

**DOCUMENT 00 00 12**

**ADDENDUM NO. 2  
February 27, 2026**

**Wilderness WWTF Clarifier Refinishing Project  
Rapidan Service Authority  
Locust Grove, Virginia**

**SEH No. RAPSA 187118**

From: Short Elliott Hendrickson Inc.  
400 Locust Drive, Suite 2  
Charlottesville, VA 22901  
434.202.3780

To: Document Holders

DOCUMENT HOLDERS on the above-named project are hereby notified that this document shall be appended to, take precedence over and become part of the original bidding documents dated January 20, 2026, and Addendum 1 dated February 16, 2026, for this work. Bids submitted for the construction of this work shall conform to this document.

This addendum consists of two (2) pages plus the following:

- o Revised Specification C-410 Bid Form for Construction Contract
- o Revised Specification 01 27 00 Unit Prices for Contingent Items
- o Revised Specification 09 97 20 Coating System for Wastewater Facilities

**Changes to specifications:**

1. Section C-111 Advertisement and C-430 Bid Bond: bid date has been changed to March 10, 2026, at 3:00 pm local time.
2. Section C-410 Bid Form for Construction Contact: REPLACE unit price bid table 3.02.A as follows:
  - a. Bidder will perform the following Work at the indicated unit prices:

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Amount
1	Concrete Crack Injection	LF	500		\$
2	Partial Depth Concrete Wall Repairs	SF	600		\$
3	Concrete Rebar Repair Less than Half Diameter Exposed	LF	50		\$
4	Concrete Rebar Repair Half or More Diameter Exposed	LF	10		\$
Total of All Unit Price Bid Items					\$

3. Section 01 27 00 Unit Prices for Contingent Items: ADD Line 3.01.C and Line 3.01.D in their entirety.
4. Section 09 97 20 Coating System for Wastewater Facilities: REPLACE in its entirety.
  - a. Revised Section 3.07 Schedules to reflect updated coating system specifications.

**Bidder Questions:**

1. Question: Can a concrete repair detail be provided for all contractors bid to the same thing? What depth should be assumed for bidding purposes for the partial depth repair? Will it all be vertical concrete repair or will there be any horizontal?

*Response: A standard concrete repair detail will not be issued for bidding; instead, contractors shall base their bids on the quantified items provided. Please refer to the revised attached C-410 Bid Form for Construction Contract 3.02 for the estimated quantities and unit descriptions for each bid item. Repairs are assumed to be on the vertical wall.*

2. Question: Can a detail for the injection work be provided?

*Response: Please refer to Section 03 01 30 - Concrete Repair and Section 03 01 32 - Concrete Crack Sealing by Pressure Injection. No additional detail to be provided.*

3. Question: Since the tanks were full at the pre-bid, are there photos of the metal components/connections that need to be removed and their current conditions?

*Response: Refer to the As-Built drawings for the locations, configurations, and connections of the metal components that are to be removed and refinished. No photos to be provided.*

4. Question: Will the bid date be pushed back?

*Response: The bid date has been extended and is now scheduled for March 10, 2026.*

5. Question: In the first system, you are now recommending Tnemec Series 1 for the first coat. This is not recommended to go on Concrete per Tnemec's data page, and industry experience. Please advise.

*Response: Please refer to the updated Section 09 97 20. The coating system revisions are reflected in the updated 3.07 Schedules.*

6. Question: Our opinion is that the original specification posted was a much better system for the concrete and steel. Why change the systems in the middle of the bid to inferior systems?

*Response: Please refer to the updated Section 09 97 20.*

7. Question: The mils recommended by each system are not in line with industry standards. Did you want us to bid this way knowing this will cost the town more money for something that will not work as well.

*Response: Please refer to the updated Section 09 97 20, including the revised 3.07 Schedules, which reflect the corrected coating system requirements and film thicknesses.*

Note: Receipt of this Addendum No. 2 (dated February 27, 2026) shall be acknowledged on the submitted Bid Form. Failure to do so may subject Bidder to disqualification.

**END OF ADDENDUM**

# BID FORM FOR CONSTRUCTION CONTRACT

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 1—OWNER AND BIDDER

- 1.01 This Bid is submitted to: **Rapidan Service Authority, 3489 Germanna Highway, Locust Grove, VA 22508.**
- 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—ATTACHMENTS TO THIS BID

- 2.01 The following documents are submitted with and made a condition of this Bid:
- A. Required Bid security;
  - B. List of Proposed Subcontractors;
  - C. List of Proposed Suppliers;
  - D. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such authority within the time for acceptance of Bids;
  - E. Contractor's license number as evidence of Bidder's State Contractor's License or a covenant by Bidder to obtain said license within the time for acceptance of Bids;
  - F. Required Bidder Qualification Statement with supporting data; ~~and~~
  - G. ~~[List other documents and edit above as pertinent].~~

