



CIVIL ENGINEERS & LAND SURVEYORS

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July 27, 2017

Re: Conde Water System Improvements  
Conde, South Dakota  
A-6352

Bid Opening: **August 2, 2017**  
**3:00 pm Local Time**

### **ADDENDUM NUMBER 1**

The following modifications become a part of the original plans and specifications, taking precedence over the items that may conflict. The bidder shall note receipt and make acknowledgement of the addendum on his bid form, incorporating its provisions in his bid.

### **CONTRACT DOCUMENTS AND TECHNICAL SPECIFICATIONS**

- 1. INSTRUCTIONS TO BIDDERS:** Disregard and remove all references to Community Development Block Grant (CDBG) Provisions
- 2. PART 1, Section 00 21 13, Article 27 on page 27:** The workforce goals for all crafts, disadvantaged/ minority participation shall be changed to 1.3%
- 3. PART 1, Section 00 21 13, page 29: Add the following Article:**

#### **ARTICLE 30 - AMERICAN IRON AND STEEL PROVISION OF THE CONSOLIDATED APPROPRIATIONS ACT OF 2014**

The low responsive bidder will be required to certify to compliance with the American Iron and Steel provision of the Consolidated Appropriations Act of 2014. This certification form may be found on page AIS-21 of the State Revolving Fund (SRF) General Conditions and must be included in the bid proposal.

Please be advised that waivers or exemptions from the American Iron and Steel provision that cite International Trade Agreements **DO NOT** comply with the Consolidated Appropriations Act of 2014 as it applies to the SRF programs. Claims from suppliers that the American Iron and Steel provision does not apply to certain products based on the International Trade Agreement exemptions of the Consolidated Appropriations Act of 2014 will not be accepted

Page 184 Replace the language in SC-13.03E with the following: "The Contract Unit Price of an item shall not be subject to change under any conditions. South Dakota Bid Law does not allow for the change of price in Unit Price work. While the unit price may not be changed, the cost of the work may be adjusted by the inclusion of a new change order item for the adjustment under the following conditions:

1. The requirements of SDCL 5-18B-19 for changes in the work are met; and

2. If the Bid price of a particular item of Unit Price Work amounts to 5 percent or more of the Contract Price and the variation in the quantity of that particular item of Unit Price Work performed by the Contractor differs by more than 25 percent from the estimated quantity of such item indicated in the Agreement; and
3. If there is no corresponding adjustment with respect to any other item of Work; and
4. If the Contractor believes that Contractor has incurred additional expense as a result thereof or if Owner believes that the quantity variation entitles Owner to an adjustment in the unit price, either Owner or Contractor may make a Claim for adjustment in the Contract Price in accordance with Article 10 if the parties are unable to agree as to the effect of any such variations in the quantity of Unit Price Work performed

**4. BIDDING DOCUMENTS, Section 00 42 43, Bid Form, page 39, Item 5:** *Please note: "The Water Tower may contain Lead Based Paint. The Contractor shall be responsible for compliance with all state and federal rules pertaining to lead based paints and to environmental and worker health matters as may arise from the cutting of the metal, tank demolition, handling and disposal or reuse of the coated metal.*

**5. BIDDING DOCUMENTS, Section 00 42 43, Bid Form, page 39, Item 42:** *1-1/4" shall be changed to 1"*

**6. BIDDING DOCUMENTS, Section 00 42 43, Bid Form, page 39, Item 43:** *1-1/4" shall be changed to 1"*

**7. BIDDING DOCUMENTS, Section 00 42 43, Bid Form, page 39, Item 46:** *1-1/4" shall be changed to 5/8" x 3/4" as called out in the specifications*

**8. BIDDING DOCUMENTS, Section 00 42 43, Bid Form, page 39, Item 49:** *1-1/4" shall be changed to 1"*

**9. PART 2, Division 02 00 00, Section 02 61 00, 1.05A, page 331:** Change the Disposal Facility to; Brown County Landfill, 13225 379<sup>th</sup> Ave., Aberdeen, SD 57401. Phone # 605-626-4019, Contact is Mike Scott- Manager

