

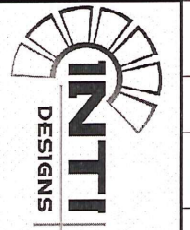
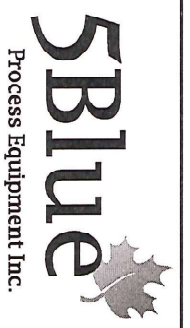
GENERAL NOTES:

- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN METERS, UNLESS OTHERWISE SPECIFIED.
- 2) REFER TO SB1107-02-DR-80-002-1 FOR PIPE SUPPORT DRAWINGS.
- 3) SPOOL TO BE FABRICATED IN ACCORDANCE WITH ASME PRESSURE PIPING CODE E31.3, 2010 EDITION.
- 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
- 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEG CORPORATION OS-5212 PIPING CLASS SPECIFICATIONS.
- 6) PIPING SPEC A13 IS TO SUPERSEDE A11 FOR ALL SMALL EGRE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER SBUE RFI #4.
- 7) HORSO TEST TO BE CHARTED FOR 1 HR.
- 8) 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
- 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
- 10) JOINT: 20% VISUAL, BW: 10% RT, SW: 5% RT (GT-UP) + 10% MT, FILLET WELDS: 10% MT.

LEGEND:

- : WELD NO.
- : MARK NO.
- : FIELD FIT WELD
- : FIELD WELD
- : SPOOL NUMBER
- : PIPE SUPPORT

STD WELD PROC:	5E-102/103	PAINT SYSTEM:	SEE E&L
L.T. WELD PROC:	5E-102/103	INSULATION:	NA
RATING/SPEC:	CL600/C11	SANDBLAST:	SPFC-SP6
HYDROTEST PSIG:	2220	DESIGN TEMP °F:	100
RADIOGRAPHY:	10%	DESIGN PRES PSIG:	1450
STRESS RELIEVE:	NO		

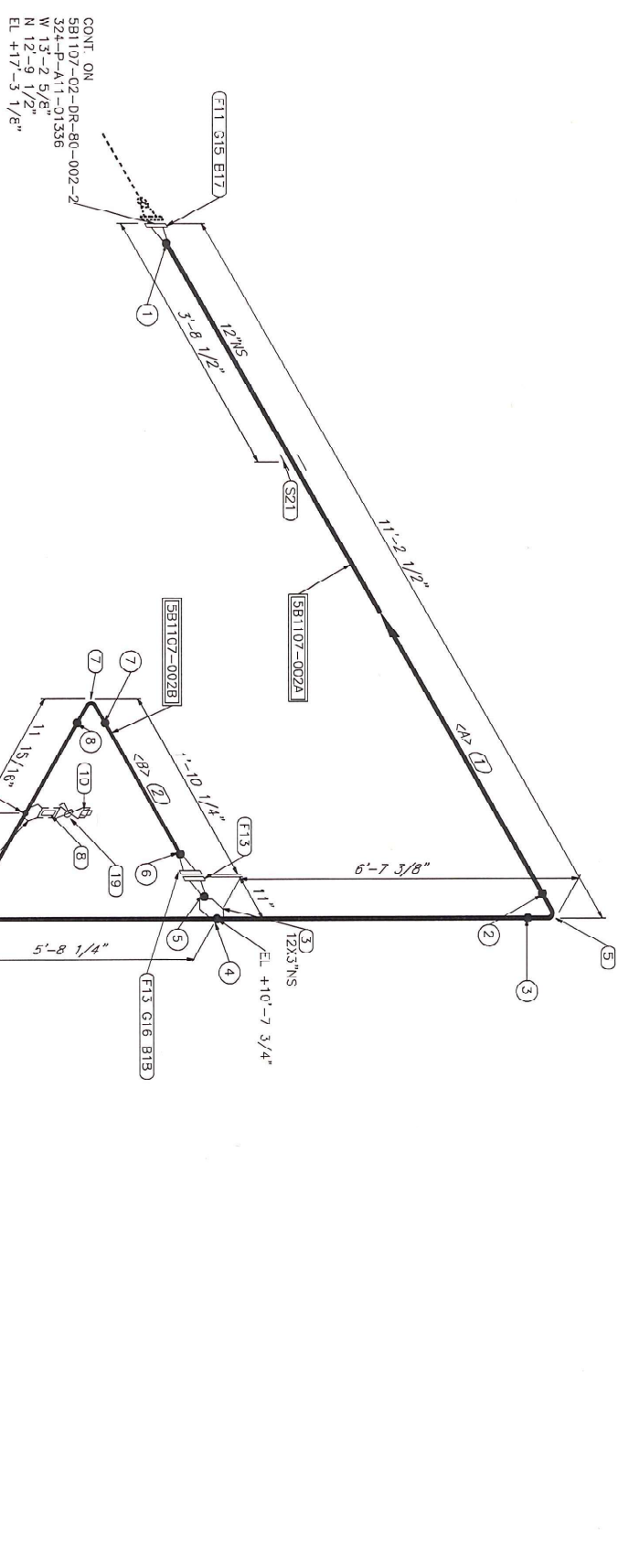


TITLE: DEVON NEG CORPORATION, FERRIER CENTRAL PROCESSING FACILITY CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP) PIPING ISOMETRIC
 LINE NO. 324-P-C11-01335
 CLIENT DOCUMENT NUMBER ISOMETRIC NUMBER REV.
 TED 581107-02-DR-80-001-1 0

BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
1	PIPE	PIPE, SCH 80, ASTM A1098, SMLS, B36.10	2.4	133.6
2	FITTINGS	PIPE, SCH 80, ASTM A333 GR6, SMLS, B36.10	3.4	218.4
3	WELDED FIT	SCH 80, ASTM A350 LF2 CL1, MSS SP-97	1	4.9
4	WELDED FIT	SCH 80, ASTM A350 LF2 CL1, MSS SP-97	1	1.9
5	WELDED FIT	SCH 80, ASTM A350 LF2 CL1, MSS SP-97	1	0.4
6	BLEED RING	CL600, RF, 1/3" THK, 316 SS SPIRAL WOUND, FLEX	1	50.0
7	90 DEG LR ELBOW	SCH 80, ASTM A234 WPB, B16.9	1	4.7
8	NIPPLE	SCH 80, ASTM A1058, SMLS, B36.10 TBE (4000CC LG)	2	4.9
9	SOILD ROUND HEAD PLUG	THRD, ASTM A1058, B16.11	2	0.8
10	FLANGES	FLANGE, CL600, SCH 80, FRWN, ASTM A1058, B16.5	3	678.0
11	FLANGES	FLANGE, CL600, SCH 80, FRWN, ASTM A1058, B16.5	1	226.0
12	FLANGES	FLANGE, CL600, SCH 80, FRWN, ASTM A1058, B16.5	1	226.0
13	FLANGES	FLANGE, CL600, SCH 80, FRWN, ASTM A1058, B16.5	1	430.0
14	FLANGES	FLANGE, CL600, SCH 80, FRWN, ASTM A1058, B16.5	1	120.0
15	GASKETS	GASKET, CL600, RF, 1/3" THK, 316 SS SPIRAL WOUND, FLEX	5	5.0
16	GASKETS	GASKET, CL600, RF, 1/3" THK, 316 SS SPIRAL WOUND, FLEX	4	4.0
17	GASKETS	GASKET, CL600, RF, 1/3" THK, 316 SS SPIRAL WOUND, FLEX	2	2.0
18	BOULTS	1/4" (20) STUDBOLT c/w 2 HEAVY HEX NUTS, ASTM A193 B7/ A194 2H,	1	85.0
19	BOULTS	1/4" (20) STUDBOLT c/w 2 HEAVY HEX NUTS, ASTM A193 B7/ A194 2H,	1	9.0
20	BOULTS	1/4" (20) STUDBOLT c/w 2 HEAVY HEX NUTS, ASTM A193 B7/ A194 2H,	1	9.0
21	BOULTS	3/4" (8) STUDBOLT c/w 2 HEAVY HEX NUTS, ASTM A193 B7/ A194 2H,	4	32.0
22	BOULTS	5/8" (4) STUDBOLT c/w 2 HEAVY HEX NUTS, ASTM A193 B7/ A194 2H,	2	9.0
23	VALVES / IN-LINE ITEMS	BALL VALVE, CL600, RF, GEAR OP, B16.34 (900696A)	1	2939.0
24	VALVES / IN-LINE ITEMS	BALL VALVE, CL600, RF, LEVER OP, B16.34 (900696A)	1	850.0
25	VALVES / IN-LINE ITEMS	BALL VALVE, CL600, RF, LEVER OP, B16.34 (900696A)	1	44.0
26	VALVES / IN-LINE ITEMS	BLIND FLANGE, CL600, RF, ASTM A1058, B16.5	1	10.0
27	VALVES / IN-LINE ITEMS	BALL VALVE, CL800, THRD, RP, LEVER OP, B16.34 (948202A)	2	1.6
28	INSTRUMENTS	CONTROL VALVE, CL600, RF, TAG: (PCV-1510B)	1	950.0
29	INSTRUMENTS	CONTROL VALVE, CL600, RF, TAG: (PCV-1510C)	1	125.0
30	SUPPGRS	GU-1/2" & SA-5 (W6@1.5)	1	18.5
31	SUPPGRS	L10-3-3" (L=3'-0 3/8")	1	44.0
32	PIPE SPOOLS	581107-001A 581107-0013 581107-0010	1	
TOTAL SHOP WEIGHT				6030.4
TOTAL FIELD WEIGHT				C.O.
TOTAL WEIGHT-THIS DWG				6030.4

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- GENERAL NOTES:**
- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN METERS, UNLESS OTHERWISE SPECIFIED.
 - 2) REFER TO SB1107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
 - 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
 - 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
 - 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION OS-5210 PIPING CLASS SPECIFICATIONS.
 - 6) PIPING SPEC A13 IS TO SUPERSEDE A11 FOR ALL SMALL EGGE VENS, DRAINS AND INSTRUMENT CONNECTIONS AS PER SBILE #4.
 - 7) HORSO TEST TO BE CHARTED FOR 1 HR.
 - 8) 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
 - 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
 - 10) JOINT NON-DESTRUCTIVE EXAMINATION: ALL CONT: 20% VISUAL, BW: 10% RT, SW: 5% RT(FT-UP) + 10% MT, TLETT WELDS: 10% MT.

SHOP NOTE:
 SHIP TO TAPER BORE 3:1 FLANGES TO MATCH MATING SCHEDULE OF STD

LEGEND:

○	WELD NO.	○	PAINT SYSTEM:	SEE E&L
○	MARK NO.	○	INSULATION:	NA
○	FTW	○	SANDBLAST:	SFPC-SP8
○	FIELD FIT WELD	○	DESIGN TEMP °F:	100
○	FIELD WELD	○	DESIGN PRES PSIG:	265
○	SPPOOL NUMBER	○		
○	STRESS RELIEVE	○		

REV.	D/M/Y	DESCRIPTION	BY	CHK	APP
1	19/09/2013	ADDED SHOP NOTE	RR	BB	BB
2	13/09/2013	ISSUED FOR CONSTRUCTION	RR	BB	BB



TITLE:
 DEVON NEC CORPORATION,
 FERRIER CENTRAL PROCESSING FACILITY
 CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP)
 PIPING ISOMETRIC
 LINE NO. 324-P-A11-01336

CLIENT DOCUMENT NUMBER: SOMERIC NUMBER
 581107-02-DR-80-002-1

REV.

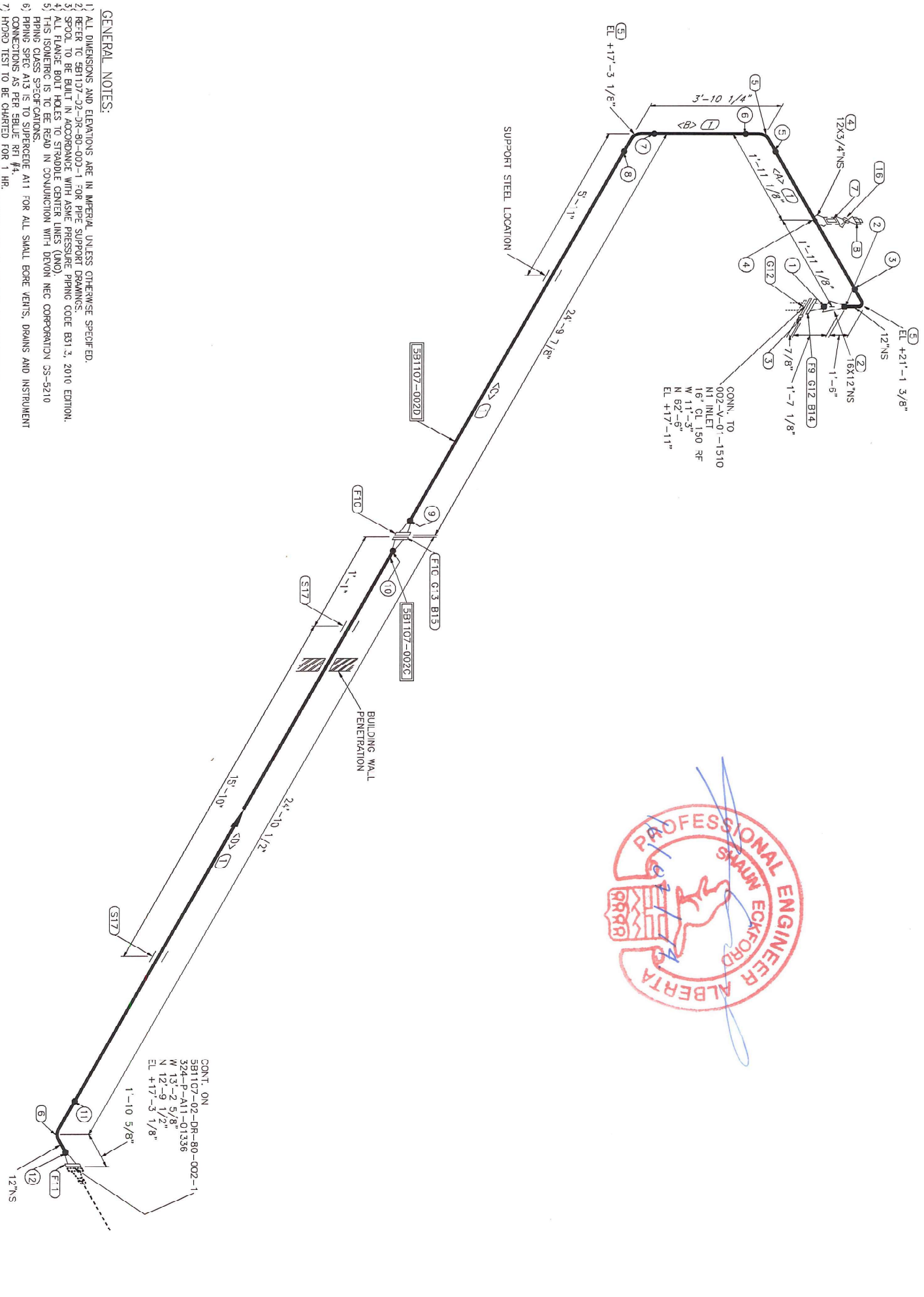
BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
1	12	PIPE, SCH STD, ASTM A106B, SMLS, E36.10	20.6'	1917.1
2	3	PIPE, SCH STD, ASTM A106B, SMLS, E36.10	15.5'	125.0
FITTINGS				
3	12X3	WELDOLET, SCH STD, ASTM A105N, MSS SP-97	1	4.0
4	12X1	THREADED, C, 3000, ASTM A105N, MSS SP-97	1	0.7
5	12	9C DEG LR ELBOW, SCH STD, ASTM A234 WPB, B16.9	2	244.0
6	3X3/4	THREADED, C, 3000, ASTM A105N, MSS SP-97	1	0.4
7	3/4	90 DEG LR ELBOW, SCH STD, ASTM A234 WPB, B16.9	2	9.4
8	3/4	SOLID ROUND HEAD PLUG, THRO, ASTM A105N, B16.11	1	0.8
9	3/4	SOLID ROUND HEAD PLUG, THRO, ASTM A105N, B16.11	1	0.4
FLANGES				
11	12	FLANGE, CL150, SCH STD, RTWN, ASTM A105N, B16.5	1	80.0
12	12	FLANGE, CL300, SCH 90, RTWN, ASTM A105N, B16.5	1	226.0
13	3	FLANGE, CL150, SCH STD, RTWN, ASTM A105N, B16.5	2	22.5
14	3	FLANGE, CL300, SCH 90, RTWN, ASTM A105N, B16.5	1	23.0
GASKETS				
15	12	GASKET, CL150, RR, 1/8" TH-K, 316 SS SPIRAL WOUND, FLEX	1	1.0
16	3	FILLER COI, CS CENTERING RING, 316 SS INNER RING, B16.20	1	1.0
BOLTS				
17	7/8X3 3/4	(12) STUBBOLT 5/16 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	1	1.0
18	5/8X3 3/4	(4) STUBBOLT C/W 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	1	1.0
VALVES / IN-LINE ITEMS				
19	3/4	BALL VALVE, CL800, THRD, LEVER OP, (BA8202A)	1	0.8
SUPPORTS				
20	12	L12-4-12" (L=3'-0 3/8")	1	158.0
FIELD MATERIALS				
SUPPORTS				
21	12	GU-12"	1	7.7
PIPE SPOOLS				
SB1107-002A SB1107-002B				

CUT PIPE LENGTH	PIECE NO	LENGTH (FT-INS)	N.S. (INS)	REMARKS	END ONE	END TWO	ITEM CODE
<A>	1	9'3 3/4"	12		BEVEL	BEVEL	49
	2	10'2 1/4"	3		BEVEL	BEVEL	49
<C>	3	5'0 3/4"	3		BEVEL	BEVEL	49
<E>	4	11'2 1/2"	12		BEVEL	BEVEL	49

WELD NO.	SIZE	NOM. THK	WELD TYPE	DESCRIPTION	WELDER ID	DATE	NDE REPORT No.	V.T.
1	12"		SCH STD	BW				
2	12"		SCH STD	BW				
3	12"		SCH STD	BW				
4	3"		SCH STD	LET				
5	3"		SCH STD	BW				
6	3"		SCH STD	BW				
7	3"		SCH STD	BW				
8	3"		SCH STD	BW				
9	3/4"		CL3000	LET				
10	3"		SCH STD	BW				
11	3"		SCH STD	BW				
12	3"		SCH STD	BW				
13	1"		CL3000	LET				
14	12"		SCH STD	BW				
15	12"		SCH STD	BW				

TOTAL SHOP WEIGHT: 1917.6
 TOTAL FIELD WEIGHT: 7.7
 TOTAL WEIGHT-THIS DWG: 1925.3



GENERAL NOTES:

1. ALL DIMENSIONS AND ELEVATIONS ARE IN METERS, UNLESS OTHERWISE SPECIFIED.
2. REFER TO SB1107-02-DR-80-002-1 FOR PIPE SUPPORT DRAWINGS.
3. SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
4. ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
5. THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEG CORPORATION CS-5210 PIPING CLASS SPECIFICATIONS.
6. PIPING SPEC A13 IS TO SUPERSEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER SBUE RFI #4.
7. HYDRO TEST TO BE CHARTED FOR 1 HR.
8. 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
9. SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
10. JOINT NON-DESTRUCTIVE EXAMINATION: 10% FT, SW: 5% RT(TIT-UP) + 10% FT, FILET WELDS: 10% MT.

REV.	D/M/Y	DESCRIPTION	BY	CHK	APP
2	13/09/2013	ISSUED FOR CONSTRUCTION	RR	BB	APP

LEGEND:	
○	WELD NO.
○	MARK NO.
○	FFW
○	FIELD FIT WELD
○	FIELD WELD
○	SPOOL NUMBER
○	PIPE SUPPORT

STD WELD PROC:	5B-102/103	PAINT SYSTEM:	SEE E&I
LT. WELD PROC: <td>5B-102/103</td> <td>INSULATION: <td>NA</td> </td>	5B-102/103	INSULATION: <td>NA</td>	NA
RATING/SPEC: <td>CL150/A11</td> <td>SANDBLAST: <td>SSPC-SP8</td> </td>	CL150/A11	SANDBLAST: <td>SSPC-SP8</td>	SSPC-SP8
HYDROTEST PSIG: <td>425</td> <td>DESIGN TEMP °F: <td>100</td> </td>	425	DESIGN TEMP °F: <td>100</td>	100
RADIOGRAPH: <td>10%</td> <td>DESIGN PRES PSIG: <td>285</td> </td>	10%	DESIGN PRES PSIG: <td>285</td>	285
STRESS RELIEF: <td>NO</td> <td></td> <td></td>	NO		

TITLE: DEVON NEG CORP ORATION, FERRIER CENTRAL PROCESSING FACILITY CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP) PIPING ISOMETRIC

LINE NO.: 324-P-A11-01336

CLIENT DOCUMENT NUMBER: SB1107-02-DR-80-002-2

ISOMETRIC NUMBER: T80

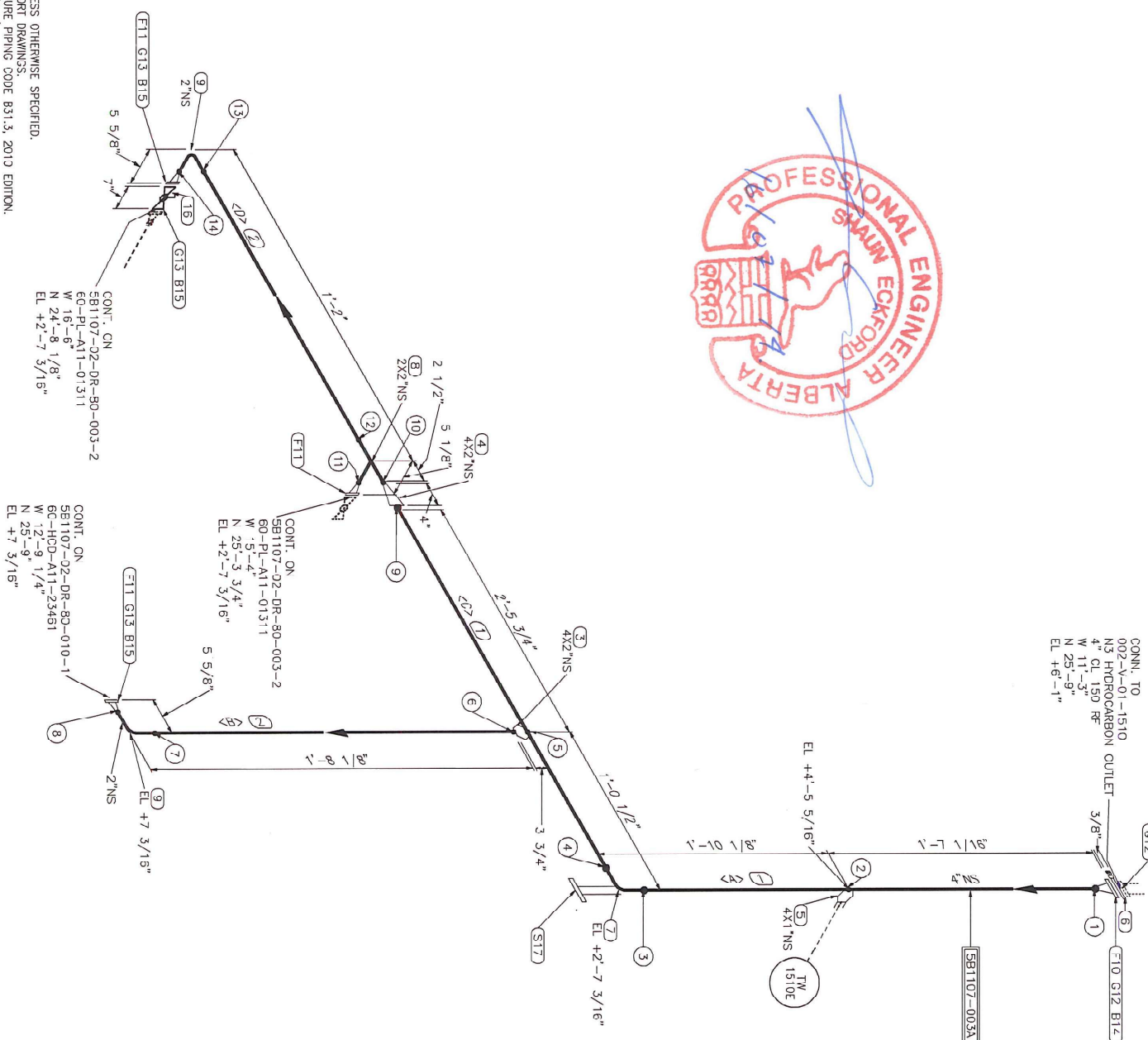
MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
1	12	PIPE, SCH STD, ASTM A333 S96, SMLS, B36.10	47.6'	2357.8
PIPE				
2	16X12	CON. REDUCER, SCH. STD, ASTM A420 WPL6, B16.9	1	75.0
3	16	FLANGE, CL150, SCH STD, RWN, ASTM A530 LF2 CL1, B16.5	1	187.0
4	12X3/4	FLANGE, CL150, SCH STD, RWN, ASTM A530 LF2 CL1, B16.5	1	80.0
5	90 DEG. LR EL30W, SCH STD, ASTM A234 WPB, B16.9	3	366.0	
6	12	NIPPLE, SCH 160, ASTM A333 S96, SMLS, B36.10 TBE (4.000CC LG)	1	122.0
7	3/4	SOLID ROUND HEAD PLUG, THRD, ASTM A350 LF2 CL1, E16.11	1	0.4
FITTINGS				
8	3/4	FLANGES		
9	16	FLANGE, CL150, SCH STD, RWN, ASTM A530 LF2 CL1, B16.5	1	127.0
10	10	FLANGE, CL150, SCH STD, RWN, ASTM A530 LF2 CL1, B16.5	1	180.0
11	12	FLANGE, CL150, SCH STD, RWN, ASTM A530 LF2 CL1, B16.5	1	80.0
GASKETS				
12	16	GASKET, CL150, RE. 1/8" THK, 316 SS, SPIRAL WOUND, FLEX	2	2.0
13	12	FILLER COI, CS CENTERING RING, 315 SS INNER RING, B16.20	1	1.0
BOLTS				
14	1/2	(16) STUBBOLT C/W 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	1	31.0
15	3/4	(12) STUBBOLT C/W 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	1	15.0
VALVES / IN-LINE ITEMS				
16	3/4	BALL VALVE, CL800, THRD, LEVER OP., (BA8202A)	1	0.8
FIELD MATERIALS				
SUPPORTS				
17	12	PIPE SPOOLS	2	15.4
CUT PIPE LENGTH				
12	12"	SCH STD	BW	
11	12"	SCH STD	BW	
10	12"	SCH STD	BW	
9	12"	SCH STD	BW	
8	12"	SCH STD	BW	
7	12"	SCH STD	BW	
6	12"	SCH STD	BW	
5	12"	SCH STD	BW	
4	3/4"	C.3000	LET	
3	12"	SCH STD	BW	
2	12"	SCH STD	BW	
1	16"	SCH STD	BW	

PIECE NO	LENGTH (FT-IN)	N.S. (INS)	REMARKS	END ONE	END TWO	ITEM CODE
<A>	10"	12		BEVEL	BEVEL	23
	10"	12		BEVEL	BEVEL	23
<C>	22'11 1/8"	12		BEVEL	BEVEL	23
<D>	22'11 3/4"	12		BEVEL	BEVEL	23

WELD NO.	SIZE	NOM. THK	WELD TYPE	DESCRIPTION	WELDER ID	DATE	NDE REPORT No.	VT.
1	16"	SCH STD	BW					

CONTR. ON	SB1107-02-DR-80-002-1	SB1107-01-01336
1	1'-10 5/8"	12"NS
2	1'-10 1/2"	12"NS
3	1'-10 1/2"	12"NS
4	1'-10 1/2"	12"NS
5	1'-10 1/2"	12"NS
6	1'-10 1/2"	12"NS
7	1'-10 1/2"	12"NS
8	1'-10 1/2"	12"NS
9	1'-10 1/2"	12"NS
10	1'-10 1/2"	12"NS
11	1'-10 1/2"	12"NS
12	1'-10 1/2"	12"NS

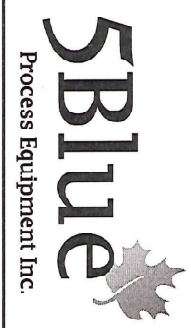
TOTAL SHOP WEIGHT	3419.2
TOTAL FIELD WEIGHT	15.4
TOTAL WEIGHT - THIS DWG	3434.6



- GENERAL NOTES:**
- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL UNLESS OTHERWISE SPECIFIED.
 - 2) REFER TO SB1107-02-DR-80-003-1 FOR PIPE SUPPORT DRAWINGS.
 - 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2013 EDITION.
 - 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
 - 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION GS-4210 PIPING CLASS SPECIFICATIONS.
 - 6) PIPING SPEC A13 IS TO SUPERCEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER SBUE FRI #4.
 - 7) HYDRO TEST TO BE CHARGED FOR 1 HR.
 - 8) 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
 - 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
 - 10) JOINT NON-DESTRUCTIVE EXAMINATION: 10% RT, SW: 5% RT(FT-UP) + 10% MT, FILET WELDS: 10% MT.