## ARTICLE 3—BASIS OF BID—LUMP SUM BID AND UNIT PRICES

### 3.01 *Lump Sum Bids*

- A. Bidder will complete the Work in accordance with the Contract Documents for the following lump sum (stipulated) price(s), together with any Unit Prices indicated in Paragraph 3.02:

1. Lump Sum Price (Single Lump Sum)

Lump Sum Bid Price	\$
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- ~~B. All specified cash allowance(s) are included in the price(s) set forth below, and have been computed in accordance with Paragraph 13.02 of the General Conditions.~~

<del>Lump Sum for Cash Allowance 1</del>	<del>\$</del>
<del>Lump Sum for Cash Allowance 2</del>	<del>\$</del>
<del>Lump Sum for Cash Allowance 3</del>	<del>\$</del>
<del>Total for all Lump Sum for Cash Allowances</del>	<del>\$</del>

3.02 *Unit Price Bids*

A. Bidder will perform the following Work at the indicated unit prices:

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Amount
1	Concrete Crack Injection	LF	500		\$
2	Partial Depth Concrete Wall Repairs	SF	600		\$
3	Concrete Rebar Repair Less than Half Diameter Exposed	LF	50		\$
4	Concrete Rebar Repair Half or More Diameter Exposed	LF	10		\$
Total of All Unit Price Bid Items					\$

B. 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, and
2. estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Work will be based on actual quantities, determined as provided in the Contract Documents.

3.03 *Total Bid Price (Lump Sum and Unit Prices)*

Total Bid Price (Total of all Lump Sum and Unit Price Bids)	\$
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**ARTICLE 4—BASIS OF BID—COST-PLUS FEE – DELETED.**

**ARTICLE 5—PRICE-PLUS-TIME BID - DELETED.**

**ARTICLE 6—TIME OF COMPLETION**

- 6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
- 6.02 ~~Bidder agrees that the Work will be substantially complete on or before [Bidder inserts date], and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before [Bidder inserts date].~~
- 6.03 ~~Bidder agrees that the Work will be substantially complete within [Bidder inserts number] calendar days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within [Bidder inserts number] calendar days after the date when the Contract Times commence to run.~~
- 6.04 Bidder accepts the provisions of the Agreement as to liquidated damages.

**ARTICLE 7—BIDDER’S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA**

7.01 *Bid Acceptance Period*

- A. 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.

7.02 *Instructions to Bidders*

- A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security.

7.03 *Receipt of Addenda*

- A. Bidder hereby acknowledges receipt of the following Addenda: **[Add rows as needed. Bidder is to complete table.]**

Addendum Number	Addendum Date

**ARTICLE 8—BIDDER’S REPRESENTATIONS AND CERTIFICATIONS**

8.01 *Bidder’s Representations*

- A. In submitting this Bid, Bidder represents the following:
  1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.
  2. Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
  3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
  4. Bidder has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
  5. Bidder has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
  6. 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 the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and

procedures of construction to be employed by Bidder, if selected as Contractor; and (c) Bidder's (Contractor's) safety precautions and programs.

7. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
8. 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.
9. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
10. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
11. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

#### 8.02 *Bidder's Certifications*

##### A. The Bidder certifies the following:

1. 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.
2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.
3. Bidder has not solicited or induced any individual or entity to refrain from bidding.
4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 8.02.A:
  - a. 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.
  - b. 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.
  - c. 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.
  - d. 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.

BIDDER hereby submits this Bid as set forth above:

Bidder:

\_\_\_\_\_  
*(typed or printed name of organization)*

By:

\_\_\_\_\_  
*(individual's signature)*

Name:

\_\_\_\_\_  
*(typed or printed)*

Title:

\_\_\_\_\_  
*(typed or printed)*

Date:

\_\_\_\_\_  
*(typed or printed)*

*If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.*

Attest:

\_\_\_\_\_  
*(individual's signature)*

Name:

\_\_\_\_\_  
*(typed or printed)*

Title:

\_\_\_\_\_  
*(typed or printed)*

Date:

\_\_\_\_\_  
*(typed or printed)*

Address for giving notices:

\_\_\_\_\_  
\_\_\_\_\_

Bidder's Contact:

Name:

\_\_\_\_\_  
*(typed or printed)*

Title:

\_\_\_\_\_  
*(typed or printed)*

Phone:

\_\_\_\_\_

Email:

\_\_\_\_\_

Address:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Bidder's Contractor License No.: (if applicable) \_\_\_\_\_

