

## **ADDENDUM NO. 2**

### **VILLAGE OF NORTH HAMPTON WATER STORAGE TANK REPLACEMENT**

**SEPTEMBER 7, 2023**

To: Planholders

From: Mote & Associates, Inc.  
214 West Fourth Street  
Greenville, Ohio 45331

Phone: (937) 548-7511  
Fax: (937) 548-7484  
E-mail: info@moteassociates.com

Re: Village of North Hampton  
Water Storage Tank Replacement

This Addendum forms a part of the Contract Documents and modifies the original Contract Documents dated August 2023. Acknowledge receipt of this Addendum in the space provided on the Bid Proposal form. Failure to do so may subject the Bidder to disqualification.

#### **GENERAL CLARIFICATIONS**

1. Work hours on the weekends will be allowed, however, the contractor shall keep mindful of the noise, as the proposed elevated water storage tank is located in the middle of town.
2. The contractor shall have a representative onsite to be present for construction meetings. At this time, we anticipate having monthly progress meetings.
3. Contractor field offices are not required if deemed not necessary by the contractor to complete their work.
4. The contractor's site superintendent is permitted to change as different specialties of the work is completed. The contractor shall notify the owner and engineer at least a week in advance of superintendent changes and provide contact information for the new superintendent.
5. The contractor shall have insurance as specified in 00 72 00 – General Conditions.
6. Contractors may choose to bid Contract "A", "B" or "C". A contractor does not have to bid on all contracts to qualify as a responsive bid.
7. All nuts/bolts on buried/exposed piping shall be 304 or 316 stainless steel.
8. The fire hydrant specified on the plans shall be Mueller Super Centurion model A423, main valve 5-1/2" with integral 4" Storz or approved equal.
9. Removal of the existing "witches' hat" elevated water storage tank is not currently a part of this project. Removal of this tower will be bid at a later date, likely after new tank is constructed.

10. There are no AIS or BABA regulations required with regards to domestic piping, fittings and valves.
11. A map is provided within this addendum to outline alternate means of accessing the proposed site. These two properties may be utilized for the construction of the storage tank; however, they shall be restored to their original condition upon completion of construction.

#### SECTION 00 41 43, BID FORM

1. The bid form has been revised and shall replace the prior version in the contract documents. An alternate line item has been added for alternate painting system for the exterior of the storage tank, along with an alternate for any required site preparations for adjacent property to be utilized during construction activities. An additional line item has been added for containment.

#### SECTION 09 97 13, COATINGS AND LININGS OF ELEVATED WATER STORAGE TANKS

1. This specification has been revised and shall replace the prior version in the contract documents.

#### SECTION 33 16 13.14, STEEL ABOVEGROUND WATER UTILITY STORAGE TANKS

1. This specification has been revised and shall replace the prior version in the contract documents.

#### SECTION 33 12 16, WATER UTILITY DISTRIBUTION VALVES

1. This specification has been revised and shall replace the prior version in the contract documents. (Included information on swing check valves)

#### SECTION 00 75 46, PREVAILING WAGE RATES

1. This specification has been revised to update new wage rates and provides potentially more applicable trades for the work.

End of Addendum



**BID FORM**  
**00 41 43**

**ARTICLE 1 - BID RECIPIENT**

- 1.01 This Bid is submitted to: **[Village of North Hampton, 250 West Clark Street, North Hampton, Ohio 45349]**
- 1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

**ARTICLE 2 - BIDDER'S ACKNOWLEDGEMENTS**

- 2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

**ARTICLE 3 - BIDDER'S REPRESENTATIONS**

- 3.01 In submitting this Bid, Bidder represents that:
- A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:
- | <u>Addendum No.</u> | <u>Addendum, Date</u> |
|---------------------|-----------------------|
| _____               | _____                 |
| _____               | _____                 |
| _____               | _____                 |
- B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
- E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on



(1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.

- F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Engineer is acceptable to Bidder.
- I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.
- J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.
- K. Bidder agrees that the contracting authority reserves the right to reject any or all bids, to waive any informalities or irregularities in the bids received, and to accept that bid which is considered lowest and to the best interest of the Owner.

#### **ARTICLE 4 - BIDDER'S CERTIFICATION**

##### **4.01 Bidder certifies that:**

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. No person interested in this Proposal is directly or indirectly interested in or connected with any other bid or proposal for the said work and no member of the Village of North Hampton, Ohio, is directly or indirectly interested therein, or in any portion thereof, and he will, if required by the Village of North Hampton, Ohio, execute and submit from himself as Principal Contractor and from any Subcontractor, the non-collusion affidavits as provided herein.
- D. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- E. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
  - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;
  - 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

#### ARTICLE 5 - BASIS OF BID

- 5.01 Bidder agrees that any item not specifically shown or called out on the plans or within the specifications, but is required to complete the work in place and fully operational, shall be included in the bid item that is most closely associated with that portion of the work.
- 5.02 Bidder will complete the Work in accordance with the Contract Documents for the following price(s) and will contract to do all the work and furnish all the materials called for by said plans and specifications, and in consideration thereof, to accept from the Owner as full payment for the completion of each specified item and any required maintenance thereof as hereinafter provided, for the following prices;

#### CONTRACT "A" - NORTH HAMPTON WATER STORAGE TANK REPLACEMENT

Ref No.	Description	Est. Qty.	Unit	Unit Price	Total Unit Price
1	100,000 Gallon Elevated Water Storage Tank	1	L.S.		
2	Coatings & Linings	1	L.S.		
3	Tank Lettering – "North Hampton"	1	L.S.		
4	Full Containment	1	L.S.		
5	Electrical, Lighting & Grounding	1	L.S.		
6	Site Restoration & Seeding	1	L.S.		
7	Dewatering	1	L.S.		
8	Site Fencing	275	L.F.		
9	Site Fencing - 12' Gates	2	Each		
10	Fire Hydrant (Tank Drain)	1	Each		
11	8" Waterline (Underground to Tank)	60	L.F.		
12	Mobilization, Bonding & Insurance	1	L.S.		
<b>Total Contract "A" – North Hampton Water Storage Tank Replacement</b>					

**Contract "A" - Bid (in words):**

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**CONTRACT A – ALTERNATE BID #1 – Exterior Paint Coating**

Description	Lump Sum Price
<b>Alternate #1</b> –Cost to furnish all labor, materials, equipment and related appurtenances to install alternate exterior paint system on the outside of the proposed elevated water storage tank. See specification section 09 97 13 – Coatings & Linings of Elevated Water Utility Storage Tanks.	\$

**Contract A – Total Alternate #1 (in words)** \_\_\_\_\_

**CONTRACT A – ALTERNATE BID #2 – Adjacent Property Site Preparation**

Description	Lump Sum Price
<b>Alternate #2</b> –Cost to furnish all labor, materials, equipment and related appurtenances to utilize the neighboring site as access to the construction of the storage tank. This includes relocation of spoils and or creation of any additional driveways needed to construct the elevated water storage tank.	\$

**Contract A – Total Alternate #2 (in words)** \_\_\_\_\_

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**CONTRACT “B” - NORTH HAMPTON ELEVATED WATER STORAGE TANK - WATERLINE**

Item No.	Description	Est. Qty.	Unit	Unit Price	Total Unit Price
624	Mobilization/Demobilization	1	L.S.		
33 11 13	8” Waterline (AWWA C900)	211	L.F.		
33 11 13	8” Waterline (Cement Lined Ductile Iron)	14	L.F.		
33 12 16	4” Gate Valve w/Box	1	Each		
33 12 16	8” Gate Valve w/Box	1	Each		
SPECIAL	5’ Diameter Valve Vault, Valves & Accessories	1	L.S.		
33 11 13	1” Altitude Valve Piping (inc. Corp Stop & Box)	25	L.F.		
<b>Total Contract “B” – North Hampton Water Storage Tank - Waterline</b>					

**Contract “B” - Total Bid (in words):** \_\_\_\_\_

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**CONTRACT "C" - NORTH HAMPTON WATER STORAGE TANK REPLACEMENT & WATERLINE COMBO**

**Section One – Water Storage Tank Replacement**

Ref No.	Description	Est. Qty.	Unit	Unit Price	Total Unit Price
1	100,000 Gallon Elevated Water Storage Tank	1	L.S.		
2	Coatings & Linings	1	L.S.		
3	Tank Lettering – "North Hampton"	1	L.S.		
4	Full Containment	1	L.S.		
5	Electrical, Lighting & Grounding	1	L.S.		
6	Site Restoration & Seeding	1	L.S.		
7	Dewatering	1	L.S.		
8	Site Fencing	275	L.F.		
9	Site Fencing - 12' Gates	2	Each		
10	Fire Hydrant (Tank Drain)	1	Each		
11	8" Waterline (Underground to Tank)	60	L.F.		
12	Mobilization, Bonding & Insurance	1	L.S.		
<b>Total Section One – North Hampton Water Storage Tank Replacement</b>					

**Section Two – Water Storage Tank Waterline**

Item No.	Description	Est. Qty.	Unit	Unit Price	Total Unit Price
624	Mobilization/Demobilization	1	L.S.		
33 11 13	8" Waterline (AWWA C900)	211	L.F.		
33 11 13	8" Waterline (Cement Lined Ductile Iron)	14	L.F.		
33 12 16	4" Gate Valve w/Box	1	Each		
33 12 16	8" Gate Valve w/Box	1	Each		
SPECIAL	5' Diameter Valve Vault, Valves & Accessories	1	L.S.		
33 11 13	1" Altitude Valve Piping (inc. Corp Stop & Box)	25	L.F.		
<b>Total Section Two – North Hampton Water Storage Tank - Waterline</b>					



**CONTRACT C – TOTAL BID (NORTH HAMPTON WATER STORAGE TANK  
REPLACEMENT & WATERLINE COMBO)**

Section Number	Total Unit Price
One – Water Storage Tank Replacement	
Two – Water Storage Tank Waterline	
<b>TOTAL BID – CONTRACT C</b>	

**Contract “C” - Total Bid (in words):** \_\_\_\_\_

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**CONTRACT C – ALTERNATE BID #1 – Exterior Paint Coating**

Description	Lump Sum Price
<b>Alternate #1</b> –Cost to furnish all labor, materials, equipment and related appurtenances to install alternate exterior paint system on the outside of the proposed elevated water storage tank. See specification section 09 97 13 – Coatings & Linings of Elevated Water Utility Storage Tanks.	\$

**Contract C – Total Alternate #1 (in words)** \_\_\_\_\_

**CONTRACT C – ALTERNATE BID #2 – Adjacent Property Site Preparation**

Description	Lump Sum Price
<b>Alternate #2</b> –Cost to furnish all labor, materials, equipment and related appurtenances to utilize the neighboring site as access to the construction of the storage tank. This includes relocation of spoils and or creation of any additional driveways needed to construct the elevated water storage tank.	\$

**Contract C – Total Alternate #2 (in words)** \_\_\_\_\_

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Bidder acknowledges that:

- (1) Each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor’s overhead and profit for each separately identified item;
- (2) Estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price bid items will be based on actual quantities, determined as provided in the Contract Documents;
- (3) Owner may reject any bid due to unbalanced Unit Prices; and
- (4) The Owner reserves the right to add or delete such quantities within the scope of the project as deemed necessary without in any way invalidating the Unit Prices bid.

- (5) If this Proposal shall be accepted, Bidder will be prepared to discuss with the Village of North Hampton, in detail any matters relating to special features and the methods proposed to be followed for the general conduct of the work, that within ten (10) days after "Notice of Award" the Contract Form with the Village of North Hampton, for performance of the work will be completed and Bidder will furnish a Contract Bond or a Performance and Payment Bond in an amount not less than one hundred percent (100%) of the total bid amount, and with sureties subject to the approval of the Village of North Hampton, as a guarantee of the faithful performance of this Contract; and that Bidder will also submit the required insurance policies.

#### ARTICLE 6 - TIME OF COMPLETION

- 6.01 Bidder agrees that the Work will be substantially complete and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before **December 31, 2024**.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages in the amount of \$500.00 for every consecutive day after the stated date in the Notice to Proceed and along with any time extension given per a Change Order and it may be retained from the monies which may be due.

#### ARTICLE 7 - ATTACHMENTS TO THIS BID

- 7.01 The following documents are submitted with and made a condition of this Bid:
- A. Required bid security;
  - B. Affidavit for Corporation;
  - C. Required Bidder Qualification Statement with supporting data;
  - D. List of Proposed Subcontractors;
  - E. Non-Collusion Affidavit; and
  - F. Certifications as listed in Section 3—Procurement Forms & Supplements in the Table of Contents.

#### ARTICLE 8 - DEFINED TERMS

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

#### ARTICLE 9 - BID SUBMITTAL

BIDDER: *[Indicate correct name of bidding entity]*

By: *[Signature]* \_\_\_\_\_

*[Printed name]* \_\_\_\_\_

*(If Bidder is a corporation, limited liability company, partnership or joint venture, attach evidence of authority to sign.)*

Address for giving notices:

Telephone Number: \_\_\_\_\_

Fax Number: \_\_\_\_\_

Contact Name and e-mail address: \_\_\_\_\_

Bidder's Federal ID No.: \_\_\_\_\_

# **COATINGS AND LININGS OF ELEVATED WATER UTILITY STORAGE TANKS**

**09 97 13**

## **PART ONE – GENERAL**

### **1.01 Scope of Work**

- A. The Contractor shall furnish all labor, materials, equipment, and incidentals required for the coating, lining, and finishing of all surfaces so designated.

### **1.02 Applicable Standards**

The following specifications shall govern with modifications as specified herein:

- A. OSHA Safety Standards for the Construction Industry, Title 29 - Labor, Subtitle B - Regulations Relating to Labor, Occupational Safety and Health Administration (OSHA) 1926, 07/01/93 editions.
- B. OSHA Worker Safety, Hazard Communications as described by the Occupational Safety and Health Act Regulation 29 CFR No. Parts 1900 through 1910.1499, 07/01/93 editions.
- C. SSPC Volume 1, *Good Painting Practice*, Latest Edition.
- D. SSPC Volume 2, Systems and Specifications, Latest Edition, *Surface Preparation Guide and Paint Application Specifications of the Steel Structures Painting Council*.
- E. NACE International, National Association of Corrosion Engineers.
- F. NACE - Coatings and Lining Handbook, National Association of Corrosion Engineers.
- G. SSPC and NACE Painter Safety Guidelines, latest editions.
- H. AWWA D-102, latest revision: *Coating Steel Water Storage Tanks* – Coatings for immersion service shall meet the application and product requirements by the Ohio E.P.A. and Standard Number 61 of the National Sanitation Foundation.
- I. AWWA D-100, latest revision: *Welded Carbon Steel Tanks for Water Storage*

### **1.03 Regulatory Agencies Requirements**

- A. Clean Air Act (CAA) - Hazardous Air Emissions by U.S. EPA or State Agency under Regulation 40 CFR 61 or state equivalent.
- B. Clean Water Act (CWA) - Hazardous Water Releases by U.S. EPA or State Agency under Regulation 40 CFR 116 through 117 or state equivalent.
- C. Toxic Substances Control Act (TSCA) - Toxic substance by U.S. EPA under Regulation 40 CFR 761.

- D. Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or "SuperFund") - Uncontrolled Hazardous Waste Sites and Hazardous Substance Release by U.S.EPA under Regulation 40 CFR 302.
- E. Resource Conservation and Recovery Act (RCRA) - Generation, Transportation, Treatment, Storage and Disposal of Hazardous Waste by U.S.EPA or State Agency under Regulation 40 CFR 260 through 267 or state equivalent.
- F. Hazardous and Solid Waste Amendments (HSWA) - Further regulation of hazardous waste by U.S.EPA or State Agency under Regulation 40 CFR 260 through 267 or state equivalent.
- G. Hazardous Material Transportation Act (HMTA) - Transportation of Hazardous Material by DOT or State Agency under Regulation 49 CFR 171 through 179 or state equivalent.
- H. Continuous ventilation shall be provided during application and cure so that coatings for surfaces in contact with potable water or water being treated for potable use shall not impart any taste or odor to the water or result in any organic or inorganic content in excess of the maximum contaminant level established by applicable laws or regulations. Revise painting system specified herein to provide manufacturer's regulatory agency approved coating system where required.
- I. All coatings used on surfaces in contact with potable water shall comply with Ohio EPA Drinking Water Standards and be listed in the latest version of the publication by National Sanitation Foundation (NSF) listing Paints and Coatings Approved for Use In Potable Water and be NSF and UL approved.

#### **1.04 Definitions**

*Abrasive:* Material used for blast-cleaning, such as slag, grit, or aluminum oxide.

*Anchor Pattern:* Profile or texture of surface, as a result of abrasive blasting. Also referred to as anchor profile or blast profile.

*ASTM:* American Society for Testing Material.

*AWWA:* American Water Works Association.

*Barrier Coating:* Protective film isolating substrate or previous coat from environment.

*Binder:* Resin; polymer; film forming portion of paint.

*Blast Cleaning:* Cleaning by abrasive propelled at high speed.

*Coatings and Linings:* The term "coatings and/or linings" as used herein means all protective coating systems and materials, which include surface preparations and all pretreatment, primers, inorganic zinc, organic zinc, epoxies, polyurethanes, epoxy phenolic, acrylics, phenolics, elastomeric polyurethane and other applied materials whether used as prime, base, seal, mist, intermediate, or finish coats. Linings are for interior wet area and immersion duty and coatings are for atmospheric exposure.

*Coating Manufacturer:* The manufacturer and source of the coatings and linings products furnished for this Contract.

*Coating Superintendent:* That employee of the coating and lining Contractor who is designated by the coating and lining Contractor as the supervisor of all coating and lining work and as the official representative of the coating and lining Contractor at any project meetings or discussions.

*Coating Supplier:* The coating and/or lining manufacturer's agent or technical representatives who is supplying the materials directly to the Contractor.

*Coating System:* The combination of surface preparation, base (prime) coat, intermediate coat(s) and finish coat(s) for a specific substrate under specific exposure conditions.

*Curing:* The process of polymerization or hardening of a coating or lining as it goes from a liquid to a solid. Determination of completion of curing shall be in accordance with manufacturers guidelines.

*Delaminating:* Separation and peeling of one or more coats from an undercoat.

*Dew point:* Temperature of a given air/water vapor mixture at which moisture condensation starts.

*Drips (also called spotting):* Paint that falls in drops causing either an uneven surface or visible drop.

*Dry Film Thickness (DFT):* Depth of cured film, usually expressed in mils (0.001 inch).

*Drying Time:* Time interval between application and curing of material.

*Dry to Recoat:* Time interval between application of material and ability to receive next coat, may not be fully cured.

*Dry to Touch:* Time interval between application of material and ability to touch lightly without damage, is not fully cured.

*Dry Spray:* Over spray or bounce back; sandy or textured finish due to spray particle being partially dried before reaching the surface. Dry spray is considered to be a coating defect.

*Fading:* Reduction in brightness of color, particularly from long term sun exposure.

