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ACKNOWLEDGEMENT PAGE

DATE: **September 12, 2024**

PAGE: **1 of 26 (INCLUDING THIS PAGE)**

TO: **ALL CONTRACTORS**

FROM: **DENISE KING**

PROJECT: **SOUTH WATER TREATEMENT PLANT**
FOR THE UTILITIES BOARD OF THE CITY OF FOLEY, ALABAMA D/B/A RIVIERA UTILITIES
GMC PROJECT NO. CMOB220112

RE: **ADDENDUM #3**

PLEASE COMPLETE BELOW AND RETURN IMMEDIATELY.

Ashley Morris
Email: Ashley.Morris@gmcnetwork.com

I, the undersigned, hereby acknowledge receipt of this Addendum.

_____ _____
Authorized Representative of Contractor Date

_____ _____
Company Name Telephone

_____
Contractor's License Number (if applicable)

ADDENDUM NUMBER 3

SOUTH WATER TREATMENT PLANT

FOR

THE UTILITIES BOARD OF THE CITY OF FOLEY, ALABAMA D/B/A RIVIERA UTILITIES

GMC PROJECT NO. CMOB220112

1. General

1.1 The following revisions are hereby added as Addendum No. 3 to the referenced Project Manual and Plans and shall be considered when preparing bids.

2. Revisions to Project Manual

2.1 Specification 09 96 00 – High Performance Coatings has been revised and is included as an attachment to this addendum. Section 3.C was added for coating of ductile iron pipe submerged or intermittently submerged in potable water.

2.2 The contract time is extended to 420 days.

2.3 Bids should include Builder's Risk insurance coverage for the project. Additional requirements are attached.

3. Questions

3.1 **Question: Specification 13 14 00 Section 2.03 B states to refer to Specification 09 96 00 for interior pipe coatings. Specification 09 96 00 Section 3.6A states; interior service refers to the interior of buildings and rooms and not the interior of tanks, structures, etc. Please confirm there are no interior coatings on the interior of the prestressed concrete tank and no coatings on the interior piping.**
Answer: No coating is required on the interior of the pre-stressed concrete tank. Any exposed interior piping shall be coated per Specification 09 96 00, Section 3.C.1. The revised Specification 09 96 00 is included as an attachment to this addendum.

3.2 **Question: Drawing Sheets D-611 and D-613 show three 17'-0" tall baffle curtains for the Clearwell. Please provide the length of the baffle curtains. Alternatively, please specify the distance from the free end of the curtain to the tank wall.**
Answer: The distance from the free end of the curtain to the wall shall be 10'-0".

3.3 **Question: Drawing Sheet D-619 detail P shows an aluminum grab rail outside of the hatch. Can the TS Rail be extended on the interior ladder in lieu of the grab rail?**
Answer: Yes, this is acceptable.

3.4 **Question: Please confirm the clearwell will not be subject to hydrostatic uplift due to groundwater or flooding.**
Answer: Groundwater levels were measured to be below the foundation of the clearwell. Please refer to the geotechnical report.

3.5 **Question: Will Halliday Products be an acceptable alternative to Thompson Fabricating for the aluminum hatches?**
Answer: Yes

3.6 **Question: Will the aluminum hatches over MXR6010 and SAMP6010 need to be traffic rated?**
Answer: No

3.7 **Question: Please provide clarification on note #6 on Sheet C-301, this is a very broad statement. We would assume that the polyethylene tanks will need to be insulated, as well as water lines 2" and smaller. Please advise if additional insulation will be required.**
Answer: The polyethylene tanks do not need to be insulated. Exposed water lines 2" and smaller shall be insulated.

3.8 **Question: Is FIT1050 and PI1050 existing?**
Answer: Yes

3.9 **Question: Who is responsible for providing LCP6020?**
Answer: The contractor or integrator shall provide LCP6020.

3.10 **Question: Who is responsible for providing FCP8110, FCP8130 & FCP8140?**
Answer: The provider of the leak detection system for the hypo bulk tanks shall provide FCP8110, FCP8130 & FCP8140.

3.11 **Question: Are there any specifications for the Servers, Network Switches, Firewall and other components in the Server Rack or is it left to the Integrator's discretion?**
Answer: This shall be the Integrator's discretion with coordination with the Owner.

3.12 **Question: Are there any specifications for the Security Cameras and are they supplied by the Systems Integrator or the Security Systems Integrator?**
Answer: Contact Scott Goodsell with Guardian Integrators, the account manager for Riviera Utilities, for information on the security cameras. His contact information is 256-577-3648 and email address is scott.goodsell@guardianintegrators.com.

3.13 **Question: Are there any Specifications for the large screen monitors in the Conference Room or is it left to the Integrator's discretion?**
Answer: This shall be the Integrator's discretion with coordination with the Owner. The monitors shall be 48" minimum and have a CAT-6 connection.

3.14 **Question: Are there any specifications for the Workstations in the Conference Room and Office 102 or is it left to the Integrator's discretion?**
Answer: This shall be the Integrator's discretion They shall be compatible with the SCADA software and have two (2) 32" monitors per workstation.

3.15 **Question: Who is responsible for providing VFD6210, VFD6220 & VFD6230?**
Answer: There is no preference on who provides them.

3.16 **Question: We are continuing to experience significant delays with electrical equipment. Will the Owner work with the contractor (not penalize the contractor) for delays with equipment so long as the delays are documented?**
Answer: Yes

4. Acknowledgement of Receipt

4.1 Receipt of Addendum shall be acknowledged in two ways:

4.1.1 Bidder acknowledges receipt of "Addendum No. 3" and date of "September 12, 2024".

AND

4.1.2 EMAIL GMC office immediately at ashley.morris@gmcnetwork.com with the signed transmittal which confirms the addendum has been received and is legible.

