



**Alliance Consulting Engineers, Inc.**  
124 Verdae Boulevard Bonaventure II, Suite 505  
Greenville, SC 29607  
Phone: (864) 284-1740 Fax: (864) 284-1741  
www.allianceCE.com

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**To:** All Bidders and Plan Holders  
**Re:** Addendum No. 1  
**Project:** Elevated Storage Tank located along  
MW Rickenbaker Road Clarendon County,  
South Carolina  
**Date:** October 28, 2024  
**Bid Date:** ~~Tuesday, October 29, 2024, at 2:00 P.M.~~  
Thursday, November 7, 2024, at 2:00 P.M.

Engineer Project No. 23192-0014  
SCIIP Grant No. A-23-C042

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Page 1 of 24

A. Notice to Bidders:

This Addendum is issued pursuant to the Conditions of the Contract and is hereby made part of the Contract Documents. The addendum serves to clarify, revise, and supersede information from Contract Documents, Technical Specifications, and Construction Plans. The Bidder shall acknowledge receipt of this Addendum in the appropriate space on the Bid Form for this form to be deemed complete. All attachments, if any, are part of this document.

B. Modifications and Clarifications to the Contract Documents.

1. Please note that the Bid Opening has been rescheduled to Thursday, November 7, 2024, at 2:00 P.M.
2. To clarify, the Scope of Work for this Contract only includes erection of the Elevated Tank and associated Piping to the Well House Building. The Well and Well House Building and associated piping to the Water Distribution System will be conducted under a separate Contract and will be conducted concurrently with the Elevated Tank construction.
3. Paragraph 3.02.D under Elevated Water Storage Tank – Multi-Leg Type (Section 33 16 19) shall be updated to read “Balcony: The tank shall be equipped with a balcony not less than 30” wide with a handrail not less than 42” high. The floor shall be perforated for drainage.”
4. Paragraph 3.03.C under Elevated Water Storage Tank – Multi-Leg Type (Section 33 16 19) shall be updated to read “Riser Manhole: A minimum **36-Inch Diameter Circular** Access Manhole shall be provided approximately three (3) feet above the base of the wet riser. The hatch shall open inward.”
5. Add attached Painting and Coating (09 90 00) Specification in its entirety.
6. Delete the Bid Form (00 41 00) in its entirety for the Elevated Storage Tank located along MW Rickenbaker Road, Clarendon County, South Carolina Bid Documents dated September 2024 and replace with the attached Bid Form (00 41 00) for the update, which shall be used by all bidders. The Bid Form (00 41 00) has been revised as detailed below.

- a. Reference to this Addendum No. 1 has been added to Page 2 for the Bidder's acknowledgement.
  - b. Item No. 11 and Item No. 12 have been revised to reflect DIP Water Main rather than PVC Water Main.
7. The limits of liability for the insurance required by Paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:
- a. Workers' Compensation, and related coverage's under Paragraphs 6.03.A.1 and A.2 of the General Conditions:

State:	<u>Statutory</u>
Federal, if applicable (e.g., Longshoreman's):	<u>Statutory</u>
Jones Act coverage, if applicable:	
Bodily injury by accident, each accident	\$ <u>N/A</u>
Bodily injury by disease, aggregate	\$ <u>N/A</u>
Employer's Liability:	
Bodily injury, each accident	\$ <u>500,000</u>
Bodily injury by disease, each employee	\$ <u>500,000</u>
Bodily injury/disease aggregate	\$ <u>500,000</u>
For work performed in monopolistic states, stop-gap liability coverage shall be endorsed to either the worker's compensation or commercial general liability policy with a minimum limit of:	\$ <u>N/A</u>
Foreign voluntary worker compensation	<u>Statutory</u>

- b. Contractor's Commercial General Liability under Paragraphs 6.03.B' and 6.03.C of the General Conditions:

General Aggregate	\$ <u>2,000,000</u>
Products - Completed Operations Aggregate	\$ <u>1,000,000</u>

*Attachments:*

- 1. Section 00 41 00 – Bid Form (7 pages)
- 2. Section 09 90 00 – Painting and Coating (15 Pages)