*Festoons:* A string or garland appearance in the coating, suspended in a loop or curve between two points.

*Finish Coat:* Final coating or lining applied after intermediate coat(s).

*Fish Eye:* Pigment separation, or pulling apart of paint film to form holes.

*Floating:* Separation of paint pigment to surface of wet paint.

*Full Wet Coat:* A heavy, glossy coat that is applied in a thickness almost heavy enough to run or sag. Provides maximum possible thickness.

*Galvanized Steel:* Zinc-coated steel, usually from dipping in bath of molten zinc.

*Gloss:* Luster; sheen; brightness.

*Grit:* Abrasive from slag and other sources used in blast cleaning.

*Hardener:* Catalyst; curing agent.

*Holiday:* Coating or lining defect such as a pinhole, void, skip, or other discontinuity in the coating film.

*Incompatibility:* Inability of a coating to perform well over another or substrate coating because of bleeding, poor bonding, or lifting of old coating; or inability of a coating to perform well on a substrate.

*Induction Time:* Time interval between mixing of components and chemical cross linking for satisfactory application of multi-component coatings and linings. Also referred to as "sweat in" time.

*Inorganic Coating:* Coating with inorganic binder (e.g., silicate or phosphate) rather than organic (e.g., of petroleum, animal, or plant origin). Commonly inorganic zinc (IOZ).

*Intermediate Coat(s):* Coat(s) applied after prime or base coat and prior to finish coat(s).

*Laitance:* White or gray weakened material floated to the surface of new concrete. This layer is not dense sound concrete and requires removal prior to application of high performance coatings and linings.

*Lifting:* Softening and raising of an undercoat by solvent in applied topcoat.

*Livered:* The progressive, irreversible increase in consistency of a pigment-vehicle combination. Livering in the majority of cases arises from a chemical reaction to the vehicle with the solid dispersed materials, but it may also result from polymerization of the vehicle. The irreversible character of the changes in the livered material distinguishes it from thixotropic "build-up", which is reversible.

*Mil:* 0.001 inch.

*Mill Scale:* The heavy oxide layer formed during hot fabrication or heat treatment of metals. Cathodic to its steel substrate.

*Mist Coat:* A partially complete coat applied with a more rapid gun motion than a full wet coat. The mist coat should displace the air in porous coatings such as inorganic zinc primer.

*NACE International:* National Association of Corrosion Engineers.

*Near White Blast:* A grade of abrasive blast cleaning of steel, equal to NACE No. 2 or SSPC-SP10.

*NSF:* National Sanitation Foundation.



*NWS:* National Welding Society.

*Orange Peel:* Hills and valleys in paint resembling the skin of an orange.

*Over spray:* Dry spray, particularly such paint that failed to strike the intended surface.

*Peeling:* Paint curling or stripping from substrate.

*Pigment:* Solid, opaque, frequently colored component of paint.

*Pinhole:* Film defect characterized by small pore-like flaws in a coating which extends entirely through the applied film and have the general appearance of pin pricks when viewed by reflecting light. The term is rather generally applied to holes caused by solvent bubbling, moisture, other volatile products, or the presence of extraneous particles in the applied film.

*Pot Life:* Time interval after mixing of components during which the coating can be satisfactorily applied.

*Primer or Prime Coat:* First coat applied to a substrate usually containing inhibitive pigments when formulated for metals.

*Profile:* Surface texture, particularly of abrasive blast cleaned steel.

*Ropiness:* Forming sticky glutinous strings or threads resembling ropes.

*Run:* Sag; curtain; associated with too heavy of a wet application of a paint film.

*Sag:* Run; curtain.

*Seal Coat:* Coat applied to a prime coat for the purpose of sealing to prevent adverse affects of gasification.

*Shelf Life:* Maximum storage time for which a material may be stored without losing its usefulness.

*Shop Coat:* Coat of paint applied in fabricating shop.

*Spreading Rate:* Area covered by a unit volume of paint at a specific thickness.

*SSPC:* The Society for Protective Coatings.

*Tack Coat:* A light covering coat applied to the surface and then allowed to flash off until it is just tacky usually taking a matter of minutes. The full wet coat is then applied which provides for thicker film build.

*Thinner:* Reducer; solvent added to reduce paint viscosity for easier application.

*Thorough Drying:* Curing of paint film through entire thickness as opposed to drying only on the surface.

*Tiecoat*: Thin adhesive coat applied to a cured paint to enhance the bonding of a topcoat.

*TCLP*: Toxicity Characteristic Leaching Procedure. A standard test used to determine if a solid waste is considered a hazardous waste by virtue of its toxicity. It is intended to simulate the leaching of toxic constituents that would take place in a landfill.

*TPC*: Technical Practices Committee of NACE.

*TSR*: Technical Service Representative.

*UL*: Underwriters Laboratory.

*Vehicle*: Liquid portion of coating materials; resin and solvent components of the coating.

*Weld Spatter*: Beads of metal scattered near seam during welding.

*White Metal Abrasive Blast*: Highest level of abrasive blast cleaning of steel, NACE No. 1 or SSPC-SP5.

## 1.05 Project Requirements

- A. The work shall be planned and scheduled so as to not damage the properties or structures or interfere with normal activities and vehicle traffic in the area of the tank. Provisions shall be made so as to not allow over spray, roller splatter or spent abrasive or debris from surface preparation to drift out of the immediate tank area to land on any nearby property or vehicles. It is recommended that the Contractor perform a site investigation prior to submitting their bid. Any cost due to property damage as a result of the construction of the water tower will be the responsibility of the Contractor regardless of the type of containment used.
- B. Containment: ~~Due to the isolated proximity of the proposed tower, containment should not be needed to protect any and all adjacent property. Note that if vacuum blasting is used, full enclosure is not needed for the blasting operation.~~ Due to the proposed location of the tower, contractor shall provide containment as needed to ensure protection for any adjacent structures and vehicles.
- C. Primer Coat: All prime coats on the proposed tower shall be shop applied ~~except for the wet interior which must be field applied~~ unless coating system selected requires an overcoat window. All remaining coats shall be field applied. If an overcoat window is required, a "holding shop primer" shall be applied to the wet interior to help protect from rust bleeding.
- D. Lettering: NORTH HAMPTON, in block letters, shall be printed on one side of the tank. All painting shall be of a size both in height and width, style and spacing as approved by the Owner and Engineer. The cost for preparing lettering templates, etc. shall be included in the cost for the painting. The Contractor shall recommend placement of overflow, ladder, and any other obstructions so they do not interfere with the lettering.

Paint lettering and signs shall be compatible, but of a different color than the exterior. It shall be placed prior to the application of the top coat.

- E. Permits: Contractor shall procure any work permits, etc. as required by the U.S. Government, the State of Ohio or local regulations or ordinances.

## **1.06 Quality Assurance**

- A. Coating Contractor Qualifications:
  - 1. Contractor shall be regularly engaged in work requiring extensive surface preparation in accordance with AWWA, Ohio EPA, NSF, UL, SSPC and NACE standards.
  - 2. Contractor shall have a minimum of five years experience in the mixing and application of high performance industrial coatings and linings.
  - 3. Contractor shall submit a list of at least five (5) municipal utilities or industrial installations completed, responsible officials, engineers, architects, coating consultants or specifiers involved with the project and the approximate contract price.
  - 4. A Contractor not meeting these requirements is required to obtain a Technical Service Representative (TSR) for the duration of the application period.
- B. Manufacturer Qualifications: Provide products manufactured as outlined by one or more of the following:
  - 1. Acceptable Coating/Lining Manufacturers:
    - a. Carboline
    - b. Sherwin Williams
    - c. Tnemec
    - d. Or approved equal
  - 2. Source Quality Control: Obtain coating and lining materials only from manufacturers who can provide the services of a qualified Coating Manufacturer's Technical Service Representative (TSR) at the project site for participation in the preconstruction meeting, at the commencement of the Application Phase of the Work, and other times as required. If the Coating Contractor can satisfy the qualifications listed in section 1.06.A, they can provide the services outlined for the TSR. TSR shall be qualified as follows:
    - a. The Coating Manufacturer's Technical Service Representative shall have five (5) years of high performance coating and lining experience.
    - b. The Coating Manufacturer's Technical Service Representative shall be experienced in the coating system and surface preparation required by these specifications. The Contractor shall submit evidence of experience through the submittal process.
    - c. The Coating Manufacturer's Technical Service Representative shall be thoroughly familiar with requirements of the NACE International Coating Inspector Training and Certification Program (NICITCP).

## **1.07 Submittals**

- A. Shop Drawings: Comply with Section 01 33 10, Submittal Checklist.

At the Pre-Construction Conference submit the following:

1. Work Plan indicating methods of construction, staging details, site arrangement, traffic patterns, warning sign locations, etc.
2. Preliminary Schedule.
3. Lead Compliance Plan.

B. Provide Contractor/Manufacturer Qualifications:

1. Coating Contractor Qualifications, See Section 1.06 A.
2. Manufacturer/TSR Qualifications, See Section 1.06 B.

C. Provide Shop Drawings for the following:

1. Critical Path Schedule: Step by step procedures that will be followed to complete each segment of the specified work. The critical path shall allow for the necessary hold points and inspections.
2. Product Data: Coating and lining manufacturer's product data sheets, coating container labels, material analysis, detailed surface preparation guidelines, surface preparation requirements, detailed application instructions for each material proposed for use. Manufacturer's requirements exceeding these specifications shall prevail. Additional specific coating/lining information shall be required as follows:
  - a. Induction time at all acceptable temperatures and relative humidity.
  - b. Pot life at all acceptable temperatures and humidity ranges.
  - c. Manufacturer's recommended thinners with detailed mixing, storage and application procedures and required application equipment. Maximum allowable thinning that complies with Clean Air Act, Volatile Organic Compounds (VOC) limits.
  - d. Manufacturer's Material Safety Data Sheets for each product.
3. Color Charts
  - a. Actual color draw-down samples.

D. Operation and Maintenance Data:

1. Include a copy of all approved shop drawings, coating and lining identification numbers, routine maintenance and cleaning of all finishes applied and detailed procedures for repairs to finishes including: coating voids, scratches, abrasions, discontinuities and pinholes.
2. A copy of a completed QA/QC Coating Inspection Log.
3. Copies of all guarantees and warranties.
4. Manufacturer's written procedures for repairs.
5. Manufacturer's recommended recoat procedure.
6. Copies of all Soil Sample and Spent Abrasive Sample Chain of Custody forms.

E. Technical Service Representative Reports. These reports should typically record the temperature at the site, site observations, and actions being performed as well as any discussion held relative to the specifications and work being performed.

## **1.08 Guarantee**

- A. Guarantee: There shall be a two year guarantee provided with two required inspection dates. Upon completion of the work the Contractor shall furnish to the Owner the guarantee/information containing but not limited to the following:
1. Written assurance from the Coating Manufacturer that all coatings and linings have been properly stored, handled, mixed and applied. A written assurance for all other tank appurtenances shall be provided by the appurtenance manufacturer.
  2. All pertinent inspection forms assuring that hold points were observed and released by the Quality Assurance Representative.
  3. One Year Inspection. An inspection of the structure shall be scheduled by the Owner prior to the one year anniversary of the accepted work. The inspection shall be conducted with representatives of the Owner, the Coating Contractor, the Coating Manufacturer's TSR (if required), and the third party inspector provided by the contractor. Scheduling of this inspection shall be at the discretion of the Owner.
  4. Two Year Inspection. A final inspection of the structure shall be scheduled by the Owner prior to the two year anniversary of the accepted work. The inspection shall be conducted with representatives of the Owner, the Coating Contractor, the Coating Manufacturer's TSR (if required), and the third party inspector provided by the contractor. Scheduling of this inspection shall be at the discretion of the Owner. The final inspection shall cover all items including coatings, structure, and all other appurtenances.
  5. Defects occurring within two years shall be repaired by the Contractor at the Contractor's expense. The remedial work shall include thorough surface preparation and coating/lining repair, or complete recoating of the defective area subject to approval of the Owner's representative. All coating and lining repairs shall be in accordance with the coating or lining manufacturer's detailed repair instructions, and the requirements of this specification.
    - a. The Owner shall drain the tank. The Contractor shall thoroughly wash out the tank.
    - b. The Contractor shall provide interior lighting, ventilation and rigging for the tank inspections.
    - c. Third Party inspection services will be arranged by the Contractor and shall be at his expense.

## **1.09 Substitutions**

- A. No substitution shall be considered that decreases or reduces the coating thickness specified; the number of coats required; changes the surface preparation specified or alters the generic type of coating specified.
- B. Substitute coating and lining manufacturers, if approved, must furnish the same colors as are available from the named manufacturers.
- C. Substitutions must fully meet or exceed performance requirements of the coating materials specified.

### **1.10 Service Environment Conditions**

- A. Exterior:
  - 1. The following exposure zone is determined for exterior coating exposure: SSPC Zones 1B - Exterior Normally Dry and 2A - Frequently Wet by Fresh Water.
- B. Interior Dry:
  - 1. The following exposure zone is determined for interior dry coating exposure: SSPC Zones 1B - Exterior Normally Dry and 2A - Frequently Wet by Fresh Water.
- C. Interior Wet:
  - 1. The following exposure zone has been determined for immersion and splash zones: SSPC Zone 2C - Potable water immersion.

## **PART TWO - PRODUCTS**

### **2.01 Material Quality**

- A. Provide primers, mist, intermediate and finish coating products produced by the same manufacturer. Where thinning is necessary to insure an acceptable finish, use only thinners recommended by the paint manufacturer, and use only to the manufacturer's recommended limits. Thinning of coating materials to be in contact with potable water shall not be permitted that exceeds allowable VOC, NSF or UL limits. Thinning shall not be permitted that exceeds allowable VOC limits or coating manufacturer's product data and detailed instructions.
- B. Provide coatings of durable and washable quality. Use coating materials which will withstand normal washing as required to remove airborne contaminants, oil, chemicals, etc., without showing discoloration, loss of gloss, staining and other damage.
- C. Coatings and linings shall have excellent adhesion and cohesion properties. Films shall dry and cure to uniform thickness and be free from pinholes, holidays, voids, discontinuities, dry spray, over spray, sags or runs. Finish coats shall be uniform in color, gloss and texture.

### **2.02 Materials Selection, Colors, and Labeling**

- A. Contractor Responsibility
  - 1. The Contractor shall furnish information to the Engineer by way of shop drawing submittal for the materials proposed to be used. If requested by the Engineer, the Contractor shall also secure a written statement from the coating manufacturer attesting to the compatibility of the proposed coating systems with the proposed material of the new elevated water tank.



2. The Engineer will prepare a color schedule based on the Owner's selections (except where colors are already specified herein) and return the same to the Contractor along with the reviewed shop drawings.
  3. All materials shall be delivered to the site in manufacturer's sealed containers. Each container shall be labeled by the manufacturer. Labels shall give the manufacturer's name, brand, and type of material, material color, and instructions for reducing. Thinning shall be done only in accordance with directions of the manufacturer and exclusively with the types of reducer recommended.
- B. Color Pigments: Pure, non-fading, applicable types to suit substrates and service indicated.
1. Lead: Measurable lead content in either the pigment or binder will not be permitted.
  2. The finish coats on the tank shall match colors selected by the Owner.
  3. Where multiple coat exterior coating systems are specified, such as those with intermediate and finish coats, the initial coat(s) shall be tinted approximately 25% lighter in color than the next coat in order to maintain a consistent quality control reference for the applicator and to provide verification of coverage.
  4. Where multiple coat interior systems are specified, there shall be a color change between coats. This color change shall be with products that fully comply with NSF and UL Guidelines.
  5. If not otherwise scheduled, specified, or directed by the Owner, all color coding of piping, ducts and equipment shall comply with applicable standards of ANSI A13.1, OSHA 1910.144 and the Owner's color coding system.
- C. Finish Quality:
1. Finishes shall exhibit a high quality, commercial grade appearance of uniform thickness.
  2. Finishes shall be free of runs, sags, drips, waves, orange peel, festoons, dry spray, cloudiness, spotting, ropiness, brush marks, roller marks, fish eyes or other surface imperfections, voids, discontinuities, pinholes, and holidays.
  3. Final coat shall be uniform in texture, color and gloss, and shall provide an acceptable match with the approved drawdown color sample.

### **2.03 Surface Preparation**

- A. Surfaces shall be clean, dry, and adequately protected from dampness. Surfaces shall be smooth, even, and true to plane. Surfaces shall be free of any material which will adversely affect adhesion or appearance of the coating. Cleanliness shall be checked by wiping the prepared steel surface with a white cloth dampened with manufacturers thinner for the particular coating system. If a dark spot appears on the rag from light wiping, the Contractor shall take steps to clean the surface more thoroughly before applying any coating materials.
- B. Interior Wet steel surfaces shall be prepared equivalent to SSPC-SP10, Near White Metal Blast Cleaning.

- C. Exterior and Interior Dry steel surfaces shall be prepared equivalent to SSPC-SP6 Commercial Blast Cleaning.
- D. All surfaces shall be clean and dry prior to coating. Abrasive blast cleaned surfaces shall be verified in accordance with SSPC-Vis 1 Standards.
- E. Surface preparation shall follow the additional requirements as set forth throughout this specification and more specifically as covered in Sections 3.03, 3.05, 3.06, 3.08, and 3.11.

## **2.04 Repair Products**

- A. Repair (touch-up) coatings for all coating and lining products applied under this Contract that are used for finish coating shall be supplied by the Contractor and turned over to the Owner after the anniversary inspection.
- B. All containers shall be properly and thoroughly labeled. Labeling shall be neat and permanent. In addition to the standard label:
  - 1. Colors shall be named and the manufacturer's product and color numbers shown.
  - 2. Substrate to which the coating product is to be applied to shall be listed.
  - 3. Manufacturing date, date of purchase, batch number, and product shelf life expiration date shall be displayed.
- C. Repair products shall be furnished in the following quantities:
  - 1. Minimum Quantity:
    - a. Four (4) units shall be supplied for each product and each finish color applied.
    - b. Each unit to include one (1) gallon of single component products and two (2) gallons of multiple component products.
    - c. Packaging: One (1) quart containers.

## **2.05 Materials and Equipment for Inspection and Quality Control**

- A. General: Prior to the beginning of any coating and lining or surface preparations, the Contractor shall supply the materials and equipment as listed in the following paragraph.
  - 1. Each item shall be of construction, durable enough to last, through normal inspection use, for the life of this Contract.
  - 2. All materials and equipment shall be supplied to the Owner/Engineer for use during this contract.
    - a. All materials and equipment shall be returned to the Contractor after final acceptance of the Work.
  - 3. All equipment shall include complete operating instructions including calibration and adjustment directions.

