

Addendum #2



Capital Project Committee

Project Information

Project Name:	BOYD WTP - PAC SYSTEM REPLACEMENT - Bid #FA09-07-152
Date:	July 28, 2009
Project Manager:	Sam Boone
Phone/Extension:	970-622-8769

Addendum Items

Item 1:	Clarifications to specifications
Item 2:	
Item 3:	
Item 4:	
Item 5:	
Item 6:	
Item 7:	
Item 8:	
Item 9:	
Item 10:	
Item 11:	
Item 12:	
Item 13:	
Item 14:	
Item 15:	

ADDENDUM #2

The following shall be considered as a part of the original bid package and acknowledged in the Bid Proposal:

1. The following Sections shall be added to the Specifications:
16110 – CONDUIT, FITTINGS, AND ACCESSORIES
16120 – WIRE, CABLE, AND ACCESSORIES
16410 – ELECTRICAL GROUNDING
2. SECTION 11923 – POWDERED ACTIVATED CARBON SILO & TRANSFER SYSTEM shall be modified as follows:
 - A. PART 2.01.A.1: Add Carman Industries, Jefferson, IN, as an acceptable manufacturer for the bin actuator.
 - B. PART 2.03.B.1.: Delete the entire sentence and replace with the following: “Blower rating: 200 scfm minimum. Calculate total system head loss; match packaged blower and motor horsepower with manufacture’s slip curve.”
3. Clarification: The transfer pipe shall have a minimum three inch inside diameter.
4. Additional information: For the electrical penetrations, the concrete wall is 15 inches thick with #5 rebar 12” O.C. E.F.E.W. and the concrete floor is ten inches thick with a two inch concrete topping; #6 rebar 12” O.C. E.F.E.W.

SECTION 16110

CONDUIT, FITTINGS, AND ACCESSORIES

PART 1 – GENERAL

1.1 SCOPE

This section includes all conduit, fittings, and accessories.

1.2 QUALITY ASSURANCE

- A. Standards as applicable:
 - 1. American National Standards Institute (ANSI)
 - 2. American Society for Testing and Materials (ASTM)
 - 3. National Electrical Manufacturers Association (NEMA)
 - 4. National Electrical Safety Code (NEC)
 - 5. National Fire Protection Association (NFPA)
 - 6. Underwriters' Laboratories (UL)

1.3 SUBMITTALS

- A. Include individual catalog cut sheets for each product supplied.

PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Rigid Steel Conduit:
 - 1. Allied Tube and Conduit Corporation
 - 2. Copperweld
 - 3. Republic Conduit, Division of Maverick Tube Corporation
 - 4. Western Tube and Conduit Corporation
 - 5. Wheatland Tube Company
- B. Rigid Steel Conduit with Boded Polyvinyl Chloride (PVC) jacket:
 - 1. Robroy Industries.
 - 2. OCAL, Inc.
 - 3. Occidental Coating Company
 - 4. Perma-Coat
- C. Rigid Polyvinyl Chloride (PVC) Conduit and Fittings:
 - 1. IPEX Inc.
 - 2. Certain-Teed Products Corporation.
 - 3. Carlon Products Division, Continental Oil Company.
 - 4. Cantex Inc.

- D. Rigid Steel Conduit Fittings:
 - 1. Heavy-Duty Cast Malleable Iron Fittings:
 - a. Appleton Electric company.
 - b. Crouse Hinds Company

2.2 DESIGN REQUIREMENTS

- A. Each length of threaded conduit furnished with coupling on one end and metal or plastic thread protector on other end.
- B. UL listed and labeled conduit, on each length, fittings, and accessories.
- C. Sizes of conduit, fittings, and accessories as indicated, specified, or as required by Electrical Codes and Standards.

2.3 RIGID STEEL CONDUIT:

- A. Conform to ANSI C80.1
- B. Mild ductile steel with uniform wall thickness and accurately cut clean threads.
- C. Each length threaded on both ends with threads protected.
- D. Hot-dipped galvanized coated with a solid, unbroken layer of 99% virgin zinc.
- E. Couplings and elbows fabricated, coated and finished by the same Process as conduit.

2.4 RIGID STEEL CONDUIT WITH BONDED POLYVINYL CHLORIDE (PVC) JACKET

- A. Hot-dipped galvanized rigid steel conduit as specified in RIGID STEEL CONDUIT, this Section.
- B. Uniformly coat cleaned, galvanized surface, except for urethane coated threads, with PVC to a nominal 40 mils by the platisol dip method.
- C. Treat and coat couplings, elbows and other conduit fittings with the same process and coating tolerances as conduit.
- D. Final cured PVC coating shall have a dielectric strength of 400 volts/mil at 60 cycles.