*End of Addendum No. 1*

**SECTION 00 41 00**

**BID FORM**

**ELEVATED STORAGE TANK  
LOCATED ALONG  
MW RICKENBAKER ROAD  
IN  
CLARENDON COUNTY**

**ALLIANCE CONSULTING ENGINEERS, INC. PROJECT NO. 23192-0014**

**TABLE OF ARTICLES**

ARTICLE 1 - BID RECIPIENT

ARTICLE 2 - BIDDER'S ACKNOWLEDGEMENTS

ARTICLE 3 - BIDDER'S REPRESENTATIONS

ARTICLE 4 - BIDDER'S CERTIFICATIONS

ARTICLE 5 - BASIS OF BID

ARTICLE 6 - TIME OF COMPLETION

ARTICLE 7 - ATTACHMENTS TO THIS BID

ARTICLE 8 - DEFINED TERMS

ARTICLE 9 - BID SUBMITTAL

**ARTICLE 1 - BID RECIPIENT**

1.01 This Bid is submitted to:

Clarendon County  
3 South Church Street  
Manning, South Carolina 29102

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 sixty (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, the other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged.

<u>Addendum No.</u>	<u>Addendum Date</u>	<u>Initials</u>
<u>1</u>	<u>October 28, 2024</u>	<u>          </u>
<u>          </u>	<u>          </u>	<u>          </u>
<u>          </u>	<u>          </u>	<u>          </u>
<u>          </u>	<u>          </u>	<u>          </u>
<u>          </u>	<u>          </u>	<u>          </u>

B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress and performance of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities), which have been identified in Paragraph 4.02 of General Conditions, and (2) reports and drawings of Hazardous Environmental Conditions that have been identified in Paragraph 4.06 of General Conditions as containing reliable "technical data."

E. Bidder has considered the information known to Bidder; 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 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, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder's safety precautions and programs.

- F. Based on the information and observations referred to in Paragraph 3.01.E above, Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of the 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 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 of the Work for which this Bid is submitted.
- J. Bidder will submit written evidence of its authority to do business in the State or other jurisdiction where the Project is located not later than the date of its execution of the Agreement.

#### **ARTICLE 4 – BIDDER'S CERTIFICATIONS**

4.01 Bidder further represents 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 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. Bidder has not solicited or induced any individual or entity to refrain from bidding.
- D. 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 AND AWARD**

5.01 **Elevated Storage Tank** - This Project consists of providing all required materials, equipment and labor necessary to complete the construction of The Elevated Storage Tank. Generally, the improvements include the construction of a 250,000 Elevated Storage Tank Located off MW Rickenbaker Road. Specific details are included within the Construction Plans and Technical Specifications.

Bidder will complete the Work in accordance with the Contract Documents for the following prices:

**Base Bid**

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
1.	Mobilization/Bonds	LS	1	\$	\$
2.	Traffic Control/Construction Safety	LS	1	\$	\$
3.	Construction Entrance	EA	1	\$	\$
4.	250,00 Gallon Elevated Storage Tank (Per AWWA)	LS	1	\$	\$
5.	Additional Cost for Pile Foundation	LS	1	\$	\$
6.	Silt Fencing	LF	1,200	\$	\$
7.	Clearing and Grubbing	AC	2	\$	\$
8.	Earthwork/Grading	SY	300	\$	\$
9.	6-FT High Chain Link Fence with 3 Strands of Barbed Wire	LF	600	\$	\$
10.	5-Inch Graded Aggregate Base Course (Type B)	SF	800	\$	\$
11.	12-Inch DIP Water Main	LF	150	\$	\$
12.	8-Inch DIP Water Main	LF	220	\$	\$
13.	18-Inch PVC Storm Drainage	LF	50	\$	\$
14.	Permanent Grassing	AC	1	\$	\$

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 Bid items will be based on actual quantities, determined as provided in the Contract Documents.

**Total Base Bid Price:** \$ \_\_\_\_\_

1. All Work as shown on the Construction Plans and specified herein:

Base Bid Price:

\_\_\_\_\_ Dollars

(Use words)

\_\_\_\_\_ Cents (\$ \_\_\_\_\_)

(Use numerals)

Amounts are to be shown in both words and figures. In case of discrepancy, the amount shown in words will govern.

All specified cash allowances are included in the price(s) set forth above and have been computed in accordance with Paragraph 11.02 of the General Conditions.

5.02 Basis of Award

The lowest bid shall be the lowest total Base Bid price listed in Paragraph 5.01. If the Owner elects to award a contract, it will be awarded to the responsive bidder who submitted the lowest bid as determined by this basis of award.

