

Addendum #1

Project: Milbank Well House #3 Replacement - 2016
Bid Date: 11:00 A.M., Local Time, November 2, 2016
Bid Location: City Administrator; 1001 4th Avenue, Suite 301, Milbank, SD
Issue Date: October 28, 2016

Notice: Failure to acknowledge all addenda in the BID may cause rejection of the BID. See Instructions to Bidders.

SCOPE OF THIS ADDENDUM:

The following becomes a part of the original project manual and drawings, taking precedence over the items that may conflict. The bidder shall note receipt and make acknowledgment of the Addendum on his/her bid form, incorporating its provision in his/her bid.

GENERAL:

The General Contractor Shall be responsible for maintaining access the easement from the adjacent land owner to the owner site. Any necessary improvements to access the land shall be coordinated by the General Contractor with the adjacent land owner. These items shall be incidental to the project.

The borrow site testing results are attached to this amendment and these are preapproved for use for this project. The contact for the borrow site is O'Connell Construction Inc. 615 North Wood Avenue, Philip, SD (605) 859-2020.

PROJECT MANUAL:

The following additions, changes and clarifications have been made to the Project Manual.

Section 00410 Bid Form

Delete: Paragraph 7.01 C. on page 00410 -4 in its entirety.

Add: Attached Document SUB -1 – List of Subcontractors and Suppliers shall be added to the project manual.

Section 331000 Water Utilities

Add: Attached Specification 331000 Water Utilities shall be added to the project manual.

Addendum #1 (cont'd)



Section 332100 Submersible Well Pump

Add: The following Paragraph 2.1 B. 9. on page 33 2100-3

9. *PITLESS ADAPTER UNIT AND DROP TUBE*

a. The pitless adapter unit shall be of the size as shown on Drawings and of the positive self-sealing industrial heavy duty type. It shall have the capability for a minimum full diameter thru-seal area for well maintenance purposes.

b. Positive pressure "O" ring seals shall be used throughout both for internal well sealing and external surface water sealing. Positive threaded well vent, cable entrance, and extra openings shall be provided and capped. A mechanical joint discharge connection one foot from the end of the pitless unit shall be provided. A 1-inch drop tube attached to port in cover of the pitless unit shall be provided for drawdown measuring. Drop tube shall be polyethylene 160 psi tested pipe.

c. The pitless adapter unit shall be a Baker Monitor Division or prior approved equal.

<i>Pitless Adapter O.D.</i>	<i>12"</i>
<i>Discharge Size</i>	<i>6"</i>
<i>Column Pipe Size</i>	<i>6"</i>

Section 400000 Process Integration

Delete: The following Paragraph 2.3 B 1. on page 40 0000-12

1. Siemens/ Quality Flow Systems, Inc.
Contact: Pat Malay – (952) 758-9445

Add:

1. Sweeny Controls Company
Jim Olson - Phone – (701) 232-3644

Section 409100 Primary Process Measurement Devices

Add: The following Paragraph 2.1 F on page 40 9100-4

Addendum #1 (cont'd)

- F. Pressure Gauge: Liquid-filled pressure gauges. Gauge to be readable from an accessible standing position.
1. General Materials Requirements: General requirements for pressure gauge are as follows:

Materials	Bourdon tube, socket, connecting tube: 316 stainless steel Case: Phenolic Diaphragm seal housing: 316 stainless steel Filter disc: 316 stainless steel Housing: 316 stainless steel
Accuracy	1% of full range
Accessories	Provide diaphragm for fluid separation and provide appropriate pulsation dampening to extend gauge life.
Enclosure	Suitable for service at 250 Deg F or maximum process temperature at which gauge is exposed.
 2. Approved Manufacturers: Pressure gauge shall be manufactured by Ashcroft, Ametek, Siemens, or Engineer approved equal.

Section 446013 Process Piping and Valves

Add: The following Paragraph 2.3 D on page 44 6013-3

2.3 VALVES

D. Butterfly Valves (3" to 20")

1. General: All butterfly valves shall be of the tight-closing, rubber-seat type with rubber seats that are securely fastened to the valve body. No metal-to-metal seating surfaces shall be permitted. Valves shall be bubble-tight at rated pressures with flow in either direction and shall be satisfactory for applications involving throttling service and/or frequent operation and for applications involving valve operation after long periods of inactivity. Valve discs shall rotate 90° from the full open position to the tight shut position. Valves 20" and smaller shall meet the full requirements of AWWA Standard C504 for Class 150B. The manufacturer shall have manufactured tight-closing, rubber-seat butterfly valves for a period of at least five (5) years. All valves shall be as manufactured by the Henry Pratt Company, DeZurik, or Engineer approved equal.
2. Valve Bodies and Flanges: Valve bodies shall be constructed of cast iron ASTM A-126 Class B (for flanged end valves). Flange drilling shall be in accordance with ANSI B16.1 Standard

