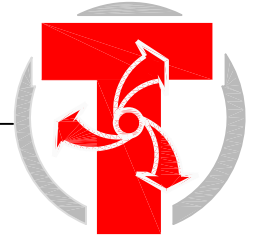
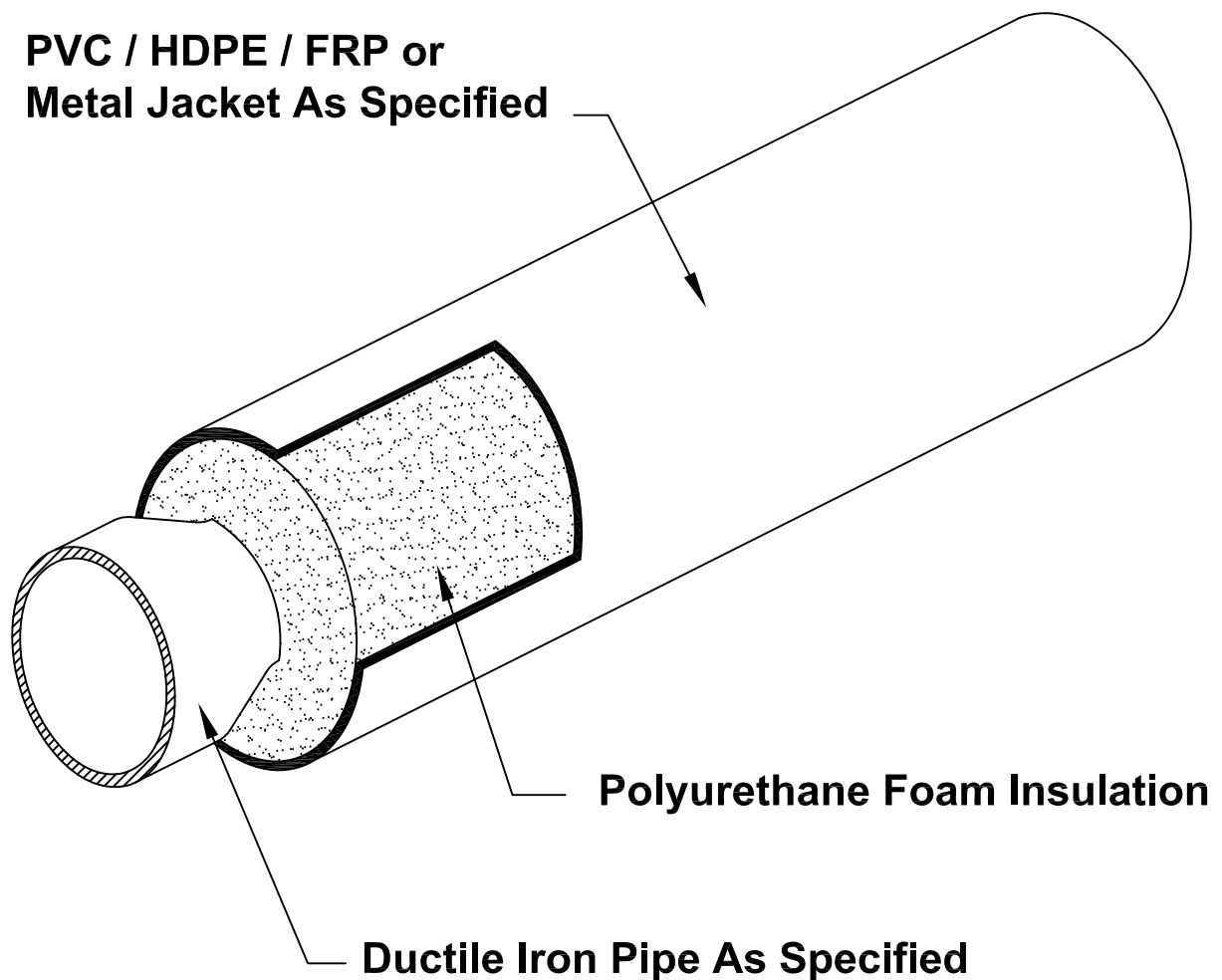


