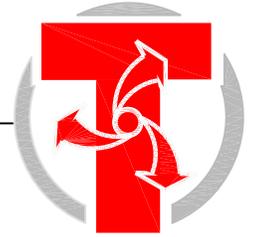
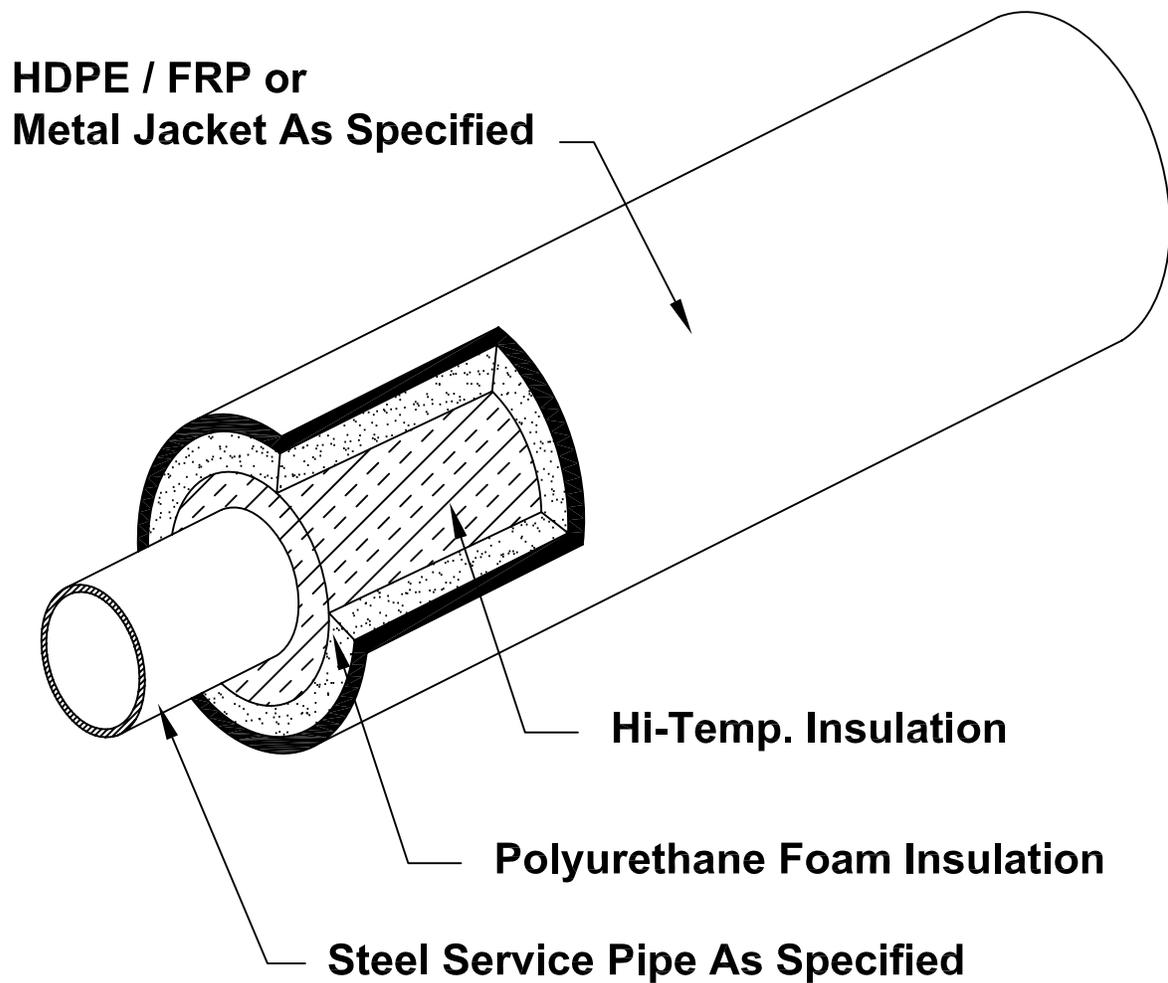


# TRICON COMPOSITE PIPE SYSTEM



For Applications Up To 353° F Below And Above Ground

- Condensate
- Heating Hot Water
- High Temp. Hot Water
- Process Piping
- Steam



**TRICON**  
Piping Systems, Inc.®

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

Pipe Size	Nominal Inner Insulation Thickness	Nominal Outer Insulation Thickness	HDPE Jacket O.D.	System Temperature
2"	1½"	1.00"	8.00"	353°F
2½"	2.00"	1.00"	10.00"	353°F
3"	2.00"	1.00"	10.00"	353°F
4"	2.50"	1.00"	12.43"	353°F
6"	2.50"	1.00"	14.06"	353°F
8"	2.50"	1.50"	17.83"	353°F
10"	3.00"	1.50"	19.80"	353°F
12"	3.00"	1.50"	22.17"	353°F

### Service Pipe:

Carbon steel service pipe shall be standard weight A53 ERW or A106 seamless beveled for welding. Condensate return piping shall be Schedule 80. All joints for pipe 2 ½" and larger in size shall be butt-welded. Sizes 2" and smaller shall be socket welded. Straight lengths of piping will be supplied with 6" of piping exposed at each end for field joint fabrication. Where possible, piping lengths shall be supplied in 40 Ft. random lengths.

### Insulation: (Inner Layer)\*

The inner layer of insulation will consist of cellular glass, calcium silicate or perlite.

### Insulation: (Outer Layer)\*

The outer conduit insulation shall be polyurethane foam with a minimum 1-inch thickness. The polyurethane foam shall have a minimum density of 2.0, and a closed cell content of 90% to 95% per ASTM D-2856, and shall have a "K" factor of .14 per ASTM C-177 @ 75° F.

### Exterior Casing:\*\*

The exterior casing shall be seamless, extruded High Density Polyethylene (H.D.P.E.) ASTM-1248, with the following physical properties:

ASTM D-3350...Resin Type III, Grade P34  
 ASTM D-638...Ultimate Elongation 850%  
 ASTM D-638...Tensile Yield Strength 3300 psi  
 ASTM D-790...Tangent Flexural Modules 175,000 psi  
**No polyethylene tape casings will be allowed.**

### Sub-Assemblies:

All fittings, anchors, and end seals, shall be factory fabricated and insulated. No field fabrication of fittings, anchors or end seals will be allowed.

### Field Joints:

After welding and hydrostatic testing, all field joints shall be insulated with insulation materials as supplied by Tricon Piping Systems, Inc.

### Expansion Compensation:

Expansion and contraction within the piping system shall be accommodated with factory-fabricated oversized elbows, z-bends, and loops.

### Installation:

**Trenches shall be maintained dry until final field closure is complete. Piping system not suitable for use in high water table.**

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 ½" in diameter, shall be placed and tamped in the trench to provide uniform bedding for the **Composite** 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.

