

**ADDENDUM NO. 2 – JUNE 29, 2015****FOR BIDS SCHEDULED TO BE OPEN JULY 7, 2015**

**To:** All Known Contract Document Holders (via E-MAIL and certified mail)

**Project:** Town of North Kingstown  
Rehabilitation of the Slocum Water Storage Tank  
Off Slocum Road  
North Kingstown, RI 02852-5762

**Owner:** Town of North Kingstown  
80 Boston Neck Road  
North Kingstown, RI 02852-5762

**Engineer:** C&E Engineering Partners, Inc. (phone: 401-762-1711)  
342 Park Avenue  
Woonsocket, Rhode Island 02895

**C&E Project No. J1317.01**

Questions received from LF Clavin & Co. Inc on Friday June 26, 2015.

**1. *What is the Tank Height?***

***Response:***

This tank structure is located off of Dry Bridge Road in the southwest portion of Town and was constructed in 1996. The tank was installed to replace the existing on site standpipe and is set at a higher elevation in order to increase the service pressure in the area. The structure is 500,000 gallons nominal capacity and of welded steel construction. The tank is 118 feet in height with the bowl measuring 38 feet by 48 feet in diameter with an overflow elevation equal to 348 feet MSL.

**2. In that the Tank has been found to be lead free, is there a need for an industrial hygienist?**

***Response:***

The industrial hygienist shall only be needed to the extent required to ensure that all safety measures in regards to dust, paint over-spray, environmental controls and worker safety are completely adhered to in accordance to the contract documents.

***3. Please verify the painting preparation for the various areas of the tank Structure (i.e. interior column non-wetted, interior column non-wetted, condensate ceiling, etc.).***

***Response:***

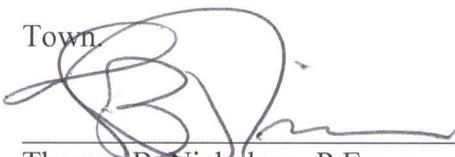
To clarify the different surface preparation and recoating of the various parts of the tank the Steel Water Tank Coatings (Section 09000) specification has been revised and is included herein. This revision clarifies the basic four (4) different types of surface preparations and where exactly they apply. They are as follows:

1. All Exterior Surfaces – This applies to all surfaces of the tank exposed to the weather including exterior column, exterior bowl, bowl roof and all exposed piping.
2. Interior non-wetted surfaces – This applies to interior fluted column, all exposed structural steel, and misc. steel fixtures (ladders, platforms, hangers, drain pipes, etc.).
3. Interior wetted non-potable surfaces – Condensate ceiling (both sides), riser pipe exterior feeding tank, exterior bowl inside fluted column and interior sides of column above condensate ceiling.
4. Wetted Surfaces – All surfaces inside bowl with potential exposure to potable water.

The material specifications have not changed but different preparation is now being required for Type 3 surfaces (Interior wetted non-potable surfaces) which may have been exposed to prolonged moisture and exhibit additional corrosion above and beyond that of other interior non-wetted surfaces. The Interior Wetted Non-potable Surfaces shall receive Commercial Blast Cleaning (SSPC-SP6) prior to recoating. All other surface preparations remain unchanged from the original specification.

Attached is the revised specification Section 09000 dated 6-29-15. This should replace in its entirety the original specification Section 09000 dated 7/13 in the contract documents.

The receipt of this addenda must be documented on page 00310-5 of the contractor's Bid Form. The Bid Due Date remains unchanged July 7, 2015 @ 11:00 am at the Finance Office of the Town.



Thomas B. Nicholson, P.E.  
Chief Engineer  
C&E Engineering Partners, Inc.  
342 Part Avenue  
Woonsocket, RI 02895

6-29-15  
Date

SECTION 09000

STEEL WATER TANK COATINGS

PART 1.00 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Work under this section consists of surface preparation, priming and finish painting necessary to complete work.
2. Use coating systems specified in this section to finish all water tank components, unless otherwise indicated. Without restricting volume or generality, work to be performed under this section includes, but is not limited to:
  - a. Exterior steel
  - b. Interior steel
  - c. Piping, ladders, railing systems, man ways and accessories

A. Related Work Described Elsewhere:

Section 13410 – Water Storage Tank Renovation

1.02 REFERENCES

A. Publications listed herein are part of this specification to extent referenced.

B. American Society for Testing and Materials:

1. ASTM D16 Terminology Relating to Paint, Varnish, Lacquer, and Related Products
2. ASTM D3359 Test Method for Measuring Adhesion by Tape Test
3. ASTM D1005 Test for determining dry film thickness
4. ASTM D4417 Test for determining surface profile