**10. PART 2, Division 16 00 00, Section 16 92 00, page 402:** Add Dakota Pump & Control-Watertown, SD and Quality Flow Systems, Inc. – New Prague, MN to the approved supplier list

**11. PART 2, Division 33 00 00, Section 33 12 13, 2.02:** Add AY McDonald Series 4845A to the Engineer Approved Equal List

**12. PART 2, Division 33 00 00, Section 33 12 16:** Add American AVK to the Engineer Approved Equal List

**13. PART 2, Division 33 00 00, Section 33 12 25, 1.03A:** *Replace with the following paragraph; "The pump house shall be equipped with two variable speed pumps. Pumps 1 and 2 shall be capable of pumping 35 gpm against a total dynamic head of 20 feet and 60 psi (158.6'). The pumps shall be ramped down to meet daily demands. The pump house shall also be equipped with one end suction pump capable of pumping 400 gpm against a total dynamic head of 245 feet and 60 psi (383.6')."*

14. PART 2, Division 33 00 00, Section 33 12 32: Measurement and Payment for Replumbing shall be incidental to the meters.

15. PART 2, Division 33 00 00, Section 33 12 32.01: Delete this section entirely

16. PART 2, Division 33 00 00, Section 33 05 23.16: Add the attached section to the specifications

**CONSTRUCTION PLANS**

1. Sheet 38, McClellan Avenue Plan Sheet: Please add a note for the gate valve on McClellan Ave.

**ADDITIONAL ELECTRICAL PLAN AND SPECIFICATIONS**

1. System Voltage will be 120/240 Delta. Utility will provide pole mounted transformers and secondary conductors to the meter socket.
2. 120V loads should be connected only to the A and C Phase and B phase will be the “High Leg”.
3. Change Meter Socket, ATS, and Panel to 400A. (standard 320A for Meter Socket)
4. Change Feeder Schedule as follows: #1 to be 4” SCH 80 PVC for utility conductors. #2 to be parallel feeder of same conduit and wire. #3 to be parallel feeder of same conduit and wire.
5. Change generator voltage to 120/240 3Phase.
6. Change line circuit breaker on generator from 200A to 400A.
7. The LP heater shall be changed to Natural Gas
8. The 50 HP pump shall be as scheduled a 208-230V / 460V 3 Phase

**ALL OTHER ITEMS OF THE PLANS AND SPECIFICATIONS REMAIN UNCHANGED**

BY:  \_\_\_\_\_



PROJECT ENGINEER – HELMS & ASSOCIATES

**Acknowledge receipt of the Addendum by inserting its number on the Bid Form. Failure to do so may subject bidder to disqualification. This Addendum forms a part of the Contract Documents. It modifies them as above.**

# SECTION 33 05 23.16 – UTILITY PIPE JACKING

## PART 1 GENERAL

### 1.01 RELATED DOCUMENTS

- A. The general provisions of the Contract, including General and Supplementary Conditions, shall apply to the Work covered in this Section.
- B. Related Work specified elsewhere:
  - 1. Traffic Control - Section 01 55 26
  - 2. Sheeting, Shoring and Bracing - Section 31 23 14
  - 3. Trenching, Backfilling and Compacting - Section 31 23 33
  - 4. Curbs, Gutters, Sidewalks and Driveways - Section 32 16 00
  - 5. Water Utility Piping and Fittings – Section 33 11 00
  - 6. Standard Drawing 01 33 23.16-1 Type I Crossing
  - 7. Standard Drawing 01 33 23.16-2 Type II Crossing

### 1.02 DESCRIPTION OF WORK

- A. The work covered by this section of the specifications includes all labor, material, equipment, and services necessary to furnish and install the types of road crossings as shown on the plans and as specified herein.