2.5 RIGID POLYVINYL CHLORIDE (PVC) CONDUIT:

- A. Fabricate from self-extinguishing high-impact polyvinyl chloride designed for aboveground and underground installations.
- B. Type EPC schedule 80 heavy-wall rigid conduit.
- C. Fittings and accessories fabricated from same material as conduit.
- D. Solvent-weld-type joints as recommended by manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Conduit:

1. General Requirements
 - a. Install conduit as near as possible to the routing indicated.
 - b. Comply with applicable requirements of NEC pertaining to installation of conduit systems.
 - d. Direct bury conduit with a minimum of 24" of cover from finished grade to top of conduit.
 - e. Place warning tape in trench over conduit 12" below finished grade.
2. Rigid PVC Conduit:
 - a. Make all joints watertight with cement compound furnished by the conduit manufacturer.
 - b. Bury conduits a minimum of 24" below finished grade.
 - c. Maintain 6-inch separation from underground piping.
 - d. Use PVC jacketed rigid steel long radius elbows at all risers.
 - e. All risers shall be PVC jacketed rigid steel conduit.
 - f. Install fittings as required.

END OF SECTION

SECTION 16120

WIRE, CABLE, AND ACCESSORIES

PART 1 – GENERAL

1.1 SCOPE

This section includes furnishing and installing (including terminations) all electrical wire accessories.

1.2 QUALITY ASSURANCE

- A. Standards as applicable:
 - 1. American Society for Testing and Materials (ASTM)
 - 2. Insulated Cable Engineers Association (ICEA)
 - 3. National Electrical Manufacturers Association (NEMA)
 - 4. National Electrical Safety Code (NEC)
 - 5. National Fire Protection Association (NFPA)
 - 6. Underwriters' Laboratories (UL)

1.3 SUBMITTALS

- A. Include individual catalog cut sheets for each product supplied.

PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Tape: Minnesota Mining and Manufacturing (3M)
- B. Wire:
 - 1. American Insulated Wire Corporation
 - 2. Cablec Corporation
 - 3. Carol Cable Company, Inc.
 - 4. Rome Cable Corporation
 - 5. Southwire Company

2.2 DESIGN REQUIREMENTS

- A. Wire:
 - 1. UL listed.
 - 2. Surface mark with manufacturers name or trademark, conductor size, insulation type, and UL label.
 - 3. Rated for 600 volts.
 - 4. Insulation type THHN/THWN.
 - 5. AWG sized for 1.25% maximum amp load, Class B stranded annealed copper.
 - 6. Temperature rating of 90° C – continuous wet or dry locations.

PART 3 - EXECUTION

3.1 INSTALLATION

A.

1. General Requirements
 - a. Use only pulling compounds approved by wire manufacturer.
 - b. Do not exceed pulling tensions or sidewall pressures in excess of manufacturer's recommendations.
 - c. Do not subject wire to bending radius less than manufacturer's recommendations.
 - d. Color code each conductor with a 1-inch wide band of colored tape at each end.

END OF SECTION

SECTION 16410
ELECTRICAL GROUNDING

PART 1 – GENERAL

1.1 SCOPE

This section includes grounding electrode system.

1.2 QUALITY ASSURANCE

- A. Standards as applicable:
 - 1. American Society for Testing and Materials (ASTM)
 - 2. Article 250, National Electrical Safety Code (NEC)
 - 3. Underwriters' Laboratories (UL)

1.3 SUBMITTALS

- A. Include catalog cuts for wire conductor and terminal fittings.

PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Termination Fittings:
 - 1. Joslyn Manufacturing Company
 - 2. Knight-Meralcraft, Division of Whitaker Cable
 - 3. Thomas & Betts, Blackburn Products
- B. Wire:
 - 1. Annealed, uncoated, bare copper conforming to ATSM B3, sized per latest edition NEC code.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Incorporate concrete encased grounding electrode into the silo concrete base per Engineer's direction.
 - 1. Install a steel reinforcing bar (rebar) of 5/8-inch diameter, a minimum of 6-feet long, in the bottom matte of structural rebar.
 - 2. Using steel tie wire, wrap 4 times around each structural rebar crossing.
 - 3. The ground wire shall be bonded to the 5/8" x 6' long rebar by

- exothermic welding process or a fitting listed for concrete encasement. Welding to the structural rebar is prohibited.
4. Where ground wire exits concrete, wrap wire with several layers of rubber tape.
 5. Protect wire at all times from abrasion, stretching, or breakage.
 6. Measure resistance of ground system by use of a three-point ground test set, e.g. Megger Ground Tester or Vibroground tester.

END OF SECTION