C. The Society for Protective Coatings:

1. SSPC-SP1 Specification for Solvent Cleaning
2. SSPC-SP2 Specification for Hand Tool Cleaning
3. SSPC-SP3 Specification for Power Tool Cleaning
4. SSPC-SP5 Specification for White Metal Blast Cleaning
5. SSPC-SP6 Specification for Commercial Blast Cleaning
6. SSPC-SP7 Specification for Brush-Off Blast Cleaning
7. SSPC-SP10 Specification for Near White Metal Blast Cleaning
8. SSPC-SP11 Specification for Power Tool Cleaning to Bare Metal
9. SSPC-PA1 Painting Application Specification
10. SSPC-PA2 Measurement of Dry Paint Thickness with Magnetic Gages
11. SSPC-SP12 Water Jetting

D. The National Association of Pipe Fabricators:

1. NAPF 500-03 Surface Preparation Standard for Ductile Iron Pipe and Fittings

1.03 DEFINITIONS

- A. Terms "Paint" shall in a general sense have reference to, zinc primers, latex, polyurethane and epoxy type coatings and application of these materials.
- B. Dry Film Thickness (DFT): Thickness, measured in mils (1/1000 inch), of a coat of paint in cured state.

1.04 SUBMITTALS

A. Product Data:

- 1. Submit manufacturer's literature describing products to be provided, giving manufacturer's name, product name, and product line number for each material.
- 2. Submit technical data sheets for each coating, giving descriptive data, curing times, mixing, thinning, and application requirements.
- 3. Submit color charts showing manufacturer's full range of standard colors.

B. Quality Assurance Submittals:

1. Certificates:

- a. Provide manufacturer's certification that products to be used comply with specified requirements and are suitable for intended application.
- b. Submit listing of not less than 5 of paint manufacturers most recent applications in New England representing similar scope and complexity to Project requirements. List shall include information as follows:
  - i) Project name and address
  - ii) Name of Owner
  - iii) Name of Contractor
  - iv) Name of Engineer
  - v) Date of completion

2. Manufacturer's Instructions:

- a. Submit manufacturer's installation procedures, if not on product data sheets, which shall be basis for accepting or rejecting actual installation procedures.

1.05 QUALITY ASSURANCE

A. Applicator's Quality Assurance:

- 1. No contractor shall be considered qualified unless it has at least five years experience in the field of water tank cleaning and tank painting of similar size and complexity in New

England, as determined by the Engineer. Contractor shall provide references and experience description upon request of the Engineer. Submit list of a minimum of 5 completed projects of similar size and complexity to this Work. Include for each project:

- a. Project name and location.
  - b. Name of owner.
  - c. Name of contractor.
  - d. Name of engineer.
  - e. Name of coating manufacturer.
  - f. Approximate area of coatings applied.
  - g. Date of completion.
2. Provide certification that specialized equipment as may be required by manufacturer for proper application of coating materials shall be utilized.
  3. The Contractor shall be a qualified rigger or shall engage the services of a qualified rigger on the job at all times when rigging is being used. The foreman in charge shall have all rigging inspected by the rigger prior to use.
  4. The Contractor shall abide by all local, state and federal laws for confined space entry.

B. Products Assurance and Applicator's Qualifications:

1. Provide products from a company specializing in manufacture of coatings with a minimum of 10 years experience.
2. Field Painting Crews shall be trained in application techniques and procedures of coating materials and shall demonstrate a minimum of 5 years successful experience in such application.
  - a. Maintain, throughout duration of application, a crew of painters who are fully qualified.
3. Single Source Responsibility:
  - a. Materials shall be products of a single manufacturer.
  - b. Provide secondary materials, which are produced or are specifically recommended by coating system manufacturer to ensure compatibility of system.

B. Pre-Installation Meeting:

1. Schedule a meeting to be held on-site before field application of coating systems begins.
2. Meeting shall be attended by Contractor, Owner's Onsite Representative, Engineer, Coating Applicators, and Manufacturer's representative.
3. Topics to be discussed at meeting shall include:
  - a. A review of Contract Documents shall be made and deviations or differences shall be resolved.
  - b. Review items such as environmental conditions, surface conditions, surface preparation, application procedures, and protection following application.

- c. Establish which areas on-site will be available for use as storage areas and working area.