5. Conclusion

5.1 This is the end of Addendum Number 3, dated Thursday, September 12, 2024.

SECTION 09 96 00 - HIGH-PERFORMANCE COATINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: High-performance coatings and special preparation of surfaces.

1. Use high performance coating systems specified in this section to finish water tank components, unless otherwise indicated. Without restricting volume or generality, work to be performed under this section may include, but is not limited to:

    a. Exterior steel
    b. Interior steel
    c. Exterior concrete
    d. Interior concrete
    e. Piping, hangers, and supports
    f. Exposed bare pipes (including color coding)

2. Painting or finishing is not needed for following:

    a. Surfaces or materials specifically scheduled or shown on Drawings to remain unfinished
    b. Items provided with factory finish.
    c. Equipment nameplates, fire rating labels, and operating parts of equipment

3. Materials and products having factory-applied primer shall not be considered factory finished.

1.2 REFERENCE STANDARDS

A. American Society for Testing and Materials:

1. ASTM D16 - Terminology Relating to Paint, Varnish, Lacquer, and Related Products

B. SSPC: The Society for Protective Coatings:

1. SSPC - Painting Manual, Volume 2: Systems and Specifications.
2. SSPC-Paint 16 - Coal Tar Epoxy-Polyamide Black (or Dark Red).
3. SSPC-SP 2 - Hand Tool Cleaning.
4. SSPC-SP 3 - Power Tool Cleaning.
5. SSPC-SP 5 - White Metal Blast Cleaning.
6. SSPC-SP 6 - Commercial Blast Cleaning.
7. SSPC-SP 7 - Brush-Off Blast Cleaning.
8. SSPC-SP 10 - Near-White Metal Blast Cleaning.
9. SSPC-SP 11 - Power Tool Cleaning to Bare Metal.

C. National Association of Pipe Fabricators

1. NAPF 500-03-01 Solvent Cleaning
2. NAPF 500-03-02 Hand Tool Cleaning
3. NAPF 500-03-03 Power Tool Cleaning
4. NAPF 500-03-04 Abrasive Blast Cleaning of Ductile Iron Pipe
5. NAPF 500-03-05 Abrasive Blast Cleaning of Cast Ductile Iron Fittings

1.3 PREINSTALLATION MEETINGS

A. Section 01 31 00 – Project Management and Coordination.
B. Convene minimum two weeks prior to commencing Work of this Section.
C. Schedule a conference and inspection to be held on-site before field application of coating systems begins.
D. Conference shall be attended by Contractor, Owner's Representative, Engineer, coating applicators, and a representative of coating material manufacturer.
E. Topics to be discussed at meeting shall include:

1. A review of Contract Documents and accepted shop drawings shall be made and deviations or differences shall be resolved.
2. Review items such as environmental conditions, surface conditions, surface preparation, application procedures, and protection following application.
3. Establish which areas on-site will be available for use as storage areas and working area

F. Pre-construction conference and inspection shall serve to clarify Contract Documents, application requirements and what work should be completed before coating application can begin.

1.4 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
B. Product Data:

1. Submit manufacturer information indicating coating materials, manufacturer’s name, product name, product number, performance ratings, curing times, mixing, thinning and application requirements.

a. Provide material analysis, including vehicle type and percentage by weight and by volume of vehicle, resin and pigment.
b. Submit manufacturer's Material Safety Data Sheets (MSDS) and other safety requirements.

C. Samples: Submit one color chart/color samples, illustrating colors for selection.

D. Schedule: Contractor shall submit a schedule of items that will receive high-performance coatings per Specification 09 96 00.
E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

F. Manufacturer Instructions: Submit special procedures, perimeter conditions requiring special attention.
G. Quality Assurance Submittals:

1. Certificates:

a. Coatings manufacturer shall certify that coating materials utilized are "non-lead" (less than 0.06% lead by weight in dried film) as defined in Part 1303 of Consumer Product Safety Act.
b. Provide certification that specialized equipment as may be required by manufacturer for proper application of coating materials shall be utilized for work of this Section.
c. Provide manufacturer's certification that products to be used comply with specified requirements and are suitable for intended application.

2. Manufacturer's Instructions:

a. Submit manufacturer's installation procedures which shall be basis for accepting or rejecting actual installation procedures.

H. Qualifications Statements:

1. Submit qualifications for manufacturer and applicator.
2. Submit manufacturer's approval of applicator.

1.5 CLOSEOUT SUBMITTALS

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for submittals.
B. Operation and Maintenance Data: Submit maintenance and cleaning requirements for coatings, repair, and patching techniques.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for maintenance materials.
B. Extra Stock Materials:

1. Furnish 1 gal of each color of each type of coating specified, for Owner's maintenance use.
2. Label each container with manufacturer's name, product number, color number, and room names and numbers where used.

1.7 QUALITY ASSURANCE

A. Conform to applicable codes and ordinances for flame, fuel, smoke, and volatile organic compound (VOC) ratings requirements for finishes at time of application.

1.8 QUALIFICATIONS

A. Provide products from a company specializing in manufacture of high performance coatings with a minimum of 10 years experience.
B. Applicator shall be trained in application techniques and procedures of coating materials and shall demonstrate a minimum of 2 years successful experience in such application.

1. Maintain, throughout duration of application, a crew of painters who are fully qualified to satisfy specified qualifications.

