

# Energy Task Force

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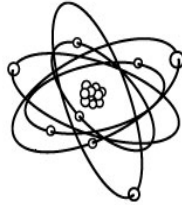
## Pre-insulated Pipe

2475 Clark St • Apopka, FL 32703 • 407-523-3770 • 407-523-3722

### ETF-MT Product Specification

Pre-insulated piping system designed for above ground or direct buried Chilled Water, Hot Water and all other 45° to 250° medium temperature systems.

- Carrier Pipe:** Schedule 40 A53B ERW Steel.
- Insulation:** Polyurethane foam: K Factor 0.14, Density 2.0 to 3.0 PCF, 90-95% closed cell conforming to mil spec -1-24172 and ASTM-C-591 completely filling the annular space between carrier pipe and jacket. Maximum service temperature of 250°
- Jacketing Material:** High Density Polyethylene (HDPE) casing Type III, Category 5, Class C conforming to ASTM D-1248 or as specified. For jacket thickness see attached schedule
- End Seal:** Mastic factory applied to insulation ends.
- Insulation of Straight Joints:** Prior to joining carrier pipe an HDPE sleeve is slid onto jacketing on either side of joint. After welding and hydro testing, the HDPE sleeve is slid in place and sealed with heat shrink tape. Polyurethane foam is then mixed and poured into the annular space and sealed watertight.
- Fittings:** All fittings are Pre-fabricated / Pre-insulated by ETF LLC
- Backfilling:** Underground systems shall be buried in a trench of not less than 24 inches deeper than the top of the pipe jacket and not less than 18 inches wider than the combined O.D. of all piping systems. Backfill should be tamped compactly in place. No rock shall be used in the first foot of the backfill. To meet H-20 highway loadings, there must be a minimum of 24 inches from top of jacket to grade of the compacted fill.



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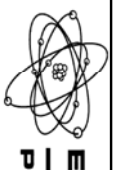
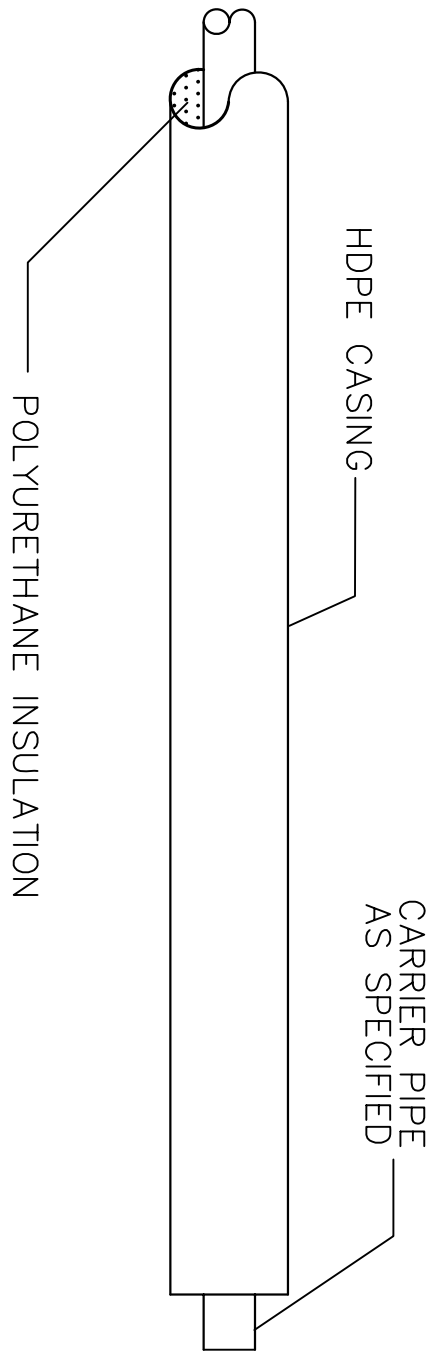
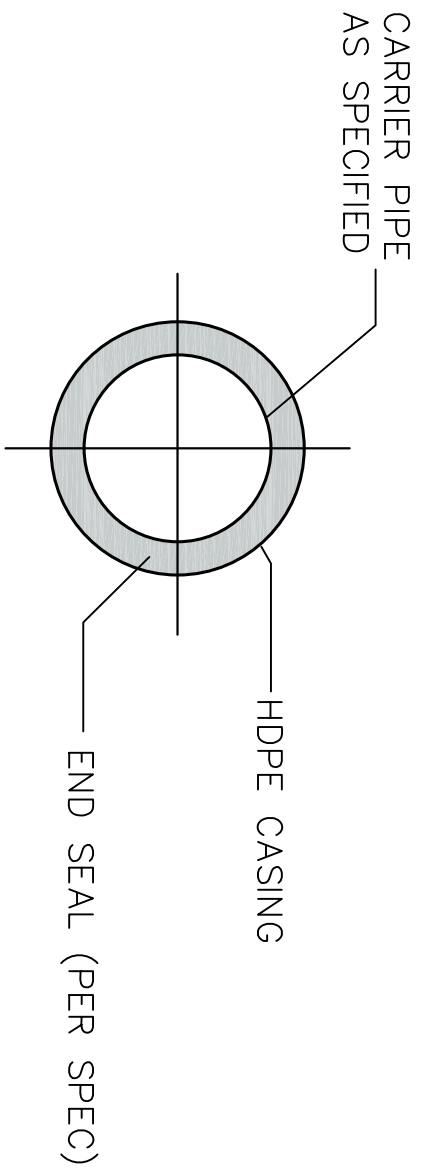
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**Table 1:** Specified Carrier Pipe / HDPE Jacket

