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CROWDER CONSTRUCTION COMPANY

CIVIL & ENVIRONMENTAL DIVISION

February 28, 2020

Mr. Ed Stempien, P.E.
Construction Projects Administrator
Public Utilities Department
219 Fayetteville St, Suite 620
Raleigh, NC 27601

Ref: Neuse River Resource Recovery Facility (NRRRF) Bioenergy Recovery Project (BERP)
Project No. CS370419-20 Clean Water State Revolving Fund (CWSRF)
Submit to cwsrfwaiver@epa.gov

Subject: Project Waiver of American Iron and Steel Requirements for 16"-24" Ductile Iron Pipe Fittings

Dear Mr. Stempien,

In order to meet the project's technical specifications for restrained joint ductile iron pipe fittings consisting of a factory manufactured restraint system identical to the factory restrained joint pipe we must submit and obtain a Project Waiver to the American Iron and Steel Requirement. The waiver request is specific to ductile iron fitting sizes 16" through 24" Flex-Ring or Lock-Ring type joints as manufactured by American Cast Iron Pipe Company, HP LOK or TR Flex as manufactured by US Pipe, TR Flex or Super Lock as manufactured by McWane Ductile. The project may consist of all three manufactures due to the bidding and award process, there are various General Contractors who have been or will be awarded bid packages.

The following supporting documentation is included for review and is presented in the order listed below.

General

1. Description of the foreign and domestic construction materials
2. Unit of Measure
3. Quantity
4. Price
5. Time of delivery or availability
6. Location of the construction project
7. Name and address of the proposed supplier
8. A detailed justification for the use of foreign construction materials

Cost Waiver Request, we are not submitting for a waiver based on cost.

Availability Waiver Requests

1. Supplier information or pricing information from a reasonable number of domestic suppliers indicating availability/delivery date for construction materials
2. Documentation of the assistance recipient's efforts to find available domestic sources, such as a description of the process for identifying suppliers and a list of contacted suppliers
3. Project Schedule
4. Relevant excerpts from project plans, specifications, and permits indicating the required quantity and quality of construction materials
5. Waiver request includes a statement from the prime contractor and/or supplier confirming the non-availability of the domestic construction materials for which the waiver is sought
6. Has the State received other waiver requests for the materials described in this waiver request, for comparable projects?

Sincerely,

CROWDER CONSTRUCTION COMPANY

**Brian
Boyle**

Digitally signed by Brian Boyle
DN: cn=Brian Boyle, o=Crowder
Construction, ou=Civil &
Environmental,
email=bboyle@crowderusa.com, c=US
Date: 2020.02.28 08:46:13 -05'00'

Brian Boyle

Senior Project Manager

cc: Mr. Shannon Dorsey, Hazen
File

3. Time of delivery or availability

Glass Lined Fittings lead time = 24 weeks
Cement Lined Fittings lead time = 16 weeks

4. Location of the construction project

8500 Battle Bridge Road, Raleigh, NC 27610

5. Name and address of the proposed supplier

Alex Shelton
McWane Ductile
Plant Division Sales
c 704.572.2903
o 704.572.2903
alex.shelton@mcwaneductile.com

Ron Miller
American Ductile Iron Pipe (Manufacturer)
American SpiralWeld Pipe
North Carolina Line & Plant Sales
Georgia Plant Sales
770-846-1493
RonaldMiller@american-usa.com

Alan Foote
C & B Piping, Inc. (Supplier/Glass Line Applicator)
P.O. Box 942
8804 Parkway Drive
Leeds, Alabama 35094
P: 205/699.0455
F: 205/699.0773
afoote@cbpiping.com

Wes Sheffield
Sales Manager
U.S. Pipe (Manufacturer)
Raleigh Sales Office
C 804.305.5753
wsheffield@uspipe.com

6. A detailed justification for the use of foreign construction materials

All restrained joint ductile iron pipe fittings specified on the project, 16" and greater, are required to be factory fittings to meet the engineering design requirements. Mechanical joint fittings, 16" and greater, do not meet the design requirements for the project and cannot be accepted where restrained joint pipe and fittings are specified.