**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 14.07 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

**ARTICLE 7 - ATTACHMENTS TO THIS BID**

7.01 The following documents are attached to and made a condition of this Bid:

- A. Required Bid security in the form of a bid bond (EJCDC No. C-430) or certified check in the amount of five percent (5%) of the total bid amount. Bid Bond shall include an executed Power of Attorney;
- B. List of Proposed Subcontractors; (must be submitted within five (5) days of the Bid Opening)
- C. List of Proposed Suppliers; (must be submitted within five (5) days of the Bid Opening)
- D. List of Project References; (must be submitted within five (5) days of the Bid Opening)
- E. Evidence of authority to do business in the State of South Carolina, or written covenant to obtain such license within the time frame for acceptance of Bids;
- F. Contractor License Number or evidence of bidders ability to obtain a State Contractor's License and covenant by Bidder to obtain said license within the time for acceptance of Bids;
- G. Required Bidder and Proposed Subcontractor Qualification Statement with Supporting Data; (must be submitted within five (5) days of the Bid Opening)
- H. Completed Bidder Submittal Checklist, if needed.

**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, General Conditions and the Supplementary Conditions.



**ARTICLE 9 – BID SUBMITTAL**

9.01 This Bid submitted by:

An Individual

Name (typed or printed): \_\_\_\_\_

By: \_\_\_\_\_ (SEAL)  
*(Individual's signature)*

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

Doing business as: \_\_\_\_\_

A Partnership

Partnership Name: \_\_\_\_\_ (SEAL)

By: \_\_\_\_\_  
*(Signature of general partner – attach evidence of authority to sign)*

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

Name (typed or printed): \_\_\_\_\_

A Corporation

Corporation Name: \_\_\_\_\_ (SEAL)

State of Incorporation: \_\_\_\_\_

Type (General Business, Professional, Service, Limited Liability): \_\_\_\_\_

By: \_\_\_\_\_  
*(Signature -- attach evidence of authority to sign)*

Name (typed or printed): \_\_\_\_\_

Title: \_\_\_\_\_ (CORPORATE SEAL)

Attest \_\_\_\_\_

Date of Authorization to do business in South Carolina is \_\_\_\_/\_\_\_\_/\_\_\_\_.

A Joint Venture

Name of Joint Venture: \_\_\_\_\_

First Joint Venturer Name: \_\_\_\_\_ (SEAL)

By: \_\_\_\_\_  
*(Signature of first joint venture partner -- attach evidence of authority to sign)*

Name (typed or printed): \_\_\_\_\_

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

Second Joint Venturer Name: \_\_\_\_\_ (SEAL)

By: \_\_\_\_\_  
*(Signature of second joint venture partner -- attach evidence of authority to sign)*

Name (typed or printed): \_\_\_\_\_

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



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

Bidder's Business Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Telephone No.: \_\_\_\_\_ Fax No.: \_\_\_\_\_

SUBMITTED on \_\_\_\_\_, 201\_\_.

State Contractor License No. \_\_\_\_\_

**END OF SECTION**

**SECTION 09 90 00**  
**PAINTING AND COATING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Surface preparation.
- B. Field application of paints, stains, varnishes, and other coatings.
- C. Scope: Finish all interior and exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.
- D. Do Not Paint or Finish the Following Items:
  - 1. Items fully factory-finished unless specifically so indicated; materials and products having factory-applied primers are not considered factory finished.
  - 2. Items indicated to receive other finishes.
  - 3. Items indicated to remain unfinished.
  - 4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
  - 5. Floors, unless specifically so indicated.
  - 6. Glass.
  - 7. Concealed pipes, ducts, and conduits.
- E. Prepare, paint and finish the exterior and interior surfaces indicated or specified, and as needed for a complete and proper installation. Surfaces not specifically excluded shall be painted, whether new or old including concealed metal surfaces.
- F. Work not Included: Unless otherwise indicated, painting of following surfaces will not be required.
  - 1. Concealed areas and inaccessible areas such as furred spaces, foundation spaces, utility tunnels, pipe spaces, and duct shafts.
  - 2. Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper (except piping), bronze and similar non-ferrous materials.
  - 3. Moving parts of operating units, mechanical or electrical parts such as valve operators, linkages, sensing devices, and motor shafts.
  - 4. Exterior concrete surfaces, including interior walls of treatment tanks.
  - 5. PVC piping systems.
  - 6. Instruments, control panels, chlorinators, etc. having factory applied finishes.

7. Roof and wall panels of pre-engineered buildings.
8. Do not paint over required labels or equipment identification, performance rating, name, or nomenclature plates.

#### **1.02 RELATED SECTIONS**

- A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, and Sections in Division 1 of these Specifications.
- B. Priming or priming and finishing of certain surfaces may be specified to be factory performed or installer performed under pertinent other Sections.