# TRICON DUCTILE IRON PIPE SYSTEM



For Applications Up To 225° F Below And Above Ground

- Chilled Water
- Heating Hot Water
- Potable Water
- Waste Water



**TRICON**  
Piping Systems, Inc.®

P.O. Box 361, Canastota, New York 13032  
Tel: 315.697.8787 Fax: 315.697.8788

**TABLE 1**

Pipe Size	Nominal Insulation Thickness	HDPE Jacket O.D.	HDPE Jacket Wall
3"	1.85"	8.00"	.175"
4"	2.43"	10.00"	.175"
6"	2.55"	12.43"	.175"
8"	2.33"	14.06"	.175"
10"	2.21"	15.87"	.175"
12"	2.16"	17.83"	.200"
14"	2.05"	19.80"	.200"
16"	2.19"	22.17"	.200"
18"	2.02"	24.00"	.225"
20"	1.44"	24.92"	.225"
24"	1.83"	30.05"	.300"
30"	1.70"	36.00"	.300"

**Service Pipe:**

The service pipe shall be Ductile Iron manufactured in accordance with ANSI/AWWA C151/A21-51. Push-on joints and mechanical joints shall be in accordance with ANSI/AWWA C111/A21.11

**Insulation:**

The insulation shall be a foamed in place closed cell polyurethane which completely fills the annular space between the carrier pipe and the exterior casing. The insulation shall have the following physical properties:

Minimum Density (lb./cu. ft.) 2.0	ASTM D-1621
"K" Factor BTU/Hr. sq. ft. °F/in. .147	ASTM C-177
90-95 % Closed Cell	ASTM D-2856

**Exterior Casing: \***

The exterior casing shall be  
 (1) Seamless, extruded white PVC Type 1, Grade 1, Class 12454-B per ASTM D-1784 **or**  
 (2) Seamless, High Density Polyethylene (H.D.P.E.) ASTM D-1248 with the following physical properties:  
 ASTM D-638.....Ultimate Elongation 850%  
 ASTM D-638.....Tensile Yield Strength 3300 psi  
 ASTM D-3350.....Resin Type III, Grade P34  
 ASTM D-790.....Tangent Flexural Modules 175,000 psi  
**No tape casings will be allowed.**

**Fittings:**

All fittings shall be mechanical joint and restrained with a mechanical retainer gland or a concrete poured thrust block. Fittings shall be in accordance with AWWA C110 and AWWA C111.

**Field Joints:**

If required, all straight joints with an HDPE jacket shall be covered with a wrap of Polyken Tape and covered with a HDPE rockshield. PVC jackets shall be covered with a PVC sleeve and a wrap of Polyken Tape.

**TABLE 2**

Pipe Size	Nominal Insulation Thickness	PVC Jacket O.D.	PVC Jacket Wall
3"	2.02"	8.16"	.070"
4"	2.60"	10.20"	.080"
6"	2.55"	12.24"	.100"
8"	2.50"	14.32"	.120"
10"	2.29"	16.00"	.140"

**Installation:**

**No Piping shall be installed in standing water. Trenches shall be maintained dry until final field closure is complete.**

The installing contractor shall handle the piping system in accordance with the directions furnished by the manufacturer and as approved by the architect and engineer. The service piping shall be hydrostatically tested to 1-1/2 times the operating pressure, or as specified in the contract documents. The test shall be maintained for a minimum time of 1 hour. **EXERCISE DUE CARE WHEN INSTALLING AND TESTING THE PIPING SYSTEM.**

**Backfill:**

A 4-inch layer of sand or fine gravel, less than 1/2" in diameter, shall be placed and tamped in the trench to provide uniform bedding for the **Ductile** system. Once the system is in place, the trenches shall be carefully backfilled with similar material and hand tamped in 6" layers until a minimum of 12" above the top of the preinsulated pipe has been achieved. The remainder of the backfill shall be void of rocks, frozen earth and foreign material. The trench shall be compacted to comply with H-20 Highway loading.