## SECTION 01 27 00

### UNIT PRICES FOR CONTINGENT ITEMS

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Section Includes:
  - 1. Procedures for Administration of Unit Prices for Contingent Items:
    - a. Submittals
    - b. Unit Prices:
      - 1) Purpose
      - 2) Term
      - 3) Costs included
    - c. Scope of Work
  - 2. Schedule of Unit Prices for Contingent Items
- B. Related Sections:
  - 1. Section 01 29 10 - Applications for Payment
  - 2. Individual Specification Sections Inferred by Schedule of Unit Prices

##### 1.02 PROCEDURES

- A. Submittals: Reflect Unit Prices on Bid Form.
- B. Unit Prices:
  - 1. General Requirements:
    - a. Use only as directed by Engineer for Owner's purposes.
    - b. Unit Prices will be included in the Contract or added by Change Order.
  - 2. Purpose of Unit Prices: Unit Prices predetermine costs to increase or decrease scope of work and to provide a basis for possible future Change Orders.
  - 3. Term: Owner has the option to include Unit Prices in Change Orders until Substantial Completion.
  - 4. Costs Included in Price: Each Unit Price shall contain all applicable material, labor, taxes, shipping, overhead, profit and other related costs per unit.
- C. Scope of Work: If conditions warrant increased or decreased scope of Work, make modifications required to acceptance of Engineer, at no change in cost to Owner other than as proposed with Bid.

#### PART 2 PRODUCTS

Not Used

#### PART 3 EXECUTION

##### 3.01 SCHEDULE OF UNIT PRICES FOR CONTINGENT ITEMS

- A. Unit Prices:
  - 1. Include the following Unit Prices on the Bid Form:
    - a. Unit Price No. 1 - Concrete Crack Injection:
      - 1) Concrete crack injection per lineal foot. Assume 500 lineal feet. The exact extents of concrete crack injection to be determined by inspection after the clarifier tank is cleaned. Reference Specification 03 01 32.
    - b. Unit Price No. 2 - Partial-Depth Concrete Wall Repair:

- 1) Concrete patching of the concrete clarifier tank per square foot. Assume 600 square feet. The exact extents of concrete patching to be determined by inspection after the clarifier tank is cleaned. Reference Specification 03 01 30.
- c. Unit Price No. 3 - Concrete Rebar Repair Less than Half Diameter Exposed:
  - 1) Rebar repair according to 03 01 30 Concrete Repair part 3.02.G.1 and part 3.02.K for rebar with less than half of the diameter exposed. Unit price is for the rebar sandblasting and coating that would be additive to the Partial-Depth Concrete Wall Repair unit price for the concrete repair. Assume 50 lineal feet. The exact extents of repair to be determined by inspection after the tank is cleaned.
- d. Unit Price No. 4 - Concrete Rebar Repair Half or More Diameter Exposed:
  - 1) Rebar repair according to 03 01 30 Concrete Repair part 3.02.G.1, 3.01.G.2, and part 3.02.K for rebar with half or more of the diameter exposed. Unit price is for the concrete chipping, rebar exposing, rebar sandblasting and coating that would be additive to the Partial-Depth Concrete Wall Repair unit price for the concrete repair. Assume 10 lineal feet. The exact extents of repair to be determined by inspection after the tank is cleaned.

**END OF SECTION**

## SECTION 09 97 20

### COATING SYSTEMS FOR WASTEWATER FACILITIES

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Provide surface preparation and application of high performance industrial coatings.
- B. Related Sections:
  - 1. Section 40 23 20 - Process Piping Valves
  - 2. Section 40 23 40 - Process Piping Hangers and Supports
  - 3. Section 46 73 17 - Radial Beam Floating Gas-holding Digester Cover

##### 1.02 REFERENCES

- A. ASTM - American Society for Testing Materials
- B. International Association of Corrosion Engineers (NACE)
- C. International Concrete Repair Institute (ICRI)
- D. Society for Protective Coatings (SSPC):
  - 1. Volume 1: Good Painting Practice
  - 2. Volume 2: Systems and Specifications

##### 1.03 DEFINITIONS

- A. Applicator: Person applying the product in the field at Site.
- B. Dry Film Thickness (DFT): Minimum dry coating thickness.
- C. SFPG: Square feet per gallon.
- D. VOC: Volatile Organic Compounds.
- E. Regional: The state in which the Project is located and surrounding states.
- F. LEL: Lower Explosion Limit.
- G. Containment: Equipment, supports, screens, tarps, or shrouds that prevent airborne debris generated during surface preparation and coating application from entering the environment and also facilitates controlled collection of debris for disposal in compliance with current regional and federal regulations.
- H. Moderate Service: Surfaces subject to normal exposure and moderate humidity. Includes concrete, concrete masonry, structural steel, miscellaneous metals, doors, and frames.
- I. Severe Service: Surfaces subject to frequent splashing, spilling, and exposure to high humidity and condensation. Includes structural steel, miscellaneous metals, piping, valves, and equipment.
- J. Immersion Service: Surfaces subject to immersion, or constant exposure to high humidity and condensation.

