



ADDENDUM NO. 2

Date: February 17, 2010
Project: Waste Water Treatment Plant Clarifier No. 2 Rehabilitation
Project No.: 080269571-A
Proposal Deadline: February 23, 2010; 2:00 PM

This Addendum is an amendment to extend the above Proposal Deadline to **March 4, 2010 at 2:00 PM**, and to the Bidding Documents for the named project and as such will be part of and included in the Contract Documents. ***Acknowledge receipt of this Addendum in the space provided on the Proposal. Failure to do so may subject the bidder to disqualification.***

Attachment:

Jones & Carter, Inc., "Addendum No. 2", dated February 16, 2010 (9 pages)

ADDENDUM NO. TWO (2)
to the
CONTRACT DOCUMENTS, SPECIFICATIONS AND CONSTRUCTION DRAWINGS
for construction of
WASTEWATER TREATMENT PLANT CLARIFIER NO. 2 REHABILITATION
PPA# 080269571
for
TEXAS A & M UNIVERSITY
PHYSICAL PLANT
BRAZOS COUNTY, TEXAS

February 16, 2010

Addendum No. Two (2) covers the following changes to the contract documents, technical specifications and construction drawings:

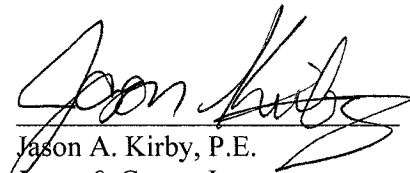
TECHNICAL SPECIFICATIONS

1. SPECIFICATION 09921- PROTECTIVE COATINGS

Replace the existing specification with the attached, revised specification.

CONSTRUCTION DRAWINGS

No changes to the construction drawings.


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Jones & Carter, Inc.
TBPE Firm No. F-439

END OF ADDENDUM NO. 2



SECTION 09921**PROTECTIVE COATING**

1.0 GENERAL

1.1 SCOPE

This section specifies furnishing labor and materials to prepare surfaces and to apply protective coatings. The term paint as used in this section means the protective coatings specified.

1.2 REFERENCE STANDARDS

Work performed and materials used must comply with the requirements of the Society for Protective Coatings (SSPC) Vol. No. 1, "Good Painting Practices", and SSPC Vol. No. 2, "Systems and Specifications"; and these technical specifications. Where a conflict exists between these technical specifications and the SSPC Specifications, the technical specifications govern.

1.3 SUBMITTALS

Before purchasing any coating materials, submit to the Engineer a submittal indicating the coating systems to be used. The submittal should indicate planned surface preparation and application rates and include a color chart upon which the Engineer will verify the color selections. The submittal shall also contain copies of the manufacturer's product data sheets for each product used. Each coating must be able to withstand the area's climate. For each product, submit to the Engineer a list of 10 applications in the State of Texas, or a location of similar climate, where the product has been in continuous use for at least five (5) years. Before beginning the actual work, provide the Engineer with a certificate from the paint supplier stating that sufficient paint has been purchased to provide the coatings specified in this section. Also, the certificate shall list the quantities and types of paint purchased.

1.4 SUBSTITUTIONS

a. Wherever a product is designated by trade name with provision for an approved equal, the product specified must be used unless a written request for substitution is submitted to the Engineer at least 10 days before the receipt of bids. The submittal must include the manufacturer's complete technical data sheets on the proposed product.

b. Consideration will be given only to those products which have been used in wastewater treatment plant service for at least 10 years. The submittal must include a list of at least 10 applications in the State of Texas area where the product has been in continuous use for at least five (5) years. Furnish the owner's name, the owner's representative, and name of product used.

1.6 DELIVERY AND STORAGE

a. Delivery. Have all paint delivered to the job site in original unopened containers. Contact Engineer for inspection before beginning painting operations.

b. Storage. Store materials in an approved location. Keep the storage area clean and repair any damage done. Remove oily rags, waste, or other fire hazards from buildings each night. Take

adequate precautions to avoid damage by fire. Place cloths and cotton waste that might constitute a fire hazard in metal containers or destroy at the end of each workday.

1.7 MAINTENANCE MATERIAL

Contractor will supply to the Owner quantities of paint for each color as shown in the schedule below to be used as touch-up paint after the guarantee period. Paint will be supplied in unopened, one (1)-gallon containers.

<u>Coating System</u>	<u>Quantity (Gal)</u>
Polyurethane	5
Coal Tar Epoxy	5
Other Coatings	5

2.0 PRODUCTS

2.1 COLOR SCHEDULE

See 3.4 COATING SCHEDULE.

