

ETF WEST LLC
Division of Energy Task Force LLC

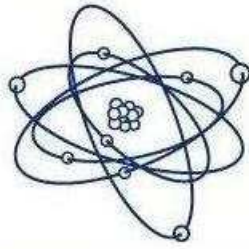
Pre-insulated pipe

7700 W Olive Ave - Peoria, AZ - 85345 - 407-523-3770 - 407-523-3722

ETF-MT Product Submittal

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 A-53 Grade B 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 impact seamless polyvinyl chloride (PVC) class 12454 B compound conforming to ASTM 1784 Type 1, Grade 1. For jacket thickness see attached schedule
- End Seal:** Mastic material end seal factory applied to insulation.
- Insulation of Straight Joints:** Prior to joining carrier pipe a PVC sleeve is slid onto jacketing on either side of joint. After welding and hydro testing, the PVC sleeve is slid in place and sealed with pressure sensitive tape. Polyurethane foam is then mixed and poured into the annular space and sealed watertight.
- Fittings:** All fittings are contractor supplied; field welded and insulated utilizing ETF West fitting insulation kits. Fitting kits consist of a mitered PVC fitting cover, polyurethane foam and pressure sensitive tape
- 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 24 inches from top of jacket to grade of the compacted fill.



ETF WEST LLC
 Division of Energy Task Force LLC

Pre-insulated pipe

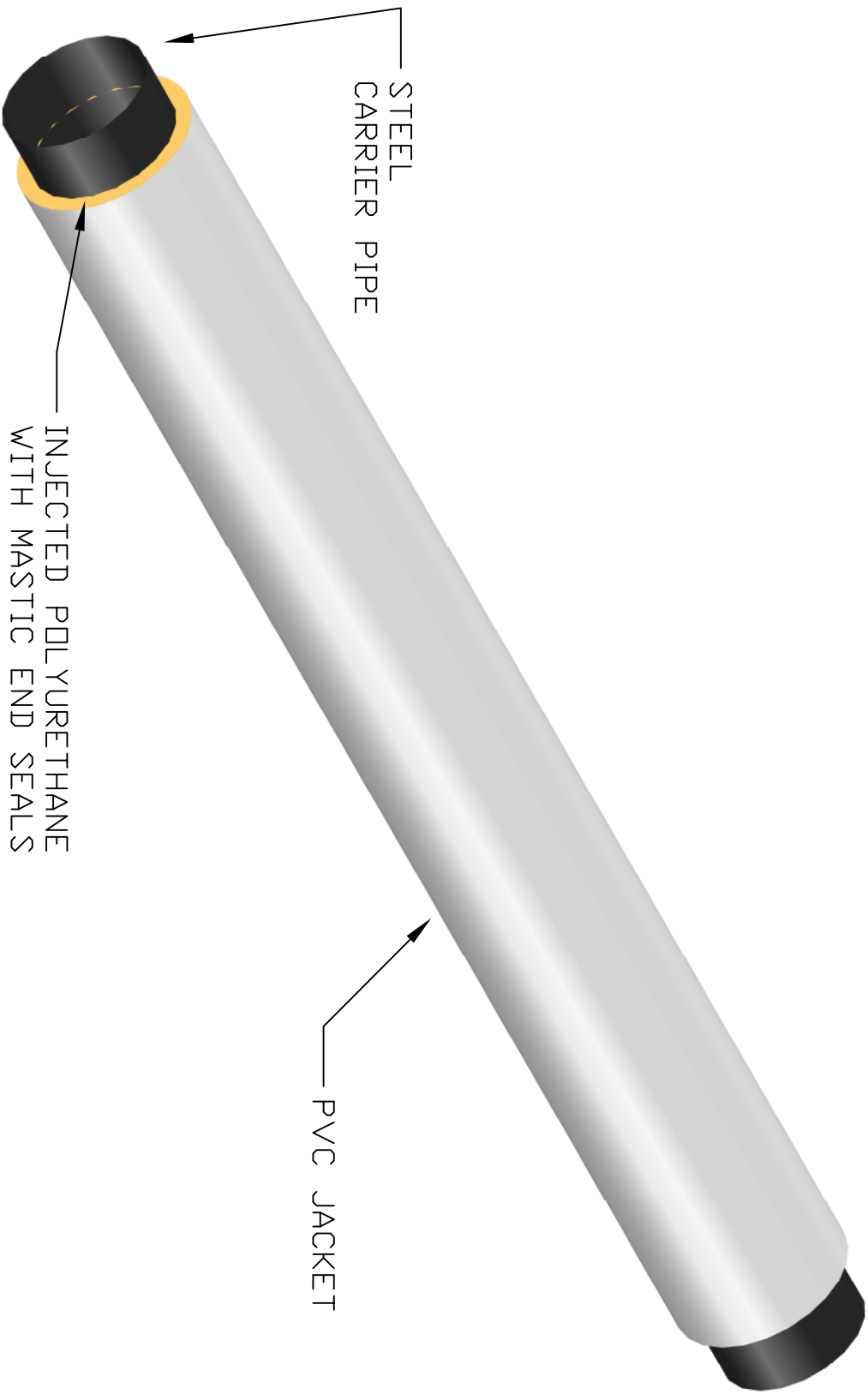
7700 W Olive Ave - Peoria, AZ - 85345 - 407-523-3770 - 407-523-3722

