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ADDENDUM 2
Via E-Mail
DATE: September 26, 2019

Contract: 19-C-00017 D.L. Tippin Tank Rehabilitation - Ferric and Acid Tank Rehabilitation

Bidders on the above referenced project are hereby notified that the following addendum is made to the Contract Documents. BIDS TO BE SUBMITTED SHALL CONFORM TO THIS NOTICE.

Item 1: Replace Section 09 96 00 High-Performance Coatings with the attached Section 09 96 00.

All other provisions of the Contract Documents and Specifications not in conflict with this Addendum shall remain in full force and effect. Questions are to be e-mailed to Contract Administration@tampagov.net.

Jim Greiner

Jim Greiner, P.E., Contract Management Supervisor

SECTION 09 96 00

HIGH-PERFORMANCE COATINGS

PART 1 GENERAL

1.01. DESCRIPTION OF WORK

A. The Contractor shall provide protective coatings and special preparation of surfaces, complete and in place, in accordance with the City standards and Contract Documents.

B. The Contractor shall field prime and finish coat all bare ferrous metal surfaces of new structures, equipment, and appurtenances scheduled to receive the Work. Surfaces that are not scheduled to receive coating system included:

1. Galvanized steel.

2. Stainless steel Work.

C. The Contractor shall finish coat all shop-primed ferrous metal surfaces of new structures, equipment, piping, and appurtenances.

D. The Contractor shall touch up paint all shop-finished metal surfaces.

1.02. RELATED SECTIONS

A. Section 01 10 00 – Supplementary Summary of Work Provisions.

B. Section 43 21 43 – Sump Liquid Pumps.

1.03. REFERENCES

ANSI/AWWA C104	Cement-Mortar Lining for Ductile Iron Pipe and Fittings
ANSI/AWWA C550	Protective Coatings For Valves
ASTM B117	Standard Practice for Operating Salt Spray (Fog) Apparatus
ASTM D522	Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings (Method A, Conical Mandrel)
ASTM D870	Standard Practice for Testing Water Resistance of Coatings Using Water Immersion
ASTM D1014	Standard Practice for Conducting Exterior Exposure Tests of Paints and Coatings on Metal Substrates
ASTM D1653	Moisture Vapor Transmission
ASTM D2794	Impact
ASTM D3363	Hardness
ASTM D4541	Adhesion (Type II Fixed Alignment Adhesion Tester)
ASTM D4541	Adhesion (Type V Self-Aligning Adhesion Tester)
ASTM D4585	Standard Practice for Testing Water Resistance of Coatings Using Controlled Condensation
ASTM D16	Standard Terminology for Paint-Related Coatings, Materials, and Applications
ASTM D4060	Abrasion Resistance (CS-17 Wheel, 1000 Grams Load)
ASTM D3359	Adhesion by Tape Test
ASTM G53	QUV Exposure (UVA-340 Bulbs, 4 Hours Light, 4 Hours Dark)

ASTM G85	Prohesion
NACE	NACE International (formerly “National Association of Corrosion Engineers”) – Certification Program
NSF International	ANSI/NSF Standard 61
SSPC-Volumes I and II	Steel Structures Painting Council - Steel Structures Painting Manual
SSPC-SP1	Solvent Cleaning
SSPC-SP2	Hand Tool Cleaning
SSPC-SP3	Power Tool Cleaning
SSPC-SP5	White Metal Blast Cleaning
SSPC-SP6	Commercial Blast Cleaning
SSPC-SP7	Brush-Off Blast Cleaning
SSPC-SP10	Near-White Metal Blast Cleaning
SSPC-SP11	Power Tool Cleaning to Bare Metal
SSPC-SP16	Brush-Off Blast Cleaning of Coated and Uncoated galvanized Steel, Stainless Steels, and Non-Ferrous Metals
N.S.F. (National Sanitation Foundation)	

1.04. DEFINITIONS

A. The term “coatings”, “finishes”, or “paint” as used herein, shall include surface treatments, emulsions, enamels, paints, epoxyresins, and other protective coatings, whether used as a pretreatment, primer, intermediate coat, or finish coat.

B. The term “DFT” means minimum dry film thickness, without any negative tolerance.

1.05. REGULATORY REQUIREMENTS

A. The Contractor shall comply with all City standards for painting and protective coatings.

1.06. SUBMITTALS

A. Submittals shall include a complete schedule of coating systems and surface preparations proposed.

1. List all interior and exterior surfaces and all major equipment to be coated.

2. The schedule is to reflect the approved manufacturer’s recommendations, and include certification that a qualified manufacturer’s representative has reviewed and approved the schedule. The qualified manufacturer’s representative shall hold current NACE certification as a Coating Inspector, Protective Coatings Specialist, or Materials Selection/Design Specialist.