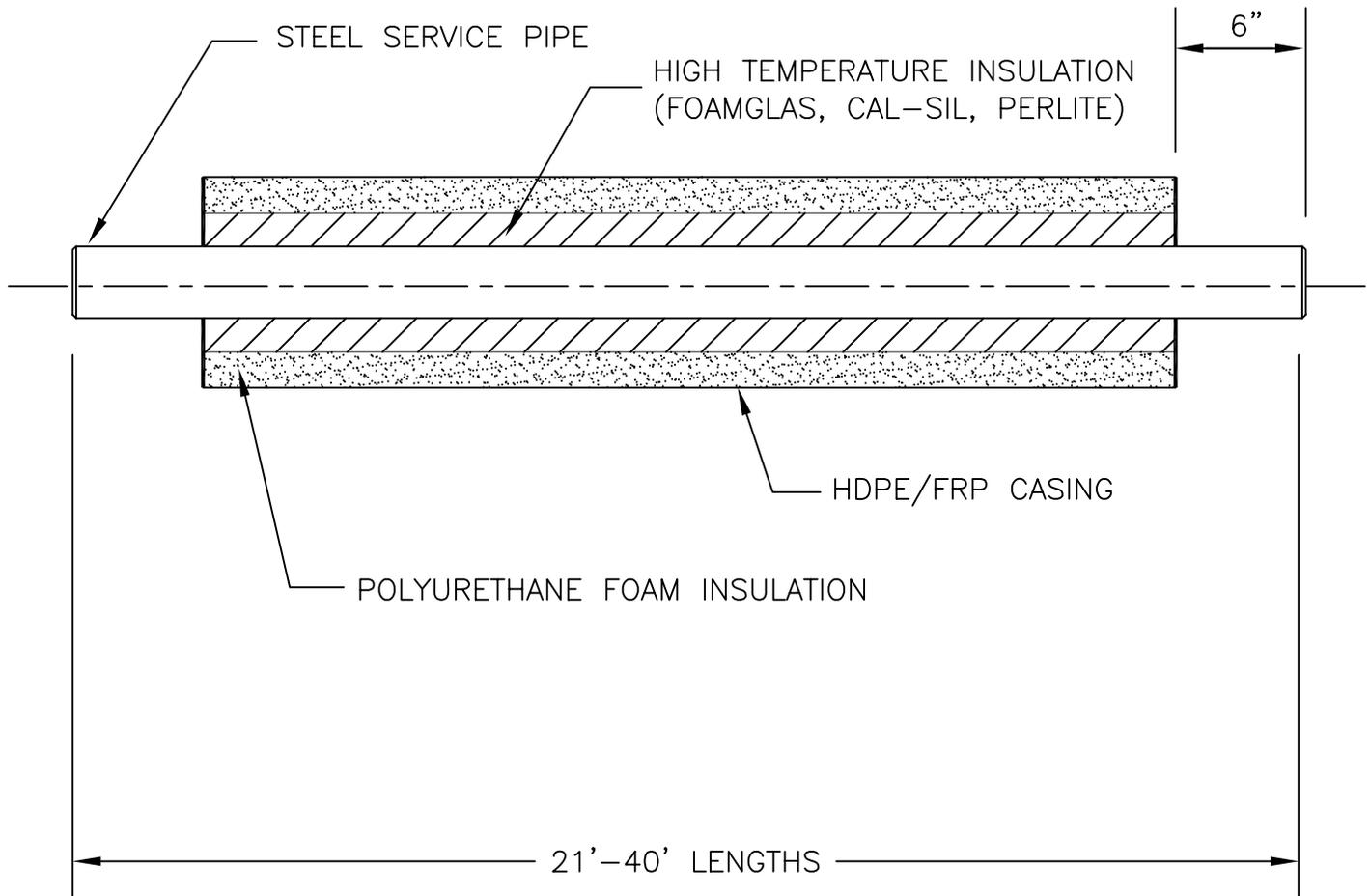
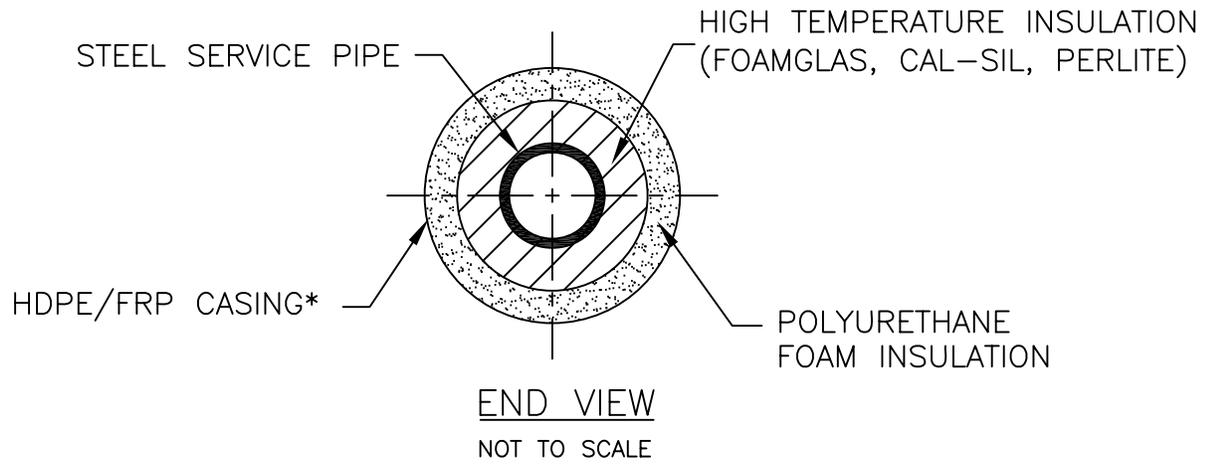
\* Insulation thickness will vary depending on the type of insulation specified and the operating temperature.

\*\* Optional metallic casings for above ground applications include, Galvanized, Aluminum or Stainless Steel. (Coated Steel available)

\*\* Optional non-metallic casings for below grade include, Filament Wound FRP.

**Tricon Piping Systems, Inc.**  
**P.O. Box 361**  
**Canastota, NY 13032**

**Tel: 315-697-8787**  
**Fax: 315-697-8788**  
**www.triconpiping.com**



\* OPTIONAL METAL JACKET AVAILABLE FOR ABOVE GRADE APPLICATIONS.

STRAIGHT LENGTH DETAIL

TRICON COMPOSITE

Date: 03/09/06

Dwg. No.: C-1

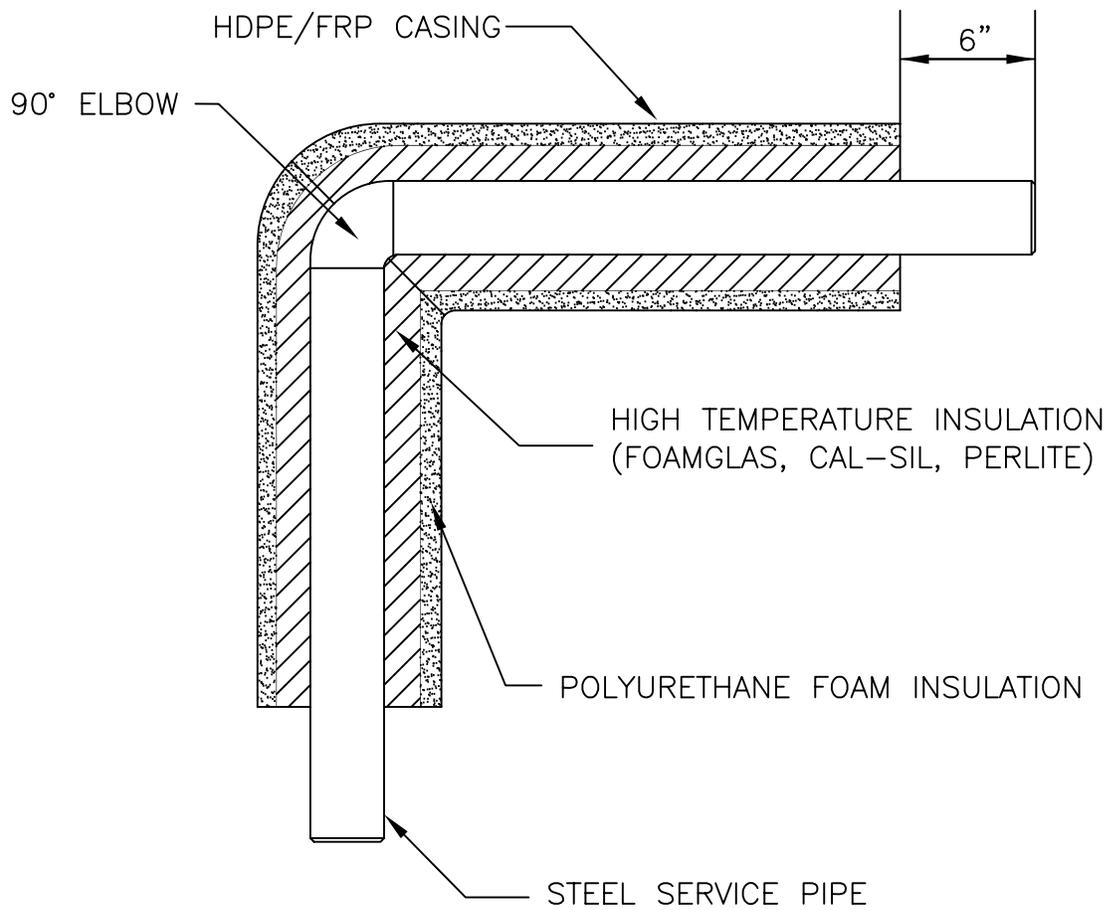
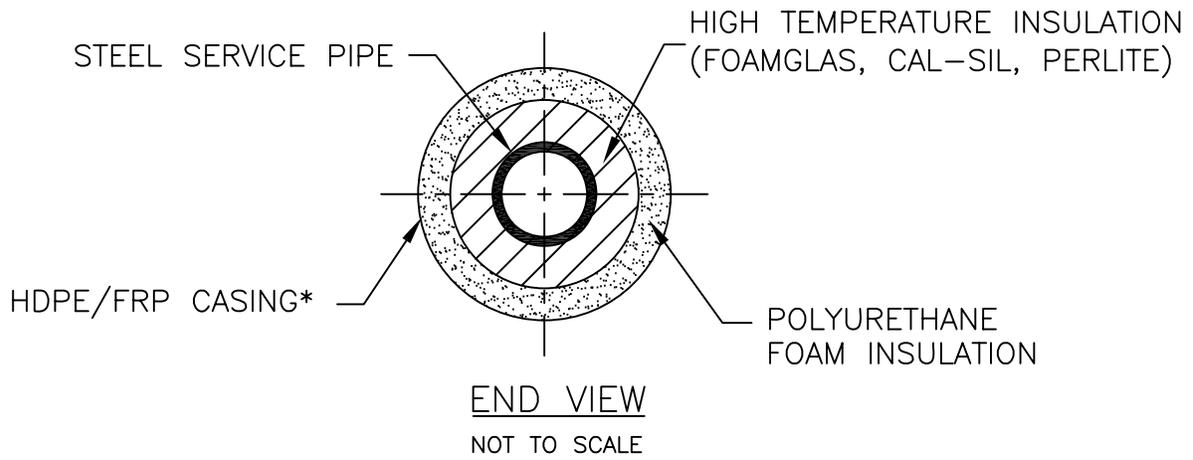
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COMPOSITE 90° ELBOW DETAIL