#### 1.04 SUBMITTALS

- A. Manufacturers' current Product Data sheets.
  - 1. Coatings
  - 2. Abrasive(s)
  - 3. Additives (as applicable)
  - 4. Containment System
  - 5. All miscellaneous fillers, caulks, sealants and resurfaces, etc.
- B. Provide list of equipment to be used on this Project for review by Engineer.
- C. Safety Data Sheets (SDS) for each product specified.
- D. Samples:
  - 1. Color chips of available colors.
  - 2. Recommended colors for color code marking.
- E. Post-construction Contract Closeout:
  - 1. Daily application records using Engineer's provided format, or Contractor's form pre-approved by Engineer.
- F. Written plan for containment of fugitive airborne particles complaint with current state and/or federal regulations.

#### 1.05 QUALITY ASSURANCE

- A. Single Source Responsibility: Provide coating products from a single manufacturer.
- B. Applicator Qualifications:
  - 1. Contractor shall provide a written statement from the coating manufacturer's authorized representative attesting that the on-site Contractor Superintendent has been instructed on proper preparation, mixing, and application procedures for all the coatings specified for this project.
  - 2. Contractor shall provide all necessary equipment to monitor and record the information required on the Daily Application Record.
    - a. Equipment shall be in good condition.
    - b. Operational within its design range.
    - c. Calibrated as required by the specified standard for use of each device.
  - 3. Applicator to establish quality control procedures and practices to monitor phases of surface preparation, storage, mixing, application, and inspection throughout the duration of the project. Contractor to provide a full-time, on-site person whose dedicated responsibilities will include quality control of the corrosion protection linings.
  - 4. Applicators' quality control procedures and practices must include the following items:
    - a. Training of personnel in the proper surface preparation requirements.
    - b. Training personnel in the proper storing, mixing, and application and quality control testing of the linings.
- C. Pre-Installation Conference (Contractor Led):
  - 1. Before applying any materials, the Contractor, Installer and qualified technical representative of the corrosion protection lining manufacturer shall meet on-site with Engineer to discuss approved products and workmanship to ensure proper application of the corrosion protection lining components and substrate preparation requirements.
  - 2. The contractor-run pre-application meeting shall include a joint observation of the substrate by the coating manufacturer & coating applicator to verify that the specified coatings are suitable for the environment, substrate type, and all anticipated ambient conditions, movement, and exposures.
  - 3. Review foreseeable methods and procedures related to the corrosion protection lining of coating Work including but not necessarily limited to the following:
    - a. Review Project requirements and the Contract Documents.
    - b. Review required submittals, both completed and yet to be completed.

- c. Review status of substrate Work, including approval of surface preparations and similar considerations.
  - d. Review requirements of on-Site quality control testing and requirements for preparing Site Quality Control Report as specified herein.
  - e. Review availability of materials, tradesmen, equipment and facilities needed to make progress and avoid delays.
  - f. Review required inspection and testing.
  - g. Review environmental conditions, other Project conditions, and procedures for coping with unfavorable conditions.
  - h. Review regulations concerning code compliance, environmental protection, health, safety, fire and similar considerations.
  - i. Review procedures required for the protection of the corrosion protection lining during the remainder of the construction period.
  - j. Contractor to provide a minimum of seven (7) days notice to all parties required for attendance at the Pre-Installation conference.
- 4. Contractor Shall Record the discussions of the Pre-Installation Conference and the decisions and agreements or disagreements reached and furnish a copy of the minutes to each party attending. Record any revision or changes agreed upon, reasons therefore, and parties agreeing or disagreeing with them.
  - 5. Reconvene the conference at the earliest opportunity if additional information must be developed to conclude the subjects under consideration.
- D. Performance Criteria: The surfaces to receive the protective lining shall be capable of withstanding under constant exposure to raw wastewater, permeation from hydrogen sulfide and other sewer gases, and attack from organic acids generated by microbial sources. Products must have sufficient field history to substantiate product viability for these exposures.
  - E. Source Quality Control: Provide each component of protective lining produced by a single manufacturer; including recommended repair mortar, repair overlay (resurfacer), base coat and topcoat materials.
  - F. Reference Standards: Comply with applicable provisions and recommendations of all standards listed in Section 1.2 except as otherwise shown or specified.
  - G. Qualifications:
    - 1. Applicator shall have minimum of 5 years application experience on projects of similar size and scope.
    - 2. Provide written statement from coating manufacturer's authorized representative attesting that Applicator has been instructed on proper preparation, mixing, and application procedures for coating specified.
    - 3. Provide regional references for coating contractor for a minimum of 5 different projects of similar size and scope completed in the last 5 years, including:
      - a. Contact person and phone number.
      - b. Project location.
      - c. Cost of coating work.
      - d. Start/finish dates.