Table 1: Specified Carrier Pipe / PVC Jacket

Nominal Pipe Size	Minimum Insulation Thickness	Nominal Jacket Size	Jacket Thickness
1/2"	1.27	3.5	60 mils
3/4"	1.16	3.5	60 mils
1"	1.03	3.5	60 mils
1 1/4"	1.17	4.0	60 mils
1 1/2"	2.07	6.0	70 mils
2"	1.81	6.0	70 mils
2 1/2"	1.56	6.0	70 mils
3"	1.30	6.0	70 mils
4"	1.75	8.0	80 mils
5"	1.22	8.0	80 mils
6"	1.68	10.0	100 mils
8"	1.68	12.0	120 mils
10"	1.64	14.0	140 mils
12"	1.63	16.0	160 mils

ETF WEST LLC WARRANTY

ETF West 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 West 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 West LLC products.

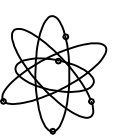


STEEL
CARRIER PIPE

INJECTED POLYURETHANE
WITH MASTIC END SEALS

PVC JACKET

7700 W OLIVE AVE - PEORIA, AZ 85345 - 407-523-3770 - 407-523-3722

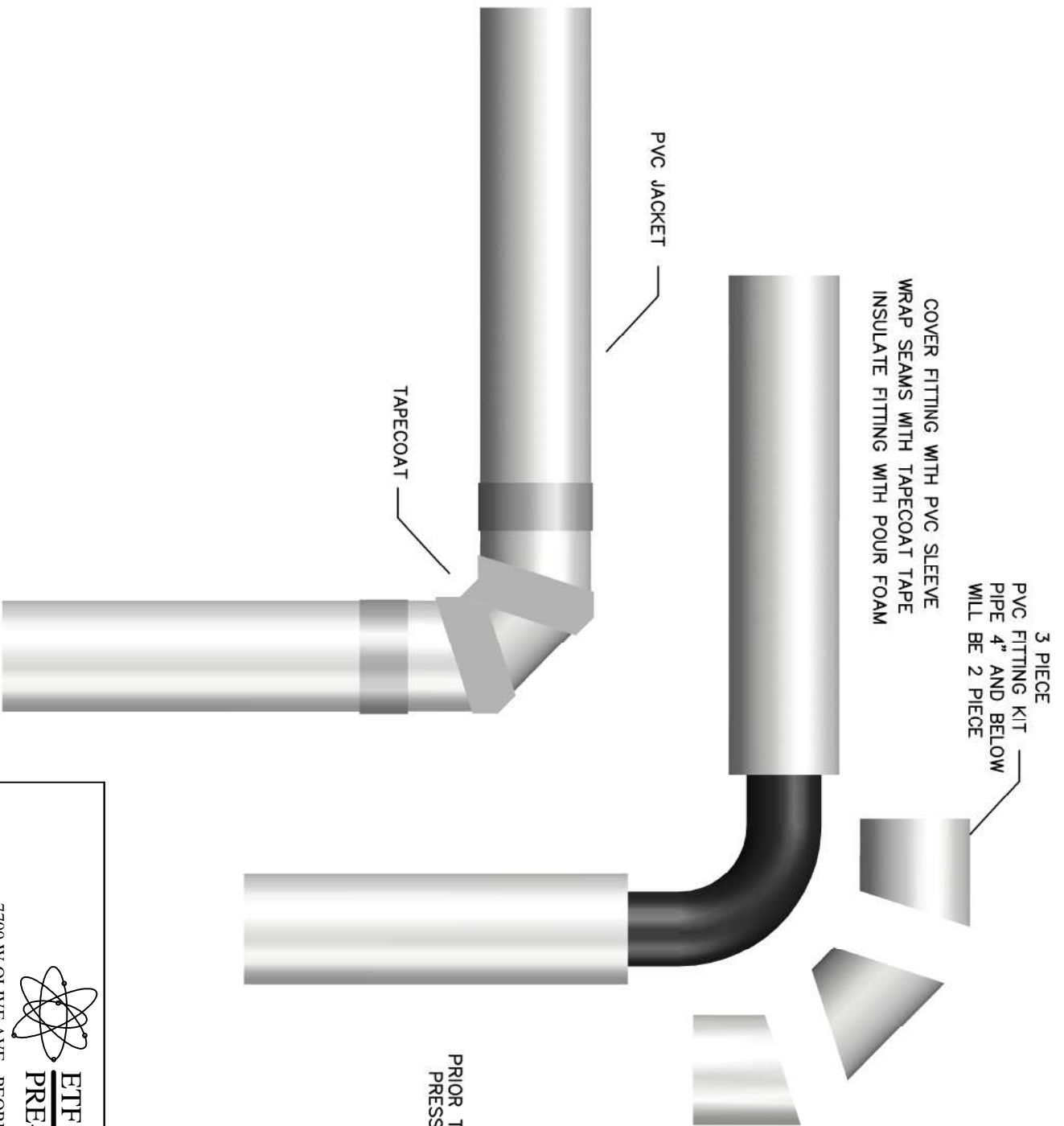


ETF WEST LLC
PRE-INSULATED PIPE

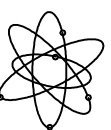
SCALE
NTS
DATE 4/22/16

STEEL X PVC JACKET

DRAWN BY
LG
DWG #



PRIOR TO INSULATING FITTING
PRESSURE TEST SYSTEM



ETF WEST LLC
PRE-INSULATED PIPE