**Accessories:**

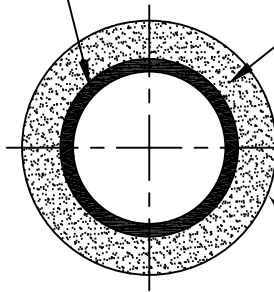
- Heat Tracing

**System Options:**

- Contact your Tricon representative for available sizes and system options.
- \* Optional metallic casings for above ground applications include, Spiral Lockseam in Galvanized, Aluminum or Stainless Steel.
- \* Optional non-metallic casings for both above and below grade offered include, Filament Wound FRP.

DUCTILE IRON SERVICE PIPE

POLYURETHANE  
FOAM INSULATION

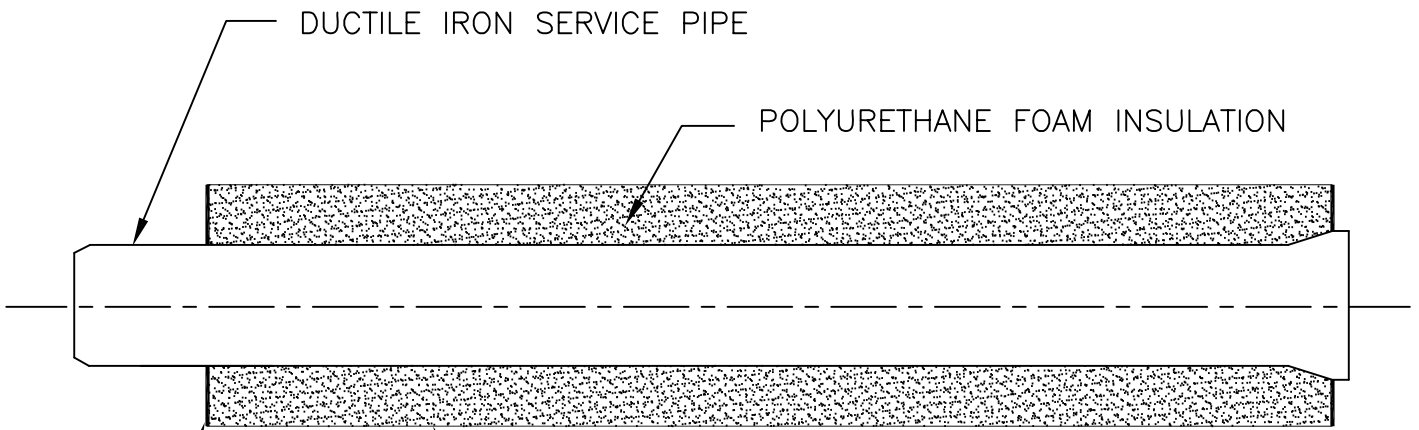


HDPE/FRP/PVC CASING

END VIEW

DUCTILE IRON SERVICE PIPE

POLYURETHANE FOAM INSULATION



HDPE/FRP/PVC CASING

MASTIC END SEAL

18'-20' LENGTHS

DUCTILE IRON STRAIGHT LENGTH DETAIL

TRICON DUCTILE IRON

Date: 03/09/06

Dwg. No.: DI-1A

Rev.:



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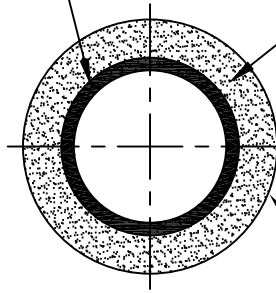
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DUCTILE IRON SERVICE PIPE

