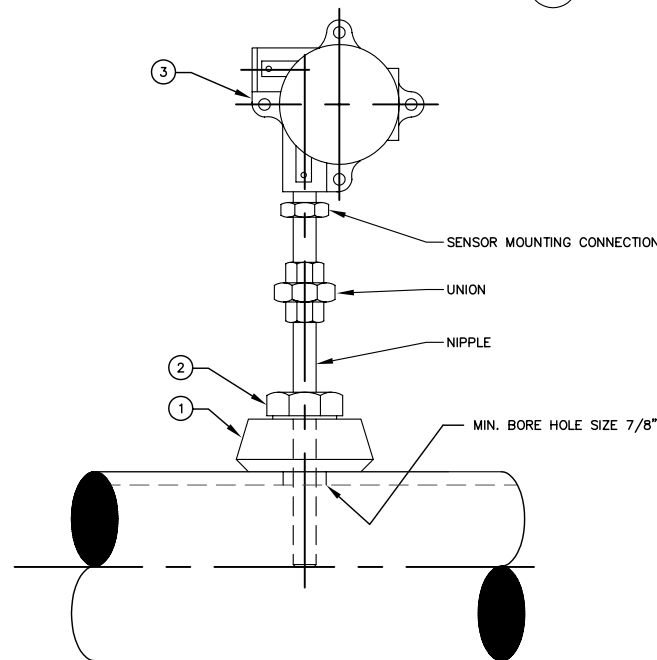


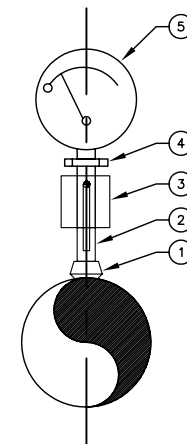
BILL OF MATERIALS				
MARK	QTY	SIZE	DESCRIPTION	LENGTH
1	1	3/4"	THRED-O-LET, ASTM A-105, FNPT, 3000#, GRADE B, ANSI B16.9	
2	1	3/4"	NIPPLE, ASTM A-106, MNPT, SCH. 160, GRADE B, TBE	4"
3	1	3/4"	BALL VALVE, SERIES 800 WOG 3000#, FNPT, FUL PORT, 316SS BALL AND NACE TRIM, CS BODY, PTFE SEATS, API 6D OR ASME B16.34, FIRE SAFE DESIGN, WKM 3/4F-B138-CS2-43-S2-WR	
4	1	3/4"x1/2"	BUSHING, THRD 3000LB, HEXAGON HEAD	
5	1	1/2"	NIPPLE, ASTM A-106, MNPT, SCH. 160, GRADE B TBE	2"
6	1		ROSEMOUNT INTERGRAL 2 VALVE MANIFOLD 0306RT22BA11	
7	1		ROSEMOUNT PRESSURE TRANSMITTER (W/ CONNECTION TO MANIFOLD) 3051S21G4A11B1AD1K5M5Q411Q5	
8	1	1/4"	NIPPLE, ASTM A-106, MNPT, SCH. 160, GRADE B TBE	2"
9	1	1/4"	PARKER QUICK RELEASE	

PRESSURE TRANSMITTER
TYPICAL CONNECTION DETAIL (A)



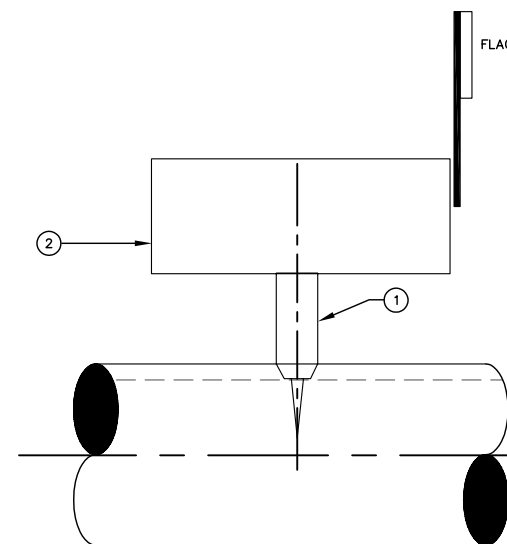
BILL OF MATERIALS				
MARK	QTY	SIZE	DESCRIPTION	LENGTH
1	1	3/4"	THRED-O-LET, ASTM A-105, FNPT, 3000#, GRADE B, ANSI B16.9	
2	1	3/4"	ROSEMONT THERMOWELL	
3	1		ROSEMOUNT TEMP. TRANSMITTER ASSY. 3144PD1A2K5B4M5T1XA	