2.2 ACCEPTABLE MANUFACTURERS

Provide protective coatings as manufactured by Carboline, Tnemec, Ameron, Sherwin Williams, Chesterton, ARC (a division of Chesterton), Epoxy Tec, or approved equal.

2.3 TEST EQUIPMENT

The following pieces of equipment will be used by the Engineer to determine film thickness and presence of flaws.

a. Microtest. Model DFG-100, 0-40 mils film thickness gauge including a set of U.S. Department of Commerce, Bureau of Standards Film Thickness Calibration Standards from 0-8 mils and 10-25 mils.

b. Tinker-Razor. Model M-1, low voltage flaw detector (holiday detector).

3.0 EXECUTION

3.1 WORK CONDITIONS

a. Weather. Do not conduct coating work under unfavorable weather conditions, unless work is well protected and specific approval is obtained from the Engineer. Do not paint when the ambient temperature is below 50°F (unless additional drying time as recommended by the paint manufacturer is allowed), when the ambient temperature is above 100°F (unless additional drying time as recommended by the paint manufacturer is allowed), when the surface temperature is within 5°F of the dew point, or when humidity is above that recommended by the paint manufacturer.

b. Surface. If surfaces to be painted cannot be put in proper condition for painting by customary cleaning and sanding operations, notify the Engineer in writing or assume the responsibility for

and rectify any unsatisfactory finish resulting from application to an unsatisfactory surface. Do not apply paint to a wet or damp surface.

c. Equipment. Maintain equipment in good working order comparable to that described in printed instructions of the coating manufacturer. Clean equipment thoroughly before and after use with the appropriate cleaning solution indicated by the coating manufacturer.

3.2 SURFACE PREPARATION

a. Solvent Cleaning. Remove heavy deposits of grease or oil from the surface with toluene or xylene solvents prior to any other surface preparation. Neutralize and flush chemical contamination prior to any other surface preparation.

b. Grinding. Remove weld splatter and rough edges and grind rough welds.

c. Abrasive Blast Cleaning.

(1) Use a source that provides compressed air, free of detrimental amounts of water and oil.

(2) Abrasive blast only the amount of surface area which can be primed the same day or before any rust starts to form, whichever occurs first. Areas which are not painted the same day must be reblasted on the day the prime coat is applied. Remove abrasive residue from the surface by brush or industrial vacuum.

(3) Abrasive blast surfaces to be coated, except those specified in the paragraph Power Tool Cleaning, to "near-white" metal in accordance with Society for Protective Coatings SSPC-SP 10, Near White Cleaning. Remove mill scale, rust dirt, paint or slightly roughened to form a suitable anchor pattern for coating application. The surface profile should be approximately two (2) mils. At least 95 percent (95%) of each square inch of surface area must be free of visible residues and the remainder limited to light discoloration.

(4) All surfaces shall be approved by the Engineer's Field Project Representative prior to any coating application. The standard of cleanliness for the surface preparation shall be evaluated with the use of SSPC Pictorial Surface Preparation Standards, SSPC-VIS.-1 and "Swedish Standards."

(5) Silica abrasive blasting material may not be used on this project.

(6) The abrasive to be used shall be sharp, angular, properly graded, and brought to the job site in moisture proof bags or air tight bulk containers.

(7) No cleaned surface shall receive a coating if "rust bloom" or discoloration has occurred.

d. Power Tool Cleaning. Clean pumps, blowers, motors, and other sensitive equipment to be coated in accordance with Society for Protective Coatings Surface Preparation Specifications, SSPC-SP 3, Power Tool Cleaning, removing loose mill scale, loose rust, loose paint and other foreign matter.

e. Metalwork. Do not shop prime any metal work unless prior approval is given by the Engineer in writing. The F.P.R will make an inspection of any shop primed metal at the factory.

3.3 COATING APPLICATION

a. Manufacturer's Representative. The coating manufacturer will be responsible, through a authorized representative, to provide technical assistance to the paint contractor as needed.

b. Workmen. Employ workmen skilled in structural steel painting and concrete coating.

c. Materials.

(1) Coating materials, abrasive, and equipment used in painting and blasting are subject to inspection at any time by the Engineer or his representative. Materials shall be delivered to the site for inspection prior to beginning work.

(2) Remove blasting residue and dust from the surface to be painted before paint application is begun.

d. Paint Coating Methods.

(1) Double lap welds.