TRICON COMPOSITE

Date: 03/09/06

Dwg. No.: C-2

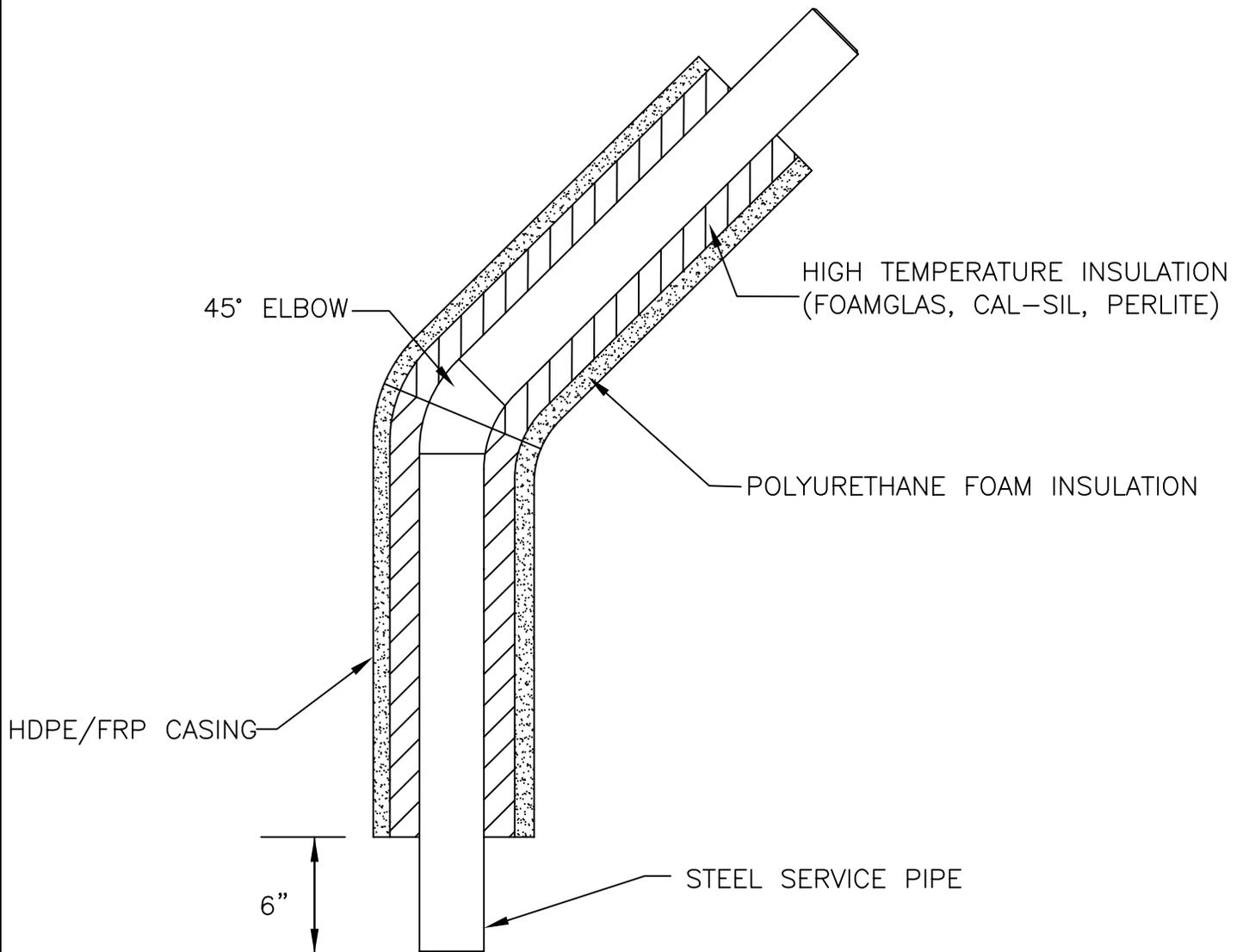
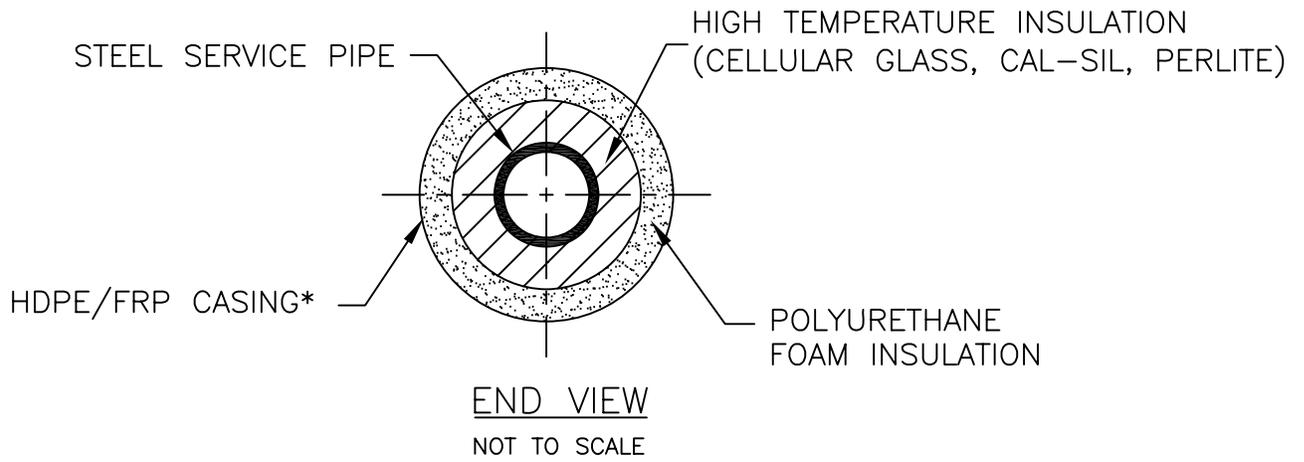
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COMPOSITE 45° ELBOW DETAIL