#### 1.06 DELIVERY AND STORAGE

##### A. Packing and Shipping:

1. Deliver products in manufacturer's original unopened containers. Each container shall have manufacturer's label, intact and legible.
2. Include on label for each container:
  - a. Manufacturer's name
  - b. Type of paint
  - c. Manufacturer's stock number
  - d. Color name and number
  - e. Instructions for thinning, where applicable

##### B. Storage and Protection:

1. Store materials in a designated protected area, per manufacturer's printed data sheet instructions.

#### 1.07 PROJECT CONDITIONS

##### A. Environmental / Job Site Special Requirements:

1. Apply coating materials per manufacturer's printed data sheet instructions:
  - a. Refer to specific product data sheets for minimum surface temperature requirements. Surface temperatures shall be at least 5 degrees F (15 degrees C) above dew point and in a rising mode.
  - b. Provide for proper ventilation using explosion proof equipment. Allow to run 72 hours after interior coating application.
  - c. Adequate illumination shall be provided using explosion proof lights and equipment.
  - d. Atmosphere shall be free of airborne dust.
2. **Contractor shall supply information in regards to means and methods to be employed during surface preparation and application of painting / coating systems to prevent migration of paint, dust, and other particulates from migrating off the site and onto abutting residential and / or commercial properties.**
3. **Contractor shall monitor at the property line(s) during preparation and coating procedures to insure that no off site migration is occurring.**
4. **Contractor shall be responsible for the occurrence of and all migration of paint, particulates, dust, etc. migrating off site and shall be responsible for reparation to individual private parties.**

## PART 2.00 PRODUCTS

### 2.01 ACCEPTABLE MANUFACTURERS

- A. This specification lists specific products manufactured by Tnemec Company, Inc. of Kansas City, Missouri. Materials specified herein are cited as minimum standard of quality, which will be acceptable.
- B. Materials specified herein shall not preclude consideration of equivalent materials. Equivalent materials shall be submitted to Engineer for consideration and shall be made at least ten (10) days prior to the date of bids.
  - 1. Requests for substitution shall include evidence of satisfactory past performance on water tanks.
  - 2. Substitutions will not be considered that change number of coats or do not meet specified total dry film thickness.
  - 3. Contractor shall state in the bid the amount of deduct to use equivalent materials to those specified.
  - 4. Paints for interior wet applications must be listed by NSF International as certified for potable water contact in accordance with ANSI/NSF Std. 61, Section 5, Protective (Barrier) Materials.

### 2.02 WATER STORAGE TANK PAINTING

#### **A. Exterior Steel (Exposed to the weather) (Complete Recoating) – Zinc/Epoxy/Polyurethane Coating System:**

Surface Preparation: Remove all contamination from surfaces scheduled for painting per SSPC SP #1 Standard. All exterior steel shall be blast cleaned-SSPC-SP-6 Commercial Blast with minimum angular profile of 2 mils. Remove all blast debris and protect prepared surfaces for recoating.

- 1<sup>st</sup> Coat: Tnemec Series 94 H2O HydroZinc @ 2.5-3.5 mils dry.
- 2<sup>nd</sup> Coat: Tnemec Series N69 Epoxoline (color) @ 4.0-6.0 mils dry.
- 3<sup>rd</sup> Coat: Tnemec Series 1075U Endura Shield (color) @ 2.0-3.0 mils dry.

Note:

- 1. \*Tnemec Series N69F may be substituted for Series N69 when surface temperatures are below 50 degrees F. Neither shall be applied at surface temperatures below 35 degrees F.
- 2. The finish coat (Series 1075U) shall be roller applied.
- 3. Tnemec 41-39 Thinner must be used with Series 1075U (no substitutions).

#### **B. Interior Steel Wet Area (Exposed to potable water) (Complete Recoating)**

Surface Preparation: Remove all contamination from surfaces scheduled for painting per SSPC SP #1 Standard. All interior steel shall be blast cleaned – SSPC-SP-10 Near White Blast

with minimum angular profile of 2 mils. Remove all blast debris and protect prepared surfaces for recoating.

- 1<sup>st</sup> Coat: Tnemec Series 94 H2O HydroZinc @ 2.5-3.5 mils dry.
- Stripe Coat: Tnemec Series N140 Epoxoline @ 4-6mils (minimum 48 hour cure time before topcoating)
- Pit Filler: Tnemec Series 215 Surfacing Epoxy (applied in accordance with manufacturer's recommendations for use with NSF 61 top coat in immersion applications with potable water).
- 2<sup>nd</sup> Coat: One (1) Coat of Tnemec Series FC 22 (100% Solids NSF Lining) at 25.0 – 30.0 mils dry.