## **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver materials to Site in original, factory-sealed containers bearing manufacturer's intact name and legible label with the following information.
  - 1. Material identification by name or number.
  - 2. Manufacturer's stock number, batch number, and date of manufacture.
  - 3. Color name and number.
- B. Storage:
  - 1. Store materials in an environmentally controlled location as recommended by coating manufacturer's product information guidelines.
  - 2. Store materials not in actual use in tightly covered containers.

3. Comply with health and fire regulations of governing authorities having jurisdiction.
- C. Handling:
1. Handle materials in a manner that precludes the possibility of contamination or incorrect product catalyzation.
  2. Do not open containers or mix components until surface preparation has been completed and approved by Engineer.
  3. Maintain containers used for storage, mixing, and application in a clean condition, free of foreign materials and residue.

## 1.07 PROJECT CONDITIONS

- A. Site Facilities:
1. As necessary to maintain required ambient conditions and contract scheduling, the contractor shall provide all required equipment for supplemental heating, dehumidification and power.
  2. Maintain environmental conditions, including temperature, dew point and humidity within range recommended by coating manufacturer.
  3. Do not use heat sources that emit carbon dioxide or carbon monoxide into areas being coated.
  4. Properly locate and vent all such heat sources to the exterior such that coating systems are unaffected by exhaust products.
  5. Provide lighting to the satisfaction of Engineer to illuminate the complete workspace during blasting, coating, and inspection operations.
- B. Environmental Conditions:
1. Coating shall not be applied in rain, snow, fog, or mist.
  2. Conduct surface preparation and coating operations only when the following conditions are met.
    - a. Ambient air temperature is within limits recommended by coating manufacturer.
    - b. Steel surface temperature is more than 5 degrees above the dew point of the ambient air.
    - c. Surfaces to be painted are clean and completely dry.
  3. Immersion Service: Continuous forced ventilation in accordance with manufacturer's recommendation.
    - a. At a minimum provide 3 to 5 air exchanges per hour for 12 hours after application of the prime coat and for the first 24 hours following final finish coat application.
    - b. Maintain exhaust in compliance with state standards.
    - c. Provide containment during abrasive blasting operations to prevent emission of abrasives, existing coatings, and contaminants onto adjacent property, street, structures, or equipment.
- C. Drawings do not purport to show actual field dimensions, but are intended only to establish location and scope of Work. Field-verify dimensions and assume full responsibility for their accuracy.

## 1.08 SEQUENCING AND SCHEDULING

- A. Schedule blasting, cleaning, and painting so that contaminants from cleaning process will not come in contact with wet, newly painted surfaces.
- B. Do not apply coatings until surface preparation has been approved by Engineer.
- C. Do not apply finish coats until:
1. All prime coat application is completed.
  2. All surfaces have been cleaned.
  3. All surfaces have been approved for coating by Engineer.

## PART 2 PRODUCTS

### 2.01 MANUFACTURERS

- A. Coatings:
  - 1. Acceptable Manufacture: Subject to compliance with specified requirements, acceptable manufacturers and products are:
    - a. BASF [www.basfbuildingsystems.com](http://www.basfbuildingsystems.com)
    - b. CIM Industries (CIM) [www.cimind.com](http://www.cimind.com)
    - c. General Polymers Corporation (GPC) [www.generalpolymers.com](http://www.generalpolymers.com)
    - d. L&M Construction (LMC) [www.lmcc.com](http://www.lmcc.com)
    - e. Sherwin Williams (SWC) [www.sherwin.com](http://www.sherwin.com)
    - f. Tnemec (TCI) [www.tnemec.com](http://www.tnemec.com)
- B. Sealant Caulking:
  - 1. Thiokol Polysulfide Caulk
  - 2. Or approved equivalent if approved by the single source manufacturer of all other submitted and approved coatings for this project.
- C. Corrosion Inhibitor
  - 1. Holdtight 102 by HoldTight, Houston, TX [www.holdtight.com](http://www.holdtight.com)
- D. Lead Abatement Additive
  - 1. Blastox by TDJ Group, Cary, IL [www.blastox.com](http://www.blastox.com)
- E. Substitutions: Manufacturer of comparable products submitted in compliance with Section 01 25 13.
- F. Substitution of fast-cure products or acceleration additives must receive prior approval by Engineer.

### 2.02 BASIS OF DESIGN – TNEMEC

- A. The coating systems specified herein are based on products manufactured by Tnemec Company, Inc. (TCI). The coating system design, material compatibility, thickness requirements, and performance criteria have been established using Tnemec products.
- B. The intent of this specification is to establish a standard of quality, performance, and durability suitable for wastewater treatment environments, including exposure to hydrogen sulfide (H<sub>2</sub>S), microbiologically induced corrosion (MIC), and immersion conditions.
- C. Products by other listed manufacturers may be submitted for consideration, provided they meet or exceed all specified requirements.