**B. Inspection Materials and Equipment:**

1. Wet Film Thickness Gauge:
  - a. Nordson S. G. Pinney Model W0001.00; Range 0 to 20 mils, or equivalent (KTA, eg.)
  - b. Quantity: 3 required.
2. Surface Temperature Thermometer min/max.
  - a. S. G. Pinney Model THRPTC315FM dial thermometer 0°-150°F, or equivalent (KTA, eg.).
  - b. Quantity: 3 required.
3. Paint Thermometer:
  - a. Taylor Paint Thermometer KTA-TATOR Model #6212, 25°-125°F, or equivalent.
  - b. Quantity: 2 required.
4. Maximum/Minimum Thermometers:
  - a. S.G. Pinney Model No. THRPTC315FM 0° to 150°F, or equivalent (KTA, eg.).
  - b. Quantity: 2 required.

At the completion of the Contract the above equipment shall remain the property of the Contractor.

**PART THREE – EXECUTION**

**3.01 Examination and Verification of Condition**

- A. Contractor shall examine the areas and conditions under which the work is to be performed and notify the Owner in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected.
- B. Do not coat over chalk, dust, dirt, rust, scale, moisture, oil, surface contaminants, coatings that have exceeded the manufacturers re-coat guidelines, or conditions otherwise detrimental to the formation of a durable, high quality coating system.

**3.02 Safety and Regulatory Compliance**

- A. The Owner's rules, policies and safety requirements shall be followed including:
  1. Hard hats are required to be worn in the work place.
  2. Safety shoes and safety goggles/glasses are required to be worn in the work place.
  3. Smoking within buildings and structures is strictly prohibited.

4. Site parking shall be designated by the Owner.
- B. Compliance with the Owner's confined space entry and safety requirements shall be adhered to by the Contractor, his employees and subcontractors. The Contractor shall secure Confined Space Entry Permits from the Owner.
- C. Contractor shall ensure that all workers and others coming in contact with abrasive blasted and coated surfaces shall always wear clean gloves, clothing and shoe coverings. These measures are to prevent contamination of the abrasive blasted and coated surfaces. Compliance with all other measures to prevent contamination that may lead to premature coating and lining failure is the Contractor's responsibility. The Contractor shall provide gloves and disposable shoe coverings for his employees, the Owner's representatives and the consultant representatives.
- D. On behalf of the Owner, the Engineer will provide an inspector or may engage the services of an inspector to perform observation of the Work. The Contractor shall notify and make available to the inspector for observation of the fit-up of any new and/or replacement parts prior to welding and following post-weld cleanup. The Contractor shall notify and make available to the inspector for observation all surfaces to be coated. The dry film thickness (DFT) of each coat shall be measured in accordance with SSPC Paint Application System No. 2 (SSPC-PA 2). However, if it is determined to be in the best interest of the Owner, the inspector may make dry film thickness measurements in excess of the quantity stated in SSPC-PA 2 or in areas where DFT deficiencies are suspected.

### **3.03 General Preparation**

- A. Delivery of Materials:
  1. Deliver all coating and lining materials, thinners and solvents to the job site in original, new and unopened packages and containers bearing manufacturer's name and label, and the following information.
    - a. Name or title of material.
    - b. Manufacturer's stock number, batch number, and date of manufacture.
    - c. Manufacturer's name.
    - d. Contents by volume, for major pigment, binder (or resin) and vehicle constituents.
    - e. Thinning instructions where recommended.
    - f. Application instructions.
    - g. Color name and number.
    - h. Shelf life expiration date.
    - i. Pot life, at various ambient temperatures.
    - j. Material safety data sheet.
    - k. Volume and weight of container.
  2. Deliver all cleaners in unopened containers which are labeled to indicate manufacturer and product.
  3. Deliver all brushes and rollers in unopened packages which are labeled to indicate manufacturer and product.

4. Delivery of abrasive in bulk transfer trucks or abrasive manufacturer's bags or bulk nylon sacks, bearing the manufacturer's name, label and the following information:
  - a. Name of material.
  - b. Manufacturer's name.
  - c. Contents and net weight of the contents.
  - d. Mesh size of material.
  - e. Impurities or contaminants.

B. Storage of Materials:

1. Store only materials which have been previously approved for this Project on the job site.
  - a. Do not store non-approved materials on the job site.
  - b. Do not store materials for other projects with the materials for this Project.
2. Store all materials in a clean, dry, lighted and environmentally controlled area, such as a storage trailer, which shall be furnished and maintained by the Contractor.
  - a. Storage area shall be kept clean and accessible at all times throughout the durations of the Coating and Lining Work.
3. Comply with health, fire and OSHA regulations.
4. Maintain coating and lining material storage area between 60°F and 90°F at all times.
5. In the event the storage area temperature drops to 35°F or below, all paint and coating materials shall be declared unacceptable for this project. All such unacceptable material shall be immediately removed from the job site and replaced by the Contractor at no additional cost to the Owner.
6. Do not store coatings or lining materials in Owner's buildings or structures.

C. Handling of Materials:

1. Handle materials carefully to prevent inclusion of foreign materials, including abrasive dust and abrasives.
2. Do not open containers or mix components until necessary preparatory work has been completed, the appropriate inspection performed and the inspection hold point released. The application work shall immediately follow proper mixing and induction if required. The Owner shall be permitted to witness mixing and thinning and to monitor pot life of all coating and lining materials.

D. Protection:

1. Cover or protect all surfaces and equipment not being coated or not scheduled to be coated or painted, during all surface preparation and coating and lining work included under this Contract. This includes, but is not limited to the Owner's

- facilities, other private and public facilities within or adjacent to the area, other Contractor's equipment, and all publicly and privately owned vehicles.
2. Display prominent warning signs indicating "WARNING - PAINTING AND ABRASIVE BLASTING WORK UNDERWAY" throughout the job site wherever surface preparation or coating and lining operations are underway. Signs shall be at clearly visible locations near all points of access by person or vehicle to the job site and immediate work area.
  3. Coating and Lining work, including surface preparation, shall not begin in any area until the Owner approves the protection plan and application techniques proposed by the Contractor. The Owner reserves the right to restrict coating and lining to those hours agreed upon and scheduled.
  4. Take precautions necessary to prevent dust, dirt and moisture from coming in contact with surfaces cleaned for coating and lining and with surfaces freshly painted. Protect freshly painted surfaces from dust/dirt moisture or other detrimental conditions throughout the initial drying period. Protect painted surfaces from dust, dirt, moisture and other contaminants detrimental to top coating.
  5. Provide fire extinguishers and post caution signs warning against smoking and open flame when working with flammable materials.
  6. Remove all temporary protective coverings provided for protection under this Contract immediately after completion of coating and lining operations.

### **3.04 Shop Pre-Cleaning and Surface Preparation of Metal Substrates**

#### **A. General:**

1. The Contractor shall provide all labor, material and equipment to thoroughly pre-clean the substrate of the water tank as scheduled. The pre-cleaning is to include steel floors, walls, roof, underside of tank, risers, columns, bracing, flanges, base plates, gussets, and all appurtenances, all immersed and non-immersed ferrous steel and equipment to be coated.
2. Perform all pre-cleaning and surface preparation procedures as specified herein, as indicated by Schedule A and in strict accordance with the coating manufacturer's instructions for each particular substrate and environmental condition.

#### **B. Pre-cleaning:**

1. Pre-clean all interior and exterior ferrous surfaces, including structural steel, aluminum and miscellaneous metal fabrications, of all oil, grease, dirt, and other foreign matter in accordance with SSPC-SP1, Solvent Cleaning.
2. The cleaned surface will be inspected for removal of iron residue, magnesium residue, calcium, chalk, dirt and contaminants. Inspection shall comply with paragraph 3.11. The surface shall have neutrality in the range of 7.0 to 7.5 pH. The cleaned surface must be free of any chlorides. The surface must be free of any chalk, dirt, debris, oil, contaminants and any other foreign matter.

#### **C. Surface Preparation:**

1. General:



- a. The following industry standards are established for surface preparation work required by this Contract:

NACE Number	SSPC Number	Surface Preparation Description
	SP 1	Solvent Cleaning
	SP 3	Power Tool Cleaning
No. 1	SP 5	White Metal Blast Cleaning
No. 2	SP 10	Near-White Metal Blast Cleaning
No. 3	SP 6	Commercial Blast Cleaning
No. 4	SP 7	Brush-Off Blast Cleaning

- b. Prior to surface-preparation and coating operations, remove all hardware, hardware accessories, hand-hole covers, hatches, dedication plaques and similar items in order to facilitate the complete coating of the items and/or the adjacent surfaces. Tape and masking protection will be acceptable only where it is not possible to remove the hardware or fixture mentioned.

- 1) Following completion of coating of each area, clean and properly reinstall the removed items.
- 2) Replace all missing items removed for coating work.
- 3) Remove all protective masking and covering.
- 4) Replace all ferrous metal fasteners and washers with similar size stainless steel fasteners.

2. Power Tool Surface Preparation: Power tool cleaning shall be as follows:

- a. Power tool cleaning shall be in accordance with SSPC-SP3.
- b. The power tools shall be operated to remove and feather out peeling paint, chipped paint, rust, runs or other imperfections. Exposed edges shall have a radius to 1/8-inch by grinding.
- c. All areas that are cleaned with power tools shall be vacuum cleaned or wiped down to remove all dust and contamination that occurs during power tool cleaning.
- d. Exterior rusted and painted areas that are power tool cleaned and dusted off shall be spot primed and/or coated and not permitted to be left uncoated overnight. Exterior power tool cleaning shall be vacuum assisted whenever lead is present.

3. Abrasive Blast Surface Preparation: Surface preparation requiring abrasive blast cleaning shall be in accordance with the following requirements.

- a. Blast cleaning shall comply with the guidelines of the NACE International Society for Protective Coatings and the Coating/Lining Manufacturer's requirements.
- b. Dry abrasive blast cleaning techniques shall be utilized.

- c. The abrasives shall be maintained free from oil, dust, chemicals, salts and other impurities.
- d. The type and size of abrasive for a particular substrate shall be selected to give a properly prepared surface consistent with the anchor pattern of the scheduled coating system and the Coating/Lining Manufacturer's requirements.
- e. Compressed air supply used for blasting shall be free of oil, water, or other contaminants. Adequate separator traps and filters shall be provided, and shall be purged of oil and water throughout the blasting operation. Accumulations of oil and moisture shall also be removed from the auxiliary air receivers by regular purging.
- f. Abrasive blasting shall not be conducted when the surface temperatures are less than 5°F above the dew point, or when the relative humidity of the surrounding air is greater than 85%. Refer to the U.S. Department of Commerce Weather Bureau, Psychometric Tables for dew points at various temperature/humidity conditions. Abrasive blasting may continue in controlled environments that comply with the specified conditions.
- g. Abrasive blasted surfaces shall be coated as soon after the blasting work is completed as possible. In no case shall blast cleaned surfaces be allowed to stand overnight without being coated unless the affected area is dehumidified.
- h. Abrasive blasting shall not be performed on any surfaces in close proximity to other surfaces which have recently been coated.
- i. Protect all adjacent areas, surfaces and equipment not to be blast cleaned from blast over spray resulting from the blasting operations. Clean up all dust, grit, blasting residue and debris at the end of each workday.
- j. Abrasive blasted surfaces shall be blown down with dry, oil-free, filtered air or by vacuum cleaning. Abrasive blasted surfaces will be inspected by the Third Party Inspector and/or the Owner's Representative and checked with the 2-inch wide clear cellophane tape test and the replica tape test. The surface shall be free of all residues, dust or other contamination that jeopardizes maximum adhesion of the coating.
- k. Anchor profiles of abrasive blast shall be in accordance with the specific requirements of the base or prime coat to be applied.
  - 1) The Contractor shall verify that the anchor profile depth provided by blast cleaning operations is sufficient to maximize the adhesion and mechanical bonding of the prime coat. Prior to prime coat application, the Third Party Inspector and/or the Owner's Representative will verify anchor profile depth by measurement with Testex replica tape. This measurement will be taken following blow-down or vacuum cleaning.
  - 2) All surfaces shall be clean, dry and free of contaminants immediately prior to the application of the coating/lining material.

### **3.05 Field Pre-Cleaning and Surface Preparation of Metal Substrates**

#### **A. General:**

1. The Contractor shall provide all labor, material and equipment to thoroughly pre-clean the interior and exterior of the water tank as scheduled. The pre-cleaning is to include steel floors, walls, roof, underside of tank, risers, columns, bracing, flanges, base plates, gussets, and all appurtenances, all immersed and non-immersed ferrous steel and equipment to be coated.
2. Perform all pre-cleaning and surface preparation procedures as specified herein, as indicated by Schedule A and in strict accordance with the coating manufacturer's instructions for each particular substrate and environmental condition.

**B. Pre-cleaning:**

1. Pre-clean all interior and exterior ferrous surfaces, including structural steel, aluminum and miscellaneous metal fabrications, of all oil, grease, dirt, and other foreign matter in accordance with SSPC-SP1, Solvent Cleaning.
2. The cleaned surface will be inspected for removal of iron residue, magnesium residue, calcium, chalk, dirt and contaminants. Inspection shall comply with paragraph 3.11. The surface shall have neutrality in the range of 7.0 to 7.5 pH. The cleaned surface must be free of any chlorides. The surface must be free of any chalk, dirt, debris, oil, contaminants and any other foreign matter.
3. The Contractor may use the (potable) water from the nearest hydrant, but the Contractor shall install a temporary reduced pressure back-flow preventer on the outlet of the hydrant.

**C. Surface Preparation:**

**1. General:**

- a. The following industry standards are established for surface preparation work required by this Contract:

NACE Number	SSPC Number	Surface Preparation Description
	SP 1	Solvent Cleaning
	SP 3	Power Tool Cleaning
No. 1	SP 5	White Metal Blast Cleaning
No. 2	SP 10	Near-White Metal Blast Cleaning
No. 3	SP 6	Commercial Blast Cleaning
No. 4	SP 7	Brush-Off Blast Cleaning

- b. Prior to surface-preparation and coating operations, remove all hardware, hardware accessories, hand-hole covers, hatches, dedication plaques and similar items in order to facilitate the complete coating of the items and/or the adjacent surfaces. Tape and masking protection will be acceptable only where it is not possible to remove the hardware or fixture mentioned.

- 1) Following completion of coating of each area, clean and properly reinstall the removed items.
  - 2) Replace all missing items removed for coating work.
  - 3) Remove all protective masking and covering.
  - 4) Replace all ferrous metal fasteners and washers with similar size stainless steel fasteners.
2. Power Tool Surface Preparation: Power tool cleaning shall be as follows:
  - a. Power tool cleaning shall be in accordance with SSPC-SP3.
  - b. The power tools shall be operated to remove and feather out peeling paint, chipped paint, rust, runs or other imperfections. Exposed edges shall have a radius to 1/8-inch by grinding.
  - c. All areas that are cleaned with power tools shall be vacuum cleaned or wiped down to remove all dust and contamination that occurs during power tool cleaning.
  - d. Exterior rusted and painted areas that are power tool cleaned and dusted off shall be spot primed and/or coated and not permitted to be left uncoated overnight.
3. Field Abrasive Blast Surface Preparation: Comply with the requirements stated in paragraph 3.04

### **3.06 Weld and Metal Surface Repair**

- A. General: The Contractor shall repair all surfaces, especially welds, and edges so that the surfaces are smoothly contoured and will not compromise the integrity or adhesion of the coating systems.
  1. Remove all weld spatter, slivers, flux deposits, unevenness, sharp projections, etc., by a systematic and uniform method by grinding in accordance with SSPC-SP3 to smooth welds to enhance adhesion of the coating. Follow grinding with power tool cleaning using a 3" or 4" belt sander fitted with an 80 grit aluminum oxide grinding wheels or non-woven 3M-abrasive discs. Welds shall comply with NACE SP0178 butt weld designation "D". Designation of other weld types shall be approved by the Owner.
  2. Fill all weld holes, voids and sharp indentations with additional weld material, and grind the surface smooth.
  3. Welds which are specified to be continuous shall be truly continuous, and skip; tack or stitch welding techniques will not be permitted.
  4. All weld area imperfections shall be corrected prior to surface cleaning and abrasive blasting.
  5. Imperfections discovered after abrasive blasting, shall be corrected and re-blasted prior to coating/lining application.
  6. Pits deeper than 0.125 inches and in clusters greater than 6 inches in diameter shall be plated over with 0.250 inch thick steel plate, seal welded to surface prior to surface preparation and coating application. Removal of spatter and curved welds and edges shall be included.

B. Weld Seam Repairs:

1. Repair weld seams in the tank in accordance with AWWA D100, Section 8, 10 and 11 or API No. 650 prior to stripe coat.
2. Seam welding shall be as required and included in the unit price bid for this coating work.

**3.07 Preparation and Mixing of Coating Materials**

- A. Mix coating material only in containers which have been placed in suitably sized non-ferrous (plastic) or new metal containers. Protect concrete, and the ground from splashes or spills during mixing of coating materials. Mix and store open containers and thinner on absorbent drop cloths over reinforced 6 mil polyethylene.
- B. Mix coating and lining materials only from properly stored containers bearing accurate product name and batch numbers of material being mixed or applied.
- C. Coating material which has livered, gelled, or otherwise deteriorated during storage shall not be used; however, thixotropic materials which must be stirred to obtain normal consistency are acceptable.
- D. Coating products with more than one component or part shall have each separate part thoroughly mixed prior to combining, mixing, and allowing for induction of the combined coating. Where several units of the finish materials are prepared for application at the same time, "boxing" of the several units is required.
- E. All stirring, mixing, boxing and induction shall be witnessed by the Owner or Owner's Representative and documented. Coating mixes not inspected and documented will not be approved for application.
- F. All coating materials shall be thoroughly mixed using a power mixer for sufficient time to thoroughly blend all components.
- G. Only thinners as specified by the coating manufacturer shall be used, and the previously approved mixing and thinning directions furnished by the coating manufacturer shall be strictly followed.
- H. Coating materials requiring the addition of a catalyst shall have the pot life clearly stated on the label. The pot life must be shown for the humidity and temperature ranges allowable under these specifications. Mixing of partial units of two component materials is strictly prohibited.
  1. The pot life must not be exceeded.
  2. When the pot life limit is reached, the coating application container must be emptied, the material discarded, the equipment cleaned and new material mixed and/or inducted.
  3. Mixing of partial units will not be allowed.

- I. Following induction, re-mix all materials before application to produce a mixture of uniform density. Mix as required during the application of the materials to maintain a uniform density.
- J. Do not stir any residue into newly mixed coating material.
- K. Coatings containing heavy or metallic pigments (zinc) that have a tendency to settle must be kept in suspension by a continuous agitating device.
- L. Coating materials shall be strained prior to application. The coating manufacturers detailed mixing and application instructions shall be followed. The coating manufacturer's recommended strainer size shall be used. Strainers shall be submitted for approval by the Engineer.
- M. Store those materials in use in covered containers. Maintain all containers used in the storage, mixing, and application of coatings in a clean condition, free of foreign materials, dust and residue.
- N. Adjust coating or lining material to the proper viscosity at ambient temperature and humidity in accordance with manufacturer's recommendations. Thinning must be done at the initiation of roller, brush or spray application, thinning of materials well into the pot life is strictly prohibited. Thinning in excess of VOC limits or NSF guidelines for interior lining material is strictly prohibited.
- O. Mixed coatings shall be covered during induction and during use to the greatest extent possible.
- P. Empty containers shall be stored until the NACE inspector approves of their removal and disposal by the Contractor.

