART 6 TOTAL</u></b>	\$

**PART 7 (per section 26 42 21 of Technical Specifications)**

Pay Item	Quantity	Unit	Unit Price	Total Cost
Cathodic Protection System	1	LS	\$	\$
			<b><u>PART 7 TOTAL</u></b>	\$

**PROJECT TOTAL** \$ \_\_\_\_\_

**Alternate Bid Item (per section 05 00 00 of Technical Specifications)**

Pay Item	Quantity	Unit	Unit Price	Total Cost
Overflow Pipe Discharge Modification	1	LS	\$	\$

Bidder shall provide all of the information as requested herein with their bid. **Failure to do so and/or failure to provide post-bid requested information may be cause for rejecting the bid as non-responsive.**

Work shall start after receipt of notification by Contractor of Notice to Proceed and shall have a substantial completion of **October 31, 2024**. The work is to be performed between **October 1 and October 31, 2024**.

Bidder/Contractor has examined and carefully studied the bidding documents and attachments, and acknowledges receipt of the following addenda:

Addendum No: \_\_\_\_\_

Dated: \_\_\_\_\_

By my signature below, I certify that the firm bidding on this contract, when making hiring decisions, does not use a past criminal conviction as a bar to or preclude a person with a criminal conviction from being considered for employment with the bidding firm unless otherwise precluded by federal or state law. I further certify that I have read and agree to be bound by the provisions of the City’s Non-Discrimination Clause found in Appendix A as updated by City Ordinance 1856.

Signed: \_\_\_\_\_ Name: \_\_\_\_\_

Title: \_\_\_\_\_

**CITY OF KALAMAZOO EX-OFFENDER POLICY CHECKLIST**

As part of the City's commitment to reducing unacceptable poverty, encouraging rehabilitation, reducing recidivism and strengthening families in Kalamazoo, the City has updated its Purchasing Policy to ensure that firms with whom the City does business share in this commitment by utilizing hiring practices that do not unfairly deny people with arrest and conviction records gainful employment. *(Important: This requirement also extends to any subcontractors the bidder intends to use to fulfill the contract for goods or services being sought from the City.)*

**Part I: Proof that the bidder does not inquire about an individual's past arrest or criminal history on the bidders employment application form**

- Attach a copy of the current application for employment being used by the bidder

**Part II: Certification that the bidder does not use an individual's past arrest or criminal history to unlawfully discriminate against them by checking *one or more* of the following:**

- That pursuant to federal or state law bidder is precluded from hiring persons with certain criminal records from holding particular positions or engaging in certain occupations by providing a cite to the applicable statute or regulation; if checking this box, provide a citation to the applicable statute or rule upon which the bidder is relying: \_\_\_\_\_
- That bidder conducts criminal history background checks only as necessary, and only after making a conditional offer of employment; that any withdrawal of an offer of employment to an individual because of a past criminal history is job-related and consistent with business necessity after the individual has been provided an individualized assessment opportunity to review and challenge or supplement the history of past criminal conduct being relied upon by the bidder;
- That the use by bidder of criminal history background checks complies with the U.S. Equal Employment Opportunity Commission's Enforcement Guidance on the Consideration of Arrest and Conviction Records in Employment Decisions and that the bidder has not had a determination rendered against it in past 7 years that it discriminated against a person through the use of an individual's arrest or criminal history

I CERTIFY THAT THE ABOVE STATEMENTS ARE TRUE.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Position

**CITY OF KALAMAZOO  
LOCAL PREFERENCE POLICY AND CERTIFICATION**

The lowest responsive Kalamazoo County bidder whose bid is not low but falls within 2% of the lowest responsive bid is afforded the opportunity to become the successful bidder if it agrees to reduce its bid to match the lowest responsive bid. The City of Kalamazoo is the sole determiner whether a bidder is responsible, qualifies as a Kalamazoo County bidder, and if its bid is responsive to the City’s specifications, terms and conditions.

If the lowest Kalamazoo County bidder chooses not to match the lowest bid, the next lowest responsive Kalamazoo County bidder whose bid falls within 2% of the lowest bid, is given the opportunity to match the lowest responsive bid.

To qualify as a Kalamazoo County bidder, the bidder must meet both the following criteria:

1. Have a physical presence in Kalamazoo County by maintaining a permanent office, factory or other facility in Kalamazoo County with employees working in Kalamazoo County.
2. Have paid real or personal property taxes related to said business to the City of Kalamazoo, County of Kalamazoo or other municipal corporation within Kalamazoo County in the previous tax year, except that a non-profit entity need not meet this requirement.

This local preference policy applies only to purchases for materials, supplies, capital outlay, and services for maintenance, repair or operation of City facilities that are over \$25,000. If more than 50% of the contract is sub-contracted to firms located outside of Kalamazoo County that bid does not qualify for the local preference policy outlined above. The local preference policy will not apply if prohibited by law. The Purchasing Agent has the authority to finally determine if the bidder qualifies as a Kalamazoo County bidder as set forth herein. The Purchasing Agent may take into account the permanency of the business in Kalamazoo, and whether the business appears to be claiming to be a Kalamazoo County business solely or primarily to qualify as a Kalamazoo County business under this Resolution, and any other material factors.

**CERTIFICATION**

If you qualify as a Kalamazoo County bidder and wish to be considered for the local preference provisions as provided above please certify that fact by providing the information requested below and attesting to its accuracy.

Firm Name: \_\_\_\_\_

Street Address of Business: \_\_\_\_\_

City, State, and Zip Code: \_\_\_\_\_

Number of employees working in Kalamazoo County: \_\_\_\_\_

Name the city or township to which business real and/or personal property taxes are paid or provide non-profit status:

\_\_\_\_\_  
The above information is accurate:

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Title: \_\_\_\_\_





**REFERENCE QUESTIONNAIRE**

Please answer the following questions completely.

1. Firm name: \_\_\_\_\_
2. Established: Year \_\_\_\_\_ Number of Employees: \_\_\_\_\_
3. Type of organization:
  - a. Individual: \_\_\_\_\_
  - b. Partnership: \_\_\_\_\_
  - c. Corporation: \_\_\_\_\_
  - d. Other: \_\_\_\_\_
4. Former firm name(s) if any, and year(s) in business:  
\_\_\_\_\_  
\_\_\_\_\_
5. Include at least 3 references of contracts for similar work performed over the last five (5) years. Include: owner, contact person and phone number and description of work performed.
  - 5.1 Company Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Type of work or contract: \_\_\_\_\_
  - 5.2 Company Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Type of work or contract: \_\_\_\_\_
  - 5.3 Company Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Type of work or contract: \_\_\_\_\_

I hereby certify that all of the information provided is true and answered to the best of my ability.

Signed: \_\_\_\_\_ Name: \_\_\_\_\_  
(Type or print)

Title: \_\_\_\_\_ Date: \_\_\_\_\_

I hereby state that all of the information I have provided is true, accurate and complete. I hereby state that I have the authority to submit this bid which will become a binding contract if accepted by the City of Kalamazoo. I hereby state that I have not communicated with nor otherwise colluded with any other bidder, nor have I made any agreement with nor offered/accepted anything of value to/from an official or employee of the City of Kalamazoo that would tend to destroy or hinder free competition.

The firm's identification information provided will be used by the City for purchase orders, payment and other contractual purposes. If the contractual relationship is with, or the payment made to, another firm please provide a complete explanation on your letterhead and attach to your bid. Please provide for accounts payable purposes:

Tax Identification Number (Federal ID): \_\_\_\_\_

Remittance Address: \_\_\_\_\_

Financial Contact Name: \_\_\_\_\_ Financial Contact Phone Number: \_\_\_\_\_

Financial Contact Email Address: \_\_\_\_\_

I hereby state that I have read, understand, and agree to be bound by all terms and conditions of this bid document.

SIGNED: \_\_\_\_\_ NAME: \_\_\_\_\_  
(Type or Print)

TITLE: \_\_\_\_\_ DATE: \_\_\_\_\_

FIRM NAME: \_\_\_\_\_  
(If any)

ADDRESS: \_\_\_\_\_  
(Street address) (City) (State) (Zip)

PHONE: \_\_\_\_\_ FAX: \_\_\_\_\_

EMAIL ADDRESS: \_\_\_\_\_

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**FOR CITY USE ONLY - DO NOT WRITE BELOW**

**SECTION III  
CITY OF KALAMAZOO  
INDEMNITY AND INSURANCE**

Contractor, or any of their subcontractors, shall not commence work under this contract until they have obtained the insurance required under this paragraph, and shall keep such insurance in force during the entire life of this contract. All coverage shall be with insurance companies licensed and admitted to do business in the State of Michigan and acceptable to the City of Kalamazoo within ten (10) days of the Notice of Award. The requirements below should not be interpreted to limit the liability of the Contractor. All deductibles and SIRs are the responsibility of the Contractor.

The Contractor shall procure and maintain the following insurance coverage:

Workers' Compensation Insurance including Employers' Liability Coverage, in accordance with all applicable statutes of the State of Michigan.

Commercial General Liability Insurance on an "Occurrence Basis" with limits of liability not less than \$1,000,000 per occurrence and aggregate. Coverage shall include the following extensions: (A) Contractual Liability; (B) Products and Completed Operations; (C) Independent Contractors Coverage; (D) Broad Form General Liability Extensions or equivalent, if not already included and (E) XCU coverage if the nature of the contract requires XC or U work.

Automobile Liability in accordance with all applicable statutes of the State of Michigan, with limits of liability not less than \$1,000,000 per occurrence, combined single limit for Bodily Injury, and Property Damage. Coverage shall include all owned vehicles, all non-owned vehicles, and all hired vehicles.

Additional Insured: Commercial General Liability and Automobile Liability, as described above, shall include an endorsement stating that the following shall be *Additional Insureds*: The City of Kalamazoo, all elected and appointed officials, all employees and volunteers, all boards, commissions, and/or authorities and board members, including employees and volunteers thereof. It is understood and agreed that by naming the City of Kalamazoo as additional insured, coverage afforded is considered to be primary and any other insurance the City of Kalamazoo may have in effect shall be considered secondary and/or excess.

To the fullest extent permitted by law the Contractor agrees to pay on behalf of, indemnify, and hold harmless the City of Kalamazoo, its elected and appointed officials, and employees against any claims, demands, suits, or loss, including all costs connected therewith, and for any damages which may be asserted, claimed, or recovered against or from the City of Kalamazoo, by reason of personal injury, including bodily injury or death and/or property damage, including loss of use thereof, caused in whole or part by any negligent act or omission by the Contractor, its employees, agents, or officers which arises out of, or is in any way connected or associated with, this contract.

Cancellation Notice: All policies, as described above, shall include an endorsement stating that it is understood and agreed that thirty (30) days, or ten (10) days for non-payment of premium, Advance Written Notice of Cancellation, Non-Renewal, Reduction, and/or Material Change shall be sent to: City of Kalamazoo, Purchasing Division, 241 W. South Street, Kalamazoo, MI 49007.

Proof of Insurance Coverage: The Contractor shall provide the City of Kalamazoo at the time that the contracts are returned by him/her for execution, or within 10 days of Notice of Award, whichever is earlier, a Certificate of Insurance as well as the required endorsements. In lieu of required endorsements, if applicable, a copy of the policy sections where coverage is provided for additional insured and cancellation notice would be acceptable. Copies or certified copies of all policies mentioned above shall be furnished, if so requested.

**INDEMNITY AND INSURANCE**  
*Continued*

If any of the above coverages expire during the term of this contract, the Contractor shall deliver renewal certificates and/or policies to City of Kalamazoo at least ten (10) days prior to the expiration date.

Scope of Coverage: The above requirements and conditions shall not be interpreted to limit the liability of the Contractor under this Contract but shall be interpreted to provide the greatest benefit to the City and its officers and employees. The above listed coverages shall protect the Contractor, its employees, agents, representatives, and subcontractors against claims arising out of the work performed. It shall be the Contractor's responsibility to provide similar insurance for each subcontractor or to provide evidence that each subcontractor carries such insurance in like amount prior to the time such subcontractor proceeds to perform under the contract.

**SECTION IV**  
**SPECIAL REQUIREMENTS**

**1. BID BOND/GUARANTEE**

The bid must be accompanied by a bid bond which shall not be less than five (5%) percent of the total amount of the bid. No bid will be considered unless it is accompanied by the required guarantee. The bid guarantee shall ensure the execution of the bid and award, and the furnishing of a performance bond and a labor and material bond (A and B below) by the successful bidder. (Contractors Note: A cashier's or certified check in lieu of a bid bond is **NOT** acceptable.)

**A. PERFORMANCE BOND**

A performance bond shall be furnished in the full amount of the contract ensuring the City of faithful performance of all the provisions of the contract, and the satisfactory performance of any equipment required hereunder. The bond shall also ensure the City against defective workmanship and/or materials.

**B. LABOR AND MATERIAL (PAYMENT) BOND**

A labor and material (payment) bond shall be furnished for the period covered by the contract, in the full amount of the contract for the protection of labor and material suppliers and sub-contractors.

Bonds shall be secured by a guaranty or a surety company listed in the latest issue of the U.S. Treasury, circular 570, and licensed to do business in the State of Michigan, and written in favor of the City of Kalamazoo. The amount of such bonds shall be within the maximum amount specified for such company in said circular 570. The bonds shall be accompanied by a power of attorney showing authority of the bonding agent to sign such bonds on behalf of the guaranty or surety company. The cost of the bonds shall be borne by the Contractor.

Failure of the Contractor to supply the required bonds within ten (10) days after Notice of Award, or within such extended period as the Purchasing Agent may agree to, shall constitute a default and the City of Kalamazoo may either award this contract to the next lowest bidder or re-advertise for bids and may charge against the Contractor for the difference between the amount of the bid and the amount for which a contract for the work is subsequently executed, irrespective of whether the amount thus due exceeds the amount of the bid bond. If a more favorable bid is received by re-advertising, the defaulting bidder shall have no claim against the City of Kalamazoo for a refund.

**2. WAIVERS OF LIEN**

Upon completion of all work and request for final payment, the Contractor shall furnish a 100% waiver of lien from each supplier and sub-contractor covering all items of the work. Failure to supply waivers of lien for the entire job upon completion and final payment request will be considered grounds for withholding final payment.

**3. SUBCONTRACTORS**

- A. Contractors shall state on the Bid and Award page any and all subcontractors to be associated with their bid, including the type work to be performed. Any and all subcontractors shall be bound by all of the terms, conditions and requirements of the contract; however, the prime contractor shall be responsible for the performance of the total work requirements.
- B. The Contractor shall cooperate with the City of Kalamazoo in meeting its commitments and goals with regard to maximum utilization of minority and women business enterprise and shall use its best efforts to ensure that minority and women business enterprises have maximum practicable opportunity to compete for subcontract work under this agreement.

**4. PREVAILING WAGES**

The successful bidder will be required to comply with Section 2-125 of the Code of Ordinances of the City of Kalamazoo regarding prevailing wages and Appendix B attached, incorporated herein by reference. Special note: This provision applies only to projects in excess of \$100,000 for City (\$2,000 federal) funded projects.

The City's requirements as it relates to prevailing wages includes a meeting with the City's Purchasing Division **prior** to work and payroll and work monitoring during the duration of the contract. Please contact Purchasing at (269) 337-8020 if you have any questions regarding Davis-Bacon provisions.

**SECTION V  
GENERAL PROVISIONS**

**1. INTENT**

It is the intent of these plans and specifications to provide for a contractor who shall provide all labor, materials, tools, and equipment necessary to perform exterior tank painting, interior tank spot repairs, and various other repairs on the Parchment Water Storage Tank.

**2. SCOPE OF WORK**

Tank Information:

The structure is a 200,000-gallon spheroid tank with a low-water level of 76.25 ft. located at 350 Park Ave. in Parchment, Michigan.

The work includes:

Exterior: High pressure water clean (5,000 to 10,000 psi) and spot power tool clean to a SSPC-SP11 standard. Apply a three (3) coat epoxy urethane fluoropolymer system.

Dry Interior: Spot power tool clean the spot failures throughout to a SSPC-SP11 standard. Apply a spot two (2) coat epoxy system to the prepared surfaces.

Foundation: Repair spalls. Water clean and apply a two (2) coat epoxy system.

Modifications:

- 1) Replace the wet interior roof hatch.
- 2) Replace the access tube roof hatch.
- 3) Trim the platform hatch covers.
- 4) Install ladder extension at the condensate platform.
- 5) Install deflector bars on the fill/draw pipe.
- 6) Install a chemical feed tap on the fill/draw pipe.
- 7) Replace the expansion joint.
- 8) Replace the mud valve.
- 9) Replace the condensate drain line.
- 10) Install an overflow flap gate.
- 11) Install a fall prevention device on the basebell ladder.
- 12) Install a pressure vacuum vent.
- 13) Install a seal at the access tube air gap.
- 14) Weld a rigging lug on the bowl.
- 15) Install opening for ventilation in the basebell.
- 16) Reroute the overflow pipe and install a duck bill check valve - alternate.
- 17) Install a shutter for a ventilation system in the basebell.
- 18) Install a flow meter on the fill/draw pipe.
- 19) Replace the dry interior light bulbs.
- 20) Install electrical receptacle for ventilation.
- 21) Install an electrical receptacle for the flow meter.

Cathodic Protection: Install an impressed current cathodic protection system.

Splash Pad: Install a concrete splash pad at the overflow pipe discharge.



**3. QUANTITIES**

All quantities are lump sum items as described in the Technical Specifications.

**4. UNIT PRICING**

The unit price, including its pro-rata share of overhead, multiplied by the quantity shown shall represent the total bid and shall be held firm for the life of this contract. Any bid not conforming to this requirement may be rejected as non-responsive.

**5. INSPECTION OF WORK**

The City may maintain inspectors on the job who shall at all times have access to work.

**6. INSPECTION OF SITE**

Each bidder shall visit the site of the proposed work and fully acquaint himself/herself with the existing conditions relating to construction and labor and shall fully inform himself/herself as to the facilities involved and the difficulties and restrictions attending the performance of this contract. The bidder shall thoroughly examine and become familiar with the drawings, specifications, and all other bid/contract documents. The Contractor, by the execution of this contract, shall in no way be relieved of any obligation under it due to his/her failure to receive or examine any form or legal instrument, or to visit the site and acquaint himself/herself with the conditions there existing. No allowance shall be made subsequently in this connection in behalf of the Contractor for any negligence of his/her part. For inspection call the Public Services Department, Water Resources Division.

**7. INSPECTION AND TESTING**

The Contractor shall give the Project Manager timely notice of readiness of the work for all required inspections, tests or approvals, and shall cooperate with inspections and testing personnel to facilitate required inspections or tests. The Contractor will provide for materials and construction testing including but not limited to compaction of subbase and backfill material, concrete testing and asphalt testing. The cost of said testing shall be borne by the Contractor. Verification that testing required by the contract has been completed on one phase of the project prior to proceeding to the next phase is the responsibility of the Contractor. In the event that the project has proceeded without required testing, the Contractor shall insure that the required testing is obtained retroactively and shall provide access for testing as necessary at his/her sole expense. The City shall perform bacteriological sampling prior to placing the water tower back into service. In the event of unacceptable sample results, Contractor shall perform additional tank disinfection, as directed by the City.

**8. MATERIALS INSPECTION AND RESPONSIBILITY**

8.1 The Project Manager shall have the right to inspect any materials to be used in carrying out the terms of the contract.

8.2 The City does not assume any responsibility for the contracted quality and standard of all materials, equipment, components or completed work furnished under this contract.

8.3 Any materials, equipment, components or completed work which does not comply with contract specifications, MDOT, or State codes may be rejected by the City, and shall be replaced by the Contractor at no cost to the City.

Parchment Water Storage Tank Project

Bid Reference #: 90900-019.0

- 8.4 Any materials, equipment or components rejected shall be removed within a reasonable period of time from the premises of the City at the entire expense of the Contractor after notice has been given by the City to the Contractor that such materials, equipment or components have been rejected.

9. **LAYING OUT WORK**

Before submitting a bid, the Contractor shall verify all measurements and shall be responsible for the correctness of same. No extra charge or compensation will be allowed on account of differences between actual dimensions and the measurements indicated on the drawings. Any difference that may be found shall be submitted to the City Engineer for consideration before proceeding. The City Engineer will provide staking for the project.

10. **SUPERVISION**

The Contractor shall employ an experienced superintendent or foreperson on the job at all times.

11. **TEMPORARY UTILITIES**

- 11.1 Temporary or construction water will NOT be available on the sites. The Contractor must provide for drinking water.
- 11.2 Temporary toilets: To be supplied by the Contractor as may be necessary.

12. **SITE SECURITY**

The Contractor shall be responsible for job site security of all materials and tools provided by him/her and no claim for loss or damage will be considered by the City.

13. **TARDINESS**

Construction delays resulting from tardiness on the part of the Contractor will be reviewed by the City in the event of any request for contract extension by the Contractor.

14. **PROGRESS SCHEDULE**

- 14.1 Work shall start after receipt of notification by Contractor of Notice to Proceed and shall be performed between **October 1 and October 31, 2024.**
- 14.2 **Project shall have a substantial completion date of October 31, 2024.** The tank may be out-of-service a maximum of 30 days.
- 14.3 Work of a similar nature may be added to this contract if agreed to by the City and the Contractor. In the event that work is added, the progress schedule for the work will remain unchanged. Any contract time added for additional work will be applied to that additional work only and cannot be added to items in the original contract. Any work done on the items in the original contract past the number of working days stated herein will be subject to liquidated damages regardless of any work that may be added at a later date.
- 14.4 The Contractor will be required to meet with the Public Services representatives to work out detailed progress schedule. The schedule for this meeting will be within two weeks after contract award has been made.

**Parchment Water Storage Tank Project**

**Bid Reference #: 90900-019.0**

- 14.5 The named sub-contractor(s) for all items shall also be present at the scheduled meeting and they will be required to sign the Progress Schedule to indicate their approval of the scheduled dates of work set forth in the Progress Schedule.
- 14.6 The Progress Schedule shall include, as a minimum, the starting and completion dates for major items, and where specified in the bid document the date the project is to be opened to traffic as well as the final project completion date specified in the bid documents. The Progress Schedule shall be coordinated with all aspects of the work occurring at the site.
- 14.7 Failure on the part of the Contractor to carry out the provisions of the Progress Schedule as established may be considered sufficient cause to prevent bidding future projects until a satisfactory rate of progress is again established.
- 14.8 The starting date and the contract time to the completion date for this project may be adjusted by Public Services without imposing liquidated damages upon the receipt of satisfactory documented evidence that unforeseen delayed delivery of critical materials will prevent the orderly prosecution the work.
- 14.9 Work hours are 7:00 am to 7:00 pm Monday through Saturday. Contractor can work outside these hours with Owner approval. Contractor shall modify work activities and schedule to accommodate events and activities at Kindleberger Park, including but not limited to, limiting noise during play rehearsals, providing access to parking areas during little league, etc.

**15. CONSTRUCTION SCHEDULE AND COORDINATION**

- 15.1 The Contractor shall supply the City with an agreeable construction schedule before commencing work on this contract. This schedule shall detail beginning and completion dates for each major component of the project.
- 15.2 The Contractor shall coordinate and cooperate with all other contractors who may be working on the site in order to allow for the orderly progress of work being done.
- 15.3 The Contractor is required to keep the Project Manager fully informed of any proposed work which will tend to interfere with the existing operations at the site.
- 15.4 The Contractor shall schedule all work to accommodate the City's schedule. In the event Contractor's schedule falls on weekends, nights or overtime work is required, no additional compensation will be allowed. All work shall be part of this contract without regard to when it is done.

**16. CONTRACTOR COORDINATION**

- 16.1 The Contractor shall make every effort to coordinate every aspect of his work with that of other contractors on the site to assure an efficiently managed and proper installation.
- 16.2 Consideration shall be given to timing of construction, maintaining adequate construction access, and construction staging. Any costs associated with this coordination shall be included in the contract.

**17. COORDINATING CLAUSE**

The Contractor's attention is called to Article 104.08 of the MDOT 2012 Standard Specifications for Construction entitled "Cooperation by Contractor."

18. ADDITIONS

- 18.1 Any modification to the contract shall be subject to prior approval by the Purchasing Agent. City Commission approval may also be required.
- 18.2 Prices for additional work required are not requested in the itemized listing contained herein for the base project. Should additional work be authorized, compensation shall be made on the basis of price or prices to be mutually agreed upon. Such additional work shall not begin until a Change Order has been approved.

19. MAINTAINING TRAFFIC

- 19.1 This work shall be in accordance with the requirements of Section 812 of the MDOT Standard Specifications for Construction and as specified herein. The Contractor is advised that the current Michigan Manual of Uniform Traffic Control Devices is hereby established as governing all work in connection with traffic control devices, barricade lighting, etc. required on this project.
- 19.2 The Contractor shall furnish, erect, maintain and, upon completion of the work, remove all traffic control devices and barricade lights within the project and around the perimeter of the project for the safety and protection of through and local traffic. This includes, but is not limited to: Advance, regulatory and warning signs; barricades and channeling devices at intersecting streets on which traffic is to be maintained; barricades at the ends of the project and at right-of-way lines for intersecting streets which are to be closed with the first usable street on each side of the project. Traffic regulators, where required by the Engineer, are included.
- 19.3 Where the existing pavement or partial widths of new pavement are to be utilized for the maintenance of through and local traffic, drum type barricades will be required at 50' intervals or as directed by the Engineer for channeling and directing traffic through the construction area.
- 19.4 Through traffic shall be maintained utilizing sidewalk closures with detours and traffic shifts per MDOT traffic and safety details.
- 19.5 Protection of all pedestrian traffic shall be maintained at all times.
- 19.6 Payment for the traffic control devices shall be based on the quantity used and the contract unit prices.
- 19.7 Under Article 812.04.D "Operated Pay Items" the term 'Relocating' shall include the relocating of the item from any street covered by the contract to any other street covered by the contract.

**Special Restrictions:** Access to frontage properties shall be maintained as much as practical. Emergency access shall be maintained at all times. The Contractor shall maintain two-way traffic with flag control as needed when the road is restricted to only one traffic lane. Contractor shall modify work activities and schedule to accommodate events and activities at Kindleberger Park, including but not limited to, limiting noise during play rehearsals, providing access to parking areas during little league, etc.

**20. LIQUIDATED DAMAGES**

20.1 Liquidated damages are applicable and begin after 30 days out-of-service or after Substantial Completion date whichever is the earlier date. Liquidated damages at \$1,250/calendar day shall apply after this date.

20.2 Ready for Final Payment Date shall be thirty (30) days after date Substantial Completion Date based on out-of-service days or scheduled Substantial Completion, or as adjusted by Change Order; or actual Substantial Completion if earlier. Liquidated damages after Ready for Final Payment Date of \$250/day shall apply.

20.3 Liquidated damages are cumulative if damages from Substantial Completion and Ready for Final Payment overlap. In addition, Special Damages, fines, or Set offs may also apply.

**21. REMOVAL OF RUBBISH**

The Contractor shall daily remove all rubbish and accumulated materials due to his/her construction.

**22. SITE ACCESS**

The City will provide fair and reasonable access to the job site within the working schedules of both parties.

**23. GUARANTEE**

The Contractor shall guarantee all of his/her work for a period of two (2) years following the date of final acceptance of the completed work and shall repair, replace or make good any materials or work which fail to function or perform or be found defective, without cost to the City.

**24. SAFETY**

The Contractor shall comply with all applicable OSHA and MIOSHA regulations.

**25. PAY ESTIMATES**

The Contractor shall be responsible for the generation of invoices for payment. Payment will be generated by the City based upon an approved invoice. Recommended frequency of payment is monthly, however, frequency of payment will not exceed bi-weekly.

**26. PRODUCT/SYSTEM SUBSTITUTIONS**

Submit a written request, to be received not later than 10 days prior to scheduled bid opening, for Substitution of any Product not named. If no substitutions are submitted, it will be reasonably concluded by the Owner that the specified product will be incorporated into the Work and the Bidder will be committed to supplying the specified product.

26.1 Describe in detail any variance to the Product specified. All proposed substitution for specified items shall be substantially the same size (height, length, width, diameter, etc.), type, color, construction quality and shall meet the design intent to be considered for substitution for the Product specified.

26.2 Document each request with complete data substantiating compliance of proposed Substitution with Product specified including written certification that Product conforms to

or exceeds all requirements of the Product specified.

- 26.3 Document all coordination information, including a list of changes or modifications needed to the Contract Documents or other parts of the Work and to construction performed by the Owner and Separate Contractors that will become necessary to accommodate the proposed substitution.
- 26.4 Provide name, address, and telephone number of manufacturer's authorized representative.
- 26.5 Submit three copies of all documents for each request for Substitution for consideration.
- 26.5 Approval of the Substitution request, if given, will be in the form of an addendum issued prior to scheduled opening date and hour at local time.

**27. SAMPLES AND DEMONSTRATIONS**

Evidence in the form of samples may be requested. Such samples are to be furnished after the date of bid opening only upon request of The City unless otherwise stated in the bid proposal. If samples should be requested, such samples must be received by The City no later than seven (7) days after formal request is made. When required, The City may request full demonstrations of any unit(s) bid prior to the award of any contract. Samples, when requested, must be furnished free of expense to The City and if not used in testing or destroyed, will upon request within thirty (30) days of bid award be returned at the bidder's request.

**28. ACCEPTANCE OF MATERIAL**

The material delivered under this proposal shall remain the property of the seller until a physical inspection and actual usage of the material and/or services is made and thereafter accepted to the satisfaction of The City and must comply with the terms herein and be full in accord with specifications and of the highest quality. In the event the material and/or service supplied to The City is found to be defective or does not conform to specifications, The City reserves the right to cancel the order upon written notice to the seller and return the product to seller at the seller's expense.

**29. VARIATIONS TO SPECIFICATIONS**

For purposes of evaluation, the bidder **MUST** indicate any variances from our specifications, terms and/or conditions, no matter how slight. If variations are not stated in the proposal, it will be assumed that the product or service fully complies with our specifications, terms, and conditions.

**30. SAFETY STANDARDS**

The bidder warrants that the products supplied to The City conform in all respects to the standards set forth in the Occupational Safety and Health Act of 1970 and its amendments and the failure to comply with this condition will be considered a breach of contract.

**31. MANUFACTURER'S CERTIFICATION**

The City reserves the right to request from bidders separate manufacturer certification of all statements made in the bid.

**32. PROTECTION OF WORK**

The Contractor shall maintain adequate protection of all his/her work from damage and shall protect all public and private abutting property from injury or loss arising in connection with this contract.

**33. PROTECTION OF PROPERTY**

- 33.1 The Contractor shall confine his/her equipment and operations to those areas of the work site necessary for the completion of the work, or as authorized by the Project Manager. The Contractor shall protect and preserve from damage any facilities, utilities or features including trees, shrubs and turf which are not required to be disturbed by the requirements of the work.
- 33.2 The Contractor shall be responsible to determine the location of and to protect from damage any utilities or other improvements.

**34. QUESTIONS**

Bidders shall address questions regarding the specifications to Eric Sajtar, P.E. Senior Civil Engineer at [sajtare@kalamazoocity.org](mailto:sajtare@kalamazoocity.org). (This does not relieve the requirements of Page 1, Item 3.) Questions regarding terms, conditions and other related bid requirements may be addressed to Nicole Kling, Buyer at [klingn@kalamazoocity.org](mailto:klingn@kalamazoocity.org) or (269) 337-8746.

**SECTION VI  
TERMS AND CONDITIONS**

**1. AWARD OF CONTRACT**

- A. This contract will be awarded to that responsible bidder whose bid, conforming to this solicitation, will be most advantageous to the City, price and other factors considered. The City reserves the right to accept or reject any or all bids and waive informalities and minor irregularities in bids received. Other factors include, as an example but not limited to, delivery time, conformance to specifications, incidental costs such as demurrage and deposits, etc.

Notification of award will be in writing by the Purchasing Agent. Upon notification, the Contractor shall submit to the Purchasing Division all required insurance certificates (if required) and such other documentation as may be requested or required hereunder. Upon their receipt and subsequent approval by the City, the Purchasing Agent will forward to the Contractor a written **NOTICE TO PROCEED**. Work shall **NOT** be started until such **NOTICE TO PROCEED** is received by the Contractor.

- B. Unilateral changes in bid prices by the bidder shall not be allowed. However, the City, at its sole option, reserves the right to negotiate with bidders in the event of, but not limited to:
- 1) No bids received;
  - 2) A single bid being received; or
  - 3) Prices quoted are over budget and/or unreasonable.

**2. COMPLETE CONTRACT**

This bid document together with its addenda, amendments, attachments and modifications, when executed, becomes the complete contract between the parties hereto, and no verbal or oral promises or representations made in conjunction with the negotiation of this contract shall be binding on either party.

**3. SUBCONTRACTORS - NON-ASSIGNMENT**

Bidders shall state in writing any and all sub-contractors to be associated with this bid, including the type of work to be performed. The Contractor shall cooperate with the City of Kalamazoo in meeting its commitments and goals with regard to maximum utilization of minority and women-owned business enterprises.

The Contractor hereby agrees and understands that the contract resulting from this solicitation shall not be transferred, assigned, or sublet without prior written consent of the City of Kalamazoo.

**4. TAXES**

The City of Kalamazoo is exempt from all federal excise tax and state sales and use taxes. However, depending upon the situation, the vendor or contractor may not be exempt from said taxes and the City of Kalamazoo is making no representation as to any such exemption.



**5. INVOICING**

**All original invoice(s) will be sent to the Finance Division, 241 W. South Street, Kalamazoo, MI 49007 or via email at [apinvoice@kalamazoo-city.org](mailto:apinvoice@kalamazoo-city.org).** Faxed copy of invoice(s) will not be accepted, unless it is to replace an original invoice that was lost in the mail. The Finance Division processes payments after receipt of an original invoice from the Contractor and approval by the department.

The City of Kalamazoo policy is to pay invoice(s) within 30 days from the receipt of the original invoice, if the services or supplies are satisfactory and the proper paperwork and procedures have been followed. In order to guarantee payment to the vendor on a timely basis, the vendor needs to receive a purchase order number before supplying the City of Kalamazoo with goods or services. All original, and copies of original invoice(s), will clearly state which purchase order they are being billed against.

**The City of Kalamazoo is a government municipality and therefore is tax exempt from all sales tax. Our tax-exempt number is 38-6004627.**

**The vendor is responsible for supplying the Finance Division with a copy of their W-9 if they are providing a service to the City of Kalamazoo.**

**6. PAYMENTS**

Upon issuance of certificates of Payment by the Architect/Engineer for labor and material incorporated in the work and the materials suitably stored at the site payment shall be made up to ninety (90%) percent of the value thereof.

When the cumulative total of payment is equal to fifty (50%) percent of the contract sum, subsequent payments will be made in the full amount for labor and material certified by the Architect/Engineer.

The amount retained shall be held until final acceptance of the work, receipt of all payrolls, releases, and waiver of liens.

**7. CHANGES AND/OR CONTRACT MODIFICATIONS**

The City reserves the right to increase or decrease quantities, service or requirements, or make any changes necessary at any time during the term of this contract, or any negotiated extension thereof. Price adjustments due to any of the foregoing changes shall be negotiated and mutually agreed upon by the Contractor and the City.

Changes of any nature after contract award which reflect an increase or decrease in requirements or costs shall not be permitted without prior approval by the Purchasing Agent. City Commission approval may also be required. **SUCH CHANGES, IF PERFORMED IN ADVANCE OF PURCHASING AGENT APPROVAL, MAY BE SUBJECT TO DENIAL AND NON-PAYMENT.**

**8. LAWS, ORDINANCES AND REGULATIONS**

The Contractor shall keep himself/herself fully informed of all local, state and federal laws, ordinances and regulations in any manner affecting those engaged or employed in the work and the equipment used. Contractor and/or employees shall, at all times, serve and comply with such laws, ordinances and regulations.

Any permits, licenses, certificates or fees required for the performance of the work shall be obtained and paid for by the Contractor.

This contract shall be governed by the laws of the State of Michigan.

**9. RIGHT TO AUDIT**

The City or its designee shall be entitled to audit all of the Contractor's records, and shall be allowed to interview any of the Contractor's employees, throughout the term of this contract and for a period of three years after final payment or longer if required by law to the extent necessary to adequately permit evaluation and verification of:

- A. Contractor compliance with contract requirements,
- B. Compliance with provisions for pricing change orders, invoices or claims submitted by the Contractor or any of his payees.

**10. HOLD HARMLESS**

If the acts or omissions of the Contractor/Vendor or its employees, agents or officers, cause injury to person or property, the Contractor/Vendor shall defend, indemnify and save harmless the City of Kalamazoo, and LL Harris and Associates, their agents, officials, and employees against all claims, judgments, losses, damages, demands, and payments of any kind to persons or property to the extent occasioned from any claim or demand arising therefrom.

**11. DEFAULT**

The City may at any time, by written notice to the Contractor, terminate this contract and the Contractor's right to proceed with the work, for just cause, which shall include, but is not limited to the following:

- A. Failure to provide insurance and bonds (when called for), in the exact amounts and within the time specified or any extension thereof.
- B. Failure to make delivery of the supplies, or to perform the services within the time specified herein, or any extension thereof.
- C. The unauthorized substitution of articles for those bid and specified.
- D. Failure to make progress if such failure endangers performance of the contract in accordance with its terms.
- E. Failure to perform in compliance with any provision of the contract.

**DEFAULT (cont.)**

- F. **Standard of Performance** - Contractor guarantees the performance of the commodities, goods or services rendered herein in accordance with the accepted standards of the industry or industries concerned herein, except that if this specification calls for higher standards, then such higher standards shall be provided.

Upon notice by the City of Contractor's failure to comply with such standards or to otherwise be in default of this contract in any manner following the Notice to Proceed, Contractor shall immediately remedy said defective performance in a manner acceptable to the City. Should Contractor fail to immediately correct said defective performance, said failure shall be considered a breach of this contract and grounds for termination of the same by the City.

In the event of any breach of this contract by Contractor, Contractor shall pay any cost to the City caused by said breach including but not limited to the replacement cost of such goods or services with another Contractor.

The City reserves the right to withhold any or all payments until any defects in performance have been satisfactorily corrected.

In the event the Contractor is in breach of this contract in any manner, and such breach has not been satisfactorily corrected, the City may bar the Contractor from being awarded any future City contracts.

- G. All remedies available to the City herein are cumulative and the election of one remedy by the City shall not be a waiver of any other remedy available to the City.

**12. TERMINATION OF CONTRACT**

The City may, at any time and without cause, suspend the work of this contract for a period of not more than ninety days after providing notice in writing to the Contractor. The Contractor shall be allowed an adjustment in the contract price or an extension of the contract times, or both, directly attributable to the suspension if Contractor makes an approved claim.