Nominal Pipe Size	Minimum Insulation Thickness	Nominal Jacket Size	Nominal Jacket Size
½"	1.70	4.50	150 mils
¾"	1.59	4.50	150 mils
1"	1.46	4.50	150 mils
1 ¼"	1.29	4.50	150 mils
1 ½"	1.17	4.50	150 mils
2"	2.00	6.63	150 mils
2 ½"	1.75	6.63	150 mils
3"	1.44	6.63	150 mils
4"	1.61	8.00	175 mils
5"	1.36	8.00	175 mils
6"	1.55	10.00	175 mils
8"	1.77	12.43	175 mils
10"	1.53	14.06	175 mils
12"	1.44	15.87	175 mils
14"	1.80	17.83	200 mils
16"	1.77	19.80	200 mils
18"	1.95	22.17	225 mils
20"	1.85	24.00	250 mils
24"	1.85	28.07	275 mils
30"	2.85	36.00	275 mils

### ETF LLC WARRANTY

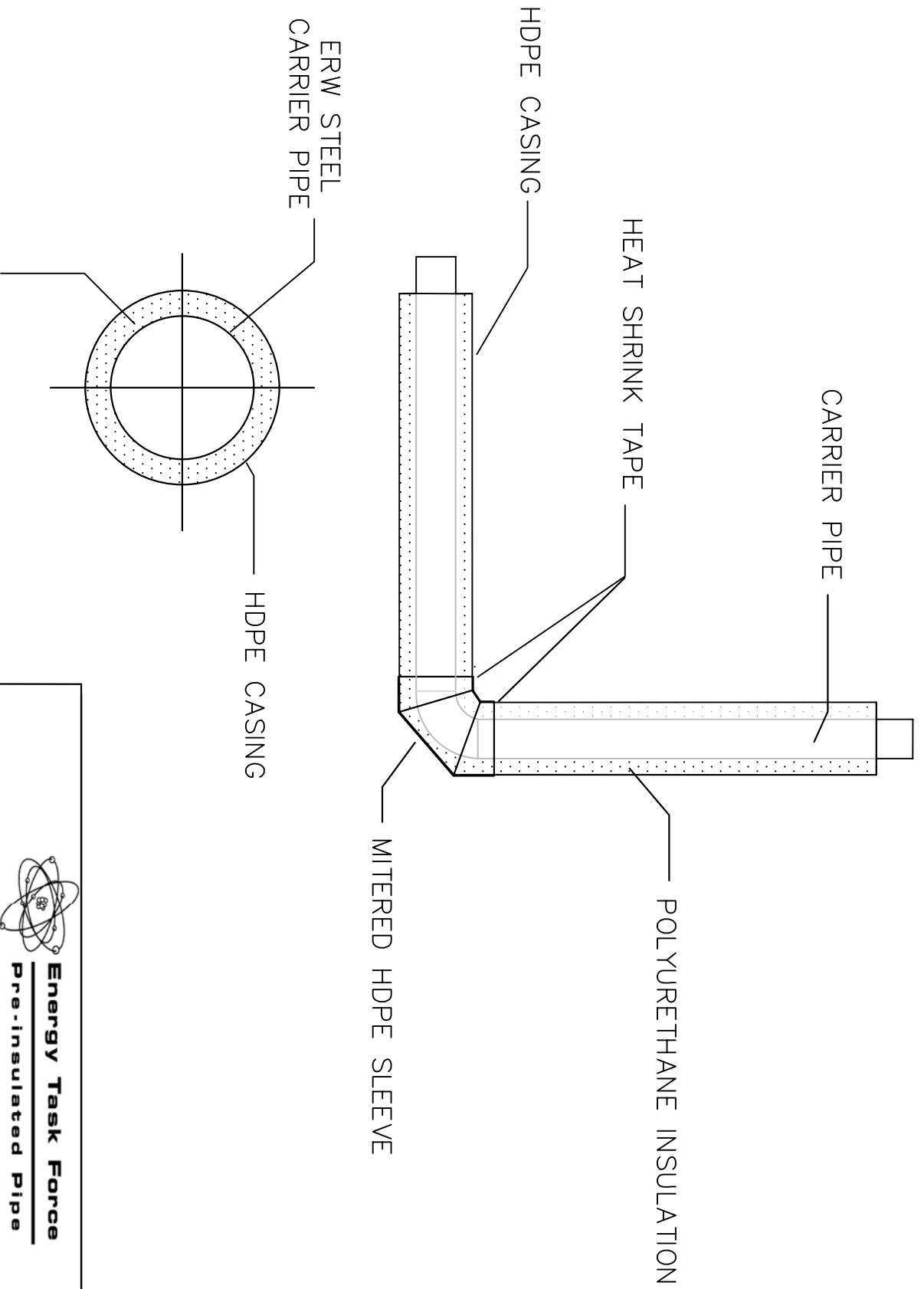
ETF LLC warrants its products only to the extent that it will replace those proved to have manufactured defects, within a one-year period from date of delivery. ETF must be provided an opportunity to inspect an alleged defective product and the installation application. This warranty does not provide for the expenses incurred for removal, re-installation or consequential damages arising from the defective material. There is no warranty other than that described above, and no one is authorized to issue any other warranty related to ETF LLC products.