#### **1.03 DEFINITIONS**

- A. Conform to ASTM D 16 for interpretation of terms used in this section.
- B. Definitions: "Paint", as used herein, means coating systems materials including primers, emulsions, epoxy, enamels, sealers, fillers and other applied materials whether used as prime, intermediate or finish coats.

#### **1.04 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product data: Within 15 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
  1. Materials list of items proposed to be provided under this Section.
  2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
- C. Subcontractor qualifications.
- D. Color chips: Provide for each type of finish coat required.
- E. Schedule:
  1. Submit schedule listing of all surfaces to be painted, manufacturer's name, generic type, trade or brand name, system for each surface including number of coats and total dry film thickness.
  2. Secure Engineer's approval of schedule, in writing, prior to ordering any materials.

#### **1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum ten years documented experience.
- B. Referenced manufacturers are the Sherwin Williams Company & the Tnemec Company, Inc. are named to establish standards of quality. Equal products of other manufacturers may be provided for the project upon approval by the Engineer.

- C. Local Technical Support: The Sherwin Williams Company - 841 Baxter St. Suite 102 Charlotte, NC 28202. Contact is Matt Apsley (704) 842-1789 matt.c.apsley@sherwin.com
- D. Tnemec Company, Incorporated 101 Rice Bent Way Unit #5 Columbia, SC 29229 (803) 736-1553. Contact is Mr. Nick Vause (803) 422-3650 or nvause@tnemec.com.
- E. Requests for substitution shall include manufacturer's literature for each product giving the name, product number, generic type, descriptive information, solids by volume, recommended dry film thickness, cost savings and certified test reports showing results to equal the performance criteria of the products specified herein. No request for substitution shall be considered that will decrease film thickness, the number of coats or offer a change in the generic type of coatings specified. In addition, a list of five similar projects shall be submitted in which each product has been used and rendered satisfactory service.
- F. Requests for product substitution shall be made at least ten (10) days prior to bid date.
- G. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- H. Paint coordination:
  - 1. Provide finish coats which are compatible with the prime coats actually used.
  - 2. Review other Sections of these Specifications as required, verifying the prime coats to be used and assuring compatibility of the total coating system for the various substrata.
  - 3. Upon request, furnish information on the characteristics of the specific finish materials to assure that compatible prime coats are used.
  - 4. Provide barrier coats over non-compatible primers, or remove the primer and reprime as required.
  - 5. Notify the Engineer in writing of anticipated problems in using the specified coating systems over prime coatings supplied under other Sections.
- I. Subcontractor qualifications:
  - 1. The Contractor shall have five years practical experience and successful history in the application of specified products in similar projects. He shall substantiate this requirement by furnishing a list of references and successful job completions.
  - 2. Applicator must successfully demonstrate to the product manufacturer the ability to apply the material correctly and within the confines of the specifications. The Contractor must provide a letter from the manufacturer stating their acceptance of the Contractor for this project to apply these products.
  - 3. The Contractor shall possess the applicable license to perform the work as herein described and as specified by local, state and federal laws.
  - 4. The Contractor must provide an English speaking job foreman at the jobsite who has the ability to communicate with project team members as needed.



5. The Contractor shall provide a site mock up as necessary with each paint system as a representative of how the systems shall be installed and their final appearance (to include color, sheen, texture etc.), which is to be approved by the Owner before any work is started. For overcoat projects, this mock up shall be used to test for adequate adhesion. This approved mock up shall be the quality standard for the rest of the project. This mock up location, size and other job specifics needs shall be detailed by the Owner.

J. Technical services:

1. Provide a NACE Level III manufacturer's technical field representative to visit the site during initial work to verify compliance with these specifications, to assure coatings are properly applied, and the proper equipment is being used.
2. Provide for a minimum of two (2) interim site visits between initiation and completion of painting.
3. Provide a manufacturer's representative at completion of painting to verify painting was installed according to specifications.
  - a. Provide Holliday testing of all immersion surfaces and dry film thickness of all metal surfaces.

**1.06 REGULATORY REQUIREMENTS**

- A. Conform to applicable code for flame and smoke rating requirements for products and finishes.

**1.07 DELIVERY, STORAGE, AND PROTECTION**

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.
- D. Comply with pertinent provisions of Section 01 60 00 - Product Requirements, for product handling.
- E. Deliver all material to site in original, new, unopened containers, labeled and bearing manufacturer's name and stock number, product and brand name, contents by volume for major constituents, instructions for mixing and reducing, and application instruction.
- F. Provide adequate storage facilities designed exclusively for the purpose of paint storage and mixing.
- G. Facility area shall be located away from open flames, be well ventilated, and be capable of maintaining ambient storage temperature of no less than 45°F.

