

NOTICE TO ALL BIDDERS

TO REPORT BID RIGGING ACTIVITIES, CALL: 1-800-424-9071

THE U.S. DEPARTMENT OF TRANSPORTATION (DOT) OPERATES THE ABOVE TOLL-FREE "HOTLINE" MONDAY THROUGH FRIDAY, 8:00 A.M. TO 5:00 P.M., EASTERN TIME. ANYONE WITH KNOWLEDGE OF POSSIBLE BID RIGGING, BIDDER COLLUSION, OR OTHER FRAUDULENT ACTIVITIES SHOULD USE THE "HOTLINE" TO REPORT SUCH ACTIVITIES.

THE "HOTLINE" IS PART OF THE DOT'S CONTINUING EFFORT TO IDENTIFY AND INVESTIGATE HIGHWAY CONSTRUCTION CONTRACT FRAUD AND ABUSE AND IS OPERATED UNDER THE DIRECTION OF THE DOT INSPECTOR GENERAL.

ALL INFORMATION WILL BE TREATED CONFIDENTIALLY AND CALLER ANONYMITY WILL BE RESPECTED.

* * * *

PLANS, PROPOSALS AND ADDENDA

AFTER AWARD OF CONTRACT, THE LOW BIDDER WILL RECEIVE TEN (10) COMPLIMENTARY SETS OF PLANS, PROPOSALS, PROJECT Q & A FORUM, AND ADDENDA FOR FIELD AND OFFICE USE. AN ELECTRONIC COPY WILL ALSO BE PROVIDED. ANY ADDITIONAL COPIES REQUIRED WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

* * * *

NOTICE TO CONTRACTORS

Bid proposals for this project will be received electronically by the South Dakota Department of Transportation (SDDOT) via the SDDOT secure bid submission site at <http://apps.sd.gov/hc65bidletting/bidsubmittallogin.aspx> until 10 A.M. Central time, on February 17, 2016, at which time the SDDOT will open bids. All bids will be checked for qualifications with results posted on the SDDOT website. The South Dakota Transportation Commission will consider all bids at a scheduled Commission meeting.

The work for which proposals are hereby requested is to be completed within the following requirement(s):

FIELD WORK COMPLETION: **JUNE 1, 2018**

The DBE goal for this project is: **NONE.**

Work Type for this project is: **Work Type 3 or Work Type 7.**

Bidding package for the work may be obtained at:
<http://apps.sd.gov/hc65bidletting/ebslettings1.aspx>

An electronic version of the most recent version of the South Dakota Standard Specifications for Roads and Bridges may be obtained at <http://www.sddot.com/business/contractors/specs/Default.aspx>

The electronic bid proposal must be submitted by a valid bidder as designated on the [Bidding Authorization Form](#). The Bidder ID and Password, coupled with a previously Department assigned Company ID, will serve as authentication that an individual is a valid bidder and will assure the secure electronic delivery of bid proposals to the Department. This authorization shall remain in full force and effect until written notice of termination of this authorization is sent by an Officer of the company and received by the Department.

PROPOSAL

Revised 8/10/11

SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION, STATE OF SOUTH DAKOTA:

Ladies / Gentlemen:

The following proposal is made on behalf of the undersigned and no others. It is in all respects fair and is made without collusion on the part of any other person, firm or corporation not appearing in the signature to this proposal.

The undersigned certifies that she / he has carefully examined the plans listed herein, the Specifications hereinbefore referred to, the Special Provisions and the form of contract, both of which are attached hereto. The undersigned further certifies that she / he has personally inspected the actual location of the work, together with the local sources of supply and that she / he understands the conditions under which the work is to be performed, or, that if she / he has not so inspected the actual location of the work, that she / he waives all right to plea any misunderstanding regarding the location of the work or the conditions peculiar to the same.

On the basis of the plans, Specifications, Special Provisions and form of contract proposed for use, the undersigned proposes to furnish all necessary machinery, tools, apparatus and other means of construction, to do all the work and furnish all the materials in the manner specified, to finish the entire project **within the contract time specified** and to accept as full compensation therefore the amount of the summation of the products of the actual quantities, as finally determined, multiplied by the unit prices bid.

The undersigned understands that the quantities as shown in the Bid Schedule are subject to increase or decrease, and hereby proposes to perform all quantities of work, as increased or decreased, in accordance with the provisions of the specifications, and subject to any applicable special provisions, and at the unit prices bid.

The undersigned understands that the "Total or Gross Amount Bid" as immediately hereinbefore set forth is not the final amount which will be paid if this proposal is accepted and the work done, but that such amount is computed for the purpose of comparison of the bids submitted and the determination of the amount of the performance bond.

The undersigned further proposes to perform all extra work that may be required on the basis provided in the specifications, and to give such work personal attention in order to see that it is economically performed.

The undersigned further proposes to both execute the contract agreement and to furnish a satisfactory performance bond, in accordance with the terms of the specifications, within twenty (20) calendar days after the date of Notice of Award from the South Dakota Department of Transportation that this proposal has been accepted.

REV. 8/3/15

SPECIAL PROVISIONS

PROJECT NUMBER(S): 2015 01(), 2016 02() PCN: X03K

TYPE OF WORK: WATER MAIN IMPROVEMENTS, SEWER MANHOLE ADJUSTMENTS
AND SIDEWALK EXTENSIONS

COUNTY: LAWRENCE

The following clauses have been prepared subsequent to the Standard Specifications for Roads and Bridges and refer only to the above described improvement, for which the following Proposal is made. In case of any discrepancy or conflict between said specifications and these Special Provisions, the latter are to govern.

The Contractor's attention is directed to the need for securing from the Department of Environment & Natural Resources, Foss Building, Pierre, South Dakota, permission to remove water from public sources (lakes, rivers, streams, etc.). The Contractor should make his request as early as possible after receiving his contract, and insofar as possible at least 30 days prior to the date that the water is to be used.