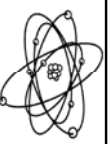
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**Pre-insulated Pipe**

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SCALE	NTS	STRAIGHT PIPE 21' OR 42' LENGTHS	DRAWN BY	LG
DATE	8/2/04		DWG #	



POLYURETHANE INSULATION



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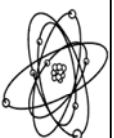
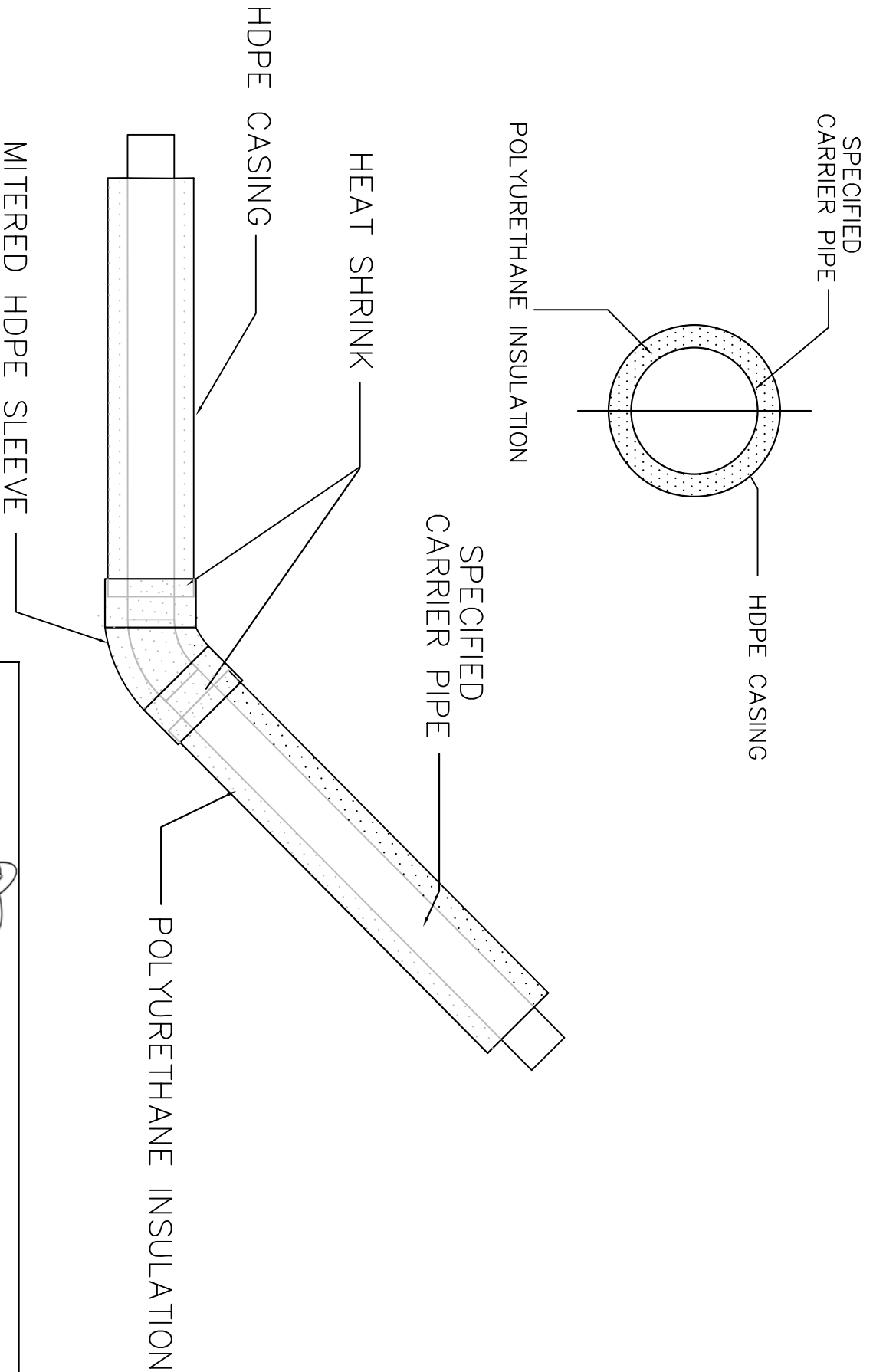
SCALE  
 NTS