- H. Paint, coatings, reducing agents, and other solvents must be stored in original containers until opened. If not resealable, then must be transferred to UL approved safety containers.
- I. Provide proper ventilation, personal protection and fire protection for storage and use of same. Comply with requirements set forth by Occupational Safety and Health Act for storage and use of painting materials and equipment.
- J. All waste materials shall be disposed of by the Contractor in accordance with South Carolina Department of Health and Environmental Control (SCDHEC).

#### **1.08 FIELD CONDITIONS**

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Do not apply exterior coatings during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
- D. Minimum Application Temperatures for Latex Paints: 45 degrees F (7 degrees C) for interiors; 50 degrees F (10 degrees C) for exterior; unless required otherwise by manufacturer's instructions.
- E. Minimum Application Temperature for Varnish Finishes: 65 degrees F (18 degrees C) for interior or exterior, unless required otherwise by manufacturer's instructions.
- F. Provide lighting level of 80 ft candles (860 lx) measured mid-height at substrate surface.

#### **1.09 EXTRA MATERIALS**

- A. See Section 01 60 00 - Product Requirements, for additional provisions.
- B. Supply 1 gallon (4 L) of each color; store where directed.
- C. Label each container with color in addition to the manufacturer's label.
- D. Upon completion of the work of this Section, deliver to the Owner at least one gallon of each color, type, and gloss of paint used in the Work, tightly sealing each container and clearly labeling with contents and location where used.

### **PART 2 PRODUCTS**

#### **2.01 MATERIALS**

- A. Provide all paint and coating products used in any individual system from the same manufacturer; no exceptions.
- B. Substitutions: See Section 01 60 00 - Product Requirements.

#### **2.02 PAINTS AND COATINGS – GENERAL**

- A. Paints and Coatings: Ready mixed, unless intended to be a field-catalyzed coating.

1. Provide paints and coatings of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
  2. Supply each coating material in quantity required to complete entire project's work from a single production run.
  3. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.
- B. Primers: Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.
1. For good flow and brushing properties.
  2. Capable of drying or curing free of streaks or sags.
- C. Volatile Organic Compound (VOC) Content:
1. Provide coatings that comply with the most stringent requirements specified in the following:
    - a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
  2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.

## **2.03 COLOR SCHEDULE**

- A. The Engineer will prepare a color schedule for guidance in the painting.

## **2.04 APPLICATION EQUIPMENT**

- A. Use only such equipment as is recommended by the paint manufacturer.

## **2.05 OTHER MATERIALS**

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Engineer.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- C. Test shop-applied primer for compatibility with subsequent cover materials.



- D. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.
- E. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
  - 1. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.
  - 2. Interior Wood: 15 percent, measured in accordance with ASTM D4442.
  - 3. Exterior Wood: 15 percent, measured in accordance with ASTM D4442.
  - 4. Concrete Floors and Traffic Surfaces: 8 percent.
- F. Do not work under unfavorable weather conditions.
  - 1. Air and surface temperatures must be above 45°F, dew point not within 5° of surface temperature, and relative humidity less than 85%.

### 3.02 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to coating application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
- D. Surfaces: Correct defects and clean surfaces which affect work of this section. Remove or repair existing coatings that exhibit surface defects.
- E. Seal surfaces that might cause bleed through or staining of topcoat.
- F. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- G. Concrete and Unit Masonry Surfaces to be Painted: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry. Adhere to SSPC 13/NACE 6 Surface Preparation of Concrete.
- H. Concrete Floors and Traffic Surfaces to be Painted: Remove contamination, acid etch, and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry. Adhere to SSPC 13/NACE 6 Surface Preparation of Concrete. Concrete surfaces shall be abrasive blasted or mechanically grinded to remove all surface contaminants and laitance. The prepared concrete shall have a surface profile depending upon system selected. After initial preparation has occurred, inspect the concrete for bugholes, voids, fins and other imperfections. Protrusions shall be ground smooth while voids shall be filled with a system compatible filler. For recommendations, consult the manufacture's technical service department.