### 2.03 SUBSTITUTION REQUIREMENTS

- A. Requests for substitution shall comply with Section 01 25 13 and the following:
  - 1. Each substitution request shall include complete and verifiable documentation demonstrating equivalency, including:
    - a. Product Data Sheets and Safety Data Sheets (SDS)
    - b. Independent laboratory testing demonstrating compliance with specified performance criteria
    - c. Chemical resistance data for wastewater immersion and H<sub>2</sub>S vapor exposure
    - d. Adhesion test data for intended substrates
    - e. Manufacturer's written certification of suitability for the specified service environment
    - f. Application instructions, including surface preparation and curing requirements
    - g. Minimum and maximum dry film thickness (DFT) requirements
    - h. A minimum of five (5) completed projects of similar size, scope, and exposure conditions within the last five (5) years
  - 2. Incomplete submissions will not be considered.

## **2.04 BASIS OF ACCEPTANCE**

- A. Proposed substitution systems must meet or exceed the performance characteristics of the Basis of Design system, including but not limited to:
  - 1. Resistance to hydrogen sulfide (H<sub>2</sub>S) and sulfuric acid attack
  - 2. Resistance to microbiologically induced corrosion (MIC)
  - 3. Abrasion and impact resistance
  - 4. Permeability and moisture resistance
  - 5. Adhesion to prepared substrates
  - 6. Compatibility between coating layers
  - 7. Proven performance in wastewater environments
- B. The Engineer or Owner shall be the sole judge of equivalency.
- C. Approval of a substitution does not relieve the Contract of responsibility for coating system performance.

## **2.05 SINGLE SOURCE REQUIREMENTS**

- A. All coatings and associated materials for each coating system shall be supplied by a single manufacturer.
- B. Mixing of products from different manufacturers within a single coating system is strictly prohibited.
- C. All primers, intermediate coats, finish coats, fillers, resurfacers, and repair materials shall be recommended by the coating manufacturer as part of a complete system.

## **2.06 MANUFACTURER REPRESENTATION**

- A. A qualified technical representative of the coating manufacturer shall attend the pre-installation conference.

## **2.07 REGULATORY COMPLIANCE**

- A. All coating materials shall comply with applicable federal, state, and local regulations, including:
  - 1. United States Clean Air Act for VOC content
  - 2. Applicable environmental and occupational safety regulations
  - 3. Requirements of authorities having jurisdiction

## **2.08 MATERIALS**

- A. Regulatory Requirements:
  - 1. Products shall comply with the United States Clean Air Act for maximum VOC content.
  - 2. Products shall comply with state environmental and health standards.
  - 3. All products shall be lead, chromate, mercury and heavy metals free.
- B. Thinners: Use thinners approved by coating manufacturer and within their recommended limits.
- C. Abrasives:
  - 1. Abrasive materials must be in compliance with state environmental and health standards.
  - 2. Properly size abrasives to provide the specified surface profile.
  - 3. The use of abrasives exceeding 1 percent free silica is prohibited.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Examine substrates, areas, and conditions for compliance with requirements for application and notify Engineer in writing of conditions detrimental to proper and timely completion of Work. Do not proceed with Work until unsatisfactory conditions have been corrected.

- B. Notify Engineer in writing of anticipated problems using specified systems with substrates primed by others.
- C. Prepare existing materials or substrates to be coated to meet the requirements of specified coating system.
- D. Starting of painting Work will be construed as Contractor's acceptance of surfaces and conditions within any particular area.