The City may, without prejudice to any other right or remedy of the City, and with or without cause, terminate the contract by giving seven days written notice to the Contractor. In such case the Contractor shall be paid, without duplication, for the following items:

- A. Completed and acceptable work executed in accordance with the contract documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such work;
- B. Expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials or equipment as required by the contract documents in connection with uncompleted work, plus fair and reasonable sums for overhead and profit on such expenses;
- C. All documented claims, costs, losses and damages incurred in settlement of terminated contracts with Subcontractors, Suppliers and others; and
- D. Reasonable expenses directly attributable to termination.

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

**13. INDEPENDENT CONTRACTOR**

At all times, the Contractor, any of his/her employees, or his/her sub-contractors and their subsequent employees shall be considered independent contractors and not as City employees. The Contractor shall exercise all supervisory control and general control over all workers' duties, payment of wages to Contractor's employees and the right to hire, fire and discipline their employees and workers. As an independent contractor, payment under this contract shall not be subject to any withholding for tax, social security or other purposes, nor shall the Contractor or his/her employees be entitled to sick leave, pension benefit, vacation, medical benefits, life insurance or workers' unemployment compensation or the like.

**14. PROJECT SUPERVISOR**

The Contractor shall employ an individual to act as Project Supervisor. The Project Supervisor shall be available to the Contractor's workers and the Project Manager at all times by use of a beeper or other reliable means. The Project Supervisor shall prepare daily work plans for the employees, monitor employee performance, attendance and punctuality; and work closely with the City's Project Manager in assuring contract compliance.

**15. MEETINGS**

The Contractor and/or Project Supervisor shall be available to meet with the Department Head or Project Manager at a mutually agreeable time to discuss problems, issues or concerns relative to the contract. Either party may call a meeting at any time. When such a request for a meeting is made, the meeting date shall, in no case exceed five (5) working days after the request; and, if in the sole opinion of the Department Head, the severity of the circumstance warrants, no more than one (1) working day.

**SECTION VII**  
**ADDITIONS TO GENERAL PROVISIONS**

**PART 1 – GENERAL**

**GENERAL PURPOSE OF THESE ADDITIONS TO GENERAL PROVISIONS**

- A. These Additions to the General Provisions were prepared by Dixon Engineering, Inc. using paragraphs from Engineering Joint Contract Documents Committee (EJCDC) General Conditions GC-700 -18 which were modified by DIXON as they relate to the coating industry. The General Provisions of this Contract were prepared by the Owner. These Additional General Provisions are intended to supplement the Owner's General Provisions as they relate to this specific project. Two examples are:
1. The Owner's Terms and Conditions detail the payment process, how to submit a Request for Payment application, what form to use and when and where to submit the application. These Additions detail how DIXON calculates approval of a pay request, no payment for stored materials, percentage complete calculation methodology, etc.
  2. In the General Provisions Liquidated Damages are defined, when, where and amount. In these Additions the method of calculating claimed wind and weather days is detailed.
- B. This Addition to General Provisions follow the EJCDC format and the Article numbers reflect the Article number in the 2018 edition of the EJCDC General Conditions. Note that not all Articles or subsections are referenced.

**DISCREPANCIES BETWEEN OWNER'S GENERAL PROVISIONS AND THESE ADDITIONS.**

- A. If the conflict is administrative in nature, then the Owner's Terms and Conditions govern. Examples are Pay Request procedures, filing a Claim, etc.
- B. If the conflict is of a technical nature, then these Additions govern.
- C. An issue determined to be in conflict in a specific item does not void other non-conflicting paragraphs in the same Article number.
- D. Bidders are required to familiarize themselves with all the General Provisions, Terms and Conditions, and Special Requirements of the contract, as well as these Additions.
- E. In all cases of discrepancies between the General Provisions, these Additions, the Technical Specifications and/or the Drawings, the Engineer shall be notified. The specifications shall govern over the drawings.
- F. If Work proceeds without Contractor obtaining proper interpretations of the conflicting issues from the Engineer, any installed Work that is not in accordance with the specification, and best practices shall be replaced at no additional cost and other costs that may occur are also the responsibility of the Contractor if they were aware of the conflict.

## ARTICLE 1 DEFINITIONS AND TERMINOLOGY

### 1.01 DEFINED TERMS

- A. Construction Industry Definitions: These definitions are taken from the EJCDC General Conditions C-700-18, the 2018 edition and some were modified by DIXON to be specific to the coating industry.
1. *Bulletin*—If time permits, a Bulletin is issued prior to a Change Order. A Bulletin is an inquiry of the Contractor of the cost to complete the work described in the Bulletin. It is intended as the basis of a Change Order if all parties reach agreement. A Bulletin may be considered as the same as a Change Proposal except that a Bulletin is generated by the Engineer because it generally requires specifications to be addressed.
  2. *Change Order* is a written order to the contractor signed by the owner, issued after execution of the contract, authorizing a change in the work or an adjustment in the contract sum or the contract time. A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
  3. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
  4. *Constituent of Concern (CC)*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead based paint (as defined by the HUD/EPA standard) hazardous waste, and any substance, product, waste, or other material. Lead, chrome, and other by-products of paint removal, as well as strippers, new coatings, and thinners, are to be included in this definition. Coating industry related CC, from new or from previous projects cannot be the basis of Contract Termination or Change Proposal by the Contractor.
  5. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor. A Shop Drawing is not a Drawing and is not part of the Contract Documents.
  6. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.
  7. *Electronic Means*—Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or communication of Electronic Documents; (b) the documentation of transmissions, including sending and receipt; (c) printing of the transmitted Electronic Document by the recipient; (d) the storage and archiving of the Electronic Document by sender and recipient; and (e) the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.
  8. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
  9. *Hold Point*—A point in the construction sequence when the Contractor is required to stop work on that portion of the project until Work has been Site reviewed by RPR or Project Manager.

10. *Non-Conformance Report*—A report written by the Engineer or Resident Project Representative, to document the Contractor’s Work that does not meet requirements of the specifications or contract.
11. *Performance Specifications* –Specifications that require the manufacturer or supplier of equipment, materials, or systems to design, manufacture, deliver, and install products to achieve specific results under stipulated conditions of operation and in environments described in applicable Specification Sections.
12. *Ready for Final Payment* – This term is used to define a time when Liquidated Damages begin, separate from Liquidated damages for failure to meet Substantial Completion Date. Ready for Final Payment Date is generally listed 30 days after Substantial Date. All punch list items are to be completed, Site cleaned and restored, and equipment removed. At the option of the Owner this LD may be in addition (cumulative) with an LD for failure to meet Substantial Completion Date.
13. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or “RPR” includes any assistants or field staff of Resident Project Representative.
14. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment. The Schedule of Value Form is supplied in these Bidding Documents as Section 00 06 00. This Schedule is to be submitted with the Bid. Adjustment of Schedule of Values by Engineer will not change the total Bid as calculated by the Contractor completing the Schedule of Values.
15. *Set-Off*—Owner may withhold from payment including Final Payment an amount equal to additional expenses incurred by Owner which were the responsibility of the Contractor. Such expenses may include additional engineering expenses related to excess review of incomplete submittals of shop drawings, pay requests, or bonds and insurance, excess Requests for Information, excess tests and inspections and return visit to site to complete a reinspection of a previously failed inspection, increase inflation in Engineering fees that result from Contractor delaying project into the next season; additional expenses incurred by Owner resulting from Contractor failure to clean site, rehabilitate Site and other construction related expenses resulting from Contractor not completing their contractual obligations.
16. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.
17. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
18. *Submittal*—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers’ instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.

19. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof. On tank projects, date of substantial completion is the date the tank is, or would have been returned to service, except for voluntary delay by Owner. Date of Substantial Completion is after complete cure, disinfection, and testing.
20. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

**B. Defective:**

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
  - a. does not conform to the Contract Documents; or
  - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
  - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).
  - d. All work completed that is rejected by an unresolved non-conformance report.

**ARTICLE 2 PRELIMINARY MATTERS**

**2.04 PRECONSTRUCTION CONFERENCE**

**A. Preconstruction Conference is herein called Preconstruction Meeting:**

1. The Engineer will schedule a Preconstruction Meeting to be attended by Owner, Engineer, and Contractor. Prior to beginning any Work, Contractor shall submit to the Engineer, a Project Schedule and all other required Submittals for the project. If the schedule is aggressive, working overtime, weekends, and/or holidays, that time shall be reflected in the Project Schedule. Once the project has begun, the Contractor shall carry the Project Schedule to completion without delay.
2. Attend a Preconstruction Meeting that may be scheduled by the Owner at a mutually agreeable time after contract preconditions, bonds, certificates of insurance, and other requirements have been met.
3. A corporate officer, or someone with legal authority to obligate the company/corporation, project manager (if different from officer), and the intended superintendent shall attend. If project superintendent does not attend the meeting, it shall be the Contractor’s responsibility to supply the information discussed at the meeting to the field superintendent.
4. The Owner will be represented by the project contact person, and the Engineer by the Project Manager, or a Contract Administrator.
5. All containment, personal hygiene, and lead control issues required in this contract will be reviewed. Be prepared to commit designated “Competent Person(s)” to responsibilities of confined space, scaffold rigging, lead, etc.



**B. Progress Meetings:**

1. The Project Manager or Owner will schedule Progress Meetings to be held on the job Site whenever needed to supply information necessary to prevent job interruptions, to observe the Work, or to inspect completed Work. The Contractor shall be represented at each progress meeting by persons with full authority to act for the Contractor in regard to all portions of the Work.

**ARTICLE 3 CONTRACT DOCUMENTS: INTENT REQUIREMENTS, REUSE**

**3.01 INTENT**

- A. The drawings and specifications are intended to include all Work and materials necessary for completion of the Work. Any incidental item of material, labor, or detail required for the proper execution and completion of the Work and omitted from either the drawings or specifications or both, but obviously required by governing codes, local regulations, trade practices, operational functions, and good workmanship, shall be provided as a part of the contract Work without extra cost, even though not specifically detailed or mentioned.

**ARTICLE 4 COMMENCEMENT AND PROGRESS OF THE WORK**

**4.01 COMMENCEMENT OF CONTRACT TIMES**

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to such date except as recommended immediately following or by written authorization of the Owner AND the Engineer (Engineer must be able to schedule appropriate RPR for Project.) Contract time is governed by out-of-service time. The Contractor is encouraged to deliver equipment to the Site prior to Contract Start. The Site will be available up to two (2) weeks prior to agreed drainage date. Contractor is also encouraged to rig the structure, complete containment installation, and complete weld repairs that do not affect the wet interior prior to draining of the tank. The amount of Work completed shall have been approved at the Preconstruction Meeting. Since the tank is not out of service these dates do not apply against Out of Service time but may require scheduling RPR services (see Section 00 91 19.01 Scheduling for RPR Services.)
- B. Delaying Work start for the convenience of the Contractor may require Owner to Set off inflation increased Engineering or RPR expenses against Contractor's Request for Payment.

**4.05 DELAYS IN CONTRACTOR'S PROGRESS**

- A. Liquidated Damages
  1. Contract time is governed by out-of-service time.
  2. On tank projects, date of substantial completion is the date the tank is or would have been returned to service, except for voluntary delay by Owner. Date of substantial completion is after complete cure, disinfection, and testing. A voluntary delay in filling by Owner, or delay that is no fault of the Contractor may extend Substantial Completion date.
  3. Abnormal weather conditions are defined as weather conditions that are at variance with the routine. An example of the determination procedure and of the required claim format is:

Project length: 45 days  
Substantial completion date: June 30<sup>th</sup>.  
Start date: May 16<sup>th</sup>.  
3 years of data\* 2021, 2022, 2023  
Average number of rain/wind days: 9  
Actual number of rain/wind days\*\*: 12  
Claim for time extension: 3 days

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4. \*Submit weather history from nearest weather reporting station for three (3) previous years from the same time period. Submit formal, by simple claim (use format above).
5. \*\*Rain/wind day is a rain or wind day where either rain and/or wind conditions exceeded safe Work conditions or were outside the parameters of good paint practices. Wind days are winds in excess of 20 mph for over four (4) hours during normal Work hours, and rain days having measurable precipitation.
6. Weather Claim Evaluation: Engineer will evaluate claim and make sole determination as to whether days meet criteria. Engineer will disallow dates where Work could have been completed on the interior; dates that result from the Contractor's Work practices (i.e. complete wet interior first and then move to exterior). Good weather days not used will count against claim.
7. Claimed rain/wind days that occur after the scheduled Substantial Completion Date or an extended Substantial Completion Date will not be awarded. Days past Substantial Completion and good weather days that were not used for Productive Work will be considered "days within the control of the Contractor."

**ARTICLE 5 SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENT CONDITIONS****5.02 USE OF SITE AND OTHER AREAS****A. Site:**

1. Protection - The Contractor is responsible for the protection of property during the period of construction and shall exercise care to prevent damage to structures, utility services, storm and sanitary drainage systems, lawns, trees, plant material, fences, walks, drives, roadways, and other improvements in and adjacent to the area of Work under the contract. Any damage to property resulting from the Contractor's operations shall be repaired or replaced by the Contractor at their expense.
2. The Contractor shall be responsible for all injury to Work in process of construction, and for all property or materials stored at the premises that may be damaged or stolen while the Work is in his care, at Contractor's expense.
3. The Contractor shall confine the apparatus, the storage of materials, and the operations of his Workers to limits indicated by law, ordinance, permits, or direction of the Engineer, and shall not unreasonably encumber the premises with his materials.
4. Maintenance
  - a. Provide labor and material necessary to maintain the Site in a safe condition.
  - b. Keep the premises free from accumulation of waste materials, rubbish, and other debris resulting from the Work.
  - c. At completion of the Work, remove all waste materials, rubbish, and debris from about the premises, as well as all tools, construction equipment, machinery, and surplus materials.
  - d. At the Contractor's expense, repair damage that may have occurred to any permanent structure completed under the contract Work, or to private or public property.
  - e. Notify the Owner of your intentions and the reasons why, if it is necessary to protect adjacent houses, cars, etc. During clean-up these areas will be considered as part of the Site and shall be cleaned accordingly.

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- f. Failure to continually maintain the Site or to immediately clean the Site after a complaint or project completion may result in the Owner completing the Work by hire or by the Owner's forces. All cost would be responsibility of the Contractor, subject to Set off.
- g. Restore Site to preconstruction condition:
  - i. Refill holes and level area around the construction Site for the Site to the original grade.
  - ii. Bring soil to a friable condition by disking, harrowing, or otherwise loosening and mixing to a depth of 3 in. – 4 in. Thoroughly break all lumps and clods.
  - iii. Rake area to be seeded. Sow seed at a minimum rate of 220 lbs./acre.
5. Cleaning - Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work, but prior to Ready for Final Payment, Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

**5.03 SUBSURFACE AND PHYSICAL CONDITIONS**

- A. Locations of all buried utility service lines in or adjacent to the Work area that are not shown on the drawings will be located by the Contractor through the local utility locating agency and marked with warning stakes. The Contractor shall be responsible for the protection of all utility service lines that are to remain. Damage to any such utility service lines, pipes, etc. resulting from the Contractor's operations shall be repaired or replaced by the Contractor at their expense. Underground Work in the coating industry involves drilling for anchors for containment systems. The painting of pit piping will be considered subsurface Work. For this type of Work the Contractor must rely on Utility Locating Services and not Technical Data from Owner, or in the case of pits, a visual inspection. Contractor shall notify each utility before digging for anchors or for any reason. Before starting, call in advance or/as required by the individual agencies: Call 811 or appropriate agency in the state of the project.

**5.06 HAZARDOUS ENVIRONMENTAL CONDITIONS AT SITE**

- A. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition (Constituents of Concern) encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the Scope of the Work or eventually identified as being caused or created by the Contractor.
- B. Power Lines – Antennas – Electrical Wiring
  1. If overhead power lines present an unsafe Work condition as determined by OSHA, Owner or utility, the Contractor at their expense and coordination, shall have the utility temporarily relocate, move, or cover lines, eliminating the hazard.
  2. Unless stated differently in Contract Documents, protect all antennas, controls, cables, and associated property of Owner's equipment or material on, in or near the structure during Work. Design construction procedures to maintain operation of antenna system. If antennas are removed from the structure protect all telecommunication equipment remaining in place.

3. Unless stated differently in the Contract Documents, protect all electrical lines and controls including 110/220 V. service lines, cathodic wiring, lights, globes, outlets, and service boxes. Protect associated property of private telecommunication companies (911, school buses, etc.) from damage during Work. Design construction procedures to maintain operation of telecommunication systems.

**ARTICLE 6 BONDS AND INSURANCE**

**6.01 PERFORMANCE, PAYMENT, AND MAINTENANCE BONDS (NOT BID BONDS)**

- A. Supply a Maintenance (Warranty) Bond for two (2) years at 50% of the contract price, to ensure any repair work required or detected as a result of the (13) months (1 year) Post Construction inspection. The repair scheduling may be delayed several months for Contractor's schedule or Owner's operational requirements. This bond is to remain in effect until repairs have been completed and accepted. Per Technical Specifications, if repairs exceed 10% of any area, then the warranty and bond shall be extended another year. The maintenance (warranty) bond must be issued by the same surety that issues the performance bond required under Paragraph 1.A of Section IV Special Requirements.

**ARTICLE 7 CONTRACTOR'S RESPONSIBILITIES**

**7.01 CONTRACTOR'S MEANS AND METHODS OF CONSTRUCTION**

- A. Contractor shall supervise, direct, control, and have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, and the safety precautions and programs incident thereto.
- B. Any plan or methods of accomplishing the work suggested to the contractor by the Engineer or other representative of the Owner, but not specified or required, shall be used at the contractor's own risk and responsibility. The Engineer and Owner assume no responsibility.
- C. Contractor shall comply with Laws and Regulations applicable to the performance of the Work.
- D. Contractor's shall perform the Work in accordance with the Contract Documents. Contractor's obligation to perform under terms of Contract and complete the Work in accordance with the Contract Documents is absolute.
- E. Contractor shall be responsible for the acts or omissions of Contractor and of any Subcontractor, any Supplier, and of any other individual or entity performing any of the Work.

**7.02 SUPERVISION AND SUPERINTENDENCE**

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents.
  1. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.
  2. Resident superintendent shall be fluent in English to the level of competency to complete responsibilities of the Contractor and to communicate with the RPR. Superintendent shall also be fluent or have access to a translator on site, for the primary language of all of the Workers. Degree of fluency in English and language of workers to be sufficient so that superintendent's employees can adequately and safely complete their duties:

3. No employee of Contractor, Subcontractor, or Supplier may be on the Project Site who cannot be directed by a Superintendent, or translator in regard to work assignments, safety issues, or who cannot understand safety signage.

**7.03 LABOR; WORKING HOURS**

- A. Provide equipment of sufficient size and power to expedite the project so that all deadlines are met. Personnel and crew size also shall be sufficient to meet required deadlines.
- B. If, in the sole opinion of the Engineer, there is insufficient equipment or personnel to complete the project, the Engineer will notify the Contractor and Owner, and a Project Meeting will be held within twenty-four (24) hours for the purpose of contract termination, unless a reasonable cause is given to the contrary.

**7.05 “OR EQUALS”**

- A. Whenever an article, material, or item of equipment is described by a performance specification, written as a proprietary product, or uses the name of a manufacturer or vendor, the term “or equal” if not inserted, shall be implied. The specific article, material, or item of equipment mentioned shall be understood as indicating the minimum requirements for fulfilling contract obligations in regard to type, function, standard of design and efficiency. See Section 09 97 13, Part 2, Substitution of Coatings, which shall govern over this clause where conflicting, relative to coatings, grouts, and fillers only. Other exceptions are when the specifications state that only the proprietary item will be permitted.

**7.11 LAWS AND REGULATIONS**

- A. Contractor is responsible for all permits and requirements of local, state, and federal agencies. This includes building, electrical, labor, OSHA, etc. The only permits not included are from health agencies for interior painting, cathodic protection installation and mixer installation which is the responsibility of the Owner.
- B. Display all wage requirements and other permits on a temporary board.
- C. Attach to the superintendent’s copy of the specifications copies of other permits that do not require display.

**7.13 SAFETY AND PROTECTION**

- A. Conform to the Occupational Safety and Health Standards of the United States Department of Labor and local safety agencies. This shall be made a condition of each subcontract as entered into pursuant to this contract.
- B. Removal of lead-based paint and painting of structures are recognized as very dangerous Work, and it is further recognized the painting industry has extensive safety training programs available.
- C. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs. Contractor’s Safety Representative shall have the authority to supersede Contractor’s foreman and shall stop work if the Work being completed is in violation of Contractor’s or Owner’s safety program, or OSHA regulations.
- D. Monitor and be responsible for all safety practices.

- E. The Engineer and Owner shall have full access to the Site. Contractor shall make personnel and equipment available to the Owner and Engineer/RPR to expedite observations.
- F. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs (if any) of which Engineer has been informed.
- G. Contractor is responsible for security, safety, etc. on the Site until all his equipment is removed and all keys are returned.

**7.17 CONTRACTOR'S GENERAL WARRANTY AND GUARANTEE**

- A. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents, or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents, or a release of Owner's warranty and guarantee rights:
  - 1. Observations and/or Daily Observation Reports by Engineer/RPR;
  - 2. Recommendation by Engineer or payment by Owner of any progress or final payment;
  - 3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
  - 4. use or occupancy of the Work or any part thereof by Owner;
  - 5. any review and approval of a Shop Drawing or Sample submittal;
  - 6. the issuance of a notice of acceptability by Engineer;
  - 7. the end of the correction period;
  - 8. any inspection, test, or approval by others; or
  - 9. any correction of defective Work by Owner.

**7.19 DELEGATION OF PROFESSIONAL DESIGN SERVICES**

- A. If the Contract Documents note, or Contractor determines, that professional engineering or other design services are needed to carry out Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety, then Contractor shall cause such services to be provided by a properly licensed design professional, at Contractor's expense. Such services are not Owner-delegated professional design services under this Contract, and neither Owner nor Engineer has any responsibility with respect to (1) Contractor's determination of the need for such services, (2) the qualifications or licensing of the design professionals retained or employed by Contractor, (3) the performance of such services, or (4) any errors, omissions, or defects in such services.

**ARTICLE 10 ENGINEER'S STATUS DURING CONSTRUCTION**

**10.07 LIMITATIONS ON ENGINEER'S AUTHORITY AND RESPONSIBILITIES**

- A. Engineer's Responsibilities
  - 1. Engineer will be Owner's representative during the construction period.
  - 2. Engineer's Project Manager (PM) will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract

Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work, and will endeavor to guard Owner against defective Work.

3. Engineer will identify all Set-off expenses incurred against Engineer in their invoice to Owner.
4. Engineer's review of the final Application for Payment and accompanying documentation, and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Contractor, will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.

**B. The Resident Project Representative's (RPR) Responsibilities**

1. If the Owner retains Engineer to provide RPR services, the RPR will be Engineer's representative at the Site to assist in observing the progress and quality of the Work. RPR's dealings in matters pertaining to the Work in general will be with Engineer and Contractor. RPR's dealings with Subcontractors will only be through or with the full knowledge or approval of Contractor. The authority of any RPR will be as directed by the Engineer.
2. Neither Engineer's authority or responsibility under any provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, will create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them. No Agreement between the Owner and Engineer and nothing in this Contract shall imply or construct a third party beneficiary status to the Contractor.

- C. Engineer/RPR shall have the authority to stop Work in the event continuation of Work under a noncompliance situation, such as incomplete containment, may result in the violation of environmental laws, create a potential tort, or may result in the covering of defective or unaccepted Work (Nonconformance) product. This authority to stop work transfers back to the Owner after the Owner has been notified and returns to the Site.

**ARTICLE 11 CHANGES TO THE CONTRACT**

**11.02 CHANGE ORDERS**

- A. A Change Order is a written order to the Contractor signed by the Owner, issued after execution of the contract, authorizing a change in the work or an adjustment in the contract sum or the contract time. The cost or credit to the Owner resulting from a change in the work shall be determined in one or more of the following ways:
1. By mutual acceptance of a lump sum;
  2. By unit prices stated in the Contract Documents or subsequently agreed upon;
  3. By actual itemized cost and fixed fees as set forth in 2 above. Cost shall be limited to the following: cost of materials, cost of labor, and cost of overhead.

- B. A Bulletin will be issued in most cases before a Change Order. A Bulletin will request prices and other information from the Contractor. Prices requested in a Bulletin are subject to negotiation with the Owner.

**11.04 FIELD ORDERS**

- A. A field modification is written by the Engineer to the Contractor for purposes of clarification of the specifications or plans. A field modification is limited to items that do not change the scope of the project.
- B. Field modifications do not affect either the project cost or completion date.
- C. Field modifications become part of the Contract Documents and become binding upon the Contractor if they fail to object within three (3) working days after receiving the modification. A field modification may be used as the basis of a project cost change or contract extension if all parties agree on the field modification form to a potential future claim of either party or that the field modification will be complied with, but under protest.

**ARTICLE 15 PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD**

**15.01 AND 15.06 PROGRESS AND FINAL PAYMENTS**

- A. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.
- B. Measurement of payment will be considered based on the Schedule of Values submitted with the Contractor's bid. The Schedule of Values will be reviewed by the Engineer prior to Notice of Award. If the Engineer determines the Schedule of Values is not acceptable, the Engineer will use the Contractor's Schedule to reallocate values. The Engineer's reallocation interest will be to maintain a sufficient value for Work completed toward the end of the project, to avoid frontloading values. The Engineer will assign values high enough to bring in another Contractor to finish Work in case of default. When evaluating the Schedule of Values, the Engineer will consider that material delivered to the Site has no value until properly applied. The Contractor has five (5) days to appeal the reallocated Schedule of Values.
- C. Pay request(s) shall be made on form(s) supplied by the Owner or Engineer or required by Owner. If no form is supplied, use AIA form.
- D. Owner will make progress payments once each month during performance of the Work, in which the Contractor files an application for payment.
  - 1. All such payments will be compared with the Schedule of Values,
  - 2. or in the case of unit price Work, based on the number of units completed, or
  - 3. if lump sum item is less than 100% completed then allocated as follows:
    - a. On the exterior, surface preparation by high pressure cleaning or jetting and power tool cleaning will be considered equal to 40% of the line-item Work and cost and full coat 15%. The remainder will be for lettering, demobilization, and clean-up.
    - b. Dry interior painting and repairs will not be broken down. 100% completion is required before they will be considered for payment.



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- c. Mobilization is included in the surface preparation allotment for items in 3 above.
4. Owner is entitled to impose a set-off or withholding against payment based on any of the following:
  - a. Third party claims, have been made or there is reasonable evidence indicating probable filing of claims against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or
  - b. Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from Workplace injuries, adjacent property damage, non-compliance with Laws and Regulations (Special Damages, see Article 18 below), and patent infringement or,
  - c. Damage caused by the Contractor to the Owner or to another Site approved Contractor or;
  - d. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other Work at or adjacent to the Site or;
  - e. an event that would constitute a default by Contractor and therefore justify a termination for cause or;
  - f. defective Work not remedied;
    - i. requiring correction or replacement including additional inspection costs
    - ii. requiring correction or replacement
    - iii. Owner has been required to correct defective Work or
    - iv. has accepted defective Work
  - g. persistent failure to carry out the Work in accordance with the Contract Documents.
  - h. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is contractually responsible or responsible for creating the condition;
  - i. the Contract Price has been reduced by Change Orders;
  - j. failure of the Contractor to make payments properly to subcontractors, or for labor, materials, or equipment or;
  - k. liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
  - l. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or Ready for Final Payment or;
  - m. reasonable evidence that the Work cannot be completed for the unpaid balance of the contract sum, or within the contract time or;
  - n. Contractor has failed to provide and maintain required bonds or insurance or;
  - o. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.
  - p. Owner has incurred extra charges or Engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to complete field observations that were determined to be failed;
  - q. other items entitling Owner to a Set-off against Payment
  - r. The Owner may also decline to make payment including an item previously approved for payment, because of subsequently discovered evidence or subsequent observations,

as may be necessary in their opinion to protect against loss by Set-off amount previously recommended.

5. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment agreed to by Owner and Contractor, if Contractor remedies the reasons for such action.
  - a. The reduction imposed shall be binding on Contractor unless Contractor duly submits a Change Proposal contesting the reduction.
  - b. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss.
6. Owner may decide against Set-off as a remedy, but in so doing, Owner does not waive any remaining remedies.
7. Neither the Owner nor the Engineer are under any requirements or obligations to notify the bonding company at project conclusion of Set-offs or other remedies chosen.
8. If the Owner/Engineer prepare an accounting Change Order at Project Conclusion it will be considered signed by Contractor, unless the Contractor files a Change Proposal within five days protesting the Set-off. If appeal is rejected, the Change Order will be considered signed unless further appeals per the appeals process are claimed.

**15.08 CORRECTION PERIOD**

- A. Within thirteen (13) months from the date of substantial completion, the structure will be inspected by the Owner and/or their representative.
- B. The inspection will be performed in accordance with the applicable portions of AWWA D-102-17 Standard for Painting Steel Water Storage Tanks and industry standards.
- C. The Owner will establish a date of inspection and may or may not notify the Contractor in advance. The Contractor's attendance will not be required.
- D. The Owner will select a third-party inspection firm (either Engineer or project representative) to document inspection.
- E. Any failed Work will be documented, and the Contractor will be notified of necessary repair (method and extent). The Owner reserves the right to require inspection of the repair Work and possibly a second warranty inspection, dependent on degree of failure.
- F. This warranty will automatically be extended until the tank is ice-free (if applicable) and the warranty inspection can be performed. The Contractor guarantees that the system is free from defects due to faulty materials or Workmanship and the Contractor shall make the necessary correction to correct these defects. If the amount of rework exceeds ten percent (10%) of a portion of the project, then the Owner reserves the right to have the warranty period extended one (1) year for the entire portion of the Work.
- G. Cost for one (1) year warranty inspection will be the responsibility of the Owner.
- H. Cost for a second warranty inspection and repair inspections will be the responsibility of the Contractor and guaranteed by Contractor's Performance and Maintenance Bond (see Article 6)
- I. The Owner retains all contractual remedies. The warranty shall not be considered an exclusive remedy.

- J. If the Owner conditionally accepts Work which was observed or found to be in noncompliance, then the Owner has the right to withhold from final payment an amount equal to the cost to redo the Work if it fails the subsequent Warranty Observation, as well as an additional amount for additional Engineering services.
- K. Contractor shall pay for additional expenses for RPR or Engineering or other Owner related expenses resulting from the failed Warranty. The Maintenance Bond shall remain in full effect, but Engineer will notify Contractor first. Failure to respond positively within two weeks will trigger notification and claim to bonding company.

**ARTICLE 16    SUSPENSION OF WORK AND TERMINATION**

**16.02 AND 16.03 TERMINATION for CAUSE AND FOR CONVENIENCE**

- A. The Owner may terminate the contract when the approved progress schedule is not met because of failure of the Contractor to exercise diligence and effectively perform all required work, or when the progress of the work is unacceptable to the owner.
- B. In the absence of a project Progress Schedule, the determination regarding the Contractor’s diligence will be based on the Engineer’s opinion, correspondence, and field reports.
- C. The Owner may terminate the contract when in the opinion of the Engineer the Non-conformance report(s) indicate the Contractor is unable or unwilling to complete the contract within the terms of the contract.

**ARTICLE 18    MISCELLANEOUS**

**18.02 LIMITATION OF DAMAGES**

- A. Contractor shall reimburse Owner (1) for any fines or penalties imposed on Owner as a direct result of the Contractor’s failure to attain Substantial Completion according to the Contract Times, and (2) for the actual costs reasonably incurred by Owner for Engineering, construction observation, inspection, and administrative services needed after the time specified in the Project Summary for Substantial Completion (as duly adjusted pursuant to the Contract), until the Work is substantially complete.
- B. After Contractor achieves Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times, Contractor shall reimburse Owner for the actual costs reasonably incurred by Owner for Engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Work to be completed and ready for final payment (as duly adjusted pursuant to the Contract), and if necessary to hire other Contractors to complete portions of the Work, until the Work is completed and ready for final payment.
- C. The special damages imposed in this paragraph are supplemental to any liquidated damages for delayed completion established in this Agreement.

**APPENDIX A**  
**NON-DISCRIMINATION CLAUSE FOR ALL CITY OF KALAMAZOO CONTRACTS**

The Contractor agrees to comply with the Federal Civil Rights Act of 1964 as amended; the Federal Civil Rights Act of 1991 as amended; the Americans With Disabilities Act of 1990 as amended; the Elliott-Larson Civil Rights Act, Act. No. 453, Public Act of 1976 as amended; the Michigan Handicappers Civil Rights Act, Act No. 220, Public Act of 1976 as amended, City Ordinance 1856 and all other applicable Federal and State laws. The Contractor agrees as follows:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, national origin, sex, age, height, weight, marital status, physical or mental disability, family status, sexual orientation or gender identity that is unrelated to the individual's ability to perform the duties of the particular job or position. Such action shall include, but not be limited to the following: employment, upgrading, demotion or transfer, recruitment advertising, layoff or termination; rates of pay or other forms of compensations; and selection for training, including apprenticeship.
2. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, national origin, sex, age, height, weight, marital status, physical or mental disability family status, sexual orientation or gender identity that is unrelated to the individual's ability to perform the duties of the particular job or position.
3. If requested by the City, the Contractor shall furnish information regarding practices, policies and programs and employment statistics for the Contractor and subcontractors. The Contractor and subcontractors shall permit access to all books, records and accounts regarding employment practices by agents and representatives of the City duly charged with investigative duties to assure compliance with this clause.
4. Breach of the covenants herein may be regarded as a material breach of the contract or purchasing agreement as provided in the Elliott-Larsen Civil Rights Act and City Ordinance 1856.
5. The Contractor will include or incorporate by reference the provisions of the foregoing paragraphs 1 through 4 in every subcontract or purchase order unless exempted by the rules, regulations or orders of the Michigan Civil Rights Commission\* and will provide in every subcontract or purchase order that said provision will be binding upon each subcontractor or seller.
6. The Contractor will not preclude a person with a criminal conviction from being considered for employment unless otherwise precluded by federal or state law. (for contracts over \$25,000)

The Elliott-Larson Civil Rights Act, Sec. 202 of Act. No. 453 of 1976 reads in part as follows:

Sec. 202. (1) An employer shall not:

- (a) Fail or refuse to hire, or recruit, or discharge or otherwise discriminate against an individual with respect to employment, compensation, or a term condition or privilege of employment because of religion, race, color, national origin, age, sex, height, weight or marital status.
- (b) Limit, segregate or classify an employee or applicant for employment in a way which deprives or tends to deprive the employee or applicant of an employment opportunity or otherwise adversely affects the status of an employee or applicant because of religion, race, color, national origin, age, sex, height, weight or marital status.
- (c) Segregate, classify or otherwise discriminate against a person on the basis of sex with respect to a term, condition or privilege of employment, including a benefit plan or system.

\* Except for contracts entered into with parties employing less than three employees.

## APPENDIX B - PREVAILING WAGES

Prevailing wages are applicable to this contract; therefore, rates will apply as follows:

- (XX) Project is funded by City of Kalamazoo monies and is estimated to be in excess of \$100,000.00. The applicable prevailing wage rates are attached.

Specifications for projects in which the City of Kalamazoo is party for construction, alterations and/or repair including painting and decorating of public buildings or public works in or for the City of Kalamazoo and which requires or involves the employment of mechanics and/or laborers shall contain the following provisions stating the minimum wages to be paid the various classes of laborers and mechanics for the project. Prevailing wage rates determined by the U.S. Department of Labor under Davis Bacon and related acts will be used for City of Kalamazoo construction projects.

By the incorporation of prevailing wage rates within this specification, the City of Kalamazoo stipulates that:

- ✓ Contractor or his/her subcontractor shall pay all mechanics and laborers employed directly upon the site of the work, unconditionally and not less than once a week and without subsequent deduction or rebate on any account the full amount, accrued at the time of payment, computed at wage rates as incorporated herein regardless of any contractual relationship which may be alleged to exist between the contractor or subcontractor and such laborers and mechanics;
- ✓ The scale of wages to be paid shall be posted by the contractor in a prominent and easily accessible place at the site of the work;
- ✓ The Prime Contractor and all subcontractors shall submit weekly certified payrolls documenting the hours worked and wages paid by work classification. **NOTE: Contactor shall not include Social Security numbers of employees on certified payrolls.**
- ✓ There may be withheld from the contractor's accrued payments the amount considered necessary by the City's Contracting Official to pay to laborers and mechanics employed by the contractor or any subcontractor on the work for the difference between the rates of wages required by the contract and the rates of wages received by such laborers and mechanics except those amounts properly deducted or refunded pursuant to the terms of the Davis-Bacon Act (USC, Title 40, Sec. 276a) and interpretations thereof.

**Special Note:** The City's requirements as it relates to prevailing wages **includes a meeting with the City's Purchasing Agent prior to starting work and the submission of weekly certified payrolls by prime contractors and all subcontractors.** The City will monitor certified payrolls, work progress, and conduct interviews with the mechanics and labors employed directly upon the site during the duration of the contract Please contact the Purchasing Department at (269) 337-8020 if you have any questions regarding prevailing wage provision.

The overtime pay to which a laborer or mechanic is entitled under this contract shall be that overtime pay to which he/she is entitled by any agreement made with the contractor or subcontractor or by any applicable provision of law; but in no event shall such amount be less than the prevailing wage in the Kalamazoo community for such overtime.

Revised 4-08



***PREVAILING WAGES***

**PARCHMENT  
WATER STORAGE TANK PAINTING**

**Bid Reference #: 90900-019.0**

**March 2024**

"General Decision Number: MI20240061 01/05/2024

Superseded General Decision Number: MI20230061

State: Michigan

Construction Type: Heavy

County: Kalamazoo County in Michigan.