TRICON COMPOSITE

Date: 03/09/06

Dwg. No.: C-3

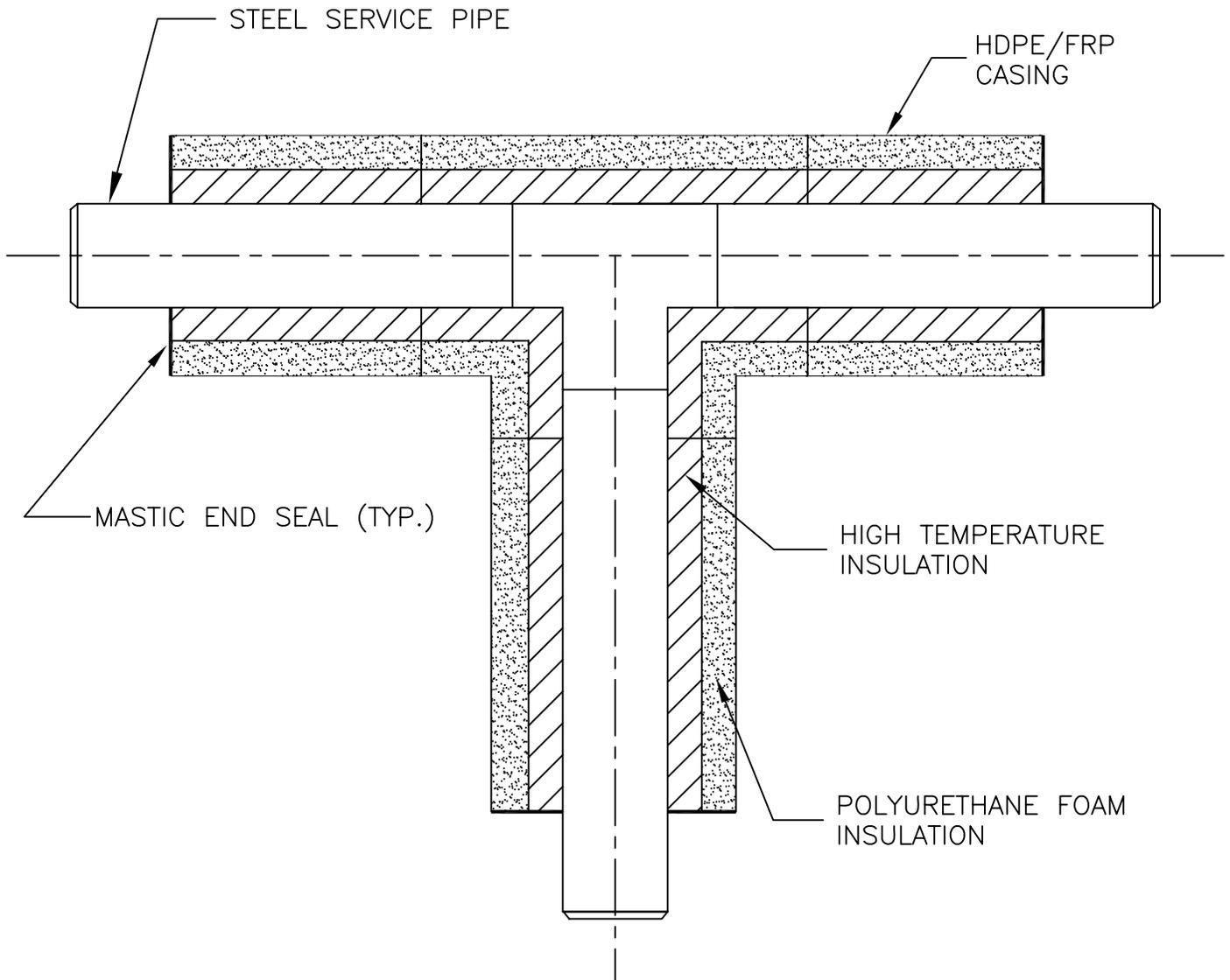
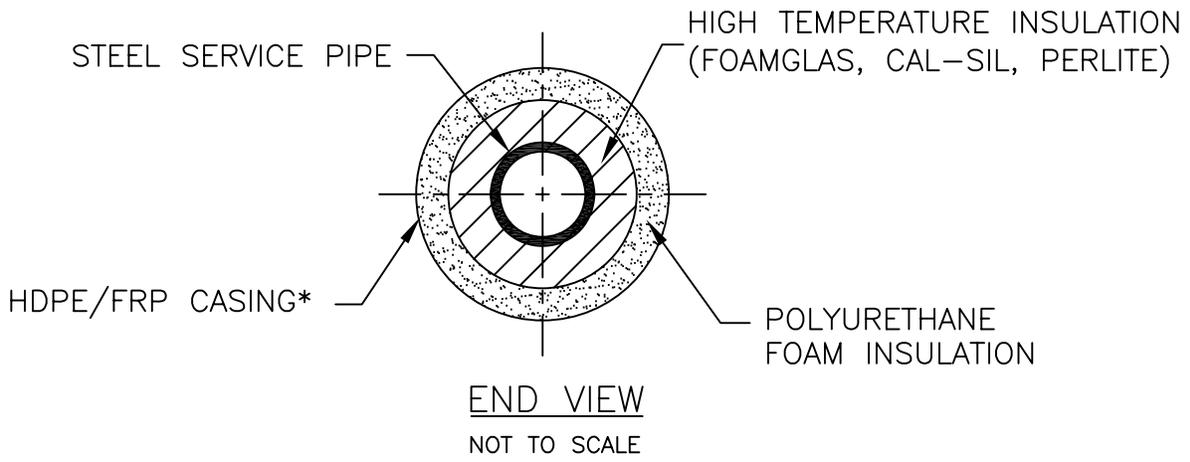
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\* OPTIONAL METAL JACKET AVAILABLE FOR ABOVE GRADE APPLICATION.

COMPOSITE TEE DETAIL

TRICON COMPOSITE

Date: 03/09/06 Dwg. No.: C-4  
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CONCRETE ANCHOR BLOCK MUST  
BE KEYED INTO UNDISTURBED EARTH

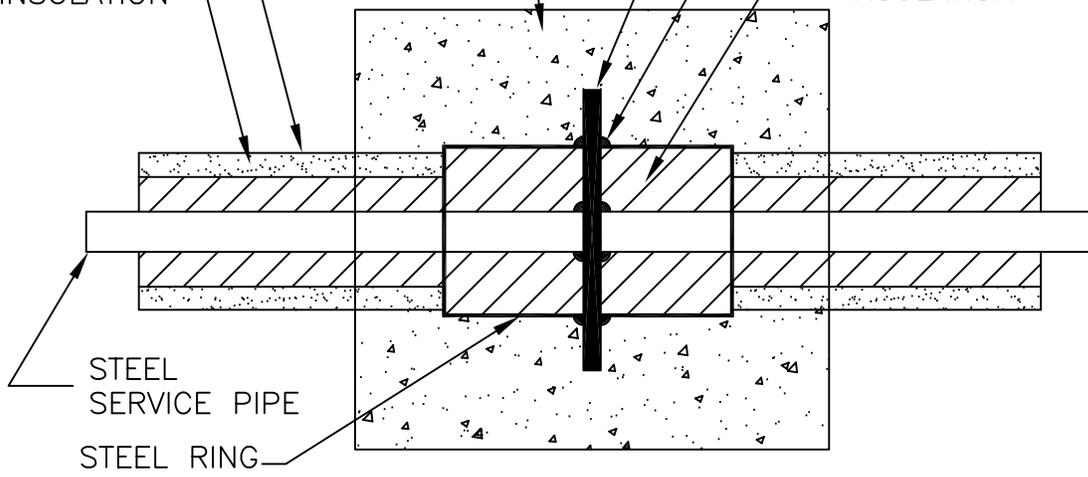
ANCHOR PLATE

CONTINUOUSLY WELDED  
TO STEEL RING &  
SERVICE PIPE

HDPE/FRP CASING

POLYURETHANE  
FOAM INSULATION

HIGH TEMPERATURE  
INSULATION



TOP VIEW  
NOT TO SCALE

ANCHOR PLATE

3"  
MIN.

1-1/2"  
MIN.

HDPE/FRP CASING

POLYURETHANE  
FOAM INSULATION

HIGH TEMPERATURE  
INSULATION

STEEL SERVICE PIPE

END VIEW  
NOT TO SCALE

NOTE: CONCRETE ANCHOR BLOCK MUST  
BE KEYED INTO UNDISTURBED EARTH.