### 1.03 SUBMITTALS

- A. The Contractor shall submit, for review, copies of Shop Drawings for materials specified herein in accordance with the requirements of Section 01 33 23.
- B. Certificates from the manufacturer that the materials furnished meet or exceed the specified requirements.

### 1.04 QUALITY ASSURANCE

- A. All pipelines, conduit, and casing pipe installed on railroad property and/or within federal, state, or county highway right-of-way shall conform to the most recently adopted codes for the system involved, the State Accommodation of Utilities Policy, and all permits as issued to the Owner by the permit issuing authority having jurisdiction over the area affected.

### 1.05 DEFINITIONS

- A. Type 1 Crossing: A crossing utilizing a casing installed by boring or jacking as hereinafter described.
- B. Type 2 Crossing: A crossing utilizing a carrier pipe only installed by boring or jacking as hereinafter described.

## PART 2 MATERIALS

### 2.01 STEEL CASING

- A. Steel casing pipe shall conform to ANSI Specification B36.10, and shall have a minimum yield strength of 35,000 psi. Minimum wall thickness shall be in accordance with the

following:

PIPE MINIMUM WALL	
DIAMETER (INCHES)	THICKNESS (INCHES)
12 or less	0.188

B. All casing pipe joints shall be welded.

## 2.02 CASING SPACERS

A. Use manufactured casing spacers to position carrier pipe in casing. Wood skids will not be allowed.

B. Use the following material requirements for casing spacers:

1. HDPE Band/Panel and Riser: ASTM D 638.
2. Stainless Steel or Carbon Steel Band/Panel and Riser: Type 304 stainless steel per ASTM A 240 or carbon steel per ASTM 36.
3. Liner: Elastomeric PVC per ASTM D 149.
4. Spacer Skid/Runner: Abrasion resistant polymer with a low coefficient of friction.
5. Fasteners: Type 304 (18-8) stainless steel per ASTM A193.

C. Watermain piping will be centered and restrained within the casing pipe. Spacers shall be sized such that the height of the risers and runners are to center the carrier pipe in the casing pipe with a top clearance of three-fourths inch minimum.

## 2.03 END SEALS

A. Casing pipe end seals will be a "Pull-On" or "Wrap Around" type seal manufactured from a minimum 1/8" thick neoprene rubber. End seals will be sealed to the carrier pipe and casing pipe by 1/2" wide T304 stainless steel bandings with 100% non-magnetic worm gear mechanism.

B. Casing end seals shall specifically designed to conform to eccentric or concentric carrier/casing configuration.

## 2.04 CARRIER PIPE FOR UNCASSED BORINGS (PVC)

A. The pipe material to be used shall meet AWWA C900 standards for Polyvinyl Chloride pressure pipe and fittings with a dimension ratio SDR14. All other pipe shall have the written approval of the ENGINEER and meet all submittal review as an optional approved product.

B. The pipe shall be joined using separate PVC coupling with beveled edges, built-in sealing gaskets and restraining grooves. The restraining splines shall be square or rectangular, and made from Nylon 101.

C. Exposed splines shall be cut flush to coupling to reduce soil drag.

D. Couplings shall be beveled on leading edges to minimize soil friction.

E. CONTRACTOR shall adhere to the pipe manufacturer's most current calculations regarding tensile load limitations for trenchless application. This calculation shall be part of the required submittal. (See chart below)

F. Pre-Approved piping systems are Certa-Lok C900/RJ as manufactured by CertainTeed

Corporation or Engineer approved equal.