REV.	D/M/Y	DESCRIPTION	BY	CHK
0	12/09/2013	ISSUED FOR CONSTRUCTION	RR	BB

LEGEND		STANDARD WELD PROC.		PAINT SYSTEM	
○	WELD NO.	SB-102/103	SEE E&I		
○	MARK NO.	SB-102/103			
○	FFW	CL150/A11	NA		
○	FIELD FIT WELD	428	SSPC-SP6		
○	FIELD WELD	100			
○	SPOOL NUMBER	285			
○	PIPE SUPPORT				



TITLE: DEVON NEC CORPORATION
 FERRIER CENTRAL PROCESSING FACILITY
 CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP)
 PIPING ISOMETRIC
 LINE NO. 50-PL-A11-01311
 CLIENT DOCUMENT NUMBER 581107-02-DR-80-003-1
 ISOMETRIC NUMBER
 REV.

BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)	
SHOP MATERIALS					
1	PIPE	PIPE SCH STD, ASTM A106B, SMLS, 336.10	5.7	6.3	
2	PIPE	P/EL, SCH 80, ASTM A106B, SMLS, 836.10	2.2	10.6	
FITTINGS					
3	4X2	WELDOLET, SCH 80, ASTM A105N, MSS SP-97	1	1.8	
4	4X2	CON REDUCER, SCH STD&80, ASTM A234 WPB, 316.9	1	3.1	
5	4X1	THREADED, CL3000, ASTM A105N, MSS SP-97	1	0.7	
6	4	SPEC BLIND, CL150, RF, ASTM A516 GR 70N, B16.48	1	8.0	
7	4	90 DEG LR ELBOW, SCH STD, ASTM A234 WPB, B16.9	1	8.7	
8	2X2	TEE, SCH 80, ASTM A234 WPB, B16.9	1	3.7	
9	2	90 DEG LR ELBOW, SCH 80, ASTM A234 WPB, B16.9	2	4.4	
FLANGES					
10	4	FLANGE, CL150, SCH STD, RFWN, ASTM A105N, B16.5	1	15.0	
11	2	FLANGE, CL150, SCH 80, RFWN, ASTM A105N, B16.5	3	18.0	
GASKETS					
12	4	GASKET, CL150, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX	2	2.0	
13	2	FILER COI, CS CENTERING RING, 316 SS INNER RING, B16.20	3	3.0	
BOLTS					
14	5/8X4 1/4	(8) STUBBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B15.5	1	1.0	
15	5/8X3 1/4	(4) STUBBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B15.5	3	3.0	
VALVES / IN-LINE ITEMS					
16	2	BALL VALVE, CL150, RF, LEVER OP, (BVC1064)	1	33.0	
SUPPORTS					
17	4	L10-3-4" (L=2-7 3/16")	1	42.0	
PIPE SPOOLS SB1107-003A					
				TOTAL SHOP WEIGHT	219.1
				TOTAL FIELD WEIGHT	0.0
				TOTAL WEIGHT-THIS DWG	219.1

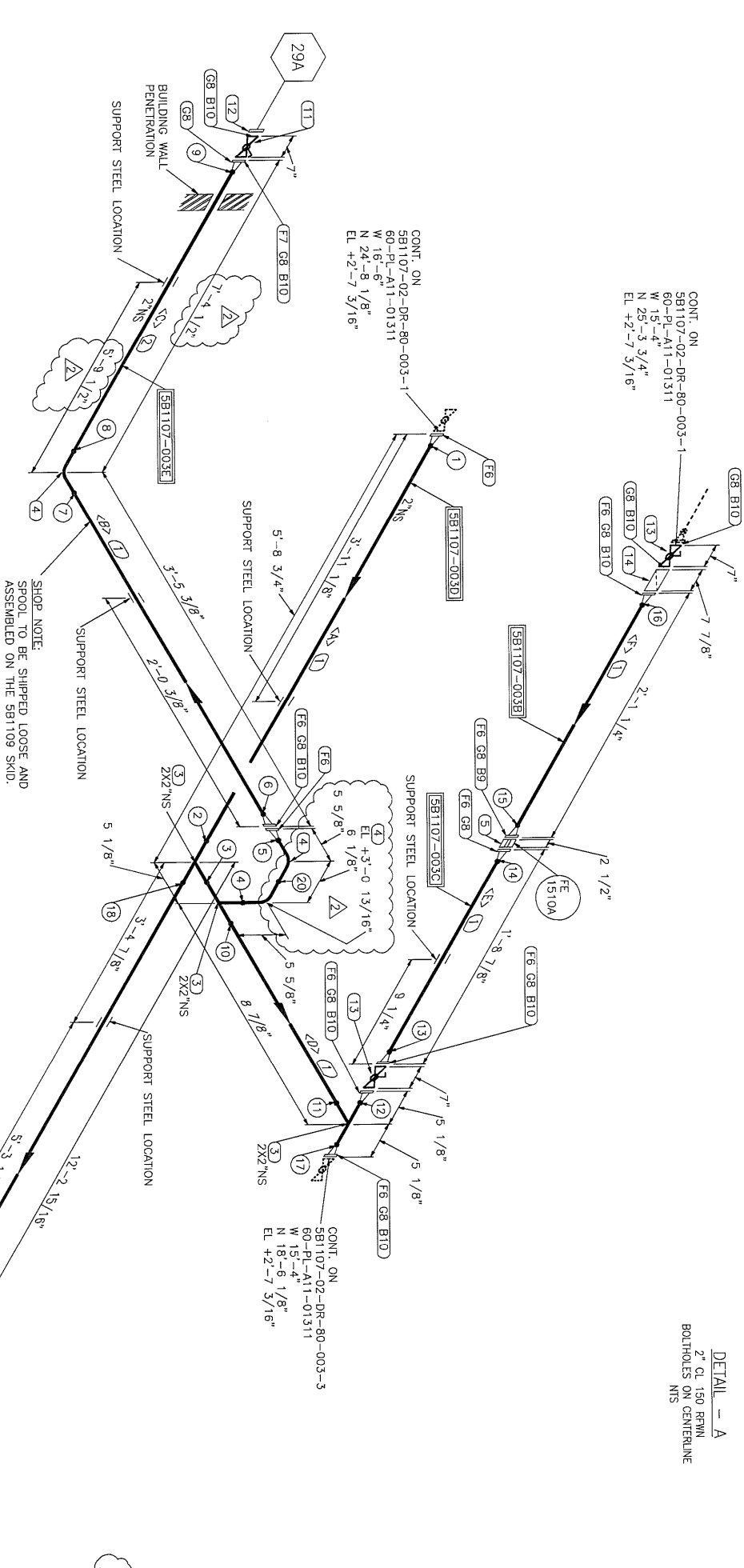
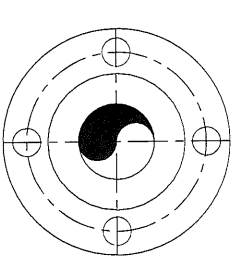
CUT PIPE LENGTH	PIECE NO	LENGTH (FT-INS)	N.S. (INS)	REMARKS	END ONE	END TWO	ITEM CODE
<AS>	27	15/16"	4		BEVEL	BEVEL	97
<BS>	15	1/8"	2		BEVEL	BEVEL	97
<CS>	30	1/8"	2		BEVEL	BEVEL	97
<DS>	8	1/4"	2		BEVEL	BEVEL	97

REV.	DESCRIPTION
0	ISSUED FOR CONSTRUCTION

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BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
1	PIPE	PIPE, SCH 80, ASTM A106B, SMLS, B36.10	1	2.2
2	PIPE	PIPE, SCH 80, ASTM A333 GR6, SMLS, E36.10	1	34.7
3	FITTINGS	TEE, SCH 80, ASTM A234 WPB, B16.9	1	1.1
4	FITTINGS	90 DEG LR ELBOW, SCH 80, ASTM A234 WPB, B16.9	1	5.0
5	FITTINGS	FLOW METER, CL150, RF, (FE-1510A)	1	6.0
6	FLANGES	FLANGE, CL150, SCH 80, RFWN, ASTM A550 LF2 CL1, B16.5	1	8.0
7	FLANGES	FLANGE, CL150, SCH 80, RFWN, ASTM A550 LF2 CL1, B16.5	1	8.0
8	GASKETS	GASKET, CL150, RF, 1/8" THK, 316 SS SPRAL, WOUND, FLEX	12	12.0
9	BOLTS	FILLER COI, CS CENTERING RING, 316 SS INNER RING, B16.20		
10	5/8X3 1/4	(4) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	1	1.0
11	VALVES / IN-LINE ITEMS	(4) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	1	1.0
12	VALVES / IN-LINE ITEMS	BALL VALVE, CL150, RF, LEVER OP, (BA0106A)	1	33.0
13	VALVES / IN-LINE ITEMS	BLIND FLANGE, CL150, RF, ASTM A350 LF2 CL1, B16.5	4	4.0
14	VALVES / IN-LINE ITEMS	BALL VALVE, CL150, RF, LEVER OP (BV0106A) Y-STRAINER, CL 150, RF (SP012503)	2	65.0
14	PIPE SPOOLS	PIPE SPOOLS	1	23.0



GENERAL NOTES:

- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL, UNLESS OTHERWISE SPECIFIED.
- 2) REFER TO 581107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
- 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
- 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
- 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION GS-5210 PIPING CLASS SPECIFICATIONS.
- 6) PIPING SPEC A3 IS TO SUPERSEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER SCHEDULE #4.
- 7) HYDRO TEST TO BE PERFORMED FOR IN ACCORDANCE WITH DEVON NEC CORPORATION GS-5210 CONNECTIONS AS PER SCHEDULE #4.
- 8) WELD GAP HAS BEEN MARKED FOR IN ACCORDANCE WITH DEVON NEC CORPORATION GS-5210 CONNECTIONS AS PER SCHEDULE #4.
- 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
- 10) JOINT NON-DESTRUCTIVE EXAMINATION.
- 11) ALL JOINTS: 20% VISUAL, BW: 10% RT, SW: 5% RT(FT-UP) + 10% MT, FILET WELDS: 10% MT.

LEGEND:

- : WELD NO.
- : MARK NO.
- : FIELD FIT WELD
- : FIELD WELD
- : SPOOL NUMBER
- : PIPE SUPPORT

STD WELD PROC: 5B-102/103
PAINT SYSTEM: SEE E&I

L.I. WELD PROC: 5B-102/103
INSULATION: NA

RATING/SPEC: CL150/A11
SANDBLAST: SSPC-SP6

HYDROTEST PSIG: 428
DESIGN TEMP °F: 100

RADIOGRAPH: 10%
DESIGN PRES PSIG: 285

STRESS RELIEVE: NO



REV.	D/M/Y	DESCRIPTION	BY	CHK	APP
0	12/09/2013	ISSUED FOR CONSTRUCTION	RR	BB	
1	24/09/2013	ADDED 'ONE HOLE' DETAIL & NOTE	RR	BB	
2	25/11/2013	REVISED AS NOTED	RR	BB	

SBBlue
Process Equipment Inc.

INTI
DESIGNS

TITLE: DEVON NEC CORPORATION, FERRIER CENTRAL PROCESSING FACILITY CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP) PIPING ISOMETRIC

LINE NO.: 60-PL-A11-01311

CLIENT DOCUMENT NUMBER: 581107-02-DR-80-003-2

ISOMETRIC NUMBER: TBD

REV.: 2

CUT PIPE LENGTH	PIECE LENGTH (FT-INS)	N.S. (INS)	REMARKS	END ONE	END TWO	ITEM CODE	QTY	WEIGHT (LBS)
<A>	5'3 1/2"	2		BEVEL	BEVEL	51	1	3.0
	2'11 1/2"	2		BEVEL	BEVEL	51	1	4.0
<C>	6'10 3/4"	2		BEVEL	BEVEL	54	1	65.0
<D>	3'5 5/8"	2		BEVEL	BEVEL	51	2	23.0
<E>	1'3 5/8"	2		BEVEL	BEVEL	51		
<F>	1'8"	2		BEVEL	BEVEL	51		
<G>	11'9 11/16"	2		BEVEL	BEVEL	51		

WELD NO.	SIZE	NOM. THK	WELD TYPE	DESCRIPTION	WELDER ID	DATE	NDE REPORT No.	V.T.
1	2"	SCH 80	BW					
2	2"	SCH 80	BW					
3	2"	SCH 80	BW					
4	2"	SCH 80	BW					
5	2"	SCH 80	BW					
6	2"	SCH 80	BW					
7	2"	SCH 80	BW					
8	2"	SCH 80	BW					
9	2"	SCH 80	BW					
10	2"	SCH 80	BW					
11	2"	SCH 80	BW					
12	2"	SCH 80	BW					
13	2"	SCH 80	BW					
14	2"	SCH 80	BW					
15	2"	SCH 80	BW					
16	2"	SCH 80	BW					
17	2"	SCH 80	BW					
18	2"	SCH 80	BW					
19	2"	SCH 80	BW					
20	2"	SCH 80	BW					

TOTAL SHOP WEIGHT: 389.5
 TOTAL FIELD WEIGHT: 0.0
 TOTAL WEIGHT-THIS DWG: 389.5

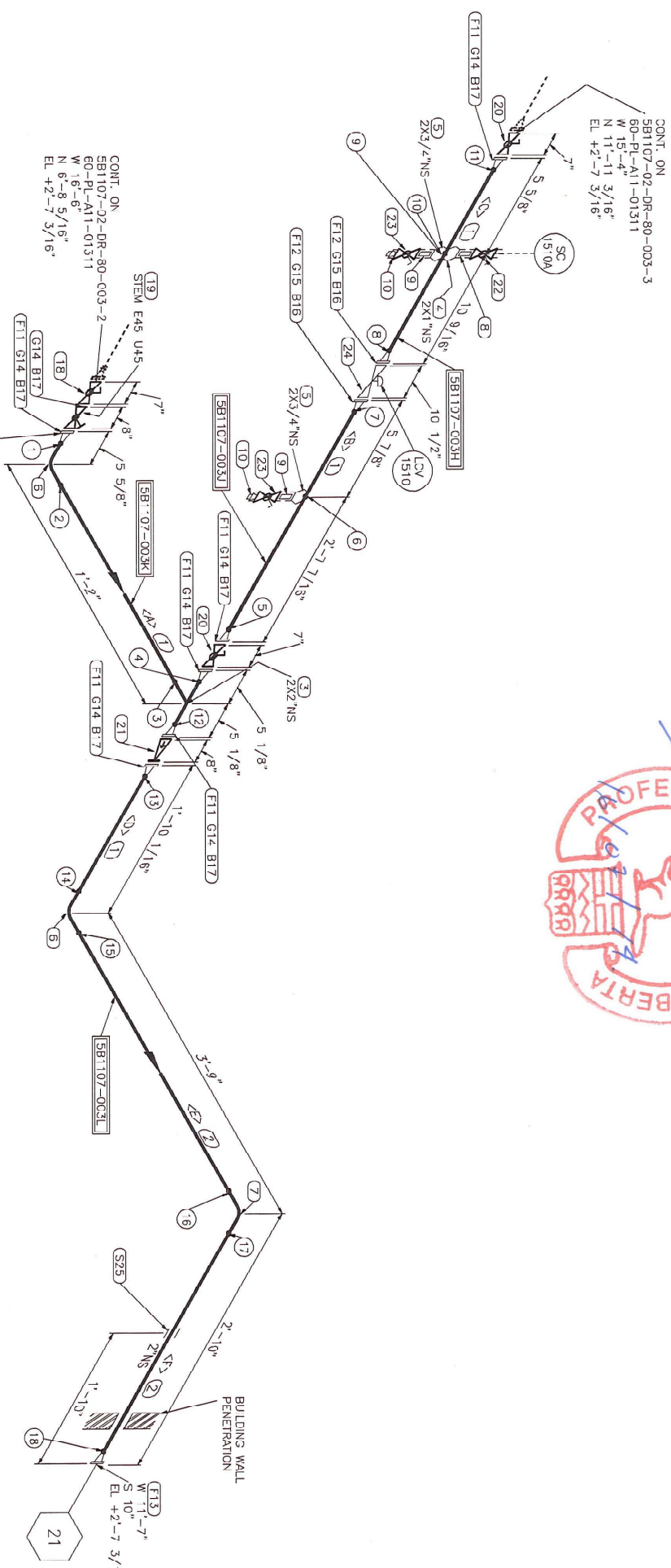
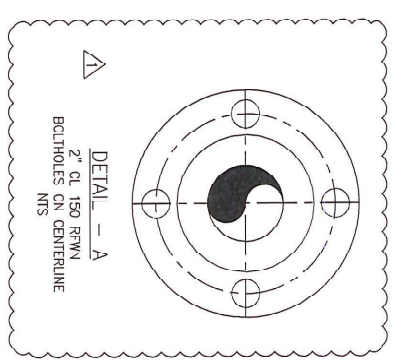
BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
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SHOP MATERIALS

1	PIPE	PIPE, SCH 80, ASTM A106B, SMLS, B36.10	5.5	28.1
2	FITTINGS	PIPE, SCH 80, ASTM A333 GR5, SMLS, B36.10	5.5	28.1
3	TEE	TEE, SCH 80, ASTM A234 WPE, B16.9	1	3.7
4	THREADED	THREADED, CL3500, ASTM A105N, MSS S2-97	1	0.7
5	90 DEG ELBOW	90 DEG ELBOW, SCH 80, ASTM A234 WPE, B16.9	2	0.7
6	90 DEG ELBOW	90 DEG ELBOW, SCH 80, ASTM A234 WPE, B16.9	2	2.9
7	NIPPLE	NIPPLE, SCH 160, ASTM A106B, SMLS, B36.10 TBE (4.0000 LG)	1	2.9
8	NIPPLE	NIPPLE, SCH 160, ASTM A106B, SMLS, B36.10 TBE (4.0000 LG)	2	3.9
9	SOLID ROUND HEAD PLUG	SOLID ROUND HEAD PLUG, THRD, ASTM A105N, B.6.11	2	0.8
10	FLANGES	FLANGE, CL150, SCH 80, RFWN, ASTM A105N, B16.5	6	36.0
11	FLANGES	FLANGE, CL300, SCH 80, RFWN, ASTM A105N, B16.5	2	18.0
12	FLANGES	FLANGE, CL150, SCH 80, RFWN, ASTM A350 L-2, CL1, B16.5	1	6.0
13	FLANGES	FLANGE, CL150, SCH 80, RFWN, ASTM A350 L-2, CL1, B16.5	1	6.0
14	GASKETS	GASKET, CL150, RF, 1/8" THK, 316 SS SPIRAL WOUND FLEX	7	7.0
15	GASKETS	GASKET, CL300, RF, 1/8" THK, 316 SS INNER RING, B16.20	2	2.0
16	FLANGES	FLANGE, CL300, SCH 80, RF, LEVER OP, (B82022)	2	1.9
17	FLANGES	FLANGE, CL300, SCH 80, RF, LEVER OP, (B82022)	2	1.9
18	VALVES / IN-LINE ITEMS	BALL VALVE, CL150, RF, LEVER OP, (B80106A1)	1	33.0
19	VALVES / IN-LINE ITEMS	GLOBE VALVE, CL150, RF, HW OP, (JAC106A1)	1	47.0
20	VALVES / IN-LINE ITEMS	BALL VALVE, CL150, RF, LEVER OP, (B80106A)	2	66.0
21	VALVES / IN-LINE ITEMS	CHECK VALVE, CL150, RF, (C10106A)	1	33.0
22	VALVES / IN-LINE ITEMS	BALL VALVE, CL800, THRD, LEVER OP, (B82022)	1	1.9
23	VALVES / IN-LINE ITEMS	BALL VALVE, CL800, THRD, LEVER OP, (B82022)	2	1.9
24	INSTRUMENTS	CONTROL VALVE, CL300, RF, TAG (LW-1510)	1	85.0
25	SUPPORTS	SUPPORT, CU-2" & SA-4" (W@13)	1	8.0
26	PIPE SPOOLS	PIPE SPOOLS, SBI107-003H, SBI107-003J, SBI107-003K, SBI107-003L	1	430.2

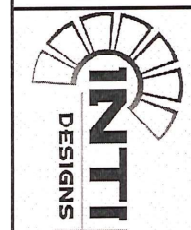
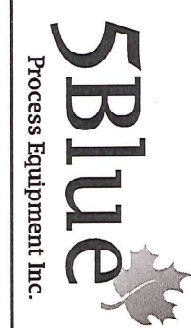
CUT PIPE LENGTH	PIECE NO	LENGTH (FT-IN)	N.S	REMARKS	END ONE	END TWO	ITEM CODE	TOTAL SHOP WEIGHT	TOTAL FIELD WEIGHT	TOTAL WEIGHT-THIS DWG
<A>	27	8 1/4"	2		BEVEL	BEVEL	53			
	27	7/8"	2		BEVEL	BEVEL	53			
<C>	10	11 1/16"	2		BEVEL	BEVEL	53			
<D>	14	5 1/16"	2		BEVEL	BEVEL	53			
<E>	32	3/4"	2		BEVEL	BEVEL	55			
<F>	24	1 1/4"	2		BEVEL	BEVEL	55			
								430.2	0.0	430.2



SHOP NOTE:
SHOP TO ONE HOLE FLANGE
(SEE DETAIL 'A')

- GENERAL NOTES:
- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL UNLESS OTHERWISE SPECIFIED.
 - 2) REFER TO SBI107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
 - 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
 - 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
 - 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORROSION GS-5210 PIPING CLASS SPECIFICATIONS.
 - 6) PIPING SPEC A13 IS TO SUPERSEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER SELLER RFI #4.
 - 7) HYDR TEST TO BE CHARTED FOR 1 HR.
 - 8) 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
 - 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
 - 10) JOINT NON-DESTRUCTIVE EXAMINATION: 10% RT, 5% RT(FI-UP) + 10% MT, FILLET WELDS 10% MT.

REV.	D/M/Y	DESCRIPTION	BY	CHK	APP	STRESS RELIEVE:	DESIGN PRES PSIG:	DESIGN TEMP °F:	INSULATION:	PAINT SYSTEM:	STD WELD PROC:	L.T. WELD PROC:	RATING/SPEC:	HYDROTEST PSIG:	RADIOGRAPHY:
1	24/09/2013	ADDED 'ONE HOLE' DETAIL & NOTE	RR	BB		NO	285	100	SSPC-SP6	SEE EXL	SB-102/103	CL150/A11	428	10%	
0	13/09/2013	ISSUED FOR CONSTRUCTION	RR	BB		NO	285	100	SSPC-SP6	SEE EXL	SB-102/103	CL150/A11	428	10%	

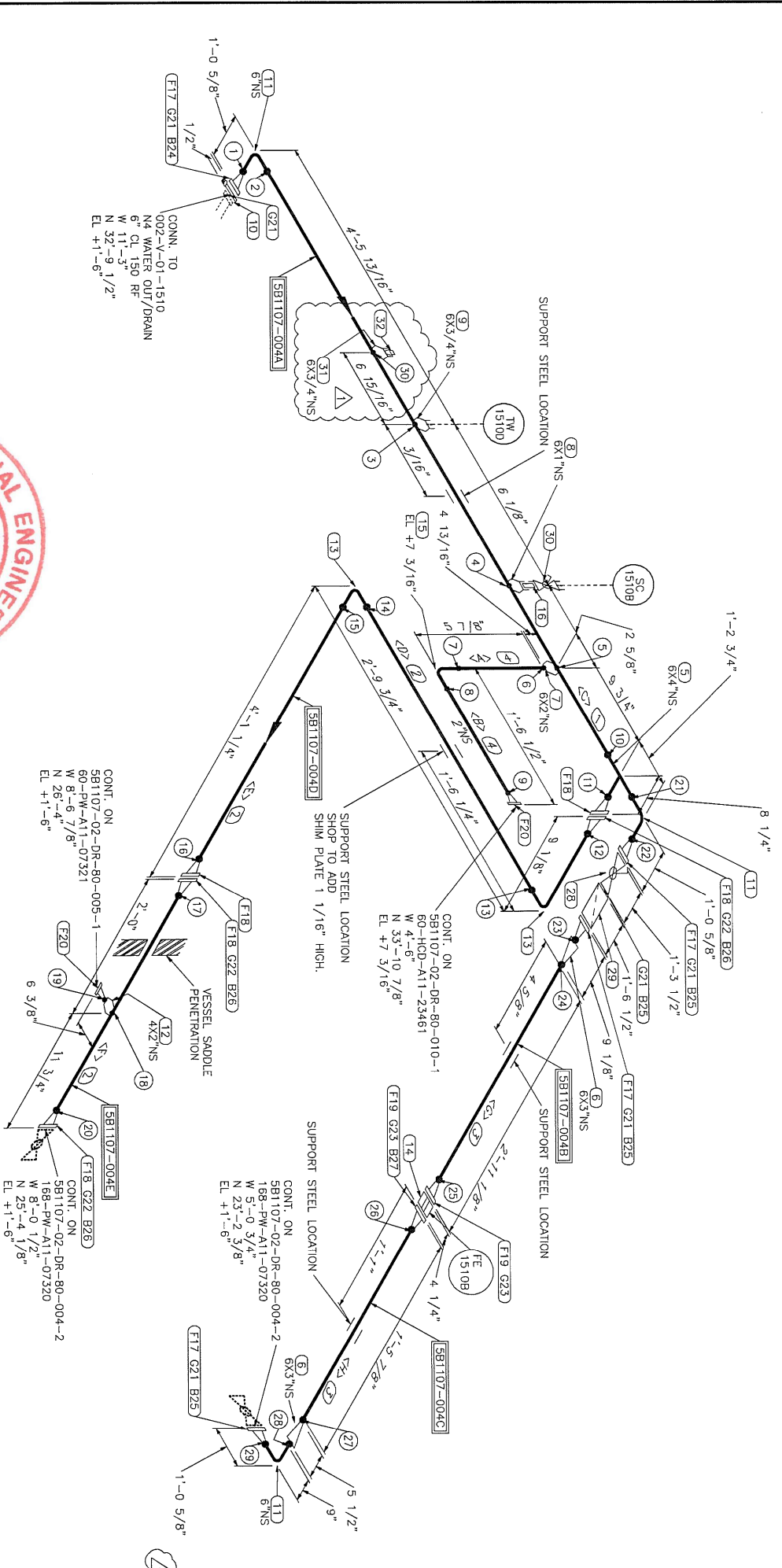


TITLE:	CLIENT DOCUMENT NUMBER:	ISOMETRIC NUMBER:	REV.
DEVON NEC CORPORATION, FERRER CENTRAL PROCESSING FACILITY CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP) PIPING ISOMETRIC	TBD	SBI107-02-DR-80-003-4	1

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BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
1	PIPE	PIPE SCH STD. ASTM A106B, SMLS, B36.10	48'	90.7
2	PIPE	PIPE SCH STD. ASTM A106B, SMLS, B36.10	7.6'	81.9
3	PIPE	PIPE SCH STD. ASTM A106B, SMLS, B36.10	4.0'	29.9
4	PIPE	PIPE SCH 80, ASTM A106B, SMLS, B36.10	1.3'	6.5
FITTINGS				
5	6X4	RED TEE, SCH STD, ASTM A234 WPB, B16.9	1	37.2
6	6X3	CON REDUCER, SCH STD, ASTM A234 WPB, B16.9	2	16.0
7	6X2	WELDOLET, SCH 80, ASTM A105N, MSS SP-97	1	1.9
8	6X1	THREADED, CL3000, ASTM A105N, MSS SP-97	1	0.7
9	6X3/4	THREADED, CL150, RF, ASTM A516 GR 70N, B16.48	1	12.0
10	6X3/4	THREADED, CL150, RF, ASTM A516 GR 70N, B16.48	1	12.0
11	4X2	WELDOLET, SCH STD, ASTM A234 WPB, B16.9	3	68.4
12	4X2	WELDOLET, SCH STD, ASTM A234 WPB, B16.9	1	1.8
13	4X2	90 DEG LR ELBOW, SCH STD, ASTM A234 WPB, B16.9	1	17.4
14	3	FLOW METER, CL150, RF, (FE-1510B)	1	1.0
15	2	90 DEG LR ELBOW, SCH 80, ASTM A234 WPB, B16.9	1	2.9
16	1	NHPL, SCH 160, ASTM A106B, SMLS, B36.10 (400000 LG)	1	2.9
FLANGES				
17	6	FLANGE, CL150, SCH STD, RFNN, ASTM A105N, B16.5	4	96.0
18	4	FLANGE, CL150, SCH STD, RFNN, ASTM A105N, B16.5	2	75.0
19	3	FLANGE, CL150, SCH STD, RFNN, ASTM A105N, B16.5	2	22.5
20	2	FLANGE, CL150, SCH 80, RFNN, ASTM A105N, B16.5	2	12.0
GASKETS				
21	6	GASKET, CL150, RF, 1/8" THK, 316 SS SPRAL WOUND, FLEX	6	6.0
22	4	FILLER COI, CS CENTERING RING, 316 SS INNER RING, B16.20	3	3.0
23	3	GASKET, CL150, RF, 1/8" THK, 316 SS SPRAL WOUND, FLEX	2	2.0
BOLTS				
24	3/4X4 3/4	(8) STUBBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	1	1.0
25	3/4X4	(8) STUBBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	4	4.0
26	5/8X3 3/4	(8) STUBBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	3	3.0
27	5/8X8 1/4	(4) STUBBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	1	1.0
VALVES / IN-LINE ITEMS				
28	6	BALL VALVE, CL150, RF, LEVER OP, (BW0105A)	1	176.0
29	6	4-STRAINER, CL150, RF, (SP0250Z)	1	149.4
30	1	BALL VALVE, CL800, HRD, LEVER OP, (BA8202A)	1	14.4
31	6X3/4	THREADED, CL3000, ASTM A105N, MSS SP-97	1	0.4
32	3/4	SOLID ROUND HEAD PLUG, THRD, ASTM A105N, B16.11	1	0.4
PIPE SPOOLS				
581107-0044 581107-0048 581107-004C 581107-004D 581107-004E				
TOTAL SHOP WEIGHT 914.0				
TOTAL FIELD WEIGHT 0.0				
TOTAL WEIGHT-THIS DWG 914.0				



GENERAL NOTES:

- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL UNLESS OTHERWISE SPECIFIED.
- 2) REFER TO 581107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
- 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
- 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
- 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION GS-5210
- 6) PIPING CLASS SPECIFICATIONS.
- 7) CONNECTIONS AS PER SCALE PRT #.
- 8) HYDRO TEST TO BE CHARGED FOR PRT #.
- 9) 1/8" WELD BEVEL HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
- 10) ADJUST NON-DESTRUCTIVE EXAMINATION.
- 11) ALL JOINT: 20% VISUAL, BW: 10% RT, SW: 5% RT(FI-UP) + 10% MT. FILLET WELDS: 10% MT.