Heavy, Includes Water, Sewer Lines and Excavation (Excludes Hazardous Waste Removal; Coal, Oil, Gas, Duct and other similar Pipeline Construction)

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

<p>If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:</p>	<ul style="list-style-type: none"> <li>. Executive Order 14026 generally applies to the contract.</li> <li>. The contractor must pay all covered workers at least \$17.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024.</li> </ul>
<p>If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:</p>	<ul style="list-style-type: none"> <li>. Executive Order 13658 generally applies to the contract.</li> <li>. The contractor must pay all covered workers at least \$12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2024.</li> </ul>

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number      Publication Date  
 0                              01/05/2024

CARP0525-006 06/01/2023

	Rates	Fringes
CARPENTER, Includes Form Work....	\$ 28.29	21.42

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ELEC0131-006 06/01/2023

	Rates	Fringes
ELECTRICIAN.....	\$ 38.29	19.47

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ENGI0325-009 09/01/2023

POWER EQUIPMENT OPERATORS: Underground Construction (Including Sewer)

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1.....	\$ 39.27	25.25
GROUP 2.....	\$ 34.38	25.25
GROUP 3.....	\$ 33.88	25.25
GROUP 4.....	\$ 33.60	25.25

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Backhoe/ Excavator, Boring Machine, Bulldozer, Crane, Grader/ Blade, Loader, Roller, Scraper, Trencher (over 8 ft. digging capacity)

GROUP 2: Trencher (8-ft digging capacity and smaller)

GROUP 3: Boom Truck (non-swinging, non- powered type boom)

GROUP 4: Broom/ Sweeper, Fork Truck, Tractor, Bobcat/ Skid Steer /Skid Loader

-----  
ENGI0326-025 06/01/2023

EXCLUDES UNDERGROUND CONSTRUCTION

	Rates	Fringes
OPERATOR: Power Equipment		
GROUP 1.....	\$ 45.48	25.25
GROUP 2.....	\$ 42.18	25.25
GROUP 3.....	\$ 39.53	25.25
GROUP 4.....	\$ 37.82	25.25
GROUP 5.....	\$ 37.82	25.25
GROUP 6.....	\$ 31.96	25.25
GROUP 7.....	\$ 29.48	25.25

PAID HOLIDAYS: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Crane operator with main boom and jib 400', 300', or 220' or longer.

GROUP 2: Crane operator with main boom and jib 140' or



longer, tower crane, gantry crane, whirley derrick

GROUP 3: Backhoe/Excavator; Boring Machine; Bulldozer; Crane; Grader/Blade; Loader; Roller; Scraper; Tractor; Trencher

GROUP 4: Bobcat/Skid Loader; Broom/Sweeper; Fork Truck (over 20' lift)

GROUP 5: Boom truck (non-swinging)

GROUP 6: Fork Truck (20' lift and under for masonry work)

GROUP 7: Oiler

FOOTNOTES:

Crane operator with main boom and jib 300' or longer: \$1.50 per hour above the group 1 rate.

Crane operator with main boom and jib 400' or longer: \$3.00 per hour above the group 1 rate.

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IRON0025-011 06/01/2023

	Rates	Fringes
IRONWORKER (REINFORCING).....	\$ 31.43	34.77
IRONWORKER (STRUCTURAL).....	\$ 34.85	38.44

-----  
LAB00334-011 09/01/2022

SCOPE OF WORK:

OPEN CUT CONSTRUCTION: Excavation of earth and sewer, utilities, and improvements, including underground piping/conduit (including inspection, cleaning, restoration, and relining)

	Rates	Fringes
LABORER		
(1) Common or General.....	\$ 22.42	12.95
(2) Mason Tender- Cement/Concrete.....	\$ 22.55	12.95
(4) Grade Checker.....	\$ 22.73	12.95
(5) Pipelayer.....	\$ 22.85	12.95

-----  
LAB00355-010 06/01/2022

EXCLUDES OPEN CUT CONSTRUCTION

	Rates	Fringes
LABORER		
Common or General; Grade Checker; Mason Tender - Cement/Concrete.....	\$ 26.70	12.95
Pipelayer.....	\$ 20.34	12.85

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PAIN0312-014 06/12/2014

	Rates	Fringes
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PAINTER

Brush & Roller.....	\$ 21.75	11.94
Spray.....	\$ 22.75	11.94

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PLAS0016-020 04/01/2014

Rates Fringes

CEMENT MASON/CONCRETE FINISHER...	\$ 22.31	12.83
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PLUM0333-026 06/01/2022

Fort Custer

Rates Fringes

PLUMBER.....	\$ 42.29	23.94
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PLUM0357-012 07/01/2020

Excluding Fort Custer

Rates Fringes

PLUMBER.....	\$ 35.20	22.35
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TEAM0007-011 06/01/2023

Rates Fringes

TRUCK DRIVER

Lowboy/Semi-Trailer Truck...	\$ 31.55	.75 + a+b
Tractor Haul Truck.....	\$ 31.30	.75 + a+b

FOOTNOTE:

- a. \$470.70 per week.
- b. \$68.70 daily.

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SUMI2010-059 11/09/2010

Rates Fringes

LABORER: Landscape.....	\$ 12.25 **	0.00
TRUCK DRIVER: Dump Truck.....	\$ 18.00	6.43
TRUCK DRIVER: Off the Road Truck.....	\$ 20.82	3.69

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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\*\* Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$17.20) or 13658 (\$12.90). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave

for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

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The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

#### Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

#### Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates

the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

#### Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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#### WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"



*Technical Specifications*

**PARCHMENT  
WATER STORAGE TANK PAINTING**

**Bid Reference #: 90900-019.0**

**March 2024**

# SUBMITTAL CHECKLIST

**PROJECT: Kalamazoo 200,000 Gallon Spheroid (Parchment) Rehabilitation**

**CONTRACTOR:** \_\_\_\_\_

**DIXON PROJECT MANAGER:** \_\_\_\_\_

Specification Section	Title	Date Received	Date Reviewed	Accepted	Reviewed with comments	Rejected
General Conditions	Progress Schedule					
<b>Maintenance of Cast-in Place Concrete</b>						
03 01 30	SDS and PDS - Bonding Agents					
03 01 30	SDS and PDS - Patching Mortar					
03 01 30	Concrete Maintenance Specialist name and (3) references					
<b>Miscellaneous Cast-in Place Concrete- splash pad</b>						
03 30 53	SDS and PDS - Concrete materials					
03 30 53	PDS -Grating					
03 30 53	Design Mixtures					
03 30 53	Concrete Maintenance Specialist name and (3) references					
<b>Metal Repairs</b>						
05 00 00	PDS and SDS - Welding Rod					
05 00 00	Welder's Certification					
05 00 00	Expansion Joint Replacement - Temporary Pipe Support Plan					
05 00 00	PDS - Roof Hatch Gasket, PDS and SDS - adhesive					
05 00 00	PDS - Corporation Stop					
05 00 00	PDS - Expansion Joint and gaskets					
05 00 00	PDS - Mud Valve and Discharge Hose					
05 00 00	PDS - Check valve for Condensate Drain Line					
05 00 00	PDS - Overflow Screen					
05 00 00	PDS - Fall Prevention Device					
05 00 00	PDS - Vent Screen					
05 00 00	PDS - Neoprene Sheeting and banding clamps for Access Tube Air Gap Covers					
05 00 00	SDS - Joint Compound for threaded fittings					
05 00 00	PDS - Overflow Duckbill Check Valve					
<b>Steel Coating</b>						
09 97 13	OSHA Safety and Health Program					
09 97 13	OSHA Safety certifications for site personnel					
09 97 13	Designated OSHA Competent Person					
09 97 13	Fall Prevention Plan					
09 97 13	Site Specific Fall Prevention Plan					
09 97 13	Certifications for spiders, scaffolding, stages, etc.					
09 97 13	SDS and PDS - Coatings, Thinners, Coating Additives, and Caulking					
09 97 13	SDS and PDS - Cleaners and Degreasers					
09 97 13	SDS and PDS - Chlorine					

# SUBMITTAL CHECKLIST

**PROJECT: Kalamazoo 200,000 Gallon Spheroid (Parchment) Rehabilitation**

**CONTRACTOR:** \_\_\_\_\_

**DIXON PROJECT MANAGER:** \_\_\_\_\_

Specification Section	Title	Date Received	Date Reviewed	Accepted	Reviewed with comments	Rejected
09 97 13	SDS and PDS - Abrasives, additives and pretreatments					
<b>Ventilation</b>						
11 00 00	PDS - Ventilation Materials					
<b>Flow Meter</b>						
12 00 00	PDS - Flow Meter Materials					
<b>Electric Work</b>						
16 05 02	Electrician Certifications or Electrical Sub-Contractor Name					
16 05 02	PDS and SDS - Light Bulbs					
<b>Impressed Current Cathodic Protection</b>						
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## **SECTION 00 91 18**

### **DEFINITIONS for TECHNICAL SPECIFICATIONS**

#### **PART 1 – GENERAL**

##### **1.01 DEFINITIONS FOR TECHNICAL SPECIFICATIONS**

- A. **Wet Interior:** Internal surfaces, excluding inaccessible areas, to the roof, shell, bottom, accessories, and appurtenances that are exposed to the stored water or its vapor. Examples are the interior of the roof, sidewall, bowl, and exterior of the access tube within the tank.
- B. **Dry Interior:** Surfaces of the finished structure, excluding inaccessible areas, that are not exposed to the elemental atmosphere or the stored water or its vapor. Examples are the interior of the access tube, interior of the riser, and underside of the bowl above the riser.
- C. **Exterior:** External surfaces, excluding inaccessible areas, of the roof, sidewall, riser, accessories, and appurtenances that are exposed to the elemental atmosphere.
- D. **Inaccessible Areas:** Areas of the finished structure that, by virtue of the configuration of the completed structure, cannot be accessed to perform surface preparation or coating application (with or without the use of scaffolding, rigging, or staging). Inaccessible areas include such areas as the contact surfaces of roof plate lap joints, underside of roof plates where they cross supporting members, top surface of rafters directly supporting roof plates, contact surfaces of bolted connections, underside of column baseplates, contact surfaces of mating parts not intended to be removed or disassembled during routine operation or maintenance of the structure and inside of risers less than a nominal 36 in. diameter.
- E. **Sidewall:** Vertical walls to the weld seam of the roof.
- F. **Access Tube:** Cylindrical tube extending from top of the riser to the roof through the tank including all steel appurtenances (i.e., ladder, overflow pipe, brackets, etc.). There may be a transition cone that connects the bowl to the access tube
- G. **Condensate Platform:** Platform that covers entire area of the dry riser and used to collect and stop condensation from entering the basebell.
- H. **Top Platform:** Landing area directly under tank's access tube.
- I. **Basebell:** Conic surface that starts at the ground that supports the riser.
- J. **Roof:** Very top of the structure, including top seam of sidewall.
- K. **Bottom:** Lower area of the tank proper shaped like a bowl.
- L. **Riser:** Center support between the basebell and bowl.

**SECTION 00 91 19.01**  
**SCHEDULING FOR RPR SERVICES**

**PART 1 – COMMUNICATION**

**1.01 RESIDENT PROJECT REPRESENTATIVE (RPR) SERVICES**

- A. DIXON provides three types of RPR services or any combination of the three:
1. Hold Point Site Visits (sometimes called Critical Phase Visits) where RPR Services are for defined Hold Point, where Work stops until that portion of Work is reviewed on Site by a professional RPR.
  2. Full Time RPR is a professional RPR staying in lodging away from home and living on per diem expenses.
  3. Daily RPR is a professional RPR living at home and traveling to Site on a daily basis.
  4. Based on the type of Project the RPR services may change from Daily or Full Time to Hold Point or from Hold Point to Daily or Full Time.
  5. Intended Beneficiary: The onsite observation services for this Project are for the benefit of the Owner. There are no intended benefits to the Contractor, or any other third parties. Contractor still provides quality control (QC).

**1.02 HOLD POINT OBSERVATIONS AND MEETINGS**

- A. Each Hold Point requires an onsite visit for Observation. Example: If the Contractor coats over, or otherwise makes Work inaccessible for Observation, the Work will be considered failed. Remove Work and recoat or repair in accordance with this specification. At least two (2) new Hold Points, surface preparation and coating, may be created when Work fails after the primer has been applied.
- B. Stop Work and schedule Observation times for the following Hold Points as a minimum. Additional Hold Points may be determined at the Preconstruction Meeting. Each Hold Point requires a Site visit and observation. Schedule of Hold Points – Preliminary:
1. Hold Point Meeting: The Preconstruction Meeting is the initial Hold Point. The Preconstruction Meeting will not be scheduled until five (5) days after all required submittals are received and reviewed by the Engineer and no exceptions are taken to the shop drawings.
  2. Hold Point - Prior to draining tank:
    - a. To ensure all Section of 01 50 00 and 01 53 43 environmental requirements are met.
    - b. To ensure blasting equipment are on-site and in working order.
  3. Hold Points – 03 01 30 Maintenance of Cast-in-place Concrete and 03 30 53 Miscellaneous Cast-in-place Concrete.
    - a. To locate or quantify repairs as necessary.

- b. To review surface preparation prior to concrete or grout installation and review all products prior to installation.
- c. After concrete or grout application is complete for quality assurance.
- 4. Hold Points – Section 05 00 00 – Metal Repairs:
  - a. To locate or quantify repairs as necessary.
  - b. To review surface preparation prior to welding and review all products prior to installation.
  - c. After welding is complete for quality assurance.
- 5. Hold Points – Sections 09 97 13 – Steel Coating and 09 97 13.10 Steel Coating Surface Preparation:
  - a. Prior to surface preparation to set the standard.
  - b. Prior to primer application to verify cleanliness, profile, thoroughness, and ambient conditions for coating application.
  - c. Prior to application of each successive coat for quality assurance and ambient conditions for the next coat.
  - d. Prior to application of the final coat to verify all non-conformance issues have been resolved.
  - e. Scheduled pre-final Observation: Allow engineer access to all locations so a complete punch list can be prepared. Final coat on ladders or other access points can be delayed until after this Observation and included as a punch list item.
  - f. Scheduled final Observation: After ALL punch list items have been completed (including painting ladders), provide access to all items on the punch list.

**1.03 SCHEDULING FOR RPR SERVICES FOR HOLD POINT OBSERVATIONS**

- A. Prior to First Observation 48 hours advance Notice is required
- B. All Subsequent Hold Points are to be scheduled by 6:00 P.M (Eastern Time) the previous day.
  - 1. Scheduling with a Central Contract Administrator. Names and phone numbers of a Contract Administrator and a Second Contract Administrator will be given to the Contractor during the Preconstruction Meeting.
- C. The Contract Administrator may be contacted by cell phone. If no answer a voice mail may be left with all details of RPR request included, or
- D. The Contract Administrator may be contacted by text to their cell phone.
- E. If the Contract Administrator is not available, DIXON’s Corporate Office may be contacted during regular working hours at 1-800-327-1578.
- F. Scheduling through a Project Manager is not an alternative.
- G. Scheduling through an RPR is not an alternative for Hold Point Observation.

#### **1.04 SCHEDULING FOR RPR SERVICES FOR FULL TIME OR DAILY OBSERVATIONS**

##### **A. Productive Work**

1. Do not start, continue, or complete any Productive Work if RPR is not present on the Project Site.
2. Productive Work includes, but is not limited to, all elements of abrasive blast cleaning, power washing, high pressure water jetting or high/low pressure water cleaning, power tool cleaning, rigging, painting, metal repairs, concrete repairs, punch list items, and clean-up.
3. Preparation, mobilization, containment erection, and other non-productive work does not require observation if completed before the structure is removed from service, nor does demobilization after tank is returned to service.
4. If containment erection is completed while other productive work progresses, then a RPR is required.
5. If welding is completed for contracted work (antenna rails, painter's rails, ladders, etc.) during containment erection welding, then contracted work is considered Productive Work and an RPR is to be present. Any spot painting during containment erection is also considered Productive Work.
6. After the Project has been completed and after all punch list items have been completed, cure time and site clean-up, excluding any waste coating or abrasive issues, are not considered Productive Work.
7. After the Project has been completed, complaints from Owner or neighbors concerning health, environmental, or damage issues, and any waste coating or waste abrasive issues, are considered Productive Work requiring a RPR even after the structure is returned to service.
8. Essentially all work completed between the out-of-service date and the Substantial Completion Date, excluding cure and disinfection, is considered Productive Work and requires the presence of a RPR.

#### **1.05 SCHEDULING WITH A CENTRAL CONTRACT ADMINISTRATOR**

- A. The Contract Administrator may be contacted by cell phone. If no answer, a voice mail may be left with all details of RPR request included, or
- B. The Contract Administrator may be contacted by text to their cell phone.
- C. If the Contract Administrator is not available, DIXON's Corporate Office may be contacted during regular working hours at 1-800-327-1578.
- D. Scheduling through a Project Manager is not an alternative.

#### **1.06 SCHEDULING THROUGH ONSITE RPR**

- A. Scheduling through an on-site RPR, completing Full Time or Daily RPR Services, may be considered a properly completed Request if completed by the Foreman and

RPR before leaving site. If not completed on site, then schedule through the Central Contract Administrator.

### **1.07 SUMMARY OF SCHEDULING HOLD POINT OBSERVATIONS**

- A. Contract Administrator
  - 1. by phone
  - 2. by text
  - 3. by voice mail
- B. Second Contract Administrator
  - 1. by phone
  - 2. by text
  - 3. by voice mail
- C. Corporate Office during work hours
  - 1. by phone
  - 2. NO voicemail
- D. Do NOT contact Project Manager

### **1.08 SUMMARY OF SCHEDULING FOR FULL TIME OR DAILY OBSERVATIONS**

- A. Contract Administrator
  - 1. by phone
  - 2. by text
  - 3. by voice mail
- B. Second Contract Administrator
  - 1. by phone
  - 2. by text
  - 3. by voice mail
- C. Corporate Office during work hours
  - 1. by phone
  - 2. NO voicemail
- D. RPR on site
- E. Do NOT contact Project Manager

### **1.09 CONTRACTOR'S RESPONSIBILITIES**

- A. The Engineer and Owner are to have full access to the Site at reasonable times for their Observation, testing, and Contractor's personnel and equipment is to be available to the Owner and Engineer/RPR to expedite Observations. Provide Owner, Engineer/RPR proper and safe conditions for such access, including rigging, and advise them of Contractor's site safety procedures and programs so that they may comply as applicable.
- B. Contractor is responsible for all of Contractor's manpower needs and scheduling and work to be completed. RPR is to be available to expedite the Project and complete

- their services with minimal interference of the Contractor's Work. Successful Project completion is dependent on Contractor's proper scheduling and use of RPR services.
- C. The Contractor is financially responsible for efficient scheduling of RPR services, See Section 00 91 19.02.

#### **1.10 DELAY IN ARRIVAL OF RPR**

- A. RPRs for Hold Point, Full-Time or Daily observations may be delayed by traffic or other reason from arriving at the scheduled time. The Contractor is to contact the Contract Administrator immediately if the RPR has not arrived at the scheduled time.
- B. The Contract Administrator will locate the missing RPR, return to the Contractor with a revised arrival time, and discuss with Contractor what other work can be completed until RPR arrives for Observation.

#### **1.11 REJECTED DEFECTIVE WORK**

- A. All Productive Work completed without an RPR present is to be considered Defective Work and rejected per the General Conditions. This includes work completed:
1. Without proper scheduling an RPR
  2. Prior to the scheduled arrival of the RPR
  3. When Day has been scheduled as a No Workday
  4. When RPR is delayed, and Contract Administrator has not been notified.

#### **1.12 NON-CONFORMANCE REPORTS (NCR)**

- A. The RPR will issue a Non-Conformance Report for every performance item, material, or equipment supplied, and/or environmental situation that fails to meet the requirements of the specifications.
- B. All Work in non-conformance will be considered Defective Work to be replaced, repaired per terms of the General Conditions.
- C. Do not start Work until all required equipment and RPR are on-site.
- D. Immediately correct all environmental non-conformance to prevent an accident. If an incident has already occurred, contact the proper governmental environmental agency, and conduct an immediate clean-up per their direction.
- E. If the Nonconformance Report is issued because of equipment specified but not delivered, repaired, or replaced then the financial Set-off will be 140% \* of the rental value of equipment in non-conformance (i.e., non-working decontamination trailer, hand wash facilities, are filtration units, etc.).
- F. If the Nonconformance Report issued is because of noncompliance with environmental equipment or practices, the Set-off will be 140%\* of the estimated cost of compliance.

\*The costs of items E and F above are damage estimates. The cost of equipment will be the rental charge from a reputable local dealer with 40% extra being for operation cost. Cost of environmental compliance is the estimated cost of compliance. The



extra 40% is potential risk to the Owner for non-conformance. In no situation will the Owner assume liability.

- G. All additional Engineering/RPR expenses incurred because of a Non-Conformance Report is subject to Set-off by Owner.

## **SECTION 00 91 19 .02**

### **CONTRACTOR'S FINANCIAL RESPONSIBILITY FOR RPR**

#### **PART 1 - PROGRESS SCHEDULE and RPR SCHEDULE**

##### **1.01 GENERAL**

- A. The Contractor is financially responsible for the proper and efficient use of RPR services.

##### **1.02 HOLD POINTS AND RPR SERVICES**

- A. Fees for Hold Point RPR Services are contracted with the Owner at a Unit Price and are calculated to include the following: travel time to and from Site, reimbursable expenses, observation and report time. Time required for Contractor to repair or redo small areas that failed Observation, are not included in the unit price. Failure may be minimal compared to all Work observed, but failed Work still must be observed before proceeding. For minor failures that can be quickly repaired, the Contractor may entirely at their option:
  - 1. Accept a Non-Conformance for failed Observation.
  - 2. Request the RPR wait for a reasonable period while repairs are completed.
  - 3. Proceed with the next phase for all areas which have not failed, and “work around” failed areas. The failed areas would then be observed at the next Hold Point.
- B. The Fee for extended onsite time, or a new Hold Point is the responsibility of the Contractor.

##### **1.03.1 FULL TIME OR DAILY RPR SERVICES**

- A. It is the intention of the Owner, that the RPR fees be used to observe Productive Work. Productive Work is defined in previous Section 00 91 19 .01 Scheduling for RPR Services, with examples. The Owner will pay for all RPR service fees generated observing Productive Work that meets specification requirements. Normally this will be the first time for most observations.
- B. The Contractor will pay all RPR and/or Engineer fees generated by failed Observations of Productive Work.
- C. The availability of RPR and RPR's ability to timely perform the required Services are dependent on Contractor's communication. RPR is to be available to meet the Progress Schedule demands and complete RPR services with minimal interference of the Contractor's Work, if Contractor properly scheduled RPR Services.

##### **1.03.2 FULL TIME OR DAILY RPR SERVICES**

- A. Contractor Pays for RPR or Engineering Services resulting from:
  - 1. Productive Work on a Holiday

2. Failed or Improper Scheduling,
3. Failure to Request Observation per Section 00 91 19 .01,
4. Less than 8 hours per day or On-call Time as a result of:
  - a. Premature Request for RPR Services,
  - b. No show or late start,
  - c. Rejection of Work and/or Non-Conformance reports,
  - d. Equipment failure, insufficient manpower, materials, or equipment
  - e. Weather reasons per 1.04.B.03

**1.03 RPR FEE CALCULATIONS FOR FAILED OBSERVATIONS**

- A. The basis for Fees assessed to Contractor is based on the Owner/DIXON contract. Fees will be calculated in the same manner as in the Owner/Engineer Agreement, i.e., if the RPR is working at an overtime rate for Owner, then fee for unproductive services will be documented at the same rate.
1. Hold Point for Welding or Coating Observation, or extra Progress Meetings
    - a. The same Unit Price Fee as would be charged to Owner for each respective Observation or meeting. Note the fee will be determined by the Contract and may vary between types of Hold Point services.
    - b. Extended time at site charged at Regular Rate (See definition below)
  2. Daily Observation is to be the same fee as charged to Owner from the Owner/DIXON contract.
    - a. Minimum workday is 8 hours plus travel time
    - b. reimbursable mileage
  3. Full-time Observation Fee is to be the same as charged to Owner for the same Service.
    - a. Minimum workday is 8 hours
    - b. Minimum work week is 40 hours
    - c. Reimbursable expenses/ Per Diem
  4. Fees common to Full Time, Daily and Hold Points with extended stays, and On-call Time
    - a. Regular Pay for RPR is charged at the rate matching the RPR's experience and qualifications.
    - b. Overtime Rate is 1.5 times Regular Rate
      - 1) For all time worked on the actual holiday
      - 2) Weekend work by RPR
      - 3) For time over 40 hours. (The standard work week for overtime (over 40) begins on Monday as Sunday is already paid at overtime rate.)
- B. Fees of misused or unnecessary Engineer/RPR Services will be documented and submitted to the Owner for Set-off.

- C. The right to Set-off is a contracted right of Owner per the General Conditions, or Additions to General Conditions, and the right to enforce those rights are at the Owner's discretion.

#### **1.04 ON-CALL TIME**

- A. RPR's are professional personnel that get paid a minimum of 8 hours per day even though the Contractor's operations or methods results in less than an 8-hour day.
- B. If the Contractor has scheduled a Workday, and if RPR is not free to spend the day at RPR's discretion or to be reassigned; then the RPR will be considered On-call.
  - 1. The RPR will be considered, if scheduled, On-call every morning and day unless work is cancelled per Section 00 19 91.01.
  - 2. For Daily observation the On-call time will not exceed 8 hours, any travel time should occur within those 8 hours.
    - a. Late Starts - Agreed start time will be scheduled with the Contract Administrator at the Preconstruction Meeting.
    - b. The RPR's On-call time starts at the agreed start time, if RPR is on Site and available to Work, and On-call time continues until Work starts.
  - 3. For weather reasons
    - a. 8 hours if adverse weather conditions were clearly forecast
    - b. Two hours plus time worked up to 8 hours or actual time worked if greater, if forecast was less than 20% weather meeting definition of a weather day.
  - 4. For reasons other than weather, eight (8) hours will be considered the minimum On-call Time. This includes, but is not limited to, equipment failure, insufficient materials, damaged containment, etc.
- C. The actual charged On-call time will be eight (8) hours, minus the number of hours actually worked.
- D. Overtime, Weekend, Holiday pay requirements apply to all On-call time pay. On-call hours will count towards forty (40) hour week triggering overtime at forty (40) hours.
- E. If Work is cancelled per requirements in Section 00 19 91.01 (by prior night) in advance and RPR is notified in advance, there is no On-call time.
- F. If Contractor schedules days off per Scheduling requirements, the inspector will return to his/her home base and there will be no show time charges. Based on the Contract the RPR may be entitled to Mobilization or Demobilization.

## **SECTION 01 50 00**

### **TEMPORARY CONSTRUCTION FACILITIES and UTILITIES**

#### **PART 1 - GENERAL**

##### **1.01 SUMMARY**

- A. The Contractor is fully responsible to provide and maintain temporary facilities and utilities required for construction as described herein, and to remove the same upon completion of work.

##### **1.02 QUALITY ASSURANCE**

- A. Regulatory Requirements:
  - 1. National Fire Protection Association (NFPA): NFPA No.70-93
  - 2. National Electrical Code (NEC) and local amendments thereto.
  - 3. Comply with all federal, state, and local codes and regulations, and utility company requirements.

#### **PART 2 - PRODUCTS**

##### **2.01 TEMPORARY ELECTRICITY and LIGHTING**

- A. Supply temporary lighting sufficient to enable Contractor to safely access all work areas.
- B. Electrical requirements more than the capacity of existing electrical service is to be responsibility of Contractor.
- C. Provide, maintain, and remove temporary electric service facilities.
- D. Facilities exposed to weather is to be weatherproof-type and electrical equipment enclosure locked to prevent access by unauthorized personnel.
- E. Contractor is to pay for and arrange for the installation of temporary services.
- F. Patch affected surfaces and structures after temporary services have been removed.
- G. Provide explosion proof lamps, wiring, switches, sockets, and similar equipment required for temporary lighting and small power tools.

##### **2.02 WATER for CONSTRUCTION**

- A. Owner will provide water required for cleaning and other purposes.
- B. Water use is not to exceed usage that might endanger the Owner's water system's integrity.

##### **2.03 SANITARY FACILITIES**

- A. Provide temporary sanitary toilet facilities conforming to state and local health and sanitation regulations, in sufficient number for use by Contractor's employees.

- B. Maintain in sanitary condition and properly supply with toilet paper.
- C. Remove from site before final acceptance of work.

#### **2.04 TEMPORARY FIRE PROTECTION**

- A. Provide and maintain in working order a minimum of two fire extinguishers and such other fire protective equipment and devices as would be reasonably effective in extinguishing fires.

#### **2.05 DAMAGE to EXISTING PROPERTY**

- A. Contractor is responsible for replacing or repairing damage to existing buildings, sidewalks, roads, parking lot surfacing, and other existing assets.
- B. Owner has the option of contracting for such work and having cost deducted from contract amount if the Contractor is not qualified to complete repairs or fails to act in a timely manner.

#### **2.06 SECURITY**

- A. Security is not provided by Owner.
- B. Contractor is to be responsible for loss or injury to persons or property where work is involved and is to provide security and take precautionary measures to protect Contractor's and Owner's interests.

#### **2.07 TEMPORARY PARKING**

- A. Parking for equipment and Contractor employees are to be designated and approved by Owner.
- B. Make parking arrangements for employees' vehicles.
- C. Any costs involved in obtaining parking area is to be borne by Contractor.

### **PART 3 - EXECUTION**

#### **3.01 GENERAL**

- A. Maintain and operate systems to ensure continuous service.
- B. Modify and extend systems as work progress requires.

#### **3.02 REMOVAL**

- A. Completely remove temporary materials and equipment when no longer required.
- B. Clean and repair damage caused by temporary installation or use of temporary facilities.
- C. Restore existing or permanent facilities used for temporary service to specified or original condition.

### **3.03 BARRIERS and ENCLOSURES**

- A. The Contractor is to furnish, install, and maintain as long as necessary, required adequate barriers, warning signs or lights at all dangerous points throughout the work for protection of property, workers, and the public. The Contractor is to hold the Owner harmless from damage or claims arising out of any injury or damage that may be sustained by any person or persons as a result of the work under the Contract.
- B. Fence removal and re-installation that is necessary to complete the work shall be incidental to the Project. Site shall be secured with temporary fencing and/or barricades while the existing fencing is displaced.

**SECTION 01 53 43**  
**PROTECTION of ENVIRONMENT**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. Contractor in executing work is to maintain work areas, on-and-off site in accordance with federal, state, or local regulations.
- B. The Contractor is responsible for any, and all clean-up of any hazardous waste that may be necessary, including all applicable costs for clean-up and disposal.

**1.02 LAWS and REGULATIONS**

- A. Environmental regulations may be met with different available technologies. It is the Contractor's sole responsibility to comply with these and all applicable environmental regulations.
- B. If a release occurs work will stop until corrective actions are complete as determined by the appropriate regulatory agency.

**1.03 PROTECTION of SEWERS**

- A. Take adequate measures to prevent impairment of operation of existing sewer system. Prevent construction material, pavement, concrete, earth, or other debris from entering sewer or sewer structure.

**1.04 PROTECTION of WATERWAYS**

- A. Observe rules and regulations of local and state agencies, and agencies of U.S. government prohibiting pollution of any lake, stream, river, or wetland by dumping of refuse, rubbish, dredge material, or debris therein.
- B. Provide containment that will divert flows, including storm flows and flows created by construction activity, to prevent loss of residues and excessive silting of waterways or flooding damage to property.
- C. Comply with procedures outlined in U.S. EPA manuals entitled "Guidelines for Erosion and Sedimentation Control Planning and Implementation," Manual EPA-72-015 and "Processes, Procedures, and Methods to Control Pollution Resulting from all Construction Activity," Manual EPA 43019-73-007.

**1.05 DISPOSAL of EXCESS EXCAVATED and OTHER WASTE MATERIALS**

- A. Dispose of waste material in accordance with federal and state codes, and local zoning ordinances.



- B. Unacceptable disposal sites include, but are not limited to, sites within wetland or critical habitat, and sites where disposal will have detrimental effect on surface water or groundwater quality.
- C. Make arrangements for disposal, subject to submission of proof to Engineer that Owner(s) of proposed site(s) has valid fill permit issued by appropriate government agency and submission of haul route plan, including map of proposed route(s).
- D. Provide watertight conveyance for liquid, semi-liquid, or saturated solids that have potential to leak during transport. Liquid loss from transported materials is not permitted, whether being delivered to construction site or hauled away for disposal. Fluid materials hauled for disposal must be specifically acceptable at selected disposal site.

#### **1.06 PROTECTION of AIR QUALITY**

- A. Contain paint aerosols and VOCs by acceptable work practices.
- B. Minimize air pollution by requiring use of properly operating combustion emission control devices on construction vehicles and equipment used by Contractor and encouraging shutdown of motorized equipment not actually in use.
- C. Trash burning not permitted on construction site.
- D. If temporary heating devices are necessary for protection of work, they are not to cause air pollution.

#### **1.07 PROTECTION from FUEL and SOLVENTS**

- A. Protect the ground from spills of fuel, oils, petroleum distillates, or solvents by use of containment system.
- B. Total paint, thinner, oils, and fuel delivered to and stored on-site cannot exceed supplied capacity of spill containment provided (i.e., fuel and oil to be sized to exceed possible spill).
- C. Provide proper containment unit under fuel tank and oil reservoirs for all equipment and fuel storage tanks.
- D. Barrels of solvents, even for cleaning, are prohibited. Do not deliver paint thinners in containers greater than five (5) gallons.
- E. Disposal of waste fluids are to be in conformance with federal, state, and local laws and regulations.

#### **1.08 USE of CHEMICALS**

- A. Chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant, or of other classification, must show approval of U.S. EPA, U.S. Department of Agriculture, state, or any other applicable regulatory agency.

- B. Use of such chemicals and disposal of residues are to be in conformance with manufacturer's written instructions and applicable regulatory requirements.

### **1.09 NOISE CONTROL**

- A. Conduct operations to cause least annoyance to residents in vicinity of work and comply with applicable local ordinances.
- B. Equip compressors, hoists, and other apparatus with mechanical devices necessary to minimize noise and dust. Equip compressors with silencers on intake lines.
- C. Equip gasoline or oil-operated equipment with silencers or mufflers on intake and exhaust lines.
- D. Route vehicles carrying materials over such streets as will cause least annoyance to public and do not operate on public streets between hours of 6:00 P.M. and 7:00 A.M., or on Saturdays, Sundays, or legal holidays unless approved by Owner.

### **PART 2 - PRODUCTS**

(Not Applicable)

### **PART 3 - EXECUTION**

#### **3.01 HAZARDOUS MATERIALS PROJECT PROCEDURES**

- A. Applicable Regulations:
  - 1. RCRA, 1976 – Resource Conservation and Recovery Act: This federal statute regulates generation, transportation, treatment, storage, and disposal of hazardous wastes nationally.
  - 2. Act 64, 1979 – Michigan's Hazardous Waste Management Act: This statute regulates generation, transportation, treatment, storage, and disposal of hazardous wastes.
  - 3. Act 451, 1994 – Natural Resources and Environmental Protection Act: This statute regulates discharge of certain substances into the environment, regulates use of certain lands, waters and other natural resources.
  - 4. Act 641 as amended 1990 – Michigan's Solid Waste Act: This statute regulates generation, transportation, treatment, storage, and disposal of solid wastes.
- B. Use the Uniform Hazardous Waste Manifest (shipping paper) to use an off-site hazardous waste disposal facility.
- C. Federal, State and local laws and regulations may apply to the storage, handling and disposal of hazardous materials and wastes. The list below includes the regulations which are most frequently encountered:

<u>Topic</u>	<u>Agency and Telephone Number</u>
Small quantity hazardous waste management, including hazardous waste stored in tanks	Hazardous Waste Division, EGLE (517) 373-2730 in Lansing, or District Office Certified County Health Department
Hazard Communication Standards (for chemical in the workplace)	Occupational Health Division, Michigan Department of Consumer, and Industrial Services (517) 373-1410
Burning of waste oil and other discharges to the air	Air Quality Division, EGLE (517) 322-1333 in Lansing, or District Office
Local fire prevention regulations and codes (including chemical storage requirements)	Local fire chief or fire marshal

D. Department of Environment, Great Lakes, and Energy

Hazardous Waste Division  
Compliance Section District Offices

Kalamazoo District Office  
7953 Adobe Rd.  
Kalamazoo, MI 49009-5025  
(269) 567-3500  
(269) 567-3555 (fax)

**SECTION 03 01 30**  
**MAINTENANCE OF CAST-IN-PLACE CONCRETE**

**PART 1 – GENERAL**

**1.01 SECTION INCLUDES**

- A. Repair of deteriorated and damaged concrete.

**1.02 RELATED DOCUMENTS**

- A. General provisions of the Contract, including General and Supplementary Conditions apply to this Section.
- B. Section 03 30 53 “Miscellaneous Cast-in-Place Concrete”.

**1.03 REFERENCES**

- A. Codes, specifications, and standards referred to by number or title shall form a part of this specification to the extent required by the references thereto. The latest revisions shall apply in all cases.
  - 1. “Building Code Requirements for Structural Concrete (ACI 318) and Commentary (ACI 318R),” American Concrete Institute.

**1.04 DEFINITIONS**

- A. Concrete Maintenance Specialist: Company that is experienced with concrete repairs performed in accordance with ACI standards. Work can be performed by the General Contractor if qualified, see submittals for requirements.

**1.05 WORK INCLUDED**

- A. Repair foundation spalls.

**1.06 PREINSTALLATION MEETINGS**

- A. Preinstallation Conference: Conduct conference at Project site.
  - 1. Review methods and procedures related to concrete maintenance including, but not limited to, the following:
    - a. Verify concrete-maintenance specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
    - b. Materials, material application, sequencing, tolerances, and required clearances.
    - c. Quality-control program.
- B. Contractor shall notify engineer a minimum of twenty-four hours before placing concrete or grout repair material.

- C. Do not place any repair material until surface preparation has been reviewed and approved by engineer.

### **1.07 SUBMITTALS**

- A. Submit the following ten (10) days prior to the preconstruction meeting:
  - 1. Provide for employees one (1) copy of all data sheets at the job site for employee access.
  - 2. Provide an electronic copy to the Engineer.
  - 3. No work may commence without the complete filing. All SDS shall conform to the requirements of SARA (EPCRA) Right-to-Know Act.
  - 4. Safety Data Sheets (SDS) and Product Data Sheets:
    - a. Furnish from all suppliers Safety Data Sheets and product data sheets for all applicable materials including, but not limited to, concrete, grouts admixtures, sealers.
  - 5. Concrete-Maintenance Specialist: The Contractor is to indicate whether the work is to be performed by in-house personnel or subcontracted. In either case submit three (3) similar projects including the scope with references. References to include client organization names and contact names with phone numbers.

### **1.08 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Each manufacturer shall employ factory-authorized service representatives who are available for consultation and Project-site inspection and on-site assistance.
- B. Concrete Maintenance Specialist Qualifications: Installers and supervisors who are trained and approved by the manufacturer to apply materials necessary to perform work of this Section. Installers shall have completed work similar in material, design, and extent to that indicated for this Project with a record of successful in-service performance. Experience in only installing or patching new concrete is insufficient experience for concrete-maintenance work.

### **1.09 PRODUCT DELIVERY, STORAGE AND HANDLING**

- A. Comply with manufacturer's written instructions for minimum and maximum temperature requirements and other conditions for storage.
- B. Store cementitious materials off the ground, under cover, and in a dry location.
- C. Store aggregates covered and in a dry location; maintain grading and other required characteristics and prevent contamination.
- D. Promptly remove damaged or unsuitable products from the job site. Replace products with undamaged, suitable products.