7700 W OLIVE AVE - PEORIA, AZ 85345 - 407-523-3770 - 407-523-3722

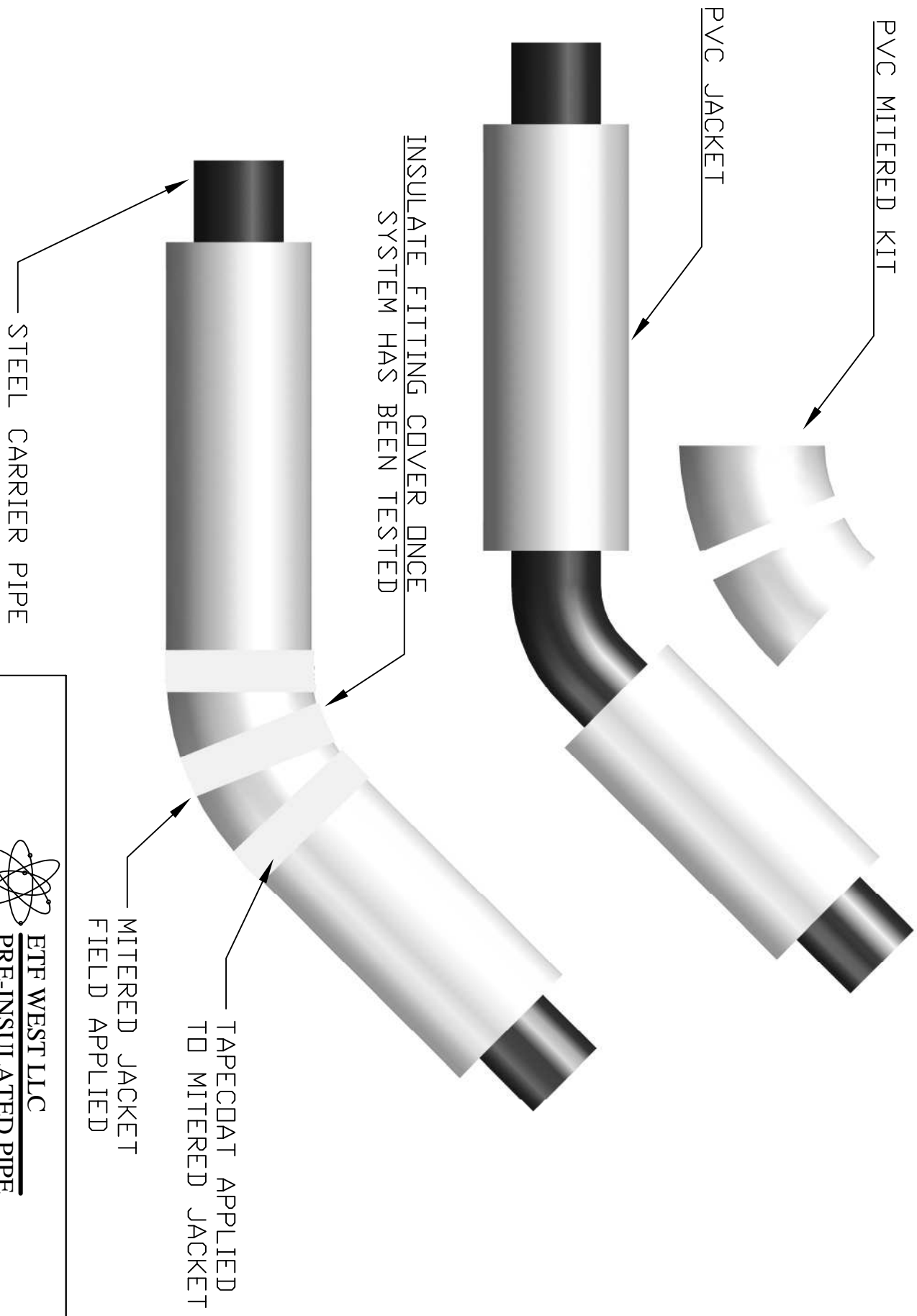
SCALE
NTS

DATE 8/2/04

STEEL WELD FITTING KIT

DRAWN BY
LG

DWG #



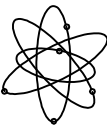
STEEL CARRIER PIPE

INSULATE FITTING COVER ONCE SYSTEM HAS BEEN TESTED

MITERED JACKET FIELD APPLIED
 TAPECOAT APPLIED TO MITERED JACKET

PVC MITERED KIT

PVC JACKET

 ETF WEST LLC PRE-INSULATED PIPE		7700 W OLIVE AVE - PEORIA, AZ 85345 - 407-523-3770 - 407-523-3722	
SCALE	NTS	FIELD INSULATED	45
DATE	4/22/16	STEEL X PVC JACKET	
		DRAWN BY	LG
		DWG #	

