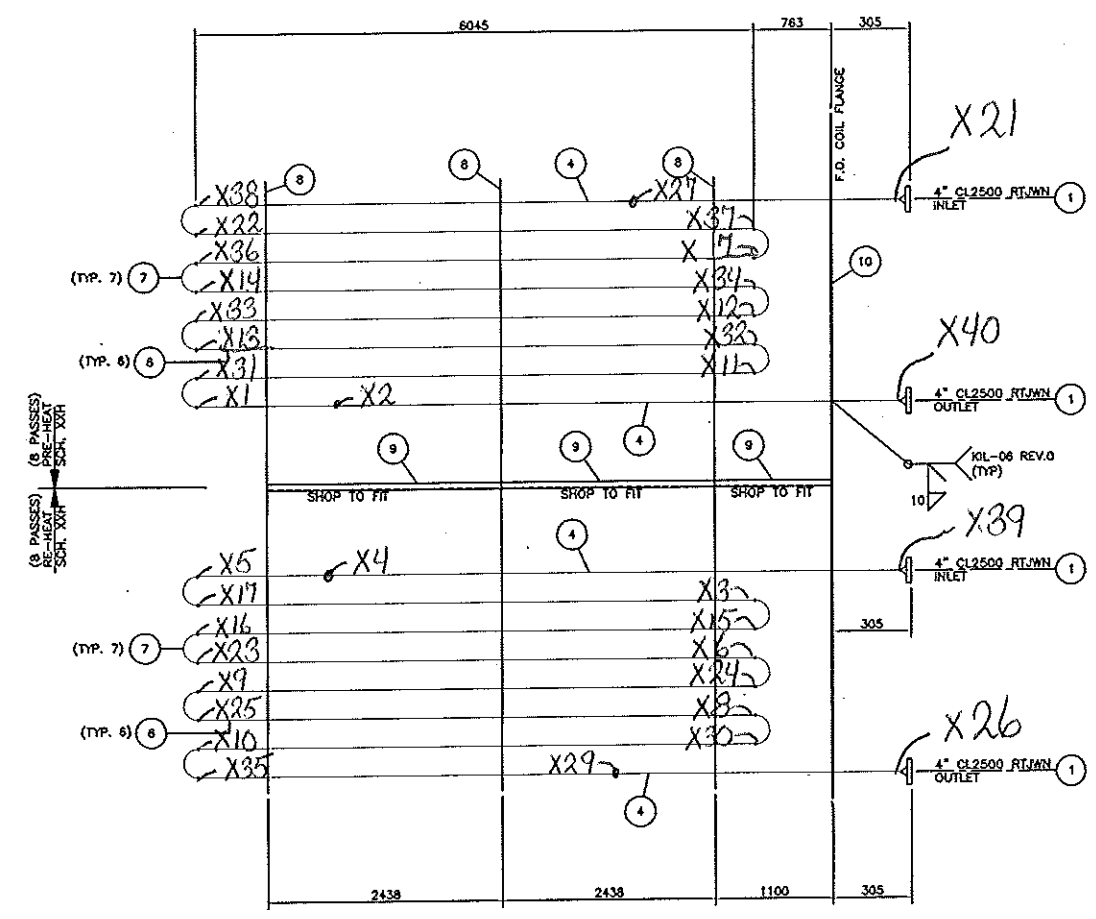
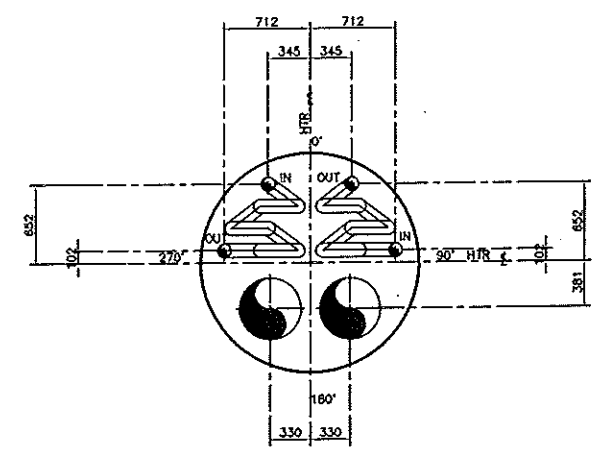


