WAUFORD
J. R. Wauford & Company, Consulting Engineers, Inc.

ADDENDUM NO. 1
SEWER SYSTEM IMPROVEMENTS
CONTRACT 16-06
GRAVITY SEWER BORING IMPROVEMENTS
JACKSON ENERGY AUTHORITY
JACKSON, TENNESSEE
WAUFORD PROJECT NO. 3590
JEA WORK ORDER NO. 1700553
CDBG DISASTER PROJECT NO. 54299

Date of Addendum: Thursday, February 27, 2020
Mandatory Pre-Bid Conference:
Tuesday, March 3, 2020, 10:00 a.m. Local Time
Bid Opening: Thursday, March 12, 2020, 2:00 P.M. Local Time

1. Advertisement for Bids, Page AB-1:

Replace the last bullet point on this page with the below bullet point:

"• Evidence that he or his boring subcontractor has performed a minimum of five projects using jack and bore methods with 36-inch Steel Casing Pipe or larger with a minimum installation length of 100 L.F. using inhouse forces."

2. Detailed Specifications, Section 4. Gravity Sewers, Manholes, and Appurtenances, Paragraph 5. Alternate Pipe Materials – Gravity Sewers, Page DS 4-3:

Modify this paragraph as follows:

"5. Alternate Pipe Materials – Gravity Sewers

a. General

Open-cut gravity sewer lines shall be either specially-lined Class 200 Ductile Iron Pipe or solid wall PVC of the pipe stiffness specified ***as indicated on the Plans. Pipe to be inserted in casing pipe shall be specially-lined Class 200 Ductile Iron Pipe with restrained joints as indicated on the Plans. Ductile iron pipe shall be manufactured by American Cast Iron Pipe Company, U.S. Pipe Company, or equal.***

b. Ductile Iron Pipe

(1) Materials, Manufacture and Joints

Ductile iron pipe shall be grade 60-42-10 iron centrifugally cast, manufactured and tested in accordance with the requirements of ANSI Specification A21.51. Ductile iron pipe shall be Class 200 and shall be specially lined as specified herein.

The pipe shall have a push-on type joint incorporating a single molded gasket and shall be tar coated outside. Slip-on type joints shall be furnished unless mechanical joints or mechanically restrained joints are specifically called for. Joints shall meet ANSI A21.11.

Gaskets shall conform with ANSI/AWWA C111/A21.

(2) Ductile Iron Pipe and Fittings with Special Lining

All ductile iron piping and fittings shall be manufactured with a special corrosion resistant lining as specified herein.

All specially lined pipe requires special handling from the outside of the pipe with straps or chains. No forks or hooks shall be used inside the pipe after the lining is applied. Field unloading shall be carefully performed, likewise, stenciled notations (at least 4 per pipe joint and 2 per fitting) shall note these handling limitations.

This specification allows U.S. Pipe or American pipe with factory applied Induron Protecto 401™ ***or Tnemec Series 431 PermaShield PL*** ceramic epoxy lining or equal.

Induron Protecto 401™ ceramic epoxy or equal shall be an amine cured Novalec epoxy containing at least 20 percent by volume ceramic quartz pigment. Coupons from factory lined DIP shall undergo the following tests:

- ASTM B 117 Salt spray (scribed panel)
- ASTM G 95 Cathodie Disbondment (1.5 volts @ 77 F) maximum 0.5 mm undercutting after 30 days.
- ASTM D714 Inversion Testing

20 percent sulphuric acid - no effect two years
140°F - 25 percent sodium hydroxide - no effect two years.
160°F - distilled water - no effect two years.
120°F - tap water - no effect two years

- Abrasion resistance - less than 3 mils loss after one million cycles using European Standard EN 5981 Section 7.8 Abrasion Resistance.

Surfaces to be lined with Protecto 401™ or equal shall be cleaned of oil and grease with a solvent using the guidelines for DIPRA-1 solvent cleaning and then abrasive blasted to remove rust and loose oxides and the lining applied within 8 hours. If rust reappears, reblast the rusted area.

All surfaces to be lined shall be cleaned to a minimum near-white metal finish as applied to ductile iron pipe and fittings. All surfaces to be lined shall be completely free of moisture, dust, grease, or any other deleterious substances, at the time the lining is applied.

The lining shall cover the inside surface of the pipe and fittings from the spigot end to the gasket socket. The coating in pipe and in fittings shall be 40 mils nominal thickness. Minimum lining thickness shall be 30 mils. Coating thickness on sealing areas in the bell socket and on the spigot may be decreased to 6 mils nominal.

Thickness determinations using a TYPE 1 magnetic thickness gauge shall be conducted in accordance with Steel Structures Painting Council SSPC-PA2 Specification as applied to ductile iron pipe and fittings.

Holiday inspection as per ASTM G-62 Method B shall be conducted using a non destructive 2,500 volt spark test. In accordance with the coating manufacturer's recommendation, holiday testing may be conducted any time after the coating has reached sufficient cure.

(3) Procedures for Sealing Cut Ends and Preparing Field-damaged Areas of Specially Lined Pipe and Fittings

(a) Remove burrs caused by field cutting of ends or handling damage and smooth out edge of the lining if it is rough and remove loose liner.

(b) Remove all traces of oil, grease, dust, dirt, *etc.*

(c) With the area to be repaired absolutely clean and suitably roughened, apply a coat of Protecto Joint Compound using the following procedure:

Protecto Joint Compound is a 7 to 1 (7:1) mix ratio. When mixed, it should contain seven parts of the black activator and one part of the translucent blending resin. This can be accomplished by using the same container to dip out seven containers from the large can and pouring one contained from the small can which contains the resin. This is the simplest and most accurate means for field mixing less than the kit provided. After the blending resin is added to the activator, the mixture should be thoroughly agitated. All activated material must be used within 45 minutes of mixing.

After the material has been thoroughly mixed in a 7 to 1 (7:1) ratio, it can be applied to the prepared surface by brush. Brushing is best due to the fact that the areas to be repaired are usually small. Practices conductive to a good coating are contained in the technical data sheet for Protecto Joint Compound.

(4) Ductile Iron Pipe Bedding and Backfill

See Paragraph 11. Pipe Laying – Gravity Sewers and Paragraph 13. Backfilling Pipeline Trenches of this section.

(5) Quality Control Testing

See Paragraph 21. Cast and Ductile Iron Pipe and Special Castings of Section 2 of these Detailed Specifications.

(6) Markings

Each length of pipe and fittings shall have the following information plainly marked on the pipe's exterior:

(a) Nominal Size
(b) Class
(c) Manufacturer
(d) Independent Testing Laboratory Stamp
(e) Quality Control Code

(7) Restrained Joint Pipe

Restrained joint ductile iron pipe for installation in steel casing pipe shall be Class ***200*** American Flex Ring, ***Class 200 U.S. Pipe (HP Lok or TR Flex)*** or equal. Ductile iron pipe with restrained joints shall be Specially Lined and conform to the latest revisions of ANSI Specification A21.10, A21.11 and A21.51. The pipe shall be installed where shown on the Plans or directed by the Engineer."

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