Certa-Lok C900/RJ, C905/RJ

Size	Pipe O.D.	DR	Note	Pressure			Mi. Wall Thickness	Bell/ Coupling O.D.	Tightest Permissible Bend		Maximum Pull-In Force, Tightest Bend Radius lbs.	Maximum Pull-In Force, Straight Pull (No Bending) lbs.
				Value psi	C900 Class	C905 Class			Radius, Ft.	% Change in Pitch per 10'		
6"	6.900	14	2	200	x		0.493	8.366	150	6.7	9,300	14,700

① Integral Bell PVC Products ② PVC Coupling ③ Composite Coupling

G. CONTRACTOR shall adhere to the pipe manufacturer's most current calculations regarding tensile load limitations for trenchless application. This calculation shall be part of the required submittal. (See chart below)

Size	SDR	Class	Pipe O.D.	Coupling O.D.	Maximum Pull-In Force Tightest Bending	Maximum Pull-In Force Straight Pull (No Bending)
6"	14	200 psi	6.900"	8.366"	9,300 lbs.	14,700 lbs.

H. CONTRACTOR shall adhere to the pipe manufacturer's most current recommendations regarding radius of curvature used for trenchless application. This calculation of each bore shall be part of the required submittal prior to work.

Pipe Diameter	Min. Radius of Curvature	Offset per 20' Length	Deflection per 20' Length
6"	150'	16"	7.6 Degrees

I. Service piping that is directional bored will meet the requirements set forth in Section 33 12 13.

2.05 CARRIER PIPE FOR UNCASSED BORINGS (HDPE)

A. The pipe shall be high performance, high molecular weight, high-density polyethylene pipe (HDPE SDR 11) with a Type 3408 resin as classified by ASTM D1248 for Type III, Class C, Category 5, grade P34 piping. The pipe shall have a minimum cell classification value 345464C as determined by ASTM D3350.

B. The piping shall be marked at intervals of 5 feet or less with the following information:

1. Manufacturer's name or trademark.
2. Nominal pipe size.
3. HDPE classification ASTM D3350.
4. Standard dimension ratio SDR 11.
5. ASTM D2513
6. Extrusion date, period of manufacture or lot, or batch number.

C. The pipe shall be sized as indicated on the plans with standard dimensions and tolerances conforming to ASTM D2513.

D. The physical properties of the pipe resin are as follows:

1. Density: ASTM D1505, not less than 0.941 - 0.955 gms/cu.cm.
  2. Melt Flow: ASTM D1238, Condition E, not greater than 0.4 gms/10 min.
  3. Flexural Modulus: ASTM D790, 110,000 to less than 160,000 psi.
  4. Tensile Strength at Yield: ASTM D638, 3,000 to less than 3,500 psi.
  5. Environmental Stress Crack Resistance (ESCR): ASTM D1693, Condition C, shall be in excess of 5,000 hrs with zero failures.
  6. Hydrostatic Design Basis: ASTM D2837, 1600 psi at 23° C.
- E. The pipe shall contain no recycled compounds except that generated in the manufacturer's own plant from resin of the same specification from the same raw material.

## 2.06 HDPE FITTINGS

- A. Fittings shall be from a polyethylene compound having cell classification equal to or exceeding compound used in pipe to ensure compatibility of polyethylene resins.
- B. The Contractor shall furnish molded fittings rather than factory fittings in available diameters.
- C. The fittings shall be of the same manufacturer as pipe being provided. Engineer may allow substitution for approved material with use of flanged joint sections.
- D. Fitting dimensions shall conform to standard dimensions in accordance with ASTM D3261.
- E. All fittings shall be marked with the following:
  1. Manufacturer's name or trademark.
  2. Nominal size.
  3. Type of plastic, material designation HDPE.
  4. ASTM D2513.

## **PART 3 EXECUTION**

### 3.01 GENERAL

- A. All work shall be planned and coordinated so as to not unduly interfere with the movement of traffic.
- B. The Contractor shall comply with the regulations of the permitting authority. The Contractor shall notify the permitting authority prior to construction. Copies of the permits are included in Section 01 11 00. Prior to construction of the crossing, the Contractor shall notify the permit-issuing agency.
- C. Road crossings shall be located so as to cross tracks or highways approximately at right angles. The location shall be such so as to not restrict drainage, endanger existing structures, or interfere with maintenance or reconstruction procedures.
- D. All topsoil shall be saved and replaced upon completion of the crossing.