### **3.08 Field Application of Interior Lining Materials**

- A. General:
  - 1. Any surface to be coated or lined shall be rendered dust-free prior to the application of coating material. This shall be accomplished using oil-free, moisture-free, blow-down air or commercial vacuum cleaning equipment with tools that are kept clean throughout the project.
  - 2. The interior surfaces of the tank shall be completely coated. The stripe coat shall be comprised of striping of all welds, edges, corners and fasteners, followed by spray application of the full wet coat to all surfaces.
  - 3. Dehumidification will be incorporated into the project, all abrasive blasting shall be completed, surfaces shall be rendered dust free and the lining system shall be applied as specified.
  - 4. Allow sufficient time between the striping and final coat to permit proper drying. Drying and curing of the entire lining system shall strictly follow the requirements of these specifications and the coating manufacturers detailed instructions.



5. Application shall be by qualified applicators. Applicators shall frequently check wet film thickness (WFT) with approved gauges. The gauges shall be Nordson, SGP or an approved equal machined gage. 'Credit Card' gauges are unacceptable.
6. Full-time ventilation must be provided during coating application and cure of interior coating system.

**B. Environmental Requirements**

1. The Contractor shall provide at least 100 foot candles of lighting uniformly applied to all areas and all surfaces being worked on. Such lighting shall be provided through the pre-cleaning, surface preparation, coating and lining application, drying, curing and inspection steps.
2. The Contractor shall be responsible for maintaining the interior of the tank with adequate ventilation and temperature control in accordance with OSHA regulations and in accordance with coating and lining manufacturer's product and application data throughout the project including the drying and curing time.
  - a. Do not apply coatings, linings or seam sealant to surfaces that have temperatures less than five (5) degrees above the dew point temperature or when the relative humidity is 85% or greater.
  - b. Minimum air and surface temperatures shall be in accordance with the Manufacturer's published detailed guidelines and these specifications.
3. The Contractor shall provide continuous dehumidification of the tank interior during surface preparation, lining material application, drying and curing.
  - a. The dehumidifier shall be of the solid desiccant (granular or loose lithium chloride) type capable of continuous operation with drip-proof, automatic electrical controller, designed to keep the air adjacent to surfaces to be cleaned and coated at a relative humidity of less than forty percent (40%).
  - b. The dehumidifier shall be capable of making one complete air change every thirty to forty minutes as a minimum.
  - c. All electrical connections between the power source and the dehumidifier equipment shall be furnished by the Contractor.
  - d. The dehumidifier shall be equal to a Munters Moisture Control Services honeycomb type desiccant dehumidifier with an auxiliary 60 kw electric heater or propane gas heater.
  - e. Desiccant regeneration (drying) may be by electric heaters or propane gas heaters.
  - f. All electricity, propane or any other fuel used shall be provided at the Contractor's expense.
4. The Contractor shall provide continuous dust collection, (negative air) with adequate filtering and air exchanges during the project.

**3.09 Shop and Field Application of Interior and Exterior Coating**

**A. General:**

1. Any surface to be coated shall be rendered dust-free prior to the application of coating material. This shall be accomplished using a vacuum or by being wiped down.
2. Apply coating materials by brush or roller in strict accordance with the manufacturer's detailed instructions and recommendations of Paint Application Specifications No. 1 in SSPC Vol. 2, where applicable. Use brushes or rollers best suited for the type of material being applied. Application shall be verified for the most desirable finish.
3. Exterior pre-cleaned, power tool cleaned and abrasive blast cleaned surfaces shall be coated with the products specified within 4 hours of completion of surface preparation (or shorter time limits as may be specified by the coating manufacturer). However, initial or prime coating of such surfaces shall always be accomplished prior to the end of the workday and 4 hours prior to the substrate going into dew point conditions.
4. It is acceptable to leave a 6 inch wide un-primed margin on the steel plate edge during shop priming to allow for field welding. Un-primed areas shall be blasted in the field to SSPC-SP10 conditions for interior wet surfaces and to SSPC-SP6 conditions for exterior and interior dry surfaces and then painted per Schedules A and B.
5. The total paint film thickness required is the same regardless of the application method. Do not apply succeeding coats until the previous coat has dried or cured, **and has been inspected and approved.**
6. Apply each material at not less than the coating manufacturer's recommended spreading rate and provide the total dry film thickness specified in Schedule B. Apply additional coats, if required, to obtain the specified dry film thickness of each coat and total dry film thickness.
7. Application shall be by qualified applicators. Applicators shall frequently check wet film thickness (WFT) with approved gauges. The gauges shall be Nordson, SGP or an approved equal machined gage.
8. Brush-out and work all brush coats into the surfaces to provide an even film. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, dry spray, dry over spray or other surface imperfection will not be acceptable.
9. Neatly draw all color and break lines.
10. Stripe Coat all edges, corners, crevices, welds, rivets, and bolts by brush application. Ferrous metal shall be striped with the primer material prior to application of the complete prime coat. There is no acceptable alternate or substitute for brush applied striping. All striping shall extend a minimum of one inch from the edge, corner, weld, bolt or crevice. Striping material may be thinned to a maximum of 25% or less when so indicated by the Coating Manufacturer's product data or detailed instructions.
11. Allow sufficient time between successive coats to permit proper drying. Drying and curing of each coat and the entire coating system shall strictly follow the requirements of the coating manufacturer.
12. Apply additional coats when undercoats, stains, or other conditions show through the final coat of paint, until the film is of uniform finish, color and appearance. Insure that all surfaces, including edges, corners, crevices, welds and exposed fasteners receive film thickness equivalent to that required on flat surfaces.

B. Environmental Requirements:

1. Apply water-base paints only when temperatures of the surface to be coated and the surrounding air temperature are in accordance with manufacturer's recommendations but in no case less than 50°F.
2. Apply coatings and linings other than water-based materials only when the temperature of surfaces to be painted and the surrounding air temperature and relative humidity are in accordance with manufacturer's recommendations but in no case less than 50°F.
3. Do not apply paint, coatings or linings to surfaces which have temperatures that are less than 5°F above the dew point. Dew points shall be determined in accordance with Psychrometer testing and U.S. Department of Commerce, Weather Bureau, Psychrometric Tables.

### **3.10 Technical Service Representative**

- A. Coating Manufacturer's Technical Service Representative (TSR) or Coating Contractor's qualified representative shall visit the site for the interior lining: on a weekly basis during the surface preparation and during the lining application phase of the work, and other times as required, in accordance with Section 1.06. The TSR shall be qualified as follows:
  1. The Coating Manufacturer's Technical Service Representative shall have five (5) years of high performance coating and lining experience.
  2. The Coating Manufacturer's Technical Service Representative shall be experienced in the coating system and surface preparation required by these specifications. The Contractor shall submit evidence of experience through the submittal process.
  3. The Coating Manufacturer's Technical Service Representative shall be thoroughly familiar with requirements of the NACE International Coating Inspector Training and Certification Program (NICITCP).
- B. For the exterior coating: on a weekly basis during the surface preparation and coating application phase of the work, the Coating Manufacturer's Technical Service Representative (TSR) or Coating Contractor's qualified representative shall visit the site on a scheduled basis to advise on suitability of surface preparation, materials, installation and finishing techniques. The weekly visit shall include a memorandum to the Owner, which summarizes the Representative's findings and recommendations.

### **3.11 Quality Assurance/Quality Control - Inspection**

- A. The Contractor shall provide an independent third party NACE Certified Inspector to monitor his work. An outline of the entire inspection and quality control process is given below.
- B. The NACE Inspector on site, shall have, as a minimum, Basic Coating Inspection - Session I and 10 years of inspection experience.
- C. Costs for full compliance and cooperation with all inspection steps shall be included in the prices bid for the work. Should the Contractor fail to meet one of the following hold points, follow-up testing for the failed hold point shall be at the expense of the

Contractor. Exceptions to this would be for one (1) follow up holiday test, after repairs of the holidays were made.

- D. Accessibility to work shall be arranged by the Contractor. The necessary rigging and hoisting shall be provided by the Contractor to make all areas of work available to the inspector for inspection. The Contractor shall make every reasonable attempt to accommodate the NACE Inspector in the performance of the tests involved. The Contractor shall also have the applicator or superintendent available to interface with and assist with the inspection process.
- E. During rehabilitation work, the Contractor shall schedule all 'hold point' inspections with the Third Party Inspector and the Engineer. Should the Contractor schedule such a visit and not attend or be represented, the expenses associated with the Inspector's visit and Engineer's representative visit shall be the Contractor's responsibility.
- F. The NACE Inspector will not allow coating or lining work over oil, dirt, rust, rust scale, mill scale, grease, moisture, or other contaminants detrimental to the formation and adhesion of a durable coating film or lining.
- G. The NACE Inspector will not allow coating over previous coats that have not sufficiently dried or that have exceeded the re-coat window as defined by the coating manufacturer's product data.
- H. Quality Assurance/Quality Control will conform to the NACE International Coating Inspectors Program.
- I. Coating Inspection Logs are required to be completed as part of the coating work.
- J. Quality Assurance/Quality Control inspection will include the following Hold Points for the Contractor. Prior to Field Pre-cleaning, NACE Inspector shall inspect all material delivered on site to document that shop applied materials meet the Project Specifications. Material that does not meet the requirements of the Project Specifications will be labeled unacceptable and removed from the site. Contractor shall provide certificates or other documentation stating that fabricated items meet or exceed the Project Specifications. Field coating and lining work may not proceed until conditions are checked by the NACE Inspector at each Hold Point, including ambient conditions.
  - 1. Hold Point 1: Following Field Pre-cleaning
  - 2. Hold Point 2: Prior to Field Power Tool Cleaning
  - 3. Hold Point 3: Following Field Power Tool Cleaning
  - 4. Hold Point 4: Following Weld and Metal Surface Repair
  - 5. Hold Point 5: Following Field Abrasive Blast Cleaning
  - 6. Hold Point 6: Prior to Field Prime Coat
  - 7. Hold Point 7: Prior to Intermediate Coat (or prior to each coat)
  - 8. Hold Point 8: Prior to Field Final Coat
- K. Inspection includes but is not limited to the following:
  - 1. Pre-Cleaning Preparation:

- a. Emulsified high pressure cleaning, removal of the residual emulsion followed by pressure rinsing three or more times for protective coating and lining work. Emulsion cleaning in accordance with SSPC-SP1.
  - b. Emulsified cleaning, power scrubbing, and rinsing for interior work as specified.
  - c. Surface neutrality.
  - d. Chlorides.
  - e. Ferrous salts.
2. Ambient Conditions:
- a. Psychrometer.
  - b. Humidity.
  - c. Dew point.
  - d. Surface temperature.
  - e. Ambient temperature.
  - f. Wind speed.
  - g. Wind direction.
  - h. Maximum/minimum substrate temperature.
  - i. Maximum/minimum material storage area temperature.
3. Surface Preparation - Abrasive Blasting:
- a. Blotter test.
  - b. Nozzle bore/nozzle aperture.
  - c. Nozzle pressure.
  - d. Correct Abrasive Submitted:
    - 1) Shop drawing submittal, abrasive sample verified with materials delivered.
    - 2) Mesh size.
    - 3) Abrasive Vial Test.
  - e. NACE surface preparation visual comparison standards.
  - f. Visual comparison to the sample work piece.
  - g. Anchor pattern by testex tape.
  - h. Cellophane tape cleanliness verification of all cleaned surfaces.
4. Surface Preparation - Power Tool.
5. Weld Grinding:
- a. NACE visual comparison standards RPO 178.
6. Coating and Lining Applications:
- a. Ambient conditions as specified above.
  - b. Coating verification is compared with specifications and submittals.
  - c. Coating container numbers.
  - d. Coating batch numbers.

- e. Coating mixing.
- f. Coating induction time.
- g. Coating temperature.
- h. Moisture in porous substrates.
- i. Coating application equipment.
- j. Approval of substrate for coating.
- k. Duration between power washing, rinsing and coating application.
- l. Coating application.
- m. Wet Film Thickness (WFT) (sample work piece, calibration work provided by Contractor).
- n. Wet Film thickness of actual application .
- o. Coating dryness.
- p. Coating cure.
- q. Dry Film Thickness (DFT) of the work piece in accordance with SSPC PA-2.
- r. Suitability for additional coat/coats.
- s. Progressive total DFT.

7. Completed Work:

- a. Final Cure: A satisfactory degree of cure is determined by solvent sensitivity testing and other recommendations of the coating/lining manufacturer. Thick film cure is determined by impression hardness.
- b. Coating and lining cure verified.
- c. Low voltage holiday detection.
- d. High voltage holiday detection.
- e. Adhesion testing if required by Owner. Repairs of damage by adhesion or other testing is the responsibility of the Contractor and shall be completed at no additional cost to the Owner.
- f. Total DFT in accordance with specifications.
- g. Correct imperfections including but not limited to the following:
  - 1) Pinholes/holidays/voids.
  - 2) Over spray.
  - 3) DFT too thin or thick.
  - 4) Defects cited.
- h. Thorough clean up completed.
- i. Punch list including touch up or final repairs completed.
- j. Documentation completed.

8. Final:

- a. Confirm completion of all punch list items.
- b. Confirm corrections, repairs, and clean up is completed.
- c. Verify full compliance with the specifications.

L. Defects. All defects exposed by inspections shall be corrected by the Contractor at no additional cost to the Owner. Should the defects require additional visits by the Third Party Inspector, this shall be done at the expense of the Contractor.

### **3.12 Cleanup**

- A. During the progress of Work, remove from the work site and work areas all discarded materials, abrasive bags, rubbish and rags at the end of each work day. This material may be stored in a covered container (dumpster) for removal weekly or at the frequency required to keep the site clean, neat and orderly.
- B. Proper removal and disposal of coatings, linings, paints, and thinners is the Contractor's responsibility.
- C. Restore site to pre-job conditions, grass, restored ruts repaired, fencing.

### **3.13 Curing**

- A. The Contractor is responsible for lining cure in accordance with the coating manufacturer's guidelines.
  - 1. The following curing conditions shall be met:
    - a. Length of cure.
    - b. Temperature during cure.
    - c. Relative humidity during cure.
    - d. Solvent sensitivity.
- B. Following documented cure, holiday detection testing will be performed by the Third Party Inspector. Any holidays shall be corrected.
- C. Maintain the interior of the tank in a sanitary condition during drying and curing of lining, prior to disinfection.

### **3.14 Disinfection**

- A. Following the curing, the Contractor is responsible for the cleaning of the tank to the Owner's satisfaction. The Contractor may use water as directed by the Owner. The Contractor shall disinfect the structure in accordance with technical specification 33 16 19.20 and AWWA C652, Disinfection of Potable Water Storage Tanks.

### **3.15 Schedule A – Coating and Lining Work Requirements**

- A. Surfaces not to be painted
  - 1. The following surfaces shall **not** be painted:
    - a. Safety climb rails. Contractor shall remove all paint spillage and splatter from safety rails and other surfaces where paint has fallen.
    - b. Electrical, instrument, signaling and other enclosures.
    - c. Flow-meters, sensors, gauges and all other instruments.
    - d. Nameplates.
    - e. Loading plaques and rating labels.

- f. Concrete, unless specified elsewhere.
- g. Stainless steel items.

B. Coating and Lining Work Required

1. Interior Wet and Immersion Exposure: (**FIELD APPLIED**)

- a. Required on underside of roof of tank, top, side and bottom of bowl, wet riser pipe and on miscellaneous items such as ladders, roof hatches, and roof vents.
- b. Work Required:
  - 1) Preclean: Comply with 3.05 B.
  - 2) Power Tool Clean: remove weld spatter and dress all welds. Comply with 3.05 C.
  - 3) Abrasive Blast: Comply with 3.05 C, provide a SSPC SP10 Near-White blast.
  - 4) Apply prime coat: Comply with 3.08 and Schedule B, Product A.3.
  - 5) Apply stripe coat: Apply striping by brush and mist coat. Comply with 3.08 and Schedule B, Product A.2.
  - 6) Apply intermediate and finish coats, apply a single, full wet coat in multiple passes to minimum DFT requirements: Comply with 3.08 and Schedule B, Product A. 4.

2. Interior Dry: (**SHOP APPLIED**)

- a. Required on underside of bowl, rods, bracing, plates, dry riser pipe, brackets, platforms and other items located in the Dry Riser above ground level. Leave minimum of 2 inches for field erection of all members for field welding.
- b. Work Required:
  - 1) Preclean: Comply with 3.04 B.
  - 2) Power Tool Clean: Comply with 3.04 C.
  - 3) Abrasive Blast: Comply with 3.04 C, provide a SSPC-SP 6 Commercial Blast Cleaning.
  - 4) Apply prime coat: Comply with 3.09 and Schedule B, Product C.2.
  - 5) Apply stripe coat: Apply striping by brush and mist coat Comply with 3.09 and Schedule B, Product C.4.
  - 6) Apply intermediate coat: Comply with 3.09 and Schedule B, Product C.3.
- c. Finish Colors:
  - 1) As selected by the Owner.

3. Exterior Exposure: (**SHOP APPLIED**)



- a. Required on all exterior exposed steel portions of tank including bowl, roof, fluted column, railings, hatches, vents, struts, flanges, bolts, nuts and all appurtenances.
  - b. Work Required:
    - 1) Shop Pre-clean: Comply with Section 3.04 B.
    - 2) Shop Abrasive Blast: Comply with Section 3.04 C, provide a SSPC-SP 6 Commercial Blast Cleaning.
    - 3) Apply Shop Primer: Comply with Section 3.09 and Schedule B, Product D. 2.
    - 4) Apply stripe and mist coat: Comply with Section 3.09 and Schedule B, Product D.2.
    - 5) Apply intermediate coat: Comply with Section 3.09 and Schedule B, Product D.3.
    - 6) Apply finish coat: Comply with Section 3.09 and Schedule B, Product D.4.
  - c. Finish Colors:
    - 1) Tank Exterior: As selected by the Owner.
4. Interior Dry: (**FIELD APPLIED**)
- a. Required on underside of bowl, rods, bracing, plates, riser pipe, brackets, platforms and other items located in the Dry Riser above ground level where 2 inches for field erection for welds was left un-painted.
  - b. Work Required:
    - 1) Preclean: Comply with Section 3.05 B.
    - 2) Power Tool Clean: Comply with Section 3.05 C.
    - 3) Abrasive Blast: Comply with Section 3.05 C, provide a SSPC-SP 6 Commercial Blast Cleaning.
    - 4) Apply prime coat: Comply with Section 3.09 and Schedule B, Product C.2.
    - 5) Apply stripe coat: Apply striping by brush and mist coat Comply with Section 3.09 and Schedule B, Product C.2.
    - 6) Apply intermediate coat: Comply with Section 3.09 and Schedule B, Product C.3.
    - 7) Apply finish coat: Comply with Section 3.09 and Schedule B, Product C.3.
  - c. Finish Colors:
    - 1) Tank Exterior: As selected by the Owner.
5. Exterior Exposure: (**FIELD APPLIED**)

- a. Required on all exterior exposed steel portions of tank including all appurtenances and accessories, where 2 inches for field erection for welds was left un-painted.
- b. Work Required:
  - 1) Preclean: Comply with Section 3.05 B.
  - 2) Power Tool Clean: Comply with Section 3.05 C.
  - 3) Abrasive Blast: to be performed inside of containment. Comply with Section 3.05 C, provide a SSPC-SP 6 Commercial Blast Cleaning.
  - 4) Provide Weld and Metal Surface Repairs: provide pit filling, seam sealing and striping of weld seams, edges and corners. Blow down or vacuum clean all blasted areas prior to primer application. Comply with Section 3.06.
  - 5) Apply prime coat: Comply with Section 3.09 and Schedule B, Product D.2.
  - 6) Apply stripe coat: Apply striping by brush and mist coat. Comply with Section 3.09 and Schedule B, Product D.2.
  - 7) Apply intermediate coat: Comply with Section 3.09 and Schedule B, Product D.3.
  - 8) Apply finish coat: Comply with Section 3.09 and Schedule B, Product D.4.
  - 9) Apply top coat: Comply with Section 3.09 and Schedule B, Product D.5.
- C. Tank Disinfection: Following coating work, the interior of the tank shall be cleaned and disinfected by the Contractor. Comply with 3.14.