COMPOSITE ANCHOR DETAIL

TRICON COMPOSITE

Date: 03/09/06

Dwg. No.: C-5

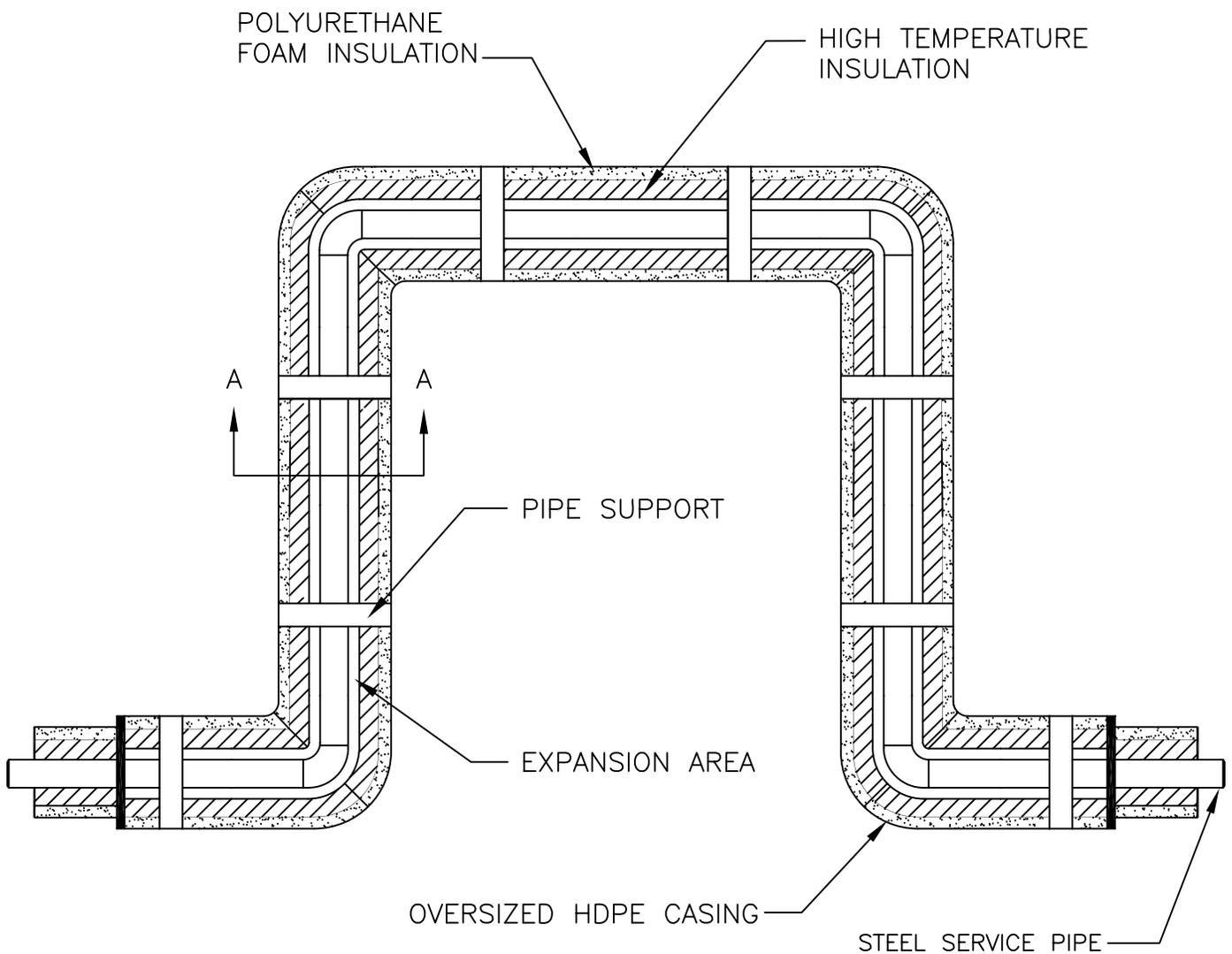
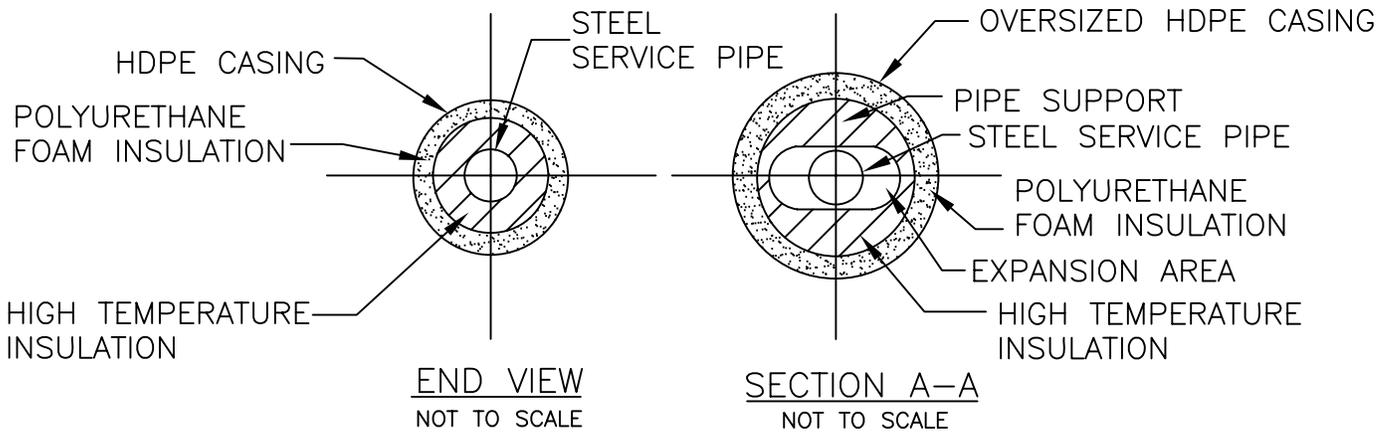
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COMPOSITE EXPANSION LOOP DETAIL

TRICON COMPOSITE

Date: 03/09/06

Dwg. No.: C-6

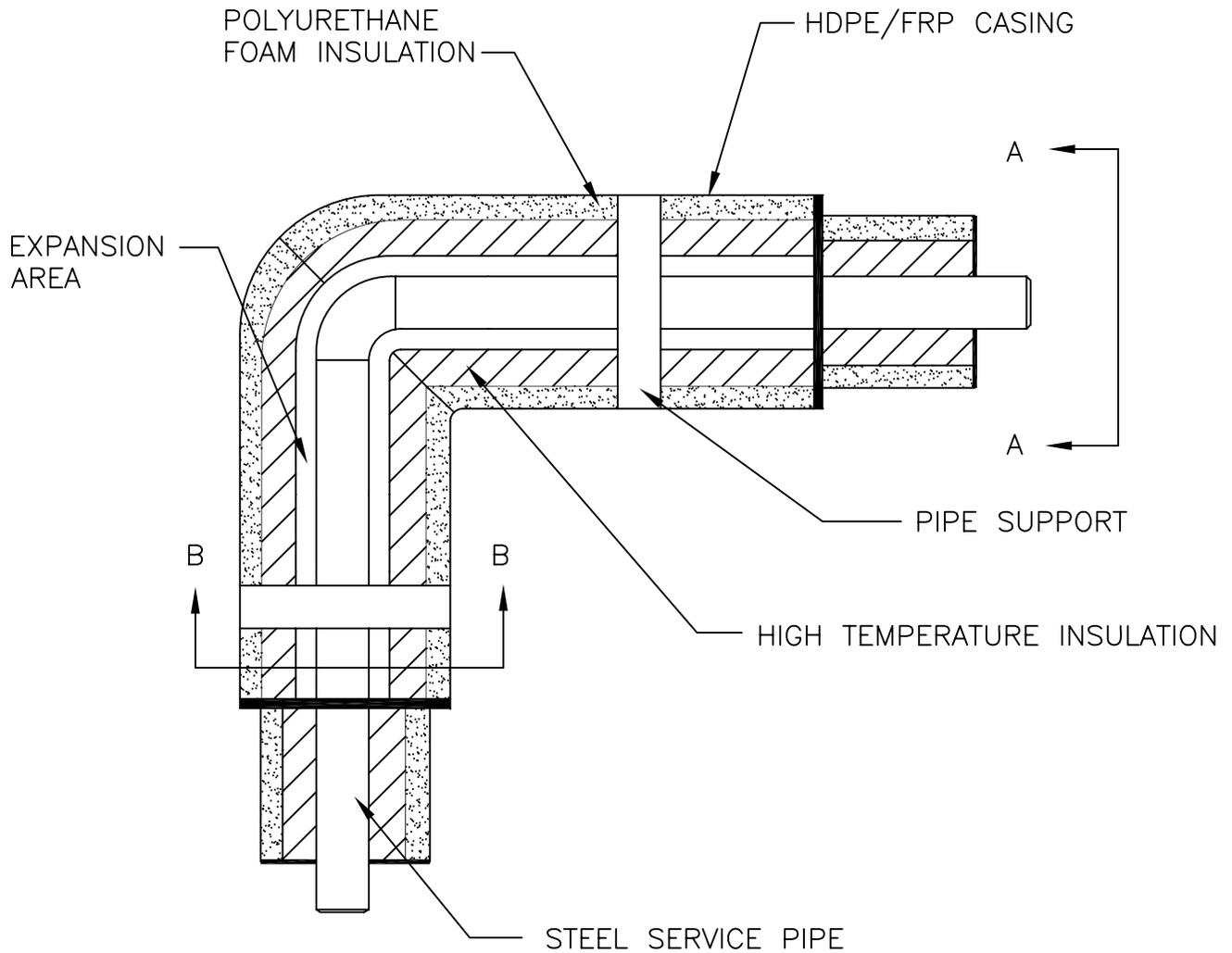
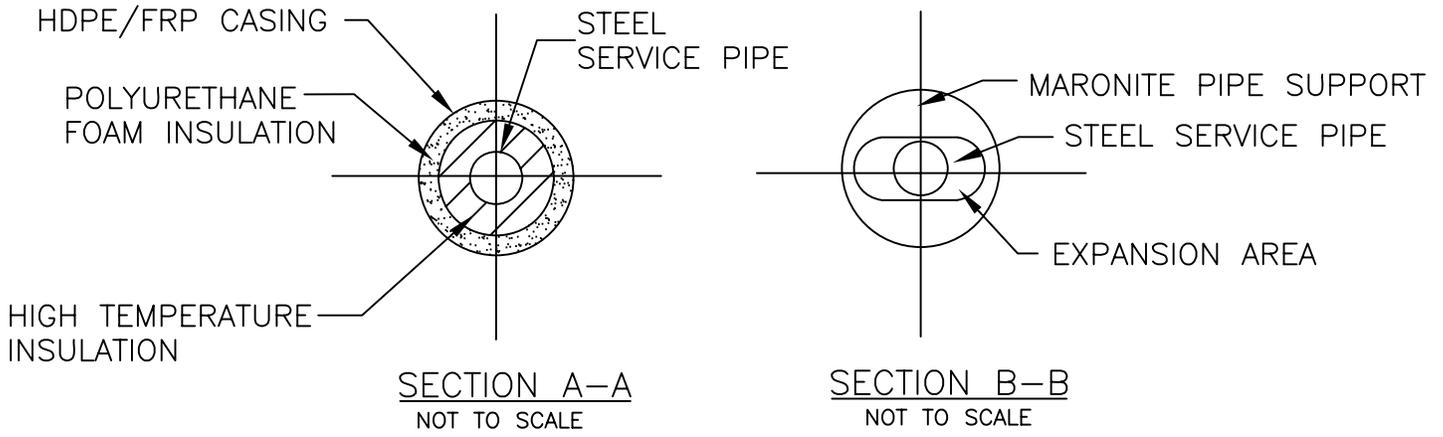
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COMPOSITE EXPANSION 90° ELBOW DETAIL