### 3.02 HEAT FUSION OF HDPE PIPE

- A. Pipe shall be welded in accordance to manufacturer's recommendation for butt fusion methods. The Contractor shall provide qualified fusion operators and shall submit qualifications to Engineer prior to fusion of all pipes.

- B. The butt fusion equipment for joining procedures shall be capable of meeting conditions recommended by pipe manufacturer including, but not limited to, temperature requirements, alignment, and fusion pressures.
- C. Solutions such as detergents and solvents, for cleaning pipe ends where required, shall be used in accordance with manufacturer's recommendations.
- D. The Contractor shall not subject pipe to strains that will over stress or buckle piping or impose excessive stress on joints.
- E. Branch saddle fusions shall be joined in accordance with manufacturer's recommendations and procedures. Branch saddle fusion equipment shall be of size to facilitate saddle fusion within trench.
- F. Before butt fusion of pipe, the Contractor shall inspect each length for presence of debris or animals. All debris and/or animals shall be removed from pipe prior to fusion of pipe.
- G. The Contractor shall use compatible fusion techniques when polyethylenes of different melt indexes are used together. The Contractor shall refer to manufacturer's specifications for compatible fusion.

### 3.03 TYPE 1 STREET/HIGHWAY/RAILROAD BORING

- A. Casing pipe shall be installed by boring, jacking, or directional bore with distance to the headers conforming to permit and/or code requirements.
- B. When pipes are installed by the boring method, the pipe must be jacked through the soil as the soil is removed by the auger. Installing pipe through pre-bored holes is not permitted. Removal of material from the bored hole by washing or sluicing is not permitted.
- C. The casing pipe shall be uniform in alignment and grade as shown on the plans.
- D. The casing pipe under highways and roads shall extend from jacking pit to receiving pit. The jacking and receiving pits for highway and road crossings shall be no closer than the toe of the inside slope.
- E. The casing pipe under railroads shall extend a minimum of 30 ft from either side of the centerline of the track. The jacking and receiving pits for shall not be closer to the roadway than the toe of slope.
- F. Casing spacers for watermain piping will be placed within two (2) feet on either side of the bell joint and equally spaced at approximate 5 to 6 feet intervals thereafter for a total of four casing spacers per 20-foot pipe length.
- G. The Contractor will install the end seals prior to making connection on either side of the boring. End seals will be installed to provide a water tight seal on each end of the casing pipe.
- H. Directional boring shall be completed as per 3.04 below.

### 3.04 TYPE 2 BORING

- A. The carrier pipe shall be installed by jacking, boring, or directional boring. Casing pipe is not required.
- B. The carrier pipe shall be uniform in alignment and grade as shown on the plans.
- C. The jacking and receiving pits for highway and road crossings shall be no closer than the toe of the inside slope.



- D. Joints, connections, or couplings shall be allowed beneath the paved or traveled portion of the road only where the road width exceeds nominal pipe length approved for use.
- E. Directional boring shall be completed as per Section 33 05 23.13.

### 3.05 TESTING PIPE

- A. Cleaning and flushing are to be done by the CONTRACTOR in accordance with the requirements of Section 33 13 00.
- B. Directional drilling pipe shall be tested by CONTRACTOR after pullback. Testing shall be in accordance with Section 33 13 01.

### 3.06 SITE RESTORATION

- A. Following drilling operations, CONTRACTOR will de-mobilize equipment and restore the work site to the original conditions or better. All excavations will be backfilled and compacted according to the specifications.
- B. Surface restoration shall be completed in accordance with the requirements of the contract, to a condition as good as or better than existed prior construction.

### 3.07 BACKFILL AND COMPACTION

- A. The backfill and compaction shall be completed in accordance with the requirements of Section 31 23 33 - Trenching, Backfilling and Compacting.