Lisa Johnson is the official in charge of the Spearfish Career Center for Lawrence County.

THE FOLLOWING ITEMS ARE INCLUDED IN THIS PROPOSAL FORM:

Instructions for Bidders, dated 1/7/16.

Special Provision Regarding Combination Bids, dated 1/5/16.

Special Provision Regarding the City Portion for Subletting, dated 1/7/16.

Technical Specifications

Standard Title VI Assurance, dated 1/15/04.

Special Provision For Implementation of Clean Air Act & Federal Water Pollution Control Act,
dated 9/1/97.

* * * *

**2015 01(), 2016 02(), PCN X03K
CITY UTILITIES**

INSTRUCTIONS FOR BIDDERS

January 7, 2016

- 1) This Water Main Improvements, Sewer Manhole Adjustments Sidewalk Extensions Project will be let and awarded by the South Dakota Department of Transportation.
- 2) Department of Transportation procedures regarding letting and awarding of contracts shall be followed.
- 3) Bidders submitting a bid on this project shall also submit a bid on IM 0901(162)14 & P 014A(11)8 PCN 020U & 0217, Lawrence County. Award of these projects will be to the same bidder based on the total of the two projects.
- 4) A prospective bidder must request any explanation regarding the meaning or interpretation of the bidding package in adequate time to allow a Department reply to reach all prospective bidders before submission of final bid proposals. The bidder will contact the Department by submitting a request for explanation to the project Q&A forum.
- 5) All bid bonds shall be made out to the Department of Transportation
- 6) The contract completion date for this project will be the same as specified of Project IM 0901(162)14 & P 014A(11)8 PCN 020U & 0217, Lawrence County. Any delays in completing this contract will not be a basis for an extension of the contract completion time for PCN 020U & 0217, Lawrence County.
- 7) After award of contract, the Contractor shall furnish satisfactory proof of coverage of insurance. Copies of Certificates of Insurance shall be furnished to the Department of Transportation AND City of Spearfish. The Contractor will be required to provide a performance bond in a sum equal to the total amount of the contract, in a form acceptable to the City. The performance bond shall remain in effect for a period of one year after the City considers the contract to be completed and accepted.
- 8) The contractor is required to schedule and conduct a preconstruction meeting that shall be held jointly with the preconstruction meeting for the state contract. Additionally the contractor is responsible for contacting the city for a list of required submittals upon receiving Notice of Award of the contract.
- 9) Construction engineering for this contract will be performed by the City of Spearfish.
- 10) Payment for this Utilities project will be made to the Contractor by the City of Spearfish.

* * * *

**STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION**

**SPECIAL PROVISION REGARDING
COMBINATION BIDS**

**2015 01(), 2016 02(), PCN X03K
CITY UTILITIES
LAWRENCE COUNTY**

NOVEMBER 19, 2015

Bidders submitting a bid on this project **MUST ALSO** submit a bid on project:

IM 0901(162)14, P 014A(11)8, PCN 020U, 0217
INTERSTATE 90 & US HIGHWAY 14A
RECONSTRUCT INTERCHANGE, RECONFIGURE RAMPS, & RECONFIGURE SERVICE
ROAD
LAWRENCE COUNTY

Award of both projects will be to the same bidder based on the total of the two projects.

Work on PCN (020U & 0217) CANNOT be used to meet the DBE Goal established for this project.

After award, the contracts will be administered as entirely separate contracts.

* * * *

**STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION**

**SPECIAL PROVISION REGARDING
THE CITY PORTION FOR SUBLETTING**

**2015 01(), 2016 02(), PCN X03K
LAWRENCE COUNTY**

JANUARY 7, 2016

This project is let in combination with State Project Number IM 0901(162)14 & P 014A(11)8 PCN 020U & 0217. The provisions of section 8.1 of the specifications requiring the Contractor to perform work amounting to not less than 50% of the total contract cost with the Contractor's own organization will not apply to the work on this contract.

**TECHNICAL SPECIFICATIONS
INDEX**

**Colorado Boulevard (Exit 14) 12: Water Main Extension Project
PCN X03K**

ITEM #	<u>SPECIFICATION</u>	<u>PAGE</u>
103	WATERING	TS-2
110	TRENCHING, EXCAVATING AND BACKFILLING	TS-3
200	DOMESTIC WATER MAIN	TS-8
201	DOMESTIC WATER MAIN APPURTENANCES	TS-14
270	AGGREGATES FOR GRANULAR BASES	TS-19

ITEM 103

WATERING

- 103.1 Description: This work consists of applying water to the materials being incorporated in to the construction of the project. Access to any City fire hydrant adjacent to the project site may be utilized by the Contractor. The City will provide a meter that shall be in place prior to use of water from the fire hydrant.
- 103.2 Measurement and Payment: The City will provide water, by use of a public fire hydrant **at no cost** to the Contractor; therefore no measurement or payment for this item will be made.

ITEM 110

TRENCHING, EXCAVATION AND BACKFILLING

- 110.1 Description: The scope of work covered by this item consists of the furnishing of all labor, equipment, plant and tools, and performing of all the necessary operations in connection with the trenching, excavation and backfilling of all water lines, sanitary sewer lines, manholes, accessories and lines connected thereto; complete including shoring, grading, dewatering and cleanup, all in accordance with the plans and specifications.
- 110.2 Excavation: All excavation of whatever substances encountered shall be performed by the Contractor to the depths indicated on the plans. To prevent slides or cave-ins the excavated materials shall be placed a sufficient distance from the banks of the excavation.