### **3.16 Schedule B - Coating and Lining Products**

- A. Lining Products: Interior Wet and Immersion Exposure
  - 1. General:
    - a. "Immersion" refers to all interior surface areas of the water holding bowl of the tank, whether actually immersed or not.
    - b. Total System DFT: 12.0 to 18.0 mils.
    - c. System DFT Striped Areas: 13 to 23 mils.
    - d. Maximum Spot DFT: 25.3 mils.
    - e. Color change between coats is required.
  - 2. Stripe Coat on Weld Seams, Edges and Fasteners:
    - a. NSF-Epoxy.
    - b. Minimum Solids Volume Content: 72%.
    - c. VOC maximum: 3.06 lbs/gallon un-thinned.
    - d. Acceptable Products:

<u><b>Manufacturer</b></u>	<u><b>Paint System</b></u>	<u><b>Dry Film Thickness (mils)</b></u>
Carboline	Carboguard No. 61	4.0-6.0
Sherwin Williams	Macropoxy 5500 or 646 PW	3.0-5.0
Tnemec	<del>Series N140 Pota-Pox Plus</del> Series 21	<del>3.0-5.0</del> 4.0 – 6.0
Or, Approved Equal		

e. Thin to manufacturer's maximum allowable percent by volume.

3. Primer:

- a. NSF-Epoxy.
- b. Volume solids content minimum 72%.
- c. VOC Maximum 3.06 lbs/gallon un-thinned.
- d. Acceptable Products:

<u><b>Manufacturer</b></u>	<u><b>Paint System</b></u>	<u><b>Dry Film Thickness (mils)</b></u>
Carboline	Carboguard No. 61	4.0-6.0
Sherwin Williams	Macropoxy 5500 or 646 PW	3.0-5.0
Tnemec	<del>Series N140 Pota-Pox Plus</del> Series 91/94	<del>3.0-5.0</del> 2.5 – 3.5
Or, Approved Equal		

4. Intermediate and Finish Coats:

- a. NSF-Epoxy.
- b. Volume solids content minimum 72%.
- c. VOC maximum 3.06 lbs./gallon un-thinned.
- d. Acceptable products:

<u><b>Manufacturer</b></u>	<u><b>Paint System</b></u>	<u><b>Dry Film Thickness (mils)</b></u>
Carboline	Carboguard No. 61	4.0-6.0
Sherwin Williams	Macropoxy 5500 or 646 PW	3.0-6.0
Tnemec	<del>Series N140 Pota-Pox Plus</del> Series 21	<del>4.0-6.0</del> 4.0 – 6.0 (2 coats)
Or, Approved Equal		

B. Sealants

1. Interior and Exterior Seam Sealer and Pit Filler:

<u>Manufacturer</u>	<u>Paint System</u>	<u>Note</u>
Carboline	No. 163-2	100% Solids Epoxy
Sherwin Williams	Steel Seam FT-910	100% Solids Epoxy
Tnemec	L3-1500	100% Solids Epoxy
Or, Approved Equal		

C. ~~Interior Dry~~

1. ~~General:~~

- a. ~~"Interior Dry" refers to all interior surface areas below the water holding bowl of the tank, down to the condensate ceiling, contained inside the fluted column of the tank.~~
- b. ~~Total System DFT: 8.0 to 10.0 mils.~~
- c. ~~Color change between coats is required.~~

2. ~~Primer:~~

- a. ~~NSF epoxy.~~
- b. ~~Volume solids content minimum 72%.~~
- c. ~~VOC Maximum 3.06 lbs/gallon un-thinned.~~
- d. ~~Acceptable Products:~~

<u>Manufacturer</u>	<u>Paint System</u>	<u>Dry Film Thickness (mils)</u>
Carboline	Carboguard No. 61	4.0-6.0
Sherwin Williams	Macropoxy 5500 or 646 PW	3.0-5.0
Tnemec	Series N140 Pota-Pox Plus	3.0-5.0
Or, Approved Equal		

3. ~~Stripe Coat on Weld Seams, Edges and Fasteners:~~

- a. ~~NSF Epoxy.~~
- b. ~~Volume solids content minimum: 72%.~~
- c. ~~VOC maximum: 3.06 lbs/gallon unthinned.~~
- d. ~~Acceptable Products:~~

<u>Manufacturer</u>	<u>Paint System</u>	<u>Dry Film Thickness (mils)</u>
Carboline	Carboguard No. 61	4.0-6.0
Sherwin Williams	Macropoxy 5500 or 646 PW	3.0-5.0
Tnemec	Series N140 Pota-Pox Plus	3.0-5.0
Or, Approved Equal		

4. ~~Finish Coat:~~

- a. ~~NSF Epoxy.~~
- b. ~~Volume solids content minimum: 72%.~~

- e. ~~VOC maximum: 3.06 lbs/gallon un-thinned.~~
- d. ~~Acceptable Products:~~

<u>Manufacturer</u>	<u>Paint System</u>	<u>Dry Film Thickness (mils)</u>
Carboline	Carboguard No. 61	4.0-6.0
Sherwin-Williams	Macropoxy 5500 or 646 PW	3.0-6.0
Tnemec	Series N140 Pota-Pox Plus	4.0-6.0
Or, Approved Equal		

D. Tank Exterior:

1. General:

- a. "Exterior" applies to all exposures not in contact with potable water or not covered under "interior".
- b. Tank System DFT: 11.0 to 18.0 mils.
- c. Color change between coats is required.

2. Primer:

- a. Organic Zinc-Rich
- b. Volume solids content minimum: 63%.
- c. VOC maximum: 3.96 lbs/gal un-thinned
- d. Acceptable Products:

<u>Manufacturer</u>	<u>Paint System</u>	<u>Dry Film Thickness (mils)</u>
Carboline	Carbozinc 859	3.0-5.0
Sherwin Williams	Corothane I GalvaPak	2.5-3.5
Tnemec	<del>Tneme Zinc 90-97</del> Series 91/94	<del>2.5-3.5</del> 2.5 – 3.5
Or, Approved Equal		

3. Intermediate Coat:

- a. NSF-Epoxy.
- b. Volume solids content minimum: 54% (mixed).
- c. VOC maximum: 3.04 lbs/gallon un-thinned.
- d. Acceptable Products:

<u>Manufacturer</u>	<u>Paint System</u>	<u>Dry Film Thickness (mils)</u>
Carboline	Carboguard 893 SG	3.0-5.0
Sherwin Williams	Macropoxy 5500 or 646 PW	2.5-4.0
Tnemec	Series N69 Hi-Build Epoxoline II	2.5-4.0
Or, Approved Equal		

4. Finish Coat:

- a. High solids aliphatic acrylic polyurethane.
- b. Volume solids content minimum: 65% (mixed).
- c. VOC maximum: 2.4lbs/gallon un-thinned.
- d. Acceptable Products:

<u>Manufacturer</u>	<u>Paint System</u>	<u>Dry Film Thickness (mils)</u>
Carboline	Carbothane 134 HG	2.0-2.5
Sherwin Williams	Acrolon 218 HS or HiSolids Polyurethane	2.5-5.0
Tnemec	Series <del>1075</del> 1095, Endura-Shield	2.5-5.0
Or, Approved Equal		

E. Tank Exterior – Alternate #1 (see bid form)

1. General:

- a. "Exterior" applies to all exposures not in contact with potable water or not covered under "interior".
- b. Tank System DFT: 6.5 to 9.5 mils.
- c. Color change between coats is required.

2. Primer:

- a. Organic Zinc-Rich
- d. Acceptable Products:

<u>Manufacturer</u>	<u>Paint System</u>	<u>Dry Film Thickness (mils)</u>
Tnemec	Series 91/94	2.5 – 3.5
Or, Approved Equal		

3. Intermediate Coat:

- a. Polyurethane
- d. Acceptable Products:

<u>Manufacturer</u>	<u>Paint System</u>	<u>Dry Film Thickness (mils)</u>
Tnemec	1095 Endura-Shield	2.0 - 3.0
Or, Approved Equal		

4. Finish Coat:

- a. Fluoropolymer
- d. Acceptable Products:

<u>Manufacturer</u>	<u>Paint System</u>	<u>Dry Film Thickness (mils)</u>
Tnemec	Series 700 HydroFlon	2.0 – 3.0
Or, Approved Equal		

End of Section

**STEEL ABOVEGROUND WATER UTILITY TANKS - ELLIPSOIDAL**  
**33 16 13.14**

**PART ONE – GENERAL**

**1.01 Scope of Work**

- A. The work to be performed under these specifications includes furnishing all materials, equipment, and labor necessary for the design, fabrication, manufacture, erection, testing, disinfection, and inspection of a welded steel ellipsoidal elevated water storage tank. The work also includes all materials, equipment, and labor necessary for the design and construction of a foundation system for this work. Also included in the work shall be the construction of water line from the water tower to the point of connection to the new 12" water line extended to the tower site by others (see plans) and all materials, labor, and equipment necessary to complete this work. The contractor shall secure all permits required for installation of the tower (including building permits secured from the Ohio Department of Commerce). It is the intent of these specifications to provide sufficient data such that all qualified contractors will have an equal opportunity to provide an adequate bid for the water storage tank.

**1.02 Applicable Standards**

The materials, design, fabrication, erection, and inspection of the elevated tank shall conform to:

- A. ACI
- B. AWWA D-100
- C. ANSI A-581
- D. All other State and Local Codes

In the event of a conflict, the stricter shall supersede.

**1.03 Tank and Tower**

- A. The 100,000 gallon capacity tank and supporting structure shall be of all welded construction. The tank shall have a cylindrical sidewall with an ellipsoidal roof and bottom, with all transition sections being smooth curves. The riser shall flare outward at the junction of the riser and bottom.
- B. The steel tank is to be supported on a suitable tower of structural steel tubular legs, and of such height from the top of the concrete foundations to the tank proper as may be necessary to provide the required height to the overflow point, as is indicated on the plans or as specified herein.



- C. The support columns shall be fabricated in panels with hollow cylindrical legs and the necessary cross bracing, sway bracing, and other members of such areas as is necessary to satisfactorily resist all stresses imposed thereon with factors of safety in accordance with standards.
- D. For plates in contact with the stored water, the compressive stress due to dead and live loads combined with bending stress due to wind or earthquake load shall not exceed twice the allowable compressive stress determined by use of AWWA Table 8 assuming plate thickness is reduced 1/8" for corrosion.
- E. The overturning moment used in designing the tower and foundation shall include the moment due to eccentricity of the gravity loads caused by deflection of the structure under wind or earthquake loading.
- F. The structural design of the water tower must conform to the requirements of AWWA D100 and the Ohio Building Code (OBC). The contractor must obtain a building permit from the Ohio Department of Commerce. Therefore, the design requirement of the strictest code (AWWA D100 or OBC) must be adhered to.

#### **1.04 Submittals**

- A. Design calculations, proving compliance with all requirements, shall be furnished by the tank contractor to the Engineer.
- B. Each bidder shall submit with his proposal a sketch of the tank showing major dimensions and plate thickness upon which his bid is based and a sketch of the foundation showing preliminary dimensions and approximate quantities of concrete and reinforcing steel.

### **PART TWO - PRODUCT**

#### **2.01 General Information**

Information to be furnished by purchaser for an elevated tank, as outlined in Part III of the Foreword, AWWA D100, is made a part of this specification, and is as follows:

- A. Capacity - 100,000 gallons.
- B. Height to top capacity line, above top of foundation (see drawing).
- C. Head range - (see drawing)
- D. Earthquake Design - This structure shall be designed and constructed to resist effects of earthquake motions determined in accordance with Articles 1614-1623 of the Ohio Basic Building Code, as applicable.

- E. Snow Load – 25 psf minimum (as per Paragraph 3.1.3.1 of AWWA D100)
- F. Wind Load - 100 mph. In addition to the Minimum Design Standards of AWWA D100, it is the tank contractor's responsibility that the elevated water tank and foundation design meet or exceed the requirements of structural design as outlined in the Ohio Basic Building Code.
- G. Time of Completion - See Instructions to Bidders.
- J. Nearest Town – Village of North Hampton, Ohio
- K. Electric Power – Available at well site within  $\pm 150'$  of the tower base (see site plan).
- L. Compressed Air - Not available at site.
- M. Soil Bearing - (See Geotechnical Engineering Investigation and Paragraph 12.3.2 & 12.3.2.1 of AWWA D100).
- N. Corrosion Allowance - None. (If required, be explicit per Section 3.9 of AWWA D100).
- O. Mill or Shop Inspection - Inspection or mill test reports are required per Section 11.1 of AWWA D100.
- P. Inspection Report - An inspection report per Paragraph 11.2.1 of AWWA D100 is required.
- Q. Pipe Connection (2) - A 8-inch diameter outlet steel pipe shall be provided inside the dry riser to  $\sim 5'$  above the bottom of the bowl. Another 8-inch pipe (inlet) shall extend through the bowl to  $6'$  below the high-water level of the tank. Both these pipes shall extend under the proposed tank and through the proposed concrete foundation. The riser pipe shall have an expansion joint above the base bend. Riser pipe shall be insulated to protect against freezing to  $-35$  degrees F. Removable riser safety grates shall be placed over the ends of the wet riser pipe tee ends.
- R. Earth cover - Minimum of 5 feet over top of pipe.

## **2.02 Accessories by Tank Contractor**

- A. Overflow: An 8" diameter wrought steel pipe overflow shall be furnished, extending from an appropriate discharge structure at overflow level, beyond the tank shell on the outside, through the balcony, and thence to the ground along a tower leg and discharge  $\pm 2$  feet above grade level onto a splash block and rock channel protection. The overflow outlet shall be covered with a number 4 mesh, non-corrodible screen and have a flapgate. The overflow shall utilize welded joints.
- B. Ladders: There shall be provided a steel ladder for the elevated tank on one (1) tower column extending from a point approximately 10 feet above the supporting foundations

to the top of the balcony rail.

1. A fixed steel ladder shall be provided for the elevated tank, extending from the roof apex to the edge of the roof and down to the balcony.
  2. A steel inside tank ladder shall be provided for the elevated tank extending from the roof manhole down to the bottom of the bowl. This ladder shall be securely fastened at both ends and located so that entry into the tank can be made through the roof manhole.
  3. A fixed steel ladder shall also be provided in dry riser for access to painter's rings.
  4. All ladders shall comply with State and Federal regulations as well as O.S.H.A. Standards (Section 1910.27), and shall be equipped with an approved safety climbing device, as required.
  5. The tank contractor shall furnish the appropriate belt and clamp for use with the climbing device to the Owner.
- C. Balcony: The tank shall be equipped with a balcony not less than 24 inches wide with a handrail not less than 42 inches high. The floor of the balcony shall be designed for a minimum vertical load of 1000 pounds assumed to be applied to any point. The floor shall be perforated for drainage. The handrail shall be capable of withstanding a 300 pound load applied laterally at the top rail.
- D. Vent: One mushroom vent of adequate size to handle pressure differential caused by water entering or leaving the tank at a maximum rate. The open area of the overflow shall not be considered as venting area. Tank contractor shall provide a special 4 mesh, non-corrodible, screened vent that opens downward to ensure fail-safe operations in the event the screen frosts over or is otherwise clogged. The vent shall be easily dismantled to remove the screens for cleaning. The vent shall be constructed so that an exhaust fan can be fastened for ventilation during painting.
- E. Roof Hatch: Shall be EPA approved and at least 30 inches in dimension or diameter and have a hinged rain proof cover. It shall be framed at least 4 inches above the surface of the tank at the opening. It shall be fitted with a solid, water tight cover which overlaps the frame opening and extends down around the frame at least 2 inches. It shall have a locking device. It shall be constructed so that an exhaust fan can be fastened to the hatch for ventilation during painting. Two hatches may be required as determined by tank manufacturer.
- F. ~~Dry~~ Wet Riser Pipe: The riser pipe for the elevated tank shall be not less than 48" in diameter and of not less than 1/4" steel plate. It shall be of welded construction. An elliptical man-way not less than 14 inches by 18 inches in size, having a watertight gasketed cover, arranged to be clamped to the opening, shall be located at approximately 36 inches above the riser base plate. A 24" diameter hinged manway with a watertight gasketed cover, located approximately 36" above the riser base plate is also acceptable. Additionally, alternate size man-ways will be acceptable, if approved by Engineer.
- G. Manhole: One manhole giving access to two painter's rings located at the top of the dry

riser. Provide a painter's exhaust hatch, 24" in diameter (or engineer's approved size) with a bolted and gasketed cover.

- I. ~~The 8" PVC water main should penetrate the foundation through an opening with a rubber joint, monolithically cast into the wall. The opening and joint shall be similar to a "Link Seal" type wall penetration. An expansion joint shall be placed above the 90° base bend where the 12" steel riser pipe is connected to the incoming water main. The 8" water main shall extend up and thru the dry riser and be welded to the steel floor plate by using a "washer" for a water tight connection.~~ (reworded, see below)
- I. The 8" ductile iron pipe water mains should penetrate the foundation through a doghouse opening in the foundation wall. A minimum 12' ductile iron pipe stick is required to be installed coming into the foundation penetration for both mains (inlet & outlet). After the 12' DIP stick, at that point, the contractor may transition to AWWA C900 pipe until specified differently within the plans (see valve vault detail on the plans).
- J. ~~Five interior waterproof light sockets with conduit, wiring, and switch shall be provided inside of the pedestal and access tube. There shall be one light located at the top of the access tube, one light near the top of the pedestal below the tank, one light at the mid-point of the supporting pedestal, one light above the condensate ceiling, and one light in the bell. The conduit and wiring shall terminate with a junction box in the supporting bell.~~ (Removed, not applicable)

## 2.03 Submittals

- A. After award of the contract, the contractor shall prepare detailed shop drawings for fabrication and erection of the steel work covered by this contract, and plans showing detailed arrangement of anchor bolts, column foundation and center pier dimensions, dead and live loads, and details of all specified tank accessories. All such drawings shall be submitted to the Engineer for approval, before fabrication of steel or shipment of equipment and accessories in accordance with the procedure set forth in the General Conditions.
- B. Qualifications of job supervisor to oversee the field progress.