3. As a minimum, schedule shall itemize each coated item or surface and shall contain the following information in tabular format:

a. Type of surface preparation (note whether shop or field preparation).

b. Coating System (generic name).

c. Prime Coat (product, number of coats, DFT per coat, square feet coverage per gallon).

d. Intermediate coat, if required (product, number of coats, DFT per coat, square feet coverage per gallon).

e. Finish coat (product, number of coats, color, DFT per coat, square feet coverage per gallon).

f. Painting status at time of installation.

g. Remarks (any special treatment or application requirements, etc.)

B. Manufacturer Information:

1. Provide manufacturer Data Sheet for each product proposed, including statements on the suitability of the material for the intended use.

2. Provide technical and performance information that demonstrates compliance with system performance and material requirements.

3. Provide manufacturer's instructions and recommendations on surface preparation and application.

4. Provide Material Safety Data Sheet for each product proposed.

5. Provide Manufacturer's certification of coating system and approval of installation.

C. Experience Requirements:

1. Field Applicator Experience Requirements:

a. Unless the Contractor has a successful experience record on projects of similar size and nature, all field painting shall be by an approved coating Subcontractor.

b. Submit coating experience records of proposed Contractor or Subcontractor for approval. Include size (area of coating), time of completion, name, the City's address, and telephone number for each experience record.

c. Provide SSPC QP 1 Certification or the manufacturer's certification of the applicator for the specified coating system.

d. Provide a written statement from the Contractor or subcontractor stating that they are qualified and experienced in the application of the specified coating systems. The letter shall state the manufacturer and model number of any mixing, heating, and pumping equipment to be used to apply the specified coating systems.

2. Shop Applicator Experience Requirements:

a. NACE Coating Inspector Program certification documents for Quality Assurance/Quality Control representative at manufacturer facility. This representative will be responsible for submitting inspection reports to the City.

b. A copy of typical Quality Assurance/Quality Control inspection report containing coating schedule items.

c. Submit coating experience records that verify that shop painting has demonstrated successful application of specified coatings on projects of similar size and nature. Include size (area of coating), time of completion, name, the City's address, and telephone number for each experience record.

d. The Shop Coating Applicator shall provide SSPC QP 3 certification or the coating manufacturer's certification of the applicator for the selected coating system.

1.07. SAMPLES

A. Two sets of color samples from the manufacturer's standard color sheets to match City standards. If custom mixed colors are indicated, the color samples shall be made using color formulations prepared to match the color samples approved by City standards. The color formula shall be shown on the back of each color sample.

1.08. EQUIPMENT WARRANTIES AND SPECIAL GUARANTEES

A. All coating systems shall be provided with a three (3) year warranty.

B. An inspection may be conducted during the eleventh month following completion of coating work. The Contractor and a representative of the coating material manufacturer shall attend this inspection.

C. Defective work shall be repaired in accordance with these specifications and to the satisfaction of the City. The City may, by written notice to the Contractor, reschedule the inspection to another date within the one year correction period or may cancel the inspection altogether.

D. The Contractor is not relieved of its responsibilities to correct defects, whether or not the inspection is conducted.

PART 2 PRODUCTS

2.01. MANUFACTURERS

A. Materials shall be as manufactured by Tnemec Company, Inc., Sherwin-Williams; or equal

B. Where thinning is necessary, only the products of the particular manufacturer furnishing the paint shall be used and all such thinning shall be done in strict accordance with the manufacturer's instructions.

C. Pipe and conduit labels as manufactured by Seton Nameplate Corporation or EMED Company, Inc.

2.02. MATERIALS

A. Exterior Chemical Storage Tanks

CHEMICAL	TNEMEC
Ferric Sulfate	• Abrasive Blast • Series 94-H2O Primer (3.5 mils) • Series 215 Pit Filler

CHEMICAL	TNEMEC
	• Series 27WB Stripe Coat (8.0 mils) • Series 27WB Intermediate Coat (8.0 mils) • Series 1095 finish Coat (5.0 mils)
Sulfuric Acid	• Abrasive Blast • Series 94-H2O Primer (3.5 mils) • Series 215 Pit Filler • Series 27WB Stripe Coat (8.0 mils) • Series 27WB Intermediate Coat (8.0 mils) • Series 1095 finish Coat (5.0 mils)