C. Single Source Responsibility:

1. Materials shall be products of a single manufacturer or items standard with manufacturer of specified coating materials.
2. Provide secondary materials which are produced or are specifically recommended by coating system manufacturer to ensure compatibility of system.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.
B. Container Labeling: Include manufacturer's name, type of coating, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
C. Inspection:

1. Accept materials on Site in manufacturer's sealed and labeled containers.
2. Inspect for damage and to verify acceptability.

D. Store materials in ventilated area and otherwise according to manufacturer instructions.
E. Protection:

1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
2. Provide additional protection according to manufacturer instructions.

1.10 AMBIENT CONDITIONS

A. Section 01 50 00 - Temporary Facilities and Controls: Requirements for ambient condition control facilities for product storage and installation.

B. Minimum Conditions: Do not install materials when temperature is below 35°F or above 110°F.
C. Refer to specific product information sheets for minimum surface temperature requirements. Surface temperatures shall be at least 5°F (15°C) above dew point and in a rising mode.
D. Subsequent Conditions: Maintain above temperature range, 24 hours before, during, and 72 hours after installation of coating.
E. Relative humidity shall be no higher than 85%.
F. For exterior spray application, wind velocity shall be less than 15 mph (25 kph).
G. Atmosphere shall be relatively free of airborne dust.
H. Restrict traffic from area where coating is being applied or is curing.

1.11 WARRANTY

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for warranties.
B. Include coverage for bond to substrate, and degradation of chemical resistance.

PART 2 - PRODUCTS

2.1 HIGH-PERFORMANCE COATINGS

A. Manufacturers:

1. Tnemec Company, Inc.
2. Sherwin Williams Company
3. Carboline
4. Or Approved Equal.

2.2 COMPONENTS

A. Coatings:

1. Description:

a. Complete multicoat systems formulated and recommended by manufacturer for intended applications and in indicated thicknesses.
b. Specified number of coats does not include primer or filler coat.

2. Lead content: None.
3. Chromium Content as Zinc Chromate or Strontium Chromate: None.
4. Maximum VOC Content: As required by applicable regulations.
5. Colors: As selected from manufacturer's standard colors.

B. Epoxy Coating:

1. Modified Polyamine Epoxy

a. Usage: A thick film, 100% solids, abrasion-resistant lining designed for wastewater immersion and fume environments. Provides low permeation to H2S gas, protects against MIC and provides chemical resistance to severe wastewater environments.
b. Exposure: Severe.
c. Number of Coats: See schedule.
d. Finish: Gloss.
e. Minimum Solids Content: 100% (mixed).
f. Minimum Dry Film Thickness Per Coat: See schedule.
g. Perma-Glaze, Series 435, as manufactured by Tnemec, or DuraPlate 5900, as manufactured by Sherwin Williams.
h. Primer: See schedule.

2. Modified Polyamine Epoxy Mortar

a. Usage: A 100% solids, hybrid epoxy mortar designed for severe wastewater immersion and fume environments. Specifically formulated to withstand high levels of hydrogen sulfide gas (H2S), sulfuric acid (H2SO4), as well as other gases common to sewer exposures. Aggregate reinforcement provides additional resistance to abrasions and impacts.
b. Exposure: Severe.
c. Number of Coats: See schedule.
d. Finish: Gloss.
e. Minimum Solids Content: 100% (mixed).
f. Minimum Dry Film Thickness Per Coat: See schedule.
g. Perma-Shield H2S, Series 434, as manufactured by Tnemec, or DuraPlate 5900 Mortar, as manufactured by Sherwin Williams.
h. Primer: See schedule.

3. Glass Flake Modified Polyamine Epoxy

a. Usage: Abrasion resistant, high solids, epoxy coating which offers high-build edge protection and excellent corrosion resistance. Contains glass flake and aluminum oxide for improved film integrity.
b. Exposure: Severe.
c. Number of Coats: See schedule.
d. Minimum Solids Content: 82.0 ± 2.0%
e. Minimum Dry Film Thickness Per Coat: 8 -18 mils DFT
f. Epoxoline, Series 142, as manufactured by Tnemec, or Macropoxy 5500LT, as manufactured by Sherwin Williams.
g. Primer: See schedule.

4. Modified Polyamine Epoxy

a. Usage: NSF Approved, abrasion resistant, high solids, epoxy coating which offers high-build edge protection and excellent corrosion resistance.
b. Exposure: Severe.

c. Number of Coats: See schedule.
d. Minimum Solids Content: 82.0 ± 2.0%
e. Minimum Dry Film Thickness Per Coat: 4 -18 mils DFT
f. Epoxoline, Series 141, as manufactured by Tnemec, or Macropoxy 5500LT, as manufactured by Sherwin Williams.
g. Primer: See schedule.

5. Surface Tolerant Modified Polyamidoamine Epoxy

a. Usage: High-build coating with superior wetting for marginally prepared rusty steel and tightly adhering old coatings. Excellent abrasion-, chemical- and corrosion-resistance. Perfect foundation for aliphatic-polyurethanes. NOT FOR IMMERSION SERVICE.
b. Exposure: Moderate.
c. Number of Coats: See schedule.
d. Finish: Semi-gloss.
e. Minimum Solids Content: 84.0 ± 2.0% (mixed).
f. Minimum Dry Film Thickness Per Coat: See schedule.
g. Chembuild, Series 135, as manufactured by Tnemec, or Macropoxy 5500 LT, as manufactured by Sherwin Williams.
h. Primer: See schedule.