Shannon Dorsey, PE
Senior Associate | Hazen and Sawyer
4011 WestChase Blvd., Suite 500, Raleigh, NC 27607
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Availability Waiver Requests

1. Supplier information or pricing information from a reasonable number of domestic suppliers indicating availability/delivery date for construction materials

American Ductile Iron Pipe, US Pipe, C&B Piping, and McWane Ductile were contacted to establish a reasonable number of domestic supplier and all stated that ductile iron fitting sizes 16" through 24" Flex-Ring or Lock-Ring type joints as manufactured by American Cast Iron Pipe Company, HP LOK or TR Flex as manufactured by US Pipe, TR Flex or Super Lock as manufactured by McWane Ductile are not manufactured domestically.

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Ron Miller
American Ductile Iron Pipe (Manufacturer)
American SpiralWeld Pipe
North Carolina Line & Plant Sales
Georgia Plant Sales
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Wes Sheffield
Sales Manager
U.S. Pipe (Manufacturer)
Raleigh Sales Office
C 804.305.5753
wsheffield@uspipe.com

2. Documentation of the assistance recipient's efforts to find available domestic sources, such as a description of the process for identifying suppliers and a list of contacted suppliers

The following manufacturers were contacted to find available domestic sources;

Wes Sheffield
Sales Manager
U.S. Pipe (Manufacturer)
Raleigh Sales Office
C 804.305.5753
wsheffield@uspipe.com

Ron Miller
 American Ductile Iron Pipe (Manufacturer)
 American SpiralWeld Pipe
 North Carolina Line & Plant Sales
 Georgia Plant Sales
 770-846-1493
RonaldMiller@american-usa.com

Alex Shelton
 McWane Ductile
 Plant Division Sales
 c 704.572.2903
 o 704.572.2903
alex.shelton@mcwaneductile.com

