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Addendum No. 1

Glendale Water Treatment Plant – Filtration Building Leakage Repairs

PWP Bid No. WA-2015-022
November 21, 2014

The following information, clarifications, changes and modifications are by reference incorporated into the bid documents for the above referenced project. Any work item or contract provision not changed or modified will remain in full force and effect. The bid date and time and construction schedule remain the same.

REPLACEMENT SPECIFICATIONS AND PROJECT DRAWINGS

Project Specifications: Specification Section 09900, Painting and Coating, shall be replaced in its entirety with the following: Section 09900, Rev 1, dated 18 Nov 2014. Please note that all modifications to the original Specification are presented in red.

Project Drawings: Drawing Sheet S-5 of the Bid Documents shall be replaced in its entirety with the following: Drawing Sheet S-5, Rev 1, dated 18 Nov 2014.

Section 09900

PAINTING AND COATINGS

PART 1: GENERAL

1.01 Description

- A. The work of this section consists of furnishing and applying paint to steel surfaces and application of a flexible waterproof coating system over concrete surfaces, exposed piping and other components specifically designated herein or in the drawings.

1.02 Submittals

- A. Submit the following to the TMWA Project Administrator for approval:
1. Paint materials list naming each product to be used identified by manufacturer and type number. Include the manufacturer's application recommendations for each product submitted and a color chart of the manufacturer's available colors.
 2. Coating material product data information identified by manufacturer and type number for each product to be used and including manufacturer and installer Quality Assurance information as discussed in Section 1.03. Include data information on all other products used to facilitate the coating installation.
 - Include detailed manufacturer's application instructions for each product submitted.
 - Submit 2 sample coupons (6" x 6", minimum) that are representative of the finished coating surface, texture, and color. Approved samples shall serve as basis for acceptance of the work for the duration of the project. Samples shall include finish texture as determined by TMWA as well as stepped samples showing stages of multi-layer applications.
 3. Certifications of compliance with NSF 61 for the paint and coatings to be applied to all surfaces that shall be in contact with treated water.
 4. Media shoring plan.
 5. Media **and underdrain** protection plan.
 6. Confined space entry procedure and safety plan.
- B. All submittals shall be provided before work within the building can commence.

1.03 Quality Assurance - Coating

- A. **Acceptable Coating Manufacturers:** The manufacturer of the specified products shall have been in existence, for a minimum of five (5) years and shall have an established program of training, certifying and technically supporting the product applicators. The manufacturer shall provide project histories with names, dates, addresses, and phone numbers of contact persons for projects of similar scope, two of which have been completed within the last five (5) years.

- B. **Single Source Responsibility for Coatings:** Provide primers and undercoat materials produced by the same manufacturer, or as recommended by the manufacturer, for each coating type specified to ensure compatibility and proper chemical and mechanical bond.

- C. **Coating Installer Qualifications:** Engage only factory trained and qualified applicators that have successfully completed applications using the specified materials on projects of similar size and scope. Provide the applicator's name as well as previous project references with reference name, address, and telephone number. The applicator shall not be changed during the duration of the project without TMWA's approval.
 - 1. Contractor shall have completed a training program in the use of heated plural component equipment and the specified polyurethane material. Provide a written certification from the equipment manufacturer and material manufacturer as a part of the Bid submittal. Certifications dated/obtained after the bid opening for this project shall not be acceptable to the Owner.

- D. **Coating Equipment Requirements:**
 - 1. The Contractor must own and maintain heated plural component equipment suitable for the application of the specified coating.
 - 2. The installer's proposed Spray Equipment must be approved for use by the coating manufacturer.

- E. Substantiation of Quality Assurance shall be submitted with the contractor's bid.

1.04 Compliance With Volatile Organic Compound (VOC) Limits

- A. All paint and coating products shall comply with the applicable limits on volatile organic compounds (VOC) as established by the United States Environmental Protection Agency and by State and local air quality regulating agencies.

- B. It shall be the Contractor's responsibility to demonstrate compliance with this requirement.

PART 2: PRODUCTS

2.01 Paint Products

- A. All paints shall be specifically manufactured for use on materials in this environment and on substrates as noted in the drawings.
- B. Paint shall be alkyd enamel as manufactured by Tnemec, Sherwin Williams, Carboline, or pre-approved equal.
- C. Paint and coatings shall be delivered in original containers, with seals unbroken.