POLYURETHANE  
FOAM INSULATION

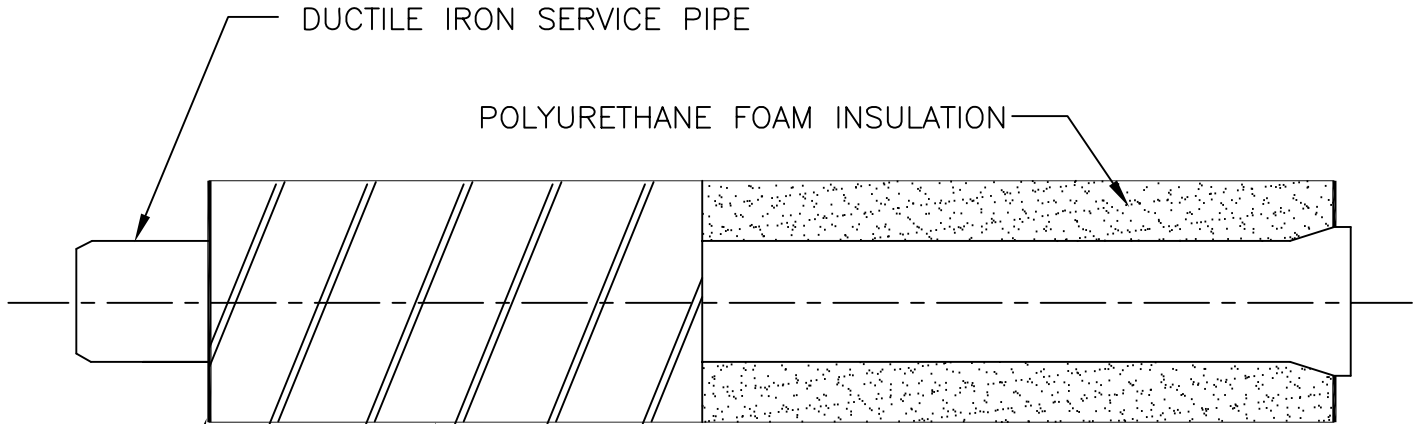


GALVANIZED, ALUMINUM OR  
STAINLESS STEEL SPIRAL CASING

END VIEW

DUCTILE IRON SERVICE PIPE

POLYURETHANE FOAM INSULATION



GALVANIZED, ALUMINUM OR  
STAINLESS STEEL SPIRAL CASING

MASTIC END SEAL

18'-20' LENGTHS

DUCTILE IRON STRAIGHT LENGTH DETAIL

TRICON DUCTILE IRON

Date: 03/09/06

Dwg. No.: DI-1B

Rev.:

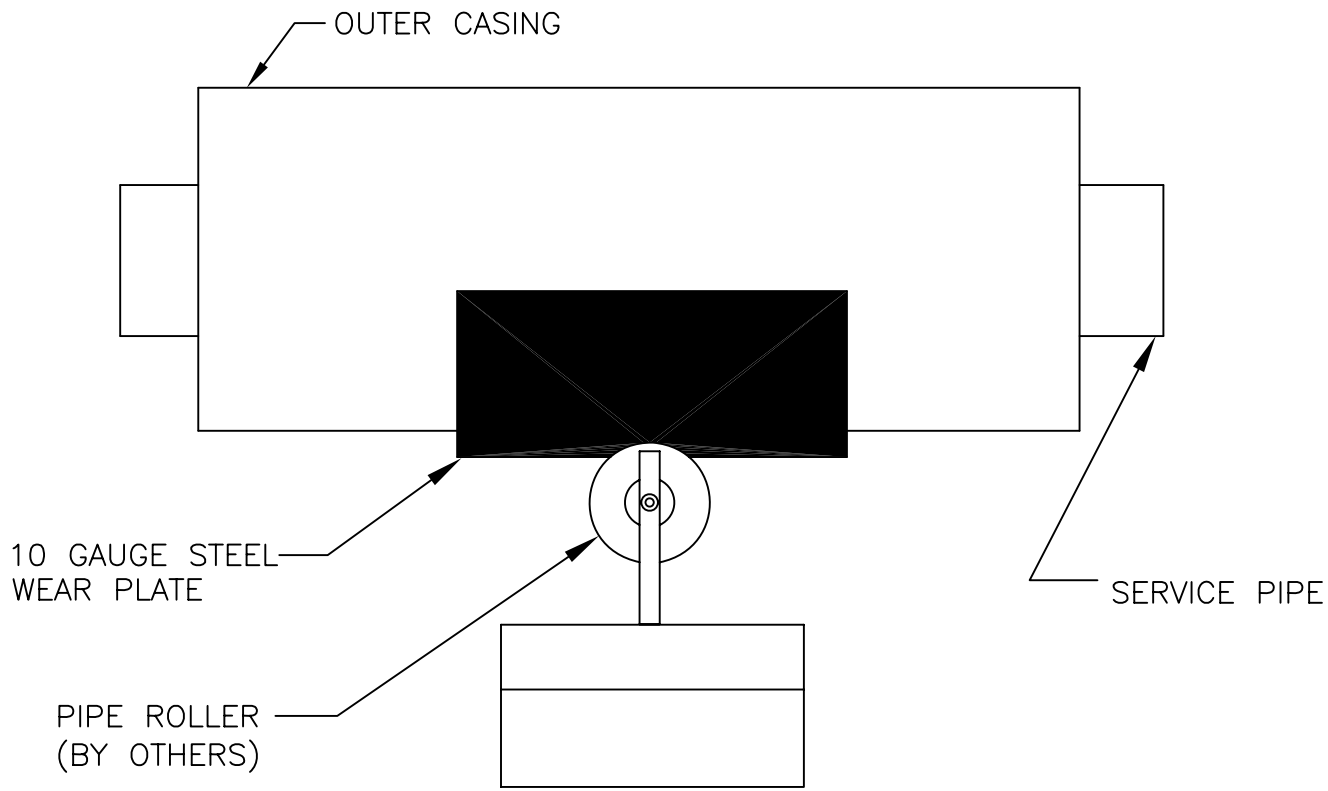


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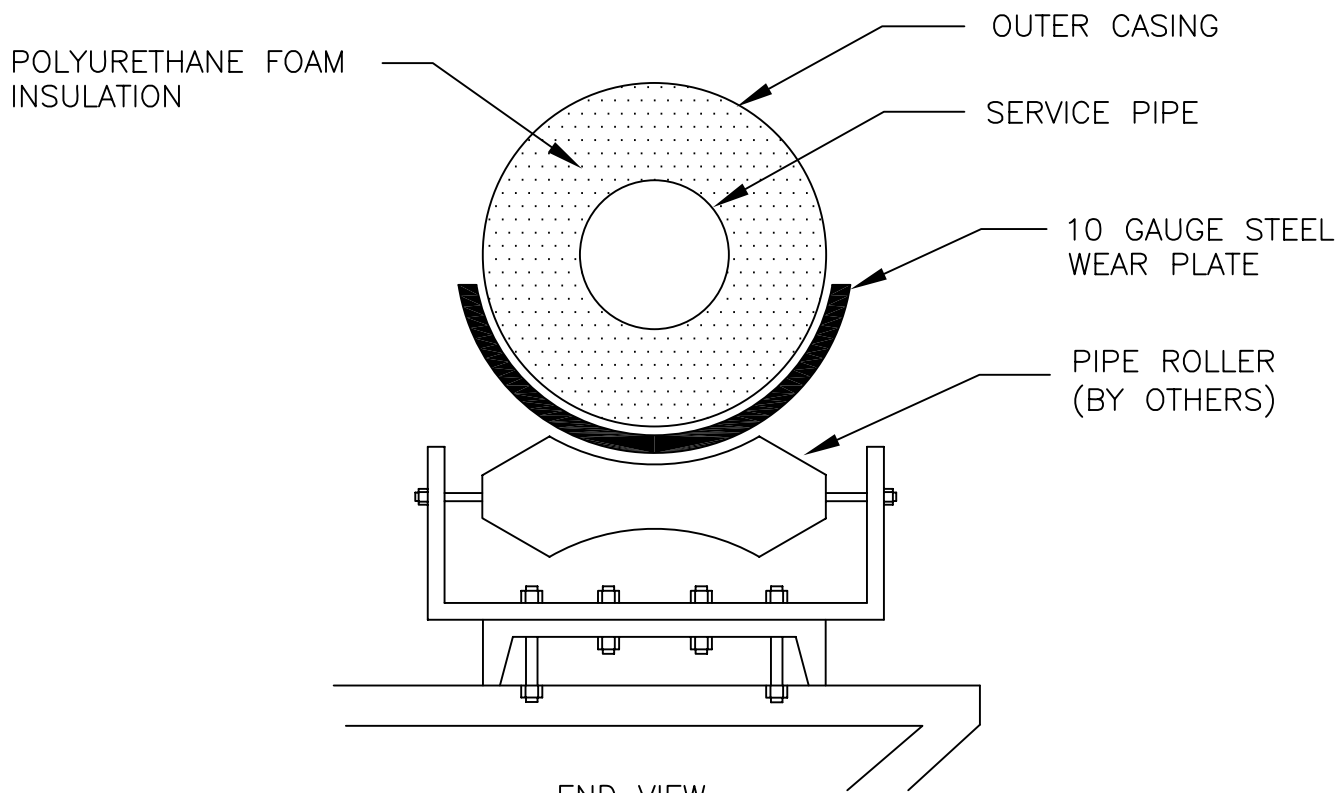
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END VIEW  
NOT TO SCALE