Except as otherwise shown on the plans, all excavation shall be made by open cut. The banks of trenches shall be vertical to a point level with the top of the pipe. The width of the trench shall be six (6) inches minimum and eight (8) inches maximum on each side of the pipe bell. Trench bottom shall excavated to 6" below the bottom of the pipe, backfilled, and compacted using Pipe Bedding/Non-spec Base Course meeting the requirements of section 270 of these specifications to 6" above the top of the sewer or water pipe as shown in the typical trench detail of the plans. Under no conditions will deleterious materials or clays be allowed as bedding material when over excavation occurs. However, if the undisturbed material encountered at grade depth constitutes, in the opinion of the Engineer, an unstable foundation for the pipe, the Contractor will be required to remove such unstable material and backfill the trench to the proper grade with approved compacted material. Compensation will be made to the Contractor in accordance with a negotiated contract unit price.

The Contractor shall adequately protect the unfinished ends of all water and sewer lines to prevent the entrance of water, earth or any foreign materials.

The bottoms of the trenches for all sewer lines shall be carefully and truly graded, formed, and lined according to the grades and dimensions furnished by the Engineer, or is shown on the plans. No changes in the locations of the lines are contemplated, but should any changes be made in the lines not materially altering the amount of character of the trenching to be done, the Contractor shall proceed with the changed alignment at the unit bid price. In case any change involves greater construction difficulties than the original alignments, the Owner and the Engineer will agree with the Contractor for extra compensation therefore, **prior** to the construction of the changed lines or line.

The Contractor shall restore all structures, culverts, fences, walls or other properties disturbed during the work to a condition similar or equal to that existing before his operations.

Excavations for manholes, structures and other accessories shall be sufficient to leave at least twelve (12) inches clear between its outer surface and the embankment or timber that may be used to shore or sheath the banks.

When a structure is to rest on an excavated surface other than rock, special care shall be taken not to disturb the bottom of this excavation and the final removal of the foundation material to grade shall not be performed until just before the footing is to be placed.

- 110.3 Water Removal: The Contractor shall remove and dispose of all water that collects in the trenches until the water lines, sewer lines, valves, manholes, and other appurtenances are in place and sealed against the entrance of water. The Contractor shall control surface water in the vicinity of the trench excavation to prevent the water from flowing into the trenches. In no case shall water or foreign materials be allowed to enter the water lines or sewer lines. Water encountered shall be disposed of by the Contractor in a manner satisfactory to the Engineer.

Removal of water from the trench without the use of well points shall not be considered as dewatering. Dewatering shall be construed to mean the continuous pumping of water with well points where required to maintain a satisfactory trench. The exclusion of this item from the bid proposal does not preclude the possibility that dewatering will be encountered, it merely indicates that it is not anticipated. If dewatering becomes necessary, the Contractor shall be paid at a negotiated contract price per hour.

If the bottom of the trench becomes an unstable foundation for the pipe through neglect of the Contractor to adequately shore or dewater the trench, the Contractor will be required to remove the unstable material and backfill the trench to the proper grade with approved compacted gravel, and no extra compensation will be granted for this material or work.

Contractors must apply for a General Dewatering Permit from D.E.N.R. if wastewater is going to be discharged to waters of the state.

- 110.4 Excavation Protection: Whenever necessary to provide safe working conditions in conformance with safety regulations the Contractor shall provide suitable shoring, sheathing and bracing to protect all excavation.

- 110.5 Existing Utilities Protection: The Contractor shall determine the location of any existing utilities not shown on the plans and shall confirm the locations of those existing utilities shown on the plans. All existing utilities shall be protected from damage during excavation and backfilling, and if damaged, shall be repaired or replaced by the Contractor at his expense. Utilities may be encountered, which must be relocated.

It will be the responsibility of the contractor to coordinate with the appropriate utility company/companies to relocate those conflicting utilities. The engineer will evaluate and determine if additional time is warranted which results from these utility relocations. Costs associated with these utility relocations shall be considered incidental to the unit bid prices for the applicable work.

- 110.6 Sheathing: Whenever necessary the Contractor shall provide suitable sheathing, shoring and bracing to provide safe working conditions and to prevent injury to adjacent buildings, pipes and other property. Damage resulting from cave-ins, slides, settlements and other causes due to improper shoring, bracing or sheathing shall be repaired by the Contractor at his expense.

The Contractor shall be responsible for all supports and the safety of the entire project site at all times. There will be no separate payment for sheathing work and all materials and labor included shall be incidental to the various contract items.

The Contractor shall be responsible for any injuries to persons and property, and all damages to any pipe, conduit, sewer or other structures injuriously affected by the work, and the Engineer acting as the agent of the Owner shall not be liable therefore.

- 110.7 Public Safety and Convenience: The Contractor shall conduct his work to assure the least possible obstruction to traffic, inconvenience to the general public and residents in the vicinity of the work, and to insure the protection of persons and property in a manner which is satisfactory to the Engineer. Temporary provisions shall be provided by the Contractor to insure the continued use of sidewalks, sewer inlets, gutters and drainage ditches which shall not be obstructed, except as approved by the Engineer.

- 110.8 Warning Signs and Barricades: The Contractor shall provide sufficient and adequate barricades, signs, lights, and guards and take all the necessary precautions to assure the protection of the work and safety of the general public. Barricades shall be of adequate construction and shall be painted with reflective paint to increase their visibility at night. The paint shall be renewed as often as necessary to keep them thoroughly visible. All obstructions and barricades shall be protected with yellow warning flashers to warn the public. Suitable warning signs shall be placed and illuminated to show in advance where construction, detours and barricades exist.

- 110.9 Rock Excavation: Rock excavation shall be defined as all masses which, in the opinion of the Engineer, cannot be excavated without blasting, drilling, or the use of rippers or other specialized equipment and all detached rocks or boulders measuring more than two (2) feet in their largest exposed face which are fastened in the trench due to their size.

In rock, the trench excavation shall extend eight (8) inches below the bottom of the pipe and refilled with compacted gravel or sand to the required elevation. Payment for this fill material shall be considered incidental to rock excavation.