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- for cast iron flanges. Two trunnions for shaft bearings shall be integral with each valve body. Body thickness shall be in strict accordance with AWWA Standard C504.
3. Valve Discs: Valve discs shall be constructed of cast iron with Ni-Chrome edge.
 4. Valve Shafts: Shafts of all valves shall be turned, ground and polished. Valve shafts shall be constructed of 18-8 Type 304 or Type 316 stainless steel. Shaft diameters must meet minimum requirements established by AWWA Standard C504 for Class 150B.
 5. Valve Seats: Valve seats shall be of a synthetic compound. Valves shall have seats that are simultaneously molded in, vulcanized, and bonded to the body. Seat bond must withstand 75 lbs. pull under test procedure ASTM D-429, Method B.
 6. Valve Bearings: Valves shall be fitted with sleeve-type bearings. Bearings shall be corrosion resistant and self-lubricating. Bearing load shall not exceed 1/5 of the compressive strength of the bearing or shaft material.
 7. Valve Packing: Packing shall be self-adjusting Chevron type.
 8. Valve Operators: Valve operators shall conform to AWWA C504. Valves shall be provided with operators as called for on the valve and piping schedule shown on the Plans.
 9. Painting: All surfaces of the valve shall be clean, dry, and free from grease before painting. The valve surfaces except for disc, seating, and finished portions shall be evenly coated with a suitable primer to inhibit rust or with asphalt varnish in accordance with Federal Specification TT-V-51c and AWWA Standard C504.
 10. Testing: Hydrostatic and seat leakage tests shall be conducted in strict accordance with AWWA Standard C504.

NOTE:

The Plan Holders List and addendums are available via the internet at <http://www.bannerassociates.com> by clicking on the Project Information link.

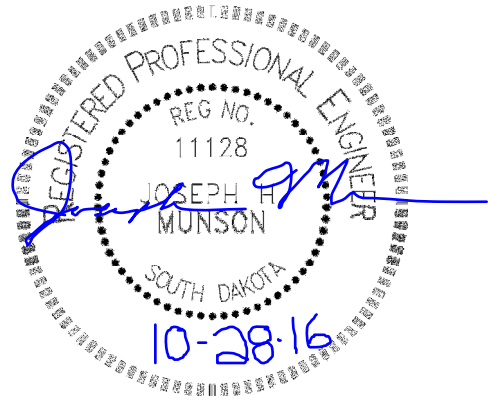
Project Manual and Drawing inquiries regarding the work should be directed to:

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Contact Persons:

Joseph Munson
Banner Associates Inc.
2307 W. 57th Street, Suite 102
Sioux Falls, SD 57108
1-855-323-6342



Joseph Munson

ATTACHMENTS

Sub-1
Section 331000 Water Utilities

LIST OF SUBCONTRACTORS AND SUPPLIERS

PROJECT: _____

BIDDER: _____

List all Subcontractors and Suppliers to be employed on the above Project. This list shall be submitted as required in Article 12 of the Instructions to Bidders and Article 7 of the Bid Form with such additional information as is required therein.

Work	Firm	Dollar Amount

END OF SECTION

SECTION 33 1000 – WATER UTILITIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specifications Sections, apply to this Section.

1.2 SUMMARY

- A. The Section includes the following:
 - 1. Raw water pipe;

1.3 SHOP DRAWINGS

- A. Shop Drawings shall be submitted in accordance with “General Requirements” for the following items:
 - 1. All piping, fittings, hydrants, valves, and valve boxes with dimensions, details and materials of construction.

PART 2 - PRODUCTS

2.1 PIPE MATERIALS

- A. General: Pipe furnished for installation on this project shall be of size shown on the Drawings. The pipe shall be manufactured from one of the materials designated for specified line and application as shown in the following Subsections.
- B. Ductile Iron Pipe:
 - 1. Push on or mechanical joint ductile iron pipe shall conform to the requirements of ANSI A21.50 (AWWA C150) and ANSI A21.51 (AWWA C151).
 - 2. Flanged ductile iron pipe for installation in manholes and vaults shall conform to ANSI A21.15 (AWWA C115) and shall be minimum Class 53.
 - 3. Flanges shall be ANSI B16.1 125 lb. Class B.
 - 4. All buried or encased piping shall be push on joint type or mechanical joint pipe conforming to the requirements of ANSI A21.11 (AWWA C111).
 - 5. Push on joint or mechanical joint ductile iron pipe for 4” to 12” shall be a minimum pressure class 350, for 14” to 20” shall be a minimum pressure class of 250 and for 24” and greater shall be a minimum pressure class of 200.
 - 6. All pipe shall be bituminous coated and cement mortar lined.