3. Project Schedule

Activity ID	Activity Name	Duration % Complete	Cost % Complete	Budgeted Total Cost	Actual Cost	Original Duration	Actual Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float
Neuse River BERP - Bid Package No. 7												
Procurement												
Bid Package No. 7 - Screenings and Preconditioning +												
Division 15 Mechanical												
15006 Ductile Iron Pipe												
Shop Drawings												
1.04 Submittals												
BP7C-15006-001-A	Prepare & Submit Shop Drawings	0%	0%	\$0.00	\$0.00	139	0	19-Nov-19	05-Apr-20	19-Nov-19	05-Apr-20	0
BP7C-15006-B	Buyout Ductile Iron Pipe	0%	0%	\$0.00	\$0.00	7	0	19-Nov-19	25-Nov-19	19-Nov-19	25-Nov-19	0
BP7C-15006-D	Fabricate and Deliver Ductile Iron Pipe	0%	0%	\$0.00	\$0.00	56	0	10-Feb-20	05-Apr-20	10-Feb-20	05-Apr-20	0
BP7CM-15006-001-A	CM Review (Shop Drawings)	0%	0%	\$0.00	\$0.00	14	0	16-Dec-19	29-Dec-19	16-Dec-19	29-Dec-19	0
BP7E-15006-001-A	Engineer Review (Shop Drawings)	0%	0%	\$0.00	\$0.00	42	0	30-Dec-19	09-Feb-20	30-Dec-19	09-Feb-20	0
Construction												
Bid Package No. 7 - Screenings and Preconditioning +												
Yard Piping												
SCR PRE AREA												
BP7-15006-9045	EXCAVATE, INSTALL, & BACKFILL - 14" PD & 24" PD FROM BMH-9 TO PDPS SOE (EX. 72" SE CROSSING	0%	0%	\$0.00	\$0.00	5	0	06-Apr-20	15-Apr-20	06-Apr-20	15-Apr-20	0
BP7-15006-9050	EXCAVATE, INSTALL, & BACKFILL - 14" & 24" PD IN PDPS SOE	0%	0%	\$0.00	\$0.00	5	0	25-Jun-20	08-Jul-20	24-Jul-20	31-Jul-20	15
BP7-15006-9055	EXCAVATE, INSTALL, & BACKFILL - 18" PD FROM SCR BLDG TO BMH-9	0%	0%	\$0.00	\$0.00	5	0	11-Jan-21	19-Jan-21	07-Mar-22	11-Mar-22	226
BP7-15006-9095	EXCAVATE, INSTALL, & BACKFILL - 24" PD FROM BMH-8 TO BMH-9	0%	0%	\$0.00	\$0.00	3	0	09-Jul-20	13-Jul-20	09-Jul-20	13-Jul-20	0
BP7-15006-9100	EXCAVATE, INSTALL, & BACKFILL - 20" PD FROM BMH-7 TO BMH-8 (0 to 40')	0%	0%	\$0.00	\$0.00	1	0	14-Jul-20	14-Jul-20	14-Jul-20	14-Jul-20	0
BP7-15006-9101	EXCAVATE, INSTALL, & BACKFILL - 20" PD FROM BMH-7 TO BMH-8 (40 to 80')	0%	0%	\$0.00	\$0.00	1	0	15-Jul-20	15-Jul-20	15-Jul-20	15-Jul-20	0
BP7-15006-9102	EXCAVATE, INSTALL, & BACKFILL - 20" PD FROM BMH-7 TO BMH-8 (80 to 120')	0%	0%	\$0.00	\$0.00	1	0	17-Jul-20	17-Jul-20	17-Jul-20	17-Jul-20	0
BP7-15006-9103	EXCAVATE, INSTALL, & BACKFILL - 20" PD FROM BMH-7 TO BMH-8 (120 to 160')	0%	0%	\$0.00	\$0.00	1	0	20-Jul-20	20-Jul-20	20-Jul-20	20-Jul-20	0
BP7-15006-9104	EXCAVATE, INSTALL, & BACKFILL - 20" PD FROM BMH-7 TO BMH-8 (160 to 200')	0%	0%	\$0.00	\$0.00	1	0	21-Jul-20	21-Jul-20	21-Jul-20	21-Jul-20	0
BP7-15006-9105	EXCAVATE, INSTALL, & BACKFILL - 20" PD FROM BMH-10 TO BMH-7	0%	0%	\$0.00	\$0.00	5	0	22-Jul-20	29-Jul-20	22-Jul-20	29-Jul-20	0
BP7-15006-9145	EXCAVATE, INSTALL, & BACKFILL - 16" RM FROM PDPS MM TO SW CORNER OF SCR BLDG	0%	0%	\$0.00	\$0.00	5	0	11-Jan-21	19-Jan-21	31-May-22	08-Jun-22	273
OUTSIDE OF SCR PRE AREA												
BP7-15006-9130	EXCAVATE, INSTALL, & BACKFILL - 14" PD & 20" PD FROM BP NO. 6/WAS THICKENING TO PDPS	0%	0%	\$0.00	\$0.00	10	0	30-Jul-20	17-Aug-20	20-May-22	08-Jun-22	354
BP7-15006-9135	EXCAVATE, INSTALL, & BACKFILL - 24" OVF FROM PDPS TO UCAD NO. 4	0%	0%	\$0.00	\$0.00	5	0	06-Oct-20	13-Oct-20	14-Apr-22	21-Apr-22	296
Uncovered Anaerobic Digester (UCAD)												
BP7-15006-4500	EXCAVATE, INSTALL, BACKFILL - 24" OVF FROM PDPS	0%	0%	\$0.00	\$0.00	3	0	05-May-20	08-May-20	08-May-20	12-May-20	2

4. Relevant excerpts from project plans, specifications, and permits indicating the required quantity and quality of construction materials

See attached project plans highlighting the location of 16"-24" DI Yard Pipe.

SECTION 15006 DUCTILE IRON PIPE

PART 1 -- GENERAL

1.01 THE REQUIREMENT

A. All ductile iron pipe and specials shall be marked with the manufacturer's name or trademark, size, weight, thickness class, the date of manufacture, and the word "Ductile".

B. Ductile iron pipe (DIP) of the sizes shown or specified shall conform to ANSI A21.51 (AWWA C151), Grade 60-42-10 for ductile iron pipe centrifugally cast in metal molds or sand-lined molds. All ductile iron pipe shall conform to ANSI A21.50 (AWWA C150) for thickness design and shall be supplied in 18 or 20 foot nominal lengths or as required to meet the requirements of the Drawings. Fittings and specials shall be cast iron or ductile iron, conforming to the requirements of ANSI A21.10 (AWWA C110) or ANSI A21.53 (AWWA C153) and shall have a minimum rated working pressure of 250 psi.