## **1.10 FIELD CONDITIONS**

- A. Cold-Weather Requirements for Cementitious Materials: Do not apply material unless concrete-surface and air temperatures are above 40 degrees F (5 deg C) and will remain so for at least 48 hours after completion of Work.
- B. Hot-Weather Requirements for Cementitious Materials: Protect repair work when temperature and humidity conditions produce excessive evaporation of water from patching materials. Use cooled materials as required. Do not apply material to substrates with temperatures of 90 deg F (32 deg C) and above.

## **1.11 INSTALLATION REQUIREMENTS**

- A. Apply all repair material within manufacturer's guidelines.

## **PART 2 – PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Source Limitations: For repair products, obtain each color, grade, finish, type, and variety of product from single source and from single manufacturer with resources to provide products of consistent quality in appearance and physical properties.

### **2.02 BONDING AGENTS**

- A. Mortar Scrub Coat: Mix consisting of 1-part portland cement and 1-part fine aggregate complying with ASTM C 144 except 100 percent passing a No. 16 (1.18-mm) sieve.

### **2.03 CONCRETE MATERIALS**

- A. Concrete: As specified in Section 03 30 53 "Miscellaneous Cast-in-Place Concrete"

### **2.04 PATCHING MORTAR – SPALLS**

- A. Patching Mortar Requirements:
  - 1. Only use patching mortars that are recommended by manufacturer for each applicable horizontal, vertical, or overhead use orientation.
  - 2. Coarse Aggregate for Patching Mortar: ASTM C 33/C 33M, washed aggregate, Size No. 8, Class 5S. Add to patching-mortar mix only as permitted by patching-mortar manufacturer.
- B. Cementitious Patching Mortar: Packaged, dry mix for repair of concrete.
  - 1. Approved material is Sika Quick VOH as manufactured by Sika Corp. [www.usa.sika.com](http://www.usa.sika.com) 1-800-933-7452, or approved equal.

### **2.05 MISCELLANEOUS MATERIALS**

- A. Water: Potable.

## **2.06 MIXES**

- A. General: Mix products, in clean containers, according to manufacturer's written instructions.
  - 1. Do not add water, thinners, or additives unless recommended by the manufacturer.
  - 2. When practical, use manufacturer's premeasured packages to ensure that materials are mixed in proper proportions. When premeasured packages are not used, measure ingredients using graduated measuring containers; do not estimate quantities or use shovel or trowel as unit of measure.
  - 3. Do not mix more materials than can be used within time limits recommended by the manufacturer. Discard materials that have begun to set.
- B. Mortar Scrub Coat: Mix dry ingredients with enough water to provide consistency per manufacturer's recommendations.
- C. Concrete: Comply with Section 03 30 53 "Miscellaneous Cast-in-Place Concrete"

## **PART 3 – EXECUTION**

### **3.01 CONCRETE MAINTENANCE**

- A. Concrete-maintenance work is to be performed only by qualified concrete-maintenance specialists.
- B. Comply with manufacturers' written instructions for surface preparation and product application.
- C. Spall repairs to be completed with patching mortar and/or new concrete placement as determined by the contractor.

### **3.02 EXAMINATION**

- A. Notify Engineer seven days in advance of dates when areas of deteriorated or delaminated concrete and deteriorated reinforcing bars will be located.
- B. Locate areas of deteriorated or delaminated concrete using hammer or chain-drag sounding and mark boundaries. Mark areas for removal by simplifying and squaring off boundaries. At columns and walls make boundaries level and plumb unless otherwise indicated.
- C. Perform surveys as the Work progresses to detect hazards resulting from concrete-maintenance work.

### **3.03 PREPARATION**

- A. Ensure that supervisory personnel are on-site and on duty when concrete maintenance work begins and during its progress.

- B. Protect persons, equipment and surrounding surfaces of the structure being repaired from harm resulting from concrete maintenance work.
  - 1. Comply with each product manufacturer's written instructions for protections and precautions. Protect against adverse effects of products and procedures on people and adjacent materials, components, and vegetation.
  - 2. Use only proven protection methods appropriate to each area and surface being protected.
  - 3. Work to be performed in a manner to prevent dust and debris from reaching areas outside of the immediate work site.
- C. Preparation for Concrete Removal: Examine construction to be repaired to determine best methods to safely and effectively perform concrete maintenance work. Examine adjacent work to determine what protective measures will be necessary. Make explorations, probes, and inquiries as necessary to determine the condition of construction to be removed during repair.
  - 1. Inventory and record the condition of items to be removed for reinstallation or salvage.

### **3.04 CONCRETE REMOVAL - SPALLS**

- A. Saw-cut perimeter of areas identified for removal to a depth of at least 1/2 inch (13 mm). Make cuts perpendicular to concrete surfaces and no deeper than cover on reinforcement.
- B. Remove deteriorated and delaminated concrete by breaking up and dislodging from reinforcement.
- C. Remove additional concrete if necessary to provide a depth of removal of at least 1/2 inch (13 mm) over the entire removal area.
- D. Where half or more of the perimeter of reinforcing bar is exposed, bond between reinforcing bar and surrounding concrete is broken, or reinforcing bar is corroded, remove concrete from entire perimeter of bar and to provide at least 1 1/2 inch clearance around bar.
- E. Test areas where concrete has been removed by tapping with hammer and remove additional concrete until unsound and disbonded concrete is completely removed.
- F. Provide surfaces with a fractured profile of at least 1/8 inch (3 mm) that are approximately perpendicular or parallel to original concrete surfaces. Restore original profile unless otherwise directed.
- G. Thoroughly clean removal areas of loose concrete, dust, and debris.
- H. Payment is a separate line item "Spall Repair" based on the quantity of two (2) square feet at two (2) inches deep, which the owner reserves the right to increase, decrease or delete this item.



### **3.05 BONDING AGENT APPLICATION – SPALL REPAIR**

- A. Mortar Scrub Coat for Job-Mixed Patching Mortar and Concrete: Dampen repair area and surrounding concrete 6 inches (150 mm) beyond repair area. Remove standing water and apply scrub coat with a brush, scrubbing it into surface and thoroughly coating repair area. If scrub coat dries, recoat before placing patching mortar or concrete.
- B. Slurry Coat for Cementitious Patching Mortar: Wet substrate thoroughly and then remove standing water. Scrub a slurry of neat patching mortar into substrate, filling pores and voids.

### **3.06 PATCHING MORTAR APPLICATION – SPALL REPAIR**

- A. Place patching mortar as specified in this article unless otherwise recommended in writing by manufacturer.
  - 1. Provide forms where necessary to confine patch to required shape.
  - 2. Wet substrate and forms thoroughly and then remove standing water.
- B. Pretreatment: Apply specified slurry coat.
- C. General Placement: Place patching mortar by troweling toward edges of patch to force intimate contact with edge surfaces. For large patches, fill edges first and then work toward center, always troweling toward edges of patch.
- D. Consolidation: After each lift is placed, consolidate material and screed surface.
- E. Multiple Lifts: Where multiple lifts are used, score the surface of lifts to provide a rough surface for placing subsequent lifts. Allow each lift to reach the final set before placing subsequent lifts.
- F. Finishing: Allow surfaces of the lifts to remain exposed to become firm and then finish to a surface matching adjacent concrete.
- G. Curing: Wet-cure cementitious patching materials, including polymer-modified cementitious patching materials, for not less than seven days by water-fog spray or water-saturated absorptive cover.

### **3.07 CONCRETE PLACEMENT**

- A. Pretreatment: Apply mortar scrub coat to concrete substrate and reinforcing steel.
- B. Place concrete according to Section 03 30 53 "Miscellaneous Cast in Place Concrete".
  - 1. Use vibrators to consolidate concrete as it is placed.
  - 2. On unformed surfaces, screed concrete to produce a surface that when finished with patching mortar will match the required profile and surrounding concrete.
- C. Form-and-Pump Placement: Place concrete by form-and-pump method where indicated.
  - 1. Design and construct forms to resist pumping pressure in addition to the weight of wet concrete. Seal joints and seams in forms and where forms abut existing concrete.

2. Pump concrete into place from bottom to top, releasing air from forms as concrete is introduced. When formed space is full, close air vents and pressurize to 14 psi (96 kPa).
  3. Use vibrators to consolidate concrete as it is placed.
- D. Wet-cure concrete for not less than seven days by leaving forms in place or keeping surfaces continuously wet by water-fog spray or water-saturated absorptive cover.
  - E. Fill placement cavities with dry-pack mortar and repair voids with patching mortar. Finish to match surrounding concrete.

### **3.01 PROTECTION OF EXISTING CONCRETE**

- A. Protect the existing concrete not identified by the Engineer as needing repair/replacement.
- B. Any damage to the existing concrete from the work performed will be repaired/replaced by the Contractor and is incidental to the project.

**SECTION 03 30 53**  
**MISCELLANEOUS CAST-IN-PLACE CONCRETE**

**PART 1 - GENERAL**

**1.01 SECTION INCLUDES**

A. Surface preparation and installation of concrete splash pad for the overflow pipe.

**1.02 RELATED DOCUMENTS**

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

**1.03 REFERENCES**

A. Codes, specifications, and standards referred to by number or title shall form a part of this specification to the extent required by the references thereto. The latest revisions shall apply in all cases.

Parchment "Building Code Requirements for Structural Concrete (ACI 318) and Commentary (ACI 318R)," American Concrete Institute.

**1.04 DEFINITIONS**

A. Concrete Maintenance Specialist: Company that is experienced with concrete repairs performed in accordance with ACI standards. Work can be performed by the General Contractor if qualified, see submittals for requirements.

**1.05 WORK INCLUDED**

A. Install a concrete splash pad at the overflow pipe discharge.

B. Payment is a separate line item "Splash Pad" which the owner reserves the right to delete.

**1.06 SUBMITTALS**

A. Submit the following ten (10) days prior to the preconstruction meeting:

1. Provide for employees one (1) copy of all data sheets at the job site for employee access.
2. Provide an electronic copy to the Engineer.
3. No work may commence without the complete filing. All SDS shall conform to the requirements of SARA (EPCRA) Right-to-Know Act.
4. Safety Data Sheets (SDS) and Product Data Sheets:
  - a. Furnish from all suppliers Safety Data Sheets and product data sheets for all applicable materials including, but not limited to, concrete and admixtures.
5. Design Mixtures: For each concrete mixture.
6. Concrete-Maintenance Specialist: The Contractor is to indicate whether the work is to be performed by in-house personnel or subcontracted. In either case submit

three (3) similar projects including the scope with references. References to include client organization names, and contact names with phone numbers.

### **1.07 QUALITY ASSURANCE**

- A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94 requirements for production facilities and equipment.
- B. Comply with the following sections of ACI 301, unless modified by requirements in the Contract Documents:
  - 1. "General Requirements."
  - 2. "Formwork and Formwork Accessories."
  - 3. "Reinforcement and Reinforcement Supports."
  - 4. "Concrete Mixtures."
  - 5. "Handling, Placing, and Constructing."
- C. Comply with ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
- D. Concrete-Maintenance Specialist Qualifications: Installers and supervisors who are trained and approved by the manufacturer to apply materials necessary to perform work of this Section. Installers shall have completed work similar in material, design, and extent to that indicated for this Project with a record of successful in-service performance. Experience in only installing or patching new concrete is insufficient experience for concrete-maintenance work.
  - 1. Field Supervision: Concrete-maintenance specialist firm shall maintain experienced full-time supervisors on Project site during times that concrete-maintenance work is in progress.

## **PART 2 - PRODUCTS**

### **2.01 FORMWORK**

- A. Furnish formwork and formwork accessories according to ACI 301.

### **2.02 STEEL REINFORCEMENT**

- A. Reinforcing Bars: ASTM A 615, Grade 60, deformed.

### **2.03 CONCRETE MATERIALS**

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source throughout Project:
  - 1. Portland Cement: ASTM C 150, Type I/II
    - a. Fly Ash: ASTM C 618, Class C or F.
- B. Normal-Weight Aggregate: ASTM C 33, crushed limestone, graded, 1 ½ inch nominal maximum aggregate size.
- C. Water: ASTM C 94.
- D. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride

ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.

1. Water-Reducing Admixture: ASTM C 494, Type A.
2. Retarding Admixture: ASTM C 494, Type B.
3. Water-Reducing and Retarding Admixture: ASTM C 494, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C 494, Type F.
5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494, Type G.
6. Plasticizing and Retarding Admixture: ASTM C 1017, Type II.

#### **2.04 CURING MATERIALS**

- A. Absorptive Cover: AASHTO M 182, Class 3, burlap cloth or cotton mats.
- B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- C. Water: Potable.

#### **2.05 CONCRETE MIXTURES**

- A. Comply with ACI 301 requirements for concrete mixtures.
- B. Normal-Weight Concrete: Prepare design mixes, proportioned according to ACI 301, as follows:
  1. Minimum Compressive Strength: 4000 psi at 28 days.
  2. Maximum Water-Cementitious Materials Ratio: 0.50.
  3. Cementitious Materials: Use fly ash, pozzolan, ground granulated blast-furnace slag, and silica fume as needed to reduce the total amount of portland cement, which would otherwise be used, by not less than 40 percent.
  4. Air Content: Maintain within range permitted by ACI 301. Do not allow air content of trowel-finished floor slabs to exceed 3 percent.

#### **2.06 CONCRETE MIXING**

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94, and furnish batch ticket information.
  1. When the air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

#### **2.07 GRATING**

- A. Galvanized steel 1 in. x 3/16 in., with band spacing of 4 in. x 1-3/16 in.
- B. Manufactured/supplied by McMaster-Carr. [www.mcmaster.com](http://www.mcmaster.com) (562) 692-5911, or approved equal.

### **EXECUTION**

#### **3.01 GROUND PREPARATION AND DESIGN**

- A. Excavate area to a depth sufficient to construct the splash pad and connect to the existing below grade drain pipe.
- B. Backfill 4 in. of clean gravel.

- C. Construct a 4 ft. x 4 ft. x 6 in. (min) thick concrete splash pad with the width centered under the overflow.
- D. Trim the existing below grade drain pipe and slope the pad towards the drain at minimum 1 inch rise per 1 ft. of run all around so the splash pad slopes toward the drain.
- E. Install reinforcement in the new concrete.
- F. See Drawing 01.

### **3.02 FORMWORK**

- A. Design, construct, erect, brace, and maintain formwork according to ACI 301.

### **3.03 STEEL REINFORCEMENT**

- A. Install steel reinforcement per ACI 318 minimum requirements.
- B. Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
- C. Reinforce with a minimum 10 gauge wire mesh.

### **3.04 CONCRETE PLACEMENT**

- A. Comply with ACI 301 for placing concrete.
- B. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.
- C. Consolidate concrete with mechanical vibrating equipment as needed.

### **3.05 FINISHING FORMED SURFACES**

- A. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defective areas. Remove fins and other projections exceeding 1/8 inch.
  - 1. Apply to all concrete surfaces.

### **3.06 CONCRETE PROTECTING AND CURING**

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and with ACI 301 for hot-weather protection during curing.
- B. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- C. Curing Methods: Cure formed and unformed concrete for at least seven days by one or a combination of the following methods:
  - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
    - a. Water.
    - b. Continuous water-fog spray.
    - c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with a 12-inch lap over adjacent absorptive covers.

2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

### **3.07 REPAIRS**

- A. Remove and replace concrete that does not comply with requirements as identified by the Contractor or by the Owner.

## **SECTION 05 00 00** **METAL REPAIRS**

### **PART 1 - GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Steel and Miscellaneous Repairs.

#### **1.02 REFERENCES**

- A. AWWA D100 Weld Standard
- B. AWS Weld Standard
- C. API 650 Standard

#### **1.03 OMISSIONS**

- A. The specifications include all work and materials necessary for completion of the work. Any incidental item(s) of material, labor, or detail(s) required for the proper execution and completion of the work are included.

#### **1.04 DEFINITIONS**

- A. Ground Flush: Ground even with adjacent metal with no transition. This preparation is intended for all removed items.
- B. Ground Smooth: Ground welds to the point that no cuts or scratches occur when rubbing your hand over the weld. Rebuild with weld any concavity discovered during grinding. This preparation is intended for all newly added steel.

#### **1.05 WORK INCLUDED**

- 1) Replace the wet interior roof hatch.
- 2) Replace the access tube roof hatch.
- 3) Trim the platform hatch covers.
- 4) Install ladder extension at the condensate platform.
- 5) Install deflector bars on the fill/draw pipe.
- 6) Install a chemical feed tap on the fill/draw pipe.
- 7) Replace the expansion joint.
- 8) Replace the mud valve.
- 9) Replace the condensate drain line.
- 10) Install an overflow flap gate.
- 11) Install a fall prevention device on the basebell ladder.
- 12) Install a pressure vacuum vent.
- 13) Install a seal at the access tube air gap.
- 14) Weld a rigging lug on the bowl.



- 15) Install opening for ventilation in the basebell.
- 16) Reroute the overflow pipe and install a duck bill check valve - alternate.

#### **1.06 WORKMANSHIP**

- A. Provide material and workmanship necessary to complete the project to the standards specified.
- B. All weld spatter is to be removed prior to coating application.
- C. Welds at all removed steel items are to be ground flush with surrounding surface. All new welds are to be ground smooth.
- D. Removed items are to become the property of the Contractor. The Contractor is to properly dispose of all removed items.

#### **1.07 WELDER QUALIFICATIONS**

- A. Certified for type and position of weld specified.
- B. The welder is to be specialized in industrial or heavy commercial welding and experienced in rigging and elevated work.

#### **1.08 SUBMITTALS**

- A. Submit the following ten (10) days prior to the preconstruction meeting:
  1. Provide for employees one (1) copy of all data sheets at the job site for employee access.
  2. Provide an electronic copy to the Engineer.
  3. No work may commence without the complete filing. All SDS are to conform to requirements of SARA (EPCRA) Right-to-Know Act.
  4. Safety Data Sheets (SDS) and Product Data Sheets:
    - a. Safety Data Sheets (SDS) for all chemicals or products that contain chemicals.
    - b. Product Data Sheets (PDS) or Technical Data Sheets (TDS) for all items.
  5. Welder's certification.
  6. Expansion Joint Replacement – Temporary Pipe Support Plan.

#### **1.09 WORK SEQUENCING**

- A. The Contractor is to monitor for flammable gases inside the tank prior to any welding or cutting. Monitoring is to be performed whether the tank is full or empty. Monitoring is also to be performed whether or not interior access is to be gained during welding and/or cutting.
- B. The following is NOT a ways-and-means decision of the Contractor. It is accepted and good painting practice and is to be completed by the Contractor in this specified fashion:
  1. Complete ahead of all cutting and welding all surface preparation, such as removal of heavy metal bearing coating in the immediate area.

2. Complete all welding repairs prior to commencement of any power washing, surface preparation, or coating application.
3. Do not install non-painted items (i.e., vents, fall prevention devices, etc.) or store items on or in the tank until after painting has been completed.
4. Remove existing items that are not to be painted after water cleaning, store in a secure location.
5. Disassemble appurtenances with mating surfaces (i.e., overflow flap gate, vent flange, etc.), surface prepare and coat mating surfaces and reassemble after topcoat is dry.
6. Remove fall prevention devices in areas to be coated before painting and reinstall after completion. Supply temporary fall prevention devices with steel cables during blasting and painting.

#### **1.10 NEW STEEL COATING**

- A. The new carbon steel and weld burn surfaces are to be prepared and coated in accordance with Sections 09 97 13 and 09 97 13.10.

### **PART 2 – PRODUCTS**

#### **2.01 SUBSTITUTIONS**

- A. All products specified herein have been determined to meet a minimal standard. The products specified are the standard to which all proposed substitutions are to be compared.

#### **2.02 STEEL PLATING and OTHER STRUCTURAL SHAPES**

- A. General Steel: ASTM – A36.
- B. General Stainless Steel: ASTM – 316.
- C. Rebar for ladder rungs: A706 Weldable Rebar.
- D. Threading on all couplings and plugs to meet NPT and FPT standards.

#### **2.03 BOLTS and NUTS**

- A. Stainless Steel
  1. ASTM F594G – 316 Stainless Steel Bolts.
  2. ASTM F594G – 316 Stainless Steel Nuts.
- B. Galvanized Steel
  1. ASTM A307 Grade A zinc coated Steel Bolts.
  2. ASTM A307 Grade A zinc coated Nuts.

#### **2.04 WELDING ROD**

- A. Final – E70XX Electrodes.

- B. Root – E60XX Electrodes.
- C. Wire – ER70S Electrodes.

## **2.05 STEEL LADDERS**

- A. General Steel: ASTM – A36.
- B. Rebar for ladder rungs: A706 Weldable Rebar.
- C. All new ladders are to meet current OSHA requirements. In addition to the requirements, rung clearances when immovable obstructions are within the required 7-inch toe clearance shall be as follows:
  - 1. Maintain a 1½” clearance between the center line of any rung and the top of any immovable obstruction.
  - 2. Maintain a 4½” clearance between the center line of any rung and the bottom of any obstruction.

## **2.06 ROOF HATCH GASKET**

- A. Roof hatch manway gaskets for access points above the high-water level (not in contact with potable water).
- B. There are two options:
  - 1. Full sheet adhered to the interior of the hatch cover:  
Gaskets to be meet ASTM D2000 requirements. Gaskets to be ¼ inch thick Ethylene Propylene Diene (EPDM) AB-576 item number 386-16-482 as manufactured/supplied by American Biltrite [www.american-biltrite.com](http://www.american-biltrite.com) (888) 275-7075, or approved equal.
  - 2. Gasket adhered to the edge of the hatch curb:  
EPDM foam and vinyl rubber Water and Weather Resistant Rubber Push-on Seal as manufactured/supplied by McMaster-Carr. [www.mcmaster.com](http://www.mcmaster.com) (562) 692-5911, or approved equal.
- C. Adhesive for gasket to be 3M Super Weather strip and Gasket Adhesive as Manufactured by 3M [www.3m.com](http://www.3m.com) (888) 364-3577, or approved equal.

## **2.07 CORPORATION STOP**

- A. Mueller 300 Ball Corporation 1 inch Valve Model B-20046N, or approved equal. Manufactured/supplied by Mueller. [www.muellercompany.com](http://www.muellercompany.com) (800) 423-1323.

## **2.08 EXPANSION JOINT**

- A. Flanged Bellows-Type with a pressure rating of 150 psi, flanged ends, 316 stainless bellows, minimum axial movement of 1 in. and minimum lateral movement of 0.1 in. Flanges are to be AWWA Class D C207.

- B. Manufactured/supplied by Kadant Johnson LLC <https://fluidhandling.kadant.com> 269-278-1715 or UIP International [www.uipintl.com](http://www.uipintl.com) 1-800-257-2467 or approved equal.
- C. Gaskets to be minimum of 1/8-inch-thick Ethylene Propylene Diene (EPDM) that meet NSF 61/600 requirements as manufactured/supplied by Sur-Seal [www.sur-seal.com](http://www.sur-seal.com) (866) 915-4916, or approved equal.

## **2.09 MUD VALVE**

- A. Babco-NFW 3 in. x 2.5 in. No Freeze Valve, or approved equal.  
Manufactured/supplied by Superior Sales & Service, Inc. [www.superiorsales.com](http://www.superiorsales.com) (402) 296-1010.
- B. Discharge hose, smooth, clear PVC. Nutriflow series, or approved equal.  
Manufactured/supplied by Goodyear Engineered Products [www.goodyearhose.com](http://www.goodyearhose.com) (866) 711-4673.

## **2.10 CONDENSATE DRAIN LINE CHECK VALVE**

- A. Proflo PFX31 2-inch brass threaded swing check valve with NSF61/600 certification, or approved equal. Manufactured/supplied by Ferguson Waterworks [www.ferguson.com](http://www.ferguson.com) (800) 721-2590.

## **2.11 OVERFLOW SCREEN**

- A. 316 stainless steel wire, twenty-four (24) or thirty (30) mesh.
- B. Manufactured/supplied by McMaster-Carr. [www.mcmaster.com](http://www.mcmaster.com) (562) 692-5911, manufactured by McNichols [www.mcnichols.com](http://www.mcnichols.com) (855) 463-5736, or approved equal.

## **2.12 FALL PREVENTION DEVICE**

- A. Cable-Type system as manufactured/supplied by 3M/DBI Sala, [www.3m.com](http://www.3m.com) (888) 364-3577, or approved equal.
  - 1. System: Lad-Saf Model and all connecting clips, etc.
  - 2. Dry interior ladder:
    - a. Climb Extension, 2 User, galvanized steel #6116636 for vertical ladders with no obstruction so cable extends above the ladder.

## **2.13 VENT SCREEN**

- A. Aluminum wire, maximum twenty-four (24) mesh or thirty (30) mesh..
- B. Manufactured/supplied by McMaster-Carr. [www.mcmaster.com](http://www.mcmaster.com) (562) 692-5911, or Wire Cloth Man [www.wireclothman.com](http://www.wireclothman.com) (800) 947-3626, or approved equal.

## **2.14 NEOPRENE SHEETING FOR ACCESS TUBE AIR GAP COVERS**

- A. Neoprene sheeting for access tube air gaps
- B. Sheeting to meet ASTM D2240 requirements. Gaskets to be 3/8-inch-thick Neoprene IM-252 item number 201-24-482 as manufactured/supplied by American Biltrite [www.american-biltrite.com](http://www.american-biltrite.com) (888) 275-7075, or approved equal.
- C. Sheeting is to be attached using stainless steel banding clamps Make-A-Clamp Kit, or approved equal. Manufactured by Breeze [www.breezehoseclamps.com](http://www.breezehoseclamps.com) (908)298-8600.

## **2.15 JOINT COMPOUND FOR THREADED FITTINGS**

- A. Great White Pipe Joint Compound as Manufactured by Oatey [www.oatey.com](http://www.oatey.com) (800) 321-9532, or approved equal.

## **2.16 OVERFLOW DUCKBILL CHECK VALVE**

- A. Duck bill check valve with 304 stainless steel ANSI flange. Tideflex series 35, or approved equal.
- B. Manufactured/supplied by Tideflex Technologies [www.redvalve.com](http://www.redvalve.com) (412) 279-0044.

## **PART 3 - EXECUTION**

### **3.01 WET INTERIOR ROOF HATCH**

- A. Replace the existing wet interior hatch.
- B. Furnish and install a 30 in. diameter hinged hatch.
- C. Weld a 16 in. x 3 in. x 3/4 in. diameter rung on the roof for a handhold. Location to be determined by the Engineer.
- D. The handhold is to be located on the ladder side of the opening.
- E. The Owner is to supply a lock or the Contractor to supply nut and bolt to install on the roof hatch hasp.
- F. Install the gasket after the exterior coating is dry to the touch. Install roof hatch gasket using adhesive.
- G. See Drawing 02.
- H. Payment is a separate line item "Wet Interior Roof Hatch" which the Owner reserves the right to delete.

### **3.02 ACCESS TUBE ROOF HATCH**

- A. Remove the existing access tube roof hatch.
- B. Furnish and install a 30 in. diameter hinged hatch.
- C. Verify that the new hatch will fit on the access tube cover without interference from the antenna cable penetrations prior to fabrication. The hatch neck and cover may

- need to be modified if the penetrations interfere. Notify the engineer if redesign is required.
- D. Weld a 16 in. x 3 in. x  $\frac{3}{4}$  in. diameter rung on the roof for a handhold. Location to be determined by the Engineer.
  - E. The handhold is to be located on the ladder side of the opening.
  - F. See Drawing 03.
  - G. Payment is a separate line item "Access Tube Roof Hatch" which the Owner reserves the right to delete.

### **3.03 PLATFORM HATCH COVER MODIFICATION**

- A. Trim the covers on the condensate and top platform hatches so the covers can completely close with the fall prevention device in place.
- B. Trim the edge of the cover and grind smooth. Ensure that the cover does not touch the cable once it is closed.
- C. Payment is incidental to the project.

### **3.04 LADDER EXTENSION AT THE CONDENSATE PLATFORM**

- A. Furnish and install a ladder section on the top of the condensate platform.
- B. Ladder to extend 5 rungs above the platform, keep spacing 12 inches between the existing ladder and new section.
- C. The ladder is to meet or exceed all OSHA requirements.
- D. See Drawing 04.
- E. Payment is a separate line item "Condensate Platform Ladder Extension" which the Owner reserves the right to delete.

### **3.05 FILL/DRAW PIPE DEFLECTOR BAR**

- A. Furnish and install deflector bars on the fill/draw pipe.
- B. See Drawing 05.
- C. Payment is a separate line item "Fill/Draw Pipe Deflector Bar" which the Owner reserves the right to delete.

### **3.06 CHEMICAL FEED TAP**

- A. Install a chemical feed tap in the fill/draw pipe at the basebell.
- B. Install a 1-inch heavy wall threaded coupling on the pipe and weld using  $\frac{1}{4}$  inch full fillet weld.
- C. Install a dielectric union then a 1-inch corporation stop.
- D. Install approximately 4 ft. above grade.
- E. All threaded connections are to be installed with joint compound.
- F. Remove the insulation from the chemical feed tap location. Reinstall the insulation after all coating repairs are performed. Drill a hole in the insulation and jacketing to

- accept the new coupling and chemical feed tap. Use a drill saw to create a clean cut, center the hole on the new chemical feed tap. Hole to be no larger than 3" diameter.
- G. Payment is incidental to the project.

### **3.07 EXPANSION JOINT REPLACEMENT**

- A. Remove the existing expansion joint located in the pit. Install a flanged spool section in place of the removed expansion joint. Spool to be STD size the flanges are to match the existing, install new galvanized steel bolts and nuts. The bolt and nut size are to match the existing flanges.
- B. The pipe diameter is approximately 12 inches. Field verify fill pipe size and opening required for new expansion joint prior to fabrication or ordering components. The Contractor is responsible for any existing pipe alterations required for new joint fitting.
- C. Install gasket between the existing flanges and the new expansion joint per AWWA C207.
- D. Use stainless steel nuts and bolts with dielectric isolation sleeves for the connection to the bellows joint, size bolts to fit the flange holes. Use galvanized steel nuts and bolts for connecting the spool section to the existing piping, size bolts to fit the flange holes.
- E. Reinstall or replace existing insulation over the entire joint and spool piece.
- F. Temporarily support the pipe during expansion joint replacement.
1. The Contractor is to submit a plan for the temporary support of the pipe during expansion joint replacement.
  2. These required submittals will be reviewed for information only, not for approval.
  3. Contractor is responsible for correcting any damage to the existing infrastructure caused by the Contractor's actions, including insufficiently supporting the pipe or allowing excessive pipe movement.
  4. Protect or plug and replace the existing tap and associated piping located above the existing expansion joint.
- G. See Drawing 06a-06b.
- H. Payment is a separate line item "Expansion Joint Replacement" which the Owner reserves the right to delete.

### **3.08 MUD VALVE**

- A. Remove the existing mud valve from the bowl to the overflow pipe, reuse coupling and drain line for the new valve installation if possible.
- B. Install a new frost-free mud valve in the lowest section of the mud settling area. Coupling is to be a heavy or extra heavy coupling and is not extend more than  $\frac{3}{8}$  in. into wet interior surfaces.

- C. Install a new hose that is to discharge into the overflow pipe. Cut a hole in the overflow (or use the existing opening, enlarge as needed).
- D. Contractor to ensure that the discharge hose does not kink. Install adaptors (i.e., steel elbow etc.) as needed to prevent kinking.
- E. See Drawing 07.
- F. Payment is a separate line item “Mud Valve” which the Owner reserves the right to delete.

### **3.09 CONDENSATE DRAIN LINE**

- A. Remove the condensate drain line from the condensate ceiling to the point of discharge outside of the basebell wall.
- B. Install a new condensate drain line.
- C. Weld a steel plate over the hole in the basebell left from removal of the existing line.
- D. Pipe to discharge into the overflow pipe. Cut hole in overflow.
- E. Furnish and install a bronze seating check valve. The check valve must normally be open and capable of operating vertically or diagonally.
- F. All threaded fittings to be covered with Teflon tape.
- G. See Drawing 08.
- H. Payment is a separate line item “Condensate Drain Line” which the Owner reserves the right to delete.

### **3.10 OVERFLOW FLAP GATE with SCREEN**

- A. Construct and install a new overflow flap gate at the pipe discharge.
- B. The flap gate is to allow for closed positioning during non-flow conditions, and open operation during overflow conditions.
- C. Field verify existing overflow pipe dimensions.
- D. Use steel plates as weights attached to the lever arm to assure complete closure at end of cycle, number may need to be more than shown on the drawing to ensure complete closure.
- E. Install PVC or plastic washers and/or spacers between the hinge bolts and lever arm, use enough washers to ensure a snug fit without damaging the coating during movement.
- F. Remove the existing flange and weld a new flange onto the discharge end of the overflow pipe. Use a minimum of ¼” steel plate, flange outside diameter to match that of the flap gate outside diameter.
- G. See Drawing 09.
- H. Payment is a separate line item “Overflow Flap Gate” which the Owner reserves the right to delete.



### **3.11 FALL PREVENTION DEVICE**

- A. Furnish and install a cable-type fall prevention device on the dry interior basebell ladder.
- B. Device is to be installed after the topcoat is dry to the touch. Use temporary safety lines during construction.
- C. Begin installation of the dry interior devices at the base of the foundation (bottom of ladder) and extend to the top of the basebell ladder.
- D. Install cable guides every 15 ft. on center.
- E. Payment is a separate line item "Fall Prevention Device" which the Owner reserves the right to delete.

### **3.12 PRESSURE VACUUM ROOF VENT**

- A. Furnish and install a pressure vacuum roof vent on a bolted flange.
- B. Location to be verified by the Engineer.
- C. See Drawings 10a-10d.
- D. Payment is a separate line item "Roof Vent" which the Owner reserves the right to delete.

### **3.13 ACCESS TUBE AIR GAP SEAL**

- A. Weld a curb extension on the access tube cover plate. Furnish and install a neoprene sheet to cover the air gap at the access tube.
- B. Remove the existing screen and mounting hardware.
- C. Attach neoprene sheet at the access tube air gap using two (2) ½" wide stainless-steel banding clamps.
- D. Work to be performed after the surface is surface prepared and coated.
- E. See Drawing 11.
- F. Payment is a separate line item "Access Tube Air Gap Seal" which the Owner reserves the right to delete.

### **3.14 BOWL RIGGING LUG**

- A. Install a lug on the bowl above the top platform ladder opening.
- B. See Drawing 12.
- C. Payment is incidental to the project.

### **3.15 BASEBELL VENTILATION OPENING**

- A. Install one (1) opening with frame and reinforcement in the basebell for installation of a ventilation system.
- B. Install steel plates along the basebell for installation of electrical conduit and receptacles for the vents.
- C. See Drawing 13.

- D. Payment is a separate line item “Basebell Ventilation Opening” which the Owner reserves the right to delete.

**3.16 OVERFLOW REROUTING WITH DUCK BILL CHECK VALVE -  
ALTERNATE**

- A. Reroute the overflow pipe so the penetration through the basebell is sufficient to install a downward elbow Trim the end of the overflow and install a downward facing elbow. Install a duck bill check valve on the new elbow.
- B. Field verify existing overflow pipe dimensions.
- C. Weld a minimum of ¼ inch steel ANSI flange on the end of the discharge and bolt the duck bill check valve on the flange.
- D. Install gasket between the existing flange and the new flange per AWWA C207 with a full face and a minimal thickness of 1/16 inch.
- E. The bolts are to be stainless steel.
- F. See Drawing 14.
- G. Payment is a separate line item “Overflow Pipe Discharge Modification - Alternate” which the Owner reserves the right to delete.

**PART 4 – SPECIAL PROVISIONS**

**4.01 STEEL REPLACEMENT COATING**

- A. All large pieces of steel to be shop primed using the specified prime coat over a SSPC-SP10 near white surface preparation.
- B. Do not prime 3 in. from area to be welded.
- C. After installation, spot clean welded areas to a SSPC-SP11 and apply coating as specified.
- D. Use only one manufacturer for repair coating.
- E. Payment is incidental to metal repairs.

**4.02 WELD PREPARATION PRIOR to COATING**

- A. Prepare all new welds per NACE SP0178 prior to coating application. Grind welds to category D.

**4.03 COATING REPAIR – WET INTERIOR**

- A. Complete all welding and cutting prior to any surface preparation for painting to avoid contamination of surfaces.
- B. Remove any residue and weld smoke by solvent cleaning.
- C. Power tool clean to a SSPC-SP11 finish all areas damaged by welding.
- D. Use 3M Scotch-Brite Clean’n Strip Discs.
- E. Feather edges of adjacent coating a minimum of ½ in. from exposed steel.

F. Apply repair system at 4.0 - 6.0 mils per coat as follows:

<u>Manufacturer</u>	<u>System</u>
Tnemec	21/21
Induron	PE-70/PE-70
Sherwin Williams	5500LT/5500LT

G. Contractor has the option to apply one (1) coat of PPG Aquatopoxy A-61 at 6.0-10.0 mils in lieu of the two-coat system.

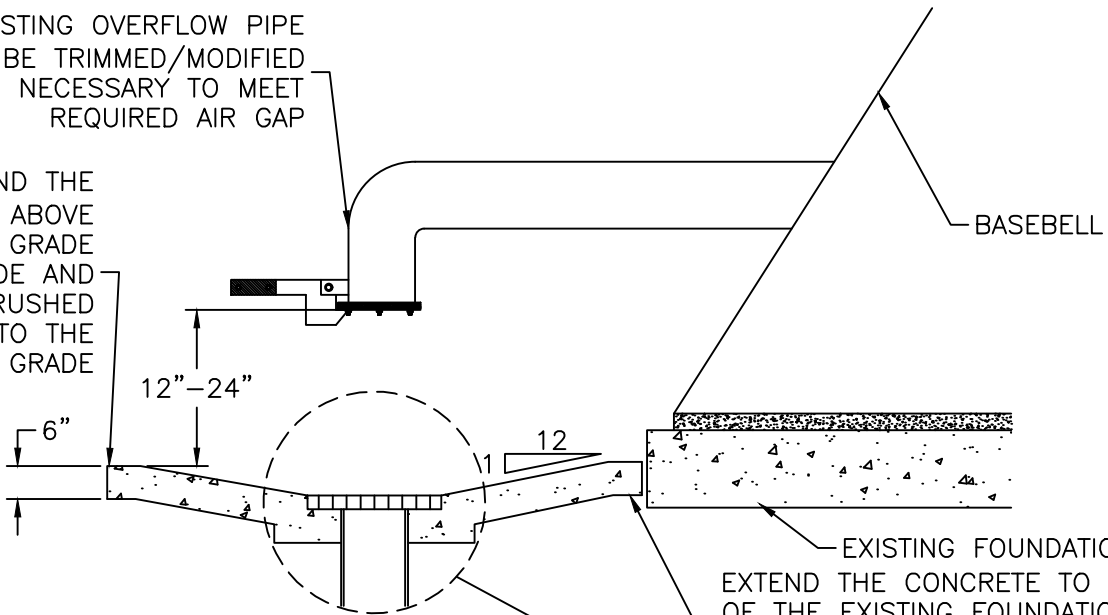
H. System to meet all National Sanitation Foundation 61 certification standards for potable water contact. Use only colors approved by NSF 61/600 are to be used in the wet interior.