2.02 Coating

- A. The filter bay coating, as well as associated products used to facilitate the coating installation, shall be specifically manufactured for use on projects of this type and on substrates as noted in the drawings.
- B. Coatings shall be Sherflex as manufactured by Sherwin Williams, Reactamine 760 as manufactured by Carboline, or pre-approved equal. Coatings based on a polyurea formulation will not be accepted. The coating system shall be certified to meet NSF 61.
 - Coatings shall be delivered in original containers, with seals unbroken.
- C. Epoxy surfacing compound and other products used to facilitate the installation of the coating system shall be approved in writing by the coating manufacturer.
- D. Spalls and delaminations shall be repaired with Sika TOP 123+ as manufactured by Sika Corporation. See the Spall and Delamination Repair Procedure on Sheet S-6 for additional requirements.

PART 3: EXECUTION

3.01 Pre-Installation Conference:

The Contractor, his installation sub-contractor, and the coating system manufacturer's representative shall meet onsite with TMWA's representative to discuss the specifics of the coating installation including schedules, general requirements, project coordination and testing.

3.02 Schedule

The contractor shall submit a detailed schedule outlining the start and completion dates for the project and the anticipated weekly work schedules.

3.03 Surfaces To Be Painted and Coated

- A. The surfaces to be painted and coated shall be as noted on the drawings.

3.04 Surfaces Not To Be Painted or Coated

- A. The following items shall not be painted or coated:
 1. Filter bay equipment.
 2. Electrical equipment and conduits.
 3. Copper and plastic piping.
 4. Other items as identified by TMWA.

3.05 General

- A. The filter bays are considered to be confined spaces. All work within the filter bays shall be performed in accordance with OSHA requirements. A confined space entry and safety plan shall be prepared for submittal to TMWA.
- B. The existing troughs and the filter media shall be temporarily relocated within the filter bays as required to allow adequate working room. The media may not be removed from the building and shall be reinstalled as directed by TMWA upon completion of the coating application. Shoring may be necessary to hold back the media. **A shoring plan shall be submitted to TMWA prior to beginning work. The shoring plan shall take into consideration the presence of the underdrain system as discussed below.**
- C. **The media is placed over an underdrain system which cannot be relocated or damaged. The contractor shall carefully expose the underdrain system during the media relocation process. As the underdrain system is being exposed, it shall be protected from all damage and contamination from the contractor's operations. If the underdrain system within a filter bay is damaged, it will need to be replaced in its entirety, at the contractor's expense. Once exposed, the underdrain system shall be covered with a layer of plastic sheeting, plywood and another layer of plastic sheeting. The plastic sheeting shall be lapped and taped to prevent contamination of the underdrain system. All work relative to the underdrain system shall be performed in the presence of TMWA's Project Representative.**
- D. The media shall also be protected from contamination by plastic sheeting, plywood or other means as approved by TMWA. A filter media protection plan shall be submitted to TMWA prior to beginning work.
- E. Prior to application of the coating, delaminations, spalls and other defects which affect the performance of the coating shall be repaired as required by the coating manufacturer to allow

proper installation of the coating. All repair materials shall be certified to meet NSF 61, unless otherwise allowed by TMWA.

- F. Surface preparation and coating application shall be in accordance with the coating manufacturer's recommendations, except where more stringent requirements are specified herein.
- G. The Contractor's coating equipment shall be designed for application of the coating materials and shall be maintained in first class working condition. Compressors shall have suitable traps and filters to remove water and oils from the air.
- H. Application of the coating shall follow immediately after surface preparation and cleaning. Any cleaned areas not receiving the coating within eight-hour period shall be recleaned prior to application of first coat.

3.06 Surface Preparation

- A. Prepare surfaces for coating in accordance with the manufacturer's written instructions and these specifications.
 - 1. Surface preparation shall be performed to avoid contamination of the filter media and to avoid introduction of dust and other contaminants to the interior of the facility.
- B. Concrete surfaces to be coated shall be thoroughly cleaned of laitance, dust, dirt, form release agents, loose concrete and all other foreign material. Moist blasting shall be used as required to facilitate containment of debris. Create a surface profile in accordance with ICRI #03732, profile number CSP-3 to CSP-5 or as otherwise recommended by the coating manufacturer.
 - 1. Following surface preparation, concrete surfaces shall be tested for moisture vapor emissions in accordance with ASTM F 1869, Standard Method for Measuring Moisture Vapor Emission Rate of Concrete Sub-floor Using Anhydrous Calcium Chloride Moisture Emissions Test. Report test results to TMWA's representative.
- C. Steel surfaces to be painted shall be prepared to meet SSPC-SP3 or SSPC-SP6.
- D. Steel surfaces to be coated shall have all oil, grease, rust, dirt, paint and other foreign material removed by Solvent Cleaning per SSPC-SP1. Minimum surface preparation is Near White Metal Blast Cleaning per SSPC-SP10/NACE 2. Steel surfaces shall be coated before flash rusting occurs.
 - 1. Surfaces scheduled for blast cleaning shall have all welds, edges, and sharp corners ground to a 1/16-inch radius and all weld splatter removed, and sandblasted, and shall be