B. Interior Chemical Storage Tanks

CHEMICAL	TNEMEC
Sulfuric Acid	• Note: Dehumidification equipment is highly recommended for the application of this coating system. If the humidity is >80%, dehumidification equipment is required. Review the Tnemec Series 365 Application Guide prior to beginning surface preparation. • Surface Preparation: Grind all rough edges and welds smooth. Abrasive blast or mechanically abrade to remove all existing coatings and to provide an SSPC-SP5/NACE No. 1 White Metal Blast Cleaning finish with a minimum angular anchor profile of 3.0 mils. • Pit Filler (As Needed): Apply Series 351 to fill all existing pits and voids. • Welds, Seams, and Edges: Brush Series 365 into welds, seams, and edges @ 20.0 mils DFT. • Full Coat: Series 365 @ 40.0-50.0 mils DFT. • Allow Series 365 to cure for 48 hours at 75 degrees F prior to returning to service.

C. All materials which will be in contact with potable water shall be approved by the National Sanitation Foundation and appropriate state and local health departments. Contractor shall submit evidence of approval for all applicable materials.

D. All materials which will be in contact with chemicals shall be compatible with said chemical per manufacturer's experience and recommendations.

E. All materials used on this project, whether shop applied by equipment manufacturer or field applied by Contractor or approved subcontractor, shall comply with all current federal, state and local Clean Air Act-related regulations. It shall be the responsibility of equipment manufacturers to comply with laws in effect at their painting facilities. Where laws or

regulations prohibit field applications of any scheduled paint product, Contractor shall submit for Engineer's approval, an alternate product of similar performance characteristics which complies with those laws. If approved, those products shall be provided at no additional cost to the City.

F. Pipe and Conduit Labels

1. Shall be removable semi-rigid plastic (not pressure-sensitive) identification markers meeting all applicable ANSI and OSHA standards.

2. Contractor is advised that, due to nature of this project, labels may require custom fabrication.

PART 3 EXECUTION

3.01. EXAMINATION

A. Ensure that substrate conditions are ready to receive work in accordance with the Contract Documents and the product manufacturer's written instructions.

B. Examine surfaces scheduled to be finished prior to the commencement of work. Correct any condition that may potentially affect proper application.

3.02. ENVIRONMENTAL REQUIREMENTS

A. No coating work shall be performed under the following conditions:

1. Surface or ambient temperatures exceed the manufacturer's recommended maximum or minimum allowable.

2. Dust or smoke laden atmosphere.

3. Damp or humid conditions, where relative humidity is above manufacturer's maximum allowable.

4. Substrate and ambient temperatures are less than 5 degrees F above the dew point and are decreasing

a. Dew point shall be measured by use of an instrument such as a Sling Psychrometer in conjunction with U.S. Department of Commerce, Weather Bureau psychrometric tables. Elcometer 319 Dew Point Meter or equal may be used.

5. Ambient temperature that is expected to drop below 50 degrees F or less than 5 degrees F above the dew point within 8 hours after application of coating.

3.03. SURFACE PREPARATION

A. All surfaces to be painted and coated shall be prepared with the objective of obtaining a clean and dry surface free from dust, rust, scale, and all foreign matter. No painting or coating shall be done before surfaces meet requirements of manufacturer.

B. Hardware accessories, machined surfaces, plates, and similar items in place prior to cleaning and coating, and not intended to be coated, shall be protected or removed during painting and coating operations and repositioned upon completion of the painting and coating operations. Drop cloths shall be provided to prevent coating materials from falling on or marring adjacent surfaces.

C. The working parts of mechanical and electrical equipment shall be protected from damage during surface preparation and coating operations. Openings in motors shall be masked to prevent entry of coating or other materials.

D. Care shall be exercised not to damage adjacent works during blasting operations. Spraying shall be conducted under carefully controlled conditions. The Contractor shall be fully responsible for and shall promptly repair all damages to adjacent works or adjoining property occurring from blasting or coating operations.

E. Cleaning and coating shall be coordinated so that dust and other contaminants from the preparation process will not fall on wet, newly coated surfaces.

F. The Contractor shall comply with the applicable federal, state, and local air-pollution control regulations for blast cleaning.

G. If the required abrasive blast cleaning will damage adjacent works, the area to be cleaned is less than 100 square feet, and the coated surface will not be submerged in service, than SSPC-SP2 or SSPC-SP3 may be used.