DATE  
 8/2/04

PREFABRICATED 90

DRAWN BY  
 LG

DWG #



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SCALE NTS

PREFABRICATED

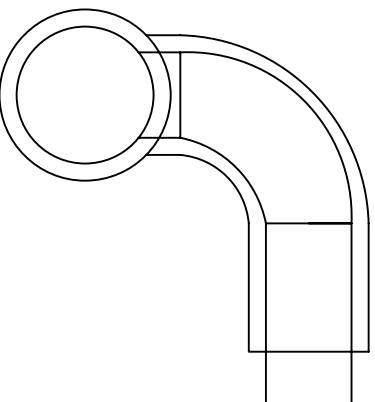
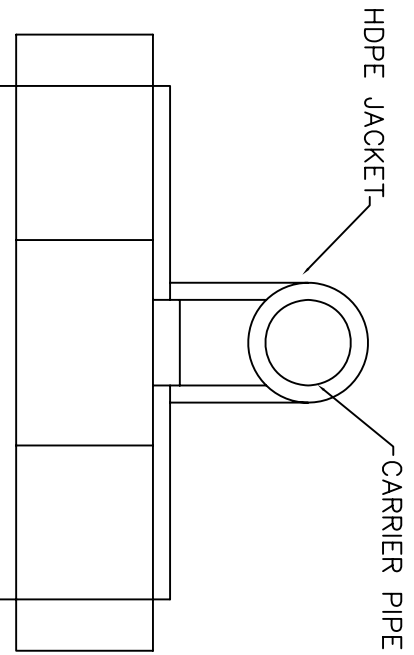
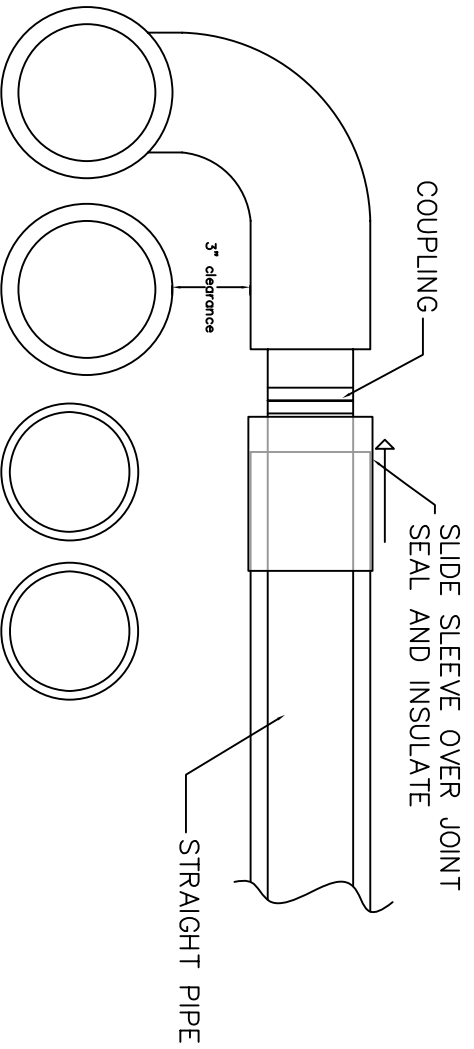
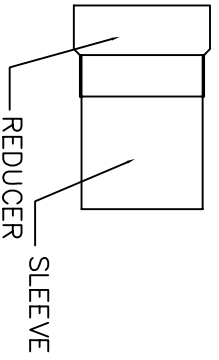
DATE 8/2/04