TRICON COMPOSITE

Date: 03/09/06

Dwg. No.: C-7

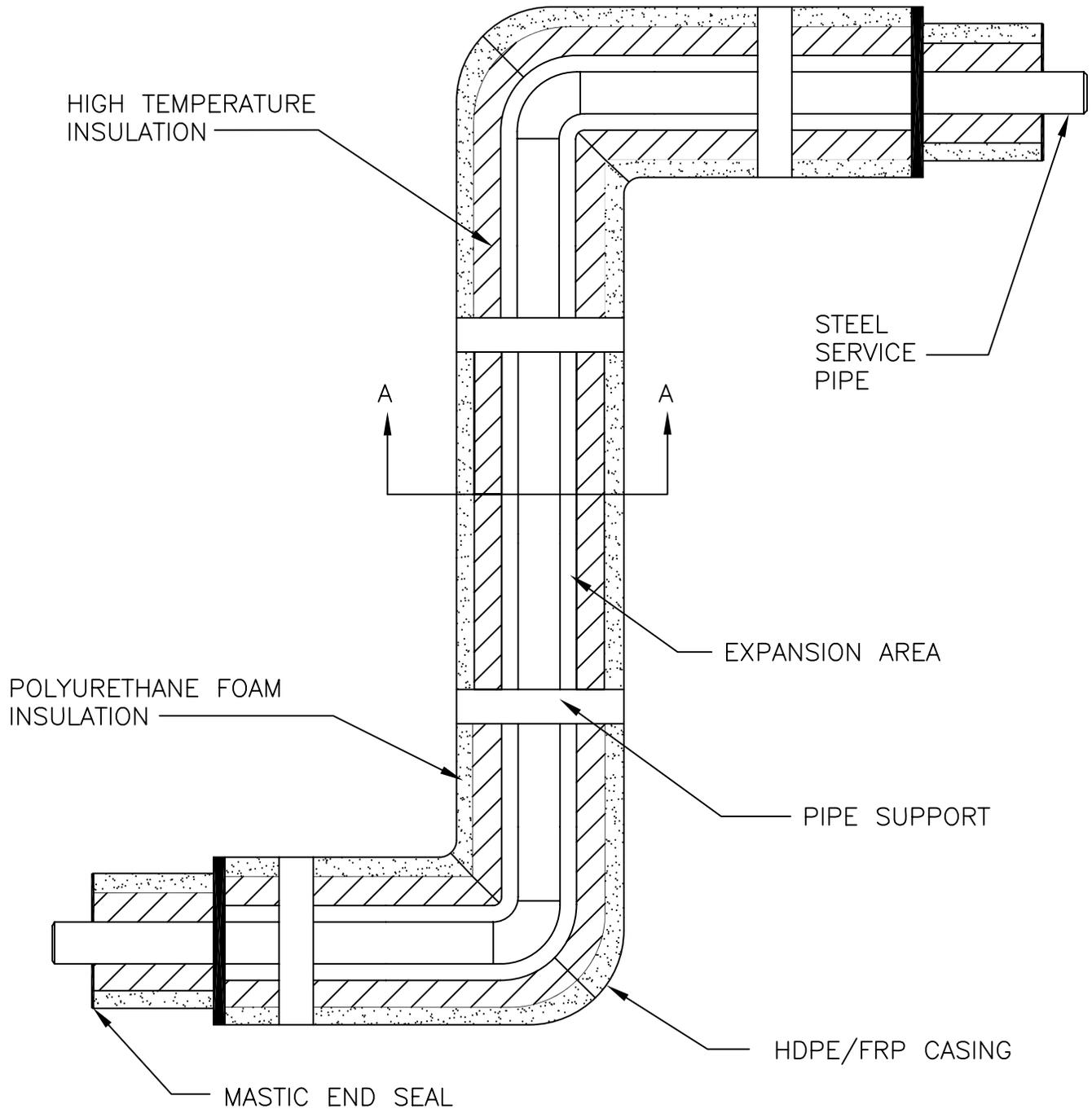
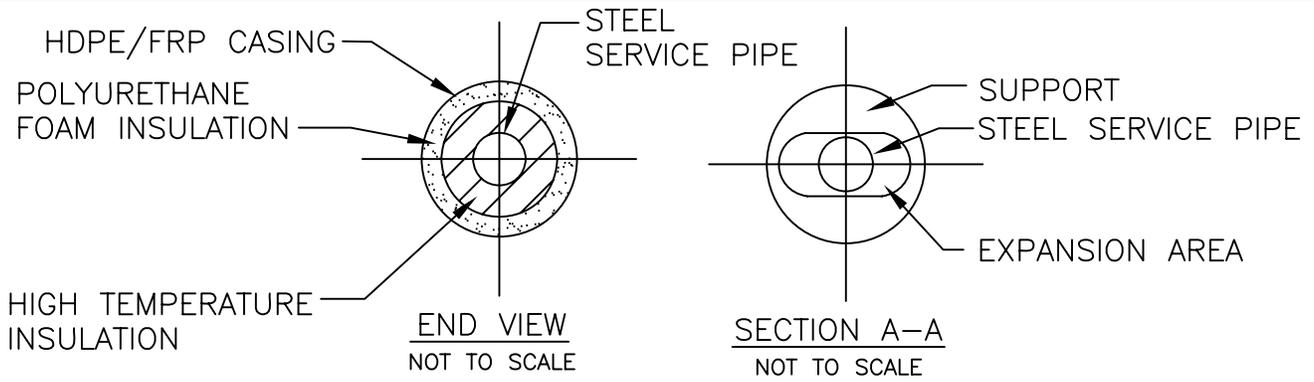
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COMPOSITE EXPANSION "Z" DETAIL