### 3.02 PREPARATION

- A. Coating manufacturer shall verify surface preparation is completed prior to coating placement.
- B. Any residue or buildup should be thoroughly cleaned from the surface being coated prior to placement of coatings as to prevent residue from affecting the ability of the coating to adhere.
- C. Remove hardware, hardware accessories, machined surfaces, plates, and similar items not to be painted, or provide surface-applied protection prior to surface preparation and painting. Following completion of painting, reinstall removed items.
- D. Clean and remove all rust, slag, weld splatter, weld scabs, mill scale, loose paint, and surface contaminants
- C. Chip or grind off flux, spatter, slag or other laminations left from welding. Grind welds and other sharp projects smooth.
- D. Re-blast all Surfaces:
  - 1. Where rusting has recurred.
  - 2. That do not meet the requirements of this Section.
- E. Feather edges of existing coating to form a smooth transition prior to spot priming.
- F. Scarify previously applied coatings in accordance with coating manufacturer's recommendations.
- G. All substrates: Prepare surface profiles in accordance with manufacturer's recommendations.
- H. Prime all bare metal and touch-up damaged shop-applied prime coat with specified primer. Prepare and coat in accordance with this Section.
- I. Mix corrosion inhibitor and apply in accordance with manufacturer's recommendations.
- J. Concrete:
  - 1. Allow new concrete to cure 28 days.
  - 2. Verify dryness by testing in accordance with ASTM D4263.
    - a. Floors: If moisture is detected, perform Moisture Vapor Emission Testing in accordance with ASTM F1869.
    - b. Moisture content not to exceed 3 pounds per 1,000 square feet in a 24-hour period.
- K. Fill cracks and voids according to coating manufacturer's recommendations.
- L. Surface Preparation Classifications:
  - 1. P1: SSPC-SP1 - Solvent Cleaning.
    - a. Scarify surface by sanding.
    - b. Brush blast if recommended by coating manufacturer.
  - 2. P2: SSPC-SP2 - Hand Tool Cleaning.
  - 3. P3: SSPC-SP3 - Power Tool Cleaning
  - 4. P4: SSPC-SP13 - Surface Preparation of Concrete
    - a. Prepare concrete, concrete block, cement plaster, and drywall by removing all efflorescence, chalk, dust, dirt, grease, and other oils, and by roughening as required to remove glaze.
    - b. Scrap and grind fins and protrusions flush with surface.

- c. Rake mortar joints clean.
  - d. Brush blast if recommended by coating manufacturer.
  - 5. P5: SSPC-SP5 - White Metal Blast Cleaning.
  - 6. P6: SSPC-SP6 - Commercial Blast Cleaning.
  - 7. P7: SSPC-SP7 - Brush Off Blast Cleaning.
  - 8. P9:
    - a. Clean wood surfaces to be painted of all dirt, oil, or other foreign substances with scrapers, mineral spirits, and sandpaper, as required.
    - b. Sandpaper smooth those finished surfaces exposed to view.
  - 9. P10: SSPC-SP10 - Near White Blast Cleaning.
  - 10. P11: SSPC-SP11 - Power Tool Cleaning to Bare Metal.
  - 11. P12: SSPC-SP12 - LP-WC/WJ-4: Pressure Wash
  - 12. P13: SSPC-SP13 - Surface Preparation of Concrete:
    - a. 4.3.1.: Abrasive Blast.
    - b. 4.3.2.: High Pressure Water Cleaning.
  - 13. P14: SSPC-SP16 - Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals
  - 14. P15: NAPF 500-03-04 Abrasive Blast Cleaning.
- M. Re-blast all Surfaces:
- 1. Where rusting has recurred.
  - 2. That do not meet the above requirements.

### 3.03 MATERIALS PREPARATION

- A. Mix and prepare materials in accordance with manufacturer's directions.
- B. Maintain containers used in mixing and application in a clean condition, free of foreign materials and residue.
- C. The following is prohibited:
  - 1. Field mixing of partial containers.
  - 2. Field mixing of lead abatement additive.
  - 3. Field tinting.

### 3.04 APPLICATION

- A. Surface preparation and coating system are as indicated in the "Coating Schedule" at the end of this Section, or noted on Drawings.
- B. Use equipment and techniques best suited for substrate and type of material being applied.
- C. Apply in accordance with manufacturer's directions.
  - 1. Do not apply in snow, rain, fog, mist, or damp surfaces.
  - 2. Allow wet surfaces to dry thoroughly and attain the temperature and conditions specified before proceeding with or continuing the painting operation.
  - 3. Work may continue during inclement weather only if areas and surfaces are enclosed and temperatures within the area can be maintained within limits specified during application and drying periods.
- D. Avoid degradation and contamination of surfaces and avoid intercoat contamination.
  - 1. Surfaces shall be free from grease, oil, abrasives, and other contaminants that may have an adverse affect on coating application, bonding, curing, or performance.
  - 2. Clean contaminated surfaces before applying next coat.
  - 3. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable system.
- E. Brush-apply primer or intermediate on all welds and edges prior to general application of finish coat.

- F. Apply caulking to flange interfaces, gaps, and intermittent weld seams.
- G. Provide finish coats that are compatible with primers used. Prime and intermediate coats shall be lighter than subsequent coat.
- H. Provide application thickness to specific mil requirements. Mil thicknesses referenced are in dry mil thickness.
- I. All paint systems are "full coverage." Where discrepancies between manufacturer's square foot coverage and mil thickness occur, use mil thickness requirements.
- J. Where voids are present exposing the substrate or undercoats, apply additional coats until a uniform color and finish is obtained. Give special attention to insure that surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
- K. Do not apply additional coats until Engineer has had the opportunity to inspect and approve previous coat.
- L. Unless otherwise indicated, match color of adjacent walls or equipment when painting conduit, miscellaneous brackets, hangers, and supports.
- M. Smooth out runs or sags immediately, or remove and recoat entire surface.
- N. Allow preceding coats to dry before recoating. Recoat within time limits specified by coating manufacturer.
- O. Do not apply coatings to the following surfaces:
  - 1. Factory or installer-finished items.
  - 2. Anodized aluminum, stainless steel, or other pre-finished metal.
  - 3. Moving parts of operating devices.
  - 4. Sprinkler heads or other fire detection/suppression elements.
  - 5. Code required labels or equipment nameplates.