## PART THREE – EXECUTION

### 3.01 Foundation

- A. A Geotechnical Engineering Investigation at the location of the elevated tank has been made. A copy of the report is included in the Appendix. The Engineer does not guarantee that the characteristics of the subsurface materials found in the work will be similar to those shown by the log of borings included in the report.
- B. The proposed foundation shall be bid as a lump sum cost.

- C. The foundation shall be constructed of concrete with the necessary anchor bolts. The foundation shall conform to requirements set forth in cast-in-place concrete and concrete reinforcement.

### **3.02 Welding**

- A. Shall be in accordance with "Welding of Elevated Water Utility Storage Tanks".

### **3.03 Inspection**

- A. Shall be in accordance with "Testing and Inspection Services for New Elevated Water Tanks".

### **3.04 Disinfection**

- A. Shall be in accordance with "Disinfection of Elevated Water Utility Storage Tanks".

### **3.05 Painting**

- A. Shall be in accordance with "Coatings and Linings of Elevated Water Storage Tanks".

### **3.06 Hydrotesting**

- A. Shall be in accordance with "Hydrotesting of Elevated Water Utility Storage Tanks".

### **3.07 Water Mains**

- A. Shall be in accordance with "Public Water Utility Distribution Piping".

### **3.08 Guarantee**

- A. The tank contractor shall guarantee the work for a period of two years from the date of completion of the work, to the extent that he will repair any defects, of which he is notified during the period, which may appear because of faulty design, workmanship, or material furnished under the specifications. The guarantee shall also cover the costs to correct all deficient items noted in the first and second anniversary inspection report. No additional costs shall be charged to the Owner for such repairs.

### **3.09 Second Anniversary Inspection**

- A. The tank contractor shall perform a second-year anniversary inspection in accordance with AWWA D102. The cost for this inspection shall be shown on the appropriate bid item as listed on the Bid Proposal Form. All deficient items noted in the second anniversary inspection report shall be corrected.

### **3.10 Required Permits**

- A. The tank contractor shall be responsible for obtaining all permits (structural, electrical, etc....) for the installation of the tower. Said responsibility shall include preparing sealed engineering drawings, plan reproduction costs, paying for permit fees, submitting and securing approval of same.

### **3.11 Safety & Environmental Requirements**

- A. The tank contractor shall be responsible for complying with all Federal, State, and Local Safety Environmental Regulations and Laws and Ordinances which are applicable.

End of Section

## **WATER UTILITY DISTRIBUTION VALVES**

**33 12 16**

### **PART ONE - GENERAL**

#### **1.01 Requirements Included**

- A. Valves and gates of the sizes and types specified or shown on the construction drawings shall be provided for the proper completion of the work included under the project.
- B. Operating nuts, gaskets, bolts, and nuts and all necessary appurtenances for a complete installation of the valves and gates shall be furnished with the valves.
- C. All valves shall open and close as per the requirements of the Owner's Utilities Department. This must be verified by the Contractor prior to ordering all valves within this project.

#### **1.02 Submittals**

- A. Provide a minimum of three (3) copies of the manufacturer's product data for the Engineer's review.

### **PART TWO - PRODUCTS**

#### **2.01 Products and Manufacture**

- A. The construction drawings may state which type of valve is to be used.
- B. If the type is not stated and only the size is given, the gate type shall be used for sizes up to and including 12-inch valves.
- C. Gate Valves
  - 1. Gate valves for buried pipe lines shall be iron body, resilient seated gate valves with nonrising stems in accordance with AWWA C509, "Resilient Seated Gate Valves, 3 Inch through 48 Inch NPS for Water Systems" or AWWA C515, "Reduced-Wall, Resilient Seated Gate Valves for Water Supply Service."
  - 2. The gate valves shall be furnished with the O-ring type stem seal.
  - 3. The direction of opening valves shall be as approved by the Engineer.
  - 4. The ends of the valve shall be either bell, mechanical joint, flange or as specified.
  - 5. Mechanical joint bell ends will be used in buried water mains of mechanical joint and rubber seal type joint cast iron or ductile iron.
  - 6. Bell and flange ends will be used in exposed ductile iron piping at the locations shown on the construction drawings.
  - 7. Gate valves for buried pipe lines shall be furnished with the proper size wrench nuts and extensions for ease of operation.
  - 8. Nuts shall have a flanged base upon which shall be cast an arrow 2 inches long showing the direction of opening and the word "OPEN" in ½ inch or larger letters

shall be cast on the nut to indicate clearly the direction to turn the wrench when opening the valve, open right nuts shall be painted red.

D. Tapping Sleeves and Tapping Machine Valves

1. Tapping sleeves and tapping machine valves of the size specified shall be furnished by the Contractor at the locations shown on the construction drawings or set by the Engineer when it is necessary to make a branch main connection into an existing water main under pressure.
2. The tapping sleeve may be of the mechanical joint type. Retainer glands shall be used to prevent rotation.
3. It shall be installed in such a manner as to provide a watertight joint with both sections of the sleeve and the existing water main.
4. The sleeve shall be installed so that the axis of the center of the valve opening is level.
5. The sleeve shall meet all of the requirements of these specifications for cast iron or ductile iron pressure pipe.
6. The sleeve shall meet all the requirements of ASTM A536 Grade 65-45-12 and shall be in compliance with NSF-61.

E. Cut-in Sleeves and Valves

1. Cut-in sleeves and valves of the size specified shall be furnished by the Contractor at the locations shown on the construction drawings or set by the Engineer when it is necessary to install a valve in an existing water main which can be safely shut off for a short period of time.
2. Both the cut-in sleeve and the cut-in valve shall have mechanical joint connections. Retainer glands shall be used to prevent rotation.
3. The installation shall be in such a manner as to provide water-tight joints between the sleeve, valve, and the existing water main.
4. The sleeve shall be installed so that the axis of the center of the valve opening is level.
5. The sleeve shall meet all of the requirements of these specifications for ductile iron pressure pipe.
6. The sleeve shall meet all the requirements of ASTM A536 Grade 65-45-12 and shall be in compliance with NSF-61.

F. Inserting Valves

1. Inserting valves of the size specified shall be furnished by the Contractor at the locations shown on the construction drawings or set by the Engineer when it is necessary to install a valve in an existing water main which cannot be practically shutdown during installation.
2. Inserting valves shall consist of a sleeve and a valve body. The sleeve shall be in two parts, which shall be installed around the main.
3. The inserting valve shall be installed in such a manner as to provide a water-tight joint with the existing water main.
4. The valve mechanism shall meet all the requirements of AWWA C509 or C515.



G. Valve Boxes

1. Valve box assembly shall be furnished for each buried valve unless the construction drawings and/or the proposal sheets specify a different type of valve enclosure.
2. The assembly shall consist of 3 pieces and a cover.
3. The cover shall be marked, "Water" and of the stay put type.
4. The valve box shall be screw type, cast iron with 5 1/4 inch shaft.
5. A round base which will enclose the valve bonnet shall be furnished with 6 inch and 8 inch valves.
6. An oval base shall be supplied with valves larger than 8 inches.

H. Combination Air Valve

1. Combination air valve shall consist of a Kinetic Air & Vacuum Valve and Air Release Valve.
2. Combination air valve of the size specified shall be furnished by the Contractor at the locations shown on the construction drawings or set by the Engineer.
3. Shall be sized according to the manufacturer's specifications.
4. Inlet and outlet shall be of the same nominal size with connections being NPT, standard.
5. The body and cover shall be of cast iron conforming to ASTM A126, Class B.

I. Swing Check Valves

1. Manufacturers:
  1. Val-Matic, [www.valmatic.com](http://www.valmatic.com)
  2. DeZurik, [www.dezurik.com](http://www.dezurik.com)
  3. Milliken, [www.millikenvalve.com](http://www.millikenvalve.com)
  4. Or Approved Equal
    - a. Substitutions: See Section 01 33 00 – Submittals & Substitutions.
2. Swing check valves shall meet the requirements of AWWA C508.
3. Valves shall be provided with flanges in accordance with ANSI B16.1, Class 125.
4. The valve body shall be full flow equal to nominal pipe diameter at all points through the valve. The seating surface shall be on a 45 degree angle to minimize disc travel.
5. The top access port shall be full size, allowing removal of the disc without removing the valve from the line. The access cover shall be domed in shape to provide flushing action over the disc for operating in lines containing high solids content. A threaded port with pipe plug shall be provided in the access cover to allow for field installation of a mechanical, disc position indicator.
6. The disc shall be of one-piece construction, precision molded with an integral o-ring type sealing surface, and contain alloy steel and nylon reinforcement in the

flexible hinge area. The flex portion of the disc shall be warranted for twenty-five years. Nun-Slam closing characteristics shall be provided through a short 35 degree disc stroke and a memory disc return action.

7. The valve disc shall be cycle tested 1,000,000 times in accordance with ANSI/AWWA C508 and show no signs of wear, cracking, or distortion to the valve disc or seat and shall remain drop tight at both high and low pressures. The test results shall be independently certified.
8. The valve body and cover shall be constructed of ASTM A536 Grade 65-45-12 ductile iron or ASTM A126 class B for 30 inches and larger. Optional body materials include ASTM A-351 Grade CF8M, stainless steel (sizes 3" through 8").
9. The exterior and interior of the valve shall be coated with an ANSI/NSF 61 approved fusion bonded epoxy coating.
10. The valves shall be iron body, bronze mounted, single disc with a 150 psi working water pressure.
11. When there is no flow through the line, the disc shall hang lightly against its seat in practically a vertical position. When open, the disc shall swing clear of the waterway.
12. Check valves shall have bronze seat and body rings, extended bronze hinge pins and bronze nuts on the bolts of bolted covers.
13. Valves shall be so constructed that disc and body seat may easily be removed and replaced without removing the valve from the line.

## **PART THREE - EXECUTION**

### **3.01 Installation**

#### **A. Valves for Water Mains**

1. General: Valves of the sizes and types indicated shall be located as shown on the construction drawings installed in accordance with the following specifications applicable to each type of valve.
2. Type: Each type valve shall be installed in accordance with the specification for the particular type listed in these specifications.
3. Gate Valves
  - a. Gate valves shall be installed of the size and at the location shown on the construction drawings and or as set by the Engineer.
  - b. Vertical valves shall be set plumb and horizontal valves installed so that the valve body is level.
  - c. The valves shall be set to the new pipe in the manner specified for cleaning, laying and jointing pipe.

- d. Mechanical joint or push on type shall be used for buried pipe lines, except that watch valves on fire hydrant leads shall be mechanical joint for anchoring purposes unless otherwise approved.
- 4. Tapping Sleeves and Tapping Valves
  - a. Tapping sleeves and tapping machine valves of the size specified shall be installed by the Contractor at the locations shown on the construction drawings when it is necessary to make a branch main connection into an existing water main under pressure.
  - b. The tapping sleeve may be of the mechanical joint type.
  - c. It shall be installed in such a manner as to provide a water-tight joint with both sections of the sleeve and the existing water main.
  - d. A contractor experienced in this type of work shall make the cut into the existing water main under pressure and as approved by the Engineer.
- 5. Cut-In Sleeves and Valves
  - a. Cut-in sleeves and valves of the size specified shall be installed by the Contractor at the locations shown on the construction drawings when it is necessary to install a valve in an existing water main which can be safely shut off for a short period of time.
  - b. The cut-in sleeve and valve shall be installed in such a manner as to provide water-tight joints between the sleeve, valve, and existing water main.
  - c. The sleeve shall be installed so that the axis of the center of the valve opening is level.
  - d. A contractor experienced in this type of work shall make the installation as approved by the Engineer.
- 6. Inserting Valves
  - a. Inserting valves of the size specified shall be installed by the Contractor at the locations shown on the construction drawings when it is necessary to install a valve in an existing water main under pressure which cannot be practically shut down during installation.
  - b. Each inserting valve shall consist of a two-part sleeve and a valve body. The sleeve shall be installed around the water main. After the main is drilled and a section removed, the valve body containing the gate valve mechanism is inserted in the sleeve.
  - c. The inserting valve shall be installed in such a manner as to provide a water-tight joint with the existing water main.
  - d. The sleeve and valve shall be installed so that the axis of the center of the valve opening is level.
  - e. A contractor experienced in this type of work with access to the special equipment required to make the complete installation according to the manufacturer's recommendations shall make the installation after obtaining the Engineer's approval.
- 7. Valve Boxes
  - a. A valve box shall be provided for every operating nut of a buried gate valve with operating mechanism fully protected with a ductile iron grease case.
  - b. The valve box shall be set free of and not rest on the valve. It shall be centered and plumb over the wrench nut of the valve.
  - c. The box cover shall be flush with the finished grade or at such other level as may be directed by the Engineer.

8. Combination Air Valves

- a. Generally will be installed in a manhole with a vented lid.
- b. Can come up off the pipe with a nipple and a saddle and an extension. No bends shall be permitted in the extension, if used.
- c. The use of fiberglass insulation shall be placed inside manhole to prevent line and valve from freezing.

B. Water Valve Abandoned

- 1. General: Valves of the sizes and types indicated shall be abandoned during construction of the proposed water main. The valve box shall be removed. Any remaining appurtenances must be removed to a minimum of one foot below the finished subgrade or ground service.

End of Section

**PREVAILING WAGE RATES**

**00 75 46**

# Prevailing Wage Rate Skilled Crafts

**Name of Union: Ironworker Local 290**

**Change # : LCN01-2021fbLoc290**

**Craft : Ironworker Effective Date : 01/27/2021 Last Posted : 01/27/2021**

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Ironworker Structural	\$29.68		\$8.30	\$9.50	\$0.65	\$0.00	\$4.45	\$0.02	\$0.00	\$0.00	\$52.60	\$67.44
Welder	\$29.68		\$8.30	\$9.50	\$0.65	\$0.00	\$4.45	\$0.02	\$0.00	\$0.00	\$52.60	\$67.44
Fence Erector	\$29.68		\$8.30	\$9.50	\$0.65	\$0.00	\$4.45	\$0.02	\$0.00	\$0.00	\$52.60	\$67.44
Reinforcing Rods	\$29.68		\$8.30	\$9.50	\$0.65	\$0.00	\$4.45	\$0.02	\$0.00	\$0.00	\$52.60	\$67.44
Machinery Mover	\$29.68		\$8.30	\$9.50	\$0.65	\$0.00	\$4.45	\$0.02	\$0.00	\$0.00	\$52.60	\$67.44
Sheeter	\$29.68		\$8.30	\$9.50	\$0.65	\$0.00	\$4.45	\$0.02	\$0.00	\$0.00	\$52.60	\$67.44
Metal Building Erector	\$29.68		\$8.30	\$9.50	\$0.65	\$0.00	\$4.45	\$0.02	\$0.00	\$0.00	\$52.60	\$67.44
Rigger & Erector	\$29.68		\$8.30	\$9.50	\$0.65	\$0.00	\$4.45	\$0.02	\$0.00	\$0.00	\$52.60	\$67.44
Apprentice	Percent											
1st year	65.05	\$19.31	\$8.30	\$9.50	\$0.65	\$0.00	\$2.95	\$0.02	\$0.00	\$0.00	\$40.73	\$50.38
2nd year	75.07	\$22.28	\$8.30	\$9.50	\$0.65	\$0.00	\$2.95	\$0.02	\$0.00	\$0.00	\$43.70	\$54.84
3rd year	85.05	\$25.24	\$8.30	\$9.50	\$0.65	\$0.00	\$2.95	\$0.02	\$0.00	\$0.00	\$46.66	\$59.28
4th year	95.05	\$28.21	\$8.30	\$9.50	\$0.65	\$0.00	\$2.95	\$0.02	\$0.00	\$0.00	\$49.63	\$63.74

**Special Calculation Note : Other is for Industry Fund.**

**Ratio :**

3 Journeymen to 1 Apprentice

**Jurisdiction ( \* denotes special jurisdictional note ) :**

ALLEN\*, AUGLAIZE, BUTLER\*,  
CHAMPAIGN\*, CLARK, CLINTON, DARKE,  
FAYETTE\*, GREENE, HARDIN\*,  
HIGHLAND\*, LOGAN\*, MADISON\*,

**Special Jurisdictional Note :** Allen County Twps included are: Auglaize, Perry, Shawnee, Amanda, Spencer, Marion, Sugar Creek, American, Bath, Jackson. Butler County Twps included are: Milford, Wayne, Madison, Lemon. Champaign Cnty Twps included are: Union, Urbana, Jackson, Concord, Salem, Mad River, Johnson, Harrison, Adams. Fayette County Twps included are: Green, Jasper, Concord, Jefferson. Hardin County Twps included are: Round Head, Marion, Liberty. Highland County Twps included are: Fairfield, Penn, Union, Marshall, Liberty, Paint, Brush Creek. Logan County Twps included are: Richland, Stokes, Bloomfield, Washington, Harrison, McArthur, Lake, Liberty, Pleasant, Miami. Madison County Twps included are: Stokes. Mercer County Twps included are: Dublin, Washington, Jefferson, Recovery, Gibson, Union, Liberty, Butler, Granville, Center, Hopewell, Franklin, Marion. VanWert County Twps included are: Jennings. Warren County Twps included are: Franklin, Clear Creek, Turtle Creek, Wayne, Massie, Washington, Salem, Union.

### **Details :**

Structural Iron Work but not limited to:field fabrication, all loading to and including the erecting,rigging,assembly,dismantling, placing, temporary and permanent securing by any means of all structural iron,steel,ornamental lead,bronze,brass,copper,aluminum,glass all ferrous and non ferrous metal and composite material, precast prestressed and post-stressed concrete structures. Bridges and bridge rails,bridge viaducts,bucks bulkheads, bumper and bumper post,canopies and unistrut canopies,corrugated ferrous and non ferrous sheets when attached to steel frames,columns,beams,bar-joists,trusses, grinders, roof decking,electrical supports,elevator cars,elevator fronts and enclosures, erection of steel towers,flag poles, gymnasium equipment,stadium and arena seating,jail cell work,jail cell beds,benches,bunks,chairs,tables,mirrors,jail cell access doors,rigging and installation of machinery and equipment(erecting,aligning,anchoring and dismantling, erection and dismantling of tower cranes,derrick monorail systems, Chicago booms,overhead cranes, gantries,material and personnel hoists,tanks,hoppers and conveyors. All pre-engineered metal buildings and their entirety including siding,roofing, gutters, downspouts and erection of all.