H. Ferrous Metals:

1. All ferrous metals to be primed shall have all rust, dust, and scale removed by abrasive blast cleaning in accordance with SSPC (Steel Structures Painting Council) procedures designated in the Specifications or Contract Drawings. Cleaned metal shall be primed or pretreated immediately after cleaning to prevent rusting. If rusting beyond ASTM Rust Grade 8 occurs in the field, rusted portions of shop-primed ferrous metals shall be field-cleaned in accordance with SSPC blast cleaning specification appropriate for service and immediately field primed.

2. All ferrous metals not primed in shop shall be abrasive blast cleaned to SSPC-SP10 Near White Blast or an SSPC-SP6 Commercial Blast, depending on exposure, prior to application of any primer, pretreatment, or paint.

3. Grease, oil, and welding fluxes shall be removed per SSPC SP1.

4. All sharp edges shall be rounded or chamfered and all burrs, rust, scale, welding lag, and spatter shall be removed and the surface prepared by SSPC SP2 Hand Tool Cleaning, and SSPC SP3 Power Tool Cleaning.

I. Nonferrous Metals

1. All nonferrous metals, whether shop or field primed, shall be solvent cleaned (SSPC-SP1) prior to application of primer.

J. Concrete:

1. All concrete surfaces shall be cleaned of all dust, oil, curing compounds, and other foreign matter before paints or coating are applied. Poured concrete and submerged surfaces to be painted shall be prepared using the following method:

a. Blasting:

1) Brush-off abrasive blast cleaning of concrete shall be described as lightly abrading the surface without entirely removing surface or exposing underlying aggregate. Brush-off abrasive blasting shall

open up subsurface holes and voids, etch the surface sufficiently for coatings to bond, and adhere at a satisfactory level. Care shall be taken during blasting that concrete is not excessively eroded.

a) Dry abrasive blasting equipment with a compressed air nozzle shall be used for blasting concrete. After blast cleaning is complete, abrasive dust and loose particles shall be removed from surface by vacuuming and blowing off with high pressure air. Voids and cracks that will cause discontinuities in coatings or unsightly appearances shall be patched.

b) All floor and tank drains subject to abrasive spray shall be plugged prior to blasting. After blasting is completed, all abrasives shall be removed from area prior to opening drains. Under no circumstances shall abrasives be allowed to enter tank or floor drains.

K. Prior to Coating:

1. Old paint surfaces on concrete and ferrous metal shall be prepared by abrasive blast cleaning in accordance with appropriate SSPC method for the service, as applicable.

L. Touchup:

1. Any abraded areas of field or shop applied coatings shall be touched up with the same type of field or shop applied coating, even to the extent of applying an entire coating, if necessary. Touchup coatings and surface preparations shall be in addition to and not considered at the first field coat.

M. Shop primed equipment shall be solvent-cleaned in the field before finish coats are applied.

3.04. APPLICATION

A. The application of protective coatings to steel substrates shall be in accordance with SSPC PA1 – Paint Application Specification No. 1.

B. The Contractor shall be responsible for cleanliness of all painting operations and use covers and masking tape to protect Work. Contractor shall protect not only his own Work, but also all adjacent Work and materials by adequate covering with drop cloths.

C. The Contractor shall maintain a daily epoxy coatings induction record log showing each epoxy paint-mixing event. A signed copy of this log shall be turned over to the Engineer's field representative before the end of each working day during which epoxy coatings are mixed or applied.

D. Any unwanted paint or coating material shall be carefully removed without damage to finished paint or surface. If damage does occur, the entire surface adjacent to and including damaged area shall be repainted without visible lap marks.

E. Do not use plumbing fixture or waste piping for mixing of paint or disposal of any refuse material. All waste shall be disposed of properly into a suitable receptacle located outside of building.

F. All coating and painting shall be applied without runs, sags, thin spots, or unacceptable marks. Coating and paint shall be applied at the rate specified to achieve minimum DFT required. Additional coats shall be applied, if necessary, to obtain DFT specified.

G. Special attention shall be given to edges, angles, weld seams, flanges, nuts and bolts, and other places where insufficient film thicknesses are likely to be present. The Contractor shall use an independent stripe coat per SSPC PA Guide 11 for these areas. Particular care shall be used to ensure that the specified coverage is secured on the edges and corners of all surfaces.

H. Special attention shall be given to materials that will be joined so closely together that proper surface preparation and application are not possible. Such contact surfaces shall be coated prior to assembly or installation.

I. No painting whatsoever shall be accomplished in rainy or excessively damp weather when the relative humidity exceeds 85 percent, or when the general air temperature cannot be maintained at 50 degrees F (10 degrees C) or above throughout entire drying period.