I. Contractor to follow the relevant items from Sections 09 97 13 and 09 97 13.10.

J. Payment is incidental to weld repairs.

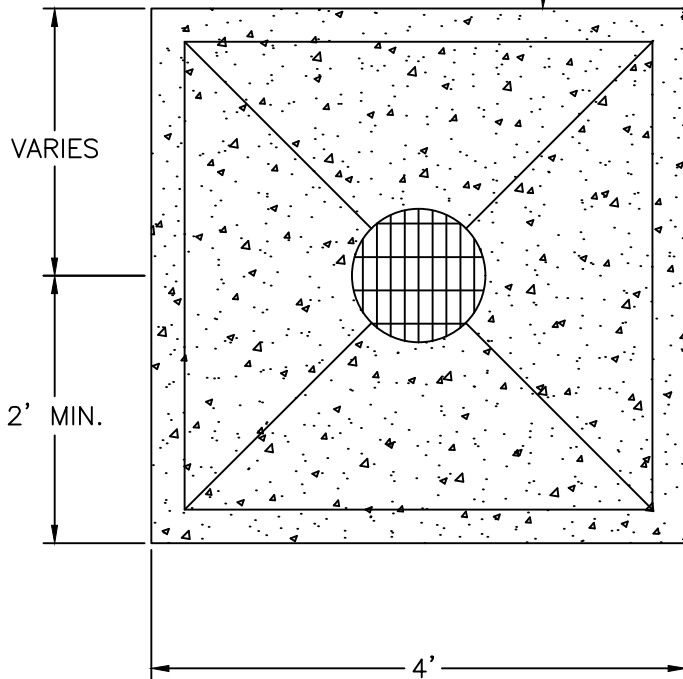
THE EXISTING OVERFLOW PIPE IS TO BE TRIMMED/MODIFIED AS NECESSARY TO MEET REQUIRED AIR GAP

EXTEND THE CONCRETE 2" ABOVE THE EXISTING GRADE AND GRADE AND SLOPE 21AA CRUSHED LIMESTONE TO THE EXISTING GRADE

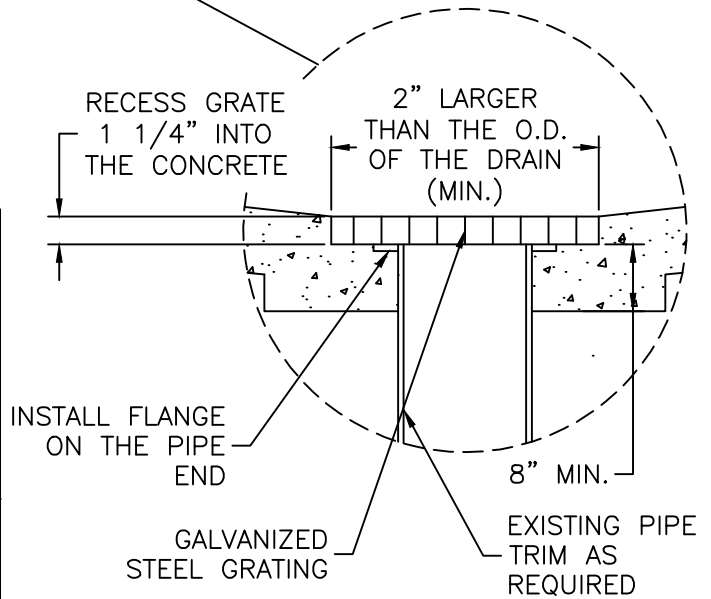


SIDE VIEW

WATER TOWER FOUNDATION SIDE, MATCH THE RADIUS OF THE FOUNDATION, PLACE WATER STOP BETWEEN THE FOUNDATION AND THE SPLASH PAD

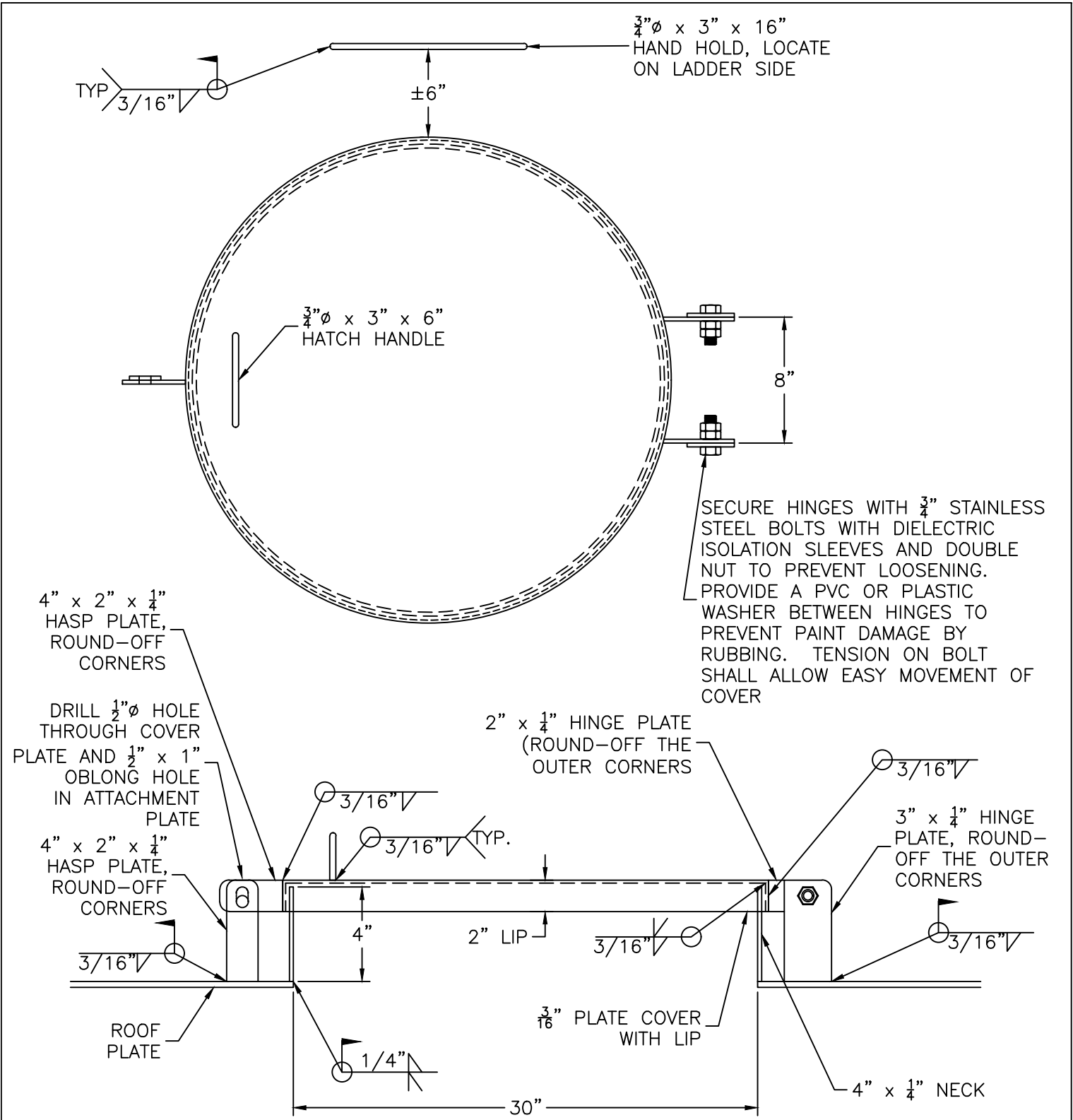


PLAN VIEW



Note: Drawing not to scale.

Kalamazoo, MI 250,000 Spheroid	
Overflow Splash Pad	
Drawn By: TMF	Date: 2/07/24
Checked By: JVR	DWG: 01

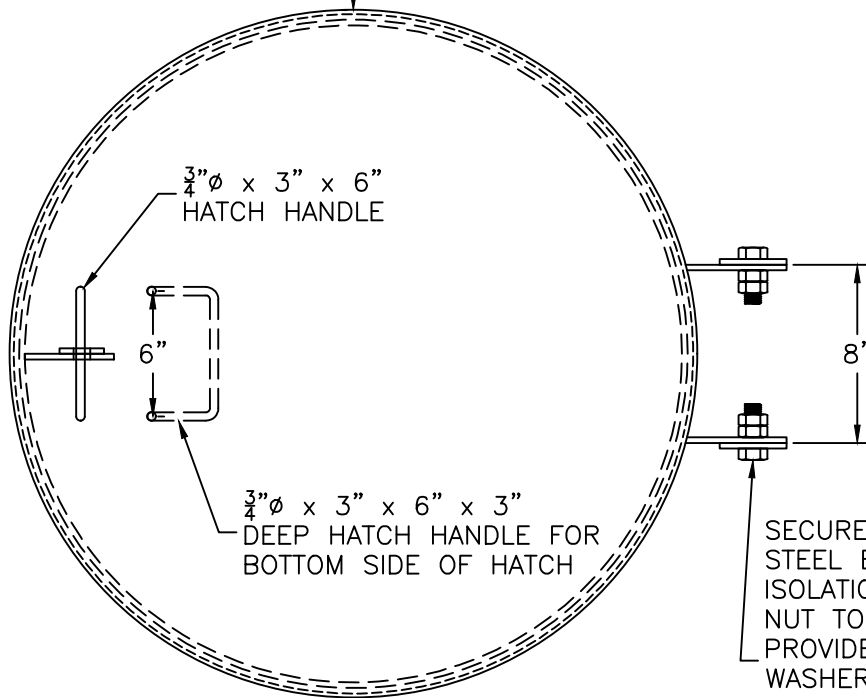


- NOTES:**
1. LOCATION OF THE MANWAY TO BE DETERMINED BY THE ENGINEER.
  2. INSTALL A GASKET ON THE COVER.
  3. HATCH COVER IS TO SEAT ON TOP OF THE ENTIRE CURB WHEN CLOSED.

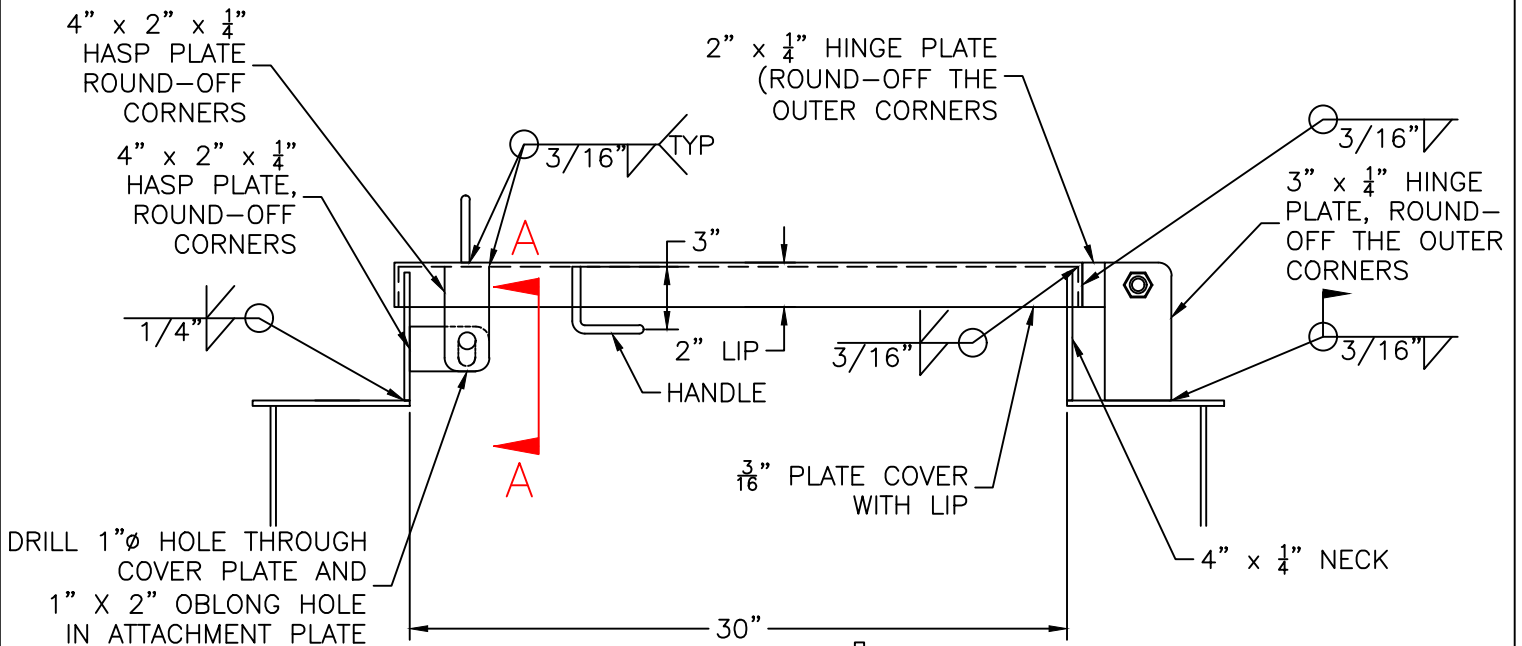
Note: Drawing not to scale.

<b>DIXON</b> ENGINEERING, INC.	
Kalamazoo, MI 250,000 Spheroid	
30" Wet Interior Roof Hatch	
Drawn By: TMF	Date: 02/07/24
Checked By: JVR	DWG: 02

TYP  $\frac{3}{16}$ "  $\frac{3}{4}$ " $\phi$  x 3" x 16"  
HAND HOLD, LOCATE  
ON LADDER SIDE

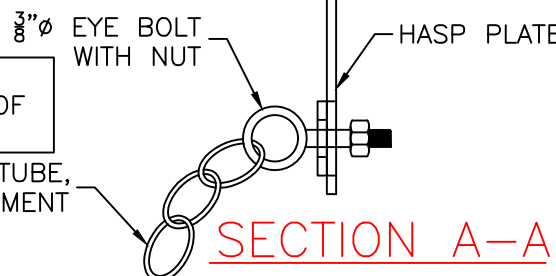


SECURE HINGES WITH  $\frac{3}{4}$ " STAINLESS  
STEEL BOLTS WITH DIELECTRIC  
ISOLATION SLEEVES AND DOUBLE  
NUT TO PREVENT LOOSENING.  
PROVIDE A PVC OR PLASTIC  
WASHER BETWEEN HINGES TO  
PREVENT PAINT DAMAGE BY  
RUBBING. TENSION ON BOLT  
SHALL ALLOW EASY MOVEMENT OF  
COVER



**NOTE:**  
HATCH COVER IS TO SEAT ON TOP OF  
THE ENTIRE CURB WHEN CLOSED.

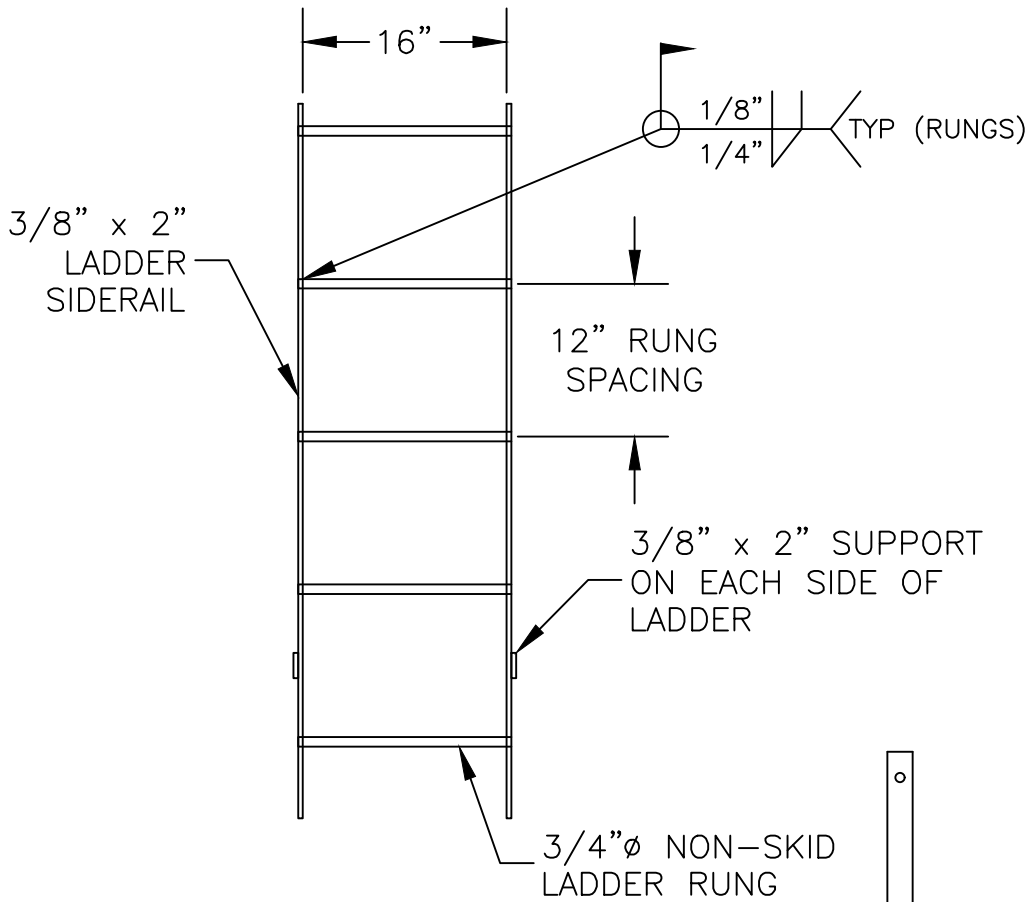
CHAIN WELDED TO ACCESS TUBE,  
LEAVE SLACK FOR EASY ATTACHMENT



**SECTION A-A**

Note: Drawing not to scale.

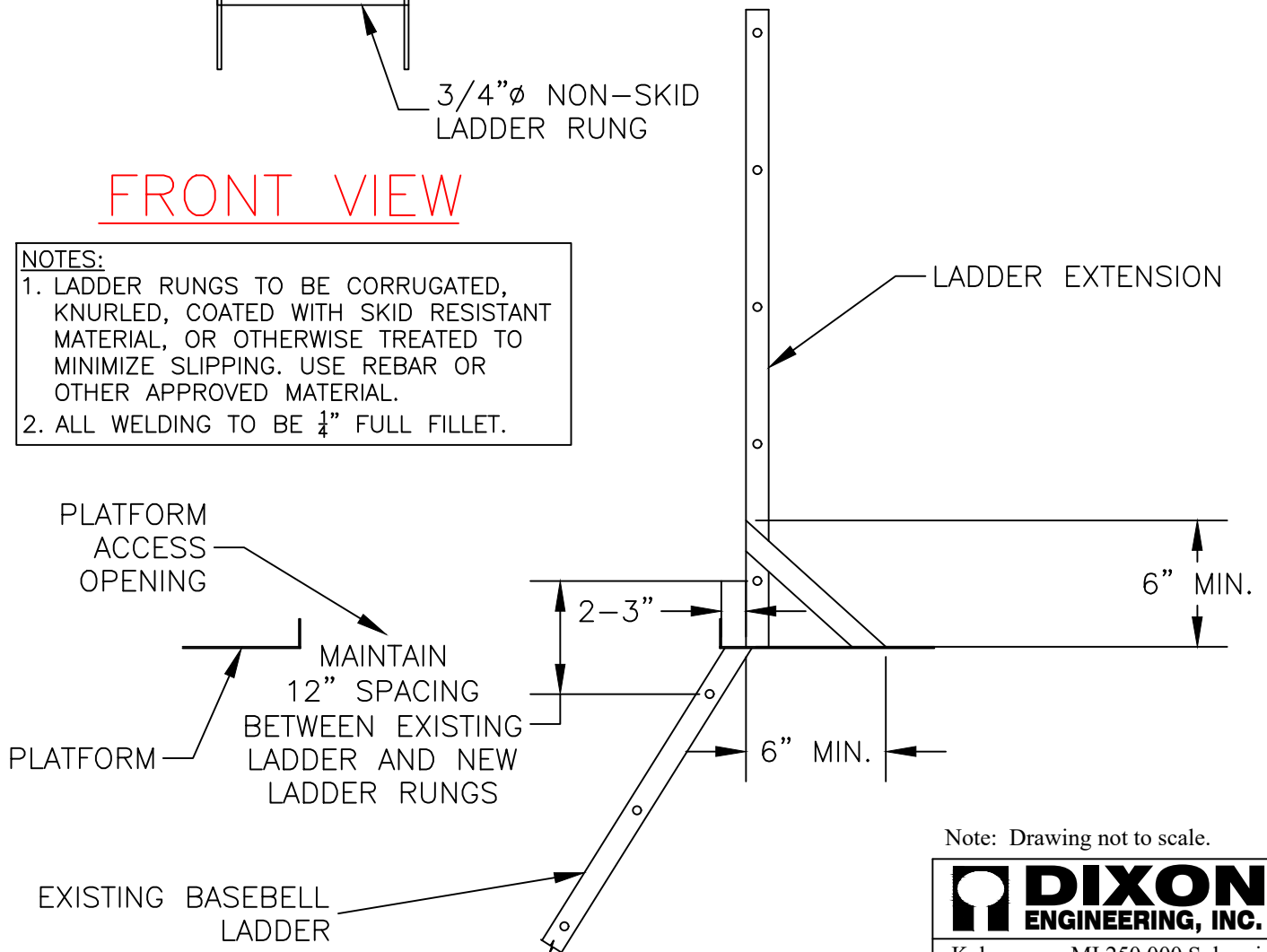
<b>DIXON ENGINEERING, INC.</b>	
Kalamazoo, MI 250,000 Spheroid	
30" Access Tube Roof Hatch	
Drawn By: TMF	Date: 02/07/24
Checked By: JVR	DWG: 03



## FRONT VIEW

**NOTES:**

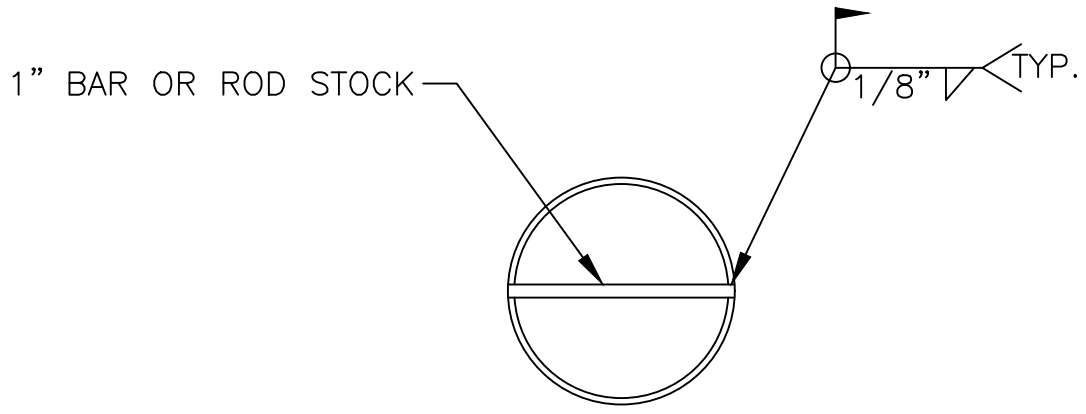
1. LADDER RUNGS TO BE CORRUGATED, KNURLED, COATED WITH SKID RESISTANT MATERIAL, OR OTHERWISE TREATED TO MINIMIZE SLIPPING. USE REBAR OR OTHER APPROVED MATERIAL.
2. ALL WELDING TO BE 1/4" FULL FILLET.



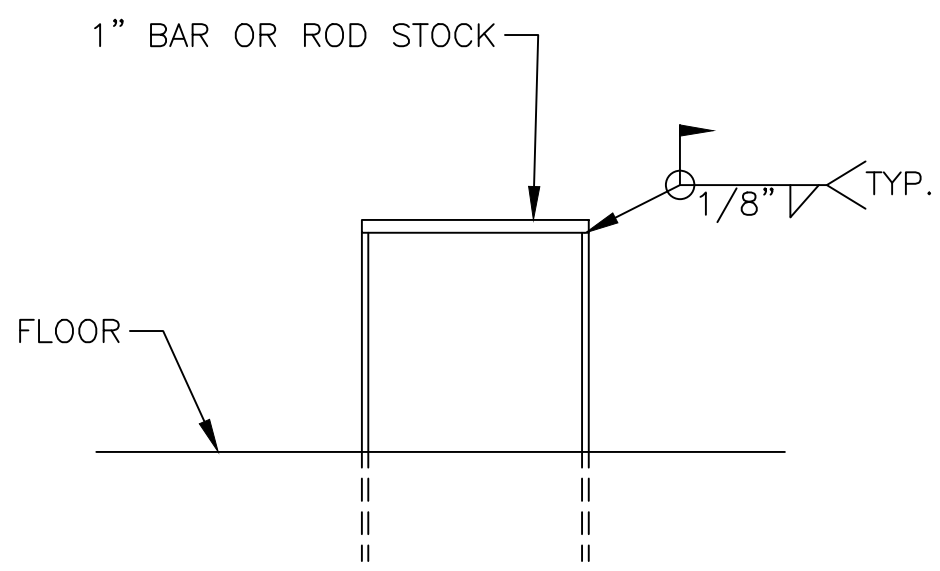
## SIDE VIEW

Note: Drawing not to scale.

<b>DIXON</b> ENGINEERING, INC.	
Kalamazoo, MI 250,000 Spheroid	
Ladder Extension	
Drawn By: TMF	Date: 11/21/23
Checked By: JVR	DWG: 04




PLAN VIEW

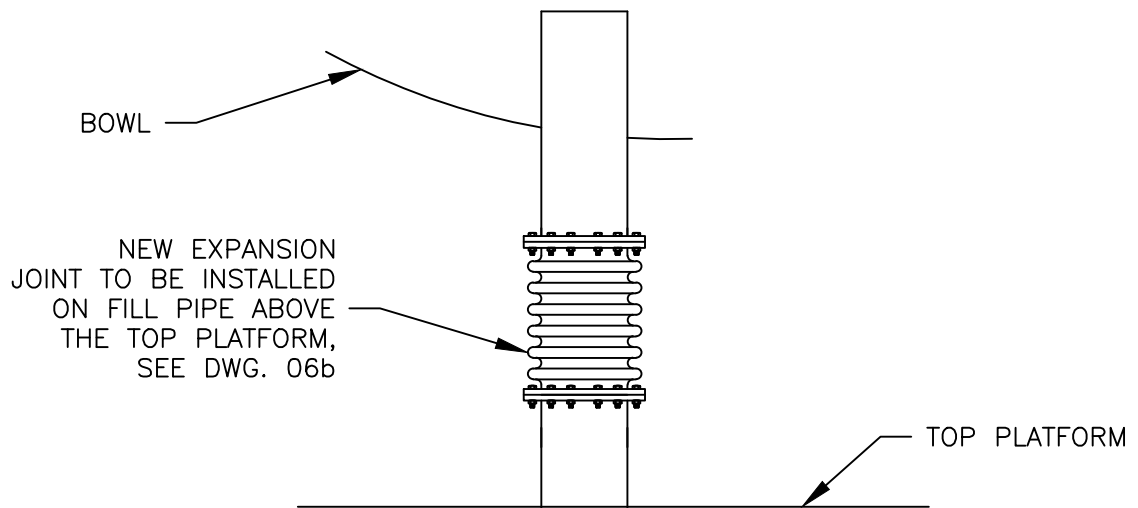


SIDE VIEW

Note: Drawing not to scale.

	
Kalamazoo, MI 250,000 Spheroid	
Fill/Draw Pipe Deflector Bar	
Drawn By: TMF	Date: 11/21/23
Checked By: JVR	DWG: 05





AWWA C207 CLASS D RING FLANGE  
 TYP. OF 2, HOLE SIZE AND PATTERN TO  
 MATCH EXISTING PIPE FLANGES  
 BOLTS TO BE GALVANIZED, NUT AND BOLT  
 SIZE TO MATCH THE EXISTING

NEW STD SCHEDULE SPOOL  
 SECTION TO REPLACE THE  
 REMOVED EXPANSION JOINT

Note: Drawing not to scale.



Kalamazoo, MI 250,000 Spheroid

Expansion Joint

Drawn By: TMF Date: 11/21/23

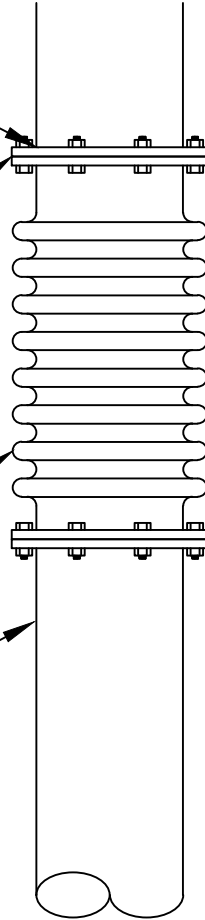
Checked By: JVR DWG: 06a

AWWA C207 CLASS D RING FLANGE TYP. OF 2, HOLE SIZE AND PATTERN TO MATCH NEW BELLOWS EXPANSION JOINT BOLTS TO BE 316 STAINLESS STEEL WITH DIELECTRIC SLEEVES

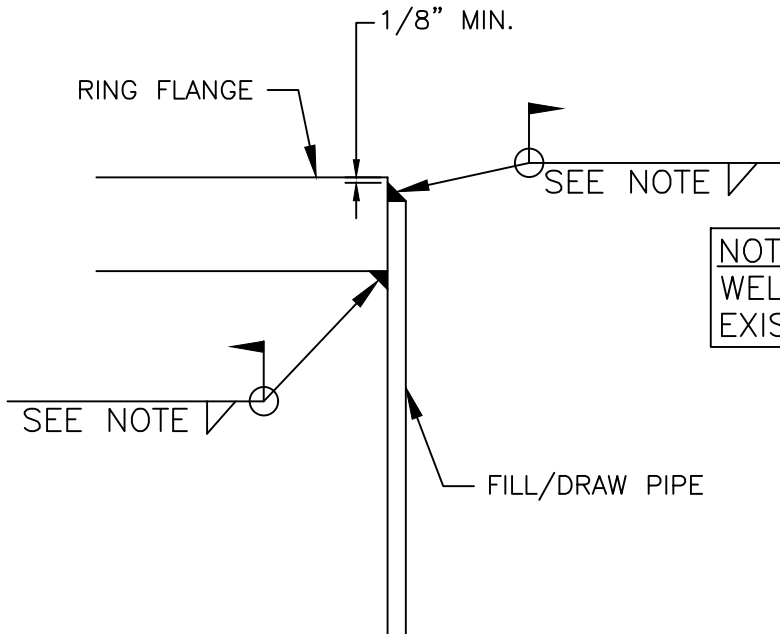
INSTALL MINIMUM OF 1/8" GASKET MATERIAL BETWEEN STAINLESS STEEL FLANGE AND STEEL FLANGE, TYPICAL OF 2

STAINLESS STEEL BELLOWS WITH FLANGED ENDS

TRIM FILL/DRAW PIPE AS NEEDED TO FIT THE NEW JOINT, FLANGE AND GASKET MATERIAL



## EXPANSION JOINT REPLACEMENT

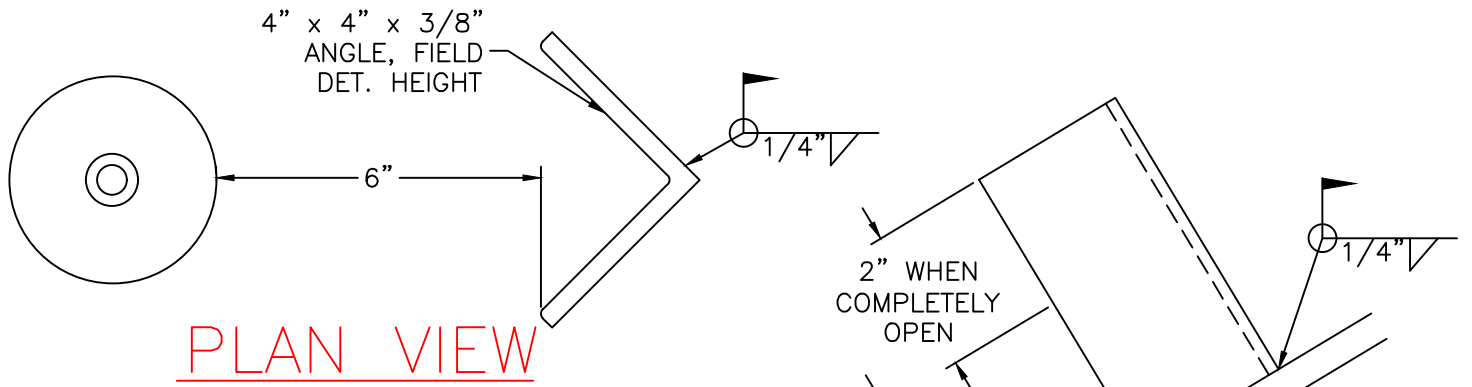


**NOTE:**  
WELD SIZE TO MATCH  
EXISTING PIPE THICKNESS

## FLANGE WELD DETAIL

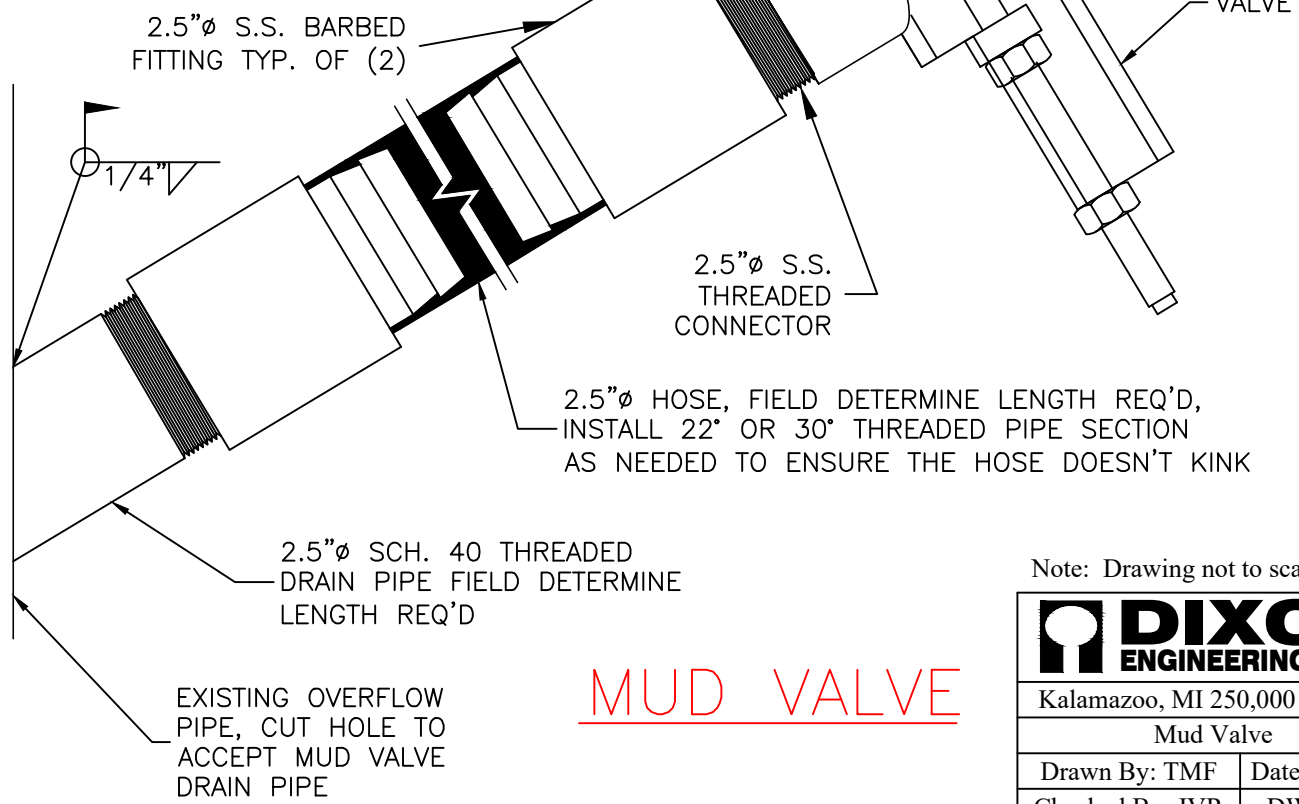
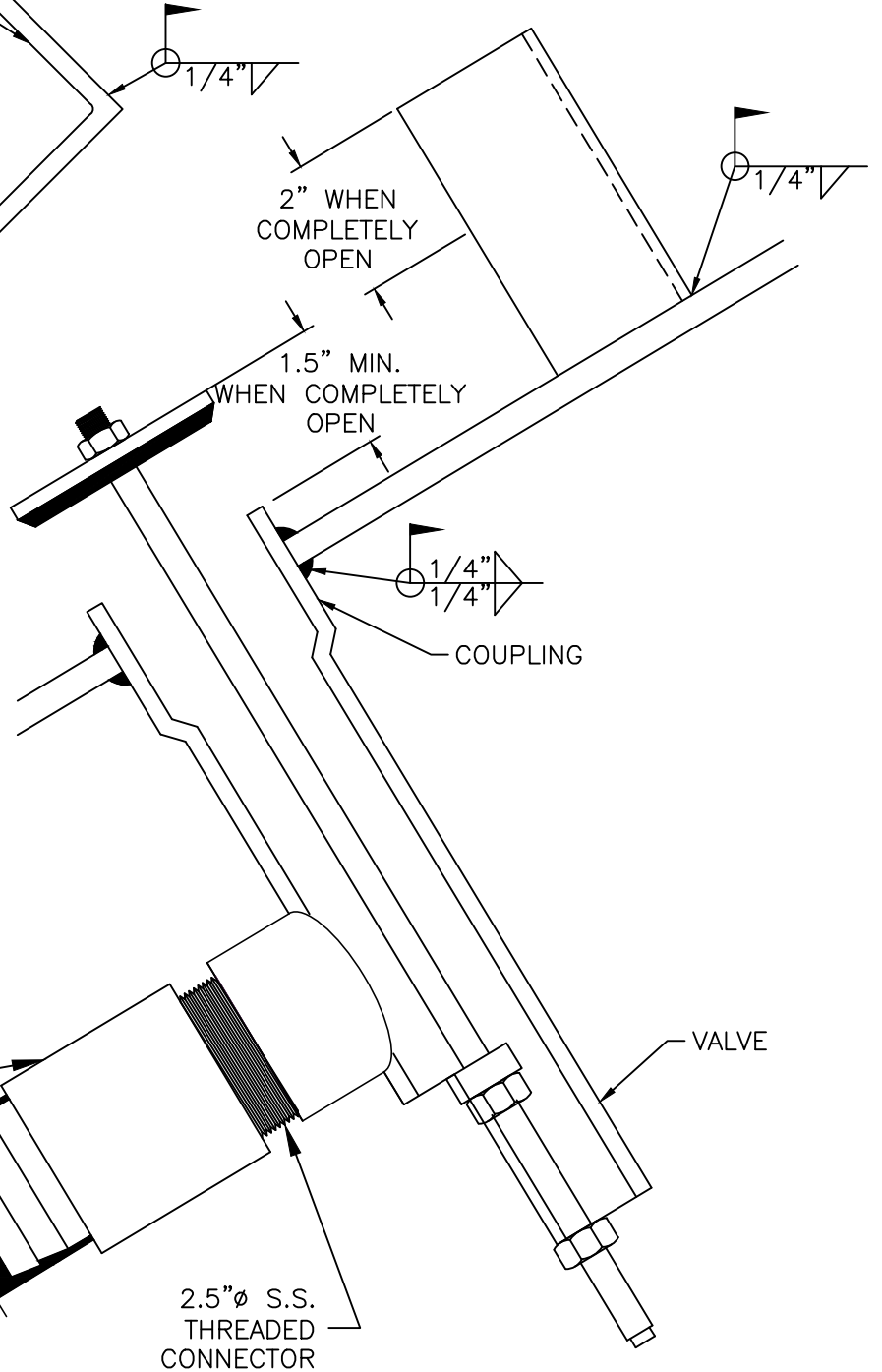
Note: Drawing not to scale.