The Contractor shall comply with all ordinances, safety code requirements, laws and regulations relative to the handling, storage and use of explosives for the protection of life and property.

The Contractor shall obtain all necessary permits and shall be responsible for the protection of persons and property and liable for any injury or damage caused by his blasting operations.

In the event that rock excavation is encountered on a project and a bid item has not been included, a contract unit price shall be negotiated prior to any rock excavation being accomplished.

110.10 Backfilling Trenches: All trenches shall be backfilled immediately after pipe is laid and inspected therein unless other protection of pipeline is directed. Stones larger than 3 inches in diameter shall not be placed within 2 feet of the top of pipe. Under no circumstances shall water be permitted to rise in unbackfilled trenches after pipe has been placed. No material shall be used for backfilling that contains frozen earth, debris, stones, having any dimension greater than 6 inches, or earth with an exceptionally high void content.

- (a) Contractor shall install pipe bedding as required by the Engineer. Bedding shall consist of 1" minus non-spec aggregate base course meeting the requirements of Section 270 Water Main Bedding Material, and be placed a minimum of 12" on either side, and a minimum of 6" above and below the pipe.
- (b) Initial Pipe Covering: In all cases for backfill around and over the pipe, only selected materials shall be used. The backfilling shall be placed completely under the pipe haunches in uniform layers, not exceeding six (6) inches in depth. Each layer and succeeding layers shall be placed by hand and then carefully and uniformly tamped, so as to eliminate the possibility of lateral displacement. This process to be repeated to not less than one (1) foot above top of pipe or 1/3 of trench depth, whichever is greater.
- (c) Traveled Ways: For areas where the ditch is within the bounds of a traveled way, the backfill above the initial pipe covering shall be placed in eight (8) inch layers and be well tamped by mechanical means or other means acceptable to the Engineer to 95 % of maximum density at optimum moisture content, ASTM D698. Special care shall be taken in the placement and compaction of fill around manholes, valves, curb stops, and fire hydrants. The compaction of these areas will require the use of whacker packers/jumping jacks or other approved procedures to assure sufficient compaction to the satisfaction of the Engineer.

For paved streets, the trench shall be backfilled according to the above method. Surplus material then remaining after backfill is complete shall be wasted at the direction of the Engineer. See the construction plans for base coarse and asphalt patching depths.

- 110.11 Roadway Patching: The Contractor shall obtain permission from the necessary authorities prior to beginning any roadway excavation. The Contractor shall restore existing roads to their original condition whenever the roadways are disturbed during the construction or refer to the construction plans for patching requirements.
- 110.12 Moving Minor Structures: The Contractor shall remove, care for, and set any culverts, drainage pipes, fences or other minor structures that have to be moved temporarily from the work area.

It shall be the Contractor's responsibility to visit the project site and determine the conditions with regard to the existence of trees, signs, fences and other miscellaneous obstacles to construction. No separate payment will be made for the removal or resetting of these items.

ITEM 200

DOMESTIC WATER MAIN

- 200.1 Description: This work item consists of furnishing and installing domestic water mains, placing of valves, fittings and appurtenances, complete as shown on the plans and as specified herein.
- 200.2 Lines and Grades: All lines shall be established by the Contractor. The Contractor shall be responsible for the preservation of stakes set, and if disturbed, shall pay the actual cost of replacing the disturbed stakes.
- 200.3 Trenching, Excavation and Backfilling: The work covered by this section shall be done in conformity with Item 110 of these specifications.
- 200.4 Materials: PVC class water pipe: All PVC water main pipe (4" through 12") shall conform to C-900 Polyvinyl Chloride Pressure Pipe, DR-18, Class 150 psi or C-900 DR-14, Class 200 psi, as specified with the plans. PVC pipe shall have bell ends with elastometric gaskets.

Ductile Iron Pipe: All ductile iron pipe shall be class 50 and fittings shall have restrained joints. The restrained joints shall a flexible boltless restrained joint as per American Flex-Ring restrained joint ductile iron pipe or equal. Pipe and pipe fittings shall be encased in a poly-rap 8 ml black PE tubing as per AWWA C105.

- 200.5 Construction Methods and Requirements: Pipe Laying: All water line pipe shall be laid with a minimum of 6 feet of cover over the pipe and shall be laid true to line as indicated. The Contractor shall use suitable equipment for handling all installation materials and any damage caused by handling or laying shall be at the Contractor's own expense. Prior to the pipe being laid it shall be inspected to detect any cracks or flaws and all dirt or foreign materials shall be removed from the inside, and from the inside of the bell and from the spigot end of the pipe. All pipe shall be laid in accordance with the manufacturer's specifications.

PVC pipe shall be thoroughly cleaned of foreign material prior to assembly. The surface of pipe and gaskets shall then have a soapy water solution applied. With the gland end gasket on the spigot end of the pipe, the two pieces shall be "seated" and the gasket pressed firmly into the bell. The gland shall be tightened evenly to the bell flange to insure a leak-proof installation.

All fittings shall be suitably provided with concrete thrust blocks poured against the fitting and undisturbed earth to insure against disjoints when the piping is placed under pressure. The concrete shall be so placed that the pipe and joints will be accessible for repair. Thrust blocks shall be applied at all tees, plugs, caps and bends. Movement shall also be prevented by attaching suitable metal rods or straps as approved by the Engineer. The blocking shall be concrete having a minimum compressive strength of 3000 p.s.i. at 28 days. A polyethylene barrier will be required at all points where concrete is in direct contact with the pipe and/or fittings.