C. Minimum Class 53 pipe shall be used for flanged spools.

D. Reference Section 15000, Basic Mechanical Requirements

PART 2 -- PRODUCT

2.01 DUCTILE IRON PIPE AND FITTINGS

A. All pipe and fittings, with the exception of glass lined pipe and sleeves, shall be cement mortar lined. Linings shall conform to American Standard Specifications for Cement Mortar Lining for Cast Iron Pipe and Ductile Iron Pipe and Fittings, ANSI A21.4 (AWWA C104) and shall be standard thickness. The mortar lining shall be protected with the bituminous seal coat. All buried DIP and fittings shall have a bituminous coating on the exterior surfaces in accordance with ANSI A21.51 (AWWA C151). All exposed DIP and fittings shall have a shop applied prime coat in accordance with Section 09900 - Painting.

B. Glass-lined ductile iron pipe shall be furnished and installed where specified in the Piping System Schedule. The finished lining shall be from 0.008-inch to 0.012-inch thick, hardness of from 5 to 6 on the Mohs Scale, density of from 2.5 to 3.0 grams per cubic centimeter as measured in accordance with the requirements of ASTM D792 and be capable of withstanding a thermal shock of 350°F without crazing, blistering, or spalling. The lining shall be Ervite Type SG-14, as manufactured by the Ervite Corporation, Erie, Pa., Ferroch MEH-32, by Water Works Supply & Mfg., Co., Marysville, CA, or equal.

C. Cutting of glass-lined pipe in the field shall be limited to only one piece per run of pipe, and this shall be for closure purposes only. Spalling of the glass liner shall be no more than 1/8-inch back from the cut. Flanges and bolt holes on spool pieces shall be aligned prior to glassing and shall be sealed and tested prior to shipment in accordance with the manufacturer's recommendation. Warping of flanges and/or pipe may be cause for rejection as determined by the Engineer.

D. Requirements for various types of joints are described in the following paragraphs. UNLESS OTHERWISE NOTED HEREIN OR ON THE DRAWINGS, ALL EXPOSED DUCTILE IRON PIPING SHALL HAVE FLANGED JOINTS.

E. Flanged joints and fittings shall have a minimum pressure rating of 250 psi with 125 lb. American Standard flanges. All flanges and fittings shall conform to the requirements of ANSI B16.1. Flanges shall be ductile iron and shall be of the threaded or screw on type. The face of the flanges shall be machined after installation of the flange to the pipe. No raised surface shall be allowed on flanges. Flanged pipe shall conform to the requirements

of ANSI Specification A21.15, (AWWA C115). Pipe lengths shall be fabricated to meet the requirements of the Drawings.

F. Gaskets shall be the "Ring Gasket" type, 1/8-inch minimum thickness, cloth inserted rubber, red rubber or neoprene and shall be suitable for the service intended. Gaskets for glass lined pipe shall be TORUSEAL flange gasket, or equal. Bolts shall be of the size and length called for and in accordance with the "American Standard" and comply with the requirements of the ANSI/AWWA Standards. The bolts for flanged joints shall be a minimum ASTM A307; Grade B carbon steel and be in accordance with ANSI A21.10, (AWWA C110). The bolts shall have hexagonal heads and nuts, no washers shall be used.

G. Bell and spigot pipe shall be provided with push on, O-ring rubber gasket, compression type joints and shall conform to the requirements of ANSI A21.11 (AWWA C111). Fittings and specials shall be supplied with mechanical joints as specified for mechanical joint pipe. If required by installation conditions, pipe shall have cast-on lugs for adequately tying it together.

H. Mechanical joints and fittings shall conform to the requirements of ANSI A21.11, (AWWA C111). Joints shall be made employing a tapered rubber gasket forced into a tapered groove with a ductile iron follower ring. If required by installation conditions, pipe and fittings shall have cast-on lugs for adequately tying the pipe and fittings together. These shall be in conformance with standard practice and as outlined under the appropriate AWWA Specifications.

I. Bolts for mechanical joints shall be high strength corrosion resistant low-alloy steel tee-head bolts with hexagonal nuts.

J. Mechanical coupling joint pipe and fittings shall be split type, shouldered end. Coupling materials shall be malleable iron. Couplings shall have a minimum pressure rating and service equal to that of the connected piping. Gaskets shall be of rubber. Bolts and nuts shall be heat treated carbon steel track bolts and shall be plated. After installation, buried couplings shall receive two heavy coats of coal tar epoxy (min. 24 mil thickness) which is compatible with the finish of the couplings. Couplings shall be as manufactured by Victaulic Company of America Style 31, or equal.