Ornamental Iron Work but not limited to:all work in connection with field fabrication, handling including loading/off loading, sorting,cutting,fastening,anchoring,bending, hoisting, placing,burning,welding,and tying,dismantling of all materials used in miscellaneous iron or steel, for stairs,hand railings,rolling doors, rolling gates,rolling shutters, fence,windows, curtain wall,erection and welding of all metal, sash,architectural and ornamental treatments, but not necessarily limited to all sizes and types of ornamental, steel iron,lead,bronze,brass, copper,aluminum,all ferrous and non ferrous metals and composite materials.

Fence Erector Iron Worker but not limited to: All work in connection with the field fabrication and erection of chain link fence,which includes but not limited to the loading and of the fence fabric and posts also the installation of the above.

# Prevailing Wage Rate

## Skilled Crafts

Name of Union: Labor HevHwy 3

Change # : LCN01-2023ibLocalHevHwy3

Craft : Laborer Group 1 Effective Date : 05/01/2023 Last Posted : 04/26/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Laborer Group 1	\$34.62		\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$48.42	\$65.73
Group 2	\$34.79		\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$48.59	\$65.98
Group 3	\$35.12		\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$48.92	\$66.48
Group 4	\$35.57		\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$49.37	\$67.15
Watch Person	\$27.35		\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$41.15	\$54.83
Apprentice	Percent											
0-1000 hrs	60.00	\$20.77	\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$34.57	\$44.96
1001-2000 hrs	70.00	\$24.23	\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$38.03	\$50.15
2001-3000 hrs	80.00	\$27.70	\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$41.50	\$55.34
3001-4000 hrs	90.00	\$31.16	\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$44.96	\$60.54
More than 4000 hrs	100.00	\$34.62	\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$48.42	\$65.73

**Special Calculation Note :** Watchmen have no Apprentices. Tunnel Laborer rate with air-pressurized add \$1.00 to the above wage rate.

### Ratio :

1 Journeymen to 1 Apprentice  
3 Journeymen to 1 Apprentice thereafter

### Jurisdiction ( \* denotes special jurisdictional note ) :

ADAMS, ALLEN, ASHLAND, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, DARKE, DEFIANCE, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GREENE, GUERNSEY, HAMILTON, HANCOCK, HARDIN, HARRISON, HENRY,

HIGHLAND, HOCKING, HOLMES, JACKSON,  
JEFFERSON, KNOX, LAWRENCE, LICKING,  
LOGAN, MADISON, MARION, MEIGS,  
MERCER, MIAMI, MONROE,  
MONTGOMERY, MORGAN, MORROW,  
MUSKINGUM, NOBLE, PAULDING, PERRY,  
PICKAWAY, PIKE, PREBLE, PUTNAM,  
RICHLAND, ROSS, SCIOTO, SENECA,  
SHELBY, TUSCARAWAS, UNION, VAN  
WERT, VINTON, WARREN, WASHINGTON,  
WAYNE, WILLIAMS, WYANDOT

**Special Jurisdictional Note :** Hod Carriers and Common Laborers - Heavy,  
Highway, Sewer, Waterworks, Utility, Airport, Railroad, Industrial and Building Site,  
Sewer Plant, Waste Water Treatment Facilities Construction

### **Details :**

#### **Group 1**

Laborer (Construction); Plant Laborer or Yardman, Right-of-way Laborer, Landscape Laborer, Highway Lighting Worker, Signalization Worker, (Swimming) Pool Construction Laborer, Utility Man, \*Bridge Man, Handyman, Joint Setter, Flagperson, Carpenter Helper, Waterproofing Laborer, Slurry Seal, Seal Coating, Surface Treatment or Road Mix Laborer, Riprap Laborer & Grouter, Asphalt Laborer, Dump Man (batch trucks), Guardrail & Fence Installer, Mesh Handler & Placer, Concrete Curing Applicator, Scaffold Erector, Sign Installer, Hazardous Waste (level D), Diver Helper, Zone Person and Traffic Control.

\*Bridge Man will perform work as per the October 31, 1949, memorandum on concrete forms, by and between the United Brotherhood of Carpenters and Joiners of America and the Laborers' International Union of North America, which states in; "the moving, cleaning, oiling and carrying to the next point of erection, and the stripping of forms which are not to be re-used, and forms on all flat arch work shall be done by members of the Laborers' International Union of North America."

#### **Group 2**

Asphalt Raker, Screwman or Paver, Concrete Puddler, Kettle Man (pipeline), All Machine-Driven Tools (Gas, Electric, Air), Mason Tender, Brick Paver, Mortar Mixer, Skid Steer, Sheeting & Shoring Person, Surface Grinder Person, Screedperson, Water Blast, Hand Held Wand, Power Buggy or Power Wheelbarrow, Paint Striper, Plastic fusing Machine Operator, Rodding Machine Operator, Pug Mill Operator, Operator of All Vacuum Devices Wet or Dry, Handling of all Pumps 4 inches and under (gas, air or electric), Diver, Form Setter, Bottom Person, Welder Helper (pipeline), Concrete Saw Person, Cutting with Burning Torch, Pipe Layer, Hand Spiker (railroad), Underground Person (working in sewer and waterline, cleaning, repairing and reconditioning). Tunnel Laborer (without air), Caisson, Cofferdam (below 25 feet deep), Air Track and Wagon Drill, Sandblaster Nozzle Person, Hazardous



Waste (level B), \*\*\*Lead Abatement, Hazardous Waste (level C)

\*\*\*Includes the erecting of structures for the removal, including the encapsulation and containment of Lead abatement process.

#### Group 3

Blast and Powder Person, Muckers will be defined as shovel men working directly with the miners, Wrencher (mechanical joints & utility pipeline), Yarnier, Top Lander, Hazardous Waste (level A), Concrete Specialist, Curb Setter and Cutter, Grade Checker, Concrete Crew in Tunnels. Utility pipeline Tappers, Waterline, Caulker, Signal Person will receive the rate equal to the rate paid the Laborer classification for which the Laborer is signaling.

#### Group 4

Miner, Welder, Gunitite Nozzle Person

A.) The Watchperson shall be responsible to patrol and maintain a safe traffic zone including but not limited to barrels, cones, signs, arrow boards, message boards etc.  
The responsibility of a watchperson is to see that the equipment, job and office trailer etc. are secure.

# Prevailing Wage Rate

## Skilled Crafts

Name of Union: Painter Local 249

Change # : LCN02-2023ibLoc249

Craft : Painter Effective Date : 05/10/2023 Last Posted : 05/10/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Painter Brush Roll	\$26.23		\$5.87	\$6.69	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.12	\$52.23
Paper Hanger	\$26.23		\$5.87	\$6.69	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.12	\$52.23
Spray Commercial	\$26.23		\$5.87	\$6.69	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.12	\$52.23
Spray Industrial	\$26.23		\$5.87	\$6.69	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.12	\$52.23
Sandblasting, Steam Cleaning-Lead Abatement	\$26.98		\$5.87	\$6.69	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.87	\$53.36
Special Coating (Coal Tar) Spray Applied	\$27.73		\$5.87	\$6.69	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$40.62	\$54.48
Steeplejack Work	\$27.18		\$5.87	\$6.69	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$40.07	\$53.66
Elevated Tanks	\$29.87		\$5.87	\$6.69	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$42.76	\$57.69
Water Blasting	\$26.98		\$5.87	\$6.69	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.87	\$53.36
Apprentice	Percent											
30 Day Probationary	50.00	\$13.12	\$5.87	\$0.45	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$19.76	\$26.32
1st Year	65.00	\$17.05	\$5.87	\$0.45	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$23.70	\$32.22
2nd Year	65.00	\$17.05	\$5.87	\$0.45	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$23.70	\$32.22
3rd Year	75.00	\$19.67	\$5.87	\$0.45	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$26.32	\$36.16
4th Year	85.00	\$22.30	\$5.87	\$0.45	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$28.95	\$40.09

## **Special Calculation Note :**

### **Ratio :**

1 Journeymen to 1 Apprentice

### **Jurisdiction ( \* denotes special jurisdictional note ) :**

CLARK, DARKE, GREENE, MIAMI,  
MONTGOMERY, PREBLE

## **Special Jurisdictional Note :**

### **Details :**

Industrial work but not limited to:work done on industrial plants, repair garages, processing plants,storage tanks, warehouses, skeleton structures,bridges,whether new or old construction, office buildings in industrial sites and interior of shopping malls.

# Prevailing Wage Rate

## Skilled Crafts

Name of Union: Painter Local 639

Change # : LCNO1-2015fbLoc639

Craft : Painter Effective Date : 06/10/2015 Last Posted : 06/10/2015

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Painter Metal Finisher/Helpers											
Top Helper Class A	\$19.09	\$3.65	\$0.00	\$0.00	\$0.66	\$0.00	\$0.00	\$0.00	\$0.00	\$23.40	\$32.94
Top Helper Class B	\$19.09	\$3.65	\$0.65	\$0.00	\$1.03	\$0.00	\$0.37	\$0.00	\$0.00	\$24.79	\$34.33
Top Helper Class C	\$19.09	\$3.65	\$1.00	\$0.00	\$1.76	\$0.00	\$0.37	\$0.00	\$0.00	\$25.87	\$35.41
Helper Class A	\$14.69	\$3.65	\$0.00	\$0.00	\$0.51	\$0.00	\$0.00	\$0.00	\$0.00	\$18.85	\$26.19
Helper Class B	\$14.69	\$3.65	\$0.65	\$0.00	\$0.79	\$0.00	\$0.28	\$0.00	\$0.00	\$20.06	\$27.40
Helper Class C	\$14.69	\$3.65	\$1.00	\$0.00	\$1.64	\$0.00	\$0.28	\$0.00	\$0.00	\$21.26	\$28.60
New Hire 90 Days	\$11.00	\$3.65	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$14.65	\$20.15

**Special Calculation Note :** Other is Sick and Personal Time

**Ratio :**

**Jurisdiction ( \* denotes special jurisdictional note ) :**

ADAMS, ALLEN, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, CUYAHOGA, DARKE, DEFIANCE, DELAWARE, ERIE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GEAUGA, GREENE, GUERNSEY, HAMILTON, HANCOCK, HARDIN, HARRISON, HENRY, HIGHLAND, HOCKING, HOLMES, HURON, JACKSON, JEFFERSON, KNOX, LAKE, LAWRENCE, LICKING, LOGAN, LORAIN, LUCAS, MADISON, MAHONING, MARION, MEDINA, MEIGS, MERCER, MIAMI, MONROE,

MONTGOMERY, MORGAN, MORROW,  
MUSKINGUM, NOBLE, OTTAWA,  
PAULDING, PERRY, PICKAWAY, PIKE,  
PORTAGE, PREBLE, PUTNAM, RICHLAND,  
ROSS, SANDUSKY, SCIOTO, SENECA,  
SHELBY, STARK, SUMMIT, TRUMBULL,  
TUSCARAWAS, UNION, VAN WERT,  
VINTON, WARREN, WASHINGTON,  
WAYNE, WILLIAMS, WOOD, WYANDOT

## **Special Jurisdictional Note :**

### **Details :**

Top Helper: Shall perform the responsibilities of a Helper and be responsible for the setup, break down, safety and quality of the company's product.

Helper : Shall be responsible for performing tasks in refinishing, compliance with safety procedures, setting up and breaking down job sites, scaffolding and swing stages and preparing surfaces for refinishing including but not limited to, masking and stripping and cleaning, oxidizing, polishing and scratch removal on various surfaces

Class A Workers: Less than 1 Year of Service.

Class B Workers: More than 1 and less than 8 Years of Service.

Class C Workers: More than 8 Years of Service.

Metal Polisher Scope of Work: Polishing, buffing, stripping, coloring, lacquering, spraying, cleaning and maintenance of ornamental and architectural metals, iron, bronze, nickel, aluminum and stainless steel and in mental specialty work, various stone finishes, stone specialty work and any other work pertaining to the finishing of metal, stones, woods, and any window washing/cleaning done in conjunction with this work, using chemicals, solvents, coatings and hand applied lacquer thinner, removing scratches from mirror finished metals, burnishing of bronze, statuary finishes on exterior and interior surfaces and the use of all tools required to perform such work, including but not limited to polishes, spray equipment and scaffolding.

Swing State Rate: All work on scaffold 4 sections or higher, including any boom lifts and swing stage scaffolds including the rigging and derigging of hanging/suspended swing stage systems and rappelling/bolson chair work, ADD \$1.50 per hour.

# Prevailing Wage Rate Skilled Crafts

Name of Union: Plumber Pipefitter Local 162

Change # : LCN01-2023ibLoc162

Craft : Plumber/Pipefitter Effective Date : 08/30/2023 Last Posted : 08/30/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Plumber Pipefitter	\$40.00		\$11.75	\$10.87	\$0.90	\$0.00	\$3.35	\$0.00	\$0.00	\$0.00	\$66.87	\$86.87
Apprentice Indentured AFTER 6/1/2002	Percent											
1st Year	51.00	\$20.40	\$11.75	\$3.26	\$0.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$35.91	\$46.11
2nd Year	55.90	\$22.36	\$11.75	\$5.69	\$0.54	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$40.34	\$51.52
3rd Year	60.80	\$24.32	\$11.75	\$8.53	\$0.58	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.18	\$57.34
4th Year	72.45	\$28.98	\$11.75	\$10.63	\$0.66	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$52.02	\$66.51
5th Year	80.40	\$32.16	\$11.75	\$10.87	\$0.74	\$0.00	\$3.35	\$0.00	\$0.00	\$0.00	\$58.87	\$74.95

## Special Calculation Note :

### Ratio :

1 Journeyman to 1 Apprentice  
2 - 4 Journeymen to 2 Apprentices  
5 - 7 Journeymen to 3 Apprentices  
8 - 10 Journeymen to 4 Apprentices

### Jurisdiction ( \* denotes special jurisdictional note ) :

CHAMPAIGN, CLARK, CLINTON, DARKE,  
FAYETTE, GREENE, MIAMI,  
MONTGOMERY, PREBLE

## Special Jurisdictional Note :

### Details :

Wage rate covers: all plumbing, pipefitting, heating, refrigeration and air conditioning work.

# Prevailing Wage Rate Skilled Crafts

Name of Union: Sheet Metal Local 24 (Dayton)

Change # : LCN01-2023ibLoc24(Day)

Craft : Sheet Metal Worker Effective Date : 06/07/2023 Last Posted : 06/07/2023

	BHR	Fringe Benefit Payments							Irrevocable Fund	Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Sheet Metal Worker	\$31.23	\$9.64	\$15.10	\$1.05	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$57.02	\$72.63
Apprentice	Percent										
Apprentice											
5th Year B	85.00	\$26.55	\$9.40	\$11.47	\$1.05	\$0.00	\$0.00	\$0.00	\$0.00	\$48.47	\$61.74
5th Year A	80.00	\$24.98	\$9.31	\$10.28	\$1.05	\$0.00	\$0.00	\$0.00	\$0.00	\$45.62	\$58.12
4th Year B	75.00	\$23.42	\$9.23	\$9.07	\$1.05	\$0.00	\$0.00	\$0.00	\$0.00	\$42.77	\$54.48
4th Year A	70.00	\$21.86	\$9.15	\$7.85	\$1.05	\$0.00	\$0.00	\$0.00	\$0.00	\$39.91	\$50.84
3rd year B	65.00	\$20.30	\$9.06	\$6.65	\$1.05	\$0.00	\$0.00	\$0.00	\$0.00	\$37.06	\$47.21
3rd Year A	60.00	\$18.74	\$8.98	\$5.44	\$1.05	\$0.00	\$0.00	\$0.00	\$0.00	\$34.21	\$43.58
2 Year B	57.52	\$17.96	\$8.94	\$4.84	\$1.05	\$0.00	\$0.00	\$0.00	\$0.00	\$32.79	\$41.78
2 Year A	55.00	\$17.18	\$8.90	\$4.23	\$1.05	\$0.00	\$0.00	\$0.00	\$0.00	\$31.36	\$39.94
Probationary 1 Year	52.50	\$16.40	\$8.86	\$3.63	\$1.05	\$0.00	\$0.00	\$0.00	\$0.00	\$29.94	\$38.13

**Special Calculation Note :** No special calculations for this skilled craft wage rate are required at this time.

## Ratio :

1 Journeyman to 1 Apprentice then,  
1 Apprentice for every 2 Journeymen thereafter

## Jurisdiction ( \* denotes special jurisdictional note ) :

ALLEN, AUGLAIZE, BUTLER, CHAMPAIGN,  
CLARK, CLINTON, DARKE, GREENE,  
HARDIN, LOGAN, MERCER, MIAMI,  
MONTGOMERY, PREBLE, SHELBY, VAN  
WERT, WARREN, WYANDOT

## Special Jurisdictional Note : Details :

# Prevailing Wage Rate

## Skilled Crafts

**Name of Union:** Truck Driver Bldg & HevHwy Class 1  
**Locals** 20,40,92,92b,100,175,284,438,377,637,908,957

**Change # :** LCN01-2023ibBldgHevHwy

**Craft :** Truck Driver **Effective Date :** 05/01/2023 **Last Posted :** 04/26/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Truck Driver CLASS 1 4 wheel service, dump, and batch trucks; drivers on tandems; truck sweepers (not to include power sweepers & scrubbers)	\$31.24		\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.39	\$64.01
Apprentice	Percent											
First 6 months	80.00	\$24.99	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$42.14	\$54.64
7-12 months	85.00	\$26.55	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$43.70	\$56.98
13-18 months	90.00	\$28.12	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.27	\$59.32
19-24 months	95.00	\$29.68	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$46.83	\$61.67
25-30 months	100.00	\$31.24	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.39	\$64.01

**Special Calculation Note :** No special calculations for this skilled craft wage rate are required at this time.

**Ratio :**

**Jurisdiction ( \* denotes special jurisdictional note ) :**



3 Journeymen to 1 Apprentice

ADAMS, ALLEN, ASHLAND, ASHTABULA,  
ATHENS, AUGLAIZE, BELMONT, BROWN,  
BUTLER, CARROLL, CHAMPAIGN, CLARK,  
CLERMONT, CLINTON, COLUMBIANA,  
COSHOCOTON, CRAWFORD, DARKE,  
DEFIANCE, DELAWARE, ERIE, FAIRFIELD,  
FAYETTE, FRANKLIN, FULTON, GALLIA,  
GREENE, GUERNSEY, HAMILTON,  
HANCOCK, HARDIN, HARRISON, HENRY,  
HIGHLAND, HOCKING, HOLMES, HURON,  
JACKSON, JEFFERSON, KNOX, LAWRENCE,  
LICKING, LOGAN, LORAIN, LUCAS,  
MADISON, MAHONING, MARION, MEDINA,  
MEIGS, MERCER, MIAMI, MONROE,  
MONTGOMERY, MORGAN, MORROW,  
MUSKINGUM, NOBLE, OTTAWA,  
PAULDING, PERRY, PICKAWAY, PIKE,  
PORTAGE, PREBLE, PUTNAM, RICHLAND,  
ROSS, SANDUSKY, SCIOTO, SENECA,  
SHELBY, STARK, SUMMIT, TRUMBULL,  
TUSCARAWAS, UNION, VAN WERT,  
VINTON, WARREN, WASHINGTON,  
WAYNE, WILLIAMS, WOOD, WYANDOT