2.2 PIPE SYSTEM APPURTENANCES

A. Pipe Fittings and Specials:

1. Specials and fittings constructed of ductile iron shall be provided for use with all water line piping and at locations shown on the Drawings.
2. Mechanical joint ductile iron fittings shall conform to the requirements of AWWA C110 or AWWA C153.
3. Flanged fittings shall conform to the requirements of ANSI/AWWA C110/A21-10.
4. Flanges shall be ANSI B16.1 125lb. Class B.
5. Bolts for all flanged fittings shall be stainless steel. Bolts for mechanical joint fittings shall be Cor-Blue, or Engineer approved equal.
6. The outside of all ductile iron fittings shall be coated with a bituminous coating.
7. The inside of the ductile iron fittings shall be coated with a standard thickness cement mortar lining.
8. Direct buried ductile iron specials and fittings shall be wrapped with polyethylene encasement material conforming to the requirements of AWWA C105.

2.3 TRACER WIRE

A. Direct Burial: Tracer wire shall conform with the following specifications:

1. Wire Size: #12 AWG
2. Wire Type: Solid Copper, Copper Clad Steel (CCS), Stainless Steel. THHN wire is not an acceptable alternative.
3. Average Tensile Break Load: 380 lbs
4. Jacket Color: Blue
5. Jacket Coating Type: HDPE, HMWPE complying with ASTM D-1248. Nylon PVC jacket coating is not an acceptable alternative.
6. Jacket Thickness (Min.): 30 mil
7. Voltage Rating: 30V
8. Splice Type: Waterproof Connector - 3M DBR, Copperhead SnakeBite or Engineer approved equal.

B. Tracer Wire Access Point: Access/termination point shall provide a means to mark and locate the buried utility. Marker/access post shall be Rhino Triview™ Test Stations or Engineer approved equal meeting the following requirements:

1. Provide 360° visibility
2. Color: Blue
3. Decals: Includes the international “No-Dig” symbol and warning message
4. Length: 54”
5. Provide external tracer wire terminal posts
6. Terminal Post: ¼” brass with a bolt, nut, washers and ring terminal
7. Provide continuity between two adjacent terminals with a stainless steel shunt

PART 3 - INSTALLATION

3.1 GENERAL

- A. The Contractor shall saw cut and remove surface improvements, excavate and trench, remove water, bed, backfill, and restore surface improvements in accordance with the requirements outlined in the provision for Earthwork for Site Utilities and details shown on the Drawings.
- B. At all times when work is not in progress all open ends of pipe and fittings shall be securely closed so that no trench water, earth or other substance will enter the pipe.

3.2 LAYING PIPE

- A. The installation of water pipe shall conform to the applicable sections of the "AWWA PVC Pipe, Design and Installation, Manual of Water Supply Practices (AWWA No. M23)", AWWA C605, Uni-Bell Plastic Pipe Association and manufacturer's recommendations.
- B. No other pipe or material of any kind shall be placed inside a pipe or fitting. The interior of the pipe shall be thoroughly cleaned of foreign matter before being lowered into the trench, and shall be kept clean during laying operations by plugging or other approved methods. The full length of each section of pipe shall rest solidly upon the pipe bed with the recesses to accommodate bells and joints, shaped by hand. Each pipe shall be laid true to line and grade and in such a manner as to form a close concentric joint with the adjoining pipe. Pipe shall not be laid in water, or when a trench or weather conditions are unsuitable for work. Water shall be kept from the trench until the joints have been completed in a satisfactory manner.
- C. Pipe shall be carefully inspected in the field before and after laying. If any cause for rejection is discovered in a pipe after it is laid, it shall be repaired or replaced by the Contractor. Any corrective work shall be approved by the Engineer and shall be at the expense of the Contractor without additional cost to the Owner. The Engineer shall be given the opportunity to inspect existing pipe before connection to new pipe is made.
- D. If less than four feet of cover is expected, insulation shall be used to protect the pipe from freezing. Cover between four and six feet will be evaluated on a case by case situation for insulation requirements. Whenever insulation is required for pipe, individual water services should be evaluated for insulation requirements. The insulation work shall be in accordance with the special provisions, drawings, and manufacturer's recommendations.