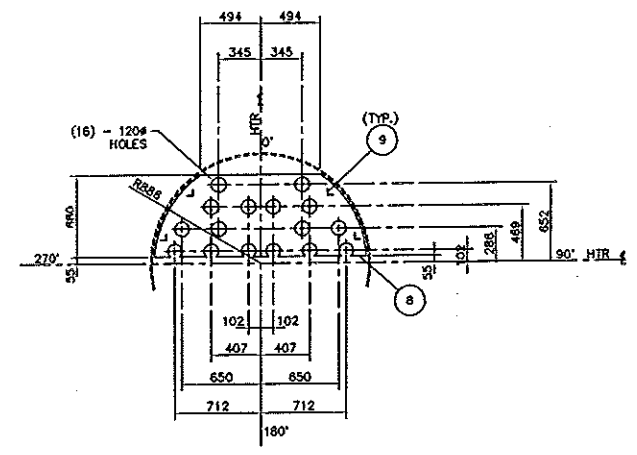
BILL OF MATERIAL			
ITEM	QTY	DESCRIPTION	MAT'L
1	4	FLANGE - 4" CL2500 RTJWN SCH. XXH BORE	SA-350-LF2 CL.1
2	---	---	---
3	1	NAME PLATE C/W BRACKET	SS/SA-36
4	4 PCS	PIPE - 4" SCH. XXH SMLS 6917 mm (22'-8 3/8" LG)	SA-333-6
5	---	---	---
6	12 PCS	PIPE - 4" SCH. XXH SMLS 6045 mm (19'-10" LG)	SA-333-6
7	14	RETURN BEND - 4" SCH. XXH x 180° LR	SA-420-WPL6
8	3 PCS	TUBE SHEET - 3/8" PL (CUT PER DWG DET'L)	SA-36
9	12 PCS	L2" x 2" x 1/4" THK (CTS)	44W
10	1	COIL FLANGE - 1/2" PL (CUT PER DWG DET'L)	SA-36



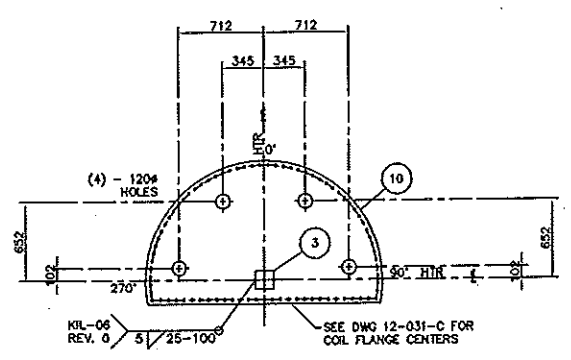
COIL BUNDLE
(NOT TRUE ORIENTATION)
(N.T.S.)