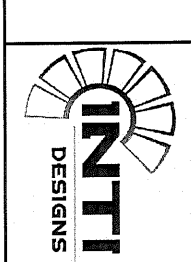
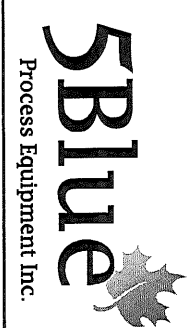
LEGEND:

○	: WELD NO.
○	: MARK NO.
○	: FIELD FT WELD
○	: FIELD WELD
○	: SPOOL NUMBER
○	: PIPE SUPPORT

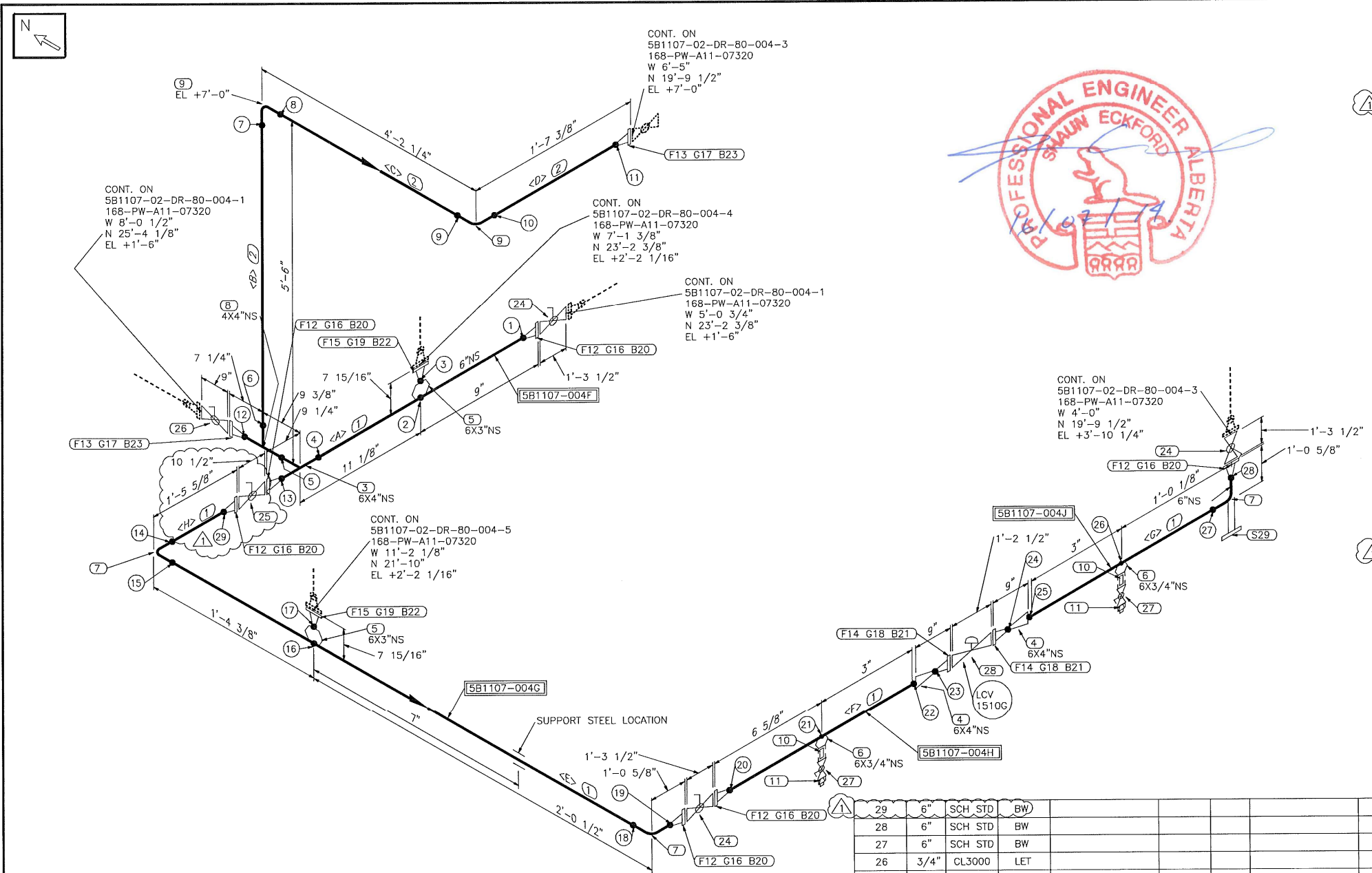
WELD NO.	SIZE	NOM. THK	WELD TYPE	DESCRIPTION	WELDER ID	DATE	NDE REPORT No.	V.T.
29	3/4"	CL3000	LET					
28	6"	SCH STD	BW					
27	3"	SCH STD	BW					
26	3"	SCH STD	BW					
25	3"	SCH STD	BW					
24	3"	SCH STD	BW					
23	6"	SCH STD	BW					
22	6"	SCH STD	BW					
21	6"	SCH STD	BW					
20	4"	SCH STD	BW					
19	2"	SCH 80	BW					
18	2"	SCH 80	LET					
17	4"	SCH STD	BW					
16	4"	SCH STD	BW					
15	4"	SCH STD	BW					
14	4"	SCH STD	BW					
13	4"	SCH STD	BW					

WELD NO.	SIZE	NOM. THK	WELD TYPE	DESCRIPTION	WELDER ID	DATE	NDE REPORT No.	V.T.
30	3/4"	CL3000	LET					
29	6"	SCH STD	BW					
28	6"	SCH STD	BW					
27	3"	SCH STD	BW					
26	3"	SCH STD	BW					
25	3"	SCH STD	BW					
24	3"	SCH STD	BW					
23	6"	SCH STD	BW					
22	6"	SCH STD	BW					
21	6"	SCH STD	BW					
20	4"	SCH STD	BW					
19	2"	SCH 80	BW					
18	2"	SCH 80	BW					
17	4"	SCH STD	BW					
16	4"	SCH STD	BW					
15	4"	SCH STD	BW					
14	4"	SCH STD	BW					
13	4"	SCH STD	BW					

REV.	D/M/Y	DESCRIPTION	BY	CHK	APP	STRESS RELIEVE:	NO	DESIGN PRES PSIG:	285	PAINT SYSTEM:	SEE E&I	WELDER ID	DATE	NDE REPORT No.	V.T.	CLIENT DOCUMENT NUMBER	ISOMETRIC NUMBER	REV.
1	25/11/2013	ADDED O-LET AND PLUG	RR	BB				428	100	SSFC-SF6						581107-02-DR-80-004-1		1
0	18/09/2013	ISSUED FOR CONSTRUCTION	RR	BB				285	100	SSFC-SF6						581107-02-DR-80-004-1		1



TITLE: DEVON NEC CORPORATION, FERRER CENTRAL PROCESSING FACILITY CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP) PIPING ISOMETRIC LINE NO. 168-PW-A11-07320



- GENERAL NOTES:**
- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL UNLESS OTHERWISE SPECIFIED.
 - 2) REFER TO 5B1107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
 - 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
 - 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
 - 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION GS-5210 PIPING CLASS SPECIFICATIONS.
 - 6) PIPING SPEC A13 IS TO SUPERCEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER 5BLUE RFI #4.
 - 7) HYDRO TEST TO BE CHARGED FOR 1 HR.
 - 8) 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
 - 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
 - 10) JOINT NON-DESTRUCTIVE EXAMINATION:
ALL JOINT: 20% VISUAL, BW: 10% RT, SW: 5% RT(FIT-UP) + 10% MT, FILLET WELDS: 10% MT.

REV.	D/M/Y	DESCRIPTION	BY	CHK	APP
1	25/11/2013	CHANGED BALL VALVE LENGTH & ADDED PIPE	RR	BB	
0	18/09/2013	ISSUED FOR CONSTRUCTION	RR	BB	

WELD NO.	SIZE	NOM. THK	WELD TYPE	DESCRIPTION	WELDER ID	DATE	NDE REPORT No.	V.T.
29	6"	SCH STD	BW					
28	6"	SCH STD	BW					
27	6"	SCH STD	BW					
26	3/4"	CL3000	LET					
25	6"	SCH STD	BW					
24	4"	SCH STD	BW					
23	4"	SCH STD	BW					
22	6"	SCH STD	BW					
21	3/4"	CL3000	LET					
20	6"	SCH STD	BW					
19	6"	SCH STD	BW					
18	6"	SCH STD	BW					
17	3"	SCH STD	BW					
16	3"	SCH STD	LET					
15	6"	SCH STD	BW					
14	6"	SCH STD	BW					
13	6"	SCH STD	BW					

STD WELD PROC:	PAINT SYSTEM:
5B-102/103	SEE E&I
L.T. WELD PROC:	INSULATION:
5B-102/103	NA
RATING/SPEC:	SANDBLAST:
CL150/A11	SSPC-SP6
HYDROTEST PSIG:	DESIGN TEMP °F:
428	100
RADIOGRAPHY:	DESIGN PRES PSIG:
10%	285
STRESS RELIEVE:	NO

BILL OF MATERIAL																																																																																																																														
MARK	SIZE (INCH)	DESCRIPTION		QTY	WEIGHT (LBS)																																																																																																																									
SHOP MATERIALS																																																																																																																														
PIPE																																																																																																																														
1	6	PIPE, SCH STD, ASTM A106B, SMLS, B36.10		4.2'	79.5																																																																																																																									
2	4	PIPE, SCH STD, ASTM A106B, SMLS, B36.10		8.7	93.3																																																																																																																									
FITTINGS																																																																																																																														
3	6X4	RED TEE, SCH STD, ASTM A234 WPB, B16.9		1	37.2																																																																																																																									
4	6X4	CON REDUCER, SCH STD, ASTM A234 WPB, B16.9		2	16.2																																																																																																																									
5	6X3	WELDOLET, SCH STD, ASTM A105N, MSS SP-97		2	8.0																																																																																																																									
6	6X3/4	THREADOLET, CL3000, ASTM A105N, MSS SP-97		2	0.7																																																																																																																									
7	6	90 DEG LR ELBOW, SCH STD, ASTM A234 WPB, B16.9		3	68.4																																																																																																																									
8	4X4	TEE, SCH STD, ASTM A234 WPB, B16.9		1	13.5																																																																																																																									
9	4	90 DEG LR ELBOW, SCH STD, ASTM A234 WPB, B16.9		2	17.4																																																																																																																									
10	3/4	NIPPLE, SCH 160, ASTM A106B, SMLS, B36.10 TBE (4.0000 LG)		2	3.9																																																																																																																									
11	3/4	SOLID ROUND HEAD PLUG, THRD, ASTM A105N, B16.11		2	0.8																																																																																																																									
FLANGES																																																																																																																														
12	6	FLANGE, CL150, SCH STD, RFWN, ASTM A105N, B16.5		6	144.0																																																																																																																									
13	4	FLANGE, CL150, SCH STD, RFWN, ASTM A105N, B16.5		2	30.0																																																																																																																									
14	4	FLANGE, CL300, SCH STD, RFWN, ASTM A105N, B16.5		2	50.0																																																																																																																									
15	3	FLANGE, CL150, SCH STD, RFWN, ASTM A105N, B16.5		2	22.5																																																																																																																									
GASKETS																																																																																																																														
16	6	GASKET, CL150, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20		6	6.0																																																																																																																									
17	4	GASKET, CL150, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20		2	2.0																																																																																																																									
18	4	GASKET, CL300, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20		2	2.0																																																																																																																									
19	3	GASKET, CL150, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20		2	2.0																																																																																																																									
BOLTS																																																																																																																														
20	3/4X4	(8) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5		6	6.0																																																																																																																									
21	3/4X4 1/2	(8) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5 (CL 300)		2	2.0																																																																																																																									
22	5/8X3 3/4	(4) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5		2	2.0																																																																																																																									
23	5/8X3 3/4	(8) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5		2	2.0																																																																																																																									
VALVES / IN-LINE ITEMS																																																																																																																														
24	6	BALL VALVE, CL150, RF, LEVER OP, (BVD106A)		3	528.0																																																																																																																									
25	6	BALL VALVE, CL150, RF, LEVER OP, (BA0106A1)		1	176.0																																																																																																																									
26	4	BALL VALVE, CL150, RF, LEVER OP, (BA0106A1)		2	113.0																																																																																																																									
27	3/4	BALL VALVE, CL800, THRD, LEVER OP, (BA8202A)		2	1.6																																																																																																																									
INSTRUMENTS																																																																																																																														
28	4	CONTROL VALVE, CL300, RF TAG: (LCV-1510G)		1	260.0																																																																																																																									
SUPPORTS																																																																																																																														
29	6	L11-2-6" (L= 1'-6")		1	45.5																																																																																																																									
PIPE SPOOLS																																																																																																																														
5B1107-004F 5B1107-004G 5B1107-004H 5B1107-004J																																																																																																																														
CUT PIPE LENGTH																																																																																																																														
PIECE NO	LENGTH (FT-INS)	N.S. (INS)	REMARKS	END ONE	END TWO	ITEM CODE																																																																																																																								
<A>	10 3/4"	6		BEVEL	BEVEL	19																																																																																																																								
	4 7/8"	4		BEVEL	BEVEL	19																																																																																																																								
<C>	3 2"	4		BEVEL	BEVEL	19																																																																																																																								
<D>	10 1/8"	4		BEVEL	BEVEL	19																																																																																																																								
<E>	1 10 5/8"	6		BEVEL	BEVEL	19																																																																																																																								
<F>	6"	6		BEVEL	BEVEL	19																																																																																																																								
<G>	6"	6		BEVEL	BEVEL	19																																																																																																																								
<H>	4 7/8"	6		BEVEL	BEVEL	19																																																																																																																								
						TOTAL SHOP WEIGHT	1732.3																																																																																																																							
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						TOTAL WEIGHT-THIS DWG	1732.3																																																																																																																							
<table border="1" style="width: 100%;"> <thead> <tr> <th>WELD NO.</th> <th>SIZE</th> <th>NOM. THK</th> <th>WELD TYPE</th> <th>DESCRIPTION</th> <th>WELDER ID</th> <th>DATE</th> <th>NDE REPORT No.</th> <th>V.T.</th> </tr> </thead> <tbody> <tr><td>12</td><td>4"</td><td>SCH STD</td><td>BW</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>11</td><td>4"</td><td>SCH STD</td><td>BW</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>10</td><td>4"</td><td>SCH STD</td><td>BW</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>9</td><td>4"</td><td>SCH STD</td><td>BW</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>8</td><td>4"</td><td>SCH STD</td><td>BW</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>7</td><td>4"</td><td>SCH STD</td><td>BW</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>6</td><td>4"</td><td>SCH STD</td><td>BW</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>5</td><td>4"</td><td>SCH STD</td><td>BW</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>4</td><td>6"</td><td>SCH STD</td><td>BW</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>3</td><td>3"</td><td>SCH STD</td><td>BW</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>2</td><td>3"</td><td>SCH STD</td><td>LET</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>1</td><td>6"</td><td>SCH STD</td><td>BW</td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table>										WELD NO.	SIZE	NOM. THK	WELD TYPE	DESCRIPTION	WELDER ID	DATE	NDE REPORT No.	V.T.	12	4"	SCH STD	BW						11	4"	SCH STD	BW						10	4"	SCH STD	BW						9	4"	SCH STD	BW						8	4"	SCH STD	BW						7	4"	SCH STD	BW						6	4"	SCH STD	BW						5	4"	SCH STD	BW						4	6"	SCH STD	BW						3	3"	SCH STD	BW						2	3"	SCH STD	LET						1	6"	SCH STD	BW					
WELD NO.	SIZE	NOM. THK	WELD TYPE	DESCRIPTION	WELDER ID	DATE	NDE REPORT No.	V.T.																																																																																																																						
12	4"	SCH STD	BW																																																																																																																											
11	4"	SCH STD	BW																																																																																																																											
10	4"	SCH STD	BW																																																																																																																											
9	4"	SCH STD	BW																																																																																																																											
8	4"	SCH STD	BW																																																																																																																											
7	4"	SCH STD	BW																																																																																																																											
6	4"	SCH STD	BW																																																																																																																											
5	4"	SCH STD	BW																																																																																																																											
4	6"	SCH STD	BW																																																																																																																											
3	3"	SCH STD	BW																																																																																																																											
2	3"	SCH STD	LET																																																																																																																											
1	6"	SCH STD	BW																																																																																																																											
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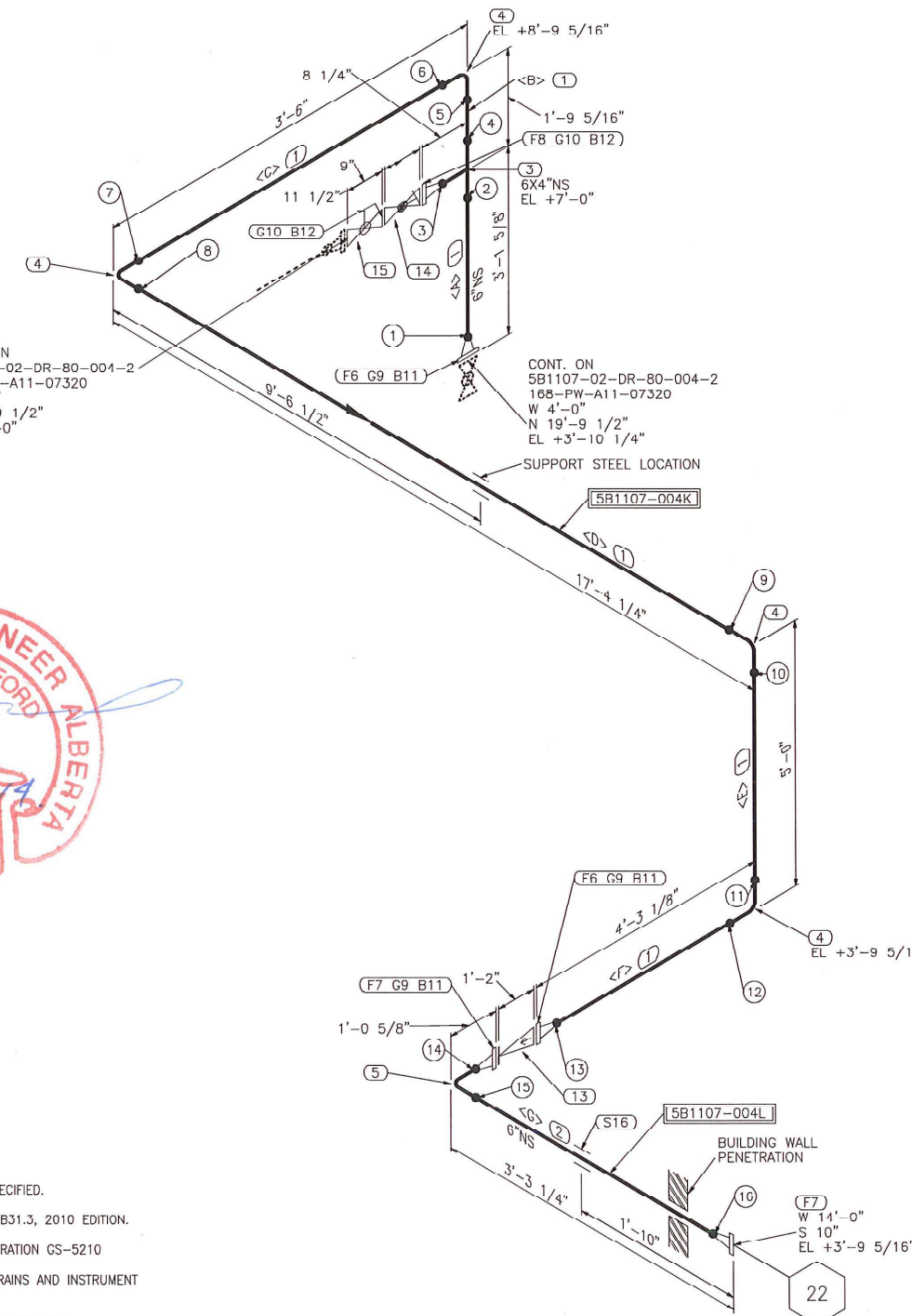
BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
PIPE				
1	6	PIPE, SCH STD, ASTM A106B, SMLS, B36.10	27.4'	519.4
2	6	PIPE, SCH STD, ASTM A333 GRG, SMLS, B36.10	2.3'	41.9
FITTINGS				
3	6X4	RED TEE, SCH STD, ASTM A234 WPB, B16.9	1	37.2
4	6	90 DEG LR ELBOW, SCH STD, ASTM A234 WPB, B16.9	4	91.2
5	6	90 DEG LR ELBOW, SCH STD, ASTM A420 WPL6, B16.9	1	22.8
FLANGES				
6	6	FLANGE, CL150, SCH STD, RFWN, ASTM A105N, B16.5	2	48.0
7	6	FLANGE, CL150, SCH STD, RFWN, ASTM A350 LF2 CL1, B16.5	2	48.0
8	4	FLANGE, CL150, SCH STD, RFWN, ASTM A105N, B16.5	1	15.0
GASKETS				
9	6	GASKET, CL150, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	3	3.0
10	4	GASKET, CL150, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	2	2.0
BOLTS				
11	3/4X4	(8) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	3	3.0
12	5/8X3 3/4	(8) STUDBOLT c/w 2 HEX NUTS, ASTM A193 CR B7, A194 CR 2H, B16.5	2	2.0
VALVES / IN-LINE ITEMS				
13	6	CHECK VALVE, CL150, RF, (C10106A)	1	200.0
14	4	GLOBE VALVE, CL150, RF, HW OP, (LA0106A1)	1	143.0
15	4	BALL VALVE, CL150, RF, LEVER OP, (BA0106A1)	1	113.0
SUPPORTS				
16	6	GU-6" & SA-5 (W6@15)	1	17.0
PIPE SPOOLS				
5B1107-004K 5B1107-004L				

PIECE NO	LENGTH (FT-INS)	N.S. (INS)	REMARKS	END ONE	END TWO	ITEM CODE
<A>	2'-4 1/4"	6		BEVEL	BEVEL	19
	6'-7 7/16"	6		BEVEL	BEVEL	19
<C>	1'-11 3/4"	6		BEVEL	BEVEL	19
<D>	15'-10"	6		RFVEL	RFVEL	19
<E>	3'-5 3/4"	6		BEVEL	BEVEL	19
<F>	3'-2 3/8"	6		DEVEL	DEVEL	19
<G>	2'-2 1/2"	6		BEVEL	BEVEL	64

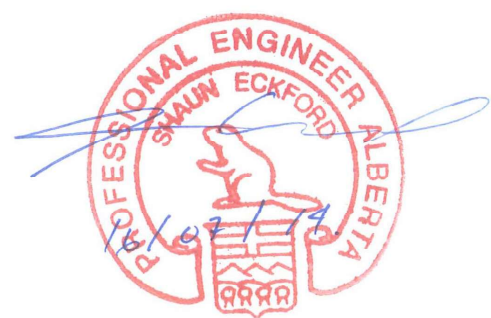
TOTAL SHOP WEIGHT 1306.5
TOTAL FIELD WEIGHT 0.0
TOTAL WEIGHT-THIS DWG 1306.5

WELD NO.	SIZE	NOM. THK	WELD TYPE	DESCRIPTION	WELDER ID	DATE	NDE REPORT No.	V.T.
16	6"	SCH STD	BW					
15	6"	SCH STD	BW					
14	6"	SCH STD	BW					
13	6"	SCH STD	BW					
12	6"	SCH STD	BW					
11	6"	SCH STD	BW					
10	6"	SCH STD	BW					
9	6"	SCH STD	BW					
8	6"	SCH STD	BW					
7	6"	SCH STD	BW					
6	6"	SCH STD	BW					
5	6"	SCH STD	BW					
4	6"	SCH STD	BW					
3	4"	SCH STD	BW					
2	6"	SCH STD	BW					
1	6"	SCH STD	BW					



CONT. ON
5B1107-02-DR-80-004-2
168-PW-A11-07320
W 6'-5"
N 19'-9 1/2"
EL +7'-0"

CONT. ON
5B1107-02-DR-80-004-2
168-PW-A11-07320
W 4'-0"
N 19'-9 1/2"
EL +3'-10 1/4"



GENERAL NOTES:

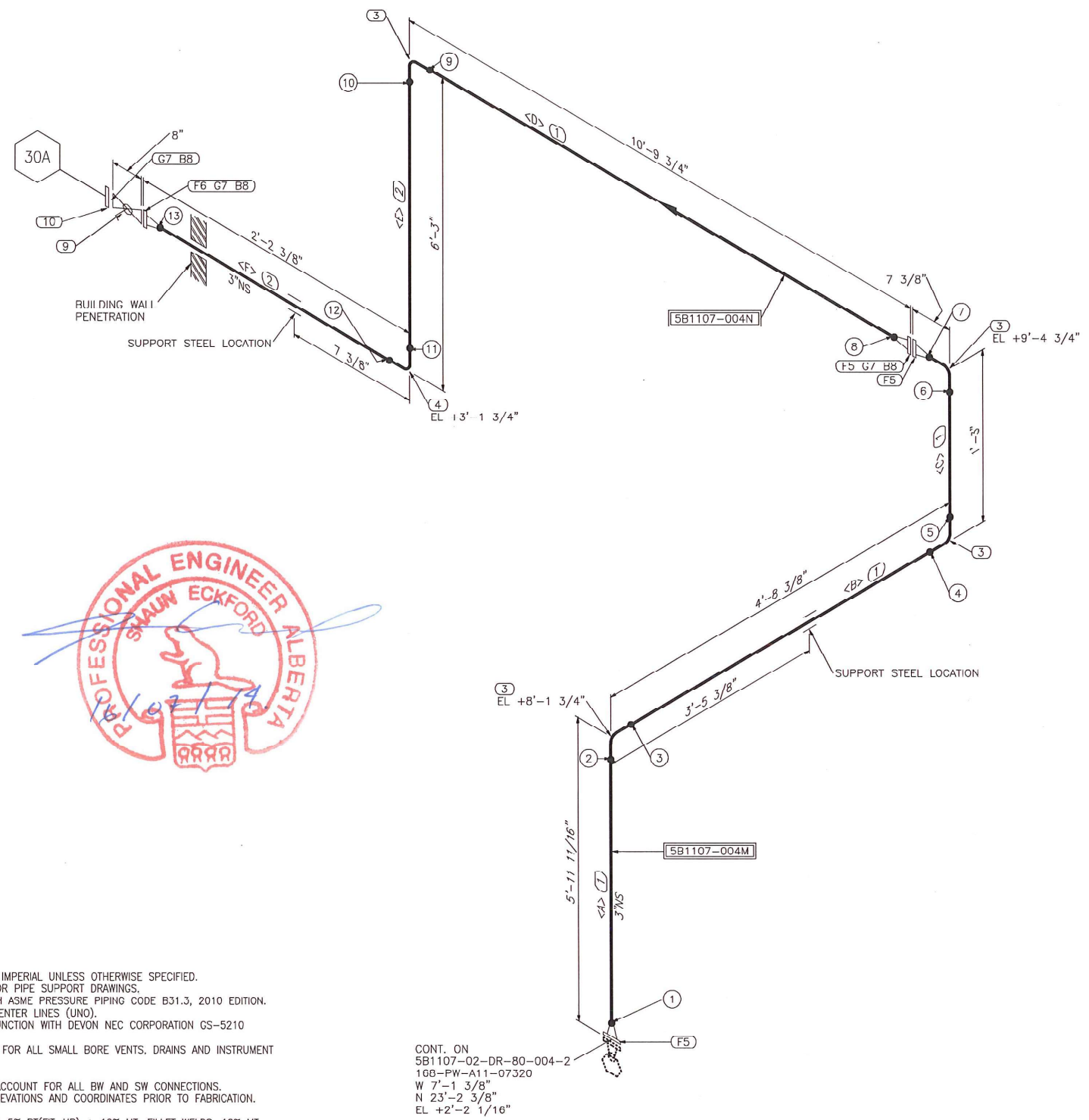
- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL UNLESS OTHERWISE SPECIFIED.
- 2) REFER TO 5B1107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
- 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
- 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
- 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION GS-5210 PIPING CLASS SPECIFICATIONS.
- 6) PIPING SPEC A13 IS TO SUPERCEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER 5BLUE RFI #4.
- 7) HYDRO TEST TO BE CHARTED FOR 1 HR.
- 8) 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
- 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
- 10) JOINT NON-DESTRUCTIVE EXAMINATION:
ALL JOINT: 20% VISUAL, BW: 10% RT, SW: 5% RT(FIT-UP) + 10% MT, FILLET WELDS: 10% MT.