3.3 CUTTING PIPE

- A. Cutting of pipe shall be done in a neat and workmanlike manner without damage to the pipe. Cutting shall be done by means of an approved type of mechanical cutter.

3.4 COUPLINGS AND FITTINGS

- A. Pipe, couplings and fittings shall be handled and installed in accordance with the recommendations of the pipe manufacturer.

3.5 JOINTING

- A. The type of joint used shall conform to the requirement for the applicable type of pipe. Jointing operations shall be carried out in strict adherence to the manufacturer's recommendations. When joining PVC pipe to ductile iron fittings, the bevel on the PVC shall be made the same as the bevel required for the ductile iron fitting (normally shorter and steeper than factory pipe bevel). When joining to mechanical joint fittings, there shall be no pipe bevel.

3.6 JOINT RESTRAINTS

- A. Joint Restraints shall be installed on the pressure pipe fittings and valves at the locations shown on the Drawings, and at a minimum of two (2) joints on either side of the pressure pipe fittings and valves.

3.7 FUTURE CONNECTIONS

- A. Pipe ends left for future connections shall be valved, plugged, or capped and anchored as shown on the Drawings or as directed by the Engineer.

3.8 RAISING OR LOWERING OF WATER LINES

- A. Water lines will be raised or lowered by the Contractor in those locations shown on the Plans, or where directed by the Engineer to avoid interference with new utilities. Water line adjustments shall be constructed to provide a minimum of two (2) feet of cover over the adjusted water line. Water line adjustments shall not be made until the Utility which owns the water line has authorized such work. The adjusting of water service lines shall be considered incidental.

3.9 WATER AND SEWER MAIN SEPARATION

- A. Horizontal Separation: Whenever possible, watermain should be laid at least 10 feet, horizontally, from any existing or proposed sewer. Should local conditions prevent a lateral separation of 10 feet, a watermain may be laid closer than 10 feet to a sewer if:
 - 1. It is laid in a separate trench; or
 - 2. It is laid in the same trench with the water main located at one side on a bench of undisturbed earth;
 - 3. In either case, the elevation of the crown of the sewer is at least 18 inches below the bottom of the water main.
 - 4. Prior approval must be obtained from Engineer, Owner, and DENR.
- B. Vertical Separation: Whenever sewers must cross under watermains, the watermain shall be laid at such an elevation that the top of the sewer is at least 18 inches below the bottom of the water main. If the sewer line is less than 18 inches below the watermain, or is above the watermain, either the sewer pipe or watermain shall be fully encased for a distance of ten (10) feet each side of the crossing. The encasement shall consist of PVC encasement pipe closed at the ends with flexible reducing couplings.
- C. A reinforced concrete pipe (RCP) storm sewer may cross below a water main with a separation of less than 18 inches or at any height above a water main provided the joints on the RCP within 10 feet of either side of the water main are assembled with:

1. Performed butyl rubber sealant meeting federal specification #SS-S-210A and AASHTO M 198, and each of these joints are encased with a minimum 2-foot wide by 6-inch thick concrete collar centered over the joint and reinforced with the equivalent steel area as that in the RCP. Encasement of the water main will not be required when the RCP joints are collared within the 20-foot section.
2. On O-ring that conforms to ASTM C 443 specifications. O-rings are manufactured for concrete pipe with diameters up to 18 inches.
3. A strip of impermeable material held in place with stainless steel bands and tested to 5 psi prior to the storm sewer being put into use.

3.10 THRUST BLOCKS

- A. Fittings at bends in all buried lines shall be firmly wedged against undisturbed earth with poured concrete thrust blocking. Concrete shall meet the Specifications set forth in Section 033000 and as detailed on Plan Sheet 2.4.

3.11 CONCRETE CRADLES

- A. The pipe shall be supported on concrete cradles where directed by the Engineer. The concrete shall meet a minimum 28-day compressive strength of 2500 psi for Fill Concrete.