45 DEGREE ELBOW

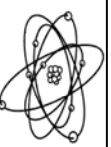
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**NOTE:**  
 IF THE BRANCH OR RUN PIPE IS TO BE REDUCED, ETF WILL PROVIDE A REDUCING SLEEVE



TEE CAN ALSO BE ROLLED AT A 45° ANGLE AND HAVE A 45° FITTING INPLACE OF A 90° FITTING



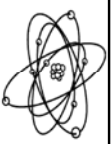
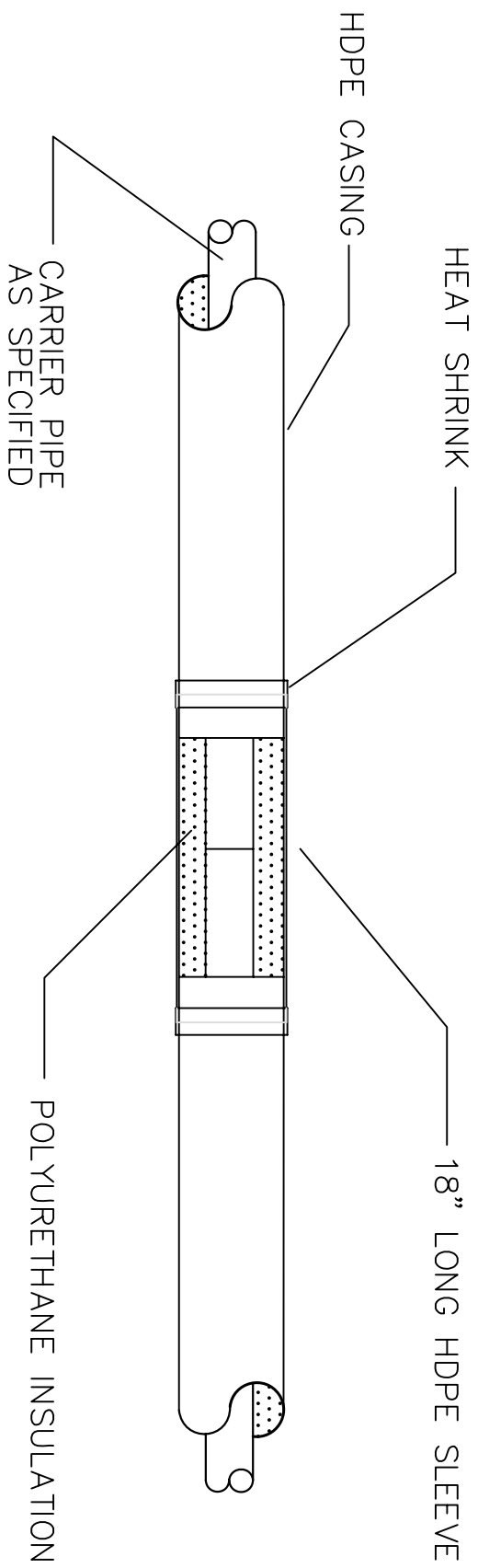
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SCALE  
 NTS  
 DATE 8/2/06

PREFABRICATED  
 CROSS OVER TEE

DRAWN BY  
 LG  
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SCALE  
 NTS

DATE  
 8/2/04

FIELD JOINT DETAIL

DRAWN BY  
 LG

DWG #