(2) Coat areas with a uniform film, free of sags, runs, or brushmarks. Where multiple coats of paint are specified, apply each coat in a different shade than the preceding coat. Each coat must be free of shadows and uniform in appearance.

(3) Except where otherwise specified, thin paint only as necessary for workability of coating material in accordance with manufacturer's printed instructions. Use only a thinner supplied by the paint manufacturer.

(4) When paint is being applied to interior of tank or risers, provide adequate ventilation.

(5) Carefully observe minimum drying time between coats as stated in printed instructions of the coating manufacturer.

(6) Comply with recommendations of the paint manufacturer in regard to drying time for each coat, technique of spray application, ventilation, paint thinning, and safety precautions. The Contractor must fully inform all members of his field crew of these recommendations.

(7) Where inspection shows that the specified thickness is not developed, apply additional coats to produce the required film thickness.

(8) Repair and recoat improper applications as recommended by the manufacturer or as required by the Engineer.

(9) Do not coat pump and motor name tags, meter and gauge sight glasses, valve operator stems or other items designated by the Engineer.

e. Forced Air Drying.

(1) Heated Air. Circulate warm air through the tank for eight (8) hours holding the air temperature between 140°F and 150°F. After initial drying, raise air temperature to between 160°F and 180°F for at least 24-hours or until all residual solvent odor is dissipated.

(2) Without Heat. If heating equipment is not available, forced air ventilation with outside ambient temperature air must continue until all solvent odor is dissipated.

f. Cleaning. Upon completion of the work remove all staging and any scaffolding not required for inspection. Dispose of all containers and rubbish in an approved manner. Remove paint spots, oil or stains on adjacent surfaces. Leave the entire job clean and acceptable.

g. Grating Protective Coatings. Aluminum surfaces to be placed in contact with steel shall be given one (1) coat of zinc chromate primer in accordance with Federal Specification II-P-645, or the equivalent, or one (1) coat of a suitable non-hardening joint compound capable of excluding moisture from the joint during prolonged service. Where severe corrosion conditions are expected, additional protection can be obtained by applying the joint compound in addition to the zinc chromate primer. Zinc chromate paint shall be allowed to dry hard (air dry 24 hours) before assembly of the parts. The steel surfaces to be placed in contact with aluminum shall be painted with zinc chromate primer or preapproved equal in accordance with Federal Specification II-P-645, followed by one (1) coat of paint consisting of two (2) lb. of aluminum paste pigment (ASTM Specification D962066, Type 2, Class B) per gallon of varnish meeting Federal Specification TT-V81d, Type II, or the equivalent. Stainless steel, or aluminized, hot-dip galvanized or electro-galvanized steel placed in contact with aluminum need not be painted.

h. Priming Galvanized Steel or Anodized Aluminum. Modify coating systems as necessary to provide proper prime coats per manufacturer’s recommendations.

3.4 COATING SCHEDULE

Coat each item listed below using the coating system specified. Color guide is typical. All colors are subject to change and must be approved by the engineer

<u>Item To Be Coated</u>	<u>Coating System</u>	<u>Color</u>
Piping		
Submerged	Coal Tar Epoxy	Black
Non-Submerged - General	Polyurethane	Owner Selected
Plant Equipment		
Clarifier Drive	Polyurethane	Owner Selected
Structural Members and Misc. Metals, Non-Submerged	Polyurethane	Owner Selected
Structural Members and Misc. Metals, Submerged	Coal Tar Epoxy	Black
Metal Launder Trough (Inside)	Non-porous, Non-fouling Composite Coating	* Depends on Product
Concrete Clarifier Tank Inner Walls	Non-porous, Non-fouling Composite Coating	*Depends on Product

This list is intended as a general guide and may not include each separate item to be coated.

3.5 COATING SYSTEMS

a. Polyurethane.

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|-----|--|--|
| (1) | Surface Preparation | SSPC SP-10
Near White Blast Clean |
| (2) | Prime Coat
Rust Inhibitive Epoxy Primer
4.0 to 6.0 mils DFT
Color: Determined by Primer | <u>Carboline Carboguard 60</u>
Tnemec Series 65
Ameron 385 PA
Sherwin Williams B67R5 / B67V5 |
| (3) | Intermediate Coat
Polyamide Cured Epoxy
4.0 to 6.0 mils DFT
Color: To be Selected | <u>Carboline Carboguard 60</u>
Tnemec Series 66
Ameron 385
Sherwin Williams B58 600 Series / B58V600 |
| (4) | Finish Coat
Aliphatic Polyurethane
2.0 to 3.0 mils DFT
Color: To be Selected | Carboline Carbothane 134HG
Tnemec Series 73
Ameron V450H Series
Sherwin Williams B65-600 / B65V600 Series |
- Total minimum dry film thickness: 10.0 mils

*NOTE - For PVC piping, use finish coat only. Solvent clean only - do not blast.

b. Coal Tar Epoxy.