- I. Aluminum Surfaces to be Painted: Remove surface contamination by steam or high pressure water. Remove oxidation with acid etch and solvent washing. Apply etching primer immediately following cleaning.
- J. Copper Surfaces to be Painted: Remove contamination by steam, high pressure water, or solvent washing. Apply vinyl etch primer immediately following cleaning.
- K. Galvanized Surfaces to be Painted: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer. Adhere to ASTM D6386. Clean surfaces with etching cleanser or mechanical scarification to remove temporary passivation layers and create sufficient profile for metal primers. Confirm removal of all temporary passivation layers using copper sulfate solution and the methods defined in SSPC-SP16. If temporary passivation layer remain intact, remove using consistent abrading with sandpaper or abrasive brush blasting per SSPC-SP-16.
- L. Uncorroded Uncoated Steel and Iron Surfaces to be Painted: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by hand wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Prime paint entire surface; spot prime after repairs. Adhere to SSPC and NACE standards as required per the manufacturer's data sheets.
- M. Shop-Primed Steel Surfaces to be Finish Painted: Ensure compatibility with the finish coats. Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.
- N. Interior Wood Surfaces to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.
- O. Interior Wood Surfaces to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats. Prime concealed surfaces with gloss varnish reduced 25 percent with thinner.
- P. Exterior Wood Surfaces to Receive Opaque Finish: Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior caulking compound after prime coat has been applied. Back prime concealed surfaces before installation.
- Q. Exterior Wood to Receive Transparent Finish: Remove dust, grit, and foreign matter; seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes with tinted exterior caulking compound after sealer has been applied. Prime concealed surfaces.
- R. Wood Doors to be Field-Finished: Seal wood door top and bottom edge surfaces with clear sealer.
- S. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

### **3.03 MATERIALS PREPARATION**

- A. General:

1. Mix and prepare paint materials in strict accordance with the manufacturer's recommendations as approved by the Engineer.
2. When materials are not in use, store in tightly covered containers.
3. Maintain containers used in storage, mixing, and application of paint in a clean condition, free from foreign materials and residue.

B. Stirring:

1. Stir materials before application, producing a mixture of uniform density.
2. Do not stir into the material any film which may form on the surface, but remove the film and, if necessary, strain the material before using.

### 3.04 PAINT APPLICATION

A. Exterior Wood to Receive Opaque Finish: If final painting must be delayed more than 2 weeks after installation of woodwork, apply primer within 2 weeks and final coating within 4 weeks.

B. General:

1. Touch-up shop applied prime coats which have been damaged, and touch-up bare areas prior to start of finish coats application (see subsection 3.7 of this Section).
2. Slightly vary the color of succeeding coats.
  - a. Do not apply additional coats until the completed coat has been inspected and approved.
  - b. Only the inspected and approved coats of paint will be considered in determining the number of coats applied.
3. Sand and dust between coats to remove defects visible to the unaided eye from a distance of five (5') feet.
4. On guards, covers, removable panels and hinged panels:
  - a. Remove fasteners before painting and re-install after paint is completely dry.
  - b. Remove or open guard, cover or panel for painting.
  - c. Paint the back sides to match the exposed sides.

C. Apply products in accordance with manufacturer's instructions.

D. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

E. Apply each coat to uniform appearance.

- F. Sand wood and metal surfaces lightly between coats to achieve required finish.
- G. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- H. Wood to Receive Transparent Finishes: Tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.
- I. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.
- J. Drying: Allow sufficient drying time between coats, modifying the period as recommended by the material manufacturer to suit adverse weather conditions.
- K. Brush or roller applications:
  - 1. Brush or roll coats onto the surface in an even film.
  - 2. Cloudiness, spotting, holidays, laps, brush or roller marks, runs, sags, and other surface imperfections will not be acceptable.
- L. Spray application:
  - 1. Except as specifically otherwise approved by the Engineer, confine spray application to metal framework and similar surfaces where handwork would be inferior.
  - 2. Where spray application is used, apply each coat to provide the hiding equivalent of brush coats.
  - 3. Do not double back with spray equipment to build up film thickness of two coats in one pass.

### **3.05 FIELD QUALITY CONTROL**

- A. See Section 01 40 00 - Quality Requirements, for general requirements for field inspection.
- B. Owner and Engineer will provide field inspection.

### **3.06 CLEANING**

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

### **3.07 SCHEDULE - SURFACES TO BE FINISHED**

- A. Do Not Paint or Finish the Following Items:
  - 1. Items fully factory-finished unless specifically noted.
  - 2. Fire rating labels, equipment serial number and capacity labels.
- B. Paint the surfaces described below under Schedule - Paint Systems.

- C. Mechanical and Electrical: Use paint systems defined for the substrates to be finished.
1. Paint all insulated and exposed pipes occurring in finished areas to match background surfaces, unless otherwise indicated.
  2. Paint shop-primed items occurring in finished areas.
  3. Paint interior surfaces of air ducts and convector and baseboard heating cabinets that are visible through grilles and louvers with one coat of flat black paint to visible surfaces.
  4. Paint dampers exposed behind louvers, grilles, and convector and baseboard cabinets to match face panels.