END VIEW  
NOT TO SCALE

DUCTILE IRON PIPE SUPPORT DETAIL

TRICON DUCTILE IRON

Date: 03/09/06

Dwg. No.: DI-2

Rev.:



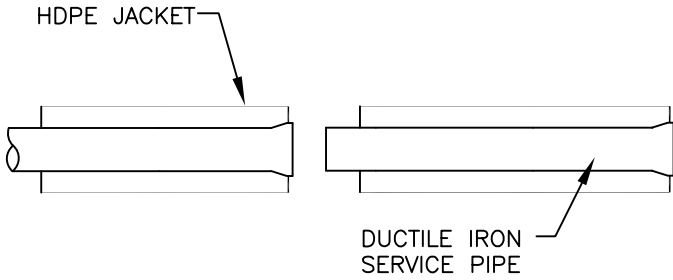
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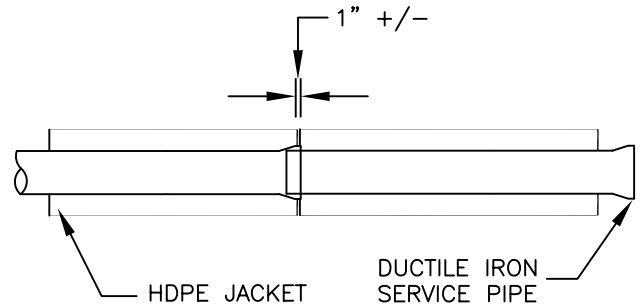
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PHASE 1



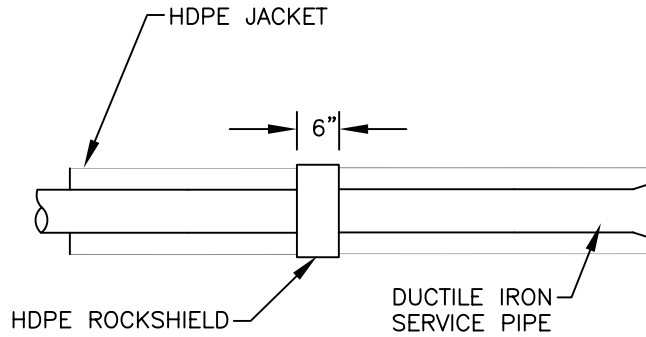
INSPECT THE GASKET AND REMOVE ANY DEBRIS FROM INSIDE OF PIPE. LUBRICATE PIPE ENDS AND GASKET. DO NOT LUBRICATE INSIDE OF THE BELL. DO NOT USE PETROLEUM BASED LUBRICANTS.

PHASE 2



INSPECT AND TEST JOINT AS REQUIRED.

PHASE 3



ONCE JOINT IS PUT TOGETHER AND TESTED PER SPECIFICATIONS, WRAP HDPE ROCKSHIELD AROUND THE FIELD JOINT AND SECURE IN PLACE WITH BLACK POLYKEN TAPE. THIS WILL KEEP ANY DEBRIS OUT OF JOINT WHEN BACK FILLING.