Tracing Wire: The Contractor shall lay blue 12 AWG solid strand soft drawn copper per ASTM B-3 or B-8 on all new mains and service lines. The tracer wire shall come along side hydrant leads and shall be terminated at each end in a Valvco flush mount tracer wire access box located directly in front of each fire hydrant or where indicated on drawings and be set to finished grade. The access box shall have a cast iron lid that can be locked and opened with a standard pentagon head key wrench. Tracer wires shall be stripped and attached to stainless steel screws mounted to the underside of the lid. Sufficient slack shall be left in wire length so cover can be lifted with wire intact. The tracer wire access box shall be of domestic manufacture and be Valvco or equal. Tracer wire shall also be installed along all water mains and hydrant leads per specifications and plan details, when applicable. The installation and cost of the box and tracer wire shall be considered incidental to the cost of water main pipe installation.

200.6 Water Main and Sewer Main/Storm Sewer Separation:

1. Vertical Separation at Crossings:

Water mains may cross above sanitary and storm sewers with a minimum vertical distance of eighteen (18) inches between the invert of the water main and the top of the sewer. In these cases where the water main is above the sewer and there is at least 18 in. of separation, then at the crossings one full 20 ft. length of water pipe shall be centered on the crossing.

A water main may cross above a sewer main with a vertical separation of less than eighteen (18) inches or below the sewer main if either the water or sewer main is encased in PVC or ductile iron or cast iron for at least ten (10) feet each side of the crossing. If PVC or ductile iron is utilized as encasement material, the ends shall be sealed with six (6) inches of concrete.

Water mains crossing under vitrified clay sewer pipes or concrete sewer pipes shall be encased in six (6) inches of concrete extending ten (10) feet either side of the crossing.

The 10 feet either side shall be measured from the outside wall of the sewer to the end of the encasement and is not measured from the centerline of the sewer main.

2. Water Main and Sewer Main/Storm Sewer Horizontal Separation:

Water mains shall be constructed with 10 feet of horizontal separation from any existing sanitary or storm sewer or proposed sanitary or storm sewer. The 10 feet horizontal separation shall be the clear distance (water pipe sidewall to sewer pipe sidewall) and not the centerline distance between the utilities.

The following installation requires Engineer's approval and is appropriate for installations where the 10 feet separation physically is not possible.

A water main may be constructed closer than 10 feet to a Sanitary or Storm sewer if it is laid in a separate trench or it is laid in the same trench and the water main is located on the opposite side on a bench of undisturbed earth.

In both cases, the elevation of the crown of the sewer has to be at least 18 inches below the invert of the water main. The sewer main shall be constructed of water main pipe (pressure class pipe) meeting the requirements of Section 200.4 and pressure tested for water tightness in accordance with AWWA standards for leakage testing.

As an alternative to constructing the sewer with water main pipe (pressure class pipe) and pressure testing the sewer, it would also be acceptable to either encase the water or sewer main within a PVC or cast iron casing.

200.7 Hydrostatic Testing:

- (a) The Contractor shall perform all the work required in connection with the test and shall provide all the equipment including but not limited to a pressure gauge, water container, appropriate pump, valve, hydrant connection and corporation stop connection. The test shall be in accordance with AWWA C605-05.
- (b) Care shall be taken to expel all of the air from the mains and service lines while the test section is slowly being filled with water. If permanent air vents are not located at all high points, corporation cocks shall be installed at such points so that the air can be expelled as the system is filled with water. The cost of the corporation stops shall be considered incidental to the cost of the main. The lines should be filled at least 24 hours prior to testing.
- (c) The test section shall be placed under a constant 150 p.s.i. pressure measured at the point of lowest elevation for a minimum period of 2 hours. The test pressure shall not vary by more than +/- 5 p.s.i. for the duration of the test.
- (d) The testing allowance shall be defined as the quantity of makeup water that must be supplied into the newly laid pipe or any valved section thereof to maintain pressure within 5 p.s.i. of the specified test pressure after the pipe has been filled with water and the air has been expelled. Testing allowance shall not be measured by a drop in pressure in the test section over a period of time.
- (e) The amount of water required to maintain the specified test pressure shall be measured by an approved method. All valves, hydrants, etc., shall be in full "open" position during the test period. The PVC pipe shall be pressure and leakage tested in accordance with AWWA C605-05. The Ductile Iron pipe shall be pressure and leakage tested in accordance with AWWA C600. No pipe installation, PVC pipe or ductile iron pipe will be accepted if the leakage is greater than that indicated in Table 200-7.

**Table 200-7
ALLOWABLE LEAKAGE IN GALLONS PER HOUR PER 1000 FT OF PIPE (GPH)
Pipe. Average Test Pressure (PSI)**

Dia. (in.)	50 psi (gph)	100 psi (gph)	150 psi (gph)	200 psi (gph)	250 psi (gph)	300 psi (gph)
4	0.19	0.27	0.33	0.38	0.43	0.47
6	0.29	0.41	0.50	0.57	0.64	0.70
8	0.38	0.54	0.66	0.76	0.85	0.94
10	0.48	0.68	0.83	0.96	1.07	1.17
12	0.57	0.81	0.99	1.15	1.28	1.40
14	0.67	0.95	1.16	1.34	1.50	1.64
16	0.76	1.08	1.32	1.53	1.71	1.87
18	0.86	1.22	1.49	1.72	1.92	2.11
20	0.96	1.35	1.66	1.91	2.14	2.34
24	1.15	1.62	1.99	2.29	2.56	2.81
30	1.43	2.03	2.48	2.87	3.21	3.51
36	1.72	2.43	2.98	3.44	3.85	4.21

- (f) Acceptance shall be determined on the basis of allowable leakage. If any test of installed pipe discloses leakage greater than that specified in Table 200-7, the Contractor shall, at his own expense, locate and make approved repairs as necessary until the leakage is within the specified allowance. All visible leaks shall be repaired, regardless of the amount of leakage.