### 3.08 SCHEDULE - PAINT SYSTEMS

- A. Provide one prime coat (shop or field) and two finish coats, unless otherwise specified, in accordance with the following:
- B. Systems:
1. In the schedules following, the type of paint system is identified by symbol in parenthesis immediately behind the manufacturer's name:
    - a. Alkyd (A)
    - b. Acrylic (AC)
    - c. Acrylic Latex (ACL)
    - d. High Build Urethane (HBU)
    - e. High Solids Epoxy (HSE)
    - f. High Build Coal Tar Solution (HBCT)
    - g. Alkyd Gloss (AG)
    - h. Epoxy Polyamide (EP)
    - i. Silicone (S)
    - j. Silicone Aluminum (SA)
    - k. Modified epoxy (ME)
- C. Cast iron or ductile iron pipe, bituminous coated:
1. Provide one prime coat as specified below and finish with two coats of appropriate metal finish as specified in paragraphs 3.8 or 3.8P above.
  2. System: Sherwin Williams (EP):
  3. Sherwin Williams Macropoxy 646 FC Epoxy applied at 5.0 – 10.0 dry mils
  4. Tnemec Series 66HS Hi-Build Epoxoline, 4.0 – 6.0 dry mils
- D. PVC piping systems:
1. Surface preparation: Surface must be dry and clean.
  2. System: Sherwin Williams (EP):
    - a. 1st Coat: Macropoxy 646 FC Epoxy applied at 5.0 – 10.0 dry mils



3. System: Tnemec (EP):
  - a. 1st Coat: Series 66HS Hi-Build Epoxoline applied at 4.0 – 6.0 dry mils

E. Non-ferrous metals:

1. Treat per manufacturer's instructions.
2. Provide finish coats as specified in paragraphs 3.8 or 3.8P above.

F. Insulated pipe:

1. Surface preparation: Surface shall be clean and dry.
2. System: Sherwin Williams (AC):
  - a. 1st Coat: Sher-Cryl HPA applied at 2.5 – 4.0 dry mils.
  - b. 2nd Coat: Sher-Cryl HPA applied at 2.5 – 4.0 dry mils.
3. Type finish: Semi gloss.
4. System: Tnemec (ACL):
  - a. 1st Coat: Series 6 Tnemec-Cryl applied at 2.0 - 3.0 dry mils
  - b. 2nd Coat: Series 6 Tnemec-Cryl applied at 2.0 - 3.0 dry mils
5. Type finish: Low Sheen.
6. Note: For semi-gloss finish, use 1029 Enduratone.

### 3.09 TOUCH-UP OF APPLIED COATINGS

- A. Prior to any touch-up, the area is to be SP2 hand tooled or SP-3 power tool cleaned.
- B. Shop applied coatings:
  1. Shop applied coatings with specified primer, as listed in Part 3.6 above, shall be touched up with the same listed primer before any topcoat(s) are applied.
  2. Shop applied coatings with manufacturer's standard paint shall be touched up with a compatible barrier coating, Tnemec Series 1 Omnithane.
    - a. Manufacturer shall notify the Engineer in writing if the manufacturer's standard paint is unable to receive the specified top coat(s) or if problems are anticipated due to incompatible coating systems.
  3. Field applied coatings: After cleaning, apply specified primer followed by specified finish coats.

### 3.10 COLOR CODING, PIPING: (PIPE SPECIFIC)

A. General:

1. Paint all exposed piping complying with color schedule herein.
2. Where schedule shows "color with contrasting band", the bands shall be approximately six inches in width, spaced at five-foot intervals along the pipe, at valves, and where pipe passes through a wall.
3. Stencil name of pipe contents on each pipe using black or white paint, whichever contrasts greater with pipe color.
  - a. Letter heights shall range from 1-1/2" to 4", dependent on pipe size.
  - b. Space name identification at 15 foot intervals, near valves, where pipes pass through walls, and where two pipes cross.