	
Kalamazoo, MI 250,000 Spheroid	
Expansion Joint	
Drawn By: TMF	Date: 02/07/24
Checked By: JVR	DWG: 06b



PLAN VIEW

- NOTES:**
1. THE THREADED FEMALE COUPLING IS TO BE 2 1/2" LONG SCH. 80, EXTEND 3/8" INTO THE BOWL.
  2. INSTALL AS CLOSE TO THE ACCESS TUBE AS POSSIBLE.
  3. THREADED CONNECTIONS ARE TO BE SEALED WITH PIPE JOINT COMPOUND (OATEY GREAT WHITE OR APPROVED EQUAL).
  4. VALVE AND PIPING IS NOT TO INTERFERE WITH LADDER ACCESSIBILITY.
  5. VALVE TO BE EQUIPPED WITH A HANDLE.

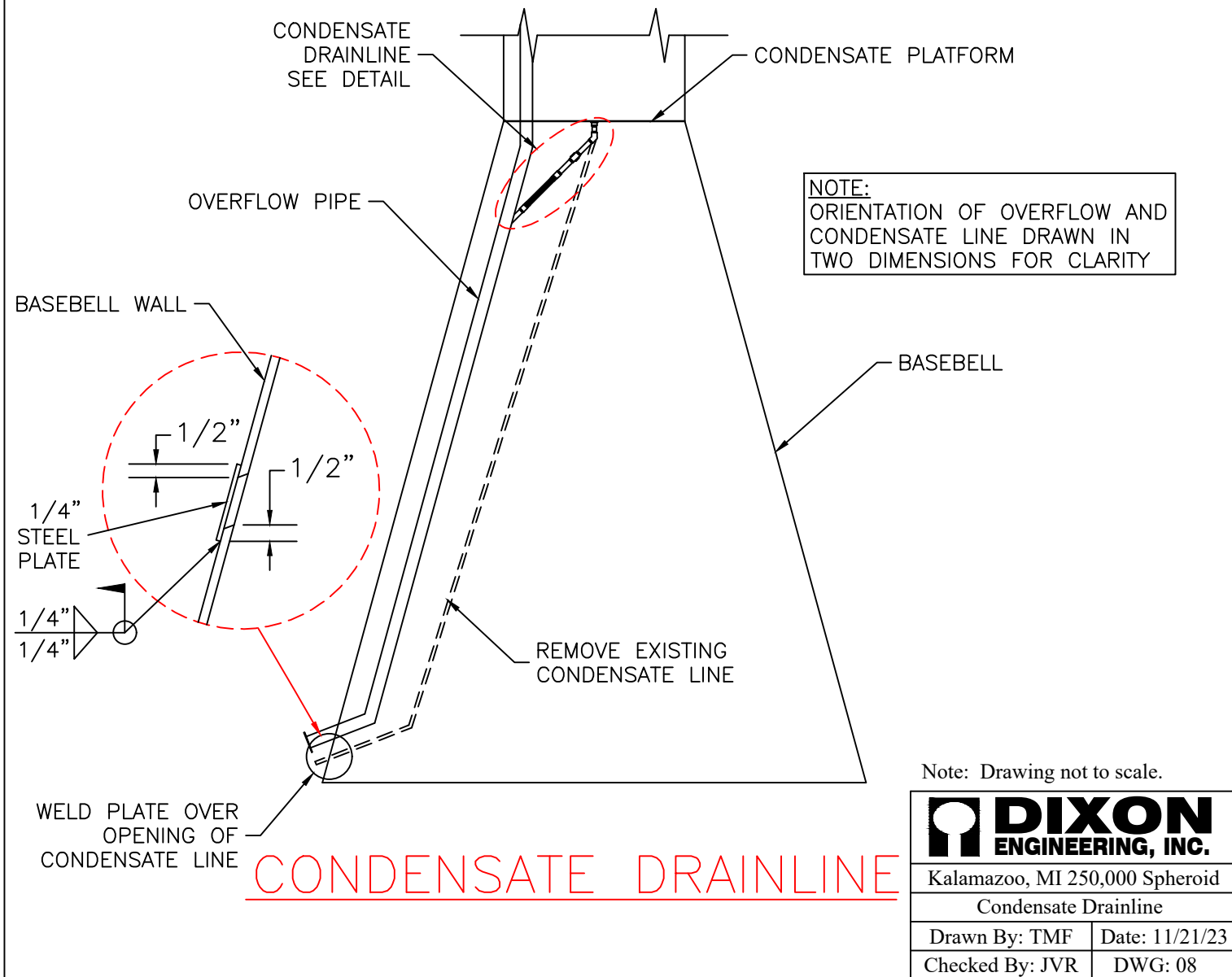
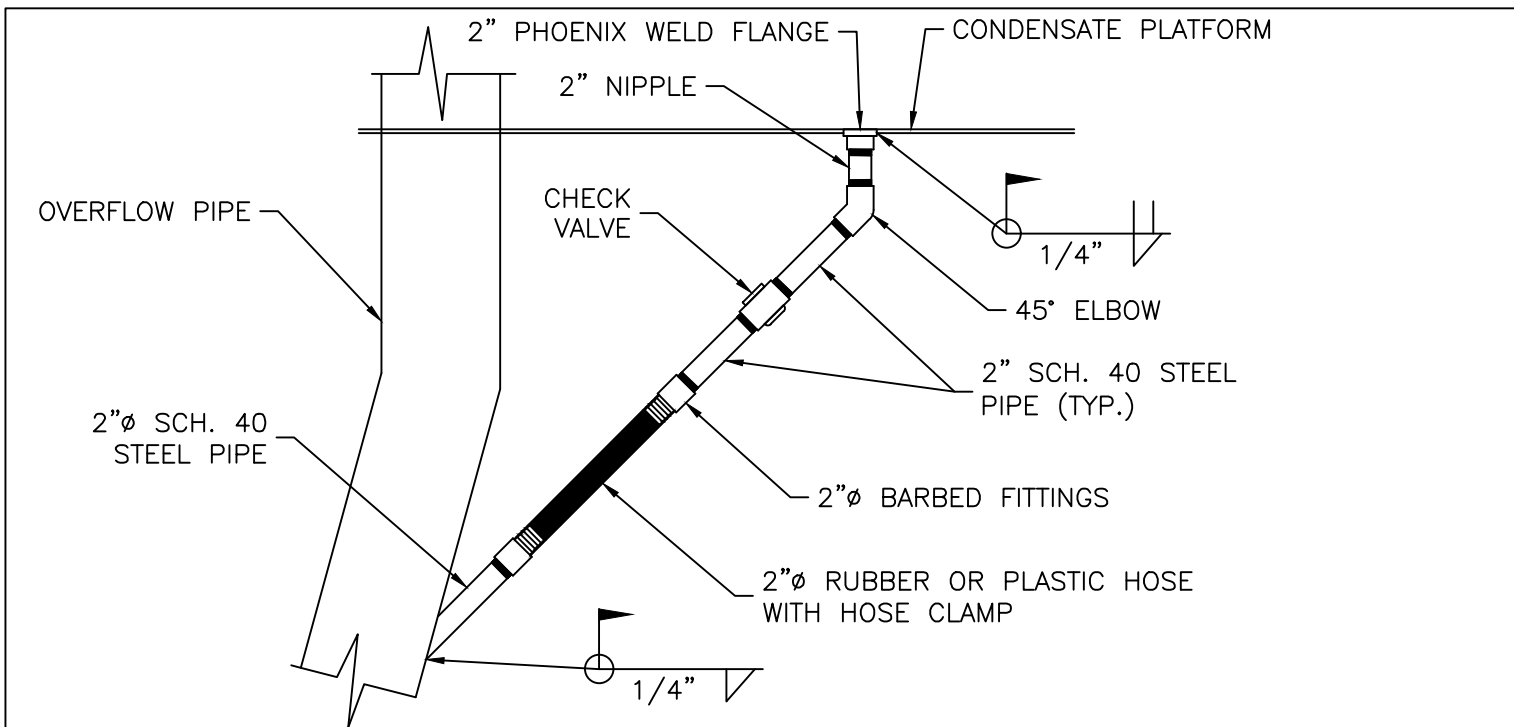


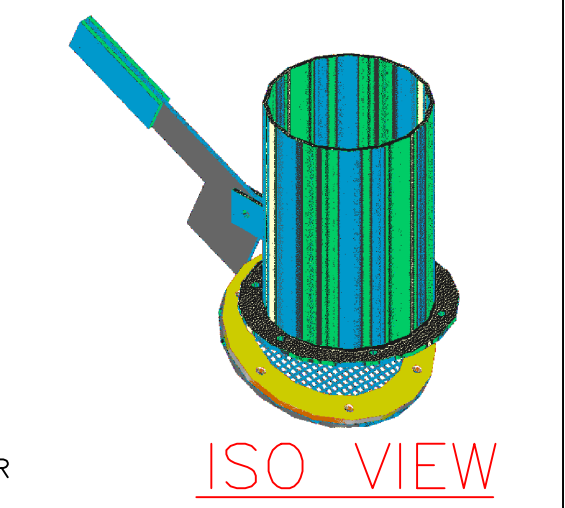
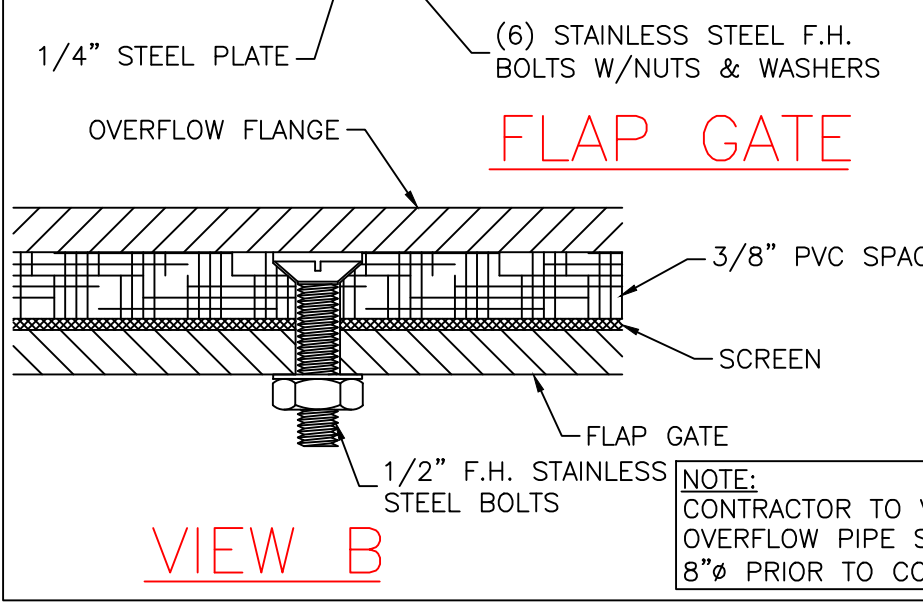
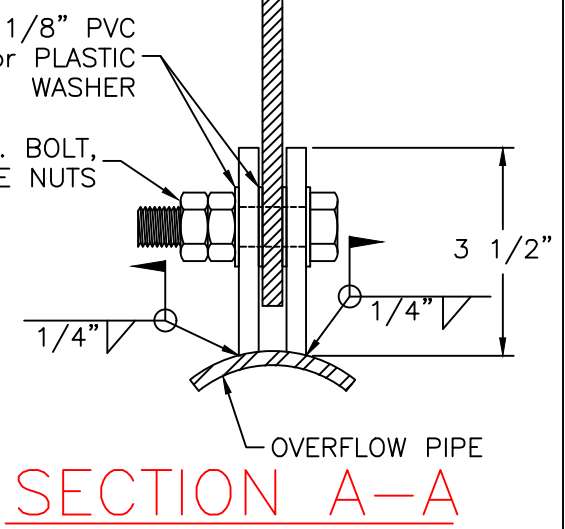
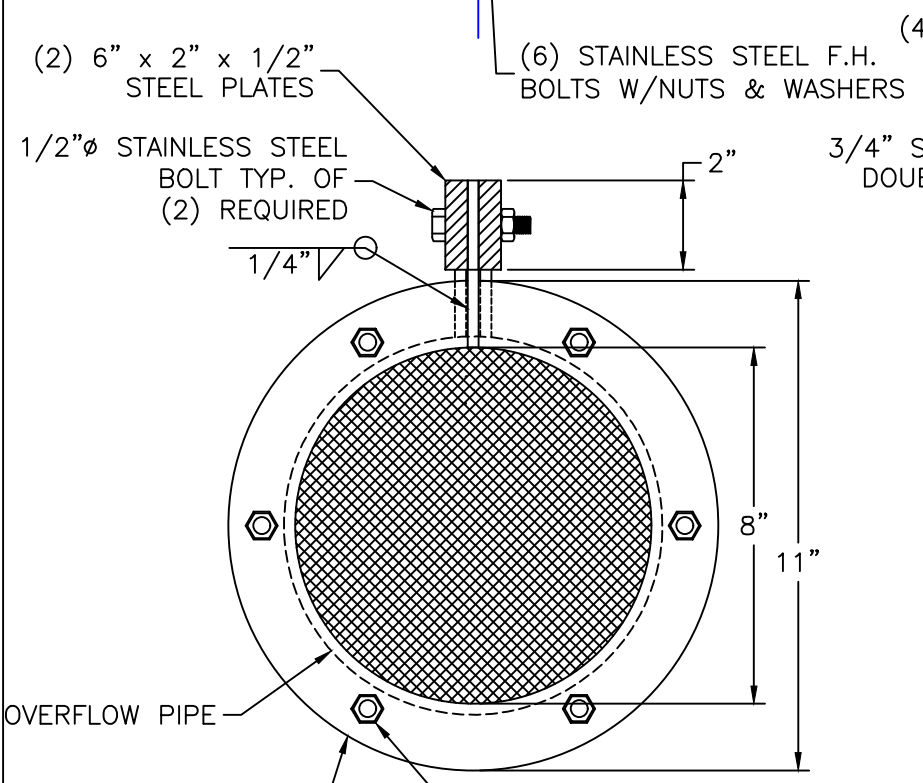
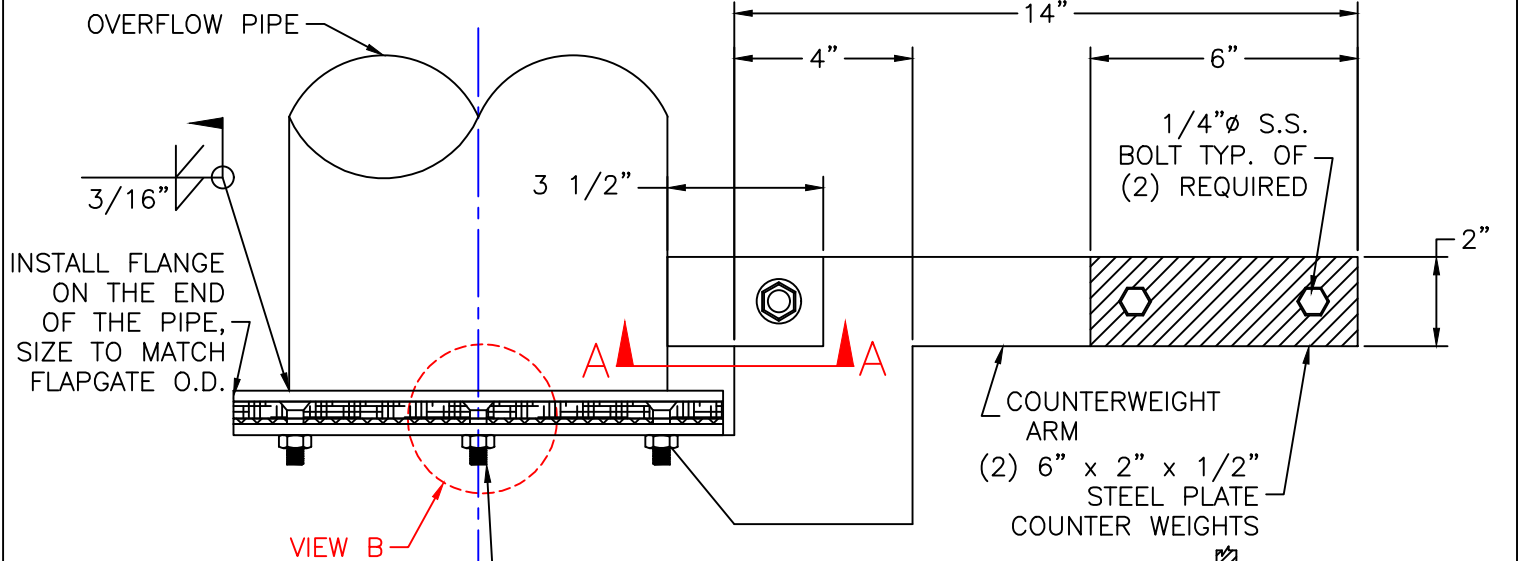
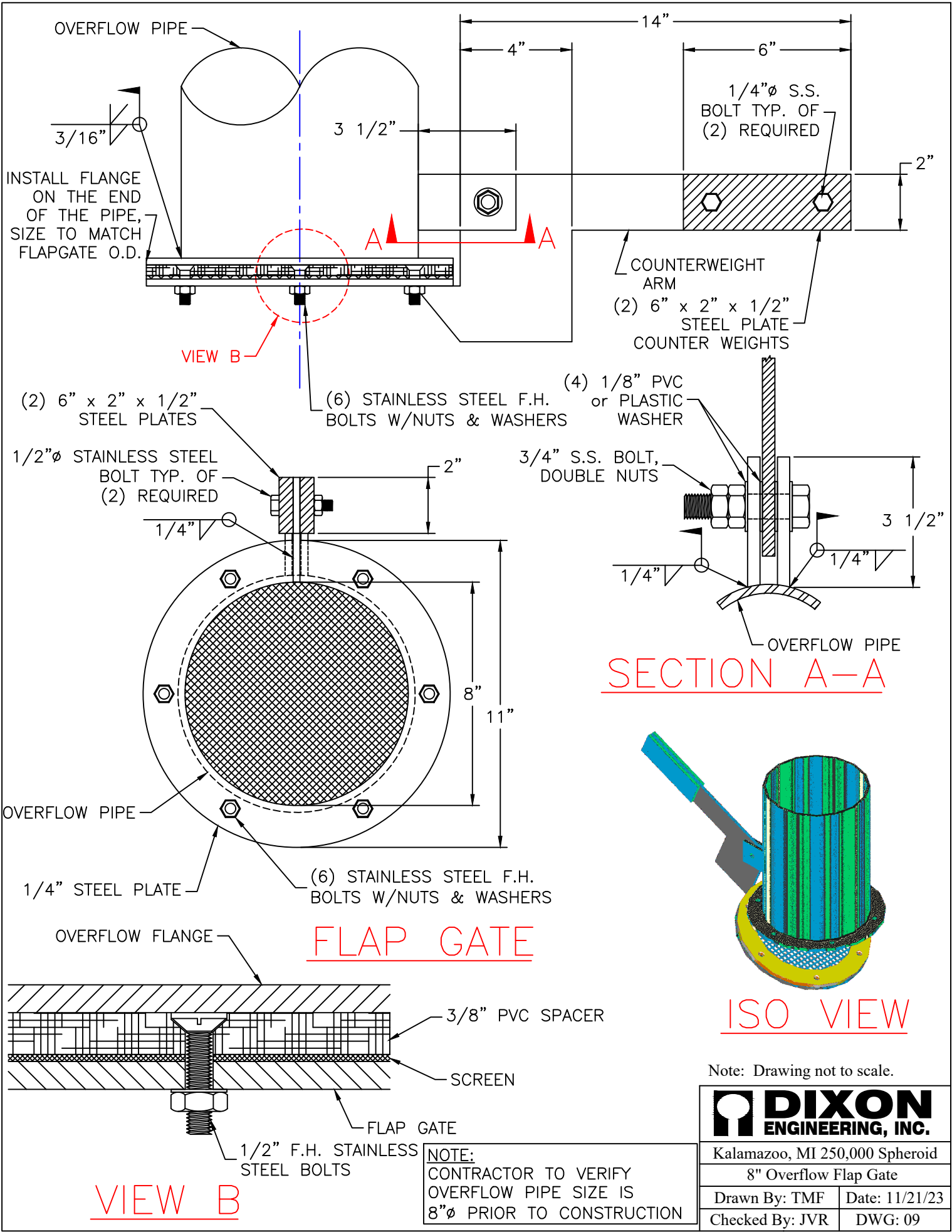
2.5"Ø HOSE, FIELD DETERMINE LENGTH REQ'D, INSTALL 22° OR 30° THREADED PIPE SECTION AS NEEDED TO ENSURE THE HOSE DOESN'T KINK

Note: Drawing not to scale.

<b>DIXON ENGINEERING, INC.</b>	
Kalamazoo, MI 250,000 Spheroid	
Mud Valve	
Drawn By: TMF	Date: 11/21/23
Checked By: JVR	DWG: 07

MUD VALVE





FLAP GATE

VIEW B

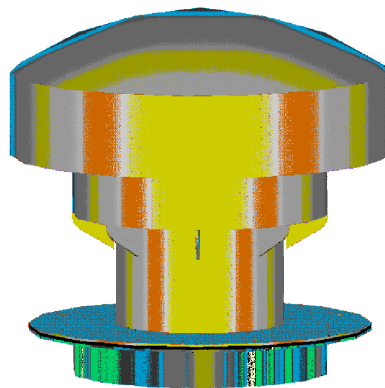
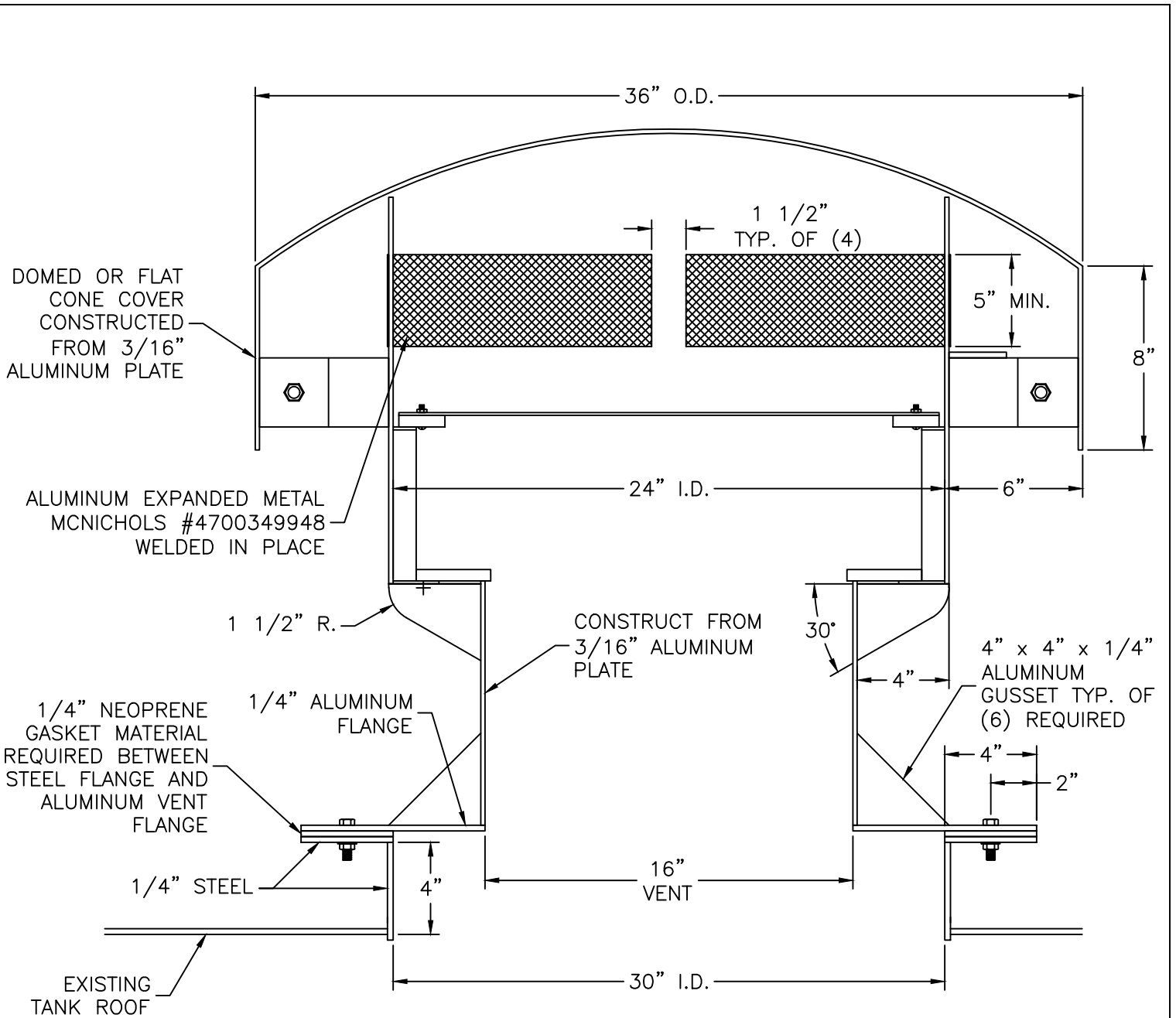
SECTION A-A

ISO VIEW

NOTE:  
CONTRACTOR TO VERIFY  
OVERFLOW PIPE SIZE IS  
8"Ø PRIOR TO CONSTRUCTION

Note: Drawing not to scale.

		Kalamazoo, MI 250,000 Spheroid	
		8" Overflow Flap Gate	
Drawn By: TMF	Date: 11/21/23		
Checked By: JVR	DWG: 09		



ISO VIEW

Note: Drawing not to scale.



Kalamazoo, MI 250,000 Spheroid

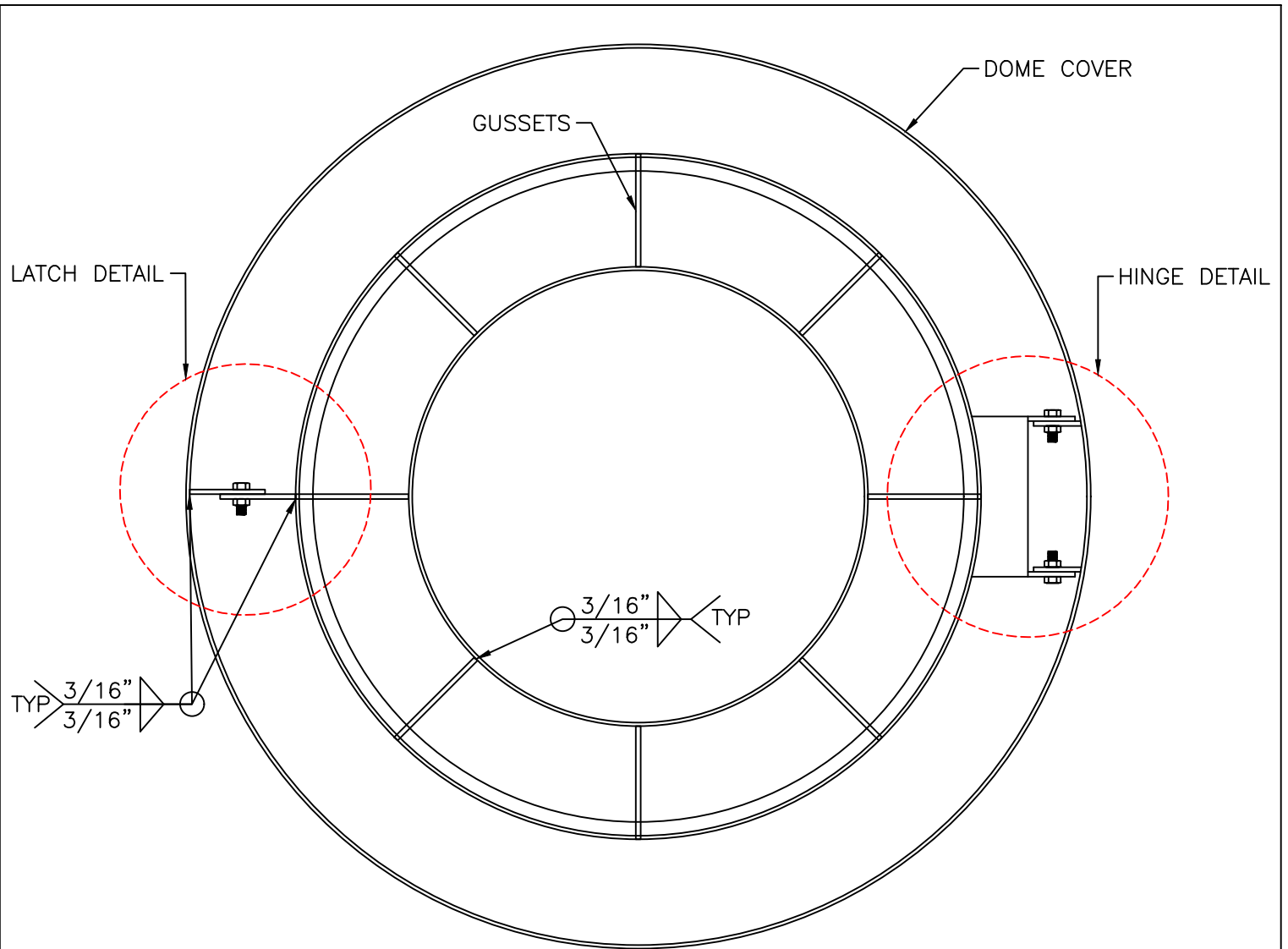
16" Pressure Vacuum Roof Vent

Drawn By: TMF

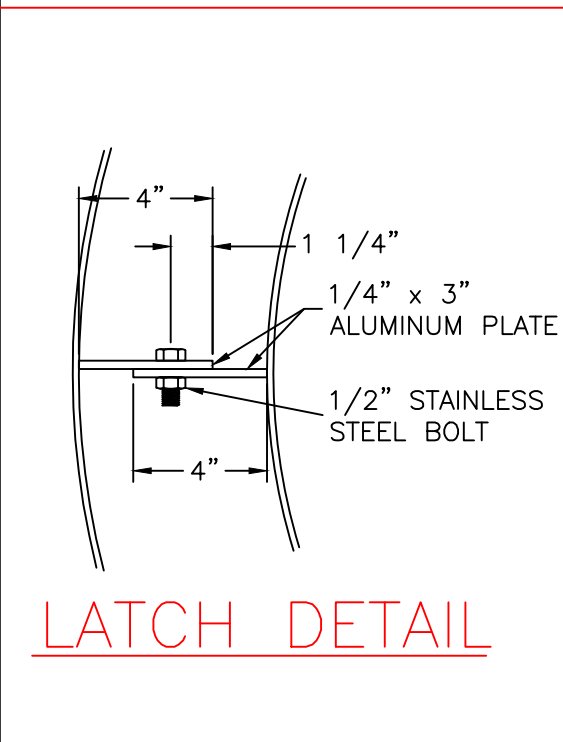
Date: 11/21/23

Checked By: JVR

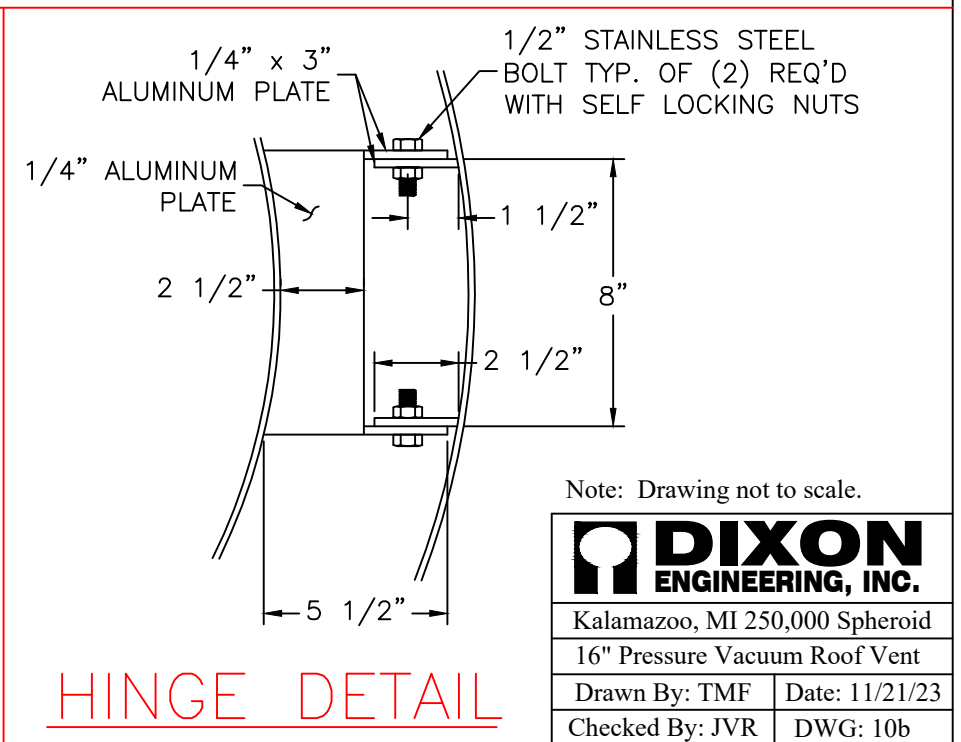
DWG: 10a



PLAN VIEW



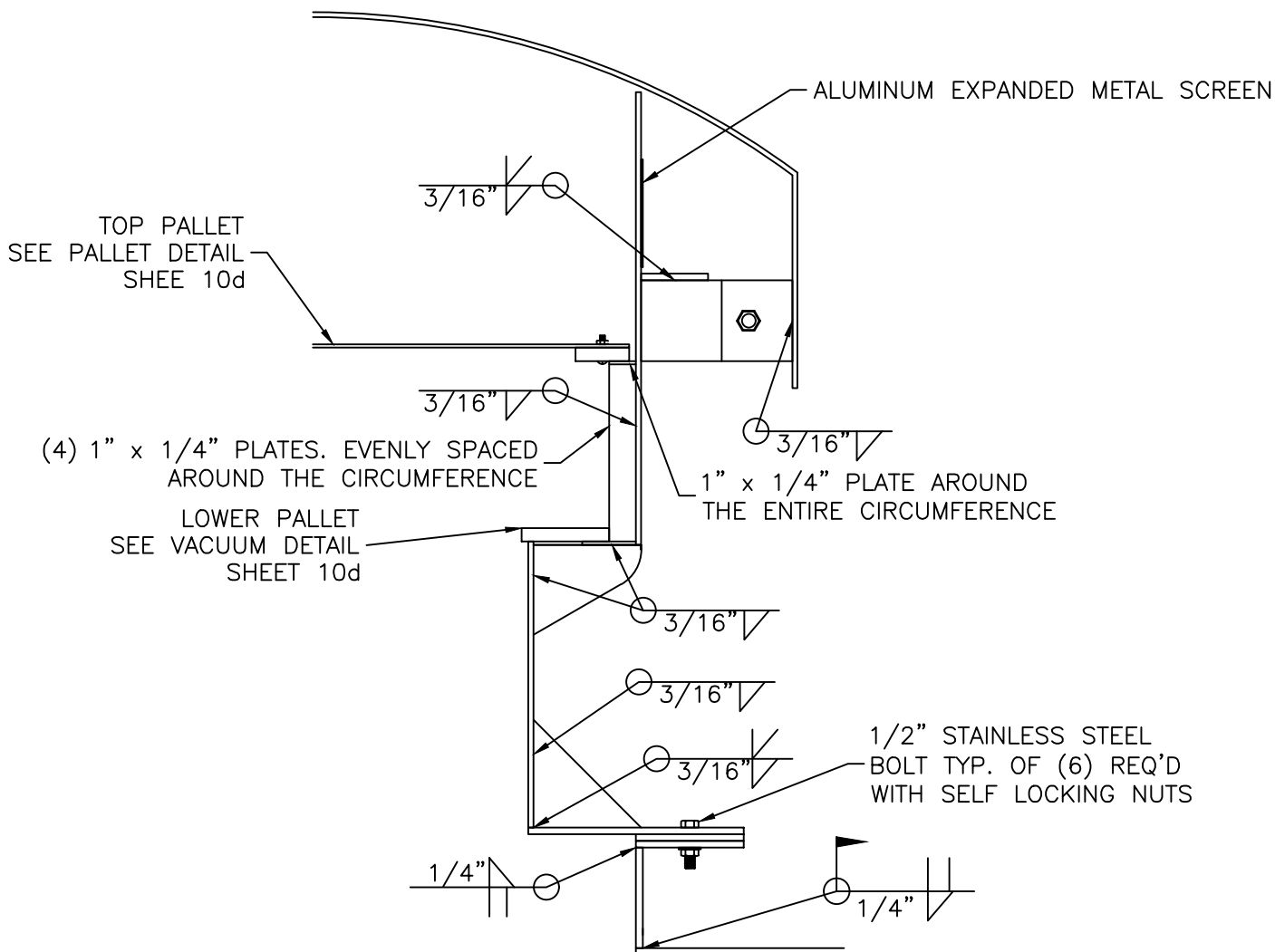
LATCH DETAIL



HINGE DETAIL


Note: Drawing not to scale.