6. NSF Approved Pure Polyamide Epoxy

a. Usage: Potable water coating which offers high-build edge protection and allows for application at a wide range of temperatures (down to 35°F or 2°C). For use on the interior and exterior of steel or concrete tanks, reservoirs, pipes, valves, pumps and equipment in potable water service.
b. NSF Certification: Yes
c. Exposure: Moderate.
d. Number of Coats: See schedule.
e. Minimum Solids Content: 56.0 ± 2.0%
f. Minimum Dry Film Thickness Per Coat: See schedule.
g. Pota-Pox, Series 20 or 20HS, as manufactured by Tnemec, or Macropoxy 646 PW, as manufactured by Sherwin Williams.
h. Primer: See schedule.

7. Polyamidoamine Epoxy

a. Usage: Potable water and wastewater primer which offers high-build edge protection and allows for application at a wide range of temperatures (down to 35°F or 2°C). For use on the interior and exterior of steel or concrete tanks, reservoirs, pipes, valves, pumps and equipment in potable water service.
b. Exposure: Moderate.
c. Number of Coats: See schedule.
d. Color: 1211 Red – Ductile Iron Pipe
e. Minimum Solids Content: 67.0 ± 2.0% (mixed).
f. Minimum Dry Film Thickness Per Coat: See schedule.
g. Pota-Pox Plus, Series N140, as manufactured by Tnemec, or Macropoxy 5500LT, as manufactured by Sherwin Williams.
h. Primer: See schedule.

8. High-Build Epoxy Coating – Pure Polyamide Epoxy

    a. Usage: Application characteristics in adverse and varied conditions.
    b. Exposure: Moderate.
    c. Number of Coats: See schedule.
    d. Finish: Satin.
    e. Minimum Solids Content: 56.0% +/- 2.0% (mixed).
    f. Minimum Dry Film Thickness Per Coat: See schedule.
    g. Hi-Build Epoxoline, Series 66 or 66HS, as manufactured by Tnemec, or Macropoxy 646 Fast Cure, as manufactured by Sherwin Williams.
    h. Primer: See schedule.

9. Waterborne Acrylic Epoxy

    a. Usage: High performance coating suitable for concrete, steel and other commonly used building materials. Features include high-build, low odor, non-yellowing white and fade resistant colors; easy cleanup and stain-, abrasion-, chemical- and moisture-resistance. Good exterior performance.
    b. Exposure: Moderate
    c. Number of Coats: See schedule.
    d. Color: Refer to Tnemec Color Guide.
    e. Finish: Satin.
    f. Minimum Solids Content: 44.0 ± 2.0% (mixed)
    g. Minimum Dry Film Thickness Per Coat: See schedule.
    h. H.B. Tneme-Tufcoat, Series 113, as manufactured by Tnemec, or Pro Industrial Water Based Epoxy.
    i. Primer: See schedule.

10. Modified Polyamine Epoxy

    a. Usage: High-solids moisture tolerant epoxy used for priming concrete, wood and drywall. Also as a stand-alone one-coat clear floor sealer.
    b. Exposure:
    c. Number of Coats: See schedule.
    d. Color: Clear. Can be field-tinted (Series 820 Field Tint) in 16 StrataShield colors and certain custom colors. Sherwin Williams products is available in clear standard and customer colors
    e. Minimum Solids Content: 100% (mixed).
    f. Minimum Dry Film Thickness Per Coat: See schedule.
    g. Epoxoprime, Series 201, as manufactured by Tnemec, or General Polymers 3746, as manufactured by Sherwin Williams.
    h. Primer: See schedule.

11. Modified Polyamine Epoxy

    a. Usage: A multi-purpose epoxy coating that can be used as a primer, broadcast, slurry/broadcast, mortar, grout coat, and topcoat. Excellent application properties with good flow and self-leveling characteristics. Protects concrete surfaces from impact, abrasion and mild chemicals.

b. Exposure: Moderate.
c. Number of Coats: See schedule.
d. Color: Clear or pigmented. Can be factory or field-tinted (Series 820 Field Tint) in 16 StrataShield colors and certain custom colors. Reference Sherwin Williams data sheets for color details
e. Minimum Solids Content: 100% (mixed).
f. Minimum Dry Film Thickness Per Coat: See schedule.
g. Power-Tread, Series 237, as manufactured by Tnemec, or General Polymers 4080 (FasTop 12S), as manufactured by Sherwin Williams.
h. Primer: See schedule.

12. Modified Novolac Epoxy

a. Usage: A multi-purpose resin for fiberglass reinforced mat secondary containment systems. Protects against chemicals, thermal cycling, impact and abrasion.
b. Exposure: Severe/moderate
c. Number of Coats: See schedule.
d. Color: 00GR Gray or clear from Sherwin Williams.
e. Minimum Solids Content: 100% (mixed)
f. Minimum Dry Film Thickness Per Coat: See schedule.
g. Chembloc, Series 239SC, as manufactured by Tnemec, or Cor-Cote HCR, as manufactured by Sherwin Williams.
h. Primer: See schedule.

C. Polyurethane Coating:

1. Modified Aromatic Polyurethane Primer

a. Usage: A single component, surface tolerant, NSF approved, moisture-cured resin, containing micaceous iron oxide and zinc to function as a primer which is field and shop friendly. Exposure: Moderate.
b. Number of Coats: See schedule.
c. Color: 1216 Greenish-Gray.
d. Minimum Solids Content: 61.0 ± 2.0% (mixed).
e. Minimum Dry Film Thickness Per Coat: See schedule.
f. Omnithane, Series 1, as manufactured by Tnemec, or Corothane 1 GalvaPac 1K or 2K Zinc Primer, as manufacturd by Sherwin Williams.
g. Primer: See schedule.