J. Application shall be by spraying where recommended by manufacturer. If material has thickened or must be diluted for application by spray gun, each coat shall be built up to the same film thickness achieved with undiluted brushed-on material. Where thinning is necessary, such thinning shall be done in strict accordance with manufacturer's instructions.

K. A minimum of 24 hours drying time shall elapse between applications of any two coats of paint on a particular surface, unless otherwise recommended by coating manufacturer. Longer drying times may be required for abnormal conditions in concert with manufacturer's recommendations.

L. Unburied steel piping shall be abrasive blast cleaned and primed prior to installation.

M. Finish coats shall be applied after concrete and equipment installation is complete, and working areas are clean and dust free.

3.05. CURING OF COATINGS

A. The Contractor shall maintain curing conditions in accordance with the conditions recommended by the coating material manufacturer prior to placing the completed coating system into service.

B. In the case of enclosed areas or forced air ventilation, using heated air, if necessary, may be required until the coatings have fully cured.

3.06. IDENTIFICATION OF PIPING

A. Piping labels shall be located as follows:

1. Adjacent to each valve and fitting (except at pump suction and discharge connections where labels are required on headers only).

2. At each branch and riser take-off.

3. At each pipe passage through wall, floor or ceiling.

4. Maximum distance between labels shall be 10 feet on all non-potable water, chemical piping, and on all chlorine solution lines with a minimum of two labels in each room,

gallery, or tunnel. Maximum distance between labels on all other piping runs shall be 20 feet.

B. Identification lettering shall be located midway between color coding bands where possible and shall be properly inclined to pipe axis to facilitate easy reading. In the event lettering and arrow identifications are required for piping less than 3/4-inch in diameter, the Contractor shall furnish and attach approved color coded tags where instructed.

C. Apply piping labels in accordance with Section 40 05 13.19, Stainless Steel Process Piping, and F.A.C. 62-610.469(7) (f). All lettering shall have an overall height in inches, in accordance with the following table:

Diameter of Pipe or Pipe Covering	Height of Lettering
3/4 to 1-3/8 inches	1/2 inch
1-1/2 to 2-3/8 inches	3/4 inch
2-1/2 to 7-7/8 inches	1-1/2 inches
8 to 10 inches	2-1/2 inches
Over 10 inches	3 inches

3.07. FIELD QUALITY CONTROL

A. Prior to receiving a Certificate of Substantial Completion, Contractor shall arrange for manufacturer to inspect the application of his product and shall submit his report to Engineer identifying products used and verifying that said products were properly applied and that paint systems were proper for the exposure and service. The manufacturer's representative shall also certify that all coats in each system are compatible with one another.

B. The Engineer, or his authorized representative, shall inspect each field coat of priming and finishing paint before the succeeding coat is applied. The Contractor shall follow a system of tinting successive paint coats so that no two coats for a given surface are exactly the same color. Areas to receive black protective coatings shall be tick-marked with white or actually gaged as to thickness when finished.

3.08. SHOP PAINTING

A. Unless otherwise indicated, items of equipment or parts or equipment which are not submerged in service shall be shop-primed and finish-coated with the indicated color. The methods, materials, application equipment, and other details of shop painting shall comply with this Section. If the shop primer requires top coating within a specific period of time, the equipment shall be finish-coated in the shop and touched up after installation, as applicable.

B. Shop primed surfaces which are to be incorporated in the Work shall be prepared in the field by cleaning all surfaces as necessary in accordance with SSPC SP1 and SSPC SP2. Damaged shop coating shall be cleaned in accordance with SSPC SP3 – Power Tool Cleaning, and recoated in the field with the primer as specified.

C. For certain pieces of equipment it may be undesirable or impractical to apply finish coatings in the field. Such equipment may include engine generator sets, equipment such as electrical control panels, switchgear or main control boards, submerged parts of pumps, ferrous metal passages in valves, or other items where it is not possible to obtain the indicated quality in the field. Such equipment shall be primed and finish- coated in the shop and touched up in the field with the identical material after installation. The Contractor shall require the manufacturer of each such piece of equipment to certify as part of its Shop Drawings that the surface preparation is in accordance with these specifications. The coating material data sheet shall be submitted with the Shop Drawings for the equipment.