### **C. Interior Steel Non-Wetted Areas (Interior Column) (Complete Recoating)**

Interior Non-Immersion Maintenance Painting:

Surface Preparation: Remove all contamination from surfaces scheduled for painting per SSPC SP #1 Standard. Perform SSPC-SP-15 Power Tool Clean Standard following cleaning where rust, rust scale, loose and non-adhering coatings and underfilm corrosion exists. Sand lightly the remaining intact coating to “de-gloss” the existing finish. Remove all sanding debris.

1<sup>st</sup> Coat: One (1) spot coat of Tnemec Series 27WB-1211 Typoxy primer @ 3.0-4.0 mils dry to cleaned to bare metal surfaces. Overlap spot coat onto intact existing coatings to a minimum 2-inches.

2<sup>nd</sup> Coat: One (1) full coat of Tnemec Series 27WB Typoxy (color) @ 3.0-4.0 mils dry on all surfaces to be scheduled for painting.

### **D Interior Steel Wetted Non-potable Areas (Condensate Ceiling and above including exterior tank bowl in side column) (Complete Recoating)**

Interior Non-Immersion Wetted Non-potable Maintenance Painting:

Surface Preparation: Surface Preparation: Remove all contamination from surfaces scheduled for painting per SSPC SP #1 Standard. All interior wetted non-potable steel shall be blast cleaned-SSPC-SP-6 Commercial Blast with minimum angular profile of 2 mils. Remove all blast debris and protect prepared surfaces for recoating.

1<sup>st</sup> Coat: One (1) spot coat of Tnemec Series 27WB-1211 Typoxy primer @ 3.0-4.0 mils dry to cleaned to bare metal surfaces. Overlap spot coat onto intact existing coatings to a minimum 2-inches.

2<sup>nd</sup> Coat: One (1) full coat of Tnemec Series 27WB Typoxy (color) @ 3.0-4.0 mils dry on all surfaces to be scheduled for painting.

## 2.03 ACCESSORIES

### A. Coating Application Accessories:

1. Provide application accessories as indicated in coating manufacturer's application instructions, including but not limited to cleaning agents, etching agents, cleaning cloths, sanding materials, and clean-up materials.
2. Material not specifically identified, but needed for proper application shall be of a quality not less than specified products.

#### 2.04 MIXING INSTRUCTIONS:

- A. Specific product mixing and thinning instructions are to be found in the manufacturer's printed data sheets.

### PART 3.00 EXECUTION

#### 3.01 EXAMINATION

##### A. Site Verification of Conditions:

1. 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.

#### 3.02 PREPARATION

##### A. Protection:

1. Take precautionary measures to prevent fire hazards and spontaneous combustion. Remove empty containers from site at completion of each days work.
2. Provide drop cloths, shields, and other protective equipment.
3. Protect elements surrounding work from damage or disfiguration.
4. As the work proceeds, promptly remove spilled, splashed, or splattered materials from surfaces. Leave storage area neat and clean at all times.

##### B. Surface Preparation:

##### 1. General Requirements:

- a. Prior to application of primer, surfaces shall be prepared to receive specified paintings system in compliance with manufacturer's recommendations and specifications of The Society of Protective Coatings as indicated in Schedule below.
- b. Surfaces to be coated shall be clean, dry and free from dust and any foreign matter that might adversely affect adhesion or appearance.

#### 3.03 APPLICATION

##### A. General Requirements:

1. Apply coating systems in compliance with manufacturer's instructions and using application method best suited for obtaining full, uniform coverage and hide of surfaces to be coated.
  - a. Work shall be implemented in compliance with applicable sections of AWWA D102 and the latest revisions thereto.
2. Apply primer, intermediate, and finish coats to comply with wet and dry film thicknesses and spreading rates for each type of material as recommended by manufacturer and in accordance with SSPC-PA2.
3. Number of coats specified shall be minimum number acceptable. Apply additional coats as needed to provide a smooth, even application.
  - a. 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.
4. Employ only application equipment that is clean, properly adjusted, and in good working order, and of type recommended by coating manufacturer.
5. After surface preparation, spot primer on interior weld seams shall be brush applied. Thinning: Thinning requirements for specified products are to be found in the paint manufacturer's printed data sheets and are to be strictly adhered to. Note: Only Tnemec NSF approved thinners must be used – no substitutions.