2. Aromatic Urethane, Zinc-Rich Primer

a. Usage: A two-component, moisture-cured, zinc-rich urethane primer for the interior and exterior steel surfaces. Exposure: Moderate.
b. Color: Greenish-gray.
c. Minimum Solids Content: 63.0 ± 2.0% (mixed).
d. Metallic Zinc Content: 83% minimum in dried film. ASTM D 522 Type III Zinc dust.
e. Standard of Quality: Hydro-Zinc, Series 91-H_20, as manufactured by Tnemec, or Corothane 1 GalvaPac 1K or 2K Zinc Primer, as manufactured by Sherwin Williams.

f. Primer: See schedule.

3. Aliphatic Acrylic Polyurethane

a. Usage: A coating highly resistant to abrasion, wet conditions, corrosive fumes and exterior weathering. High build quality combines with project specific primers for two-coat, labor saving systems. Fast curing options are available; see Curing Time below. NOT FOR IMMERSION SERVICE.
b. Exposure: Moderate.
c. Number of Coats: See schedule.
d. Finish: Gloss.
e. Minimum Solids Content: 66 ± 2.0% (mixed).
f. Minimum Dry Film Thickness Per Coat: See schedule.
g. Endura-Shield, Series 1095, as manufactured by Tnemec, or Acolon 218 HS, as manufactured by Sherwin Williams.
h. Primer: See schedule.

4. Aliphatic Moisture Cured Urethane
a. Usage: Extremely hard, chemical-resistant urethane floor coating with superb wear characteristics. Excellent resistance to abrasion, wet conditions, corrosive fumes and chemical contact. Excellent gloss and color retention. Low odor characteristic allows for use near occupied space. Note: For horizontal surfaces only.
b. Exposure: Moderate.
c. Number of Coats: See schedule.
d. Finish: Semi-gloss.
e. Minimum Solids Content: 92 ± 2.0% (clear mixed).
f. Minimum Dry Film Thickness Per Coat: See schedule.
g. Everthane, Series 248, as manufactured by Tnemec, or Amorseal Rexthane 1, as manufactured by Sherwin Williams.
h. Primer: See schedule.

5. Polyurethane Modified Concrete
a. Usage: High performance designed to reduce moisture vapor emissions prior to the application of non-breathing, polymer floor topping finishes. Must be able to withstand up to 20lbs moisture vapor transmission and 99% RH.
b. Exposure: Moderate/Severe
c. Number of Coats: See schedule.
d. Finish: Matt.
e. Minimum Solids Content: 100%%.
f. Minimum Dry Film Thickness Per Coat: See schedule.
g. Everthane, Series 241 MVT, as manufactured by Tnemec, or General Polymers FasTop 12S, as manufactured by Sherwin Williams.
h. Primer: See schedule.

D. Alkyd Coating:

1. Alkyd

a. Usage: High gloss industrial enamel offering good flow, hiding and protection for recommended surfaces in mild to moderately severe exposures. Not for use on surfaces that are continually wet or sweat frequently.
b. Exposure: Mild to moderately severe.
c. Number of Coats: See schedule.
d. Finish: Gloss.
e. Minimum Solids Content: 49.0 ± 2.0%.
f. Minimum Dry Film Thickness Per Coat: See schedule.
g. Hi-Build Tneme-Gloss, Series 2H, as manufactured by Tnemec, or Industrial Enamel, as manufactured by Sherwin Williams.
h. Primer: See schedule.

2. Phenolic Alkyd

a. Usage: Lead- and chromate-free, fast-drying, corrosion-resistant primer that accepts a variety of high-performance topcoats. Ideally suited for steel fabricators, OEM's and field applications where "dry-fall" characteristics are desired. Note: Not recommended for immersion.
b. Exposure: Moderate.
c. Number of Coats: See schedule.
d. Color: 77 Red or 78 Gray.
e. Minimum Solids Content: 58.0 ± 2.0%.
f. Minimum Dry Film Thickness Per Coat: See schedule.
g. Chem-Prime H.S., Series 37H, as manufactured by Tnemec, or Kem Bond HS Primer, as manufactured by Sherwin Williams.
h. Primer: See schedule.

E. Acrylic

1. HDP Acrylic Polymer

a. Usage: Water-based, low VOC, High Dispersion Pure acrylic polymer coating providing excellent long-term protection in both interior/exterior exposures. May be applied by spray, brush or roller over a variety of solvent and waterborne steel primers. May also be used over many aged coatings. It is mildew resistant and exhibits very good gloss and color stability. Application methods include "dry-fall" under certain conditions (See Application). Note: Series 1029's "dry-fall" characteristics help reduce the potential for overspray problems on buildings and surrounding property.
b. Exposure: Moderate.
c. Number of Coats: See schedule.
d. Color: Refer to Tnemec Color Guide.
e. Minimum Solids Content: 40.0 ± 2.0%.
f. Minimum Dry Film Thickness Per Coat: See schedule.
g. Enduratone, Series 1029, as manufactured by Tnemec, or SherCryl HPA, as manufactured by Sherwin Williams.
h. Primer: See schedule.

2. Modified Waterborne Acrylate

a. Usage: Flexible, breathable coating primarily for concrete and masonry that can fill and bridge minor hairline cracks. Excellent elastomeric protection against driving rain, alternate freezing-thawing and UV light. Series 156 can also be used as a low cohesive stress overcoat for aged oil or alkyd systems.
b. Exposure: Moderate.
c. Number of Coats: See schedule.
d. Color: Refer to Tnemec Color Guide.
e. Minimum Solids Content: 50.9 ± 2.0%
f. Minimum Dry Film Thickness Per Coat: See schedule.
g. Enviro-Crete, Series 156, as manufactured by Tnemec, or ConFlex XL Smooth, as manufactured by Sherwin Williams.
h. Primer: See schedule.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for application examination.
B. Examine areas and conditions under which application of coating systems shall be performed for conditions that will adversely affect execution, permanence, or quality of coating system application.
C. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes until moisture content of surface is below following limits:

1. Masonry Surfaces: 12% maximum
2. Vertical Concrete Surfaces: 12% maximum
3. Horizontal Concrete Surfaces: 8% maximum

D. Correct conditions detrimental to timely and proper execution of Work.
E. Do not proceed until unsatisfactory conditions have been corrected.
F. Commencement of installation constitutes acceptance of conditions and responsibility for satisfactory performance.