LEGEND:		STD WELD PROC:	PAINT SYSTEM:
○	: WELD NO.	5B-102/103	SEE E&I
○	: MARK NO.	L.T. WELD PROC: 5B-102/103	INSULATION: NA
○	: FIELD FIT WELD	RATING/SPEC: CL150/A11	SANDBLAST: SSPC-SP6
○	: FIELD WELD	HYDROTEST PSIG: 428	DESIGN TEMP °F: 100
○	: SPOOL NUMBER	RADIOGRAPHY: 10%	DESIGN PRES PSIG: 285
○	: PIPE SUPPORT	STRESS RELIEVE: NO	

TITLE: DEVON NEC CORPORATION.
FERRIER CENTRAL PROCESSING FACILITY
CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP)
PIPING ISOMETRIC
LINE NO. 168-PW-A11-07320

CLIENT DOCUMENT NUMBER	ISOMETRIC NUMBER	REV.
TBD	5B1107-02-DR-80-004-3	0

REV.	D/M/Y	DESCRIPTION	BY	CHK	APP
0	18/09/2013	ISSUED FOR CONSTRUCTION	RR	BB	



GENERAL NOTES:

- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL UNLESS OTHERWISE SPECIFIED.
- 2) REFER TO 5B1107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
- 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
- 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
- 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION GS-5210 PIPING CLASS SPECIFICATIONS.
- 6) PIPING SPEC A13 IS TO SUPERCEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER 5BLUE RFI #4.
- 7) HYDRO TEST TO BE CHARTED FOR 1 HR.
- 8) 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
- 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
- 10) JOINT NON-DESTRUCTIVE EXAMINATION:
ALL JOINT: 20% VISUAL, BW: 10% RT, SW: 5% RT(FIT-UP) + 10% MT, FILLET WELDS: 10% MT.

CONT. ON
5B1107-02-DR-80-004-2
100-PW-A11-07320
W 7'-1 3/8"
N 23'-2 3/8"
EL +2'-2 1/16"

BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
PIPE				
1	3	PIPE, SCH STD, ASTM A106B, SMLS, B36.10	20.0'	151.2
2	3	PIPE, SCH STD, ASTM A333 GR6, SMLS, B36.10	7.1'	53.5
FITTINGS				
3	3	90 DEG LR ELBOW, SCH STD, ASTM A234 WPB, B16.9	4	18.8
4	3	90 DEG LR ELBOW, SCH STD, ASTM A420 WPL6, B16.9	1	4.7
FLANGES				
5	3	FLANGE, CL150, SCH STD, RFWN, ASTM A105N, B16.5	3	33.8
6	3	FLANGE, CL150, SCH STD, RFWN, ASTM A350 LF2 CL1, B16.5	1	11.3
GASKETS				
7	3	GASKET, CL150, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	3	3.0
BOLTS				
8	5/8X3 3/4	(4) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	3	3.0
VALVES / IN-LINE ITEMS				
9	3	BALL VALVE, CL150, RF, LEVER OP, (BA0106A1)	1	64.0
10	3	BLIND FLANGE, CL150, RF, ASTM A350 LF2 CL1, B16.5	1	9.0
PIPE SPOOLS				
5B1107-004M 5B1107-004N				

CUT PIPE LENGTH

PIECE NO	LENGTH (FT-INS)	N.S. (INS)	REMARKS	END ONE	END TWO	ITEM CODE
<A>	5'4 3/16"	3		BEVEL	BEVEL	19
	3'11 1/8"	3		BEVEL	BEVEL	19
<C>	5 3/4"	3		BEVEL	BEVEL	19
<D>	10'2 1/4"	3		BEVEL	BEVEL	19
<E>	5'5 3/4"	3		BEVEL	BEVEL	64
<F>	1'6 7/8"	3		BEVEL	BEVEL	64

TOTAL SHOP WEIGHT 352.1
TOTAL FIELD WEIGHT 0.0
TOTAL WEIGHT-THIS DWG 352.1

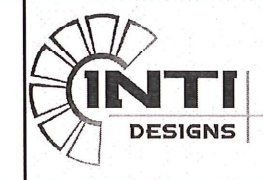
MARK	SIZE	NOM. THK	WELD TYPE	DESCRIPTION	WELDER ID	DATE	NDE REPORT No.	V.T.
13	3"	SCH STD	BW					
12	3"	SCH STD	BW					
11	3"	SCH STD	BW					
10	3"	SCH STD	BW					
9	3"	SCH STD	BW					
8	3"	SCH STD	BW					
7	3"	SCH STD	BW					
6	3"	SCH STD	BW					
5	3"	SCH STD	BW					
4	3"	SCH STD	BW					
3	3"	SCH STD	BW					
2	3"	SCH STD	BW					
1	3"	SCH STD	RW					

REV.	D/M/Y	DESCRIPTION	BY	CHK	APP
0	18/09/2013	ISSUED FOR CONSTRUCTION	RR	BB	

LEGEND:

- : WELD NO.
- : MARK NO.
- FFW : FIELD FIT WELD
- ⊗ : FIELD WELD
- 4 : SPOOL NUMBER
- : PIPE SUPPORT

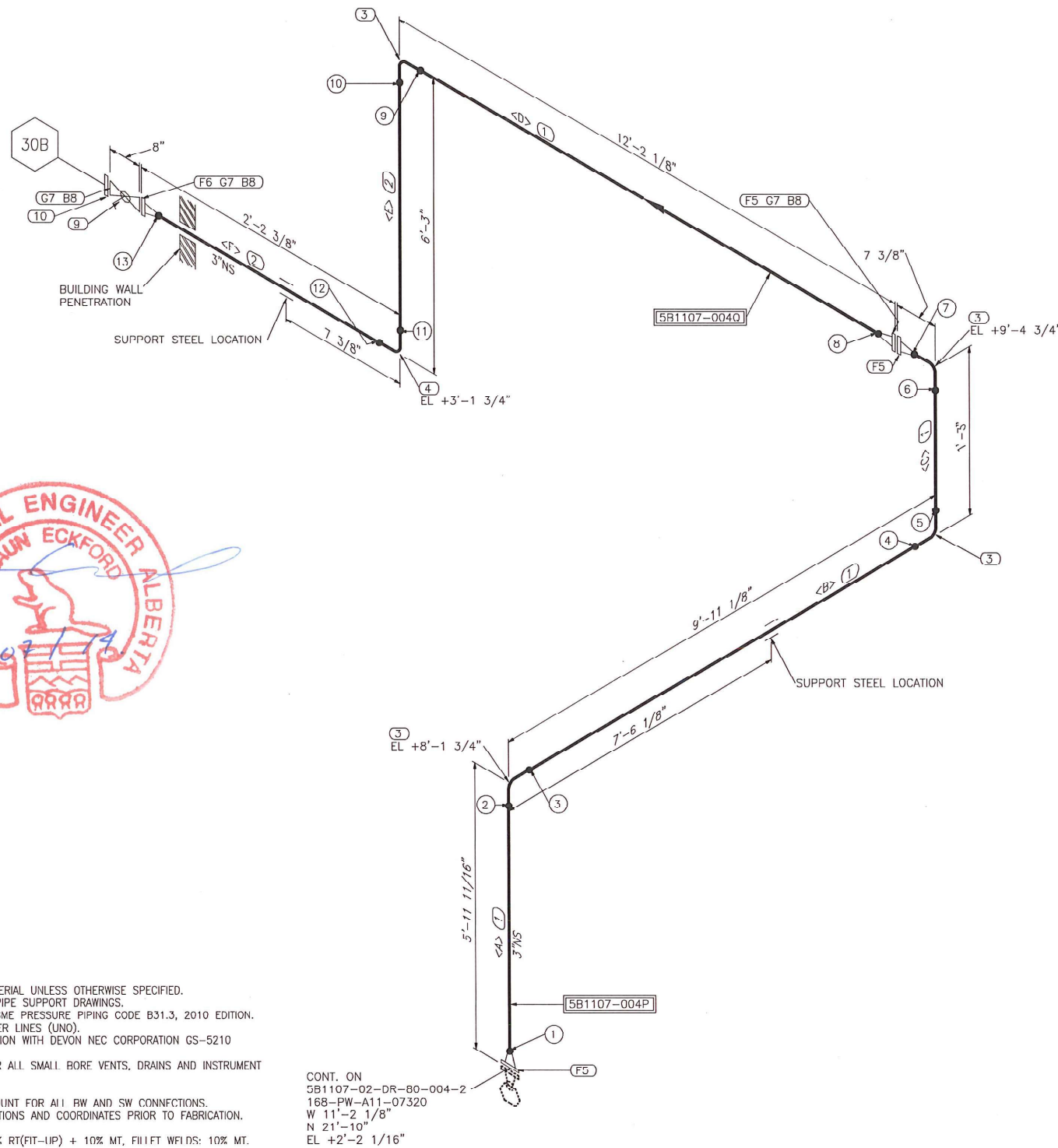
STD WELD PROC:	5B-102/103	PAIN SYSTEM:	SEE E&I
L.T. WELD PROC:	5B-102/103	INSULATION:	NA
RATING/SPEC:	CL150/A11	SANDBLAST:	SSPC-SP6
HYDROTEST PSIG:	428	DESIGN TEMP °F:	100
RADIOGRAPHY:	10%	DESIGN PRES PSIG:	285
STRESS RELIEVE:	NO		



TITLE: DEVON NEC CORPORATION, FERRIER CENTRAL PROCESSING FACILITY, CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP) PIPING ISOMETRIC

LINE NO. 168-PW-A11-07320

CLIENT DOCUMENT NUMBER	ISOMETRIC NUMBER	REV.
TBD	5B1107-02-DR-80-004-4	0



GENERAL NOTES:

- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL UNLESS OTHERWISE SPECIFIED.
- 2) REFER TO SB1107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
- 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
- 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
- 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION GS-5210 PIPING CLASS SPECIFICATIONS.
- 6) PIPING SPEC A13 IS TO SUPERCEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER 5BLUE RFI #4.
- 7) HYDRO TEST TO BE CHARTED FOR 1 HR.
- 8) 1/8" WFLD GAP HAS RFFN TAKFN INTO ACCOUNT FOR ALL RW AND SW CONNECTIONS.
- 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
- 10) JOINT NON-DESTRUCTIVE EXAMINATION:
ALL JOINT: 20% VISUAL, RW: 10% RT, SW: 5% RT(FIT-UP) + 10% MT, FILL FT WFLDS: 10% MT.

CONT. ON
 SB1107-02-DR-80-004-2
 168-PW-A11-07320
 W 11'-2 1/8"
 N 21'-10"
 EL +2'-2 1/16"

BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
PIPE				
1	3	PIPE, SCH STD, ASTM A106B, SMLS, B36.10	26.6'	201.2
2	3	PIPE, SCH STD, ASTM A333 GR6, SMLS, D36.10	7.1'	53.5
FITTINGS				
3	3	90 DEG LR ELBOW, SCH STD, ASTM A234 WPB, B16.9	4	18.8
4	3	90 DEG LR ELBOW, SCH STD, ASTM A420 WPL6, B16.9	1	4.7
FLANGES				
5	3	FLANGE, CL150, SCH STD, RFWN, ASTM A105N, B16.5	3	33.8
6	3	FLANGE, CL150, SCH STD, RFWN, ASTM A350 LF2 CL1, B16.5	1	11.3
GASKETS				
7	3	GASKET, CL150, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	3	3.0
BOLTS				
8	5/8X3 3/4	(4) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	3	3.0
VALVES / IN-LINE ITEMS				
9	3	DALL VALVE, CL150, RF, LEVER OP, (DA0106A1)	1	64.0
10	3	BLIND FLANGE, CL150, RF, ASTM A350 LF2 CL1, B16.5	1	9.0
PIPE SPOOLS				
5B1107-004P 5B1107-004Q				

PIECE NO	LENGTH (FT-INS)	N.S. (INS)	REMARKS	END ONE	END TWO	ITEM CODE
<A>	5'4 3/16"	3		BEVEL	BEVEL	19
	9'1 7/8"	3		BEVEL	BEVEL	19
<C>	5 3/4"	3		RFVFI	RFVFI	19
<D>	11'6 5/8"	3		BEVEL	BEVEL	19
<E>	5'5 3/4"	3		DCVEL	DCVEL	64
<F>	1'6 7/8"	3		BEVEL	BEVEL	64

TOTAL SHOP WEIGHT 402.1
 TOTAL FIELD WEIGHT 0.0
 TOTAL WEIGHT-THIS DWG 402.1

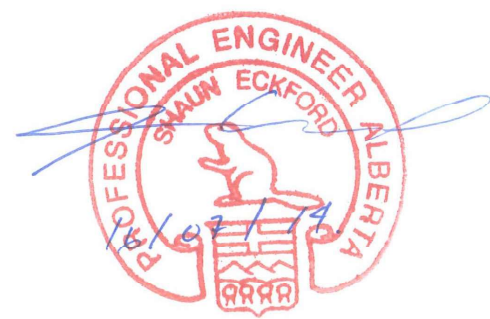
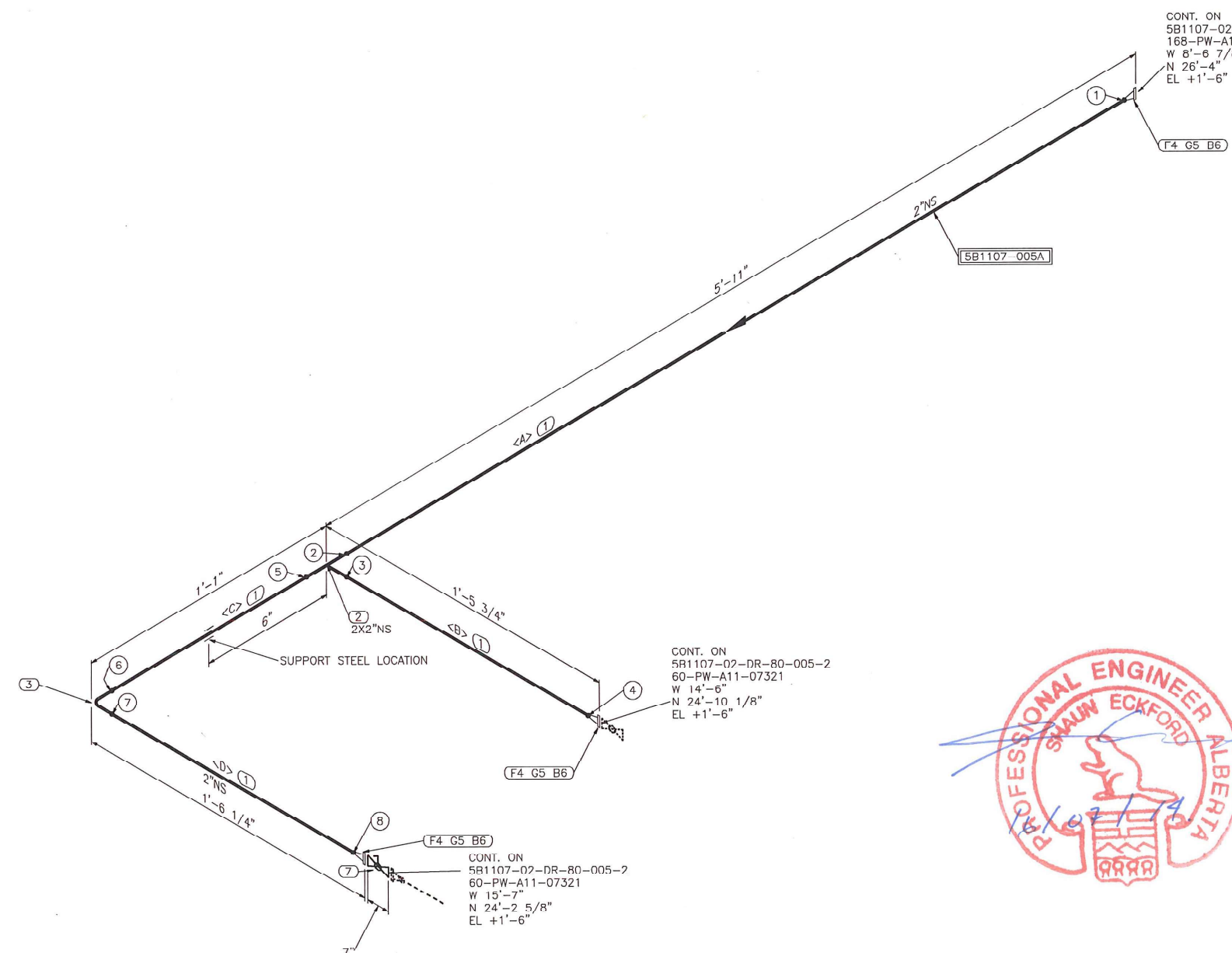
WELD NO.	SIZE	NOM. THK	WELD TYPE	DESCRIPTION	WELDER ID	DATE	NDE REPORT No.	V.T.
13	3"	SCH STD	BW					
12	3"	SCH STD	BW					
11	3"	SCH STD	BW					
10	3"	SCH STD	BW					
9	3"	SCH STD	BW					
8	3"	SCH STD	BW					
7	3"	SCH STD	BW					
6	3"	SCH STD	BW					
5	3"	SCH STD	BW					
4	3"	SCH STD	BW					
3	3"	SCH STD	BW					
2	3"	SCH STD	BW					
1	3"	SCH STD	BW					

REV.	D/M/Y	DESCRIPTION	BY	CHK	APP
0	18/09/2013	ISSUED FOR CONSTRUCTION	RR	BB	[Signature]

LEGEND:		STD WELD PROC:	PAINT SYSTEM:
○	: WELD NO.	5B-102/103	SEE E&I
○	: MARK NO.	L.T. WELD PROC:	INSULATION: NA
○	: FIELD FIT WELD	RATING/SPEC:	SANDBLAST: SSPC-SP6
○	: FIELD WELD	HYDROTEST PSIG:	DESIGN TEMP °F: 100
4	: SPOOL NUMBER	RADIOGRAPHY:	DESIGN PRES PSIG: 285
	: PIPE SUPPORT	STRESS RELIEVE:	NO

TITLE: DEVON NEC CORPORATION,
 FERRIER CENTRAL PROCESSING FACILITY
 CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP)
 PIPING ISOMETRIC
 LINE NO. 168-PW-A11-07320

CLIENT DOCUMENT NUMBER	ISOMETRIC NUMBER	REV.
TBD	5B1107-02-DR-80-004-5	0



GENERAL NOTES:

- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL UNLESS OTHERWISE SPECIFIED.
- 2) REFER TO 5B1107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
- 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
- 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
- 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION GS-5210 PIPING CLASS SPECIFICATIONS.
- 6) PIPING SPEC A13 IS TO SUPERCEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER 5BLUE RFI #4.
- 7) HYDRO TEST TO BE CHARTED FOR 1 HR.
- 8) 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
- 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
- 10) JOINT NON-DESTRUCTIVE EXAMINATION:
ALL JOINT: 20% VISUAL, BW: 10% RT, SW: 5% RT(FIT UP) + 10% MT, FILLET WELDS: 10% MT.

REV.	D/M/Y	DESCRIPTION	BY	CHK	APP
0	18/09/2013	ISSUED FOR CONSTRUCTION	RR	BB	[Signature]

LEGEND:		STD WELD PROC:	PAINT SYSTEM:
○	: WELD NO.	5B-102/103	SEE E&IL
○	: MARK NO.	L.T. WELD PROC: 5B-102/103	INSULATION: NA
○	: FIELD FIT WELD	RATING/SPEC: CL150/A11	SANDBLAST: SSPC-SP6
○	: FIELD WELD	HYDROTEST PSIG: 428	DESIGN TEMP °F: 100
□	: SPOOL NUMBER	RADIOGRAPHY: 10%	DESIGN PRES PSIG: 285
—	: PIPE SUPPORT	STRESS RELIEVE: NO	



TITLE: DEVON NEC CORPORATION, FERRIER CENTRAL PROCESSING FACILITY, CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP), PIPING ISOMETRIC, LINE NO. 60-PW-A11-07321		
CLIENT DOCUMENT NUMBER	ISOMETRIC NUMBER	REV.
TBD	5B1107-02-DR-80-005-1	0

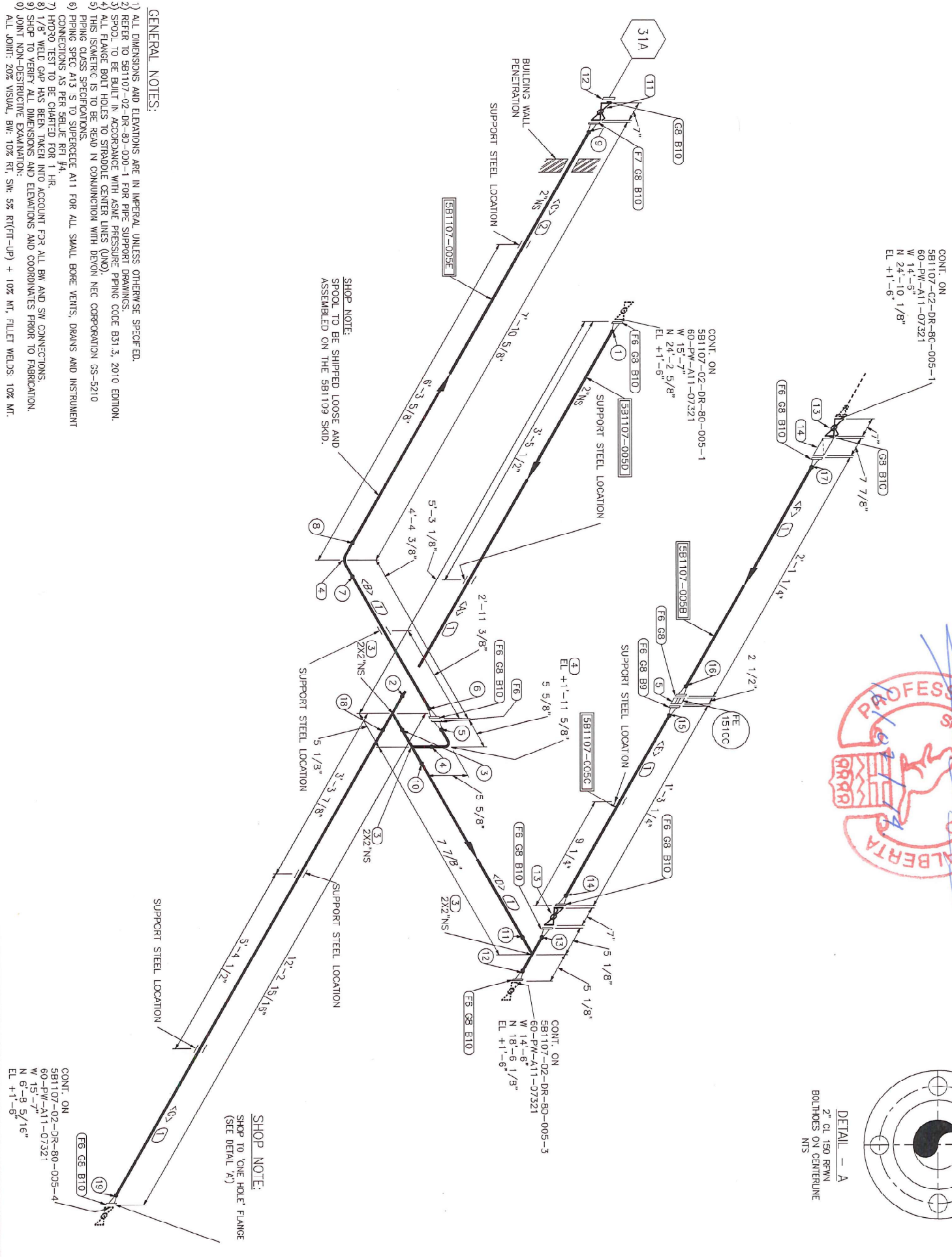
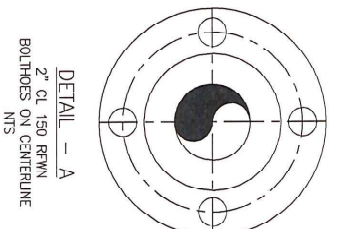
BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
PIPE				
1	2"	PIPE, SCH 80, ASTM A106B, SMLS, B36.10	8.2'	41.0
FITTINGS				
2	2X2	TEE, SCH 80, ASTM A234 WPB, B16.9	1	3.7
3	2"	90 DEG LR ELBOW, SCH 80, ASTM A234 WPD, D16.9	1	2.2
FLANGES				
4	2"	FLANGE, CL150, SCH 80, RFWN, ASTM A105N, B16.5	3	18.0
GASKETS				
5	2"	GASKET, CL150, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CCI, CS CENTERING RING, 316 SS INNER RING, B16.20	3	3.0
BOLTS				
6	5/8X3 1/4	(4) STUDDOLT c/w 2 IICX NUTS, ASTM A193 CR B7, A194 CR 2H, B16.5	3	3.0
VALVES / IN-LINE ITEMS				
7	2"	BALL VALVE, CL150, RF, RP, LEVER OP, (BA0106A1)	1	33.0
PIPE SPOOLS				
		5B1107-005A		

CUT PIPE LENGTH						
PIECE NO	LENGTH (FT-INS)	N.S. (INS)	REMARKS	END ONE	END TWO	ITEM CODE
<A>	5'5 3/4"	2		BEVEL	BEVEL	83
	1'0 1/2"	2		BEVEL	BEVEL	83
<C>	7 1/4"	2		BEVEL	BEVEL	83
<D>	1'0 1/2"	2		BEVEL	BEVEL	83

TOTAL SHOP WEIGHT 103.9
TOTAL FIELD WEIGHT 0.0
TOTAL WEIGHT-THIS DWG 103.9

WELD NO.	SIZE	NOM. THK	WELD TYPE	DESCRIPTION	WELDER ID	DATE	NDF RPT No.	V.T.
8	2"	SCH 80	BW					
7	2"	SCH 80	BW					
6	2"	SCH 80	BW					
5	2"	SCH 80	BW					
4	2"	SCH 80	BW					
3	2"	SCH 80	BW					
2	2"	SCH 80	BW					
1	2"	SCH 80	BW					



- GENERAL NOTES:**
- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL, UNLESS OTHERWISE SPECIFIED.
 - 2) REFER TO 5B1107-02-DR-80-005-1 FOR PIPE SUPPORT DRAWINGS.
 - 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
 - 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
 - 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION CS-5210 PIPING CLASS SPECIFICATIONS.
 - 6) PIPING SPEC AT 3 S TO SUPERCEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER SCHEDULE R11 #4.
 - 7) HOTO TEST TO BE CHARTED FOR 1 HR.
 - 8) 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
 - 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
 - 10) JOINT NON-DESTRUCTIVE EXAMINATION: 10% RT, SW, 5% RT(FN-UP) + 10% MT, FILLET WELDS, 10% MT. ALL JOINT: 20% VISUAL, BW: 10% RT, SW, 5% RT(FN-UP) + 10% MT, FILLET WELDS, 10% MT.