### **Special Jurisdictional Note :**

### **Details :**

# Prevailing Wage Rate

## Skilled Crafts

**Name of Union:** Truck Driver Bldg & HevHwy Class 2  
**Locals** 20,40,92,92b,100,175,284,438,377,637,908,957

**Change # :** LCN01-2023ibBldgHevHwy

**Craft :** Truck Driver **Effective Date :** 05/01/2023 **Last Posted :** 04/26/2023

	BHR	Fringe Benefit Payments							Irrevocable Fund	Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECE T (*)	MIS C (*)		
<b>Classification</b>											
Truck Driver CLASS 2 Tractor Trailer-Semi Tractor Trucks; Pole Trailers; Ready Mix Trucks; Fuel Trucks; 5 Axle & Over; Belly Dumps; Low boys - Heavy duty Equipment(irrespective of load carried) when used exclusively for transportation; Truck Mechanics (when needed)	\$31.66	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.81	\$64.64
<b>Apprentice</b>	<b>Percent</b>										
First 6 months	80.00	\$25.33	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$42.48	\$55.14
7-12 months	85.00	\$26.91	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$44.06	\$57.52
13-18 months	90.00	\$28.49	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$45.64	\$59.89
19-24 months	95.00	\$30.08	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$47.23	\$62.27
25-30 months	100.00	\$31.66	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$48.81	\$64.64

**Special Calculation Note :** No special calculations for this skilled craft wage rate are required at this time.

**Ratio :**

3 Journeymen to 1 Apprentice

**Jurisdiction ( \* denotes special jurisdictional note ) :**

ADAMS, ALLEN, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, DARKE, DEFIANCE, DELAWARE, ERIE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GREENE, GUERNSEY, HAMILTON, HANCOCK, HARDIN, HARRISON, HENRY, HIGHLAND, HOCKING, HOLMES, HURON, JACKSON, JEFFERSON, KNOX, LAWRENCE, LICKING, LOGAN, LORAIN, LUCAS, MADISON, MAHONING, MARION, MEDINA, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, OTTAWA, PAULDING, PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE, PUTNAM, RICHLAND, ROSS, SANDUSKY, SCIOTO, SENECA, SHELBY, STARK, SUMMIT, TRUMBULL, TUSCARAWAS, UNION, VAN WERT, VINTON, WARREN, WASHINGTON, WAYNE, WILLIAMS, WOOD, WYANDOT

**Special Jurisdictional Note :****Details :**

# Prevailing Wage Rate

## Skilled Crafts

**Name of Union:** Truck Driver Bldg & HevHwy Class 3  
**Locals** 20,40,92,92b,100,175,284,438,377,637,908,957

**Change # :** LCN01-2023ibBldgHevHwy3

**Craft :** Truck Driver **Effective Date :** 05/01/2023 **Last Posted :** 04/26/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Truck Driver CLASS 3 Articulated Dump Trucks; Ridge-Frame Rock Trucks; Distributor Trucks)	\$32.66		\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$49.81	\$66.14
Apprentice		Percent										
First 6 months	80.00	\$26.13	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$43.28	\$56.34
7-12 months	85.00	\$27.76	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$44.91	\$58.79
13-18 months	90.00	\$29.39	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$46.54	\$61.24
19-24 months	95.00	\$31.03	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.18	\$63.69
25-30 months	100.00	\$32.66	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$49.81	\$66.14

**Special Calculation Note :** No special calculations for this skilled craft wage rate are required at this time.

**Ratio :**

3 Journeymen to 1 Apprentice

**Jurisdiction ( \* denotes special jurisdictional note ) :**

ADAMS, ALLEN, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA,

COSHOCTON, CRAWFORD, DARKE,  
DEFIANCE, DELAWARE, ERIE, FAIRFIELD,  
FAYETTE, FRANKLIN, FULTON, GALLIA,  
GREENE, GUERNSEY, HAMILTON,  
HANCOCK, HARDIN, HARRISON, HENRY,  
HIGHLAND, HOCKING, HOLMES, HURON,  
JACKSON, JEFFERSON, KNOX, LAWRENCE,  
LICKING, LOGAN, LORAIN, LUCAS,  
MADISON, MAHONING, MARION, MEDINA,  
MEIGS, MERCER, MIAMI, MONROE,  
MONTGOMERY, MORGAN, MORROW,  
MUSKINGUM, NOBLE, OTTAWA,  
PAULDING, PERRY, PICKAWAY, PIKE,  
PORTAGE, PREBLE, PUTNAM, RICHLAND,  
ROSS, SANDUSKY, SCIOTO, SENECA,  
SHELBY, STARK, SUMMIT, TRUMBULL,  
TUSCARAWAS, UNION, VAN WERT,  
VINTON, WARREN, WASHINGTON,  
WAYNE, WILLIAMS, WOOD, WYANDOT

**Special Jurisdictional Note :**

**Details :**

# Prevailing Wage Rate

## Skilled Crafts

Name of Union: Electrical Local 683 Inside

Change # : LCN02-2023ibLoc683In

Craft : Electrical Effective Date : 05/29/2023 Last Posted : 05/24/2023

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Electrician	\$37.75	\$11.00	\$8.40	\$1.16	\$0.00	\$3.70	\$0.00	\$0.00	\$0.00	\$62.01	\$80.89
Welding	\$38.75	\$11.00	\$8.43	\$1.16	\$0.00	\$3.70	\$0.00	\$0.00	\$0.00	\$63.04	\$82.42
Mdium Voltage Splicing	\$38.75	\$11.00	\$8.43	\$1.16	\$0.00	\$3.70	\$0.00	\$0.00	\$0.00	\$63.04	\$82.42
Over 100 feet	\$56.63	\$11.00	\$8.97	\$1.16	\$0.00	\$3.70	\$0.00	\$0.00	\$0.00	\$81.46	\$109.78
Level 1 CW 0 to 2000 hours	\$13.13	\$6.51	\$0.39	\$0.76	\$0.00	\$0.39	\$0.10	\$0.00	\$0.00	\$21.28	\$27.85
Level 2 CW 2001 to 4000 hours	\$14.00	\$6.51	\$0.42	\$0.76	\$0.00	\$0.42	\$0.10	\$0.00	\$0.00	\$22.21	\$29.21
Level 3 CW 4001 to 6000 hours	\$14.88	\$6.51	\$0.45	\$0.76	\$0.00	\$0.45	\$0.10	\$0.00	\$0.00	\$23.15	\$30.59
Level 4 CW 6001 to 8000 hours	\$16.63	\$6.51	\$0.50	\$0.76	\$0.00	\$0.50	\$0.10	\$0.00	\$0.00	\$25.00	\$33.32
Level 1 CE 8001 to 10000 hours	\$18.38	\$6.51	\$0.55	\$0.76	\$0.00	\$0.55	\$0.10	\$0.00	\$0.00	\$26.85	\$36.04
Level 2 CE 10,001 to 12,000 hours	\$20.13	\$6.51	\$0.60	\$0.76	\$0.00	\$0.60	\$0.10	\$0.00	\$0.00	\$28.70	\$38.77
Level 3 CE 12,001 to 14,000 hours	\$25.38	\$6.51	\$0.76	\$0.76	\$0.00	\$0.76	\$0.10	\$0.00	\$0.00	\$34.27	\$46.96

Apprentice	Percent											
0-1000 hrs 1st Period	40.00	\$15.10	\$11.00	\$3.36	\$1.16	\$0.00	\$1.48	\$0.00	\$0.00	\$0.00	\$32.10	\$39.65
1001-2000 hrs 2nd Period	45.00	\$16.99	\$11.00	\$3.78	\$1.16	\$0.00	\$1.67	\$0.00	\$0.00	\$0.00	\$34.60	\$43.09
2001-3500 hrs 3rd Period	55.00	\$20.76	\$11.00	\$4.62	\$1.16	\$0.00	\$2.04	\$0.00	\$0.00	\$0.00	\$39.58	\$49.96
3501-5000 hrs 4th Period	65.00	\$24.54	\$11.00	\$5.47	\$1.16	\$0.00	\$2.41	\$0.00	\$0.00	\$0.00	\$44.58	\$56.85
5001-6500 hrs 5th Period	70.02	\$26.43	\$11.00	\$5.88	\$1.16	\$0.00	\$2.59	\$0.00	\$0.00	\$0.00	\$47.06	\$60.28
6501-8000 hrs 6th Period	80.00	\$30.20	\$11.00	\$6.73	\$1.16	\$0.00	\$2.96	\$0.00	\$0.00	\$0.00	\$52.05	\$67.15

### Special Calculation Note : Other is Administrative Fee

#### Ratio :

1 to 3 Journeyman to 2 Apprentices  
4 to 6 Journeyman to 4 Apprentices

#### Jurisdiction ( \* denotes special jurisdictional note ) :

CHAMPAIGN, CLARK, DELAWARE,  
FAIRFIELD, FRANKLIN, MADISON,  
PICKAWAY\*, UNION

#### Ratio

Construction Wireman and Construction  
Electrician

1 Journeyman to 2 Apprentices to 2 CW/CE  
With a MAXIMUM of 6 CW/CE an on any  
jobsite

Construction Wireman and Construction  
Electricians may work on residential projects  
without working under the supervision of a  
Journeyman Wireman. On ALL other job sites,  
Construction Wireman and Construction  
Electricians CAN only be employed after an  
APPRENTICE IS EMPLOYED on the job site.

**Special Jurisdictional Note :** In Pickaway County the following townships:  
Circleville, Darby, Harrison, Jackson, Madison, Monroe, Muhlenberg, Scioto, Walnut, Was  
hington.

#### Details :

# Prevailing Wage Rate

## Skilled Crafts

**Name of Union:** Electrical Local 683 Inside Lt Commercial South West

**Change # :** LCN02-2023ibLoc683In

**Craft :** Electrical **Effective Date :** 05/29/2023 **Last Posted :** 05/24/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Electrician	\$37.75		\$11.00	\$8.40	\$1.16	\$0.00	\$3.70	\$0.00	\$0.00	\$0.00	\$62.01	\$80.89
Welding	\$38.75		\$11.00	\$8.43	\$1.16	\$0.00	\$3.70	\$0.00	\$0.00	\$0.00	\$63.04	\$82.42
Medium Voltage Splicing	\$38.75		\$11.00	\$8.43	\$1.16	\$0.00	\$3.70	\$0.00	\$0.00	\$0.00	\$63.04	\$82.42
Over 100 feet	\$56.73		\$11.00	\$8.97	\$1.16	\$0.00	\$3.70	\$0.00	\$0.00	\$0.00	\$81.56	\$109.92
CE-3 12,001-14,000 Hrs	\$25.38		\$6.51	\$0.76	\$0.76	\$0.00	\$0.76	\$0.10	\$0.00	\$0.00	\$34.27	\$46.96
CE-2 10,001-12,000 Hrs	\$20.13		\$6.51	\$0.60	\$0.76	\$0.00	\$0.60	\$0.10	\$0.00	\$0.00	\$28.70	\$38.77
CE-1 8,001-10,000 Hrs	\$18.38		\$6.51	\$0.55	\$0.76	\$0.00	\$0.55	\$0.10	\$0.00	\$0.00	\$26.85	\$36.04
CW-4 6,001-8,000 Hrs	\$16.63		\$6.51	\$0.50	\$0.76	\$0.00	\$0.50	\$0.10	\$0.00	\$0.00	\$25.00	\$33.32
CW-3 4,001-6,000 Hrs	\$14.88		\$6.51	\$0.45	\$0.76	\$0.00	\$0.45	\$0.10	\$0.00	\$0.00	\$23.15	\$30.59
CW-2 2,001-4,000 Hrs	\$14.00		\$6.51	\$0.42	\$0.76	\$0.00	\$0.42	\$0.10	\$0.00	\$0.00	\$22.21	\$29.21
CW-1 0-2,000 Hrs	\$13.13		\$6.51	\$0.39	\$0.76	\$0.00	\$0.39	\$0.10	\$0.00	\$0.00	\$21.28	\$27.85
Apprentice	Percent											
0-1000 hrs 1st Period	40.00	\$15.10	\$11.00	\$3.36	\$1.16	\$0.00	\$1.48	\$0.00	\$0.00	\$0.00	\$32.10	\$39.65
1001-2000 hrs 2nd Period	45.00	\$16.99	\$11.00	\$3.78	\$1.16	\$0.00	\$1.67	\$0.00	\$0.00	\$0.00	\$34.60	\$43.09



2001-3500 hrs 3rd Period	55.00	\$20.76	\$11.00	\$4.62	\$1.16	\$0.00	\$2.04	\$0.00	\$0.00	\$0.00	\$39.58	\$49.96
3501-5000 hrs 4th Period	65.00	\$24.54	\$11.00	\$5.47	\$1.16	\$0.00	\$2.41	\$0.00	\$0.00	\$0.00	\$44.58	\$56.85
5001-6500 hrs 5th Period	70.02	\$26.43	\$11.00	\$5.88	\$1.16	\$0.00	\$2.59	\$0.00	\$0.00	\$0.00	\$47.06	\$60.28
6501-8000 hrs 6th Period	80.00	\$30.20	\$11.00	\$6.73	\$1.16	\$0.00	\$2.96	\$0.00	\$0.00	\$0.00	\$52.05	\$67.15

**Special Calculation Note :** Other is administrative fee

**Ratio :**

2 Apprentices for every 3 Journeyman Wireman  
or fraction thereof;  
1 to 3 Journeyman to 2 Apprentices  
4 to 6 Journeyman to 4 Apprentices

**Jurisdiction ( \* denotes special jurisdictional note ) :**

CHAMPAIGN, CLARK, DELAWARE,  
FAIRFIELD, FRANKLIN, MADISON,  
PICKAWAY\*, UNION

**Construction Electrician and Construction  
Wireman Ratio**

There shall be a minimum ratio of one inside  
Journeyman to every (4) employees of different  
classification per jobsite. An inside Journeyman  
Wireman is required on the project as the fifth  
(5th) worker or when apprentices are used.

**Special Jurisdictional Note :** In Pickaway County the following townships:  
Circleville, Darby, Harrison, Jackson, Madison, Monroe, Muhlenberg, Scioto, Walnut, Was  
hington.

The scope of work for the light commercial agreement shall apply to the following  
facilities not to exceed 200,000 square feet; office buildings, shopping centers, auto  
sales agencies and garages, churches, funeral homes, nursing homes, hotels, retail  
and wholesale facilities, small stand-alone manufacturing facilities when free  
standing and not part of a larger facility (not to exceed 50,000 square fee), solar  
projects (500 panels or less) unless otherwise covered under the agreement, lighting  
retrofits (when not associated with remodels involving branch re-circuiting) lighting  
retrofits shall be defined as the changing of lamps and ballasts in existing light  
fixtures and shall also include the one for one replacement of existing fixtures,  
warehouses, gas stations, food service centers, restaurants, entertainment facilities,  
hospitals, clinics, motels, residential buildings.

**Details :**

# Prevailing Wage Rate

## Skilled Crafts

Name of Union: Ironworker Local 172

Change # : LCN01-2023ibLoc172

Craft : Ironworker Effective Date : 06/01/2023 Last Posted : 05/31/2023

	BHR	Fringe Benefit Payments							Irrevocable Fund	Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Ironworker	\$34.07	\$8.90	\$9.50	\$0.71	\$0.00	\$3.50	\$0.06	\$0.00	\$0.00	\$56.74	\$73.77
Rigger Welder Reinforcing Sheeter Fence Erector Machinery Mover	\$34.07	\$8.90	\$9.50	\$0.71	\$0.00	\$3.50	\$0.06	\$0.00	\$0.00	\$56.74	\$73.77
Apprentice	Percent										
1st Year 0-1500 Hours	70.00 \$23.85	\$8.90	\$9.50	\$0.71	\$0.00	\$3.50	\$0.06	\$0.00	\$0.00	\$46.52	\$58.44
2nd Year 1501-3000 Hours	80.00 \$27.26	\$8.90	\$9.50	\$0.71	\$0.00	\$3.50	\$0.06	\$0.00	\$0.00	\$49.93	\$63.55
3rd Year 3001-4500 Hours	90.02 \$30.67	\$8.90	\$9.50	\$0.71	\$0.00	\$3.50	\$0.06	\$0.00	\$0.00	\$53.34	\$68.67

**Special Calculation Note :** Other is for Safety & Training Fund

### Ratio :

Rod Work  
3 Journeymen to 1 Apprentice

Structural Work  
3 Journeymen to 1 Apprentice

Finishing, Steel Sash, Stairway and Ornamental  
1 Journeymen to 1 Apprentice

Sheet Gang  
1 Apprentice for every sheeting gang per project

### Jurisdiction ( \* denotes special jurisdictional note ) :

CHAMPAIGN\*, CLARK, CRAWFORD\*,  
DELAWARE, FAIRFIELD, FAYETTE\*,  
FRANKLIN, HARDIN\*, HIGHLAND\*,  
HOCKING, JACKSON\*, KNOX, LICKING,  
LOGAN\*, MADISON\*, MARION, MORROW,  
PERRY, PICKAWAY, PIKE, ROSS, UNION,  
VINTON, WYANDOT\*

**Special Jurisdictional Note :** Champaign County Twps included: Wayne, Rush, Goshen. Crawford County Twps included: Bucyrus, Dallas, Jefferson, Jackson, Whetstone, Polk, Sandusky. Fayette County Twps included: Paint, Marion, Perry, Madison, Wayne, Union. Hardin County Twps included: McDonald, Taylorcreek, Hale, Dudley, Pleasant, Goshen, Blanchard, Lynn, Jackson, Buck, Cessna, Marion, Washington. Highland County Twps included: Madison. Jackson County Twps included: Liberty, Washington, Milton, Jackson, Coal, Wilkesville. Logan County Twps included: Monroe, Zane, Jefferson, Perry, Rush Creek, Bokes Creek. Madison County Twps included: Range, Paint, Fairfield, Sommerford, Jefferson, Pike, Canaan, Pleasant, Oak Run, Union, Deer Creek, Monroe, Darby. Pike County Twps included: Perry, Benton, Mifflin, Sunfish, Newton, Prebble, Pee Pee, Seal, Beaver, Jackson. Wyandot County Twps included: Jackson, Marseilles, Mifflin, Pitt, Antrim. Muskingum County includes: Jackson, Licking, Hope Well, Newton, Clay, Cass, Muskingum falls, Springfield, Madison, Washington, Wayne, Brush Creek.

**Details :**