K. Restrained joint pipe shall consist of factory manufactured bolted retainer rings, ductile iron locking segments held in place by rubber retainers, or ductile iron retaining rings that lock over the bell of the joint and are secured to prevent rotation, and factory welded retainer beads or rings on the spigot of the pipe. All components of the bolted or snap ring assemblies shall be constructed of corrosion-resistant, high strength, low-alloy steel. Restrained joint pipe shall be Flex-Ring or Lock-Ring type joints as manufactured by American Cast Iron Pipe Company, HP LOK or TR Flex as manufactured by US Pipe, Bolt Lok or Snap-Lok as manufactured by Griffin Pipe Products, TR Flex or Super Lock as manufactured by Clow Water Systems Co., or approved equal.

L. Restrained fittings for piping systems 16-inches in diameter and greater shall have factory restraint systems identical to the factory restrained joint pipe specified in Item K above. All fittings shall be minimum pressure Class 250 unless otherwise specified.

M. Restrained fittings for pipe systems 14-inches in diameter and smaller shall be Mechanical Joint fittings with restraint assemblies such as Stargrip by Star Pipe Systems, Mega Lug by EBAA Iron, ONE LOK by Sigma, Grip Ring by Romac, or approved equal. Where threaded rods are allowed, the rods and tabs shall be designed for the specified restraint system design pressure, shall have lengths less than 10 feet between fittings, and shall be painted with two heavy coats of coal tar epoxy after installation.

N. The manufactured systems for thrust restraint indicated above shall be used where restrained joint ductile iron pipe and fittings are specified or indicated on the drawings. Gripping gaskets are not an acceptable form of restraint. Thrust restraint and harnessing

systems such as threaded-rods, friction clamps, retainer glands shall be used only where specifically specified herein, indicated on the drawings or if allowed by the Engineer in isolated applications where conditions warrant and necessitate their use. Concrete thrust blocks may be used in accordance with the schedule indicated on the drawings, if applicable.

O. Cast Iron Soil Pipe shall conform to the standards of the Cast Iron Soil Pipe Institute (CISPI) Specification HS-67, and also ANSI Specification A-112.5.2 for Hub & Spigot pipe or A.112.5.1 for Hub & Spigot pipe or A.112.5.1 for No-Hub Pipe. Pipe class shall be "Extra Heavy: (XH).

- END OF SECTION -

5. Waiver request includes a statement from the prime contractor and/or supplier confirming the non-availability of the domestic construction materials for which the waiver is sought.

Crowder Construction surveyed the three specified manufacturers and asked the same two questions and the response is listed below;

CROWDER QUESTION: Which American **pipe products** meet the technical specifications of the project that are produced in the US in sufficient and are reasonably available of satisfactory quality?

AMERICAN RESPONSE: "ALL full length pipe and spools are made in the USA and in sufficient quantities. All full-length pipe & spool products not only meet AWWA Standards, we exceed those standards."

US PIPE RESPONSE: "All of our DI Pipe 3"- 64" are produced Domestically. This includes Tyton, TR-Flex, HP-Lok, and HDSS. Our HP-Lok."

MCWANE DUCTILE: "All ductile iron **pipe products** being supplied by McWane Ductile will meet the technical specifications of the project, are produced in the US and are reasonably available of satisfactory quality."

CROWDER QUESTION: Which American **fitting products** meet the technical specifications attached that are produced in the US in sufficient and are reasonably available of satisfactory quality?

AMERICAN RESPONSE:

- a. All manufactured FlexRing fittings 24" and smaller are IMPORTED.
- b. All 30" thru 48" FlexRing fittings can be sourced from USA.
- c. All 54" thru 64" LokRing Fittings are made in the USA.

US PIPE RESPONSE: "TR-Flex Fittings can be produced Domestically in sizes 30" and Larger, sizes 24" and below are Imported from outside of the USA"

MCWANE DUCTILE: "All ductile iron fitting products being supplied by McWane Ductile will meet the technical specifications of the project, are produced in the US and are reasonably available of satisfactory quality with the only exception being TR-Flex Fittings 24" and below. 24" and below TR-Flex fitting are not currently manufactured in the US."

6. Has the State received other waiver requests for the materials described in this waiver request, for comparable projects?

16-inch and 24-inch ductile iron pipe flex-ring fittings	Availability	North Carolina	City of Winston-Salem	CW	8/1/16
TR flex pipe fittings	Availability	North Carolina	City/County Utilities Commission for Winston-Salem/Forsyth County	CW	8/6/15