LEGEND:

- : WELD NO.
- : MARK NO.
- : FIELD FIT WELD
- : FIELD WELD
- : SPOOL NUMBER
- : PIPE SUPPORT

STD WELD PROC: SB-102/103
L.T. WELD PROC: SB-102/103
RATING/SPEC: CL150/A11
HIDROTEST PISC: 428
RADIOGRAPHY: 10%
STRESS RELIEVE: NO

PAINT SYSTEM: SEE E&I
INSULATION: NA
SANDBLAST: SSPC-SP6
DESIGN TEMP °F: 100
DESIGN PRESS PISC: 285

REV.	D/A/Y	DESCRIPTION	BY	CHK
0	18/09/2013	ISSUED FOR CONSTRUCTION	RR	BB

SBBlue
Process Equipment Inc.

INTI DESIGNS

TITLE: DEVON NEC CORPORATION, FERRER CENTRAL PROCESSING FACILITY CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP) PIPING ISOMETRIC
LINE NO.: 60-CW-A11-07321

CLIENT DOCUMENT NUMBER: TBD
ISOMETRIC NUMBER: 5B1107-02-DR-90-005-2
REV.: 0

BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
1	PIPE	PIPE, SCH 80, ASTM A106B, SMLS, E36.10	23.3	116.7
2	PIPE	PIPE, SCH 80, ASTM A233 GR6, SMLS, E36.10	7.5	37.2
3	FITTINGS	TEE, SCH 80, ASTM A234 WPB, B16.9	3	11.1
4	FITTINGS	90 DEG LR ELBOW, SCH 80, ASTM A234 WPB, B16.9	2	4.4
5	FITTINGS	FLOW METER, CL150, RF, (FE-15-00)	1	5.0
6	FLANGES	FLANGE, CL150, SCH 80, RFRW, ASTM A105N, B16.5	10	60.0
7	FLANGES	FLANGE, CL150, SCH 80, RFRW, ASTM A350 LF2 CL1, B16.5	1	6.0
8	GASKETS	GASKET, CL150, RF, 1/8" THK, 316 SSS SPIRAL WOUND, FLEX FILLER COI, OS CENTERING RING, 316 SS INNER RING, E1E.20	12	12.0
9	BOLTS	(4) STUD BOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	1	1.0
10	5/8X3 1/4	(4) STUD BOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	10	10.0
VALVES / IN-LINE ITEMS				
11	2	BALL VALVE, CL150, RF, LEVER O2, (B&Q106A1)	1	33.0
12	2	BLIND FLANGE, CL150, RF, ASTM A350 LF2 CL1, B16.5	1	4.0
13	2	BALL VALVE, CL150, RF, 2B&B, LEVER O2, B16.34 (B&Q106A)	1	65.0
14	2	Y-STRAINER, CL150, RF (SP012505)	1	23.0
PIPE SPOOLS				
5B1107-005B 5B1107-005C 531107-005D 5B1107-005E				

CUT PIPE LENGTH

PIECE NO	LENGTH (FT-IN)	N.S	REMARKS	END ONE	END TWO	ITEM CODE
<A>	4'9 7/8"	2		BEVEL	ENVEL	83
	3'10 5/8"	2		BEVEL	ENVEL	83
<C>	7'2 1/8"	2		BEVEL	ENVEL	83
<D>	1'5 3/8"	2		BEVEL	ENVEL	83
<E>	1'8"	2		BEVEL	ENVEL	83
<G>	11'9 3/4"	2		BEVEL	ENVEL	83

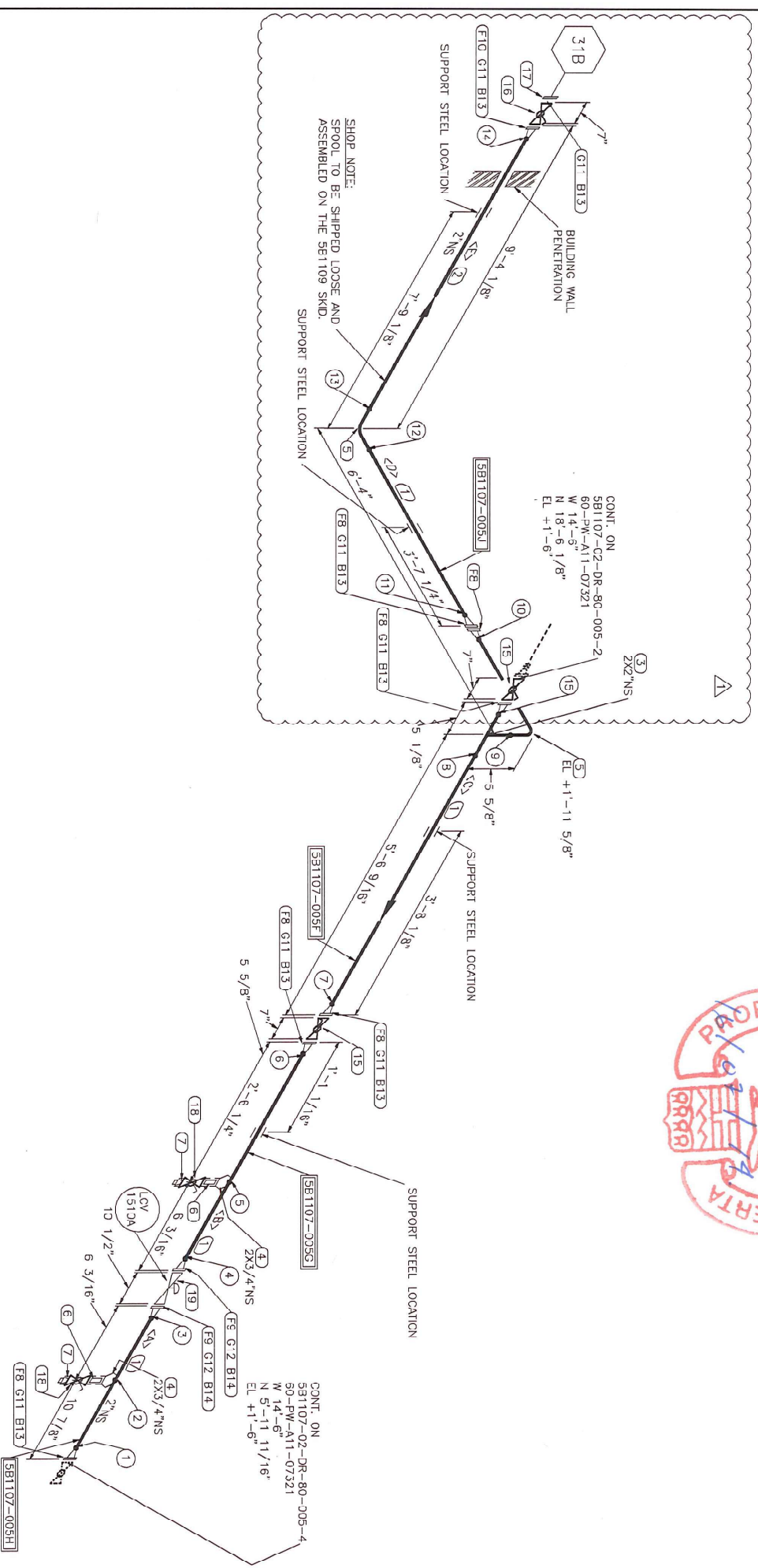
WELD NO.	SIZE	NOM THK	WELD TYPE	WELDER D	DATE	NDE REPORT NO.	V.I.
1	2"	SCH 80	BW				
2	2"	SCH 80	BW				
3	2"	SCH 80	BW				
4	2"	SCH 80	BW				
5	2"	SCH 80	BW				
6	2"	SCH 80	BW				
7	2"	SCH 80	BW				
8	2"	SCH 80	BW				
9	2"	SCH 80	BW				
10	2"	SCH 80	BW				
11	2"	SCH 80	BW				
12	2"	SCH 80	BW				
13	2"	SCH 80	BW				
14	2"	SCH 80	BW				
15	2"	SCH 80	BW				
16	2"	SCH 80	BW				
17	2"	SCH 80	BW				
18	2"	SCH 80	BW				
19	2"	SCH 80	BW				

TOTAL SHOP WEIGHT: 390.3
 TOTAL FIELD WEIGHT: 0.0
 TOTAL WEIGHT-THIS DWG: 390.3

BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
PIPE				
1	2"	PIPE, SCH 80, ASTM A1098, SM.S, B36-10	14.1'	70.5
2	2"	PIPE, SCH 80, ASTM A333 GR6, SMLS, B36-10	8.9'	44.5
FITTINGS				
3	2X2	TEE, SCH 80, ASTM A234 WPB, B16.9	1	3.7
4	2X3/4	THREADED, CL3000, ASTM A1031N, MSS SF-97	2	0.7
5	90 DEG	90 DEG ELB, SCH 80, ASTM A234 WPB, B16.9	2	4.4
6	3/4"	NIPPLE, SCH 160, ASTM A1098, SMLS, B36-10 TBE (4.0900 LG)	2	3.9
7	3/4"	SOLID ROUND HEAD FLG, THRD, ASTM A1031N, B16.11	2	0.8
FLANGES				
8	2"	FLANGE, CL150, SCH 80, RTN, ASTM A1029N, 316.5	6	35.0
9	2"	FLANGE, CL300, SCH 80, RTN, ASTM A1029N, 316.5	2	18.0
10	2"	FLANGE, CL150, SCH 80, RTN, ASTM A350 LF2 CL1, B16.5	1	6.0
GASKETS				
11	2	GASKET, CL150, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX	7	7.0
12	2	FILER COI, CS CENTERING RING, 315 SS INNER RING, B16.20	2	2.0
BOLTS				
13	5/8X3 1/4	(4) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	7	7.0
14	5/8X3 1/2	(8) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	2	2.0
VALVES / IN-LINE ITEMS				
15	2	BALL VALVE, CL150, RF, LEVER OP, B16.34 (90106A)	2	66.0
16	2	BALL VALVE, CL150, RF, LEVER OP, (960105A1)	1	33.0
17	2	BLIND FLANGE, CL150, RF, ASTM A350 LF2 CL1, B16.5	1	4.0
18	3/4	BALL VALVE, C.800, THRD, LEVER OP, (96R202A)	2	1.6
INSTRUMENTS				
19	2	CONTROL VALVE, CL300, RF (LCV-1510A)	1	85.0
PIPE SPOOLS				
5B1107-005F		5B1107-02-DR-80-005-4		
5B1107-005E		5B1107-02-DR-80-005-2		
5B1107-005H		5B1107-02-DR-80-005-1		

CUT PIPE LENGTH	PIECE LENGTH (FT-INS)	N.S. (INS)	REMARKS	END ONE	END TWO	ITEM CODE	TOTAL SHOP WEIGHT	TOTAL FIELD WEIGHT	TOTAL WEIGHT-THIS DWG
<A>	11 5/16"	2		BEVEL	BEVEL	83	395.9	0.0	395.9
	2 6 15/16"	2		BEVEL	BEVEL	83			
<C>	5 1 5/16"	2		BEVEL	BEVEL	83			
<D>	5 4 1/2"	2		BEVEL	BEVEL	83			
<E>	8 10 3/8"	2		BEVEL	BEVEL	94			



GENERAL NOTES:

- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
- 2) REFER TO 5B1107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
- 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE E31.3, 2010 EDITION.
- 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO)
- 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION GS-5210 PIPING CLASS SPECIFICATIONS.
- 6) PIPING SPEC A13 IS TO SUPERSEDE A11 FOR ALL SMALL EGRE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER SCHEDULE #1 #4.
- 7) HYDRO TEST TO BE CHARGED FOR 1 HR.
- 8) 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL EW AND SW CONNECTIONS
- 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
- 10) JOINT NON-DESTRUCTIVE EXAMINATION: 10% RT, 10% MT, 10% SM: SR: RT(UT-EP) + 10% MT, T-LET WELDS: 10% MT. ALL JOINTS: 20% VISUAL, BV: 10% RT, SM: SR: RT(UT-EP) + 10% MT, T-LET WELDS: 10% MT.

REV.	D/M/Y	DESCRIPTION	BY	CHK	APP
1	24/09/2013	REMOVED WELD NUMBERS	RR	BB	
2	18/09/2013	ISSUED FOR CONSTRUCTION	RR	BB	

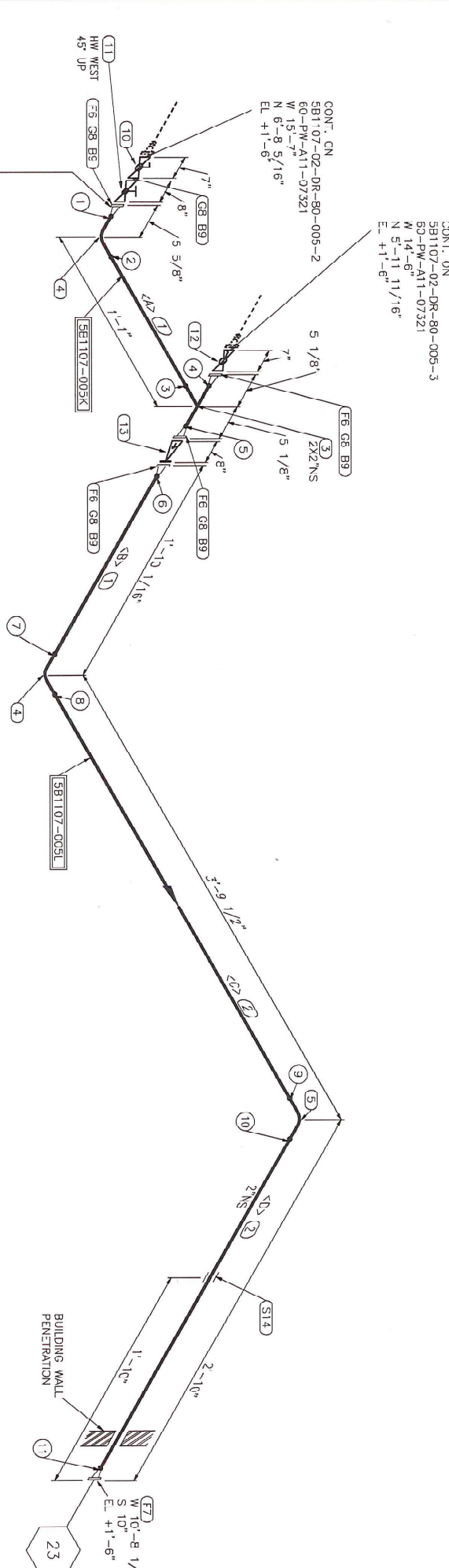
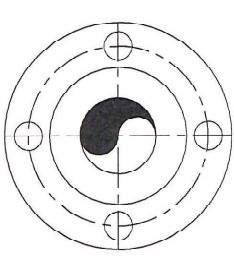
STANDARD	WELD PROC.	SE-102/103	PAINT SYSTEM	SEE E&L
L.T. WELD PROC. <td>SE-102/103 <td>INSULATION: <td>NA</td> <td></td> </td></td>	SE-102/103 <td>INSULATION: <td>NA</td> <td></td> </td>	INSULATION: <td>NA</td> <td></td>	NA	
RATING/SPEC:	CL150/A11 <td>SANDBLAST: <td>SF-C-Sp6 <td></td> </td></td>	SANDBLAST: <td>SF-C-Sp6 <td></td> </td>	SF-C-Sp6 <td></td>	
HYDROTEST PSIG:	428 <td>DESIGN TEMP °F: <td>100 <td></td> </td></td>	DESIGN TEMP °F: <td>100 <td></td> </td>	100 <td></td>	
RADIOPH-PHY:	10% <td>DESIGN PRES PSIG: <td>285 <td></td> </td></td>	DESIGN PRES PSIG: <td>285 <td></td> </td>	285 <td></td>	
STRESS RELIEVE:	NO			

TITLE: DEVON NEC CORPORATION,
 FERRIER CENTRAL PROCESSING FACILITY
 CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP)
 PIPING ISOMETRIC
 LINE NO. 60-PW-A11-07321

CLIENT DOCUMENT NUMBER	ISOMETRIC NUMBER	REV.
TBD	5B1107-02-DR-80-005-3	1

BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
1	PIPE	PIPE, SCH 80, ASTM A106B, SMLS, B36.10	2.0'	9.9
2	PIPE	PIPE, SCH 80, ASTM A333 GR6, SMLS, B36.10	5.7'	28.3
3	FITTINGS	TEE, SCH 80, ASTM A234 WPB, B16.5	1	3.7
4	FITTINGS	90 DEG LR ELBOW, SCH 80, ASTM A234 WPB, B16.5	2	4.4
5	FITTINGS	90 DEG LR ELBOW, SCH 80, ASTM A420 WPL6, B16.5	1	2.2
6	FLANGES	FLANGE, CL150, SCH 80, RFWN, ASTM A105N, B16.5	4	24.0
7	FLANGES	FLANGE, CL150, SCH 80, RFWN, ASTM A350 LF2 CL1, B16.5	1	6.0
8	GASKETS	GASKET CL150, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER COI, CS CENTERING RING, 316 SS INNER RING, B16.20	5	5.0
9	BOJTS	VALVES / IN-LINE ITEMS 5/8x3 1/4 (4) STJPOUT c/w 2 HEX NUTS, ASTM A153 GR B7, A194 GR 2H, B153	5	5.0
10	VALVES / IN-LINE ITEMS	BALL VALVE, CL150, 3E, RP, LEVER OP, (B90106A1)	1	33.0
11	VALVES / IN-LINE ITEMS	GLOBE VALVE, CL150, RF, HW OP, (U0106A1)	1	47.0
12	VALVES / IN-LINE ITEMS	BALL VALVE, CL150, 3E, LEVER OP, B16.34 (B70106A)	1	33.0
13	VALVES / IN-LINE ITEMS	CHECK VALVE, CL150, RF, (C10106A)	1	35.0
14	SUPPORTS	SUPPORTS GU-2" & SA-4 (W4@13)	1	4.0
15	PIPE SPOOLS	PIPE SPOOLS 5B1107-05K 5B1107-00RL		



SHOP NOTE:
SHOP TO ONE HOLE FLANGE
(SEE DETAIL A)

GENERAL NOTES:

- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL, UNLESS OTHERWISE SPECIFIED.
- 2) REFER TO 5B1107-C2-DR-80-00C-1 FOR PIPE SUPPORT DRAWINGS.
- 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
- 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
- 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION CS-5210 PIPING CLASS SPECIFICATIONS.
- 6) PIPING SPEC A.3 IS TO SUPERCEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER SBBLUE RFI #4.
- 7) HYDRO TEST TO BE CHARTED FOR 1 -FR.
- 8) 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
- 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
- 10) JOINT NON-DESTRUCTIVE EXAMINATION: ALL JOINT: 20% VISUAL, BW: 10% RT, SW: 5% RT/FT-UP) + 10% MT, FILET WELDS: 10% MT.



REV.	D/M/Y	DESCRIPTION	BY	CHK	APP
0	19/09/2013	ISSUED FOR CONSTRUCTION	RR	BB	APP

LEGEND:	STD WELD PROC:	PAINT SYSTEM:
○ : WELD NO.	5B-102/103	SEE E&L
○ : MARK NO.	5B-102/103	INSULATION: NA
○ : FIELD FIT WELD	CL150/A11	SANDBLAST: SSPC-SF6
○ : FIELD WELD	428	DESIGN TEMP °F: 100
○ : SPOOL NUMBER	10%	DESIGN PRES PSIG: 285
○ : PIPE SUPPORT		

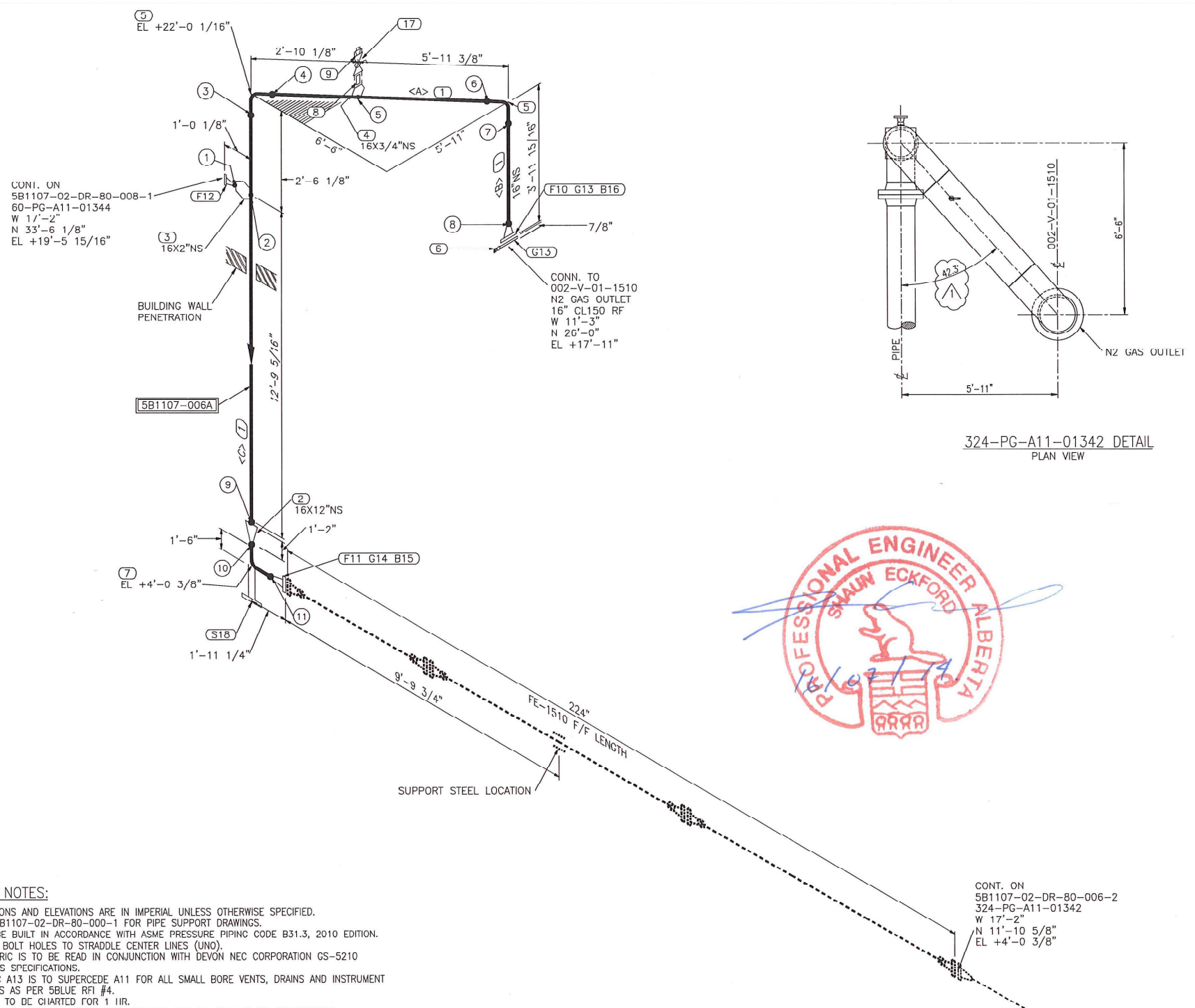
CLIENT DOCUMENT NUMBER	ISOMETRIC NUMBER	REV.
TBD	5B1107-02-DR-80-05-4	0

CUT PIPE LENGTH	PIECE NO	LENGTH (FT-INS)	N.S.	REMARKS	END ONE	END TWO	ITEM CODE
<A>	1	7' 1/4"	2		BEVEL	BEVEL	8C
	2	1' 4"	2		BEVEL	BEVEL	8G
<C>	3	3' 3 1/4"	2		BEVEL	BEVEL	8S
<D>	4	2' 4 1/4"	2		BEVEL	BEVEL	8S

TOTAL S-JOB WEIGHT: 240.4
TOTAL FIELD WEIGHT: 0.0
TOTAL WEIGHT-THIS DWG: 240.4

WELD NO.	SIZE	NOM. THK	WELD TYPE	DESCRIPTION	WELDER ID	DATE	NDE REPORT No.	V.T.
1	2"	SCH 80	EW					
2	2"	SCH 80	EW					
3	2"	SCH 80	EW					
4	2"	SCH 80	EW					
5	2"	SCH 80	EW					
6	2"	SCH 80	EW					
7	2"	SCH 80	EW					
8	2"	SCH 80	EW					
9	2"	SCH 80	EW					
10	2"	SCH 80	EW					
11	2"	SCH 80	EW					

TITLE: DEVON NEC CORPORATION, FERRIER CENTRAL PROCESSING FACILITY CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP) PIPING ISOMETRIC LINE NO. 60-PW-A11-07321



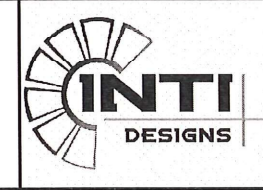
324-PG-A11-01342 DETAIL
PLAN VIEW

GENERAL NOTES:

- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL UNLESS OTHERWISE SPECIFIED.
- 2) REFER TO 5B1107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
- 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
- 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
- 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION GS-5210 PIPING CLASS SPECIFICATIONS.
- 6) PIPING SPEC A13 IS TO SUPERCEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER 5BLUE RFI #4.
- 7) HYDRO TEST TO BE CHARTED FOR 1 HR.
- 8) 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
- 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
- 10) JOINT NON-DESTRUCTIVE EXAMINATION:
ALL JOINT: 20% VISUAL, BW: 10% RT, SW: 5% RT(FIT-UP) + 10% MT, FILLET WELDS: 10% MT.