<b>DIXON ENGINEERING, INC.</b>	
Kalamazoo, MI 250,000 Spheroid	
16" Pressure Vacuum Roof Vent	
Drawn By: TMF	Date: 11/21/23
Checked By: JVR	DWG: 10b

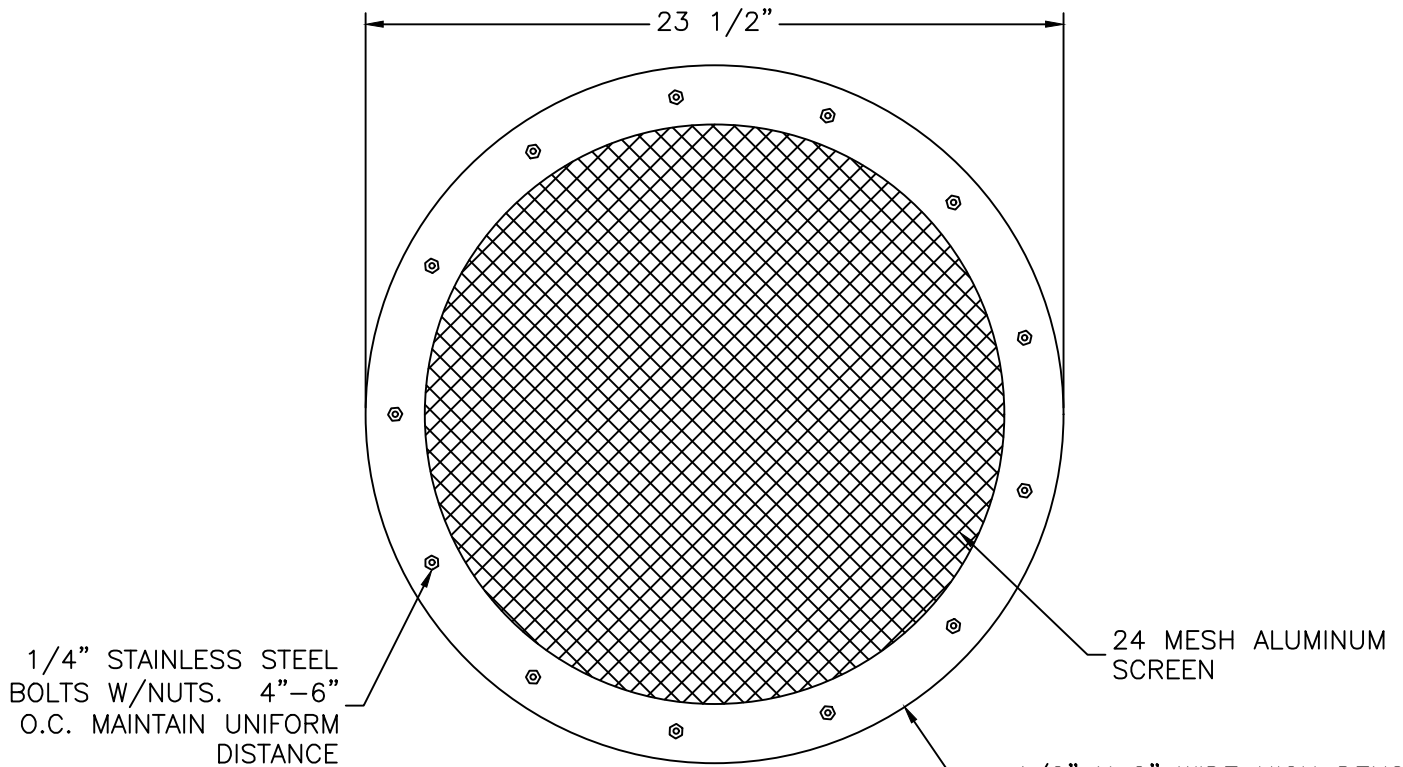


## WELDING DETAIL

Note: Drawing not to scale.

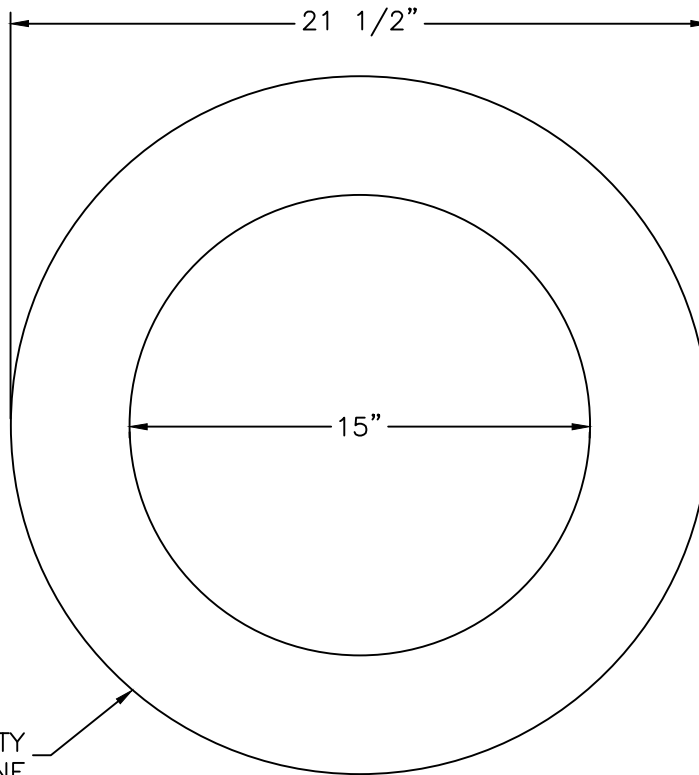
	
Kalamazoo, MI 250,000 Spheroid	
16" Pressure Vacuum Roof Vent	
Drawn By: TMF	Date: 11/21/23
Checked By: JVR	DWG: 10c





TOP PALLET

1/2" X 2" WIDE HIGH DENSITY POLYETHELENE TYPICAL OF TWO SECTIONS, SCREEN TO BE SANDWICHED BETWEEN THE TWO RINGS



VACUUM PALLET

Note: Drawing not to scale.



Kalamazoo, MI 250,000 Spheroid

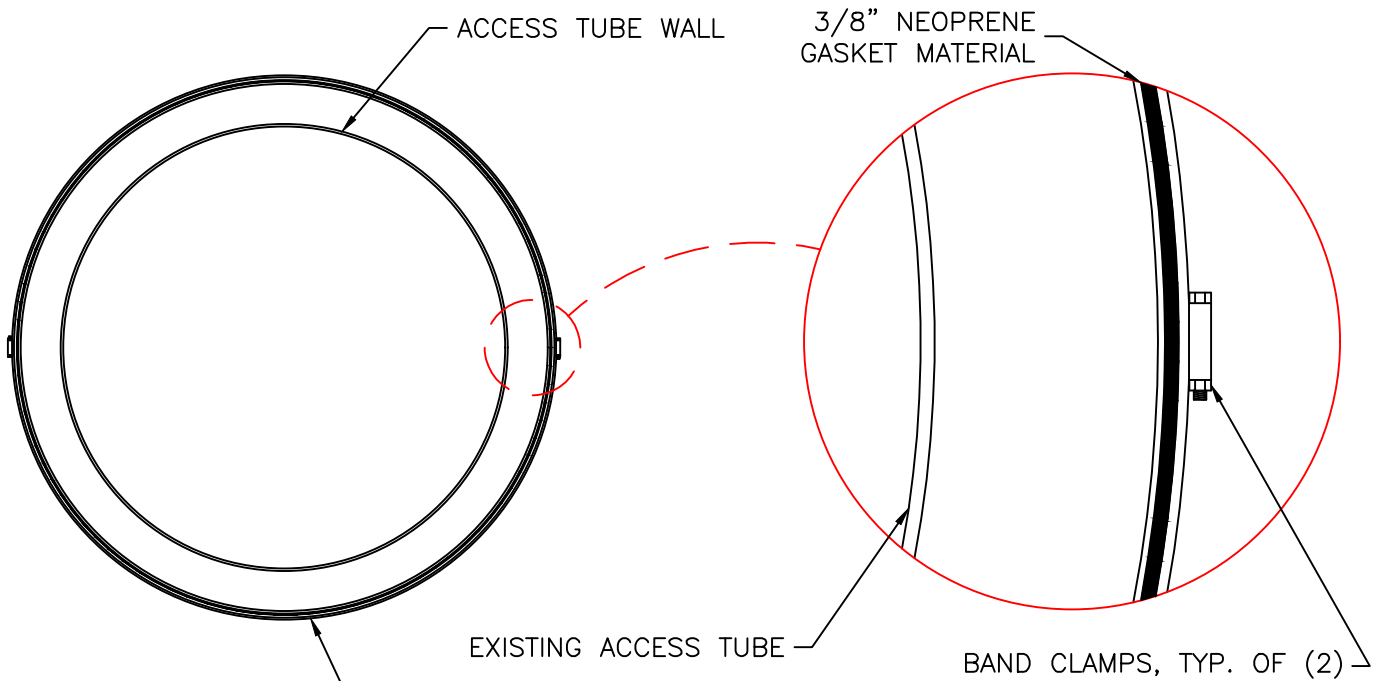
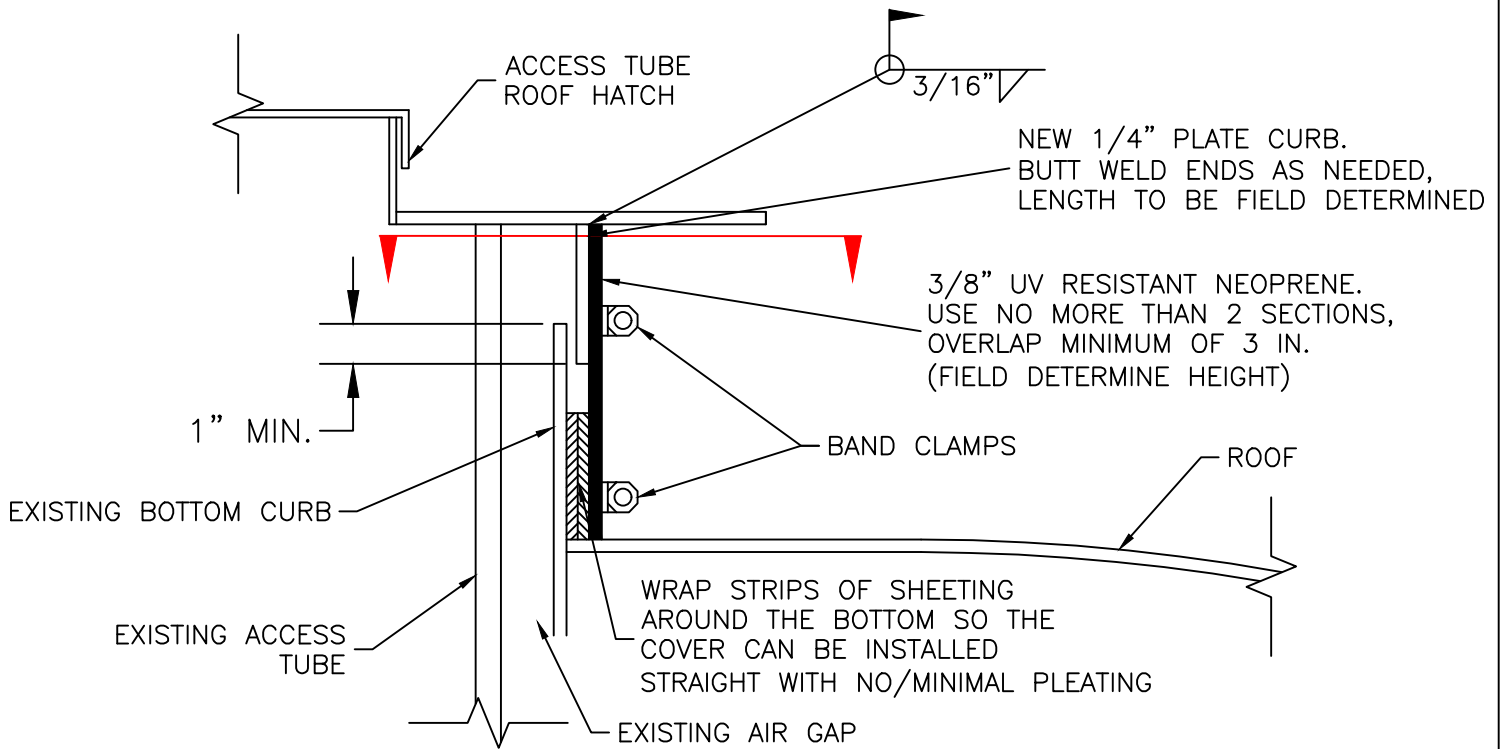
16" Pressure Vacuum Roof Vent

Drawn By: TMF

Date: 11/21/23

Checked By: JVR


DWG: 10d

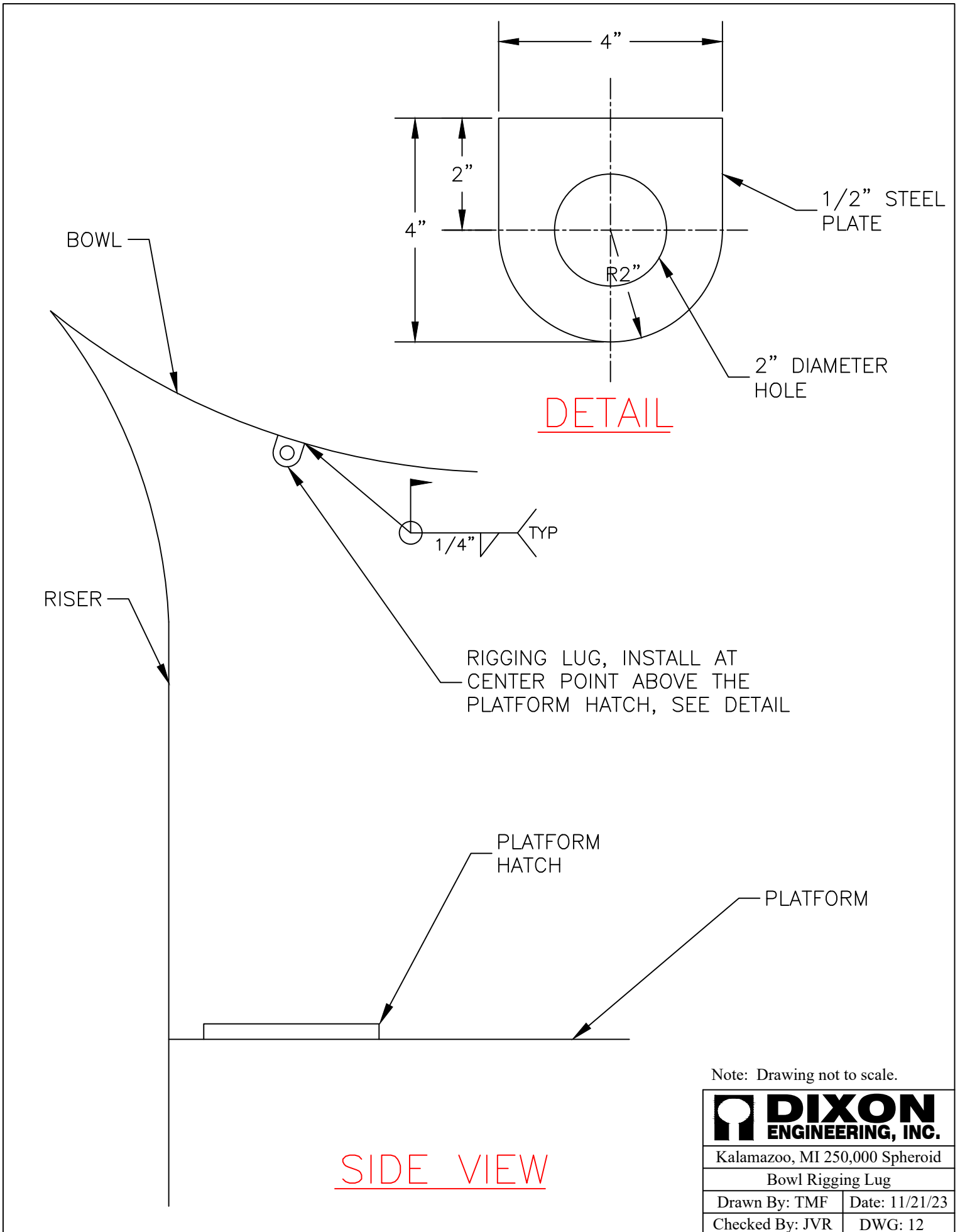


ACCESS TUBE SEAL


SECTION VIEW

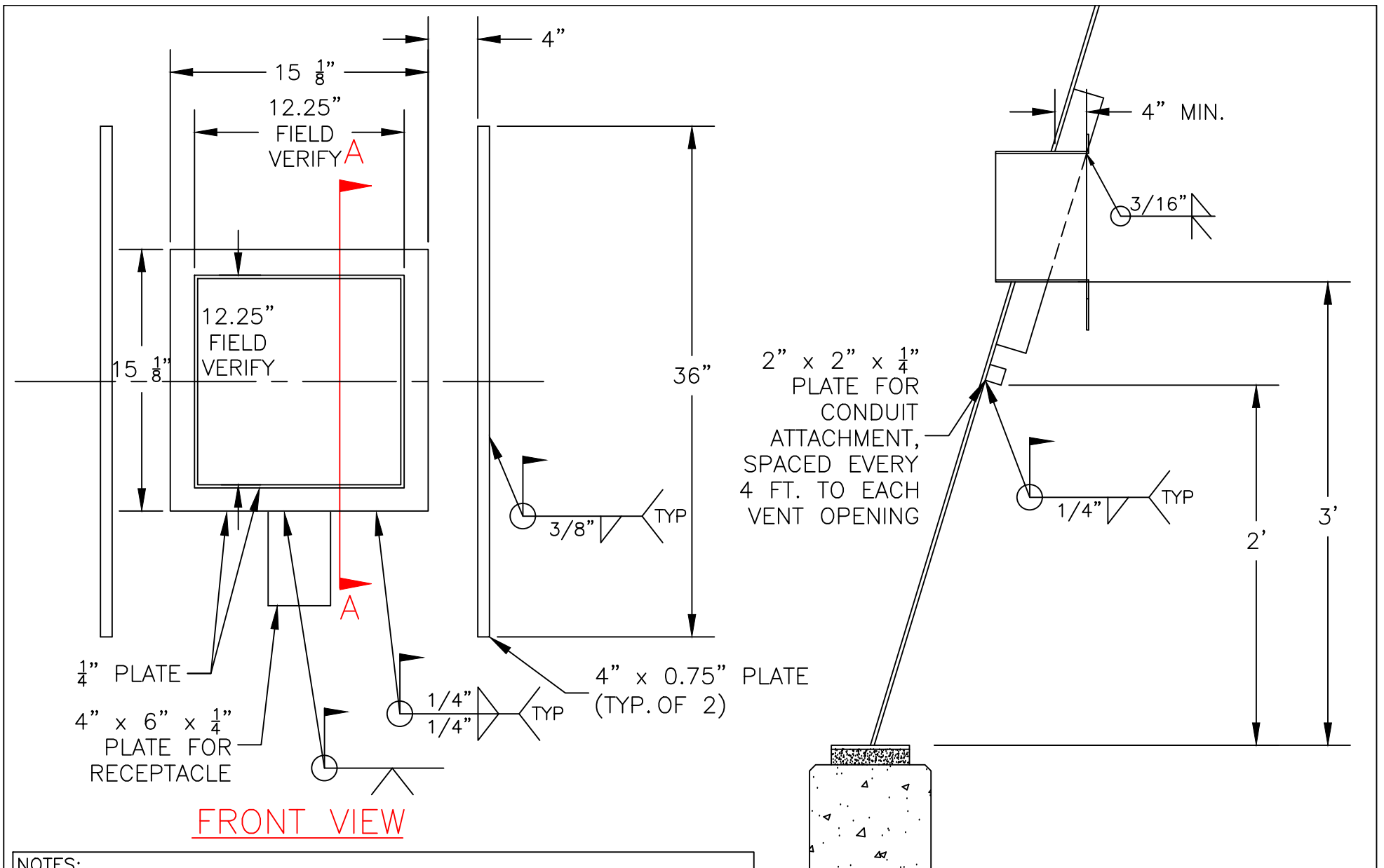
Note: Drawing not to scale.

	
Kalamazoo, MI 250,000 Spheroid	
Access Tube Air Gap Seal	
Drawn By: TMF	Date: 11/21/23
Checked By: JVR	DWG: 11



Note: Drawing not to scale.

	
Kalamazoo, MI 250,000 Spheroid	
Bowl Rigging Lug	
Drawn By: TMF	Date: 11/21/23
Checked By: JVR	DWG: 12



**NOTES:**

- 1) INSTALL ONE OPENING IN THE BASEBALL, FIELD DETERMINE LOCATION WITH THE ENGINEER/OWNER.
- 2) FRAME JOINT TO BE JOINED WITH FULL PENETRATION GROOVE WELDS.
- 3) INSTALL THE SHUTTER AND THE TRANSITION TO THE FRAME USING GALVANIZED BOLTS AND NUTS, WITH A GASKET BETWEEN THE SHUTTER AND THE STEEL FRAME, THEN INSTALL THE MODIFIED SQUARE TO ROUND TRANSITION.

Note: Drawing not to scale.



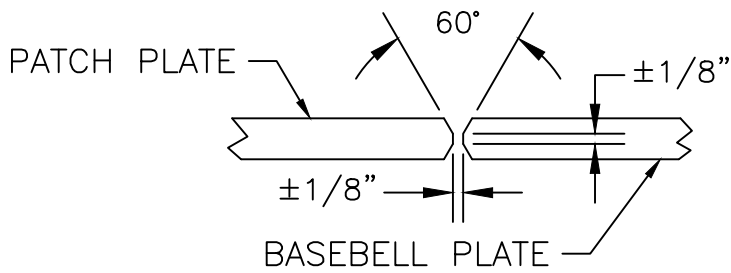
Kalamazoo, MI 250,000 Spheroid

Ventilation Opening

Drawn By: TMF Date: 02/07/24

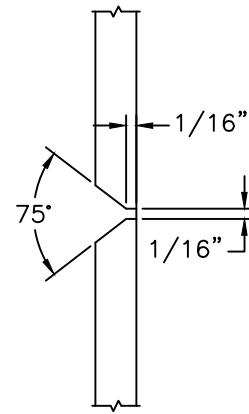
Checked By: JVR DWG: 13

**SECTION A-A**

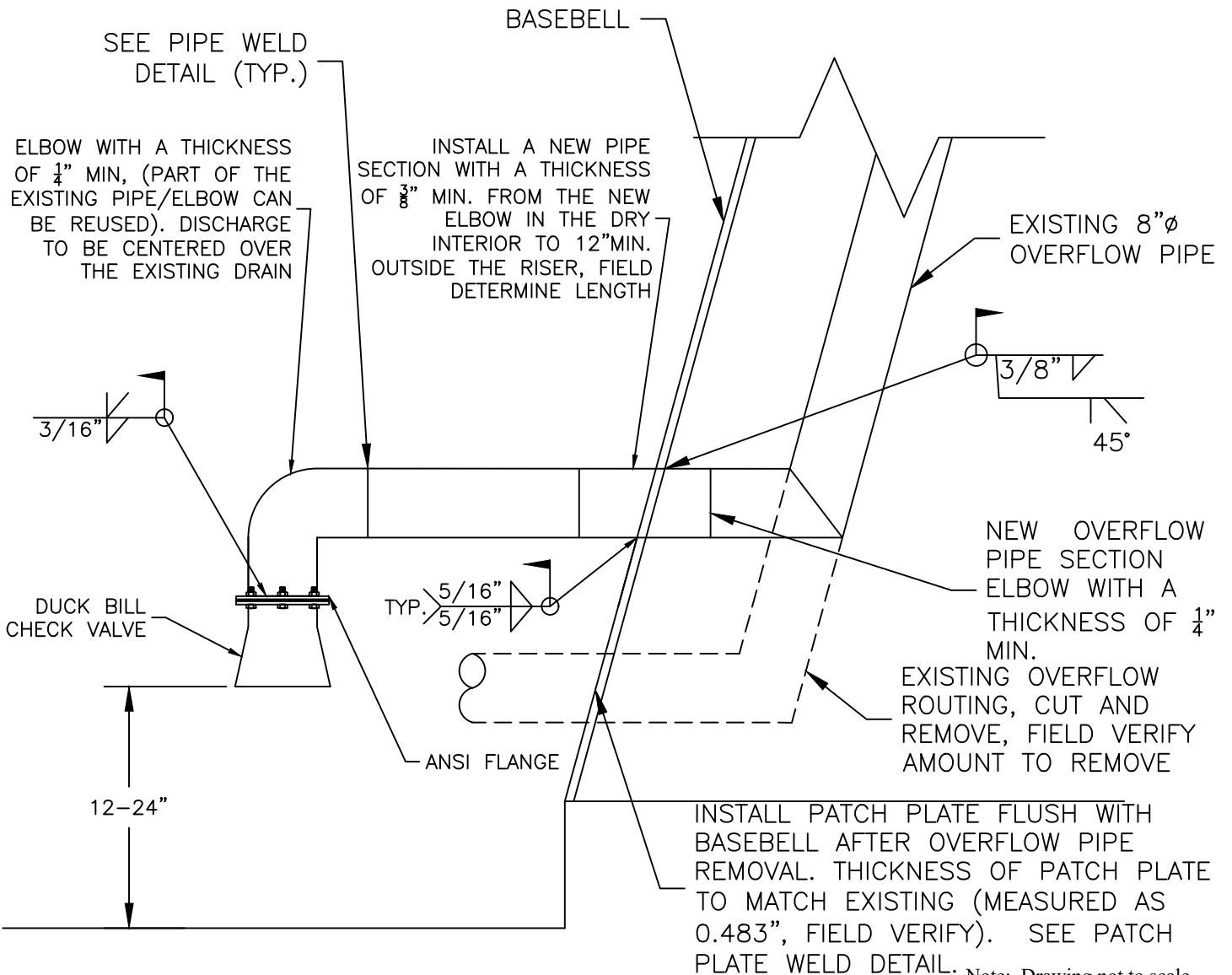


PATCH PLATE WELD DETAIL

(FULL PENETRATION FIELD WELD, BOTH SIDES)



PIPE WELD DETAIL



Note: Drawing not to scale.

<b>DIXON</b> ENGINEERING, INC.	
Kalamazoo, MI 250,000 Spheroid	
Reroute Overflow Pipe	
Drawn By: TMF	Date: 02/07/24
Checked By: JVR	DWG: 14

## **SECTION 09 97 13** **STEEL COATING**

### **PART 1 – GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Painting of steel structures.
- B. Interior cleaning and disinfection.

#### **1.02 REFERENCES**

- A. AWWA Standards (latest versions):
  - 1. D102 – Painting Steel Water Storage Tanks.
  - 2. C652 – Disinfection of Water Storage Facilities.
  - 3. C655 – Field Dechlorination.
- B. NSF/ANSI (latest versions)
  - 1. NSF/ANSI 60/600 and 61/600.

#### **1.03 WORK INCLUDED**

- A. Exterior: Apply a three (3) coat epoxy urethane fluoropolymer system.
- B. Dry Interior: Apply a spot two (2) coat epoxy system to the prepared surfaces.

#### **1.04 EXISTING COATING CONDITIONS**

- A. Exterior: Unknown coating system applied over a SSPC-SP6 blast in 2010.
- B. Wet Interior: Presumed to be an epoxy system that was applied in 2010.
- C. Dry Interior: Spot repair system that is presumed to be an epoxy applied in 2010.  
The coated tested for lead at 0.0058% by weight.

#### **1.05 OMISSIONS or INCIDENTAL ITEMS**

- A. It is the intent of these specifications to coat the structure for the purpose of corrosion protection on wet interior surfaces. It is the intent to coat the exterior for corrosion protection and aesthetics.
- B. Any minor or incidental items not specifically detailed in the schedule, but inherently a part of the work is included at no additional cost to the Owner.
- C. Engineer, as interpreter of the specifications, will determine if disputed items fall under this category. Prevailing custom and trade practices will be considered in this determination.

#### **1.06 PAINTER QUALIFICATIONS**

- A. The Contractor is to complete all coating and surface preparation.
- B. Painter is to be specialized in industrial or heavy commercial painting.

- C. ALL CONTRACTORS ARE TO BE PREQUALIFIED with Dixon Engineering for projects of this size and complexity.

## **1.07 SUBMITTALS**

- A. Submit the following with the annual prequalification:
1. Occupational Safety and Health Programs and certification that all site personnel have been trained as required by law.
- B. Submit the following ten (10) days prior to the preconstruction meeting:
1. Provide for employees one (1) copy of all data sheets at the job site for employee access.
  2. Provide an electronic copy to the Engineer.
  3. No work may commence without the complete filing. All SDS are to conform to requirements of SARA (EPCRA) Right-to-Know Act.
  4. Safety Data Sheets (SDS) and Product Data Sheets:
    - a. Furnish from all suppliers Safety Data Sheets and product data sheets for all applicable materials including but not limited to: coatings, thinners, additives, cleaners, caulking, degreasers, chlorine, abrasives, abrasive additives, and pretreatments.
  5. Fall Prevention Plan and Site-Specific Fall Hazard Evaluation:
    - a. Site specific plan to contain a description and/or generic drawing of the existing structure and appurtenances of this structure and reflect safety changes specified for this project.
    - b. Certifications for all spiders, scaffolding, stages, etc., to be used on the project. All certifications to be current, less than one (1) year old.
- C. Submit the following at the preconstruction meeting:
1. Designated OSHA Competent Person and qualifications, if not previously submitted.
- D. Submit the following within two (2) weeks of project completion with final pay request:
1. Waivers of lien.
  2. Copies of any formal worker safety or environmental citations received on the project.

## **1.08 OWNER RESPONSIBILITY**

- A. Drain the structure with seven (7) day notice after Contractor meets all precedent conditions of the contract.
- B. Fill the tank and draw samples and test after chlorination; responsibility for passing test results remains with the Contractor. Failing test results could result in added costs to Contractor, including re-chlorination, cost of water, plus possible liquidated damages.

### **1.09 DELIVERY and STORAGE of MATERIAL**

- A. Due to supply chain issues, the Owner reserves the right to require that the Contractor is to have all of the required coating for the project delivered to the site or to the Contractor's storage facility prior to the tank being taken out-of-service and commencement of the project.
- B. Submit manufacturer's invoice, with or without paint cost, to the Engineer for review. This submittal will be used to identify the quantity of paint recommended by the manufacturer for a job of this size and design and will be used to check the quantity actually delivered to the project.
- C. Cover bulk materials subject to deterioration because of dampness, weather, or contamination, and protect while in storage.
- D. Maintain materials in original, sealed containers, unopened and with labels plainly indicating the manufacturer's name, brand, type, grade of material, and batch numbers.
- E. Remove from the work site containers that are broken, opened, water marked, and/or contain caked, lumpy, or otherwise damaged materials. They are unacceptable.
- F. Store the material in a climate controlled designated area where the temperature will not exceed the manufacturer's storage recommendations. Heat the storage area to the manufacturer's recommended minimum mixing temperature.
- G. Keep equipment stored outdoors from contact with the ground, away from areas subject to flooding, and covered with weatherproof plastic sheeting or tarpaulins.
- H. Store all painting materials in a location outside the structure.
- I. Do not store or have on-site unapproved material, material from different manufacturers, or materials from different projects.

### **1.10 ACCESS and RPR SAFETY**

- A. Provide access to all portions of the project where work is being completed. Access must be close enough and secure enough to allow the RPR to use equipment without extensions.
- B. Provide personnel to assist with access and to ensure Contractor's access equipment is safely used.
- C. Provide separate fall protection devices and safety lines for the Owner and observers. Limit fall to five vertical feet.
- D. These specifications require the Contractor to supply a separate fall protection cable and safety grab for each tie-off point for the observer's use. The Contractor is encouraged to provide a separate cable and tie-off for each worker. The cables may be connected to the same tie-off point as the RPR, but a separate cable and safety grab are required for each user.



- E. The Project area is located in an active City Park. Contractor shall provide unhindered access to park facilities and parking areas at all times and shall implement safety measures necessary to protect park users from falling objects, overspray, etc. via the use of temporary fencing or other necessary and acceptable means. The parking area immediately south of the water tower may be used by the Contractor and access to the public may be limited on an as-needed basis.

### **1.11 OBSERVATION and TESTING**

- A. Prior to the scheduled observation, remove all dust, spent abrasive, and foreign material from the surface to be coated.
- B. The Contractor is to furnish an instrument for measuring the wet film thickness, and also a calibrated instrument for measuring dry film thickness of each field coat of paint. The dry film thickness testing gauge to be the magnetic type as manufactured by Elcometer Co., or the Nordson Gauge Co.; spring loaded model with two percent (2%) accuracy margin over a range of one-to-twenty-one (1-100) mils or equal.
- C. The Engineer will furnish and operate observation equipment for their own use as quality assurance.
- D. Certify to the Owner that the specified paint has been applied at the paint manufacturer's recommended coverage, and to the specified thickness required. Also, certify that the paint has been applied in accordance with this contract.
- E. Take all necessary steps, including dry striping by brush or roller, to ensure a holiday-free coating system.
- F. The wet interior coating repairs are subject to low or high voltage holiday testing.
- G. The Owner and Engineer reserve the right to perform destructive testing under conditions deemed necessary. Testing may include, but is not limited to, the Tooke thickness test and adhesion testing. Any damage caused by these tests will be corrected to specifications at the Contractor's expense.

### **1.12 CLIMATIC CONDITIONS**

- A. Do not apply paint when the temperature, as measured in the shade, is below the manufacturer's required ambient and surface temperatures.
- B. Do not apply paint to wet or damp surfaces, or during rain, snow, or fog.
- C. Do not apply paint when it is expected the relative humidity will exceed 85%, or the surface temperature is less than 5° F above dew point, or the air temperature will drop below the manufacturer's requirements for proper cure. Anticipate dew or moisture condensation, and if such conditions are prevalent, delay painting until the observer is satisfied the surfaces are dry.

### **1.13 APPLICATION**

- A. Complete all painting and surface preparation in strict accordance with these specifications, approved paint manufacturer's specifications, and good painting practices per SSPC.
- B. Apply each coating at the rate and in the manner specified by the manufacturer. Check the wet film thickness every 200 sq. ft. to ensure each coat applied meets the dry film thickness range requirements.
- C. Allow sufficient time for each coat of paint to dry and cure. Allow a minimum of twenty-four (24) hours between coats, unless product requirements have a maximum time less than 24 hours.
- D. Apply exterior coating by brush and roller only. Spray application is not permitted without prior approval of the Engineer. Even with prior approval, responsibility for damage to any property caused by spray application still remains with the Contractor.
- E. Coatings are to be applied using methods to eliminate roller or spray marks in the finished product on the exterior.
- F. Painting may be delayed because of poor coverage or the potential damage from overspray and/or dry spray. In all cases, responsibility for damages rests with the Contractor.
- G. The Contractor is responsible for the appearance of the finished project and is warned to prevent contact with any freshly applied coating. Removal of rigging is to be completed so not to mar or damage the coating.
- H. Additional coats required for coverage or to eliminate roller marks, spray marks and to repair dry spray and overspray are the responsibility of the Contractor at no additional cost to the Owner.
- I. Use of pole extension on spray guns is prohibited for all paint application.
- J. Mixing partial kits is not permitted. All partial cans of coating must be removed from the site.
- K. Mixing blades to be clean. The Engineer has the right to reject mixing blades based on cleanliness or paint build-up. Do not use the same mixing blade for different coatings (i.e., epoxy and urethane coatings).

### **1.14 PRESSURE RELIEF VALVES**

- A. Furnish two (2) pressure relief valves.
- B. The valves are to be Aquatrol series 69F1 manufactured by Aquatrol Valve Company, Inc. [www.aquatrol.com](http://www.aquatrol.com) 800-323-0688, or approved equal.
- C. Valves will need to be fitted with a hydrant thread adaptor. Valves to be adjustable with range a minimum of 30 to 90 psi. Set valve at 60 psi.
- D. Supply three (3) days prior to draining of the structure.
- E. After work on the structure and successful disinfection have been completed, the Owner will return the valves to the possession of the Contractor.

- F. Cost is incidental to the project.

## **PART 2 – PRODUCTS**

### **2.01 COLOR**

#### **A. Exterior Coatings:**

1. Supply the Engineer with a color chart to allow the Owner ample time for the exterior topcoat color selection.
2. Factory tint the intermediate coat(s) for all areas of the structure if similar to the finish coat. Tinting is to be sufficient to allow visibility of the dissimilar color from 1 ft., and from 100 ft.
3. The Owner is to select or verify the topcoat color at the preconstruction meeting.
  - a. All bids are to be based on Tnemec “Fairway 21GN” color.

#### **B. Wet Interior and Dry Interior Coatings:**

1. The color is to be a different tint between coats. Tinting to be performed in the factory. The final color is to be white, blue, or off-white as selected by the Owner. The topcoat color is to be verified at the preconstruction meeting.
2. Only colors approved by NSF 61/600 are to be used in the wet interior.

### **2.02 SUBSTITUTIONS**

- A. All coatings specified and approved herein have met or exceeded a specified list of ASTM standards. The materials specified are the standard to which all others are to be compared.
- B. The purpose is to establish a standard of design and quality, and not to limit competition.
- C. Manufacturers wishing to have their products approved are to have their coatings tested using the same test methods.
- D. Approval by ANSI/NSF Standard 61/600 is also a requirement for potable water contact coatings.
- E. The selection of coatings also has taken into consideration the manufacturer’s current and past performance on availability, stocking, and shipping capabilities, ability to resolve disputes, and any applicable warranties.

### **2.03 EQUIPMENT COVERING**

- A. Use material that is 8 – 10 mils thick, and 100% impermeable to all vulnerable equipment.
- B. Use material resistant to tear and/or rip by mechanical action from abrasive blasting during blasting operations.
- C. Make coverings airtight by use of duct tape at the openings, or other suitable measures.

- D. Meet with representative of equipment owners to verify covering will not damage equipment. Damage is the Contractor's responsibility. This includes not only the Owner's equipment, but also telecommunication antennas, cables, buildings, controls, etc.

#### **2.04 AIR DRYER for COMPRESSOR**

- A. Use air dryers that are sufficient to remove 98% of the moisture from the compressed air. Size the dryers on total cfm using manufacturer supplied charts. Upon request, provide charts to the Engineer for verification.
- B. If the dryer fan is not operable, cease all blasting until the dryer is replaced or repaired.
- C. Supply air dryer with an air draw-off valve to check air for dryness, oil contamination, and cleanliness on the outlet side of the air dryer.
- D. For cleaning operations, draw clean air from the outlet side of the air dryer.

