

**SECTION 308**

**BORING AND JACKING**

**PART 2 MATERIALS**

2.2 STEEL CASING PIPE

- E. Casing pipe length shall conform to City of Meridian Standard Drawing SW1 "Casing Length Requirements."

2.4 CARRIER PIPE SKIDS

- A. Calpico spacers shall be used except where an equivalent has been pre-approved by the City Engineer.

2.6 ANNULAR SPACE BACKFILL

- A. Backfill the void between the carrier pipe and the casing with clean sand free of deleterious material, or low strength foaming concrete grout/ neat cement with a 7-day compressive strength of 60-70 psi, and a density of 35-38 lb/ft<sup>3</sup> after foaming but prior to pumping. Annular space backfill may be deleted with the written approval of the City Engineer. Seal each end of casing with 3/8" neoprene seal with stainless steel bands. Refer to City of Meridian Standard Drawings SW1 and SW2.

**PART 3 WORKMANSHIP**

3.1 GENERAL REQUIREMENTS

- A. Bore or jack, as necessary, at the locations indicated in the Contract Documents and staked in the field for the installation of pipelines, services, utilities, and ancillary items. Verify location and depth of all utilities.

●● END OF SECTION ●●

**SECTION 309**

**HORIZONTAL DIRECTIONAL DRILLING**

**PART 3 WORKMANSHIP**

3.5 HORIZONTAL DIRECTIONAL DRILLING OPERATION

- B. Accurately survey the entire drill path with entry and exit stakes placed in the appropriate locations within the areas indicated on drawings. Using a magnetic guidance system survey, drill path for any surface geo-magnetic variations or anomalies. Verify location and depth of all utilities.

●● END OF SECTION ●●

**SECTION 310**

**PIPE CASING AND SLEEVING**

**PART 1 GENERAL**

1.1 SECTION INCLUDES

- A. Pipe casing and sleeving requirements for pipe installation.
- B. Annular space backfill requirements for casing or sleeving pipe installation.

1.2 RELATED SECTIONS

- A. Section 205 – Dewatering.
- B. Section 301 – Trench Excavation
- C. Section 306 – Trench Backfill
- D. Section 1103 – Construction Traffic Control

1.3 REFERENCES

- A. ASTM A 252: Standard Specifications for Welded and Seamless Steel Pipe Piles.
- B. Manual on Uniform Traffic Control Devices, Latest Edition.

1.4 SUBMITTALS

- A. Submit shop drawings of trench safety system for informational purposes only if excavation is over 4 feet deep.
- C. Submit a traffic control plan if the operation will disrupt the normal flow of traffic in the work area, per Section 1103 – Construction Traffic Control.
- D. Submit a dewatering plan if surface or groundwater are encountered, per Section 205 - Dewatering.

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1.5 FIELD MEASUREMENTS

- A. Verify that survey benchmark and intended elevations for the work are as indicated in the Contract Documents.
- B. Notify City Engineer if installation conditions such as soils or alignment do not match those contemplated in the Contract Documents. Allow one working day for Design Engineer to modify the design if necessary, unless otherwise specified.

1.6 PROJECT RECORD DOCUMENTS

- A. Accurately record actual location of the carrier pipe and encountered utilities in relation to existing permanent benchmarks.
- B. Provide copy of record documents to Owner prior to issuance of substantial completion.

**PART 2 MATERIALS**

2.1 GENERAL REQUIREMENTS

- A. Construction materials and equipment used for the work are to meet all requirements of the Contract Documents.
- B. Use, handle, and store material in such a manner as to preserve quality and fitness for the work.
- C. Immediately remove materials from the site of work that does not conform to the requirements of the Contract Documents as determined by the City Engineer or designee.

2.2 STEEL CASING PIPE -- Under Irrigation ditches, pipe, canals, roadways, or railroads.

- A. Conform to ASTM A252 with 3/8-inch minimum wall thickness.
- B. Diameter a minimum of 2 inches larger than the outside bell diameter of the carrier pipe.
- C. Casing to meet all superimposed loads, soil type conditions, and other conditions presented in the project.
- D. Furnish pipe of sufficient thickness to withstand the forces exerted by the insertion operations.

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- E. Casing pipe length shall conform to City of Meridian Standard Drawing SW1 "Casing Length Requirements."
- F. See Standard Drawing SW2 for steel casing details

2.3 PVC PIPE SLEEVING – DEQ Separation

- A. PVC water class pipe DR25 or equal.
- B. Diameter a minimum of 2 inches larger than the outside bell diameter of the carrier pipe.
- C. Casing to meet all superimposed loads, soil type, conditions, and other conditions presented in the project.
- D. Furnish pipe of sufficient thickness to withstand the forces exerted by the insertion operations.
- E. See Standard Drawing SW2 for PVC sleeve details

2.4 ANNULAR SPACE BACKFILL WHEN CARRIER PIPES ARE INSTALLED

- A. Backfill the void between the carrier pipe and the casing with clean sand free of deleterious material, or low strength foaming concrete grout/ neat cement with a 7-day compressive strength of 60-70 psi, and a density of 35-38 lb/ft<sup>3</sup> after foaming but prior to pumping. Seal each end of casing with 3/8" neoprene seal with stainless steel bands. Refer to City of Meridian Standard Drawings SW1 and SW2
- B. Annular space backfill may be deleted with the written approval of the City Engineer. When a 20-foot PVC sleeve is used to meet DEQ separation requirements, and no ground water is anticipated, the annular space backfill may be deleted with approval of the Public Works Inspector.

**PART 3 WORKMANSHIP**

3.2 CONSTRUCTION SAFETY

- A. Meet or exceed OSHA requirements at all times for all annular space backfill activities.

3.3 ANNULAR SPACE BACKFILL

- A. Prevent floating or displacement of the carrier pipe and do not induce pressures that will collapse or distort the carrier pipe.

**PART 4 MEASUREMENTS AND PAYMENT**

- 4.1 Annular space backfill to be measured in accordance with the following methods outlined below and identified in the Bid Schedule. Payment includes full compensation for providing all materials, labor, tools, and equipment necessary to complete the work including annular space backfill material, excavation, backfill, labor, dewatering, miscellaneous material, surface restoration, and all incidental work required. If not separately indicated in the Bid Schedule, annular space backfill will be paid for as a part of the other Bid Items.
- A. Pipe Casing and Sleeving: By the linear foot measured on a horizontal basis through the centerline of the carrier pipe for the size of carrier pipe indicated.
1. Bid Schedule Payment Reference: 310.4.1.A.1
  2. Bid Schedule Description: Pipe Casing and Sleeving \_\_\_\_\_ (diameter)...linear foot (LF)
- B. Pipe Casing and Sleeving: On a lump sum basis for the location indicated.
1. Bid Schedule Payment Reference: 310.4.1.B.1
  2. Bid Schedule Description: Pipe Casing and Sleeving \_\_\_\_\_ (diameter), STA\_\_\_\_\_ to STA\_\_\_\_\_ lump sum (LS)

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