DUCTILE IRON FIELD JOINT DETAIL

TRICON DUCTILE IRON

Date: 03/09/06

Dwg. No.: DI-3

Rev.:



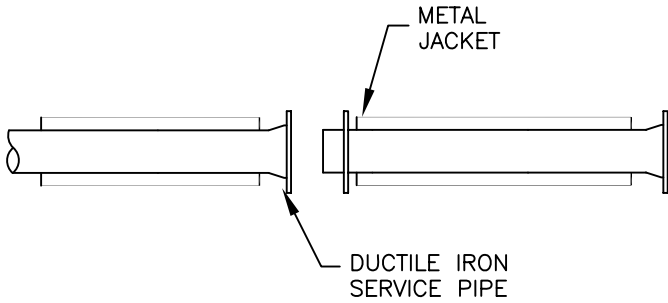
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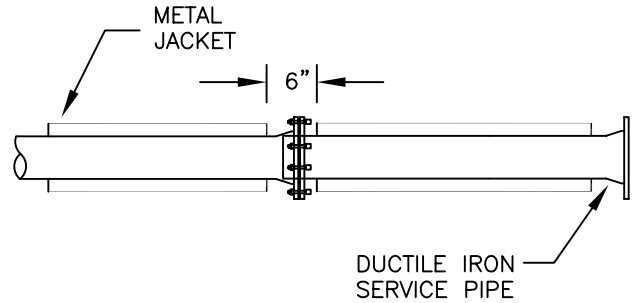
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PHASE 1



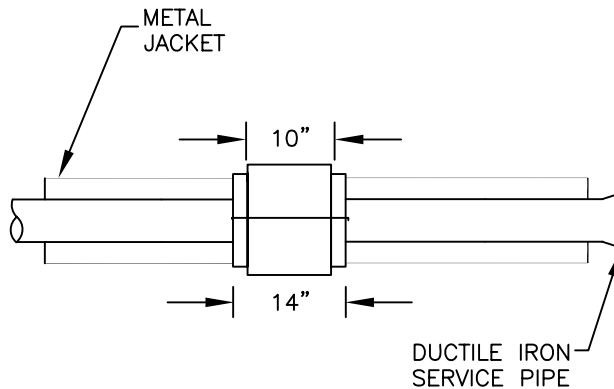
INSPECT THE GASKET AND REMOVE ANY DEBRIS FROM INSIDE OF PIPE. BOLT MECHANICAL FIELD JOINT TOGETHER AND SECURE IN PLACE. TEST FIELD JOINT AS REQUIRED.

PHASE 2



ONCE PIPE HAS BEEN JOINED, TEST JOINTS AS REQUIRED

PHASE 3



AFTER TESTING OF JOINTS, CENTER INSULATED JOINT COVER IN PLACE AND DRY FIT. SOME TRIMMING MAY BE NECESSARY FOR A CLOSE FIT. PUT A BEAD OF SILICONE SEALANT AROUND CASING 1" FROM EACH END. PLACE 2-PC COVER OVER JOINT AND TIGHTEN BOLTS.

MECHANICAL JOINT DUCTILE IRON FIELD JOINT DETAIL

TRICON DUCTILE IRON

Date: 03/09/06

Dwg. No. DI-4

Rev.:



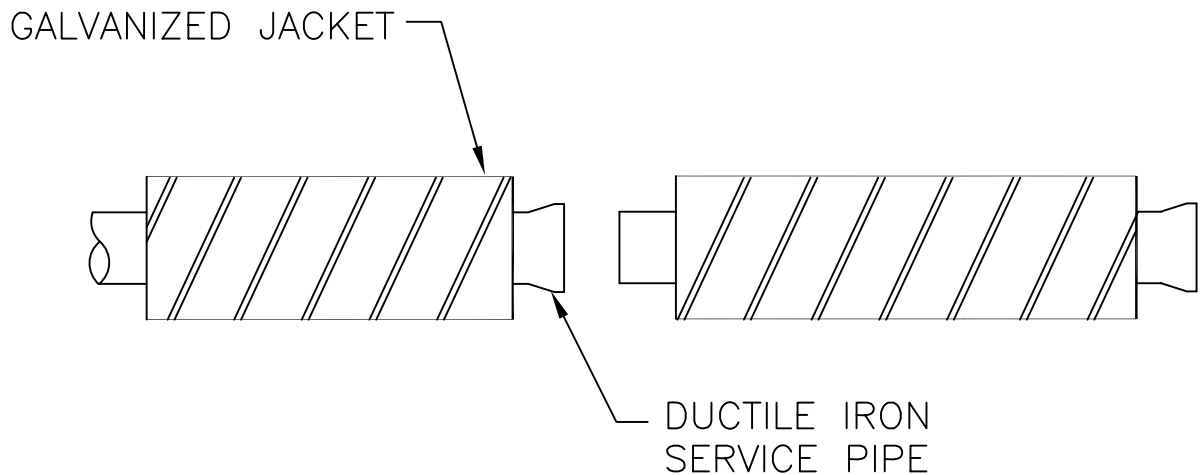
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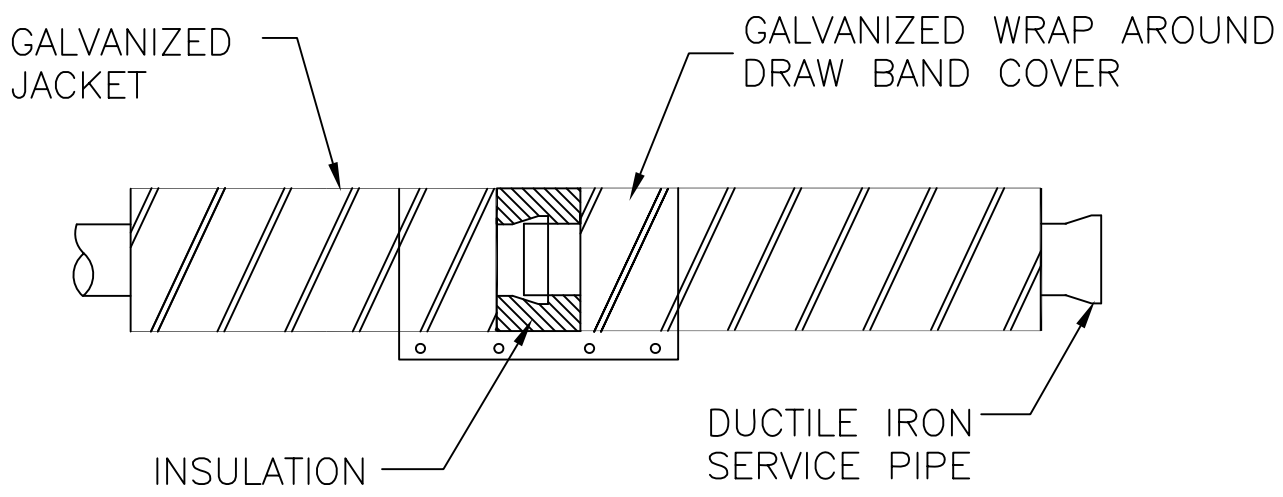
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PHASE 1



REMOVE ALL FOREIGN MATTER IN SOCKET. THE GASKET SEAT SHOULD BE THOROUGHLY INSPECTED TO BE CERTAIN IT IS CLEAN. FOREIGN MATTER IN THE GASKET SEAT MAY CAUSE A LEAK. LUBRICATE PIPE ENDS AND GASKET. DO NOT LUBRICATE THE INSIDE OF THE BELL. DO NOT USE PETROLEUM BASED LUBRICANTS.

PHASE 2



APPLY PRECUT INSULATION IN PLACE OVER JOINT. SOME TRIMMING MAY BE NECESSARY FOR A CLOSE FIT. PUT A BEAD OF SILICONE SEALANT AROUND CASING 2" FROM END CASING. PLACE WRAP AROUND DRAW BAND OVER JOINT AND TIGHTEN BOLTS.

DUCTILE IRON FIELD JOINT DETAIL WITH METAL JACKET



TRICON DUCTILE IRON

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Rev.:

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