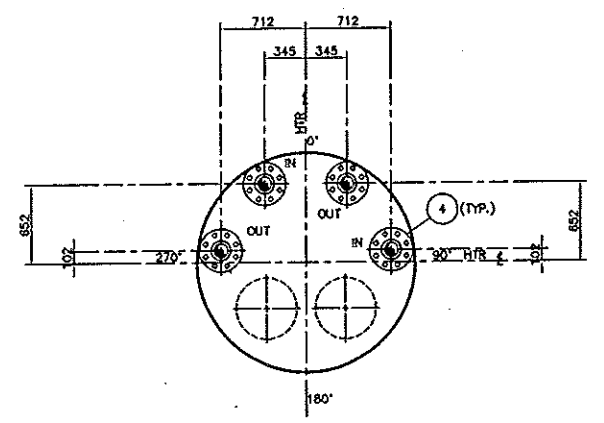
COIL LAYOUT



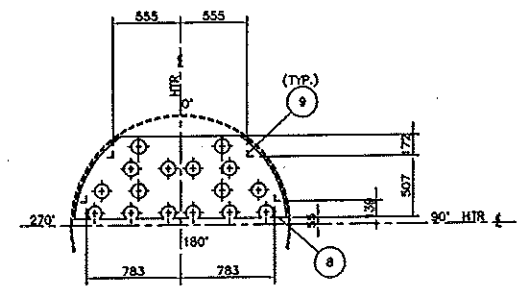
TUBE SHEET DET'L
(3) REQ'D



COIL FLANGE DET'L
(1) REQ'D



FRONT VIEW



ITEM #9 LOCATION DET'L

GENERAL SPECIFICATIONS:

MATERIALS:	PRE-HEAT COIL (4" SCH. XXH)	RE-HEAT COIL (4" SCH. XXH)
PIPE	SA-333-6 SMLS	SA-333-6 SMLS
RETURN BEND	SA-420-WPL6	SA-420-WPL6
FLANGE / THRODLET	SA-350-LF2 CL.1	SA-350-LF2 CL.1
HEATING SURFACE	193.8 SQ.FT.	193.8 SQ.FT.
VOLUME	6.65 CU.FT.	6.65 CU.FT.
DESIGN DATA:		
DESIGN PRESSURE	5020 PSIG	5020 PSIG
DESIGN TEMPERATURE	-20/200°F	-20/200°F
JOINT EFFICIENCY	100%	100%
STRESS RELIEVED	60 MINUTES @ 1150°F ±25°F	60 MINUTES @ 1150°F ±25°F
RADIOGRAPHY (NORMAL)	100% PER B31.3 TOTAL WELD	100% PER B31.3 TOTAL WELD
CORROSION ALLOWANCE	0.076"	0.076"
HYDROTEST PRESSURE	7975 PSIG	7975 PSIG
CRH NO.:	---	---

DESIGN AND CONSTRUCTED IN ACCORDANCE WITH THE 2010 EDITION OF THE ASME CODE FOR PROCESS PIPING SECTION ASME B31.3 PARA 304.1.2.
KOOTENAY WELDING PROCEDURE No.: WP-2940.2
AQP No.: 1479
IMPACT TESTING NOT REQ'D PER B31.3 PARA 323.2.2
COILS TO BE REGISTERED FOR ALBERTA SERVICE.

FABRICATION NOTES:

1. JOINT PREP. AND FIT-UP AS PER KOOTENAY ENGR. SPEC. KIL-003.
2. ALL ATTACHMENTS TO BE CONTINUOUSLY WELDED.
3. NOT TO BE USED IN A PRESSURE VESSEL.

ESTIMATE WEIGHT:
11,750 LBS

QUALITY CONTROL
10/16/12
ISSUED FOR CONSTRUCTION

Job# 12-031-CB
KOOTENAY INDUSTRIES LTD.
CALGARY, ALBERTA
DRAWN BY: KS
CHECKED BY: KT
S/N: 12-031-033.CB
DATE: 12-10-02
SCALE: 1:30

PIPE TO FITTING	TOL./CPLG/WOL	WELDNECK FLANGE	SOL./SW FLANGE
1.) KIL-5 REVO KIL-6 REVO	2.) KIL-5 REVO KIL-6 REVO	3.) KIL-5 REVO KIL-6 REVO	4.) KIL-5 REVO KIL-6 REVO

(3) REQ'D
TIME CARD
12-031-033-CB

REV.	DESCRIPTION	APP'D	DATE	BY	DATE
Δ	ISSUED FOR CONSTRUCTION			KS	12-10-02

HEATING COIL: 8 PASSES PRE-HEAT,
8 PASSES RE-HEAT (SOUR SERVICE)
DAYLIGHT ENERGY LTD. 12-031-B