D. All shop-painted items shall be properly packaged and stored until they are incorporated in Work. Any painted surfaces that are damaged during handling, transportation, storage, or installation shall be cleaned, scraped, and patched before field painting begins so that work shall be equal to original painting at shop. Equipment or steel work that is to be assembled on the site shall likewise receive a minimum of one shop coat of paint at factory. Paint and surface preparation used for shop coating shall be identified on equipment shop drawings submitted to Engineer.

E. The Contractor shall make certain that the shop primers and field topcoats are compatible and meet the requirements of this Section. Copies of applicable coating manufacturer's data sheets shall be submitted with equipment Shop Drawings.

F. Where exact identity of shop primer cannot be determined, or where primer differs from that specified, Contractor shall perform blast cleaning appropriate for service, followed by specified paint system. In lieu of above, Contractor has the option of shipping bare metal to job site and performing appropriate blast cleaning, followed by field prime coat of specified material immediately thereafter.

END OF SECTION

TABLE A-1

COATING SYSTEM SCHEDULE

Non-Submerged Concrete Walls and Ceilings - Interior (paint only when scheduled in Table A-2 or in the architectural drawings)

SYSTEM C-1	TNEMEC	REMARKS
Surface preparation	Clean and dry	Allow concrete to cure 28 days prior to beginning coating operations
Prime coat	Series N69 Hi-Build Epoxoline II 3.0-5.0 mils	--
Intermediate coat	--	--
Finish coat	Series N69 Hi-Build Epoxoline II 3.0-5.0 mils	Total DFT - 8.0 mils minimum

Concrete - Exterior (paint only when scheduled in Table A-2 or in the architectural drawings)

SYSTEM C-5	TNEMEC	REMARKS
Surface preparation	Clean and dry	Allow concrete to cure 28 days prior to beginning coating operations
Prime coat	Series 157-Color Enviro-Crete 111-148 sq.ft. per gal.	--
Intermediate coat	--	--
Finish coat	Series 157-Color Enviro-Crete 111-148 sq.ft. per gal.	Total DFT - 12.0 mils minimum

Concrete in Contact With Raw or Potable Water (paint only when scheduled in Table A-2 or in the architectural drawings)

SYSTEM C-6	TNEMEC	REMARKS
Surface preparation	Brush blast	Allow concrete to cure 28 days prior to beginning coating operations
Prime coat	Series N140-158L Pota-Pox Plus 214-357 sq.ft. per gal.	--
Intermediate coat	Series N140-1255 Pota-Pox Plus 178-268 sq.ft. per gal.	--

Finish coat	Series N140-158L Pota-Pox Plus 178-268 sq.ft. per gal.	Total DFT = 14.0 mils minimum

Non-Submerged Ferrous Metal

SYSTEM M-1	TNEMEC	REMARKS
Surface preparation	SSPC-SP6 Commercial blast	Shop
Prime coat	Series 4-56 Versare Primer 2.0-3.0 mils	Shop
Intermediate coat	Series 23-Color Enduratone 2.0-3.0 mils	--
Finish coat	Series 23-Color Enduratone 2.0-3.0 mils	Total DFT = 7.5 mils minimum

General Ferrous Metal - Interior

SYSTEM M-2	TNEMEC	REMARKS
Surface preparation	SSPC-SP6 Commercial blast	Shop
Prime coat	Series N69-1211 Hi-Build Epoxoline II 3.0-5.0 mils	Shop
Intermediate coat	Series N69-Color Hi-Build Epoxoline II 3.0-5.0 mils	--
Finish coat	Series N69-Color Hi-Build Epoxoline II 3.0-5.0 mils	Total DFT - 12.0 mils minimum

Submerged Ferrous Metal

SYSTEM M-3	TNEMEC	REMARKS
Surface preparation	SSPC-SP10 Near White blast	--
Prime coat	Series N69-1211 Hi-Build Epoxoline II 3.0-5.0 mils	Shop
Intermediate coat	Series N69-Color Hi-Build Epoxoline II 3.0-5.0 mils	--
Finish coat	Series N69-Color Hi-Build Epoxoline II 3.0-5.0 mils	Total DFT = 12.0 mils minimum

TABLE A-1 (continued)

General Ferrous Metal - Exterior

SYSTEM M-4	TNEMEC	REMARKS
Surface preparation	SSPC-SP6 Commercial blast	Shop
Prime coat	Series N69-1211 Hi-Build Epoxoline II 3.0-5.0 mils	Shop
Intermediate coat	Series N69-Color Hi-Build Epoxoline II 3.0-5.0 mils	--
Finish coat	Series 1075-Color Endura-Shield II 2.0-3.0 mils	Total DFT = 10.5 mils minimum