3.12 TRACER WIRE

- A. Contractor shall install the tracer wire in compliance with the following requirements:
 1. Tracer wire shall be installed to properly trace all water distribution pipes without loss or deterioration of signal or without the signal migrating off the tracer wire.
 2. Tracer wire shall be installed in the same trench and inside horizontal bored holes and casing with pipe during pipe installation.
 3. Tracer wire shall be secured to the pipe at 10-ft intervals to insure that the tracer wire remains adjacent to the pipe.
 4. NO SPLICE will be allowed in horizontal bored holes or casing with pipe.
 5. Approved splice connections shall be waterproof connections such as 3M DBR, Copperhead SnakeBite or Engineer approved equal.
 6. Except for approved spliced in connections, tracer wire shall be continuous and without splices from each access/termination point.
 7. Tracer wire access points shall be within the public right-of-way or public utility easement.
 8. Tracer wire access points shall be no more than 500 feet apart. Longer distances between access points shall be approved by the Engineer prior to establishing the access point.
 9. Continuity tests shall be conducted by the Contractor in the presence of and to the satisfaction of the Engineer, Resident Project Representative, or Owner. The Contractor shall provide sufficient advance notice of any testing.
 10. Contractor shall supply all the necessary testing equipment and materials to perform the continuity tests. After the Contractor has confirmed and demonstrated that the tracer wire system is functioning properly, the Owner shall test for functionality and final acceptance of the tracer wire system.

3.13 HYDROSTATIC TESTING FOR WATER LINES

- A. General: It is the intent of this Specification that all joints in piping be watertight and that all joints which are found either by observation or any specified test to leak shall be made watertight by the Contractor. The water main shall be tested in accordance with AWWA C605 or as specified herein.
- B. Pressure Test: After the pipe has been laid, all newly laid pipe or any valved section thereof shall be subjected to the hydrostatic pressure listed below at the point of testing.
1. Pressure gauge shall be a standard pressure gauge that registers 0-200 psi with 1 psi increments. Dial size shall be 4 ½ - inch diameter.
 2. Test Pressure Restrictions: Test pressures shall be:
 - a. Not be less than 100 psi.
 - b. Not exceed pipe or thrust restraint design pressures.
 - c. Be of at least 2-hour duration.
 - d. Not vary by more than \pm 5 psi.
 - e. Not exceed twice the rated pressure of the valves or hydrants when the pressure boundary of the test section includes closed gate valves or hydrants.
 - f. Not exceed the rated pressure of the valves if resilient-seated butterfly valves are used.
 3. Pressurization: Each valved section of pipe shall be filled with water slowly and the specified test pressure, based on the elevation of the lowest point of the line or section under test and corrected to the elevation of the test gage, shall be applied by means of a pump connected to the pipe in a manner satisfactory to the Engineer.
 4. Air Removal: Before applying the specified test pressure, air shall be expelled completely from the pipe, valves and hydrants. If permanent air vents are not located at all high points, the Contractor shall install corporation stops at such points so that air can be expelled as the line is filled with water. After all the air has been expelled, the corporation cocks shall be closed and the test pressure applied. At the conclusion of the pressure test, the corporation cocks shall be left in-place.
 5. Examination: All exposed pipe, fittings, valves, hydrants and joints shall be examined carefully during the test. Any damage or defective pipe, fittings, valves or hydrants that are discovered following the pressure test shall be repaired or replaced with sound material and the test shall be repeated until it is satisfactory to the Engineer.
- C. Leakage Test:
1. General: A leakage test shall be conducted concurrently with the pressure test.
 - a. Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe, or any valved section thereof, to maintain pressure within 5 psi of the specified test pressure after the air in the pipeline has been expelled and the pipe has been filled with water.
 2. Allowable Leakage: No pipe installation will be accepted if the leakage is greater than that determined by the following formula:

$$L = \frac{ND(p)^{1/2}}{7,400}$$

Where

- L = The allowable leakage in gallons per hour.
N = Number of joints.
D = The nominal pipe diameter in inches.

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p = The average test pressure during the leakage test in
psi gage.

- a. When testing against closed metal-seated valves, an additional leakage per closed valve of 0.0078 gallon per hour per inch of nominal valve size shall be allowed.
 - b. When hydrants are in the test section, the test shall be made against the closed hydrant.
3. Acceptance of Installation: Acceptance shall be determined on the basis of allowable leakage. If any test of pipe discloses leakage greater than that specified in "Allowable Leakage", above, the Contractor shall, at his expense, locate and repair the defective material until the leakage is within the specified allowance.
- a. All visible leaks are to be repaired regardless of the amount of leakage.

3.14 CLEAN-UP

- A. Upon completion of the work, the Contractor shall remove all surplus construction materials and debris resulting from the work, and all areas of work shall be left in an orderly manner.

END OF SECTION 33 1000