200.8 Disinfection:

- (a) Disinfection shall conform to the South Dakota D.E.N.R. Standards and AWWA/ANSI C600 and AWWA/ANSI C651-05.
- (b) Prior to being placed in service, the entire line shall be chlorinated. The contractor shall place hypo chlorite tablets in each section of water pipe installed, including the hydrant branch, according to the table below:

**Number of 5-Gram Calcium Hypo Chlorite Tablets Required
(50 Mg/l Dose)**

Length of Pipe Section (feet)	Diameter of Pipe (in.)							
	4	6	8	10	12	14	16	
13 or less	1	2	2	3	5	6	8	
13-17	1	2	3	5	6	8	11	
18-20	1	2	3	5	7	9	12	
21-30	2	3	5	7	10	14	18	
31-40	2	4	6	9	14	18	24	

- (c) Placing Tablets: Tablets shall be adhered to the inside top section of each pipe length using a food grade adhesive, such as Permatex Form-A-Gasket No. 2 or Permatex Clear RTV Silicon Adhesive Sealant as manufactured by Loctite Corporation, or approved equivalent.

- (d) Flushing: Within 48 hours of the end of the 24-hour retention period, the Contractor shall flush the heavily-chlorinated water from the main until the chlorine concentration in the water leaving the main is no higher than that prevailing in the system or is less than one (1) ppm chlorine residual as determined by the Engineer. The highly-chlorinated water shall not be discharged to any waterway where danger to fish or other aquatic life may occur. Dechlorination of the water may be necessary prior to discharge.
- (e) Bacteriological Testing: Two bacteria samples taken a minimum of 24 hours apart must be passed prior to placing the new main into service. The Contractor shall sample for coliform bacteria contamination after all water lines have been flushed. One sample of water from the end of the disinfected/flushed line must be collected from new installation. This sample must be submitted to the State Health Laboratory in Pierre, or other laboratory acceptable to D.E.N.R. The sample must confirm the absence of coliform bacteria contamination before any taps may be made to the main or the main is activated and placed into service.

200.9 Water Main Closures and Temporary Service:

- (a) Water Main Closures shall be scheduled to minimize the inconvenience to the public. Please refer to the plans for specific closure restrictions. The contractor is required to coordinate, schedule and obtain approval from the Engineer prior to any closures.

The Contractor shall obtain notification of closure cards from the Engineer and shall hand-deliver the closure cards to affected properties at least 48 hours prior to closure of any water main, unless a shorter time of notice is approved by the Engineer.

- (b) Operation of Valves: Only City personnel shall operate valves on existing water mains. The Contractor may operate valves on newly installed water mains that are under his control, until such time as they are accepted by the City for operation and maintenance.
- (c) Temporary water service for private residences affected shall be provided by the Contractor when the water main closure will exceed eight (8) hours. The Contractor shall provide temporary water service for businesses upon request, regardless of the length of closure. When temporary service is to be provided to businesses, the Contractor shall obtain the name and phone number of a responsible contact person at each affected business and submit the information to the Engineer at least 48 hours prior to closure.

200.10 Method of Measurement and Basis for Payment: All measurements and payments shall be based on completed work performed in strict accordance with the drawings and specifications and the respective prices and payment shall constitute full compensation for all work completed, including incidentals. No separate payment shall be made for excavation, trenching and backfilling or for

other items of work covered under this section of the specification and all such costs pertinent to these items shall be included in the applicable unit prices.

Watermain: Installed pipe quantities are determined by measuring from centerline to centerline of all pipe and fittings. Measurements are to the nearest foot. Payment will be made at the unit price bid per lineal foot for the appropriate size of water pipe, furnished and installed, including trenching, excavation, tracer wire, backfilling, dewatering, sheeting or shoring, pressure and leakage testing, disinfection, ductile iron pipe substitution for lowerings/crossings, all joint restraints, thrust blocks, polyethylene encasement and bedding material. Unless otherwise specified, no extra payment will be made for excavation deeper than that required to provide minimum specified cover.

Pipe Bedding: 1" Non-spec pipe bedding material shall be incidental to the contract unit price per foot of "'X" Water Main", however the contractor shall submit weight tickets to verify the actual pipe bedding quantity.

Abandonments: No separate measurement will be made for abandonment of water mains. Such work will be incidental to the project.

Connect to Existing Water Main: Connections of new mains to existing mains are measured on a per each basis. Payment will be made at the unit price bid and includes any fittings/couplings and other incidentals required to connect the new main to the existing main.

ITEM 201

DOMESTIC WATER MAIN APPURTENANCES

201.1 Description: This work item consists of furnishing and installing fire hydrants, valves, fittings and other appurtenances, complete as shown on the plans and as specified herein.

201.2 Joint Restraint Devices at Fittings:

- (a) In general, solid ring restraints shall be used whenever possible. Split restraints may be used when connecting to existing systems, for special cases, and when a solid ring restraint is not available for the application.

All joint restraint devices shall meet the corrosion requirements for “fittings” which states that all internal and external ferrous surfaces be epoxy coated. All bolts and nuts shall conform to AWWA C111 and ASTM – A325 Type 3. The bolts and nuts shall be Cor-Blue, fusion bonded epoxy, Series 300 stainless steel or approved equal. Coated bolts and nuts shall be “near white” or “white” metal with 1 to 2 mil coating thickness. Fitting types applicable to this specification consist of bends, crosses, tees, reducers/increasers, plugs, caps, couplings, and sleeves.

For Ductile Iron pipe to Ductile Iron MJ fittings: Fitting Joint Restraints shall be EBAA MEGALUG Series 1100, Series 1100SD, or equal.

For PVC pipe to Ductile Iron MJ fittings: Fitting Joint Restraints shall be EBAA Series 2000PV, Series 2000SV, Series 15PF00, or equal.

- (b) Valves: Valves shall be located in the street just off the water main connected to a tee or cross with a Foster Adaptor. Valve covers shall be **Class 35-Heavy Duty (HD)**.