- slightly roughened to form a suitable surface texture for the coating application. Do not leave blasted surfaces overnight before coating.
2. Abrasive used in blast cleaning operations shall be new, washed, graded and free of contaminants that would interfere with adhesion of coating and shall not be reused unless specifically approved by TMWA.
 3. During blast cleaning operations, caution shall be exercised to insure that surfaces not scheduled to receive coating are not exposed to abrasion from blast cleaning.
 4. The Contractor shall keep the area of his work in a clean condition and shall not permit blasting materials, including dust, to accumulate within the facility.
 5. Blast cleaned surfaces shall be cleaned prior to application of specified coatings by a combination of blowing with clean dry air, brushing/brooming or vacuuming.

E. Steel Structures Painting Council (SSPC) specifications are as follows:

1. Solvent Cleaning (SSPC-SP1): Removal of oil, grease, soil and other contaminants by use of solvents, emulsions, cleaning compounds, steam cleaning or similar materials and methods which involve a solvent or cleaning action.
2. Hand Tool Cleaning (SSPC-SP2): Removal of loose rust, loose mill scale and other detrimental foreign matter to degree specified by hand chipping, scraping, sanding, and wire-brushing.
3. Power Tool Cleaning (SSPC-SP3): Removal of loose rust, loose mill scale and other detrimental foreign matter to degree specified by power wire-brushing, power impact tools or power sanders.
4. White Metal Blast Cleaning (SSPC-SP5): Blast cleaning to a gray-white uniform metallic color until each element of surface is free of all visible residues.
5. Commercial Blast Cleaning (SSPC-SP6): Blast cleaning until at least two-thirds of each element of surface area is free of all visible residues.
6. Brush-off Blast Cleaning (SSPC-SP7): Blast cleaning to remove loose rust, loose mill scale and other detrimental foreign matter to degree specified.
7. Near White Blast cleaning (SSPC-SP10): Blast cleaning to nearly white metal cleanliness, until at least 95 percent of each element of surface area is free of all visible residues.

3.07 Paint and Coating Application

- A. Apply paint and coatings in accordance with the manufacturer's instructions and these specifications.
- B. Protective coverings or drop cloths shall be use to protect surfaces, including media, that are not being coated.

- C. Paint and coating shall be well applied to the minimum required thickness leaving no holidays, gaps, pinholes, blisters, delaminations, sags, foreign materials or other defects. Coating terminations shall be as detailed and in a straight line.
- D. Primer and paint shall be applied to attain minimum Dry Film thicknesses of 3.0 mils and 5.0 mils, respectively. Paint shall be applied in two coats.
- E. Coating shall be applied to attain complete coverage without gaps, holidays or bubbles and with a minimum Dry Film thickness of 80 to 100 mils or as otherwise recommended by the coating manufacturer. The contractor will be responsible for measuring and documenting the thickness as the coating is applied. Provide thickness measurements to the TMWA representative.

Areas of coating with gaps, holidays or bubbles or with inadequate thickness shall be repaired or recoated in accordance with the manufacturer's requirements and to TMWA's satisfaction.

- F. The in-place coating shall be tested by the installer to verify adhesion. The test procedure shall be in accordance with ASTM D7234. Each filter bay shall have a minimum of 2 to 4 tests as directed by TMWA. Testing shall be witnessed by the TMWA representative. All test areas shall be recoated per the coating manufacturer's requirements.

Coating acceptance shall be based, in part, on the results of the adhesion tests.

3.08 Protection

- A. During construction, the contractor shall protect the paint and coating against all damage by accident or otherwise, and shall leave the work clean and wholly intact. The work will not be accepted until all of the work has been completed and all non-compliant or damaged areas have been repaired.

3.09 Cleaning

- A. Upon completion of the work, all equipment, staging, scaffolding and containers shall be removed from the site. The filter bay troughs and media shall be replaced as directed by TMWA. All damage resulting from the work of this section shall be cleaned, repaired, or refinished to the satisfaction of TMWA's Project Representative.

END OF SECTION