TRICON COMPOSITE

Date: 03/09/06

Dwg. No.: C-8

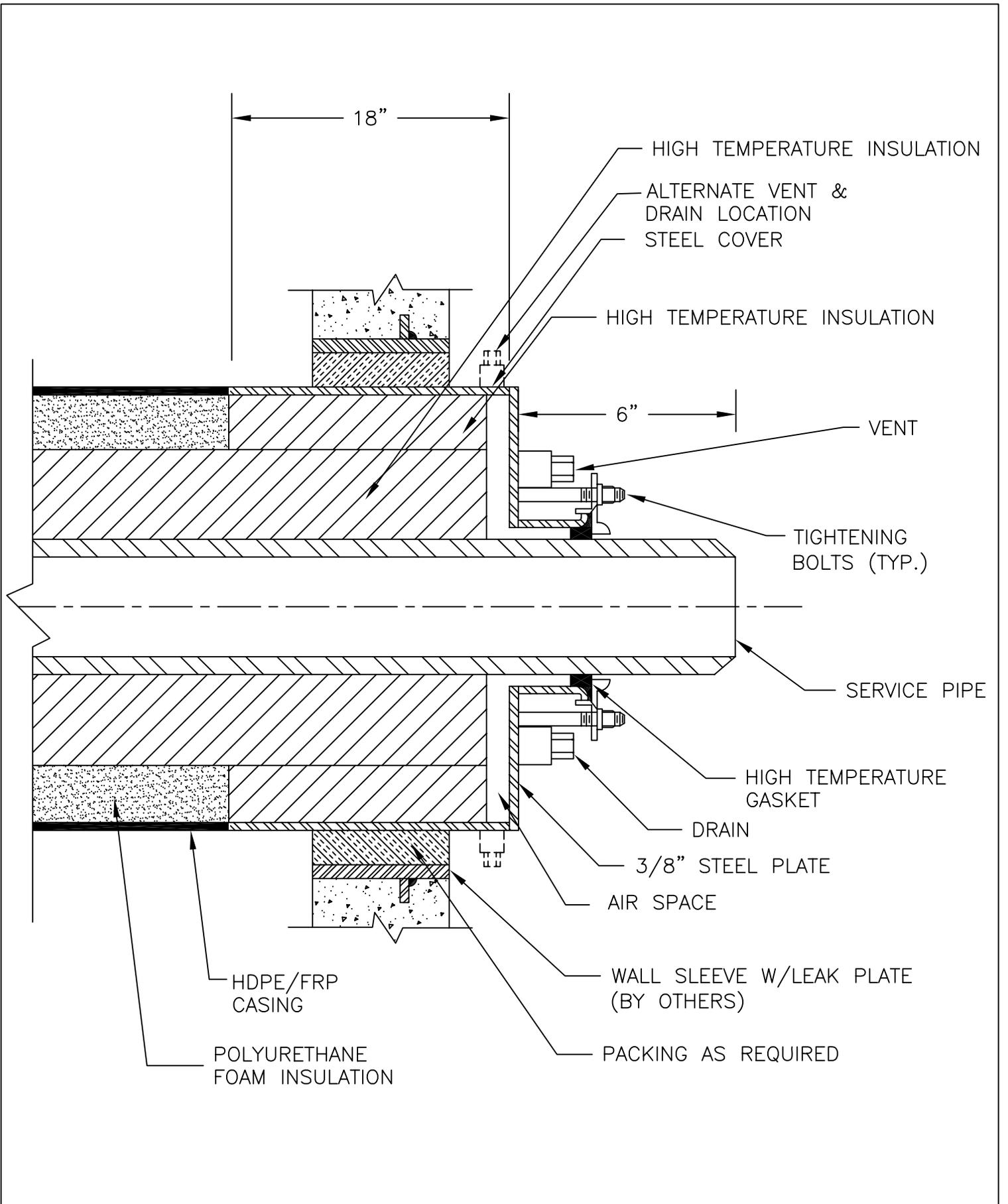
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COMPOSITE GLAND END SEAL DETAIL



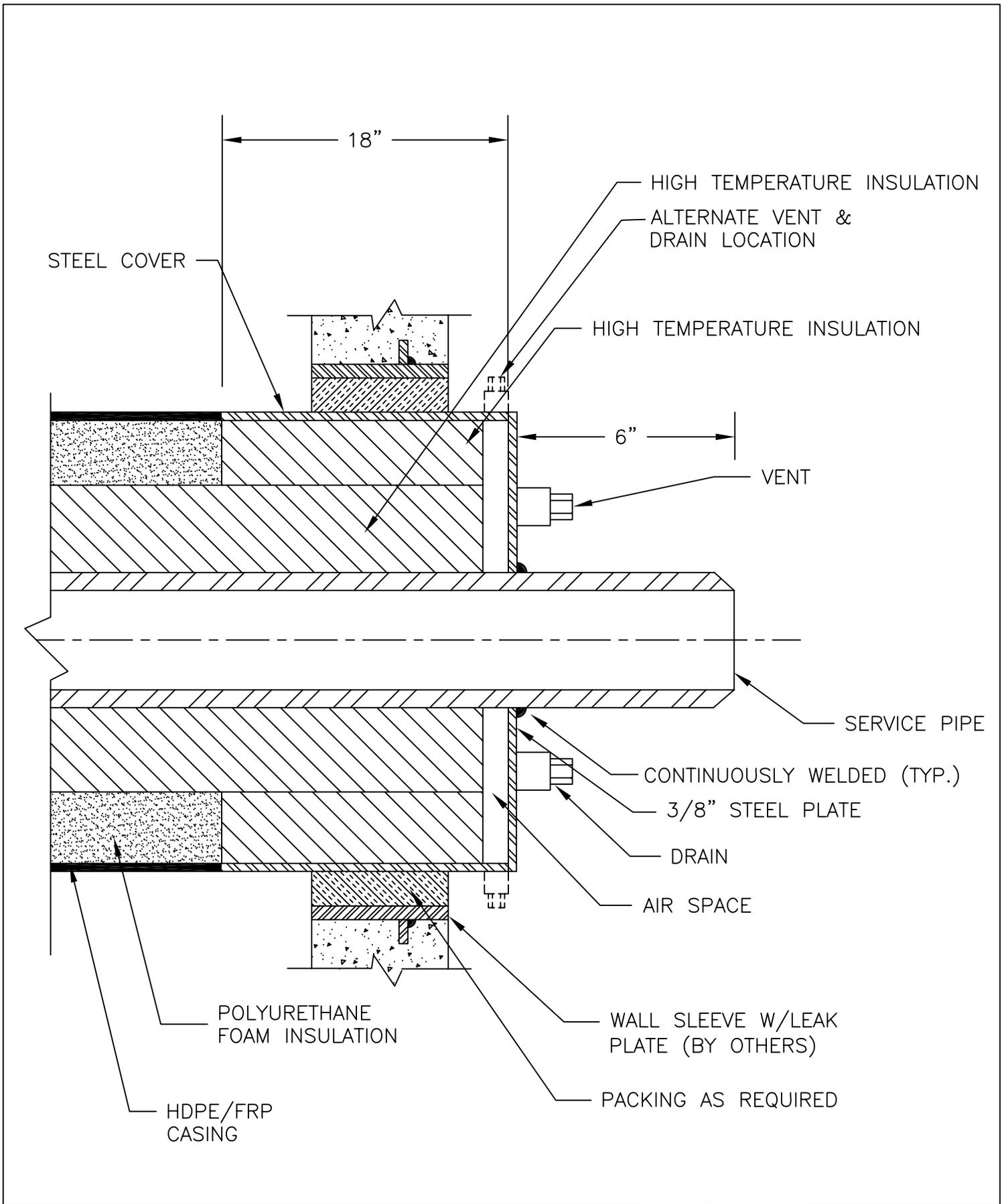
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Date: 03/09/06 Dwg. No.: C-9

Rev.:



COMPOSITE WELD END SEAL DETAIL

TRICON COMPOSITE

Date: 03/09/06

Dwg. No.: C-10

Rev.:

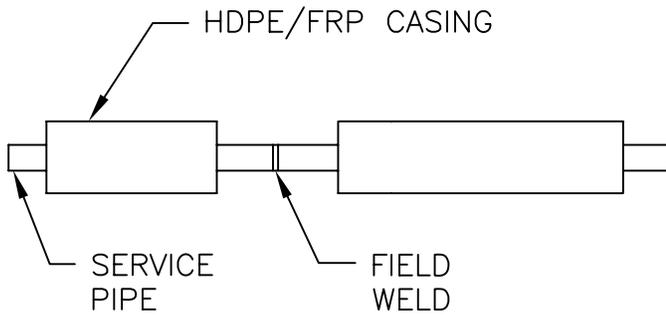


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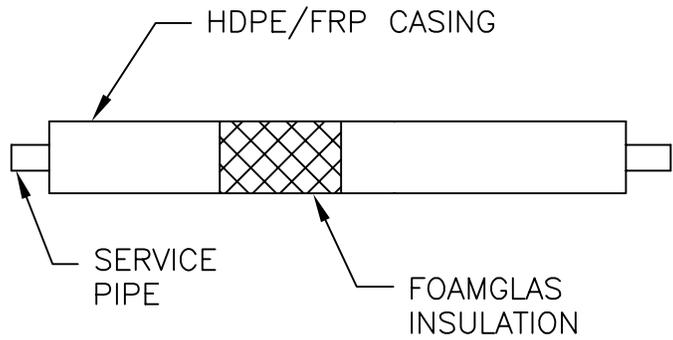
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PHASE 1



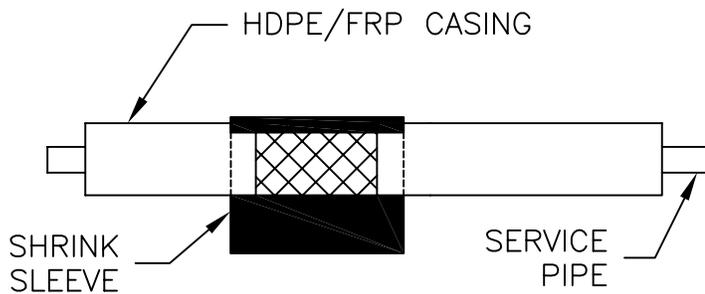
AFTER WELDING SERVICE PIPE, CHECK/TEST ALL WELDS AS REQUIRED. PREPARE PIPE AND CASING FOR INSULATION.