### **PART 3 – EXECUTION**

#### **3.01 DISINFECTION**

- A. Disinfect the completely painted structure in accordance with AWWA Standard C652 Chlorination Method No. 3.
- B. Furnish the material and labor necessary to disinfect the structure in the required manner. Any chlorine products used are to be NSF 60/600 approved. Assist the Owner during filling and ensure that any manways are free of leaks after filling. The Contractor is to adjust the manways and replace gaskets as needed to ensure there are no leaks.
- C. Do not allow water to enter the distribution system until satisfactory bacteriological test results are received.
- D. The Owner is responsible for collecting two consecutive bacteriological samples, 24 hours apart, following disinfection. Satisfactory results are required before the tank can be returned to service.
- E. Water drained to waste may not contain any substances in concentrations that can adversely affect the natural environment. No total residual chlorine may be measured in water discharged to surface water. It is recommended that the water be dechlorinated per AWWA C655 Field Dechlorination.
- F. Pay all additional expenses if it is necessary to repeat the testing and disinfection procedure as a result of defective work.

#### **3.02 PROTECTION of NON-WORK AREAS**

- A. Protect all non-painted surfaces, turf, and parking areas prior to all painting, and paint removal, grinding, and blasting activities.

- B. Protect and seal all controls and electrical components (even if they are not in the immediate work area) that are in danger from the project. Coordinate with the Owner so all controls are shut down and/or vented if necessary.

### **3.03 ANTENNA REMOVAL**

- A. There is one (1) antenna mounted on the roof, and one (1) on the riser. The number of antennas listed are from the last known condition, the Contractor is to field verify number of antennas.
- B. The antennas and cables are to be removed by the Contractor prior to the start of the project and reinstalled after coating is completed.
- C. All welded brackets will remain in place for the Contractor to surface prepare and paint.
- D. Any galvanized or stainless-steel materials are to be removed by the antenna carrier prior to tank surface preparation and reinstalled by the antenna carrier after the topcoat is dry to the touch.
- E. All previously coated items are to be removed surface prepared, coated and reinstalled with the original brackets after the topcoat is dry to the touch.
- F. Antenna removal and reinstallation, where required, shall be performed by the Contractor and associated costs shall be incidental to the Project. The disconnection, reconnection, and storage of the equipment is coordinated with the City's recommended contact to ensure that work is completed properly.

### **3.04 ANTENNA EQUIPMENT COATING**

- A. Antenna equipment that is currently coated the same color as the tank is to be surface prepared and coated to match the exterior tank per these specifications including but not limited to: brackets and mounting poles.
- B. All previously coated items are to be coated per the exterior specifications. Any galvanized, stainless steel or other uncoated materials are to remain uncoated.
- C. Cable connections are to be removed during surface preparation and coating application. Temporary supports may be needed to hold the cables in place during the project. Reinstall the cable attachments or install new connections if the attachment is a zip-tie or electrical tape. Note that the antenna and any miscellaneous equipment attachment points are to remain in place throughout the project, unless Contractor is directed to remove and reinstall them (e.g. City owned antennas).
- D. Cost is incidental to the project.

### **3.05 HAND WASH FACILITY**

- A. Provide OSHA approved hand wash facility with running water. Hot water is not required.
- B. Stock facility with soap and towels and keep supply replenished.

- C. Test and dispose of the water properly after the project is completed.

### **3.06 LIGHTING of WORKSPACE**

- A. Provide durable lighting fixtures designed for the intended work environment for use during blasting, painting, and during all observations.
- B. Encase portable lamps in a non-conductive, shatterproof material. Use only heavily insulated cable with an abrasive resistant casing.
- C. Install all temporary electrical items in accordance with all local, state, and federal codes, including OSHA.
- D. Protect from paint overspray and damage from abrasive materials.
- E. Measure required illumination during surface preparation and coating application at the work surface. Supply 20 ft. candles minimum illumination during blasting and painting, and 30 ft. candles minimum prior to and during observation, per SSPC-Guide 12. Inspect the prepared surface at the higher illumination prior to calling for observation. All work must conform to specification requirements prior to the scheduled observation.
- F. Measure the illumination at the work surface in the plane of the work.

## **PART 4 – SPECIAL PROVISIONS**

### **4.01 SCHEDULING**

- A. Complete all welding and any other work that damages the coating before paint operations begin, including surface preparation. The exception is paint removal in the weld area.
- B. If Contractor wants a variance in this schedule, request the change and provide a reason in writing to the Owner. The Project Manager will reply with a written Field Order if the change is approved. The Engineer reserves the right to put further restrictions in Field Order. If the Contractor objects to restrictions, he may revert to the original specifications.

### **4.02 GRASS RESTORATION**

- A. The Contractor is to report any damaged ground at the construction site in writing prior to mobilization of equipment, otherwise all repairs to the damaged ground will be the responsibility of the Contractor.
- B. Refill all holes, ruts etc. with clean topsoil, and level area around the construction site to the original grade.
- C. Fill material to be clean soil, no gravel, rocks, or construction debris is to be used as fill material without the Owner's consent.
- D. Bring soil to a friable condition by disking, harrowing, or otherwise loosening and mixing to a depth of 3 in. – 4 in. Thoroughly break all lumps and clods.

- E. Rake area to be seeded. Sow seed at a minimum rate of 220 lbs./acre. Use seed intended for the climate.
- F. Work to be completed to the Owner's satisfaction.
- G. Cost is incidental to the project.

## **SECTION 09 97 13.10**

### **STEEL COATING SURFACE PREPARATION**

#### **PART 1 – GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Power Tool Cleaning.
- B. High Pressure Water Cleaning.

##### **1.02 REFERENCES**

- A. AWWA Standards (latest version):
  - 1. D102 Painting Steel Water Storage Tanks.
- B. SSPC and NACE Standards (latest versions):
  - 1. SP11 – Power Tool Cleaning to Bare Metal.
  - 2. SP12/NACE No. 5 – Surface Preparation and Cleaning of Metals by Water Jetting Prior to Recoating
  - 3. VIS 3 (Visual standard for hand and power tool cleaned metal).

##### **1.03 WORK INCLUDED – SURFACE PREPARATION**

- A. Exterior: High pressure water clean (5,000 to 10,000 psi), spot power tool clean to a SSPC-SP11 standard.
- B. Dry Interior: Spot power tool clean the spot coating failures throughout to a SSPC-SP11 standard.

#### **PART 2 – PRODUCTS**

##### **2.01 EXTERIOR CLEANER**

- A. United 727 Weather-Zyme as manufactured by United Laboratories, 320 37<sup>th</sup> Ave., St. Charles, IL 60174 1-800-323-2594.

#### **PART 3 – EXECUTION**

##### **3.01 WET INTERIOR CLEANING**

- A. Low pressure water clean all surfaces and appurtenances at 4,000 psi to remove sediment, minerals, and other contaminants. Remove any remaining water.
- B. Staining may remain in place, the Engineer to approve cleanliness.
- C. The cost is incidental to the project.



### **3.02 HIGH PRESSURE WATER CLEANING (SSPC-SP12/NACE No. 5) - EXTERIOR**

- A. Solvent clean all visible grease, oil, salt, algae, and residue in accordance with SSPC-SP1.
- B. High pressure water clean all exterior surfaces and appurtenances at 5,000 – 10,000 psi per SSPC-SP12/NACE No. 5 HP WC to remove all dirt, chalk, algae, other foreign material, and all brittle or loose coating and rust.
- C. Operational pressure will be determined by the Engineer based on field conditions.
- D. Maintain a water jet nozzle distance of 2 in. – 10 in. away from the surface.
- E. Hold the water jet nozzle with 0° - 15° tip perpendicular (90°) to the surface at all times.
- F. Only use machines rated at and capable of achieving and maintaining 10,000 psi. Use of a rotating/reciprocating nozzle during water cleaning is permitted but not to increase the pressure of a washer rated lower than required.
- G. Do NOT exceed a rate of 10 sq. ft./minute.
- H. The gauge measuring time of use must be operational on the unit, if not operational the Contractor may be shut down and/or deducted price for rental of an operational unit from the final payment.
- I. Feather all edges using power tools per this specification.
- J. **SURFACES WITH AN EXISTING CLEAR COAT WILL REQUIRE SANDING. ALL CLEAR COAT REMAINING AFTER POWER WASHING IS TO BE SCARIFIED AND SHARP EDGES ARE TO BE REMOVED USING 30-60 GRIT PAPER. SCARIFY THE SURFACE PRIOR TO THE APPLICATION OF THE FIRST FULL COAT.**

### **3.03 POWER TOOL CLEAN (SSPC-SP11) – EXTERIOR AND DRY INTERIOR**

- A. Solvent clean all visible grease, oil, salts, and residue.
- B. Power tool clean all surfaces and appurtenances to bare metal (SSPC-SP11) in areas where steel is exposed or rusted, or where coating is abraded.
- C. Retain or produce a surface profile. Surface profile is to be greater than 1.0 mil.
- D. Edges of adjacent coating is to be feathered a minimum of ½ in. from the exposed steel with 3M Scotch-Brite Clean'n Strip discs.

## **SECTION 09 97 13.19.01**

### **DRY INTERIOR STEEL COATING – SPOT TWO COAT EPOXY**

#### **PART 1 – GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Partial painting in the dry interior.

##### **1.02 REFERENCES**

- A. SSPC and NACE Standards:
  1. PA1 – Paint Application.
  2. PA2 – Measurements and Calibration.
  3. NACE RP 0178 Surface Finish Requirements.

##### **1.03 WORK INCLUDED**

- A. Application of a spot epoxy system.

#### **PART 2 – PRODUCTS**

##### **2.01 EPOXY SPOT SYSTEM**

- A. Approved suppliers and system:

<u>Manufacturer</u>	<u>System</u>
Tnemec	V69/V69
Induron	PE-70/PE-70
Sherwin Williams	646FC/646FC

#### **PART 3 – EXECUTION**

##### **3.01 EPOXY SPOT SYSTEM**

- A. Apply to all prepared areas a spot two (2) coat epoxy system.
- B. Surface preparation is defined in Section 09 97 13.10.
- C. Apply each coat at the following rates:

<u>Coat</u>	<u>Minimum</u>	<u>Maximum</u>
	<u>D.F.T. (mils)</u>	<u>D.F.T. (mils)</u>
Primer (spot)	3.5	5.5
Topcoat (spot)	<u>3.5</u>	<u>5.5</u>
Total	7.0	11.0

- D. Each coat to be a different color from the previous coat and is to be approved by the engineer. No color bleedthrough should occur if proper application rates are observed.

- E. Apply all coats in uniform color and sheen without streaks, laps, runs, sags, cloudy, or missed areas. Correct all defects before application of the successive coat.
- F. Allow a minimum of twenty-four (24) hours between coats. Additional time may be necessary if low temperatures require an increase in the necessary cure time.

### **3.02 SCHEDULE of WORK**

- A. Complete all exterior and interior welding prior to surface preparation.

**SECTION 09 97 13.24.14**  
**EXTERIOR STEEL COATING – THREE COAT EPOXY**  
**FLUOROPOLYMER OVERCOAT**

**PART 1 – GENERAL**

**1.01 SECTION INCLUDES**

- A. Painting on the exterior.

**1.02 REFERENCES**

A. SSPC and NACE Standards:

- 1. PA1 – Paint Application.
- 2. NACE RP 0178 Surface Finish Requirements.
- 3. NACE RP 0178 Surface Finish Requirements.

**1.03 WORK INCLUDED**

- A. Application of a fluoropolymer system.
- B. Application of lettering.

**PART 2 – PRODUCTS**

**2.01 FLUOROPOLYMER OVERCOAT SYSTEM**

- A. The contractor is advised to follow all requirements for safety concerning isocyanates.
- B. Ultraviolet protection additives mixed at factory only. There will be no tinting or addition of any material other than the manufacturer's thinners.
- C. Approved suppliers and systems:

<u>Manufacturer</u>	<u>System</u>
Tnemec	108(spot)/108/1095/V700
Induron	Ebond100(spot)/Ebond100/I-6600 Plus LV/Perma-Gloss LV
Sherwin Williams	5000/5000/Hi-Solids Poly-250/Fluorokem HS 100

**PART 3 – EXECUTION**

**3.01 FLUOROPOLYMER OVERCOAT SYSTEM**

- A. Apply to all prepared surfaces a three (3) coat epoxy fluoropolymer system.
- B. Surface preparation is defined in Section 09 97 13.10.

C. Apply each coat at the following rates:

<u>Coat</u>	<u>Minimum</u>	<u>Maximum</u>
	<u>D.F.T. (mils)</u>	<u>D.F.T. (mils)</u>
Primer (spot)	1.0	2.0
Intermediate	1.0	2.0
Urethane Intermediate	2.0	3.0
Topcoat	<u>2.0</u>	<u>3.0</u>
Total	6.0	10.0

D. Each full coat to be a different color from the previous coat and is to be approved by the engineer. No color bleedthrough should occur if proper application rates are observed.

E. Apply all coats in uniform color and sheen without streaks, laps, runs, sags, cloudy, or missed areas. Correct all defects before application of the successive coat.

F. Allow a minimum of twenty-four (24) hours between coats. Additional time may be necessary if low temperatures require an increase in the necessary cure time.

### 3.02 LETTERING

A. Paint the name "City of Parchment" in two (2) locations on the tank.

B. Paint the lettering the same size, style, and color as the existing lettering, and place the lettering in the same locations. Verify size and document locations for application purposes.

C. Approved Fluoropolymer urethane coating system.

<u>Manufacturer</u>	<u>System</u>
Tnemec	V700
Induron	Perma-Gloss LV
Sherwin Williams	Fluorokem HS 100

D. Apply lettering coating at 2.0 to 3.0 mils. The color is to be white.

E. Payment is incidental to exterior repainting.

### 3.03 SCHEDULE of WORK

A. Complete all exterior and interior welding prior to surface preparation.



*City of  
Parchment*



**SECTION 09 97 23.23.01**

**CONCRETE FOUNDATION COATING – TWO COAT EPOXY**

**PART 1 – GENERAL**

**1.01 SECTION INCLUDES**

A. Painting of the concrete foundation(s).

**1.02 REFERENCES**

A. SSPC and NACE Standards:

1. PA1 – Paint Application.
2. PA2 – Measurements and Calibration.

**1.03 WORK INCLUDED**

A. Application of an epoxy system.

**PART 2 – PRODUCTS**

**2.01 EPOXY SYSTEM**

A. Approved suppliers and manufacturers:

<u>Manufacturer</u>	<u>System</u>
Tnemec	V69/V69
Induron	PE-70/PE-70
Sherwin Williams	646FC/646FC

**PART 3 – EXECUTION**

**3.01 EPOXY SYSTEM**

- A. Apply to all prepared areas a two (2) coat epoxy system.
- B. Remove soil 3” below grade around the entire foundation prior to coating, backfill once the topcoat is dry to the touch.
- C. Foundations to be water cleaned at 3,500 to 5,000 psi to remove all contaminants.
- D. Apply each coat at the following rates:

<u>Coat</u>	<u>Min. D.F.T. (mils)</u>	<u>Max. D.F.T. (mils)</u>
Primer	3.5	5.5
Topcoat	<u>3.5</u>	<u>5.5</u>
Total	7.0	11.0

- E. Allow the manufacturer’s minimum time between coatings.
- F. Cost is incidental to exterior painting.

## **SECTION 11 00 00**

### **VENTILATION SYSTEM**

#### **PART 1 – GENERAL**

##### **1.01 SCOPE**

- A. Installation of a ventilation system shutter.

##### **1.02 SUBMITTALS**

- A. The following information shall be included in the submittal for this section:
  - 1. Product Data Sheets for all materials to be installed for the ventilation system.

#### **PART 2 – PRODUCTS**

##### **2.01 VENTILATION MATERIALS**

- A. (1) 12 in. x 12 in. shutter model #T9F245711 as manufactured/supplied by Global Industrial Shutter [www.globalindustrial.com](http://www.globalindustrial.com) (888) 978-7759.
- B. (1) square to round sheet metal transition model #STR. as manufactured/supplied by Jer-air [www.jerair.com](http://www.jerair.com) (352) 591-2674.
- C. Gasket to be ¼ inch thick Ethylene Propylene Diene (EPDM) AB-576 item number 386-16-482 as manufactured/supplied by American Biltrite [www.american-biltrite.com](http://www.american-biltrite.com) (888) 275-7075, or approved equal. Note that the gasket material is not required to meet NSF-61 requirements.

#### **PART 3 – EXECUTION**

##### **3.01 INSTALLATION**

- A. The Contractor is to install the shutter (louver), gasket and square to round transition onto the penetration in the basebell.
- B. Modify the sheet metal transition by removing the curb, the outside dimensions are to be 15 in. x 15 in.
- C. The ventilation system, hoses, etc. will be installed by the Owner after the completion of the project.
- D. Payment is a separate line item “Shutter Installation” which the Owner reserves the right to delete.



## **SECTION 12 00 00** **FLOW METER**

### **PART 1 – GENERAL**

#### **1.01 SCOPE**

- A. This section describes the requirements for a Full Profile Insertion electromagnetic flow meter and microprocessor-based signal converter. Under this item, the contractor shall furnish and install the magnetic flowmeter equipment and accessories as indicated on the plans and as herein specified.

#### **1.02 SUBMITTALS**

- A. The following information shall be included in the submittal for this section:
1. Data sheets and catalog literature for the 395L or 394L Insertion Mag meter and the microprocessor-based signal converter.
  2. Connection diagrams for equipment wiring.
  3. List of spare parts and optional equipment.

### **PART 2 – PRODUCTS**

#### **2.01 ELECTROMAGNETIC FLOWMETER (FULL PROFILE INSERTION MAGMETER)**

- A. The electromagnetic flow meter shall consist of a flow sensor based on Faraday's Law of Electromagnetic Induction and microprocessor-based signal converter. Equipment shall meet all requirements of Midwest Municipal Instrumentation Quote # 20231130-Kzoo Parch. Water Tower, dated 11/30/23, unless directed otherwise by the Owner.
- B. Sensor:
1. Operating principle: Utilizing Faraday's Law of Electromagnetic Induction, the flow of a conductive liquid around the sensor induces an electrical voltage that is proportional to the velocity of the flow.
  2. Construction: The sensor material shall be constructed of 316 Stainless Steel and coated with NSF 61 certified approved epoxy coating.
  3. 316 Stainless Steel Electrodes shall be used.
  4. Sensor operating Temp: +14° to +170° F @ 250 PS.
  5. Electronics operating temperature (Converter): -4° to +140° F
  6. Size: 12" long
  7. Installation hardware shall include a Stainless Steel 2" full ported valve with a Stainless Steel nipple.

8. Submergence: a. The sensor shall be NEMA 6P or IP68 rated to be permanently submerged up to 6 feet. b. The sensor shall be NEMA 6P or IP68 rated to be permanently submerged up to 30 feet (option with IP68 rated strain relief connection only).
9. Converter enclosure: NEMA 4X or IP67 enclosure
10. Display: Background illumination with a three button menu driven alphanumeric 5-line, 40-character display to indicate flow rate, totalized values, settings, and faults
11. Power supply: 90/265 VAC or 11-35VDC
12. Outputs: 4-20mA (0–21mA) into 1000 ohms max.
13. Standard Outputs: a. Four separate digital programmable outputs: open collector transistor useable for pulse, frequency, or alarm settings, for standard converters and Modbus configuration. b. Two separate digital programmable outputs: open collector transistor usable for pulse, frequency, or alarm settings, for Profibus and HART configurations.
14. Communications: Option: RS-485 Modbus, Profibus Protocols and HART (Must specify at the time of order.)
15. Sensor and signal converter performance: a. Flow Range: 0.3 fps to 32\* fps for accuracies stated below. \*Maximum velocities may be restricted to less than 32 fps in larger diameter applications. b. Accuracy: +/- 0.5% of actual flow for flow range of 1 f/s to 32 f/s, and +/-1% from .3 f/s to 1 f/s c. Separation: Maximum distance of 500 feet between signal converter and sensor without the use of any additional equipment. Longer cable lengths shall be available upon request. Please contact the factory. d. Bi-directional flow capabilities (Optional)
16. Totalizer: Three eight-digit counters for forward flow, reverse flow and net 17. The electromagnetic insertion flow meter shall be McCrometer 394L Bi-directional Full Profile Insertion Mag Meter or equal.

## **2.02 ELECTROMAGNETIC FLOWMETER (FULL PROFILE INSERTION MAGMETER)**

- A. Spare parts for the equipment shall include the following, unless otherwise noted.
- B. One set of manufacturers recommended spare parts.
- C. Extra operation manuals as required.

## **2.03 OPERATOR FUNCTIONS**

- A. Calibration
  1. Each flow sensor shall be N.I.S.T. wet calibrated and all of the calibration information and factory settings matching the sensor shall be stored integrally within the converter's non – volatile memory. At initial commissioning, the flow meter commences measurement without any initial programming. Should the

signal converter need to be replaced, the new signal converter will upload all previous settings and resume measurement without any need for reprogramming or rewiring.

2. An N.I.S.T traceable certificate of calibration shall accompany each flow sensor.

### **PART 3 – EXECUTION**

#### **3.01 INSTALLATION**

- A. The flow meter is to be installed on the fill/draw pipe inside the wooden enclosure inside the basebell.
- B. Follow manufacturer's recommendation for the minimum upstream and downstream installation requirements for the flow sensor.
- C. Wiring between flow sensors and remote mounted signal converters shall use cable type and procedures as per the manufacturer's recommendations.
- D. Work to be performed by Midwest Municipal Instrumentation Inc. 517-764-4736 as a sub-contractor (paid by the Contractor).
- E. The Contactor is to coordinate installation of the flow meter and is to weld a 2 in. threaded coupling in the fill/draw pipe for installation of the meter. Contactor to verify coupling size with Midwest Municipal Instrumentation Inc. prior to installation. Welds to be ¼ in. full fillet welds. Contractor to provide dielectric isolation where dissimilar metals are used.
- F. Midwest Municipal Instrumentation Inc. is to perform Startup of the equipment.
- G. Payment is a separate line item "Flow Meter Installation" which the Owner reserves the right to delete.

#### **3.02 MANUFACTURER'S ASSISTANCE**

- A. Warranty
  1. The manufacturer of the electromagnetic flow meter shall guarantee for five years of operation that the equipment shall be free from defects in design, workmanship, or materials.
  2. In the event a component fails to perform as specified, or is proven defective in service during the guarantee period, the manufacturer shall promptly repair or replace the defective part at no cost to the owner.

## **SECTION 16 05 02** **ELECTRIC WORK**

### **PART 1 – GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Furnish and coordinate all labor, equipment, materials, tools, testing, and temporary work necessary to perform the repairs.

#### **1.02 REFERENCES**

- A. NEC.
- B. FAA.
- C. Local Codes and Regulations.

#### **1.03 OMISSIONS**

- A. The specifications include all work and materials necessary for completion of the work. Any incidental items of material, labor, or detail required for the proper execution and completion of the work are included.

#### **1.04 WORK INCLUDED**

- 1) Replace the dry interior light bulbs.
- 2) Install electrical receptacle for ventilation.
- 3) Install an electrical receptacle for the flow meter.

#### **1.05 WORKMANSHIP**

- A. Provide material and workmanship necessary to complete the project to the standards specified.

#### **1.06 ELECTRICIAN QUALIFICATIONS**

- A. The electrician must conform to all licensing and/or certification requirements of the State.
- B. The electrician shall be experienced in rigging and elevated work.

#### **1.07 SUBMITTALS**

- A. Submit the following ten (10) days prior to the preconstruction meeting.
- B. Provide for employees one (1) copy of all data sheets at the job site for employee access.
- C. Provide an electronic copy to the Engineer.
- D. Product Data Sheets (PDS) and Safety Data Sheets (SDS) for light bulbs.

- E. Subcontracted Electrician name or electrician certifications if work is to be performed by General Contractor.

## **PART 2 – PRODUCTS**

### **2.01 GENERAL**

- A. Use electrical materials and equipment designed and manufactured with UL Label.
- B. Supply all new equipment and materials from products of the same manufacturer.
- C. Furnish all equipment and materials from an established, reputable manufacturer of quality construction, design, and guaranteed to perform the service required.

### **2.02 CONDUIT**

- A. Use rigid galvanized steel, stainless steel or aluminum conduit.

### **2.03 CONDUIT FITTINGS and BOXES**

- A. Use standard threaded type of cast ferrous alloy conduit fittings to suit the location and purpose. Use fittings manufactured by Crouse-Hinds, Appleton Electric, or equal.
- B. Use waterproof and insect proof galvanized malleable or cast iron, aluminum, or corrosion resistant stainless-steel boxes. Note that conduit material are to match box and fitting materials.

### **2.04 WIRING**

- A. Use only soft drawn annealed copper wire of 98% conductivity with THHN/THWN insulation.
- B. Use #12 or larger wires with ground for all lines.
- C. Use cable terminators designed for wire size and usage.

### **2.05 ELECTRICAL RECEPTACLES**

- A. Duplex receptacles and switches, 120 volt, 20 amp, GFCI receptacles suitable for severe environment outdoor service.

### **2.06 LIGHT BULBS**

- A. Dry interior bulbs to be bright white LED bulbs with a minimum brightness of 800 lumens and a color of light at a minimum of 5,000K and a minimum rated life of 25,000 hours., size A19.

## **PART 3 – EXECUTION**

### **3.01 REPLACE LIGHT BULBS**

- A. Replace all dry interior bulbs with LED light bulbs.
- B. Change all of the bulbs whether the existing are operational or not. Change bulbs after all blasting and painting equipment has been removed from the tank.
- C. All bulbs to have the same color and brightness throughout the dry interior.
- D. Payment is incidental to the project.

### **3.02 ELECTRIC RECEPTACLE FOR VENTILATION**

- A. Install one (1) receptacle outlet, at ventilation opening.
- B. There is a 120-volt power available in the basebell. Route wiring inside conduit from the electrical panel to the ventilation opening.
- C. Attach the conduit to steel plates installed per section 05 00 00 Part 3.15. Attach the receptacle to a steel plate installed per section 05 00 00 Part 3.15.
- D. Payment is separate line item “Receptacle Installation - Ventilation” which the Owner reserves the right to delete.

### **3.03 ELECTRIC RECEPTACLE FOR FLOW METER**

- A. Install one (1) receptacle outlet located inside the wooden enclosure inside the basebell.
- B. There is a 120-volt power available in the basebell. Route wiring inside conduit from the electrical panel into the enclosure.
- C. Attach the receptacle box to the wooden structure.
- D. Payment is separate line item “Receptacle Installation – Flow Meter” which the Owner reserves the right to delete.

## **SECTION 26 42 21**

### **IMPRESSED CURRENT CATHODIC PROTECTION SYSTEM**

#### **PART 1 – GENERAL**

##### **1.01 DESCRIPTION**

- A. **SCOPE:** Furnish and install a complete automatic controlled impressed current cathodic protection system to prevent corrosion on the submerged interior surfaces of the water storage tank. All work and material are to meet the standards established in AWWA D104-Automatically Controlled Impressed-Current Cathodic Protection for the Interior of Steel Water Tanks.
- B. **CONFLICTS:** Requirements contained in these specifications apply to and govern the work under this section. All General Condition items and Information for Bidder items applicable or contained in these specifications apply. This Technical Specification is intended to expand the General Conditions and/or other Technical Specifications and is not intended to conflict or override any items unless specifically stated. If a conflict is noted, the engineer will review prior to proceeding with the project. If a conflict does exist, the Technical Specifications govern over any General Conditions or Information for Bidders.
- C. Payment is a separate line item “Cathodic Protection System” which the owner reserves the right to delete.

##### **1.02 QUALIFICATIONS of CATHODIC PROTECTION MANUFACTURER**

- A. The bidder is to have a minimum of five (5) continuous years of successful experience in the manufacture, installation, and servicing of automatic cathodic protection systems for water storage tanks. The bidder is to have a permanent service organization located within three hundred (300) miles of the tank location. The contractor (manufacturer) is to have a minimum of twenty-five (25) successful units installed in water storage tanks. The manufacturer and/or his subcontractor must own and maintain or lease the equipment necessary for installation and have proper training in regard to the safety requirements.
- B. New firms may also bid this project; however, they will be subjected to thorough review based on individual experiences of staff, proof of the continuation with firm (i.e. stock ownership, etc.) and financial stability of the firm. Essentially, they will be required to provide sufficient documentation to convince the owner they will be available throughout the ten (10) years to service the system, if needed.

##### **1.03 SUBMITTALS**

- A. Submit the following ten (10) days prior to the preconstruction meeting.
  - 1. Provide an electronic copy to the Engineer.

- a. Shop Drawings
- b. Operation/Maintenance Manuals

#### **1.04 GUARANTEE**

A. Guarantee the cathodic protection system against all defects in materials and workmanship and further guarantee to prevent corrosion, when maintained in a continuous operation in accordance with the contractor's instructions, as evidence by the absence of pitting (or additional pitting) below the high waterline in the tank for a period of one (1) year. The requirement of a maintenance contract may be beneficial but cannot be made a precondition to this warranty. In the event corrosion is not prevented, the contractor is to readjust, repair, or replace the system. Guarantee the reference anodes for five (5) years. It is the intention of the owner to inspect the tank, as necessary, to review the performance of the cathodic protection system.

#### **1.05 DESIGN and PERFORMANCE REQUIREMENTS**

##### **A. DESIGN CRITERIA:**

1. The tank is a 250,000-gallon spheroid elevated water storage tank. It is approximately 76.25 ft. to bottom of the tank.
  2. Total bare surface area to be protected shall be 50% of the tank surface up to the high waterline.
  3. Design tank-to-water potential is to be -900 mv with units capable of adjustment from -850 mv to -1050 mv. The design potential is to be IR drop-free (type A) and based on a copper/copper sulfate reference anode.
  4. Minimum current density is to be 0.5 MA/sq. ft. of the bare surface area.
  5. The minimum design anode system life is to be ten (10) years.
- B. The intent of these specifications is to procure a quality product by an established manufacturer of the latest design. Cost of the equipment is to include all royalty costs arising from patents and licenses associated with furnishing the specified equipment. Design all material to withstand the stresses created under ice conditions. Use the latest state-of-the-art "permanent" system which is designed to be ice-free and designed for use in tanks with ice conditions. Use corrosion resistant materials for all equipment or protect with corrosion resistant industrial coating approved by the engineer.

### **PART 2 – PRODUCTS**

#### **2.01 CATHODIC PROTECTION SYSTEM**

A. Provide a cathodic protection system (ice-free) that is to be a suspended or floating ring-type system. Furnish all items, as necessary, for the complete operating system.



## 2.02 MATERIALS

- A. Furnish materials for the best quality, regularly used in commercial practice and conforming to the following specifications. Specifically design the cathodic protection system for operation in icing conditions and protect against damage from ice.
- B. Supply only material for use inside the wet interior (i.e., all material in contact with water shall meet NSF 61/600 Standards and bears the NSF or UL label verifying compliance).
- C. Mount the power unit as directed in Part 3 – Execution in a stainless steel, waterproof cabinet suitable for outdoor use, adequately ventilated with stainless steel screens, and with provision for locking. Secure cabinet by using mounting brackets. If mounted on steel, electrically isolate from steel with non-conductive insulator.
- D. Use an electrical insulating material having suitable thickness and mechanical strength for the mounting board. Mount accurate D.C. meters with a D.C. voltmeter on the panel board for indicating output of rectifier.
- E. Include a potential indicating voltmeter on the panel board. This voltmeter is to be part of the sensing circuit and is to continuously indicate the structure potential value that the control system is maintaining.
- F. Panel Board is to contain the following equipment:
  1. Power Unit: The power unit is to have the necessary circuit breakers, transformer, selenium or silicon rectifying elements, voltmeter(s), ammeter(s), lightning, surge, overload protection, wiring and appurtenances of adequate capacity to meet the requirements established by the Engineering Survey for each corrosion problem. Provide a power unit with voltage adjustments to regulate the current required for corrosion control. The unit is to be adjustable over the entire range of 0-100% of rated capacity. Design the power unit for Single Phase, 60 Hz, 110-120 volt A.C. rated to operate at an ambient temperature of 45° Centigrade. Include a circuit breaker for the A.C. and an overload relay in the D.C. circuit. The entire power unit is to be fully field serviceable. The overall efficiency of the power unit is to exceed 65%, and the power factor is to exceed 90% of full load and rated voltage to the power unit, in the conversion of A.C. to D.C. The power factor is to be greater than 85% at outputs exceeding 25% of the rated capacity.
  2. Automatic Controller: House the controller integrally with the rectifier unit. The automatic controller is to be completely solid-state design having no moving parts and capable of automatically maintaining the tank-to-water potential at (-)900 millivolts with respect to a copper-copper sulphate reference electrode within an accuracy of 25 millivolts. The tank-to-water potential measured and maintained by the controller is to be free of “IR” drop error (Type A).

3. Rectifier: Use non-aging tri-amp selenium or silicon rectifiers of the approved selenium type, as manufactured by General Instrument Corporations or equal for rectifier stacks. The rectifier stacks are to have adequate cooling fins so their normal temperature rise at rated capacity will not exceed that specified by the N.E.M.A. and by the manufacturer of the rectifier stacks for cathodic protection service. Use air-cooled rectifier stacks.

Design the transformer for use in cathodic protection rectifiers having separate primary and secondary copper windings. The rectifiers are to be capable of automatically adjusting output to maintain potential within +/- 25mv of -900mv, and to be adjustable over 0-100% of its rated capacity.

4. Tank-to-Water Potential Meter: Equip the controller with a calibrated potential monitoring and display circuit having an integral impedance exceeding 1000 megohms which is to be so connected to read from the system reference cell the tank-to-water potential being maintained by the cathodic protection system.

This voltage reading is to be free of "IR" drop error.

NOTE: If digital readout is provided, provide access to all readings required above.

- G. Run positive wires from the power unit to the anode circuits in rigid galvanized steel , stainless steel, or aluminum conduits, as established by the National Electrical Code for the allowable current-carrying capacity. Use rigid galvanized steel , stainless steel, or aluminum, the final 2-3 ft. of the connections at the rectifier and junction box can be non-metallic flexible conduit. Use state code for underground wire. Use HMWPE (High Moly) wire from the rectifier to and in the tank, all underground wiring is to be inside PVC conduit.
- H. Equip the system with copper-copper sulfate reference electrode designed for a minimum five (5) year life. Install two (2) electrodes on opposite sides of the bowl. If either electrode fails within five (5) years, replace as often as necessary, free of charge to the owner.
- I. Design the anode system for a minimum life of ten (10) years and securely attach to the tank to prevent damage from ice conditions. Include all labor and material for installation of the anodes, and use submerged floating anodes. The anode system uses mixed metal oxide wire anodes. Attach the anodes to a buoyant submerged structure that is maintained in a totally submerged condition, down to access tube. Anode and reference electrode lead wires are to enter the tank below the minimum water level through pressure tight fittings. Use 3,000 lb. couplings for fitting. Use a separate cord to encircle the supporting cord approximately 8 in. greater radius and design the cord to relieve tension in the loading. Use  $\frac{5}{16}$  in. polyester or nylon rope.

- J. Protect all units using lightning arresters, surge protectors, and automatic overload protection in all modes and comply with all FCC regulations. All patent requirements are the responsibility of the contractor.

### **2.03 ALARM and TELEMETRY CONTROLS**

- A. The alarm and telemetry circuits are to be a secondary system designed to read controls and not to interfere in any manner with the primary controls. Use four-to-twenty (4-20) milliamp sensors to read voltage, amperage and potential of both circuits. One alarm light shall be furnished on the cover of the rectifier box. The light shall be activated by a change in amperage, voltage or potential that would signal a possible system failure.

## **PART 3 – EXECUTION**

### **3.01 INSTALLATION**

- A. The cathodic protection system is to be installed by full-time employees of the supplier of the system who are specifically trained to install and service water tank cathodic protection systems. Subcontractors who are specialized tank personnel may install the cathodic protection system under direct, on-site supervision by a responsible employee of the manufacturer.
- B. Install clips, pressure fitting, mounting supports, and/or brackets prior to any coating application.
- C. Contractor shall consult with the Owner prior to connecting the system to the existing electrical panels and/or controls. The Owner reserves the right to perform connections to the existing equipment. The Owner will modify/program the existing controls to communicate with proposed cathodic protection equipment. Contractor shall assist the Owner as necessary.

### **3.02 CLIPS AND PRESSURE FITTING**

- A. Use existing clips and pressure fitting if possible. If needed furnish and install new attachment clips and pressure fitting.
- B. Clips to be installed using ¼ in. fillet welds all around. No area may be left which would be susceptible to crevice corrosion.
- C. Weld the pressure fitting with ¼ in. fillet continuous welds all around on both the tank's wet interior and exterior.

### **3.03 INSTRUCTIONS**

- A. After installation is complete, energize the system and adjust for optimum operations. After the unit is adjusted, take tank-to-water potential measurements using a copper-

copper sulfate reference electrode. Submit a report to the engineer, including all the test results obtained.

- B. After supervising of inspection and start-up operations, provide one (1) additional day for training of the owner and/or his representative. The training is to include minor troubleshooting practices, recordkeeping, and methods used to determine the effectiveness of the system. The training period is at the owner's discretion within one (1) year of start-up.

### **3.04 MOUNTING PANEL**

- A. Locate waterproof cabinet rectifier in the basebell at location approved by the owner.
- B. Mount on the existing mount if room is available, see manufacturers recommendations for clearance requirements.
- C. If space is not available on the existing panel weld a mounting plate in-place with 1/8 in. continuous fillet weld in the interior basebell.
- D. Mounting plate to be constructed of minimum of 3/16 inch steel. Bend plate to create a mounting face that is a minimum of 20 inches wide and 20 inches tall. Set mounting panel 5 ft. on center above grade.
- E. Welds to be 3/16-inch fillet seal welds.
- F. Drill four 11/32-inch holes and bolt onto the panel using stainless steel bolts. Verify hole size and location.
- G. Surface prepare and coat the mounting plate prior to installation of the rectifier.

### **3.05 PAINT REPAIR**

- A. All interior burns shall be power tool cleaned to a SSPC-SP11 bare metal condition, and spot coated with the following two (2) coat system at 4.0 to 6.0 mils per coat:

<u>Manufacturer</u>	<u>System</u>
Tnemec	21/21
Induron	PE-70/PE-70
Sherwin Williams	5500LT/5500LT

- B. Contractor may apply one (1) coat of Aquatopoxy A-61 at 6.0 to 10.0 mils in lieu of the two-coat system.

### **3.06 OPERATION of SYSTEM**

- A. Startup of the system is to be performed once all work is complete.
- B. Complete the requirements from the Instructions Section above when scheduled with the Owner.

### **3.07 ELECTRICAL SUPPLY**

- A. There is a 120-volt power source with a circuit breaker panel available in the basebell.

B. Coordinate with owner and connect electrical source to cathodic protection controls.