3.2 PREPARATION

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for application preparation.
B. Protection:

1. Take precautionary measures to prevent fire hazards and spontaneous combustion. Remove empty containers from Site.

2. Place cotton waste, cloths and hazardous materials in containers, and remove from Site daily.
3. Provide drop cloths, shields, and other protective equipment.
4. Protect elements surrounding work of this section from damage or disfiguration.
5. As Work proceeds, promptly remove spilled, splashed, or splattered materials from surfaces.
6. During application of coating materials, post Wet Paint signs.
7. During application of solvent-based materials, post No Smoking signs.

C. Clean surfaces of loose foreign matter.

D. Remove substances that would bleed through finished coatings; if removal is not possible, seal surface with shellac.

E. Remove finish hardware, fixture covers, and accessories and store.

F. Existing Painted and Sealed Surfaces:

1. Remove loose, flaking, and peeling paint, and feather edge and sand smooth edges of chipped paint.
2. Clean with mixture of trisodium phosphate and water to remove surface grease and foreign matter.

G. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Surfaces shall be mechanically cleaned to remove passivation and to provide a uniform 1.0 mil anchor profile.

H. Ferrous Metal:

1. Surfaces shall be free of residual deposits of grease, rust, scale, dirt, dust, and oil.

   a. Immersion Service: SSPC-SP 10 Near White Blast Cleaning
   b. Non-Immersion Service: SSCP-SP 6 Commercial Blast Cleaning.

2. Field Repair of Shop Primed Surfaces:

   a. Non-Immersion Service: Remove all dirt, dust, chalk, oil, grease, as well as any other foreign matter by solvent cleaning (SSPC-SP 1) and/or power washing. All areas damaged during transportation, construction or installation shall be cleaned in accordance with SSPC-SP 11 Power Tool Cleaning to Bare Metal or SSPC-SP 6 Commercial Blast Cleaning. All edges shall be feathered. All surfaces shall be clean and dry prior to coating
   b. Immersion Service: Remove all dirt, dust, chalk, oil, grease, as well as any other foreign matter by solvent cleaning (SSPC-SP 1) and/or power washing. All areas damaged during transportation, construction or installation shall be cleaned in accordance with SSPC-SP 10 Near White Blast Cleaning. All edges shall be feathered. The remainder of the intact shop primer shall be cleaned in accordance with SSPC-SP 7 Brush-Off Blast Cleaning to provide a minimum, uniform, anchor profile of at least 1.0 mil. In order to prevent injury to surrounding painted areas, blast cleaning may necessitate use of lower air pressure, small nozzle and abrasive particle sizes, short blast nozzle distance from surface, shielding and masking. If

damage is too extensive to touch-up, item shall be re-cleaned and coated or painted. All surfaces shall be clean and dry prior to receiving the specified finish coat(s).

3. For surfaces not shop primed, surfaces shall be cleaned in compliance with specifications of Steel Structures Painting Council as indicated in Schedule of Coating Systems below.

3.3 APPLICATION

A. Comply with MPI - Architectural Painting Manual.
B. Apply primer to each surface, unless specifically not required by coating manufacturer.
C. Apply coating systems in compliance with manufacturer's instructions and using application method best suited for obtaining full, uniform coverage of surfaces to be coated.
D. Apply primer, intermediate, and finish coats to comply with wet and dry film thickness and spreading rates for each type of material as recommended by manufacturer.

1. Application rates in excess of those recommended and fewer numbers of coats than specified shall not be accepted.

E. Number of coats specified shall be minimum number acceptable. Apply additional coats as needed to provide a smooth, even application.

1. Closely adhere to re-coat times recommended by manufacturer. Allow each coat to dry thoroughly before applying next coat. Provide adequate ventilation for tank interior to carry off solvents during drying phase.

F. Employ only application equipment that is clean, properly adjusted, and in good working order, and of type recommended by coating manufacturer.
G. After surface preparation, interior weld seams shall receive a stripe coat applied by brush.
H. Make edges of paint adjoining other materials or colors sharp and clean, without overlapping.
I. Apply coatings to specified thicknesses.
J. Apply in uniform thickness coats, without runs, drips, pinholes, brush marks, or variations in color, texture, or finish.
K. Finish edges, crevices, corners, and other changes in dimension with full coating thickness.

3.4 FIELD QUALITY CONTROL

A. Section 01 40 00 - Quality Requirements: Requirements for inspecting and testing.
B. Section 01 70 00 - Execution and Closeout Requirements: Requirements for testing, adjusting, and balancing.

C. Inspecting and Testing: Comply with MPI - Architectural Painting Manual.

3.5 CLEANING

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for cleaning.
B. Collect waste material that may constitute fire hazard, place in closed metal containers, and remove daily from Site.
C. Clean surfaces immediately of overspray, splatter, and excess material.
D. After coating has cured, clean and replace finish hardware, fixtures, and fittings previously removed.

3.6 SCHEDULE

A. INTERIOR SERVICE

*Interior service refers to the interior of buildings and rooms and not the interior of tanks, structures, etc.