B. Sherwin Williams color schedule:

<u>Water</u>	<u>Generic Color</u>	<u>Sherwin Williams Color</u>
Raw Water	olive green	4070 Generator Green
Settled or Clarified	aqua	4068 Alloy Aqua
Finished or Potable	dark blue	4086 Safety Blue
 <u>Wastewater</u>		
Sewage Plant Effluent	clay	4048 Mason Brick
Backwash Waste	light brown	4003 Pallet Tan
Reclaimed Water	light purple	4043 Bearing Taupe
Sludge	dark brown	4001 Bolt Brown
Sewer (sanitary or other)	dark gray	4026 Slate Gray
 <u>Chemical</u>		
Alum Or Primary Coagulant	orange	4083 Safety Orange
Ammonia	white	7006 Extra White
Carbon Slurry	black	4090 Black
Caustic	yellow with green band	4084 Safety Yellow/ 4085 Safety Green
Chlorine (Gas and Solution)	yellow	4084 Safety Yellow
Fluoride	light blue with red band	4061 Hydro Blue/ 4081 Safety Red
Lime Slurry	light green	4069 Emerald Ice
Ozone	yellow with orange band	4084 Safety Yellow/ 4083 Safety Orange
Phosphate Compounds	light green with red band	4069 Emerald Ice/ 4081 Safety Red
Polymers or Coagulant Aids	orange with green band	4083 Safety Orange/ 4080 Plumb
Potassium Permanganate	violet	4080 Plumb
Soda Ash	light green with orange band	4069 Emerald Ice/ 4083 Safety Orange
Sulfuric Acid	yellow with red band	4084 Safety Yellow/

Sulfur Dioxide	light green with yellow band	4081 Safety Red 4069 Emerald Ice/ 4084 Safety Yellow
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**Other**

Compressed Air	dark green	4071 Rain Forest
Gas	red	4040 Deck Red
Other Lines	light gray	4019 Flint Gray
Hoists/Trolleys	yellow	4084 Safety Yellow
Fire Protection	red	4081 Safety Red

C. Tnemec color schedule:

Water	Generic Color	Tnemec Color
Raw Water	olive green	110GN Clover
Settled or Clarified	aqua	10GN Aqua Sky
Finished or Potable	dark blue	11SF Safety Blue
<b>Wastewater</b>		
Sewage Plant Effluent	clay	07RD Terra Cotta
Backwash Waste	light brown	68BR Twine
Reclaimed Water	light purple	R0715 Light Purple
Sludge	dark brown	84BR Weathered Bark
Sewer (sanitary or other)	dark gray	GR28 Fossil
<b>Chemical</b>		
Alum Or Primary Coagulant	orange	04SF Safety Orange
Ammonia	white	11WH White
Carbon Slurry	black	35GR Black
Caustic	yellow with green band	02SF Safety Yellow/ 02SF Safety Green
Chlorine (Gas and Solution)	yellow	02SF Safety Yellow
Fluoride	light blue with red band	25BL Fountainbleu/ 06SF Safety Red
Lime Slurry	light green	PA30 Daiquiri Ice
Ozone	yellow with orange band	02SF Safety Yellow/ 04SF Safety Orange
Phosphate Compounds	light green with red band	PA30 Daiquiri Ice/ 06SF Safety Red
Polymers or Coagulant Aids	orange with green band	04SF Safety Orange/ 14SF Safety Purple
Potassium Permanganate	violet	14SF Safety Purple
Soda Ash	light green with orange band	PA30 Daiquiri Ice/ 04SF Safety Orange
Sulfuric Acid	yellow with red band	02SF Safety Yellow/ 06SF Safety Red
Sulfur Dioxide	light green with yellow band	PA30 Daiquiri Ice/

Other		02SF Safety Yellow
Compressed Air	dark green	91GN Balsam
Gas	red	28RD Monterrey Tile
Other Lines	light gray	32GR Light Gray
Hoists/Trolleys	yellow	02SF Safety Yellow
Fire Protection	red	06SF Safety Red

### 3.11 INSPECTION AND ACCEPTANCE

- A. Examination of overall appearance and measurement of dry film thickness.
- B. Correct defects and/or deficiencies to satisfaction of the Engineer.

### 3.12 WARRANTY

- A. The Contractor will warrant the work free of defects in material and workmanship for a period of one year from the acceptance of the work. At the end of one year, the Contractor will return for a one-year anniversary inspection of the work. The Contractor will correct any deficiencies found with no cost to the owner. Inspections shall be conducted to conform to owners spec.

### 3.13 CLEAN-UP

- A. Upon completion, painting contractor shall clean-up and remove from site all surplus materials, tools, appliances, empty cans, cartons, and rubbish resulting from painting work. Site shall be left in neat, orderly condition.
- B. Remove all protective drop cloths and masking from surfaces not being painted. Provide touch-up around same areas as directed by the Engineer.
- C. Remove all misplaced paint splatters or drippings resulting from this work.

**END OF SECTION**