PHASE 2



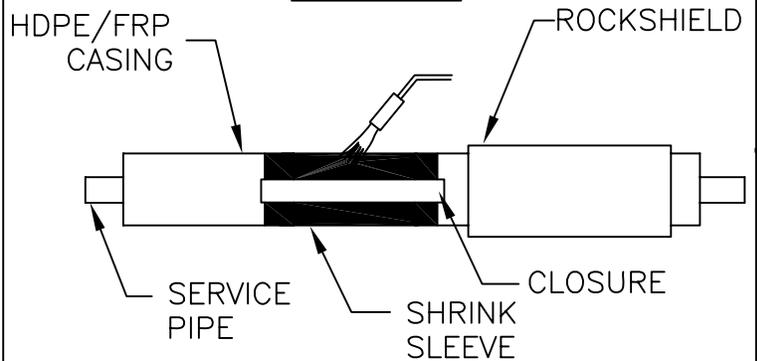
MAKE SURE THAT PIPE AND CASING ARE CLEAN AND DRY. INSTALL LAYER OF PIPE INSULATION OVER JOINT AND SECURE IN PLACE.

PHASE 3



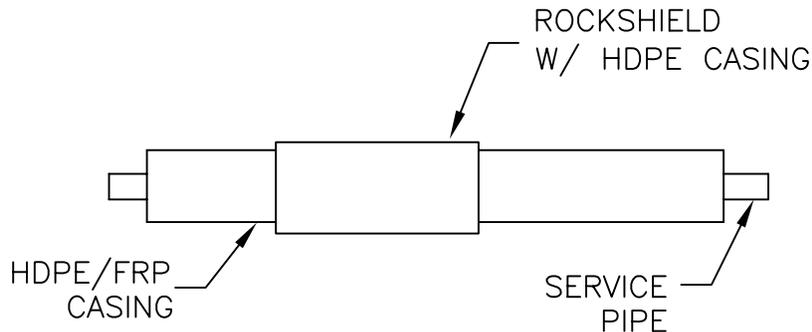
REMOVE RELEASE LINER AND PLACE SHRINK SLEEVE AROUND JOINT AND PIPE INSULATION. OVERLAP SLEEVE AT THE 10 TO 12 O'CLOCK POSITION. GENTLY HEAT BACKING OF CLOSURE AND PRESS THE CLOSURE FIRMLY INTO PLACE AND PAT DOWN.

PHASE 4



WITH LOW YELLOW FLAME, HEAT THE SHRINK SLEEVE FROM THE MIDDLE TOWARD EACH SIDE OF THE SLEEVE UNTIL RECOVERY IS COMPLETE. SHRINKING HAS BEEN COMPLETED WHEN ADHESIVE OZZES FROM SIDES. AVOID EXCESSIVE HEAT TO OVERLAP AREA.

PHASE 5



AFTER SHRINK SLEEVE HAS COOLED, INSPECT THE SLEEVE TO ENSURE FULL CONTACT WITH CASING AND THAT ADHESIVE HAS FLOWED BEYOND BOTH SLEEVE EDGES. MAKE SURE THAT NO CRACKS OR HOLES ARE IN SLEEVE. INSTALL HDPE ROCKSHIELD OVER SHRINK SLEEVE WITH A MINIMUM 2" OVERLAP OF SLEEVE.

COMPOSITE FIELD JOINT DETAIL



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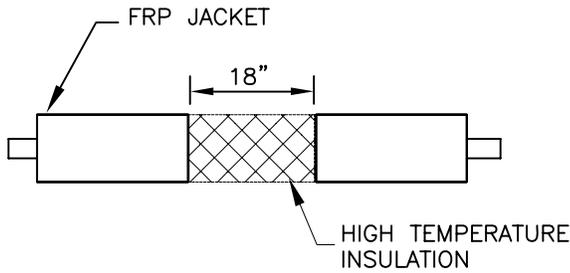
TRICON COMPOSITE

Date: 03/09/06

Dwg. No.: C-11

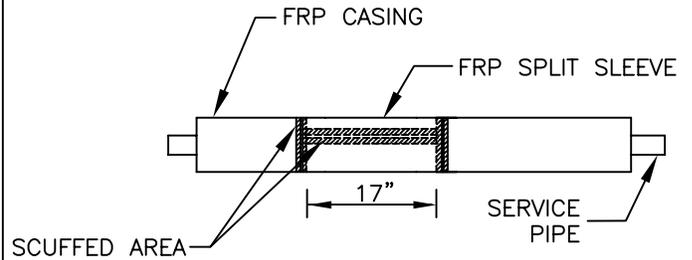
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STEP 1



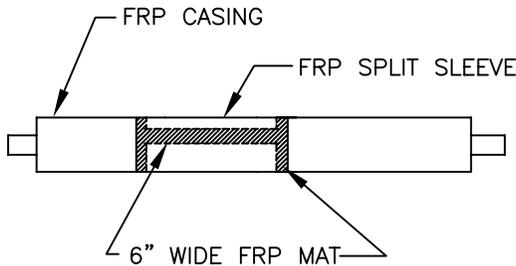
AFTER WELDING SERVICE PIPE, APPLY HIGH TEMPERATURE INSULATION TO PIPE AND SECURE IN PLACE.

STEP 2



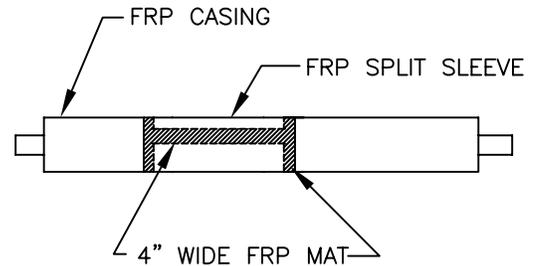
PLACE SPLIT FRP SLEEVE AROUND INSULATION WITH THE HORIZONTAL SPLIT AT THE 10 O'CLOCK POSITION. CREATE A GOOD BINDING SURFACE FOR THE HAND LAY-UP BY SCUFFING THE ENDS OF FRP SPLIT SLEEVE AND JACKET.

STEP 3



TAKE 3 LAYERS OF PRECUT 6" WIDE FIBERGLASS MAT AND SATURATE WITH FRP RESIN. (MIX 1/2 GAL. OF FRP RESIN WITH 1/2 OZ. OF CATALYST AND STIR. IT IS IMPERATIVE THAT YOU HAVE A GOOD MIX BETWEEN RESIN AND CATALYST.) PICK UP THE THREE (3) STRIPS OF SATURATED MAT AND AND PLACE ONE END AT THE 12 O'CLOCK POSITION AND THE OTHER AT THE 6 O'CLOCK POSITION.  
 Note: Cold temperatures will cause longer curing time.

STEP 4



ROLL INTO PLACE WITH FRP ROLLER UNTIL MATT LIES FLAT AND AIR BUBBLES ARE OUT. REPEAT FOR OTHER SIDE AND FOR OTHER CIRCUMFERENTIAL JOINT. FOR HORIZONTAL JOINT REPEAT PREVIOUS PROCEDURE EXCEPT LAY MATERIAL IN HORIZONTAL POSITION AND ROLL.

COMPOSITE FIELD JOINT KIT DETAIL WITH WET FRP HAND LAY-UP

TRICON COMPOSITE

Date: 03/09/06 Dwg. No.: C-12

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