

SECTION 33 05 23.01

JACKING AND BORING

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Boring, drilling or jacking operations for casing for water pipe, sanitary sewer pipe, storm sewer pipe, and traffic conduit in areas where trenching is not feasible.
- B. Contractor shall maintain at all times a file at the job site containing NMSHTD, railroad, or other permits required to perform the work.

1.02 RELATED WORK

- A. Section 01 71 23.17 - NMDOT Utility Permit Survey Requirements
- B. Section 33 12 01 – Water Systems

1.03 SUBMITTALS

- A. Section 01 33 23 – Shop Drawings, Product Data, and Samples: Product data for all materials and appurtenances specified in Part 2 PRODUCTS.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Steel Casing:
  - 1. Electric resistance welded tubing for sizes 26 inch O.D. and under.
  - 2. Double-submerged arc-weld for sizes 28 inch O.D. and over.
  - 3. ASTM A-53 Steel, Grade B with beveled ends for sizes 26 inch O.D. and under.
  - 4. API 5LB steel with beveled ends for sizes 28 inch O.D. and over.
  - 5. Standard class wall thickness for all casing sizes.

6. Size and thickness:

Steel Casing Diameter Nominal / I.D.	Steel Casing Nominal Wall Thickness	Nominal Ductile Iron Carrier Pipe Size
14"/13.25"	.375"	6"
16"/15.25"	.375"	8"
18"/17.25"	.375"	10"
22"/21.00"	.500"	12"
24"/23.00"	.500"	14"
26"/25.00"	.500"	16"
30"/29.00"	.500"	18"
36"/35.00"	.500"	24"
42"/41.00"	.500"	30"
Or as scheduled		

B. Carrier Pipe:

1. 24" and Smaller: Ductile iron pipe, push-on joints with gasket-type integral joint restraint (U.S. Pipe Field Lok 350® or American Ductile Iron Pipe Fast-Grip®), as Specified in Section 33 12 01 – Water Systems, or Section 40 27 00 – Process Pipe Systems.
2. 30" and Larger: Ductile iron pipe, push-on joints, with the external mechanical restraint devices, as specified in Section 33 12 01 – Water Systems, or Section 40 27 00 – Process Pipe Systems.
3. Extend carrier pipe and restrained joints 1'-0" beyond each end of casing.

2.02 APPURTENANCES

A. Casing Spacer:

1. Shell and Risers: T-304 passivated stainless steel or fusion bonded thermoplastic powder coated steel, 14 gage minimum, flanges ribbed for strength, two-piece bolt-on shell, 8" wide minimum, 3 bolts per flange.
2. Liner: PVC or EPDM, 0.090" thick, 85-90 durometer "A", overlap edges, ribbed.
3. Runners: UHMW polymer or glass filled polymer, mechanically attached to risers or shell.
4. Fasteners: T-304 stainless steel, 5/16"
5. Acceptable Manufacturers:
  - a. Cascade Waterworks Manufacturing Company, Model CCS
  - b. Advance Products and Systems, Inc., Model SSI, SI, SSIM and SIM
  - c. Engineer approved equivalent.

- B. Casing End Seals:
1. Construction: Rubber seal with steel bands.
  2. Seal: Virgin SBR Rubber
  3. Bands: T-304 stainless steel
  4. Wrap-around seam sealed with bonding cement or mastic.
  5. Acceptable Manufacturers:
    - a. Cascade Waterworks Manufacturing Company, Model CCES
    - b. Advance Products and System, Inc., Model AC, AW, or AZ.
    - c. Engineer approved equivalent.

### PART 3 EXECUTION

#### 3.01 INSTALLATION

- A. Water, Sewer, and Storm Drain:
1. Completed to the alignment and grade shown on the construction drawings.
  2. Earth and/or rock augers shall not exceed the O.D. of the steel casing by more than 1/4 inch.
  3. Use equipment for boring and insertion of steel casing capable of simultaneous operation.
  4. Feed rate of augers and hydraulic pushing of the casing shall be the same.
  5. Avoid loss of earth.
  6. Excavated material shall be removed from the casing as excavation progresses and no accumulation of such material within the casing shall be permitted.
  7. Fill voids around the outside face of the casing by grouting when operation is complete.
  8. Grouting equipment and material shall be on the job site before boring operations are started in order that grouting around the bored casing may be started immediately after the boring operations have finished.
  9. Carrier pipe shall be skidded through the casing on casing spacers in centered positioning.
  10. Place casing spacers within two (2) feet from each end of the casing. Place three (3) spacers on first pipe section, then two (2) every pipe section thereafter, at each joint, and at the center of each carrier pipe section.
  11. Modify casing spacer placement to meet spacing manufacturer and pipe manufacturer recommendations.
  12. Contractor to locate all underground and overhead utilities before beginning boring operations and shall repair any damage to utilities resulting thereto.
  13. Only workmen experienced in the boring operation shall perform the work.
- B. Electrical Conduit:
1. Use approved jacking or drilling methods.
  2. Non-metallic conduit shall not be installed by jacking.
  3. Non-metallic conduit shall be installed by drilling if a hole larger than the conduit is pre-drilled and the conduit is hand-installed.

4. Jacking or drilling pits shall be at least two (2) feet from the edge of any type of any pavement, measured from the side of the pit nearest to the pavement.

### 3.02 FIELD QUALITY CONTROL

- A. Tolerances:
  1. Installation to be sound, tight, and true to line and grade.
  2. Allowable tolerance as to grade and alignment of the installed casing shall not exceed 1/10 of a foot per hundred feet of casing length.

### 3.03 SCHEDULE

- A. As shown on Drawings.

END OF SECTION