- (c) Fittings: All bolts and nuts shall conform to AWWA C111 and ASTM – A325 Type 3. The bolts and nuts shall be Cor-Blue, fusion bonded epoxy, Series 300 stainless steel or approved equal. Coated bolts and nuts shall be “near white” or “white” metal with 1 to 2 mil minimum coating thickness. Fitting types applicable to this specification consist of bends, crosses, tees, reducers/increasers, plugs, caps, couplings, and sleeves.

1. Ductile Iron water main fittings: Fittings shall be ductile-iron with 350-psi pressure rating and rubber gasket joints meeting all applicable requirements of the latest edition of AWWA C110, C111, and/or C153 Specifications. All internal and external ferrous surfaces shall be coated with a minimum 6 mil thick fusion bonded epoxy coating applied electrostatically and at a minimum shall meet the requirements of AWWA C116.

Bends and tees shall be placed on a stable foundation, which may require the use of concrete pads of equal size or larger than specified for valves. Fittings shall be provided with thrust blocks, joint restraining devices, and polyethylene encasement as specified herein. Foster adaptors shall be installed to connect all valves to tees and crosses and shall be incidental to the cost of said appurtenances.

- (d) Thrust Restraint: Thrust restraints in the form of concrete thrust blocks shall be provided at tees, crosses, horizontal bends, plugs, caps, valves, fire hydrants, and similar locations as per these specifications and or per plans. The use of Sac-Crete for thrust blocks is not allowed. Only Concrete capable of attaining a compressive strength of 3000psi in 28days, from a commercial batch plant, can be used.

201.3 Fire Hydrants and Auxiliary Valves:

- (a) Fire hydrants shall meet or exceed A WW A C502, latest revision. Rated working pressure shall be 250 psi, and hydrants shall include the following specific design criteria:
 - (b) The nozzle section, upper and lower standpipes and hydrant base shall be ductile iron. Nozzle shall be mechanically attached. Nozzles pinned or screwed in will not be allowed.
 - (c) The main valve closure shall be compression type, opening against the pressure and closing with the pressure. Nozzle section to be designed for easy 360-degree rotation by the loosening of no more than four bolts.
 - (d) The seat diameter shall be 5 1/4", hydrant must be designed so that removal of all working parts can be accomplished without excavating. The lower valve washer must be fusion-bonded epoxy coated. The bronze seat must be threaded into mating threads of bronze for easy field repair.
 - (e) Hydrant shall have factory installed 304 stainless steel bolting between barrel and shoe.
 - (f) The draining system of the hydrant will be bronze and be positively activated by the main operating rod. Hydrant shall be furnished with a sliding bronze drain valve. Sliding drain valves made of rubber, plastic or leather will not be allowed.
 - (g) Hydrant must have an internal travel stop nut located in the top-housing hydrant. Hydrant must have a double oil reservoir so that operating threads are oil lubricated and be O-ring sealed from water, moisture and foreign matter.
 - (h) Hydrant must have a traffic flange design allowing for quick and economical repair of damage resulting from a vehicle's impact. The rod coupling must be

two pieces bolted on by two stainless steel studs and four brass lock nuts. Pins, standard nuts and bolts not allowed.

- (i) Coating System Performance Requirements for Exterior Surfaces Above Grade 1. All ferrous metal parts of the hydrant shall be coated to meet the minimum requirements of Section 4.2, *Painting*, in American Water Works Association Standard ANSI/AWWA C502-94-*Dry Barrel Fire Hydrants*.
- (j) Primer shall be used on all surfaces and shall be cross-linked two-part liquid epoxy. Epoxy primer shall be applied using an electrostatic spray process.
- (k) Topcoat: Surfaces shall be top coated with high-gloss two-part liquid urethane that uses an aliphatic isocyanate catalyst to produce a cross-linked cure. Topcoat shall be applied using an electrostatic spray process.
- (l) The hydrant base shall be coated with fusion-bonded epoxy on interior and exterior surfaces using materials and coating application procedures that meet or exceed the requirements of AWW A C550- 01 *Standard for Protective Epoxy Interior Coatings for Valves and Hydrants*.
- (m) Hydrant must have been in service for a minimum of 40 years and has maintained complete interchangeability.
- (n) Fire Hydrants shall stand plumb and shall have their nozzles parallel with or at right angles to the street, with the pumper nozzle facing the street. At intersections, the pumper nozzle shall face the higher classification street. Hydrants shall be set with the bottom of the breaker flange 2 inches above the finished ground elevation resulting in the centerline of the lowest nozzle being at least (18) inches above finished grade.
- (o) **Hydrants shall be American Flow Control's Waterous Pacer, model WB-67-250 or equal.**

201.4 RESILIENT WEDGE GATE VALVES SPECIFICATIONS

- (a) Valves 2"-16" shall be resilient wedge type rated for 250 psi cold cold water working pressure. All ferrous components shall be ductile iron. Valves 3"-16" shall be in full compliance with AWWA C-515. The words "DI" or "Ductile Iron" shall be cast on the valve or stamped on a permanently attached corrosion resistant metal.
- (b) All valves 18" or larger shall be butterfly type as specified in the plans or detailed specifications.
- (c) All ferrous parts of the valve shall be made of ductile iron ASTM A536, minimum 65,000 psi tensile strength.