TEMPERATURE TRANSMITTER-TYPICAL
CONNECTION DETAIL (D)



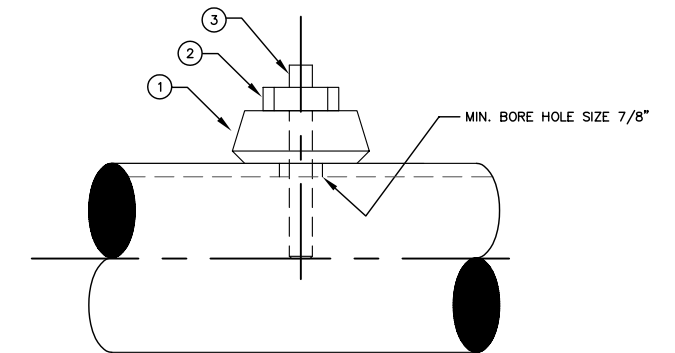
BILL OF MATERIALS				
MARK	QTY	SIZE	DESCRIPTION	LENGTH
1	1	3/4"	THRED-O-LET, ASTM A-105, FNPT, 3000#, GRADE B, ANSI B16.9	
2	1	3/4"	NIPPLE, ASTM A-106, MNPT, SCH. 160, GRADE B, TBE	4"
3	1	3/4"	BALL VALVE, SERIES 800 WOG 3000#, FNPT, FUL PORT, 316SS BALL AND NACE TRIM, CS BODY, PTFE SEATS, API 6D OR ASME B16.34, FIRE SAFE DESIGN, WKM 3/4F-B138-CS2-43-S2-WR	
4	1	3/4"x1/2"	BUSHING, THRD 3000LB, HEXAGON HEAD	
5	1		PRESSURE GAUGE 4" FACE, 0-2000 PSI, 1/2" MNPT CONNECTION	

PRESSURE INDICATOR TYPICAL
CONNECTION DETAIL (B)




BILL OF MATERIALS				
MARK	QTY	SIZE	DESCRIPTION	LENGTH
1	1	2"	THRED-O-RING W/CAP AND PLUG, TDW MODEL# TR-0000-0001-00 W/DETAIL-B FLAT BOTTOM BEVEL WELD	
2	1		TDW PIG-SIG, FLAG/ELECTRICAL, BIDIRECTIONAL, MODEL 04-7778-2071-51	

PIG SIG ACCESSORY (E)



BILL OF MATERIALS				
MARK	QTY	SIZE	DESCRIPTION	LENGTH
1	1	3/4"	THRED-O-LET, ASTM A-105, FNPT, 3000#, GRADE B, ANSI B16.9	
2	1	3/4"	ROSEMOUNT THERMOWELL	
3	1	1/2"	PLUG, ASTM A-106, MNPT, SCH. 160, GRADE B	

THERMOWELL-TYPICAL
CONNECTION DETAIL (C)



Rooney Engineering, Inc.
12201 E. Arapahoe Rd.
Centennial, CO 80112
(303) 792-5911

NO	REVISION	DATE	APPR	BY
1	AS-BUILT	01/25/08	EK	ADJ
0	ISSUED FOR CONSTRUCTION	6/25/07	EK	ADJ

ENBRIDGE PIPELINES (ND)

PENN (ND) STATION
TYPICAL PIPING DETAILS

PROJECT:	SCALE: AS NOTED	DATE: 1/26/07	DRAWN: RMB
CHECK:	APPR:	DATE:	

DWG. NO. 2430-P-101