### **3.05 QUALITY CONTROL**

- A. Contractor shall provide all necessary equipment to monitor and record the information required on the Daily Application Record.
  - 1. Equipment shall be in good condition.
  - 2. Operational within its design range.
  - 3. Calibrated as required by the specified standard for use of each device.
- B. Maintain a copy of the following information at the site:
  - 1. Product Data Sheets.
  - 2. Safety Data Sheets (SDS).
  - 3. Contract Document and submittals.
  - 4. Daily Application Record.
    - a. Record information (in English) on form located at the end of this Section.
- C. Coating systems shall be installed in strict accordance with the manufacturer's written recommendations. Where conflicts occur between manufacturer requirements and this specification, the more stringent requirement shall govern.
- D. Owner's representative may be on site to observe the application of each coating, and the preparation of each substrate.
- E. Provide safe and complete access to all surfaces for observation by Owner and/or Engineer.
- F. Prepare rigging so that all surfaces are within arm's reach of observer.

- G. Measure wet paint with wet film thickness gages.
- H. Provide DFT measurements for all coatings in accordance with SSPC-PA2.
- I. Perform Holiday testing in accordance with NACE RPO 188 as directed by Engineer.
- J. Correct any deficiencies observed or detected by field testing as directed by Engineer.

### **3.06 CLEANING AND PROTECTION**

- A. During progress of Work, remove discarded materials, rubbish, cans, and rags at end of each workday from the Site.
- B. Furnish drop cloths, shields, and protective methods to prevent spray or droppings from disfiguring other surfaces.
- C. Upon completion of Work:
  - 1. Clean window glass and spattered surfaces.
  - 2. Remove spattered paint by washing and scraping, using care not to scratch or otherwise damage finished surfaces.
- D. Protect Work of other trades against damage. Correct any damage by cleaning, repairing or replacing, and repainting.
- E. Provide "Wet Paint" signs as required to protect newly-painted finishes. Remove temporary protective wrappings provided for protection of Work, after completion of painting operations.
- F. At completion of Work of other trades, touch-up and restore damaged or defaced surfaces.

### **3.07 SCHEDULES**

- A. See the following pages.

### Coating Schedule

SYSTEM NUMBER	TYPE	SUBSTRATE / SERVICE	SURFACE PREP	MFG	FIRST COAT	DFT (Mils)	SECOND COAT	DFT (Mils)	FINISH COAT	DFT (Mils)	NOTES
C1a	Chemical Resistant	Existing Concrete Immersion Severe	P13 4.3.1	TCI	Series 217 or Series 218	See PDS	Series N69	6.0 – 8.0	Series 141	10.0 – 14.0	Fill all bugholes and voids with Series 217 or Series 218.
S4	Epoxy Chemical Resistant	Steel Immersion (Municipal wastewater & H2S Vapor Exposure)	P10	TCI	Series 1	2.5 – 3.5	Series N69	6.0 – 8.0	Series 141	10.0 – 14.0	-
S4E	Epoxy Chemical Resistant	Steel Immersion (Municipal wastewater, H2S Vapor, and Exterior Exposure)	P10	TCI	Series 1	2.5 – 3.5	Series N69	6.0 – 8.0	Series 141	10.0 – 14.0	-
S7	Epoxy/Acrylic Urethane	Steel Exterior Exposure	P6	TCI	Series N69	6.0 – 8.0	Series 1095	2.0 – 4.0	-	-	-

# DAILY APPLICATION RECORD

-----RECORD EVERY 3 HOURS-----

DATE		Surface Temperature (Deg. F.)	Air Temperature (Deg. F.)	Material Temperature (Deg. F.)	Relative Humidity (%)	Dew Point (Deg. F.)	Weather Conditions
TIME START	AM						
	PM						
	AM						
	PM						
	AM						
	PM						
TIME STOP	AM						
PM							

Area Prepared	
Area Coated	
Type of Material & Quantity Applied:	

SIGNED

**PROJECT NAME:** \_\_\_\_\_  
**OWNER:** \_\_\_\_\_  
**SEH FILE #:** \_\_\_\_\_  
**CONTRACTOR:** \_\_\_\_\_