REV.	D/M/Y	DESCRIPTION	BY	CHK	APP
1	26/09/2013	ADDED ANGLE & REVISED SCHEDULE	RR	BB	<i>[Signature]</i>
0	16/09/2013	ISSUED FOR CONSTRUCTION	RR	BB	<i>[Signature]</i>

LEGEND:		STD WELD PROC:	PAINT SYSTEM:
○	: WELD NO.	5B-102/103	SEE E&IL
○	: MARK NO.	L.T. WELD PROC: 5B-102/103	INSULATION: NA
○	: FIELD FIT WELD	RATING/SPEC: CL150/A11	SANDBLAST: SSPC-SP6
⊗	: FIELD WELD	HYDROTEST PSIG: 428	DESIGN TEMP °F: 100
□	: SPOOL NUMBER	RADIOGRAPHY: 10%	DESIGN PRES PSIG: 285
—	: PIPE SUPPORT	STRESS RELIEVE: NO	



TITLE:		
DEVON NEC CORPORATION, FERRIER CENTRAL PROCESSING FACILITY CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (IFP) PIPING ISOMETRIC LINE NO. 324-PG-A11-01342		
CLIENT DOCUMENT NUMBER	ISOMETRIC NUMBER	REV.
TBD	5B1107-02-DR-80-006-1	1

BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
PIPE				
1	16	PIPE, SCH STD, ASTM A333 GR6, SMLS, B36.10	19.7'	1226.9
FITTINGS				
2	16X12	CON REDUCER, SCH STD, ASTM A234 WPB, B16.9	1	75.0
3	16X2	WELDOLET, SCH 80, ASTM A105N, MSS SP 97	1	1.2
4	16X3/4	THREDOLET, CL3000, ASTM A350 LF2 CL1, MSS SP-97	1	0.4
5	16	90 DEG LR ELBOW, SCH 310, ASTM A420 WPL6, B16.9	2	416.0
6	16	PADDFL BLANK & SPACER, CL150, RF, ASTM A516 GR 70, B16.48	1	79.0
7	12	90 DEG LR ELBOW, SCH STD, ASTM A234 WPB, B16.9	1	122.0
8	3/4	NIPPLE, SCH 160, ASTM A333 GR6, SMLS, B36.10 TBE (4.0000 LG)	1	2.0
9	3/4	SOLID ROUND HEAD PLUG, THRD, ASTM A350 LF2 CL1, B16.11	1	0.4
FLANGES				
10	16	FLANGE, CL150, SCH STD, RFWN, ASTM A350 LF2 CL1, B16.5	1	127.0
11	12	FLANGE, CL300, SCH STD, RFWN, ASTM A105N, B16.5	1	138.0
12	2	FLANGE, CL150, SCH 80, RFWN, ASTM A350 LF2 CL1, B16.5	1	6.0
GASKETS				
13	10	GASKET, CL150, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	2	2.0
14	12	GASKET, CL300, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	1	1.0
BOLTS				
15	1 1/8X6 3/4	(16) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	1	49.0
16	1X6 1/2	(16) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	1	31.0
VALVES / IN-LINE ITEMS				
17	3/4	BALL VALVE, CL800, THRD, LEVER OP, (BAB202A)	1	0.8
SUPPORTS				
18	12	L12-5-12" (L- 4'-0 3/8")	1	205.0
PIPE SPOOLS				
5B1107-006A				

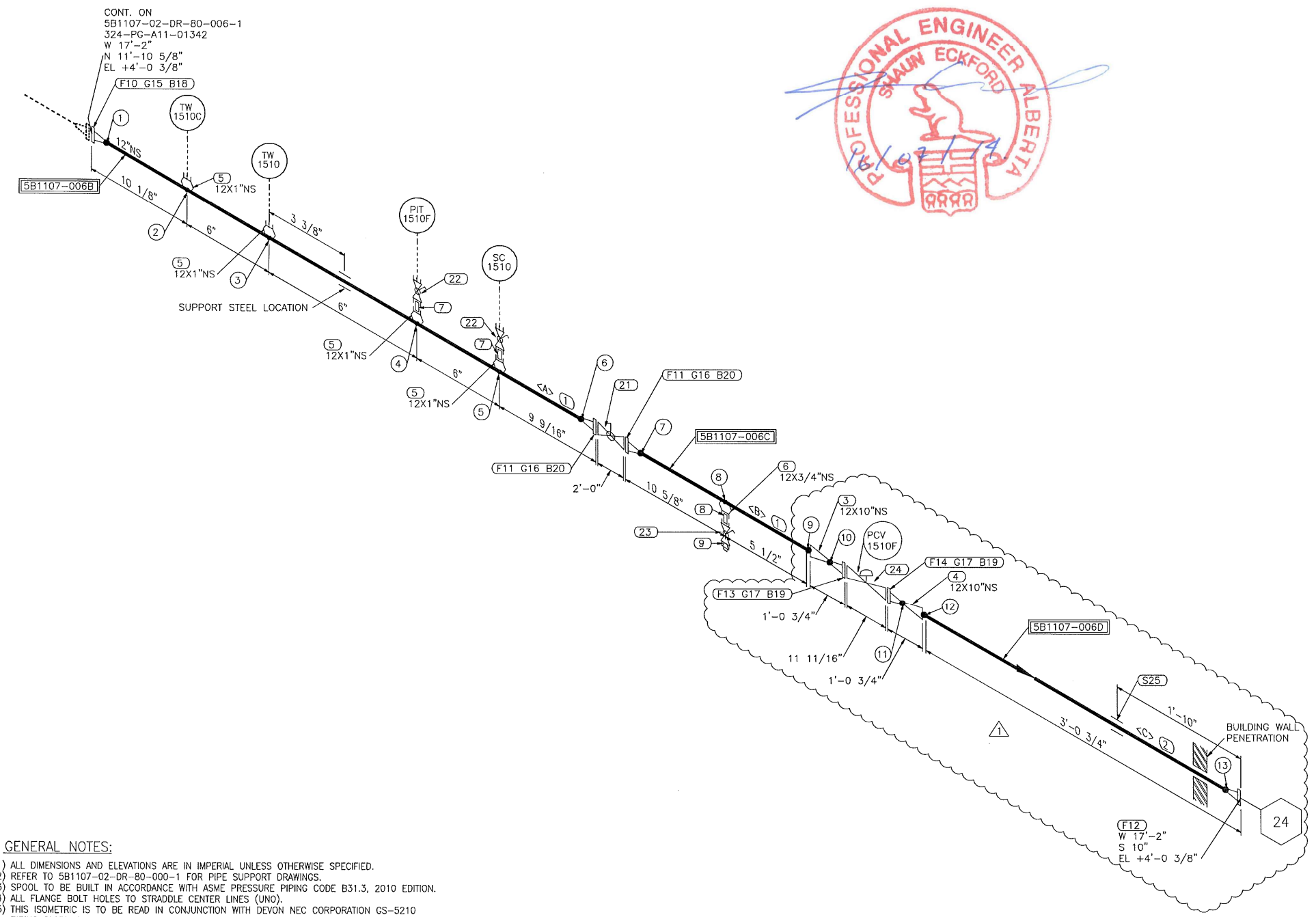
CUT PIPE LENGTH						
PIPCF NO	LENGTH (FT-INS)	N.S. (INS)	REMARKS	END ONE	END TWO	ITEM CODE
<A>	4'9 1/4"	16		BEVEL	BEVEL	40
	1'6 11/16"	16		BEVEL	BEVEL	40
<C>	1'3'3 5/16"	16		BEVEL	BEVEL	40

11	12"	SCH STD	DW					
10	12"	SCH STD	BW					
9	16"	SCH STD	BW					
8	16"	SCH STD	BW					
7	16"	SCH STD	BW					
6	16"	SCH STD	BW					
5	3/4"	CL3000	LET					
4	16"	SCH STD	BW					
3	16"	SCH STD	BW					
2	2"	SCH 80	LET					
1	2"	SCH 80	BW					

WELD NO.	SIZE	NOM. THK	WELD TYPE	DESCRIPTION	WELDER ID	DATE	NDE REPORT No.	V.T.

TOTAL SHOP WEIGHT 2482.4
TOTAL FIELD WEIGHT 1627.6
TOTAL WEIGHT-THIS DWG 4110.0

CONT. ON
5B1107-02-DR-80-006-2
324-PG-A11-01342
W 17'-2"
N 11'-10 5/8"
EL +4'-0 3/8"



- GENERAL NOTES:**
- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL UNLESS OTHERWISE SPECIFIED.
 - 2) REFER TO 5B1107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
 - 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
 - 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
 - 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION GS-5210 PIPING CLASS SPECIFICATIONS.
 - 6) PIPING SPEC A13 IS TO SUPERCEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER 5BLUE RFI #4.
 - 7) HYDRO TEST TO BE CHARTED FOR 1 HR.
 - 8) 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
 - 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
 - 10) JOINT NON-DESTRUCTIVE EXAMINATION:
ALL JOINT: 20% VISUAL, BW: 10% RT, SW: 5% RT(FIT-UP) + 10% MT, FILLET WELDS: 10% MT.

BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
PIPE				
1	12	PIPE, SCH STD, ASTM A106B, SMLS, B36.10	3.3'	162.4
2	12	PIPE, SCH STD, ASTM A333 GR6, SMLS, B36.10	2.7'	132.7
FITTINGS				
3	12X10	CON REDUCER, SCH STD, ASTM A234 WPB, B16.9	1	33.4
4	12X10	CON REDUCER, SCH STD, ASTM A420 WPL6, B16.9	1	33.4
5	12X1	THREAOLET, CL3000, ASTM A105N, MSS SP-97	4	2.5
6	12X3/4	THREAOLET, CL3000, ASTM A105N, MSS SP-97	1	0.4
7	1	NIPPLE, SCH 160, ASTM A106B, SMLS, B36.10 TBE (4.0000 LG)	2	5.7
8	3/4	NIPPLE, SCH 160, ASTM A106B, SMLS, B36.10 TBE (4.0000 LG)	1	2.0
9	3/4	SOLID ROUND HEAD PLUG, THRD, ASTM A105N, B16.11	1	0.4
FLANGES				
10	12	FLANGE, CL300, SCH STD, RFWN, ASTM A105N, B16.5	1	138.0
11	12	FLANGE, CL150, SCH STD, RFWN, ASTM A105N, B16.5	2	160.0
12	12	FLANGE, CL150, SCH STD, RFWN, ASTM A350 LF2 CL1, B16.5	1	80.0
13	10	FLANGE, CL300, SCH STD, RFWN, ASTM A105N, B16.5	1	91.0
14	10	FLANGE, CL300, SCH STD, RFWN, ASTM A350 LF2 CL1, B16.5	1	91.0
GASKETS				
15	12	GASKET, CL300, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	1	1.0
16	12	GASKET, CL150, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	2	2.0
17	10	GASKET, CL300, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	2	2.0
BOLTS				
18	1 1/8X6 3/4 (16)	(CL300)STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	1	15.0
19	1X6 1/4 (16)	STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	2	50.0
20	7/8X4 3/4 (12)	STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	2	30.0
VALVES / IN-LINE ITEMS				
21	12	BALL VALVE, CL150, RF, GEAR OP, (BD0106AG)	1	943.0
22	1	BALL VALVE, CL800, THRD, LEVER OP, (BA8202A)	2	2.8
23	3/4	BALL VALVE, CL800, THRD, LEVER OP, (BA8202A)	1	0.8
INSTRUMENTS				
24	10	CONTROL VALVE, CL300, RF TAG: (PCV-1510F)	1	440.0
SUPPORTS				
25	12	GU-12" & SA-5 (W6 15)	1	20.0
PIPE SPOOLS				
5B1107-006B 5B1107-006C 5B1107-006D				

PIECE NO	LENGTH (FT-INS)	N.S. (INS)	REMARKS	END ONE	END TWO	ITEM CODE
<A>	2'3 13/16"	12		BEVEL	BEVEL	41
	11 1/2"	12		BEVEL	BEVEL	41
<C>	2'8 1/8"	12		BEVEL	BEVEL	68

TOTAL SHOP WEIGHT: 2439.2
TOTAL FIELD WEIGHT: 0.0
TOTAL WEIGHT-THIS DWG: 2439.2

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
13	12"	SCH STD BW		
12	12"	SCH STD BW		
11	10"	SCH STD BW		
10	10"	SCH STD BW		
9	12"	SCH STD BW		
8	3/4"	CL3000 LET		
7	12"	SCH STD BW		
6	12"	SCH STD BW		
5	1"	CL3000 LET		
4	1"	CL3000 LET		
3	1"	CL3000 LET		
2	1"	CL3000 LET		
1	12"	SCH STD BW		

WELD NO.	SIZE	NOM. THK	WELD TYPE	DESCRIPTION	WELDER ID	DATE	NDE REPORT No.	V.T.

REV.	D/M/Y	DESCRIPTION	BY	CHK	APP
1	25/11/2013	REVISED AS NOTED	RR	BB	
0	16/09/2013	ISSUED FOR CONSTRUCTION	RR	BB	

LEGEND:		STD WELD PROC:	PAINT SYSTEM:
○	: WELD NO.	5B-102/103	SEE E&I
○	: MARK NO.	L.T. WELD PROC: 5B-102/103	INSULATION: NA
○	: FIELD FIT WELD	RATING/SPEC: CL150/A11	SANDBLAST: SSPC-SP6
○	: FIELD WELD	HYDROTEST PSIG: 428	DESIGN TEMP °F: 100
□	: SPOOL NUMBER	RADIOGRAPHY: 10%	DESIGN PRES PSIG: 285
—	: PIPE SUPPORT	STRESS RELIEVE: NO	

TITLE: DEVON NEC CORPORATION.
FERRIER CENTRAL PROCESSING FACILITY
CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP)
PIPING ISOMETRIC
LINE NO. 324-PG-A11-01342

CLIENT DOCUMENT NUMBER	ISOMETRIC NUMBER	REV.
TBD	5B1107-02-DR-80-006-2	1

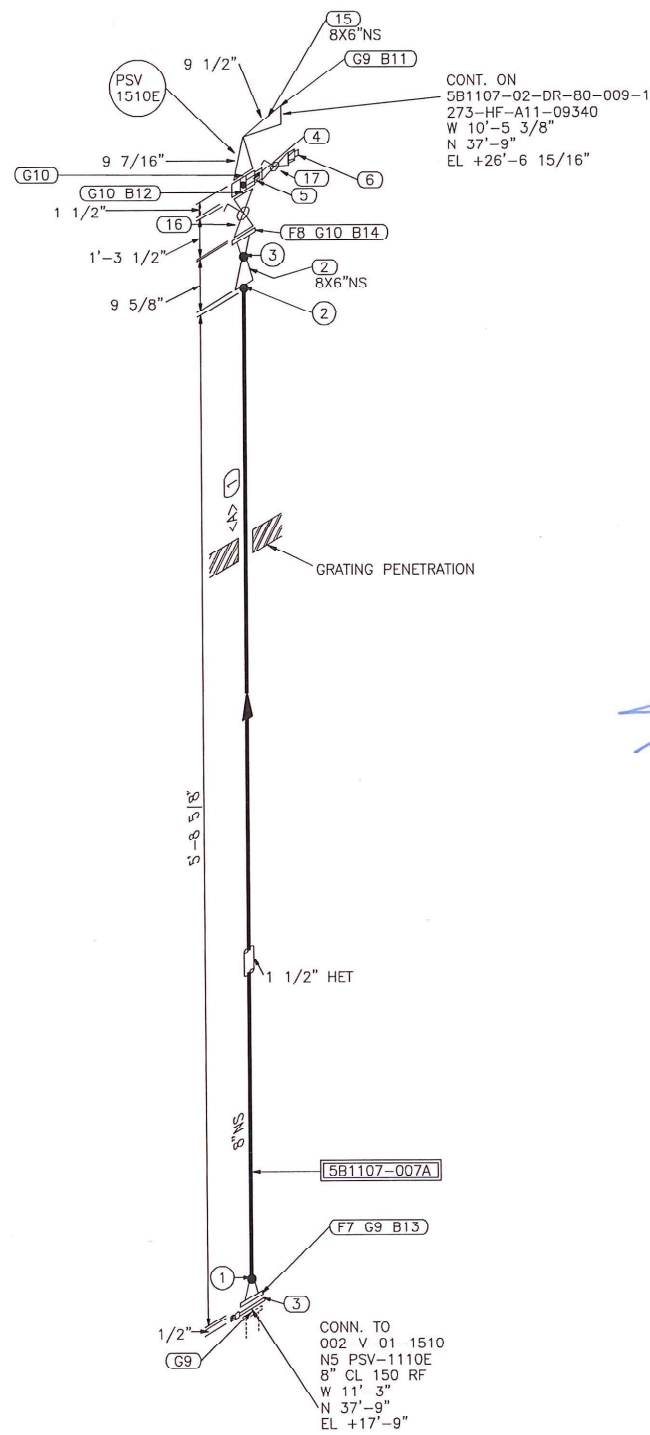
BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
PIPE				
1	8	PIPE, SCH STD, ASTM A333 GR6, SMLS, B36.10	5.4'	153.5
FITTINGS				
2	8X6	CON REDUCER, SCH STD, ASTM A420 WPL6, B16.9	1	13.9
3	8	SPLC BLIND, CL150, RF, ASTM A516 GR 70N, B16.4B	1	20.0
4	6	RIFFL RING, CL150, RF, C/W (1) 3/4" THRD CONN ASTM A516 70N	1	1.0
5	3/4	NIPPLE, SCH 160, ASTM A333 GR6, SMLS, B36.10 BOE-TOE (4.0000 LG)	1	2.0
6	3/4	SOLID ROUND HEAD PLUG, THRD, ASTM A350 LF2 CL1, B16.11	1	0.4
FLANGES				
7	8	FLANGE, CL150, SCH STD, RFWN, ASTM A350 LF2 CL1, B16.5	1	39.0
8	6	FLANGE, CL150, SCH STD, RFWN, ASTM A350 LF2 CL1, B16.5	1	24.0
GASKETS				
9	8	GASKET, CL150, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	3	3.0
10	6	GASKET, CL150, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	3	3.0
BOLTS				
11	3/4X4 1/4	(8) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	1	1.0
12	3/4X6 1/4	(8) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	1	1.0
13	3/4X5	(8) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	1	1.0
14	3/4X4	(8) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	1	1.0
VALVES / IN-LINE ITEMS				
15	8X6	RELIEF VALVE, CL150 x CL150, RF (PSV-1510E)	1	430.0
16	6	BALL VALVE, CL150, RF, LEVER OP, (BA0106A1)	1	176.0
17	3/4	BALL VALVE, CL800, THRD, LEVER OP, (BA8202A)	1	0.8
PIPE SPOOLS				
5B1107-007A				

PIECE NO	LENGTH (FT-ING)	N.S. (ING)	REMARKS	END ONE	END TWO	ITEM CODE
<A>	5'4 1/2"	8		BEVEL	BEVEL	24

TOTAL SHOP WEIGHT 871.4
 TOTAL FIELD WEIGHT 0.0
 TOTAL WEIGHT-IHIS DWG 871.4

WELD NO.	SIZE	NOM. THK	WELD TYPE	DESCRIPTION	WELDER ID	DATE	NDE REPORT No.	V.T.
3	6"	SCH STD	BW					
2	8"	SCH STD	BW					
1	8"	SCH STD	BW					



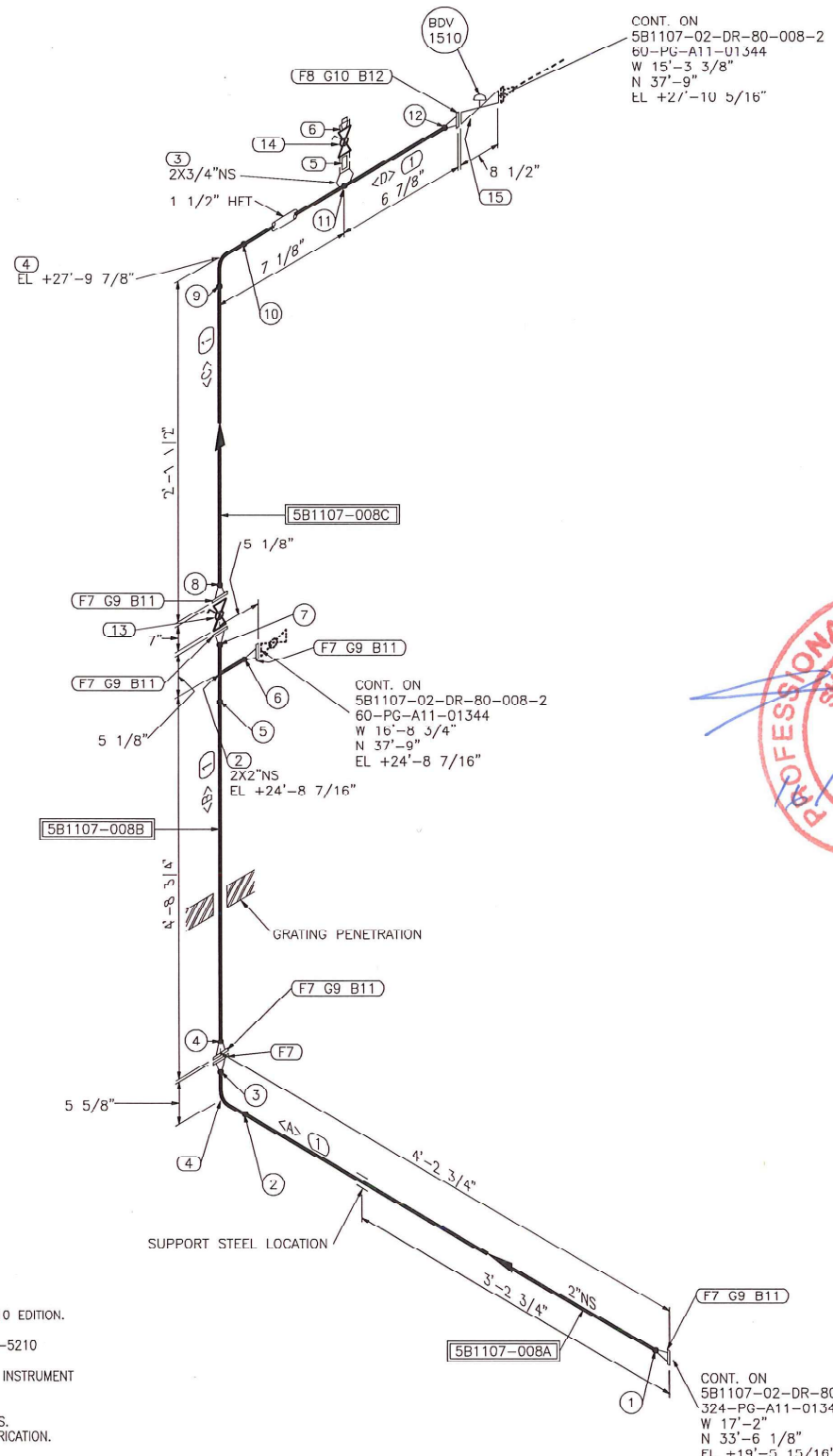
- GENERAL NOTES:**
- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL UNLESS OTHERWISE SPECIFIED.
 - 2) REFER TO 5B1107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
 - 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
 - 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
 - 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION GS-5210 PIPING CLASS SPECIFICATIONS.
 - 6) PIPING SPEC A13 IS TO SUPERCEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER SRIIE RFI #4.
 - 7) HYDRO TEST TO BE CHARTED FOR 1 HR.
 - 8) 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
 - 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
 - 10) JOINT NON-DESTRUCTIVE EXAMINATION:
 ALL JOINT: 20% VISUAL, BW: 10% RT, SW: 5% RT(FIT-UP) + 10% MT, FILLET WELDS: 10% MT.

LEGEND:	STD WELD PROC:	PAINT SYSTEM:
○ : WELD NO.	5B-102/103	SEE E&IL
○ : MARK NO.	L.T. WELD PROC: 5B-102/103	INSULATION: 1 1/2" HET
○ FFW : FIELD FIT WELD	RATING/SPEC: CL150/A11	SANDBLAST: SSPC-SP6
⊗ : FIELD WELD	HYDROTEST PSIG: 428	DESIGN TEMP °F: 100
4 : SPOOL NUMBER	RADIOGRAPHY: 10%	DESIGN PRES PSIG: 285
— : PIPE SUPPORT	STRESS RELIEVE: NO	



TITLE: DEVON NEC CORPORATION. FERRIER CENTRAL PROCESSING FACILITY CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP) PIPING ISOMETRIC LINE NO. 168-PC-A11-01343		
CLIENT DOCUMENT NUMBER	ISOMETRIC NUMBER	REV.
TBD	5B1107-02-DR-80-007-1	0

REV.	D/M/Y	DESCRIPTION	BY	CHK	APP
0	17/09/2013	ISSUED FOR CONSTRUCTION	RR	BB	



GENERAL NOTES:

- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL UNLESS OTHERWISE SPECIFIED.
- 2) REFER TO 5B1107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
- 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
- 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
- 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION GS-5210 PIPING CLASS SPECIFICATIONS.
- 6) PIPING SPEC A13 IS TO SUPERCEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER 5BLUE RFI #4.
- 7) HYDRO TEST TO BE CHARTED FOR 1 HR.
- 8) 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
- 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
- 10) JOINT NON DESTRUCTIVE EXAMINATION:
ALL JOINT: 20% VISUAL, BW: 10% RT, SW: 5% RT(FIT-UP) + 10% MT, FILLET WELDS: 10% MT.

BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
PIPE				
1	2"	PIPE, SCH 80, ASTM A333 GR6, SMLS, B36.10	10.2'	51.0
FITTINGS				
2	2X2	TEE, SCH 80, ASTM A420 WPL6, B16.9	1	3.7
3	2X3/4	THREAOLET, CL3000, ASTM A350 LF2 CL1, MSS SP-97	1	0.4
4	2"	90 DEG LR ELBOW, SCH 80, ASTM A420 WPL6, B16.9	2	4.4
5	3/4"	NIPPLE, SCH 160, ASTM A333 GR6, SMLS, B36.10 TBE (4.0000 LG)	1	2.0
6	3/4"	SOLID ROUND HEAD PLUG, THRD, ASTM A350 LF2 CL1, B16.11	1	0.4
FLANGES				
7	2"	FLANGE, CL150, SCH 80, RFWN, ASTM A350 LF2 CL1, B16.5	6	36.0
8	2"	FLANGE, CL300, SCH 80, RFWN, ASTM A350 LF2 CL1, B16.5	1	9.0
GASKETS				
9	2"	GASKET, CL150, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	5	5.0
10	2"	GASKET, CL300, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	1	1.0
BOLTS				
11	5/8X3 1/4	(4) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	5	5.0
12	5/8X3 1/2	(8) STUDBOLT c/w 2 HEX NUTS, ASTM A193 CR B7, A194 CR 2H, B16.5	1	1.0
VALVES / IN-LINE ITEMS				
13	2"	BALL VALVE, CL150, RF, LEVER OP, (BA0106A1)	1	33.0
14	3/4"	BALL VALVE, CL800, THRU, LEVER OP, (BA820ZA)	1	0.8
INSTRUMENTS				
15	2"	CONTROL VALVE, CL300, RF TAG: (BDV-1510)	1	36.0
PIPE SPOOLS				
		5B1107-008A 5B1107-008B 5B1107-008C	1	20.5

PIECE NO	LENGTH (FT-INS)	N.S. (INS)	REMARKS	END ONE	END TWO	ITEM CODE
<A>	3'9"	2		BEVEL	BEVEL	5
	4'3 9/16"	2		BEVEL	BEVEL	5
<C>	1'7 3/4"	2		BEVEL	BEVEL	5
<D>	8"	2		BEVEL	BEVEL	5

TOTAL SHOP WEIGHT 188.5
 TOTAL FIELD WEIGHT 0.0
 TOTAL WEIGHT-THIS DWG 188.5

WELD NO.	SIZE	NOM. THK	WELD TYPE	DESCRIPTION	WELDER ID	DATE	NDE REPORT No.	V.T.
12	2"	SCH 80	BW					
11	3/4"	CL3000	LET					
10	2"	SCH 80	BW					
9	2"	SCH 80	BW					
8	2"	SCH 80	BW					
7	2"	SCH 80	BW					
6	2"	SCH 80	BW					
5	2"	SCH 80	BW					
4	2"	SCH 80	BW					
3	2"	SCH 80	BW					
2	2"	SCH 80	BW					
1	2"	SCH 80	BW					

REV.	D/M/Y	DESCRIPTION	BY	CHK	APP
0	17/09/2013	ISSUED FOR CONSTRUCTION	RR	BB	

LEGEND:		STD WELD PROC: 5B-102/103		PAINT SYSTEM: SEE E&I	
○	: WELD NO.	L.T. WELD PROC: 5B-102/103	INSULATION: 1 1/2" HET		
○	: MARK NO.	RATING/SPEC: CL150/A11	SANDBLAST: SSPC-SP6		
○	: FIELD FIT WELD	HYDROTEST PSIG: 428	DESIGN TEMP °F: 100		
○	: FIELD WELD	RADIOGRAPHY: 10%	DESIGN PRES PSIG: 285		
○	: SPOOL NUMBER	STRESS RELIEVE: NO			
○	: PIPE SUPPORT				

5Blue
Process Equipment Inc.