B. Disinfection and Filling of Tank:

1. Provide adequate ventilation for proper drying of paint on interior surfaces and which will remove solvent vapors.
2. A manufacturer approved physical test (i.e. solvent wipe test, pencil hardness test or approved test method) shall be performed on the completed interior coating surface to insure that the coating system is fully cured. Proper documentation shall be provided to the Town and Engineer. In addition, Contractor shall complete and submit a copy of the RIDOH – Certification of Adequate Curing of Tank Coating Form contained in Appendix of this document.
3. Contractor shall be required to comply with the Rules and Regulations Pertaining to Public Drinking Water (R46-13-DWQ) page 17 sections 4.2 regarding curing of coatings systems as follows.

“4.2 All newly constructed PWSs or additions to existing systems shall be flushed, adequately disinfected, and the water examined for the presence of coliform organisms in accordance with Appendix 1. No system shall be placed in use until such examination discloses the absence of coliform organisms. Any newly constructed or recoated water storage tank shall be tested for volatile organic compounds (VOCs) prior to being put into service. If VOCs reported are above the laboratory detection limit and/or background source limit, the water system shall flush and/or drain the tank, refill and analyze for VOCs until such time as the concentrations reported are below the laboratory detection limit. An alternative to refilling and retesting shall be to submit documentation acceptable to the

Director that the tank coating was NSF Standard 61 approved, was mixed properly and has cured properly. Any waste water resulting from disinfection must be disposed of in accordance with applicable Federal, State and Local regulations, and with the proper permits.”

4. Following final application, tank shall not be disinfected or filled until coating system is fully cured.
5. Refer to applicable product data sheet(s) for dry time/temperature requirements. Disinfection and tank filling shall be as specified in Section 13410.

C. Interface with Other Work:

1. Allow a minimum of seven days curing time after application of final coat to tank interior before flushing, disinfecting or filling with water.

3.04 REPAIR / RESTORATION

A. At completion of Work, touch-up and restore finishes where damaged.

B. Defects in Finished Surfaces:

1. When stain, dirt, or undercoats show through final coat, correct defects and cover with additional coats until coating is of uniform finish, color, appearance and coverage.

C. Touch-up of minor damage shall be acceptable where result is not visibly different from surrounding surfaces. Where result is visibly different, either in color, sheen, or texture, recoat entire surface.

3.05 FIELD QUALITY CONTROL

A. Inspector's Services: Services for inspection of surface preparation, coatings application and related work shall be performed by an independent firm as designated by the Owner. Contractor shall coordinate directly with the designated inspection firm to schedule all inspection and observation of the work as required.

1. Documents:

- a. Review Contract Documents and applicable sections of referenced standards.

2. Field Painting Inspection:

- a. Verify cleaning operations to surfaces are to condition specified.
- b. Verify conformance of paint to specification.
- c. Check for thickness of each coating.
- d. Check touch-up for final finish.
- e. Contractor will have both wet and dry film gauges onsite for inspector's use.

3. Reports:

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- a. Submit written progress reports describing inspections made and showing action taken to correct non-conforming work. Report uncorrected deviations from Contract Documents.

B. Manufacturer's Service:

1. A representative of the paint manufacturer shall be available to provide on-site technical assistance, and guidance for application of the paint system as needed.

3.06 PROTECTION

- A. Protect painted areas against damage until paint system is fully cured.

3.07 WASTE MANAGEMENT

A. General Requirements:

1. Place materials defined as hazardous or toxic waste in designated containers.
2. Return solvent and oil soaked rags for contaminant recovery and laundering or for proper disposal.
3. Do not dispose of paints or solvents by pouring on ground. Place in designated containers for proper disposal.

B. Containment/Disposal Requirements:

1. Surface Preparation Debris Containment:

- a. When required by federal, state or local regulation, entire tank and structure shall be enclosed and surface preparation debris contained.
- b. Refer to SSPC 61 Guide for Containing Debris Generated during Paint Removal Operations.

2. Disposal of Surface Preparation Debris:

- a. Surface preparation debris shall be disposed of in compliance with applicable federal, state and local regulations.

3.08 ONE YEAR ANNIVERSARY INSPECTION

- A. Owner shall set a date for a one- year inspection.
- B. Inspection will be attended by owner's representative, engineer, and painting contractor.
- C. Any deficiencies in the coatings system will be repaired at the contractor's expense.

END OF SECTION

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