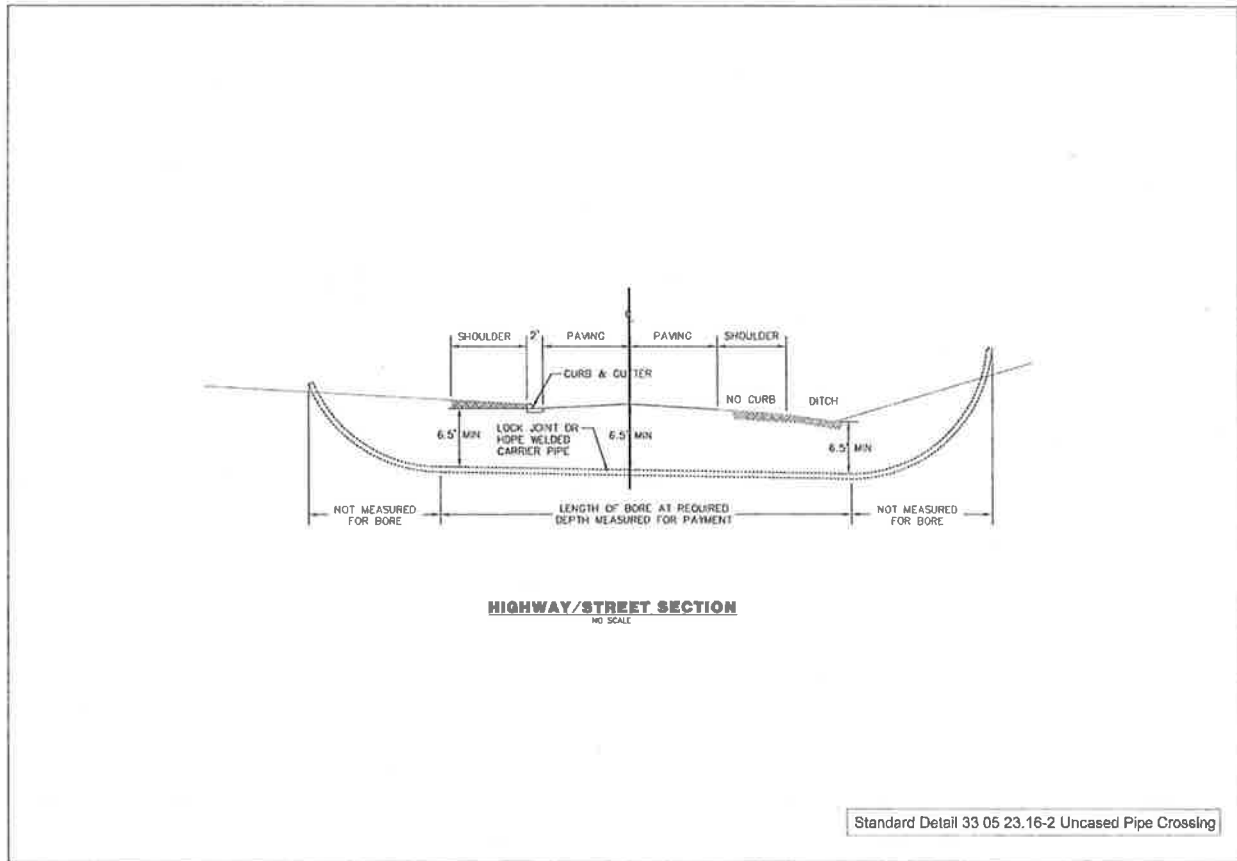
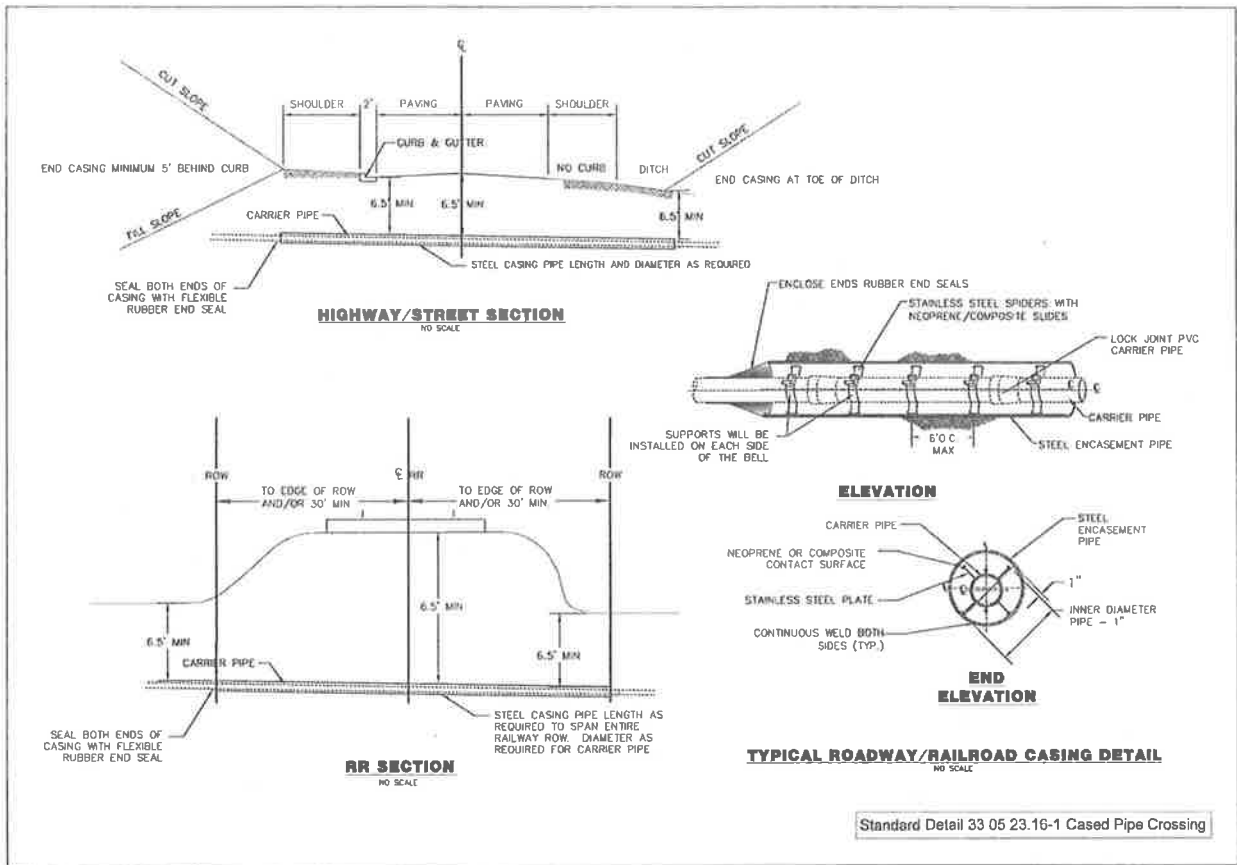
## **PART 4 MEASUREMENT AND PAYMENT**

### 4.01 MEASUREMENT

- A. Measurement for 12" Casing Pipe shall be per lineal foot of casing pipe actually installed. Measurement will be based on the size of carrier pipe installation as provided in the bid form. Casing spacers and end seals will be considered incidental to the crossing bid items.
- B. Measurement for Type 1 crossings will be per lineal foot of casing pipe actually bored and jacked as measured in the field from boring pit to receiving pit. Measurement will be based on the size of carrier pipe installation as provided in the bid form. Casing spacers and end seals will be considered incidental to the crossing bid items.

### 4.02 PAYMENT

- A. Payment for Casing Pipe will be at the contract unit price per foot for the size of casing pipe installed.
- B. Payment for Bore and Jack Steel Casing Pipe will be at the contract unit price per foot for the size of casing pipe installed.



\*\*\* END OF SECTION \*\*\*