INTI
DESIGNS

TITLE: DEVON NEC CORPORATION, FERRIER CENTRAL PROCESSING FACILITY, CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP), PIPING ISOMETRIC, LINE NO. 60-PG-A11-01344

CLIENT DOCUMENT NUMBER	ISOMETRIC NUMBER	REV.
TBD	5B1107-02-DR-80-008-1	0

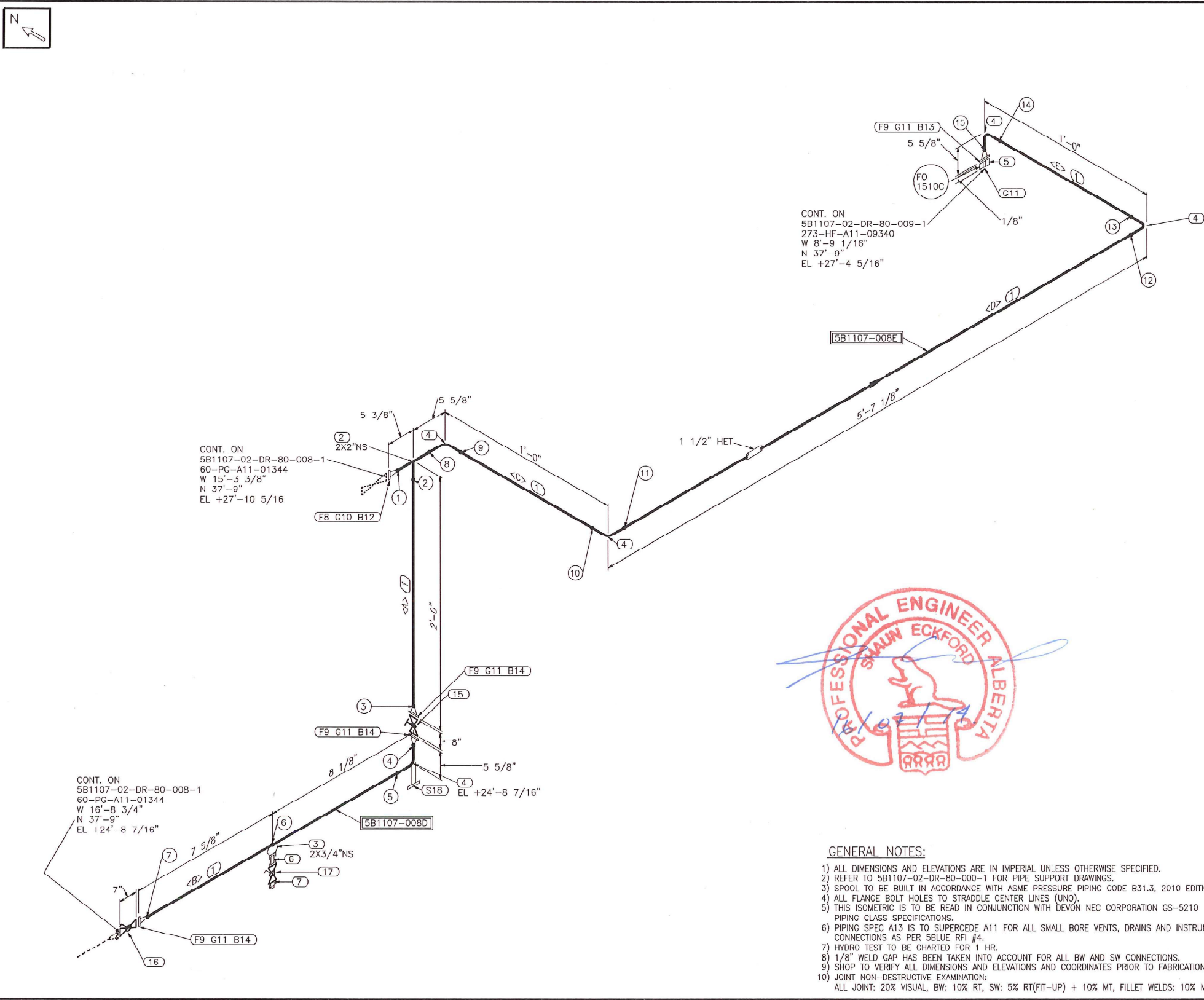
BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
PIPE				
1	2	PIPE, SCH 80, ASTM A333 GR6, SMLS, B36.10	8.4'	42.2
FITTINGS				
2	2X2	TEE, SCH 80, ASTM A420 WPL6, B16.9	1	3.7
3	2X3/4	THREAOLET, CL3000, ASTM A350 LF2 CL1, MSS SP-97	1	0.4
4	2	90 DEG LR ELBOW, SCH 80, ASTM A420 WPL6, B16.9	5	11.0
5	2	FLOW ORIFICE, CL150, RF, (FO-1510C)	1	1.0
6	3/4	NIPPLE, SCH 160, ASTM A333 GR6, SMLS, B36.10 TBE (4.0000 LC)	1	2.0
7	3/4	SOLID ROUND HEAD PLUG, THRD, ASTM A350 LF2 CL1, B16.11	1	0.4
FLANGES				
8	2	FLANGE, CL300, SCH 80, RFWN, ASTM A350 LF2 CL1, B16.5	1	9.0
9	2	FLANGE, CL150, SCH 80, RFWN, ASTM A350 LF2 CL1, B16.5	4	24.0
GASKETS				
10	2	GASKET, CL300, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	1	1.0
11	2	GASKET, CL150, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	5	5.0
BOLTS				
12	5/8X3 1/2	(8) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5 (CL300)	1	1.0
13	5/8X3 1/2	(4) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	1	1.0
14	5/8X3 1/4	(4) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	3	3.0
VALVES / IN-LINE ITEMS				
15	2	GLOBE VALVE, CL150, RF, HW OP, (LA0106A1)	1	47.0
16	2	BALL VALVE, CL150, RF, LCVR OP, (DA0106A1)	1	33.0
17	3/4	BALL VALVE, CL800, THRD, LEVER OP, (BA8202A)	1	0.8
SUPPORTS				
18	2	L10-3-2" (L= 2'-8 7/16")	1	27.0
PIPE SPOOLS				
5B1107-008D 5B1107-008E				

PIECE NO	LENGTH (FT-INS)	N.S. (INS)	REMARKS	END ONE	END TWO	ITEM CODE
<A>	1'6 3/4"	2		BEVEL	BEVEL	5
	10"	2		BEVEL	BEVEL	5
<C>	5 3/4"	2		BEVEL	BEVEL	5
<D>	5'0 7/8"	2		BEVEL	BEVEL	5
<E>	5 3/4"	2		BEVEL	BEVEL	5

TOTAL SHOP WEIGHT 212.3
 TOTAL FIELD WEIGHT 0.0
 TOTAL WEIGHT-THIS DWG 212.3

WFLD NO.	SIZE	NOM. THK	WFLD TYPE	DESCRIPTION	WFLD REF ID	DATE	NDF RFPRT No.	V.T.
15	2"	SCH 80	BW					
14	2"	SCH 80	BW					
13	2"	SCH 80	BW					
12	2"	SCH 80	BW					
11	2"	SCH 80	BW					
10	2"	SCH 80	BW					
9	2"	SCH 80	BW					
8	2"	SCH 80	BW					
7	2"	SCH 80	BW					
6	3/4"	CL3000	LET					
5	2"	SCH 80	BW					
4	2"	SCH 80	BW					
3	2"	SCH 80	BW					
2	2"	SCH 80	BW					
1	2"	SCH 80	BW					



- GENERAL NOTES:**
- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL UNLESS OTHERWISE SPECIFIED.
 - 2) REFER TO 5B1107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
 - 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
 - 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
 - 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION GS-5210 PIPING CLASS SPECIFICATIONS.
 - 6) PIPING SPEC A13 IS TO SUPERCEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER 5BLUE RFI #4.
 - 7) HYDRO TEST TO BE CHARTED FOR 1 HR.
 - 8) 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
 - 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
 - 10) JOINT NON DESTRUCTIVE EXAMINATION:
ALL JOINT: 20% VISUAL, BW: 10% RT, SW: 5% RT(FIT-UP) + 10% MT, FILLET WELDS: 10% MT.

REV.	D/M/Y	DESCRIPTION	BY	CHK	APP
0	17/09/2013	ISSUED FOR CONSTRUCTION	RR	BB	[Signature]

LEGEND:		STD WELD PROC:	PAINT SYSTEM:
○	: WELD NO.	5B-102/103	SEE E&I
○	: MARK NO.	L.T. WELD PROC: 5B-102/103	INSULATION: 1 1/2" HET
○	FFW : FIELD FIT WELD	RATING/SPEC: CL150/A11	SANDBLAST: SSPC-SP6
○	: FIELD WELD	HYDROTEST PSIG: 428	DESIGN TEMP °F: 100
○	4 : SPOOL NUMBER	RADIOGRAPHY: 10%	DESIGN PRES PSIG: 285
—	: PIPE SUPPORT	STRESS RELIEVE: NO	

5Blue
Process Equipment Inc.

INTI
DESIGNS

TITLE: DEVON NEC CORPORATION, FERRIER CENTRAL PROCESSING FACILITY, CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP) PIPING ISOMETRIC

LINE NO. 60-PG-A11-01344

CLIENT DOCUMENT NUMBER	ISOMETRIC NUMBER	REV.
TBD	5B1107-02-DR-80-008-2	0

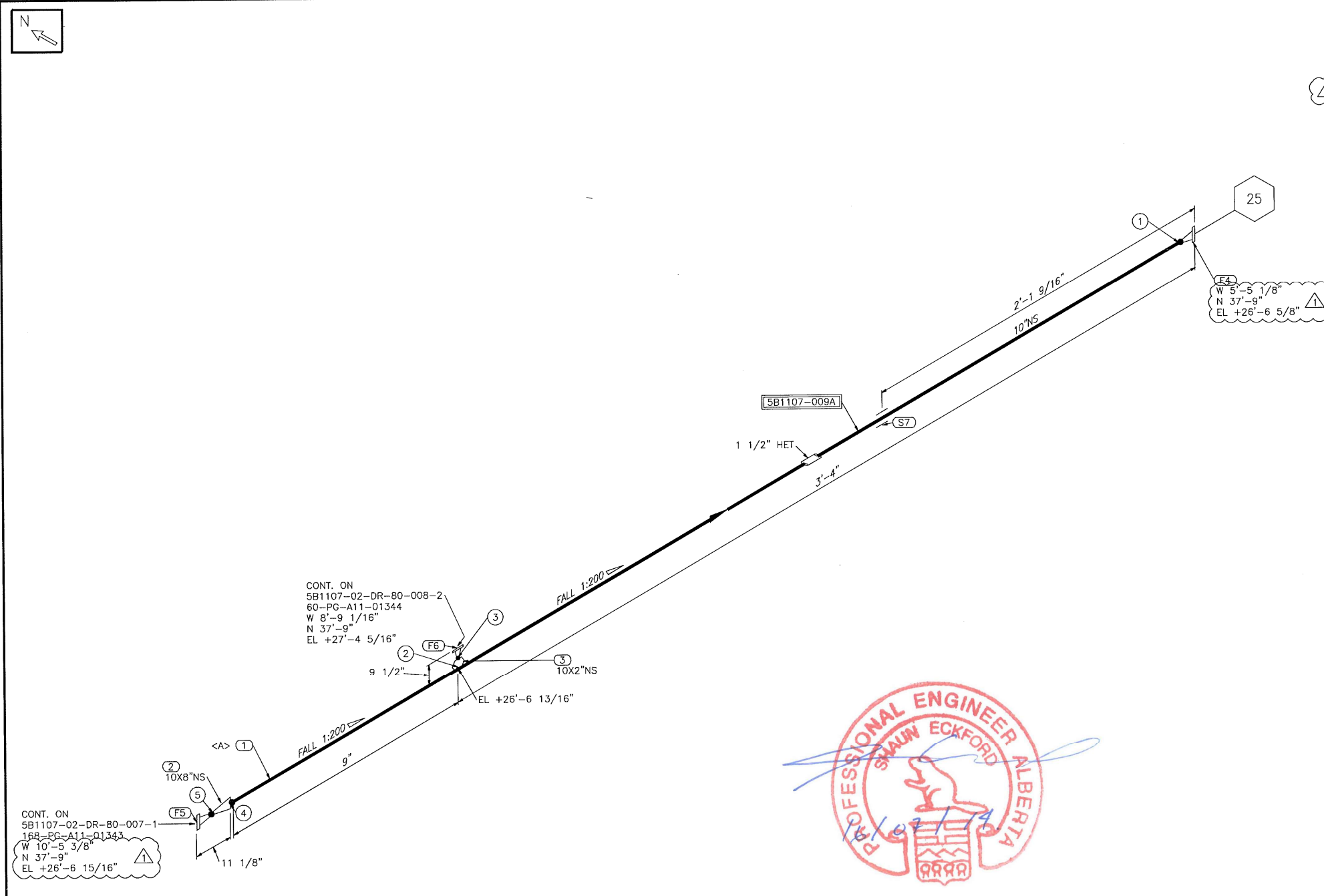
BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
PIPE				
1	10	PIPE, SCH STD, ASTM A333 GR6, SMLS, B36.10	3.8	151.4
FITTINGS				
2	10X8	CON REDUCER, SCH STD, ASTM A420 WPL6, B16.9	1	23.2
3	10X2	WELDOLET, SCH 80, ASTM A350 LF2 CL1, MSS SP-97	1	1.8
FLANGES				
4	10	FLANGE, CL150, SCH STD, RFWN, ASTM A350 LF2 CL1, B16.5	1	52.0
5	8	FLANGE, CL150, SCH STD, RFWN, ASTM A350 LF2 CL1, B16.5	1	39.0
6	2	FLANGE, CL150, SCH 80, RFWN, ASTM A350 LF2 CL1, B16.5	1	6.0
SUPPORTS				
7	10	S9-2-A-10" (W6@15) & SA-6 & SG-6	1	45.0
PIPE SPOOLS				
5B1107-009A				

PIECE NO	LENGTH (FT-INS)	N.S. (INS)	REMARKS	END ONE	END TWO	ITEM CODE
<A>	3'8 7/8"	10		BEVEL	BEVEL	8

TOTAL SHOP WEIGHT 318.3
 TOTAL FIELD WEIGHT 0.0
 TOTAL WEIGHT-THIS DWG 318.3

WELD NO.	SIZE	NOM. THK	WELD TYPE	DESCRIPTION	WELDER ID	DATE	NDE REPORT No.	V.T.
5	8"	SCH STD	BW					
4	10"	SCH STD	BW					
3	2"	SCH 80	BW					
2	2"	SCH 80	LET					
1	10"	SCH STD	BW					



CONT. ON 5B1107-02-DR-80-008-2
 60-PG-A11-01344
 W 8'-9 1/16"
 N 37'-9"
 EL +27'-4 5/16"

CONT. ON 5B1107-02-DR-80-007-1
 168-PG-A11-01343
 W 10'-5 3/8"
 N 37'-9"
 EL +26'-6 15/16"

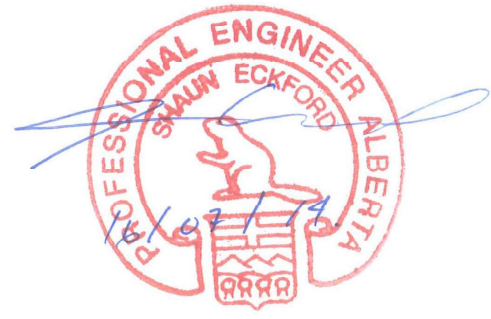
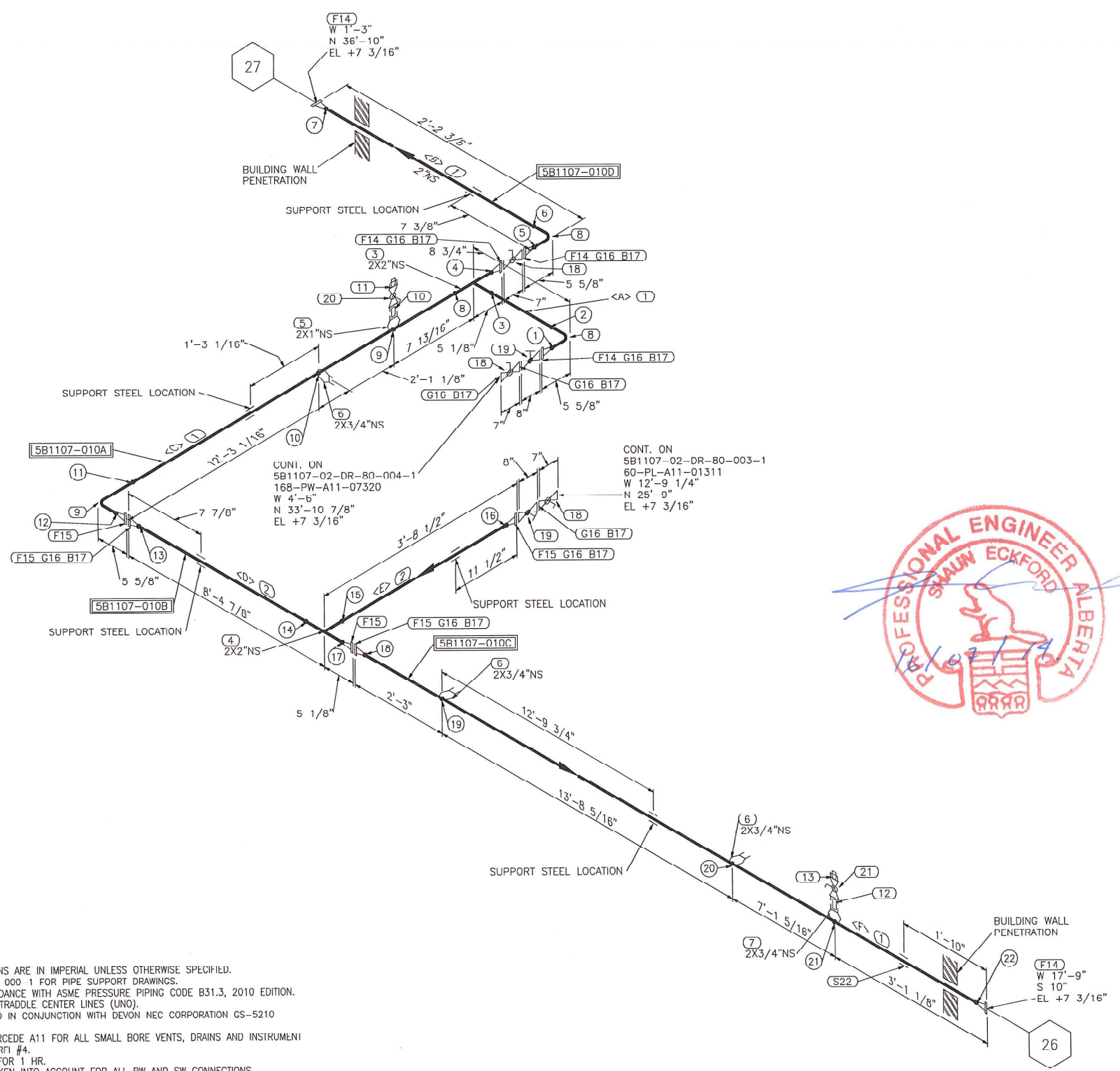
- GENERAL NOTES:**
- ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL UNLESS OTHERWISE SPECIFIED.
 - REFER TO 5B1107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
 - SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
 - ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
 - THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION GS-5210 PIPING CLASS SPECIFICATIONS.
 - PIPING SPEC A13 IS TO SUPERCEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER BLUE RFI #4.
 - HYDRO TEST TO BE CHARTED FOR 1 HR.
 - 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
 - SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
 - JOINT NON-DESTRUCTIVE EXAMINATION:
 ALL JOINT: 20% VISUAL, BW: 10% KI, SW: 5% RT(FIT-UP) + 10% MT, FILLET WELDS: 10% MT.

REV.	D/M/Y	DESCRIPTION	BY	CHK	APP
1	06/11/2013	REVISED PIPE LENGTH	RR	BB	
0	17/09/2013	ISSUED FOR CONSTRUCTION	RR	BB	

LEGEND:	STD WELD PROC:	PAINT SYSTEM:
○ : WELD NO.	5B-102/103	SEE E&I
○ : MARK NO.	L.T. WELD PROC: 5B-102/103	INSULATION: 1 1/2" HET
○ : FIELD FIT WELD	RATING/SPEC: CL150/A11	SANDBLAST: SSPC-SP6
○ : FIELD WELD	HYDROTEST PSIG: 428	DESIGN TEMP °F: 100
□ : SPOOL NUMBER	RADIOGRAPHY: 10%	DESIGN PRES PSIG: 285
— : PIPE SUPPORT	STRESS RELIEVE: NO	

TITLE: DEVON NEC CORPORATION,
 FERRIER CENTRAL PROCESSING FACILITY
 CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP)
 PIPING ISOMETRIC
 LINE NO. 273-HF-A11-09340

CLIENT DOCUMENT NUMBER	ISOMETRIC NUMBER	REV.
TBD	5B1107-02-DR-80-009-1	1

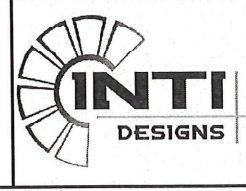


- GENERAL NOTES:**
- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL UNLESS OTHERWISE SPECIFIED.
 - 2) REFER TO 5B1107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
 - 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
 - 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
 - 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION CS-5210 PIPING CLASS SPECIFICATIONS.
 - 6) PIPING SPEC A13 IS TO SUPERCEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER 5DLUC RFI #4.
 - 7) HYDRO TEST TO BE CHARTED FOR 1 HR.
 - 8) 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
 - 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
 - 10) JOINT NON-DESTRUCTIVE EXAMINATION:
 ALL JOINT: 20% VISUAL, BW: 10% RT, SW: 5% RT(FIT-UP) + 10% MT, FILLET WELDS: 10% MT.

LEGEND:

○	: WELD NO.
○	: MARK NO.
○	: FIELD FIT WELD
○	: FIELD WELD
○	: SPOOL NUMBER
—	: PIPE SUPPORT

STD WELD PROC:	5B-102/103	PAINT SYSTEM:	SEE E&I
L.T. WELD PROC:	5B-102/103	INSULATION:	NA
RATING/SPEC:	CL150/A11	SANDBLAST:	SSPC-SP6
HYDROTEST PSIG:	428	DESIGN TEMP °F:	100
RADIOGRAPHY:	10%	DESIGN PRES PSIG:	285
STRESS RELIEVE:	NO		



TITLE: DEVON NEC CORPORATION.
 FERRIER CENTRAL PROCESSING FACILITY
 CENTRAL OIL BATTERY LIQUID EXTRACTION PLANT (LEP)
 PIPING ISOMETRIC
 LINE NO. 60-HCD-A11-23461

CLIENT DOCUMENT NUMBER	ISOMETRIC NUMBER	REV.
TBD	5B1107-02-DR-80-010-1	0

0	19/09/2013	ISSUED FOR CONSTRUCTION	RR	BB
REV.	D/M/Y	DESCRIPTION	BY	CHK

BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
PIPE				
1	2	PIPE, SCH 80, ASTM A333 GR6, SMLS, B36.10	42.2'	211.9
2	2	PIPE, SCH 80, ASTM A106B, SMLS, B36.10	11.3'	56.5
FITTINGS				
3	2X2	TEL, SCH 80, ASTM A420 WPL6, B16.9	1	3.7
4	2X2	TFE, SCH 80, ASTM A234 WPB, B16.9	1	3.7
5	2X1	THREDOLET, CL3000, ASTM A350 LF2 CL1, MSS SP-97	1	1.1
6	2X3/4	THREDOLET, CL3000, ASTM A105N, MSS SP-97	3	1.1
7	2X3/4	THREDOLET, CL3000, ASTM A350 LF2 CL1, MSS SP-97	1	0.4
8	2	90 DEG LR ELBOW, SCH 80, ASTM A420 WPL6, B16.9	2	4.4
9	2	90 DEG LR FLOW, SCH 80, ASTM A234 WPB, B16.9	1	2.2
10	1	NIPPLE, SCH 160, ASTM A333 GR6, SMLS, B36.10 TBE (4,000 LG)	1	2.9
11	1	SOLID ROUND HEAD PLUG, THRD, ASTM A350 LF2 CL1, B16.11	1	0.8
12	3/4	NIPPLE, SCH 160, ASTM A333 GR6, SMLS, B36.10 TBE (4,000 LG)	1	2.0
13	3/4	SOLID ROUND HEAD PLUG, THRD, ASTM A350 LF2 CL1, B16.11	1	0.4
FLANGES				
14	2	FLANGE, CL150, SCH 80, RFWN, ASTM A350 LF2 CL1, B16.5	5	30.0
15	2	FLANGE, CL150, SCH 80, RFWN, ASTM A105N, B16.5	5	30.0
GASKETS				
16	2	GASKET, CL150, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	9	9.0
BOLTS				
17	5/8X3 1/4	(4) STUDBOLT c/w 7 HFX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	9	9.0
VALVES / IN-LINE ITEMS				
18	2	BALL VALVE, CL150, RF, LEVER OP, B16.34 (BA0106A1)	3	99.0
19	2	GLOBE VALVE, CL150, RF, HW OP, B16.34 (LA0106A1)	2	94.0
20	1	BALL VALVE, CL800, THRD, LEVER OP, (BA8202A)	1	1.4
21	3/4	BALL VALVE, CL800, THRD, LEVER OP, (BA8202A)	1	0.8
SUPPORTS				
22	2	GU-2" & SA-4 (3"x3"x3/8" ANGLE)	1	4.0
PIPE SPOOLS				
5B1107-010A 5B1107-010B 5B1107-010C 5B1107-010D				

CUT PIPE LENGTH

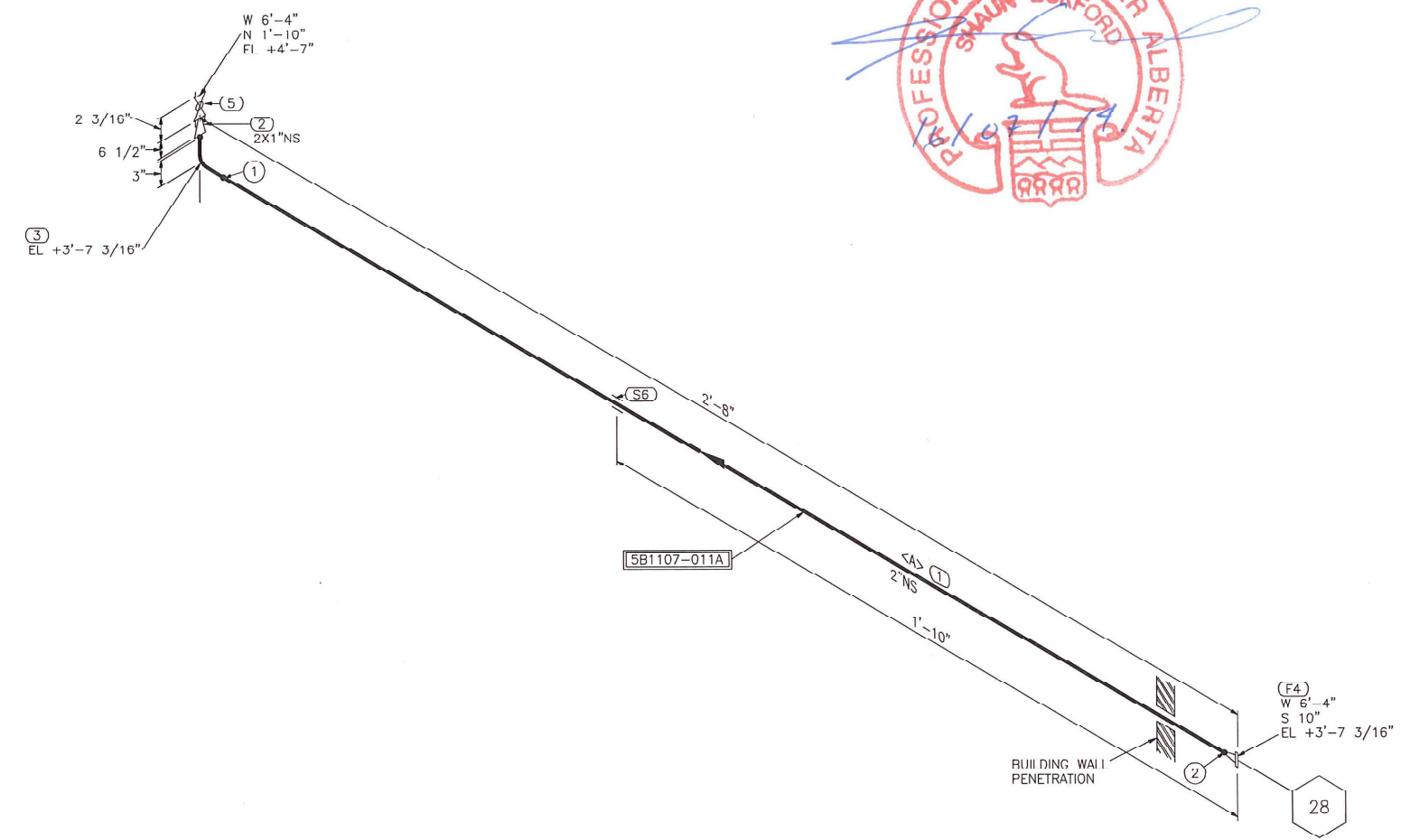
PIECE NO	LENGTH (FT-INS)	N.S. (INS)	REMARKS	END ONE	END TWO	ITEM CODE
<A>	3"	2		BEVEL	BEVEL	19
	1'8 5/8"	2		BEVEL	DCVCL	19
<C>	14'6 1/4"	2		BEVEL	BEVEL	19
<D>	7'11 5/8"	2		BEVEL	BEVEL	34
<E>	3'3 1/4"	2		BEVEL	BEVEL	34
<F>	25'8 1/2"	2		BEVEL	BEVEL	19
TOTAL SHOP WEIGHT						567.4
TOTAL FIELD WEIGHT						0.0
TOTAL WEIGHT-THIS DWG						567.4