1. Interior Exposed Ferrous Metals: 16 gauge or heavier

a. Shop primed; field applied finish coats or field applied system

1) Surface Preparation: SSPC SP10 Near White Blast Cleaning
2) Primer/Shop Coat: **Note (1)**

a) Tnemec: Series 91 H20 Hydro-Zinc
b) Sherwin Williams: GalvaPac 1K or 2K Zinc Primer
c) Carboline: Carbomastic 615
d) Dry Film Thickness: 2.5 – 3.5 mils (Carboline: 5.0 - 10.0)

3) First Coat:

a) Tnemec: Series 66 Epoxoline **Note (2), (3)**
b) Sherwin Williams: Macropoxy 646 Fast Cure
c) Carboline: Carboguard 635
d) Dry Film Thickness: 3.0 – 5.0 mils (Carboline: 4.0 - 6.0)

4) Finish Coat:

a) Tnemec: Series 1095 Endura-Shield
b) Sherwin Williams: Acolon 218 HS
c) Carboline: Carbothane 8845
d) Dry Film Thickness: 2.0 – 3.0 mils (Carboline: 3.0 - 5.0)

5) Total Dry Film Thickness: 6.5 to 9.5 mils

Note (1) Coordinate shop cleaning and primer coat with appropriate Metals Specifications.

Note (2) *Series 66 may be interchanged with Series 161 when surface temperature is below 50 degrees (21 degrees C) or when faster recoat is desired.*
Note (3) *66HS Epoxoline may be substituted for 66 Epoxoline.*

2. Lightweight Metals: (18 gauge or lighter)

   a. Shop primed; field applied finish coats or field applied system
   b. Surface Preparation: For Galvanized Metal, Aluminum, Other Non-Ferrous Metals. Etch entire surface using Clean & Etch by Great Lakes Laboratories. For Ferrous Metals clean per SSPC- SP3 Power Tool Cleaning

      1) Primer/Shop Coat: Manufacturers Standard Type Primer Compatible with finish coats below

         a) Perform crosshatch field adhesion test per ASTM D 3359 to determine compatibility of manufacturer's primer with herein specified coating system prior to coating system application.

      2) First Coat:

         a) Tnemec: Series 37H-77 Chemprime
         b) Sherwin Williams: Kem Bond HS Primer
         c) Carboline: Sanitile 120
         d) Dry Film Thickness: 2.0 - 3.0 mils (Carboline: 1.0 - 2.0)

      3) Intermediate Coat:

         a) Tnemec: Series 2H Tneme-Gloss
         b) Sherwin Williams: Industrial Enamel
         c) Carboline: Carbocoat 8215
         d) Dry Film Thickness: 2.0 - 3.0 mils

      4) Finish Coat:

         a) Tnemec: Series 2H Tneme-Gloss
         b) Sherwin Williams: Industrial Enamel
         c) Carboline: Carbocoat 8215
         d) Dry Film Thickness: 2.0 - 3.0 mils

      5) Total Dry Film Thickness: 6.0 to 9.0 mils (excluding shop primer coat)

3. Concrete Floors (Clear Sealer):

   a. Surface Preparation: All surfaces shall be free of all coatings, sealers, etc. Pressure wash to remove loose material and contamination.

      1) First Coat:

         a) Tnemec: Series 629 CT Densifyer 201
         b) Sherwin Williams: H&C Pro Series Endurapolish Waterbased Clear Hardener & Densifyer
         c) Carboline: Carbocrete Sealer WB (DFT: 1.0 – 3.0 mils)

d) Coverage Rate: 300-350 sq. ft. per gallon

2) Second Coat:

a) Tnemec: Series 629 CT Densifyer 201
b) Sherwin Williams: H&C Pro Series Endurapolish Waterbased Clear Hardener & Densifyer
c) Coverage Rate: 350-400 sq. ft. per gallon

4. Gypsum Wallboard

a. Surface Preparation: Clean and dry.

1) First Coat:

a) Tnemec: Series 1026 Enduratone
b) Sherwin Williams: ProMar 200 Zero VOC Interior Latex Primer
c) Dry Film Thickness: 2.0 – 3.0 mils

2) Second Coat:

a) Tnemec: Series 1026 Enduratone
b) Sherwin Williams: SherCryl HPA
c) Dry Film Thickness: 2.0 – 3.0 mils

3) Third Coat:

a) Tnemec: Series 1026 Enduratone
b) Sherwin Williams: SherCryl HPA
c) Dry Film Thickness: 2.0 – 3.0 mils

4) Total Dry Film Thickness: 6.0 – 9.0 mils

5. Wood

a. Surface Preparation: Clean and dry.

1) First Coat:

a) Tnemec: Series 1099W Tnemec Primer
b) Sherwin Williams: PrepRite Interior/Exterior Latex Primer/Sealer
c) Carboline: (Opaque finish) Sanitile 120
d) Dry Film Thickness: 2.0 – 3.0 mils (Carboline: 1.0 - 2.0)

2) Second Coat:

a) Tnemec: Series 1029 Enduratone
b) Sherwin Williams: SherCryl HPA
c) Carboline: (Opaque finish) Carbocoat 8215
d) Dry Film Thickness: 2.0 – 3.0 mils

3) Third Coat:

a) Tnemec: Series 1029 Enduratone
b) Sherwin Williams: SherCryl HPA
c) Carboline: (Opaque finish) Carbocoat 8215
d) Dry Film Thickness: 2.0 – 3.0 mils

4) Total Dry Film Thickness: 6.0 – 9.0 mils

B. EXTERIOR SERVICE

*All coating thickness are expressed in dry film thickness (DFT.)