- | | | |
|-----|---|---|
| (1) | Surface Preparation | SSPC SP-10
Near White Blast Clean |
| (2) | Prime Coat
Coal Tar Epoxy
8.0 to 10.0 mils DFT
Color: Black or Red | Carboline Bitumastic 300M
Tnemec 46H413
Ameron 78HB
Sherwin Williams B69B60 / B60V60 |
| (3) | Finish Coat
Coal Tar Epoxy
8.0 to 10.0 mils DFT
Color: Black | Carboline Bitumastic 300M
Tnemec 46H413
Ameron 78HB
Sherwin Williams B69B60 / B60V60 |
- Total minimum dry film thickness: 16 mils

c. Specialty Coatings (Launder Trough – Inside).

- | | | |
|-----|---|--|
| (1) | Surface Preparation | <u>SSPC SP-10</u>
<u>Near White Blast Clean</u>
Or Per Manufacturers Site Specific
Recommendation |
| (2) | Prime Coat
10.0 to 15.0 mils DFT
Color: White or Lt. Gray | Chesterton ARC S1
<u>EpoxyTec Uroflex</u>
<u>Tnemec Series 435 Perma-Shield</u> |

- | | | |
|-----|--|---|
| (3) | Intermediate Coat
10.0 to 15.0 mils DFT
Color: White or Lt. Gray | Chesterton ARC S1
<u>EpoxyTec Uroflex</u>
<u>Tnemec Series 435 Perma-Shield</u> |
|-----|--|---|

Total minimum dry film thickness: 20 mils

d. Specialty Coatings (Clarifier Concrete Walls).

- | | | |
|-----|--|---|
| (1) | Surface Preparation | <u>SSPC-SP-13 Concrete Preparation</u>
Or Per Manufacturers Recommendations |
| (2) | Prime Coat
50.0 to 70.0 mils DFT
Color: Dependent on Brand | Chesterton ARC S1HB
<u>EpoxyTec Uroflex</u>
<u>Raven 405</u>
<u>Tnemec Series 436 Perma-Shield FR</u> |
| (3) | Final Coat
50.0 to 70.0 mils DFT
Color: Dependent on Brand | Chesterton ARC S1HB
<u>EpoxyTec Uroflex</u>
<u>Raven 405</u>
<u>Tnemec Series 436 Perma Shield- FR</u> |

Total minimum dry film thickness: 100 mils

3.6 INSPECTION AND TESTING

a. Inspection.

(1) Surface preparations, coating applications and repairs are subject to inspection by the Engineer. The standards published by the Steel Structures Painting Council, especially SSPC-VISL-635, Pictorial Surface, will be used as guides for acceptance or rejection of the cleaning, painting or coating application. Particular attention will be given hard to reach areas, bolted connections, sway rods, anchor bolts and threaded joints.

(2) Give sufficient notice in advance (minimum 24 hours) of coating applications so that the Engineer can perform the following inspections:

- (a) Examination and approval of surface preparation prior to any coating.
- (b) Examination and approval of each coat prior to application of the next coat.
- (c) Inspection of the completed coating for runs, overspray, roughness, and any evidence of improper application.
- (d) Direction or observation of testing.

(3) Any re-inspection cost will be charged to the Contractor at Sixty Dollars (\$60.00) per hour including travel time.

b. Testing.

(1) The Engineer will designate a representative to perform inspection and testing.

(2) Should any paint system fail to pass a test, the Engineer will specify corrective measures. The paint system will then be re-tested. Additional expenses, including re-testing, will be charged to the Contractor.

(3) The following tests will be made:

(a) Metal substrate surface profile after abrasive blasting.

(b) Dry film thickness will be tested after each coat of interior and exterior paint has been applied, and after the final coat of the exterior system has been applied to the pump, motor, tanks and piping. A test will be made for every 25 square feet of surface and at locations designated by the field project representative.

(c) The interior and exterior systems will be tested for holidays after the final coat has been applied.

(4) The Engineer may specify additional tests including but not limited to:

(a) Solvent wipe-off test

(b) Crosshatch adhesion test

(5) Appropriate scaffolding for Engineer's inspection shall be available. Provide manpower to move scaffolding during inspection.

END OF SECTION 09921