Ferrous Metal Below Grade

SYSTEM M-5	TNEMEC	REMARKS
Surface preparation	SSPC-SP6 Commercial blast	--
Prime coat	--	--
Intermediate coat	--	--
Finish coat	46H-413 Hi-Build Tneme-Tar 16.0-20.0 mils	Total DFT - 16.0 mils minimum

Uncertain Base Coat

SYSTEM M-8	TNEMEC	REMARKS
Surface preparation	SSPC-SP1 Solvent cleaning and SSPC-SP2 Hand tool cleaning	Remove grease and oil. Scuff sand to dull gloss
Prime coat	Series 1 Purple-Prime 2.5-3.5 mils	Follow with appropriate system for exposure.
Intermediate coat	--	Delete normal specified primer
Finish coat	--	--

Aluminum Surfaces in Contact with Concrete

SYSTEM M-9	TNEMEC	REMARKS

Surface preparation	SSPC-SP1 Solvent cleaning	--
Prime coat	Series N69-Color Hi-Build Epoxoline II 3.0-5.0 mils	--
Intermediate coat	--	--
Finish coat	--	Total DFT - 4.0 mils minimum

Interior Insulated Piping

SYSTEM M-10	TNEMEC	REMARKS
Surface preparation	Clean and dry	--
Prime coat	Series 6-Color Tneme-Cryl 2.0-3.0 mils	--
Intermediate coat	--	--
Finish coat	Series 6-Color Tneme-Cryl 2.0-3.0 mils	Total DFT = 5.0 mils minimum

Non-Submerged Ferrous Metal - Extra Corrosion Protection - Exterior

SYSTEM M-11	TNEMEC	REMARKS
Surface preparation	SSPC-SP6 Commercial blast	Shop
Prime coat	90-97 Tneme-Zinc 2.5-3.5 mils	Shop
Intermediate coat	Series N69-Color Hi-Build Epoxoline II 3.0-5.0 mils	--
Finish coat	Series 1075-Color Endura-Shield II 2.0-3.0 mils	Total DFT - 9.5 mils minimum

Nonferrous Metal - Interior

SYSTEM M-12	TNEMEC	REMARKS
Surface preparation	SSPC-SP1 Solvent Cleaning	--
Prime coat	Series N69-Color Hi-Build Epoxoline II 3.0-5.0 mils	--
Intermediate coat	--	--
Finish coat	Series N69-Color Hi-Build Epoxoline II 3.0-5.0 mils	Total DFT = 8.0 mils minimum

Nonferrous Metal - Exterior

SYSTEM M-13	TNEMEC	REMARKS
Surface preparation	SSPC-SP1 Solvent Cleaning	--
Prime coat	Series N69-Color Hi-Build Epoxoline II 3.0-5.0 mils	--
Intermediate coat	--	--
Finish coat	Series 1075-Color Endura-Shield II 2.0-3.0 mils	Total DFT - 6.5 mils minimum

Galvanized Steel - Exterior

SYSTEM M-14	TNEMEC	REMARKS
Surface preparation	SSPC-SP7 Brush-off blast	--
Prime coat	Series N69-Color Hi-Build Epoxoline II 3.0-5.0 mils	--
Intermediate coat	--	--
Finish coat	Series 1075-Color Endura-Shield II 2.0-3.0 mils	Total DFT = 6.5 mils minimum

Galvanized Steel - Interior

SYSTEM M-15	TNEMEC	REMARKS
Surface preparation	SSPC-SP1 Solvent cleaning to remove soluble contaminants. SSPC-SP3 Power tool cleaning to remove insoluble contaminants	SSPC-SP1 preferred method is steam cleaning or power wash with degreaser/fresh water rinse
Prime coat	Series N69-Color Hi-Build Epoxoline II 3.0-5.0 mils	--
Intermediate coat	--	--
Finish coat	Series N69-color Hi-Build Epoxoline II 3.0-5.0 mils	Total DFT - 8.0 mils minimum

TABLE A-1 (continued)

Gypsum Board or Plaster Walls, Ceiling and Soffits - Interior/ Exterior

SYSTEM G-1	TNEMEC	REMARKS
Surface preparation	Clean and dry	--
Prime coat	Series 6-Color Tneme-Cry l2.0-3.0 mils	--
Intermediate coat	--	--
Finish coat	Series 6-Color Tneme-Cry l2.0-3.0 mils	Total DFT = 5.0 mils minimum