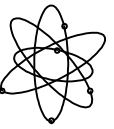
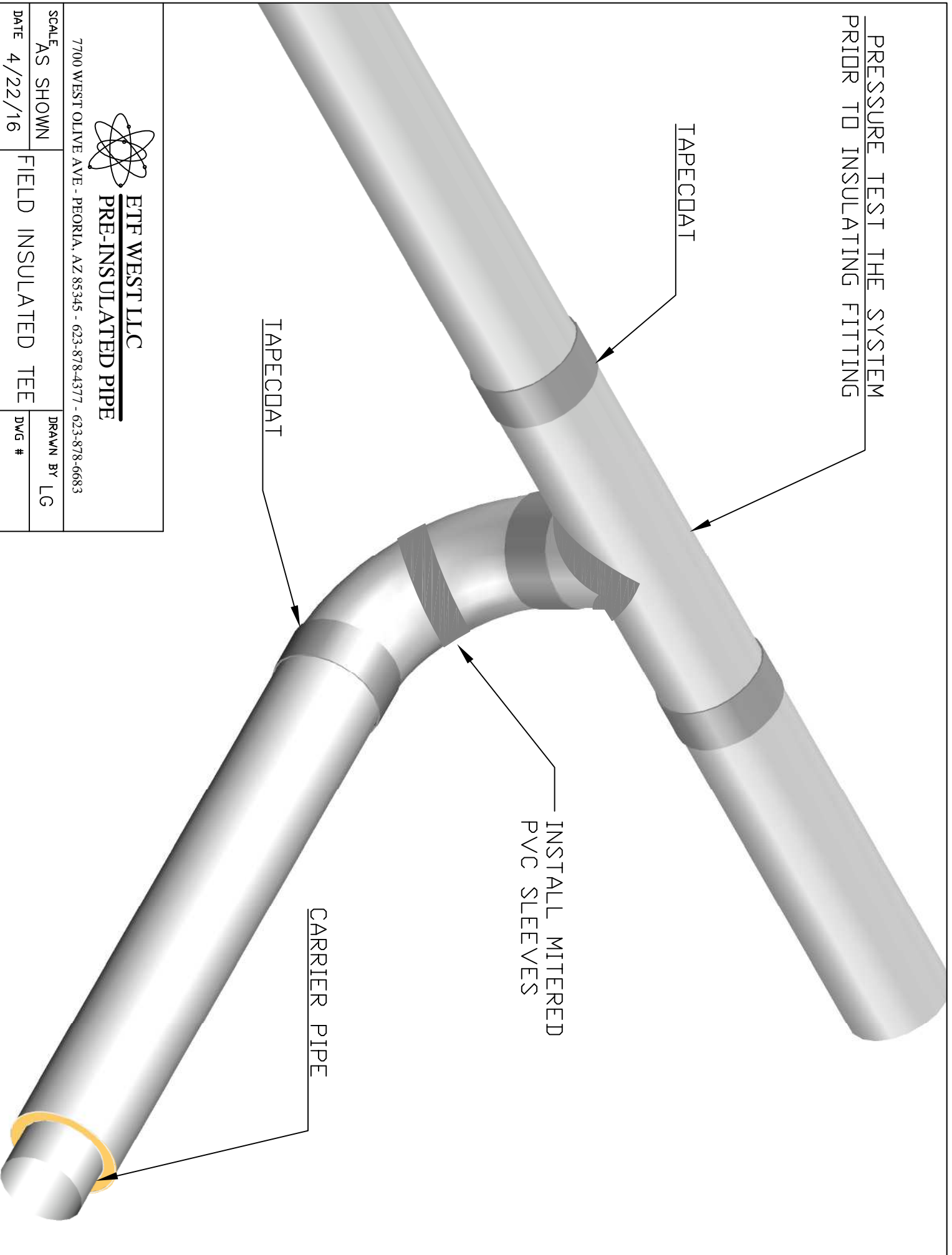
PRESSURE TEST THE SYSTEM
PRIOR TO INSULATING FITTING

TAPECOAT

TAPECOAT

INSTALL MITERED
PVC SLEEVES

CARRIER PIPE



ETF WEST LLC
PRE-INSULATED PIPE

7700 WEST OLIVE AVE - PEORIA, AZ 85345 - 623-878-4377 - 623-878-6683

SCALE
AS SHOWN

FIELD INSULATED TEE

DRAWN BY LG
DWG #

DATE 4/22/16

PRIOR TO INSULATING JOINT
PRESSURE TEST SYSTEM

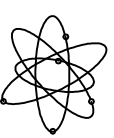
PVC SLEEVE

PVC JACKET

PVC SLEEVE

TAPECOAT

COVER JOINT WITH PVC SLEEVE
WRAP SEAMS WITH TAPECOAT TAPE
INSULATE JOINT WITH POUR FOAM



ETF WEST LLC
PRE-INSULATED PIPE

7700 W OLIVE AVE - PEORIA, AZ 85345 - 407-523-3770 - 407-523-3722

SCALE
NTS

DATE
4/22/16

FIELD JOINT DETAIL

DRAWN BY
LG

DWG #