1. Exterior Exposed Ferrous Metals: 16 gauge or heavier

a. Shop primed; field applied finish coat or field applied system
b. Surface Preparation: SSPC SP6 Commercial Blast Cleaning

1) Spot primer:

a) Tnemec: Tnemec 135 Chembuild
b) Dry Film Thickness: 2.0 to 3.0 mils

2) First Coat:

a) Tnemec: Tnemec 135 Chembuild
b) Dry Film Thickness: 2.0-3.0 mils

3) Finish Coat:

a) Tnemec: Tnemec 1094 Endura-Shield
b) Dry Film Thickness: 2.0-3.0 mils

c. Total Dry Film Thickness: 6.0 to 9.0 mils

2. Non-Submerged Ductile Iron:

a. Surface Preparation: Abrasive blast to remove all contaminants.

1) Primer:

a) Tnemec: Series N140-1211 Pota-Pox Plus
b) Sherwin Williams: Macropoxy 5500 LT
c) Carboline: Carboguard 635
d) Dry Film Thickness: 6.0 – 8.0 (Carboline: 4.0 - 6.0)

2) Intermediate:

a) Tnemec: Series 66 Epoxoline **Note (1), (2)**
b) Sherwin Williams: Macropoxy 646 Fast Cure

c) Carboline: Carboguard 635
d) Dry Film Thickness: 3.0 – 5.0 (Carboline: 4.0 - 6.0)

3) Finish Coat:

a) Tnemec: Series 1095 Endura-Shield
b) Sherwin Williams: Acrolon 218 HS
c) Carboline: Carbothane 8845
d) Dry Film Thickness: 2.0 – 3.0 (Carboline: 3.0 - 5.0)

4) Total Dry Film Thickness: 11.0 – 16.0

Note (1) Series 66 may be interchanged with Series 161 when surface temperature is below 50 degrees (21degrees C) or when faster recoat is desired
Note (2) 66HS Epoxoline may be substituted for 66 Epoxoline.

C. IMMERSION OR VAPOR ZONE SERVICE

1. Ductile Iron Pipe (OD) Submerged or Intermittently Submerged in Potable Water

a. Surface Preparation: Uniformly abrasive blast the entire exterior surface using angular abrasive to an NAPF 500-03-04: "External Pipe Surface Condition". When viewed without magnification, the exterior surfaces shall be free of all visible dirt, dust, loose annealing oxide, loose mold coating, rust and other foreign matter.

1) Primer/Shop Coat:

a) Tnemec: Series N140-1211 Pota-Pox Plus (Shop primed surfaces shall be prepared in accordance with Section 3.2-H-2-b above)
b) Sherwin Williams: Macropoxy 5500 LT (Shop primed surfaces shall be prepared in accordance with Section 3.2-H-2-b above)
c) Carboline: Carboguard 891VOC
d) Dry Film Thickness: 6.0 – 8.0 mils (Carboline: 4.0 – 10.0 mils)

2) Intermediate:

a) Tnemec: Series 20-39BL Pota-Pox
b) Sherwin Williams: Macropoxy 646 PW
c) Dry Film Thickness: 4.0 – 6.0

3) Finish:

a) Tnemec: Series 141-1255 Epoxoline
b) Sherwin Williams: Macropoxy 5500 LT
c) Carboline: Carboguard 891VOC
d) Dry Film Thickness: 10.0 – 12.0 (Carboline: 4.0 – 10.0 mils)

4) Total Dry Film Thickness: 20.0 - 26.0 mils.
5) Holiday Detection: Interior surfaces, following a minimum of 96 hours cure, shall be holiday detected in accordance with ASTM G 62 low voltage holiday detection. Holiday detector shall be a Tinker & Rasor Model M-1

or equal. Areas found to have holidays shall be marked and repaired in accordance with the paint manufacturer's instructions. The Engineer shall be notified of time of testing so that he might be present to witness testing.

D. COLOR SYSTEM MATERIAL INDENTIFICATION

1. The color system shall be selected by the Owner from manufacturer’s standard color chart.

END OF SECTION 09 96 00

6.04 *Builder's Risk and Other Property Insurance*

F. *Builder's Risk Requirements:* The builder's risk insurance must:

1. be written on a builder's risk "all risk" policy form that at a minimum includes insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment stored and in transit, and must not exclude the coverage of the following risks: fire; windstorm; hail; flood; earthquake, volcanic activity, and other earth movement; lightning; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; and water damage (other than that caused by flood).

    a. Such policy will include an exception that results in coverage for ensuing losses from physical damage or loss with respect to any defective workmanship, methods, design, or materials exclusions.

    b. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake, volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance will be provided through other insurance policies acceptable to Owner and Contractor.

2. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.

3. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of contractors, engineers, and architects).

4. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).

5. extend to cover damage or loss to insured property while in transit.

6. allow for the waiver of the insurer's subrogation rights, as set forth in this Contract.

7. allow for partial occupancy or use by Owner by endorsement, and without cancellation or lapse of coverage.

8. include performance/hot testing and start-up, if applicable.

9. be maintained in effect until the Work is complete, as set forth in Paragraph 15.06.D of the General Conditions, or until written confirmation of Owner's procurement of property insurance following Substantial Completion, whichever occurs first.

10 include as named insureds the Owner, Contractor, Subcontractors (of every tier), and any other individuals or entities required by this Contract to be insured under such builder's risk policy. For purposes of Paragraphs 6.04, 6.05, and 6.06 of the General Conditions, and this and all other corresponding Supplementary Conditions, the parties required to be insured will be referred to collectively as "insureds."