Gypsum Board, Walls, Ceilings, and Soffits, High Performance - Interior

SYSTEM G-2	TNEMEC	REMARKS
Surface preparation	Clean and dry	--
Prime coat	51-792 PVA Sealer 1.0-2.0 mils	--
Intermediate coat	Series N69-Color Hi-Build Epoxoline II 2.0-3.0 mils	--
Finish coat	Series N69-Color Hi-Build Epoxoline II 2.0-3.0 mils	Total DFT - 6.5 mils minimum

NOTE: Table A-1 and the Equipment Finish Schedule (Table A-2) are not intended to list every structure or equipment item to be painted. All new and existing structures, equipment, and appurtenances including all items furnished under the contract shall be painted by the Contractor, in accordance with the most applicable category from Table A-1. New and existing concrete tanks are not to be painted unless specifically identified in the following tables or on the architectural drawings.

TABLE A-2

EQUIPMENT FINISH SCHEDULE

BUILDING NAME/PROCESS	ITEM NAME	COLOR
General equipment	Aluminum in contact with concrete	Black
	Wall sleeves (interior portion only)	Black
	Gate operators	Grey
	Strainers, backflow preventers, water meters	Match pipe color
	Hydrants – fire	Safety Yellow
	Submerged ductile iron and steel pipe, supports, valves	Black
	Non-submerged interior ductile iron and steel pipe, supports, valves	Per pipe schedule
	PVC pipe accessories	Per pipe schedule
	Miscellaneous interior non-submerged ferrous metal	*
	Flow elements	Light Brown
	Floor drains	Black
	Lintels	*
	Chemical feed system, feed pumps and supports (unless otherwise listed)	Per pipe schedule
	Sump pumps	Manufacturer's standard
	Interior motors, drives, pump operators – non-submerged	Light Gray
	Interior ferrous metal – non-submerged	*
	Existing and new monorails, cranes, and support systems**	Safety Yellow
	Existing and new trolleys, hoists and portable lifting devices**	Safety Yellow
	Bollards	Safety Yellow

*To be selected by City during shop drawing review.
**Except components that are finished with a hot dip galvanized coating or are either all stainless steel and/or aluminum materials; are not painted.

Note: All other equipment shall be manufacturer's standard unless otherwise indicated in the equipment specification.

TABLE A-3

PIPING COLOR AND LABEL SCHEDULE

LEGEND	LABEL COLOR	PIPE COLOR
(1)	GR	Grey
(1)	GR	Grey
(1)	BR	Brown
(1)	BR	Brown
(1)	BK	Blue
(1)	BK	Purple
(1)	BK	Purple
(1)	G	Light Blue
(1)	GR	Grey
(1)	GR	Grey
(1)	GR	Grey
(1)	OR	Orange
(1)	OR	Orange
Process Air	G	Green
(1)	BR	Brown
Other	(1)	(1)

1) To be selected by City during shop drawing review.

Color Code:

GR - Gray with black letters
B - Blue with white lettering
LB - Light blue with white lettering DB - Dark blue with white lettering G - Green with black letters
Y - Yellow with black letters
BR - Brown with white letters
LBR - Light brown with white letters
DBR - Dark brown with white letters BK - Black with white letters
R - Red with white letters
OR - Orange with white lettering

Notes:

a) In addition to this color chart, label and paint (or band) all piping shown on H&V, mechanical, and plumbing drawings.
b) Multi-use pipes shall receive labels designating only their primary use.
c) Paint all metal electrical conduit to match background. Do not paint PVC or PVC-coated conduit.
d) Do not paint stainless steel, copper, FRP or PVC pipe. Provide pipe labels only.
e) This table may not list every pipe to be painted or labeled. All piping and conduit shall be painted.
f) All new and existing pipe shall be painted unless buried or of a material for which painting is not required per these notes.
g) Some pipe types listed include several different materials and only exposed piping of relevant materials shall be painted.
h) Some pipe types listed include buried and exposed piping. Only piping that is not buried shall be painted.

PAINT SCHEDULE

Reviewed by Paint Mfg. Rep. _____

Interior or Exterior Surfaces to Be Painted and Major Equipment	Surface Preparation		Paint System	Prime Coat Product, No. of Coats, Dry Film Thickness, and Coverage	Intermediate Coat	Finish Coat	Painting Status	Remarks (Any Special Treatment or Application Requirements)
	Shop	Field		Color	Color	Color		

DAILY EPOXY COATINGS INDUCTION RECORD

Date	Product	Location	Ambient Temperature (°F)	Mix Start Time	Induction End Time	Total Induction Time Before Use

END OF SECTION