- (d) The wedge shall be symmetrical and seal equally well with the flow in either direction and have wedge covers on both wedge guides made of Delrin.
- (e) Valves 4"-24" shall be NSF Standard 61 certified. Valve shall have factory installed 304 stainless steel exterior bolting. All bolt sizes to be no smaller than 5/8" diameter. Metric size and socket head cap screws are not allowed.
- (f) Operating nut shall be made of ductile iron and shall have four flats at stem connection to assure even torque input to the stem.
- (g) All gaskets shall be pressure-energized O-rings.
- (h) Stem shall be sealed by three O-rings. The top two O-rings shall be replaceable with valve fully open and while subject to full rated working pressure. O-rings set in a cartridge shall not be allowed.
- (i) Valve shall have thrust washers located with one above and one below the thrust collar to assure trouble-free operation of the valve.
- (j) All internal and external surfaces of the valve body and bonnet shall have a fusion bonded epoxy coating, complying with ANSI/AWWA C550, applied electrostatically prior to assembly.
- (k) Valves 18" and larger shall have an enclosed gear case. Design shall be of the bevel or spur type dependent upon the installation conditions of the valve.
- (l) Valve Box adaptors shall be installed on all valve bonnets prior to installing the valve box per the manufacturer's recommendations. The valve box adaptor shall be a "Valve Box Adaptor II" as manufactured by Adaptor, Inc., a "Valve Box Self-Centering Alignment Ring" as manufactured by American Flow Control, or an approved equal.
- (m) **Valves shall be American Flow Control Series 2500-1 Ductile Iron Resilient Wedge Gate Valves, A-2360 Mueller Resilient Wedge Gate Valves or approved equal.**

201.5 Method of Measurement and Basis for Payment: All measurements and payments shall be based on completed work performed in strict accordance with the drawings and specifications and the respective prices and payment shall constitute full compensation for all work completed, including incidentals. No separate payment shall be made for excavation, trenching and backfilling or for other items of work covered under this section of the specification and all such costs pertinent to these items shall be included in the applicable unit prices.

- (a) Water Main Fittings and Couplings: All bends, tees and reducers are measured on a per each basis. Payment will be made at the unit price bid for the appropriate fitting, furnished and installed, including polyethylene encasement and thrust blocks and/or other joint restraint devices.

- (b) Valves: Valves are measured on a per each basis. Valve boxes and box adaptors shall be included with the valves as a complete unit. Payment will be made at the unit price bid for the appropriately sized valve and box, furnished and installed including polyethylene encasement, concrete pad, thrust restraint, valve box adaptor and adjustment to finished grade.

- (c) Fire Hydrants: Fire hydrants are measured on a per each basis. Payment will be made at the unit price bid, including polyethylene encasement, thrust restraint, tracer wire access box and adjustment to finished grade per specifications.

ITEM 270

WATER MAIN BEDDING MATERIAL

- 270.1 Scope: This work shall consist of furnishing and placing one or more courses of bedding material under around and above water mains.
- 270.2 Materials: Water bedding material shall conform to the following gradation:

Gradation	
Requirement	Pipe Bedding (1" Non-Spec. ABC)
Sieve	
3"	
2"	
1 3/4"	
1 1/2"	
1"	100%
3/4"	90-100%
5/8"	
1/2"	70-90%
3/8"	
1/4"	
No. 4	40-70%
No. 6	
No. 8	
No. 10	
No. 16	
No. 20	
No. 30	
No. 40	15-40%
No. 50	
No. 80	
No. 100	
No. 200	10-20%

- 270.3 Construction Requirements: Each layer of bedding material shall be compacted to a density of not less than 95% as determined by AASHTO T 147 of the maximum dry density as determined by the requirements of AASHTO T 99. The moisture content of the material shall be within $\pm 3\%$ of optimum moisture.
- 270.4 Method of Measurement and Payment: 1" Non-spec pipe bedding material shall be incidental to the contract unit price per foot of "X" Water Main", however the contractor shall submit weight tickets to verify the actual pipe bedding quantity.

**STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION**

**SPECIAL PROVISION
FOR
STANDARD TITLE VI ASSURANCE**

JANUARY 15, 2004

TITLE VI – NONDISCRIMINATION:

During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the “Contractor”) agrees as follows:

- (1) Compliance with Regulations: The contractor shall comply with the Regulations relative to nondiscrimination in Federally or State assisted programs of the South Dakota Department of Transportation, Title 49, Code of Federal Regulations, Part 21, as they may be amended (hereinafter referred to as the “Regulations”), incorporated by reference and made a part of this contract.
- (2) Nondiscrimination: The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, religion, national origin, sex, age or disability in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.
- (3) Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor’s obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, religion, national origin, sex, age or disability.
- (4) Information and Reports: The contractor shall provide all information and reports required by the Regulations, or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the South Dakota Department of Transportation or the Federal Highway Administration to be pertinent to ascertain compliance with such Regulations or directives. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information, the contractor shall so certify to the South Dakota Department of Transportation, or the Federal Highway Administration as appropriate, and shall set forth what efforts it has made to obtain this information.
- (5) Sanctions for Noncompliance: In the event of the contractor’s noncompliance with the nondiscrimination provisions of this contract, the South Dakota Department of Transportation shall impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including but not limited to:
 - (a) withholding of payments to the contractor under the contract until the contractor complies, and/or
 - (b) cancellation, termination or suspension of the contract, in whole or in part.
- (6) Incorporation of Provisions: The contractor shall include the provisions of paragraphs (1) through (6) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives pursuant thereto. The contractor shall take such action with respect to any subcontract or procurement as the South Dakota Department of Transportation or the Federal Highway Administration may direct as a means of enforcing such provisions including sanctions for non-compliance. Provided, however, that, in the event of a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request the South Dakota Department of Transportation to enter into such litigation to protect the interest of the State, and, in addition, the contractor may request the United States to enter such litigation to protect the interests of the United States.

* * * *

**STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION**

**SPECIAL PROVISION FOR
IMPLEMENTATION OF CLEAN AIR ACT
AND
FEDERAL WATER POLLUTION CONTROL ACT**

SEPTEMBER 1, 1997

By signing this bid, the bidder will be deemed to have stipulated as follows:

- a) That any facility to be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub. L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub. L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR, Part 15), is not listed on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.
- b) That the State Transportation Department shall be promptly notified prior to contract award of the receipt by the bidder of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility to be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

* * * *