MARK	SIZE	NOM. THK	WELD TYPE	DESCRIPTION	WELDER ID	DATE	NDE REPORT No.	V.T.
22	2"	SCH 80	BW					
21	3/4"	CL3000	LET					
20	3/4"	CL3000	LET					
19	3/4"	CL3000	LET					
18	2"	SCH 80	BW					
17	2"	SCH 80	BW					
16	2"	SCH 80	BW					
15	2"	SCH 80	BW					
14	2"	SCH 80	BW					
13	2"	SCH 80	BW					
12	2"	SCH 80	BW					
11	2"	SCH 80	BW					
10	3/4"	CL3000	LET					
9	1"	CL3000	LET					
8	2"	SCH 80	BW					
7	2"	SCH 80	BW					
6	2"	SCH 80	BW					
5	2"	SCH 80	BW					
4	2"	SCH 80	BW					
3	2"	SCH 80	BW					
2	2"	SCH 80	BW					
1	2"	SCH 80	BW					

BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
PIPE				
1	2	PIPE, SCH 80, ASTM A333 GR6, SMLS, B36.10	2.2'	11.0
FITTINGS				
2	2X1	CONC SWAGE, SCH 80x160, ASTM A420 WPL6, SMLS, MSS SP-95 BLE-TSE	1	2.0
3	2	90 DEG LR ELBOW, SCH 80, ASTM A420 WPL6, B16.9	1	2.2
FLANGES				
4	2	FLANGE, CL150, SCH 80, RFWN, ASTM A350 LF2 CL1, B16.5	1	6.0
VALVES / IN-LINE ITEMS				
5	1	BALL VALVE, CL800, THRD, LEVER OP, (BA8202A)	1	1.4
SUPPORTS				
6	2	GU-2" & SA-4 (W6@15)	1	6.0
PIPE SPOOLS				
5B1107-011A				

PIECE NO	LENGTH (FT-INS)	N.S. (INS)	REMARKS	FND ONE	FND TWO	ITFM CODE
<A>	2' 2 1/4"	2		BEVEL	BEVEL	6



GENERAL NOTES:

- ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL UNLESS OTHERWISE SPECIFIED.
- REFER TO 5B1107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
- SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
- ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
- THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION GS-5210 PIPING CLASS SPECIFICATIONS.
- PIPING SPEC A13 IS TO SUPERCEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER 5BBLUE RFI #4.
- HYDRO TEST TO BE CHARTED FOR 1 HR.
- 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
- SHOP TO VERIFY ALL DIMENSIONS AND COORDINATES PRIOR TO FABRICATION.
- JOINT NON-DESTRUCTIVE EXAMINATION:
ALL JOINT: 20% VISUAL, BW: 10% RT, SW: 5% RT(FIT-UP) + 10% MT, FILLET WELDS: 10% MT.

TOTAL SHOP WEIGHT	28.6
TOTAL FIELD WEIGHT	0.0
TOTAL WEIGHT-THIS DWG	28.6

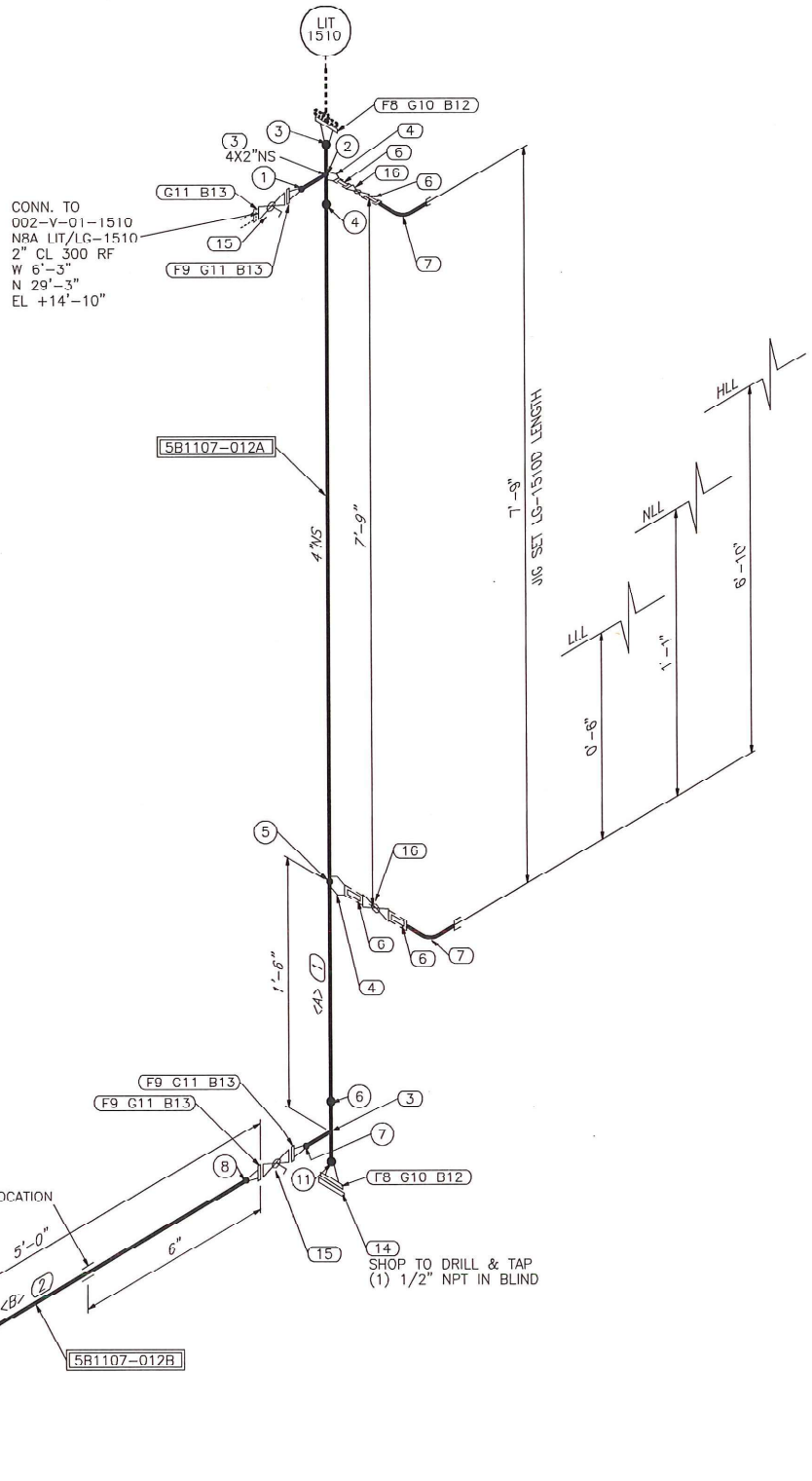
WELD NO.	SIZE	NOM. THK	WELD TYPE	DESCRIPTION	WELDER ID	DATE	NDE REPORT No.	V.T.
2	2"	SCH 80	BW					
1	2"	SCH 80	BW					

REV.	D/M/Y	DESCRIPTION	BY	CHK	APP
0	19/09/2013	ISSUED FOR CONSTRUCTION	RR	BB	

LEGEND:		STD WELD PROC: 5B-102/103		PAINT SYSTEM: SEE E&L	
○	: WELD NO.	L.T. WELD PROC: 5B-102/103	INSULATION: NA		
○	: MARK NO.	RATING/SPEC: CL150/A11	SANDBLAST: SSPC-SP6		
○	: FIELD FIT WELD	HYDROTEST PSIG: 428	DESIGN TEMP °F: 100		
○	: FIELD WELD	RADIOGRAPHY: 10%	DESIGN PRES PSIG: 285		
□	: SPOOL NUMBER	STRESS RELIEVE: NO			
	: PIPE SUPPORT				

TITLE: DEVON NEC CORPORATION,
FERRIER CENTRAL PROCESSING FACILITY
CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP)
PIPING ISOMETRIC
LINE NO. 60-FG-A11-20330

CLIENT DOCUMENT NUMBER	ISOMETRIC NUMBER	REV.
TBD	5B1107-02-DR-80-011-1	0



CONN. TO
002-V-01-1510
NRA LIT/LG-1510
2" CL 300 RF
W 6'-3"
N 29'-3"
EL +14'-10"

CONN. TO
002-V-01-1510
NBB LIT/LG-1510
2" CL 300 RF
W 11'-3"
N 29'-3"
EL +6'-1"



GENERAL NOTES:

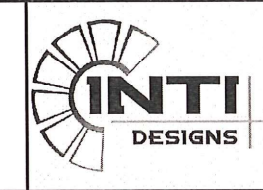
- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL UNLESS OTHERWISE SPECIFIED.
- 2) REFER TO 5B1107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
- 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
- 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
- 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION GS-5210 PIPING CLASS SPECIFICATIONS.
- 6) PIPING SPEC A13 IS TO SUPERSEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER 5BLUE RFI #4.
- 7) HYDRO TEST TO BE CHARTED FOR 1 HR.
- 8) 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL RW AND SW CONNECTIONS.
- 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
- 10) JOINT NON-DESTRUCTIVE EXAMINATION:
ALL JOINT: 20% VISUAL, RW: 10% RT, SW: 5% RT(FIT-UP) + 10% MT, FILLET WELDS: 10% MT.

REV.	D/M/Y	DESCRIPTION	BY	CHK	APP
0	19/09/2013	ISSUED FOR CONSTRUCTION	RR	BB	

LEGEND:

- : WELD NO.
- : MARK NO.
- : FIELD FIT WELD
- : FIELD WELD
- 4 : SPOOL NUMBER
- : PIPE SUPPORT

STD WELD PROC:	5B-102/103	PAINT SYSTEM:	SEE E&IL
L.T. WELD PROC:	5B-102/103	INSULATION:	NA
RATING/SPEC:	CL150/A11	SANDBLAST:	SSPC-SP6
HYDROTEST PSIG:	428	DESIGN TEMP °F:	100
RADIOGRAPHY:	10%	DESIGN PRES PSIG:	285
STRESS RELIEVE:	NO		



TITLE: DEVON NEC CORPORATION, FERRIER CENTRAL PROCESSING FACILITY, CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP), PIPING ISOMETRIC, LINE NO. 002-V-01-1510-LB-1510

CLIENT DOCUMENT NUMBER	ISOMETRIC NUMBER	REV.
TBD	5B1107-02-DR-80-012-1	0

BILL OF MATERIAL

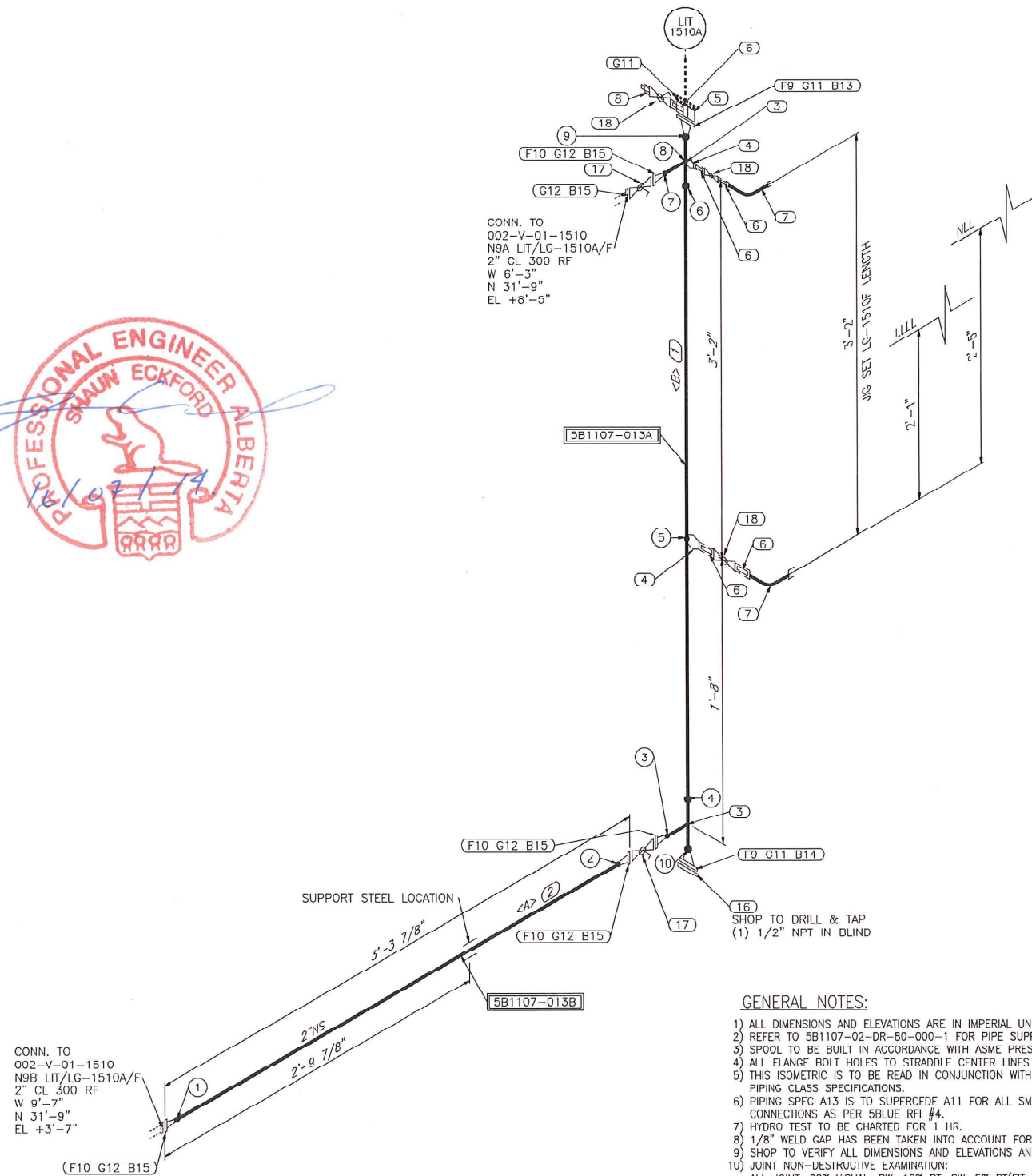
MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
PIPE				
1	4	PIPE, SCH STD, ASTM A106B, SMLS, B36.10	8.6'	92.2
2	2	PIPE, SCH 80, ASTM A106B, SMLS, B36.10	4.5'	22.6
FITTINGS				
3	4X2	RED TEE, SCH STD, ASTM A234 WPB, D16.9	2	29.0
4	4X3/4	THREDOLET, CL3000, ASTM A105N, MSS SP-97	2	0.8
5	2	90 DEG LR ELBOW, SCH 80, ASTM A234 WPB, B16.9	1	2.2
6	3/4	NIPPLE, SCH 160, ASTM A106B, SMLS, B36.10 TBE (4.0000 I/G)	4	7.8
7	3/4	90 DEG LR ELBOW, CL3000, THRD, ASTM A105N, B16.11	2	2.9
FLANGES				
8	4	FLANGE, CL300, SCH STD, RFWN, ASTM A105N, B16.5	2	50.0
9	2	FLANGE, CL300, SCH 80, RFWN, ASTM A105N, B16.5	4	36.0
GASKETS				
10	4	GASKET, CL300, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	2	2.0
11	2	GASKET, CL300, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	5	5.0
BOLTS				
12	3/4X4 1/2	(8) STUDBOLT c/w 2 HEX NUTS, ASIM A193 GR B7, A194 GR 2H, B16.5	2	2.0
13	5/8X3 1/2	(8) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	5	5.0
VALVES / IN-LINE ITEMS				
14	4	HUB BLIND FLANGE, CL300, RF, ASTM A105N, B16.5 (DRILL & TAP 1/2" NPT)	1	27.0
15	2	BALL VALVE, CL300, RF, LEVER OP, B16.34 (BV0306A)	2	76.0
16	3/4	BALL VALVE, CL800, THRD, LEVER OP, (BA8202A)	2	1.6
PIPE SPOOLS				
5B1107-012A 5B1107-012B				

CUT PIPE LENGTH

PIECE NO	LENGTH (FT-INS)	N.S. (INS)	REMARKS	END ONE	END TWO	ITEM CODE
<A>	8'6 1/2"	4		BEVEL	BEVEL	20
	4'6"	2		BEVEL	BEVEL	34

TOTAL SHOP WEIGHT 361.8
TOTAL FIELD WEIGHT 22.0
TOTAL WEIGHT-THIS DWG 383.8

MARK	SIZE	NOM. THK	WELD TYPE	DESCRIPTION	WELDER ID	DATE	NDE REPORT No.	V.T.
11	4"	SCH STD	BW					
10	2"	SCH 80	BW					
9	2"	SCH 80	BW					
8	2"	SCH 80	BW					
7	2"	SCH 80	BW					
6	4"	SCH STD	BW					
5	3/4"	CL3000	LET					
4	4"	SCH STD	BW					
3	4"	SCH STD	BW					
2	3/4"	CL3000	SW					
1	2"	SCH 80	BW					



CONN. TO
002-V-01-1510
N9A LIT/LG-1510A/F
2" CL 300 RF
W 6'-3"
N 31'-9"
EL +8'-5"

CONN. TO
002-V-01-1510
N9B LIT/LG-1510A/F
2" CL 300 RF
W 9'-7"
N 31'-9"
EL +3'-7"

GENERAL NOTES:

- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL UNLESS OTHERWISE SPECIFIED.
- 2) REFER TO 5B1107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
- 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
- 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
- 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION GS-5210 PIPING CLASS SPECIFICATIONS.
- 6) PIPING SPEC A13 IS TO SUPERSEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER 5BLUE RFI #4.
- 7) HYDRO TEST TO BE CHARTED FOR 1 HR.
- 8) 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL RW AND SW CONNECTIONS.
- 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
- 10) JOINT NON-DESTRUCTIVE EXAMINATION:
ALL JOINT: 20% VISUAL, BW: 10% RT, SW: 5% RT(FIT-UP) + 10% MT, FILLET WELDS: 10% MT.

BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
PIPE				
1	4	PIPE, SCH STD, ASTM A106B, SMLS, B36.10	4.2'	44.6
2	2	PIPE, SCH 80, ASTM A106B, SMLS, B36.10	2.9'	14.3
FITTINGS				
3	4X2	RED LEE, SCH STD, ASIM A234 WPB, B16.9	2	29.0
4	4X3/4	THRIFADOLET, CL3000, ASTM A105N, MSS SP-97	2	0.8
5	4	BLEED RING, CL300, RF, C/W (1) 3/4" THRD CONN ASTM A516 70N	1	1.0
6	3/4	NIPPLE, SCH 160, ASTM A106B, SMLS, B36.10 TDE (4.0000 LG)	5	9.7
7	3/4	90 DEG LR ELBOW, CL3000, THRD, ASTM A105N, B16.11	2	2.9
8	3/4	SOLID ROUND HEAD PLUG, THRD, ASTM A105N, B16.11	1	0.4
FLANGES				
9	4	FLANGE, CL300, SCH STD, RFWN, ASTM A105N, B16.5	2	50.0
10	2	FLANGE, CL300, SCH 80, RFWN, ASTM A105N, B16.5	4	36.0
GASKETS				
11	4	GASKET, CL300, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	3	3.0
12	2	GASKET, CL300, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	5	5.0
BOLTS				
13	3/4X6 1/4	(8) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	1	1.0
14	5/4X4 1/2	(8) STUDBOLT c/w 2 HEX NUTS, ASIM A193 GR B7, A194 GR 2H, B16.5	1	1.0
15	5/8X3 1/2	(8) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	5	5.0
VALVES / IN-LINE ITEMS				
16	4	HUB BLIND FLANGE, CL300, RF, ASTM A105N, B16.5 (DRILL & TAP 1/2" NPT)	1	27.0
17	2	BALL VALVE, CL300, RF, LEVER OP, B16.34 (BV0306A)	2	76.0
18	3/4	BALL VALVE, CL800, THRD, LEVER OP, (BAB202A)	3	2.3
PIPE SPOOLS				
5B1107-013A 5B1107-013B				

CUT PIPE LENGTH

PIECE NO	LENGTH (FT-INS)	N.S. (INS)	REMARKS	END ONE	END TWO	ITEM CODE
<A>	2'10 1/8"	2		BEVEL	BEVEL	14
	4'1 1/2"	4		BEVEL	BEVEL	25

TOTAL SHOP WEIGHT 308.7
TOTAL FIELD WEIGHT 22.0
TOTAL WEIGHT-THIS DWG 330.7

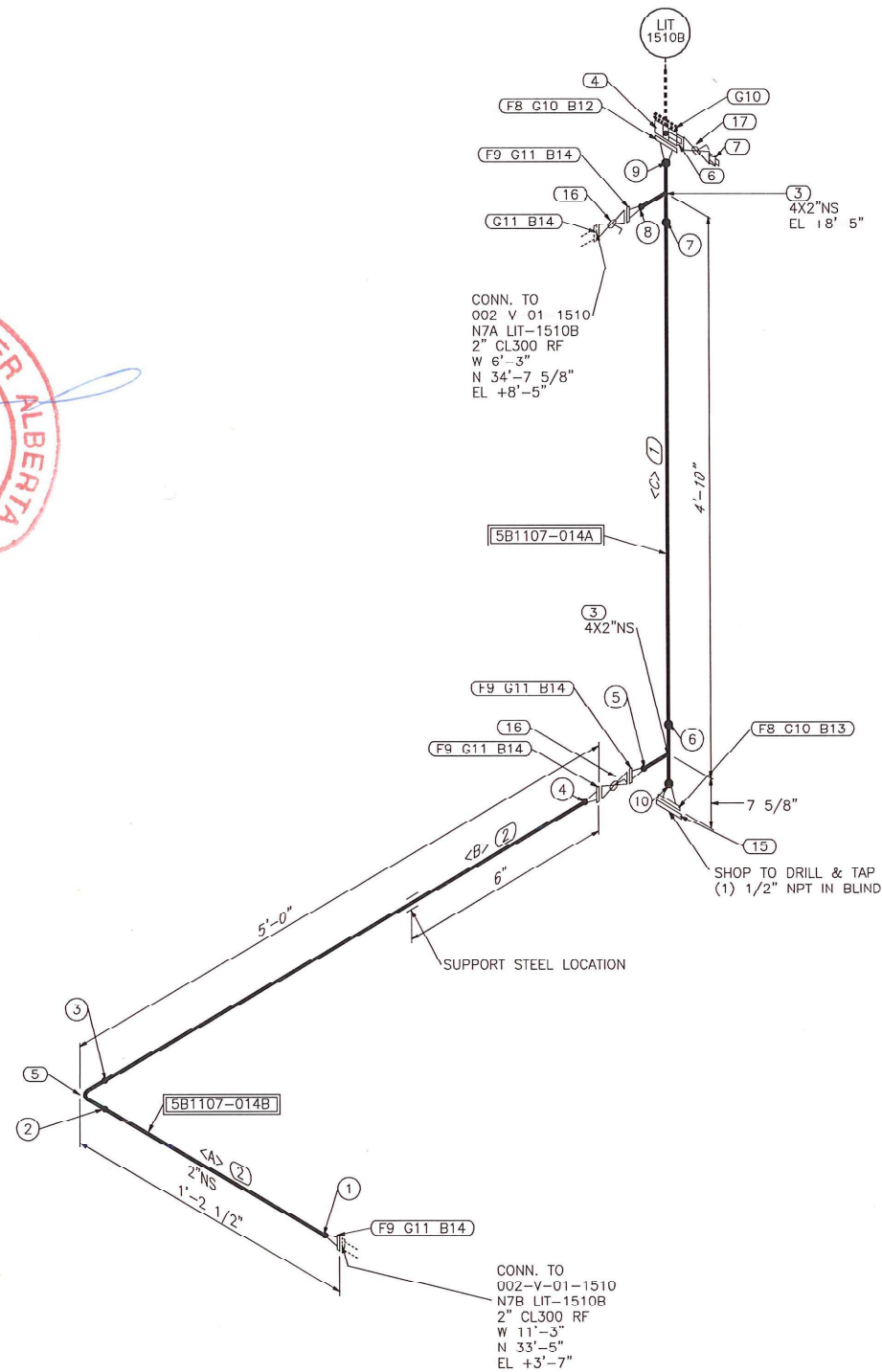
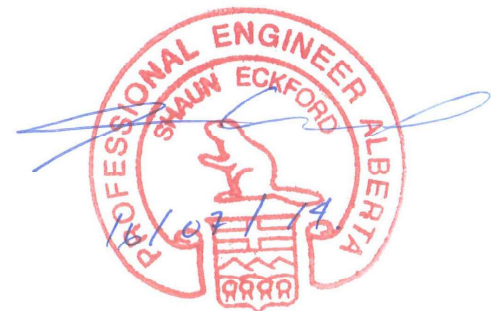
ITEM NO	SIZE	NOM. THK	WELD TYPE	DESCRIPTION	WELDER ID	DATE	NDE REPORT No.	V.T.
10	4"	SCH STD	BW					
9	4"	SCH STD	BW					
8	3/4"	CL3000	SW					
7	2"	SCH 80	BW					
6	4"	SCH STD	BW					
5	3/4"	CL3000	LET					
4	4"	SCH STD	BW					
3	2"	SCH 80	BW					
2	2"	SCH 80	BW					
1	2"	SCH 80	BW					

REV.	D/M/Y	DESCRIPTION	BY	CHK	APP
0	19/09/2013	ISSUED FOR CONSTRUCTION	RR	BB	

LEGEND:		STD WELD PROC: 5B-102/103		PAINT SYSTEM: SEE E&IL		
○	: WELD NO.	L.T. WELD PROC: 5B-102/103	INSULATION: NA			
○	: MARK NO.	RATING/SPEC: CL150/A11	SANDBLAST: SSPC-SP6			
○	FFW : FIELD FIT WELD	HYDROTEST PSIG: 428	DESIGN TEMP °F: 100			
○	× : FIELD WELD	RADIOGRAPHY: 10%	DESIGN PRES PSIG: 285			
□	: SPOOL NUMBER	STRESS RELIEVE: NO				
—	: PIPE SUPPORT					

TITLE: DEVON NEC CORPORATION.
FERRIER CENTRAL PROCESSING FACILITY
CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP)
PIPING ISOMETRIC
LINE NO. 002-V-01-1510-LG-1510F

CLIENT DOCUMENT NUMBER	ISOMETRIC NUMBER	REV.
TBD	5B1107-02-DR-80-013-1	0



GENERAL NOTES:

- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL UNLESS OTHERWISE SPECIFIED.
- 2) REFER TO 5B1107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
- 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
- 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
- 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION GS-5210 PIPING CLASS SPECIFICATIONS.
- 6) PIPING SPEC A13 IS TO SUPERCEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER 5BLUE RFI #4.
- 7) HYDRO TEST TO BE CHARTED FOR 1 HR.
- 8) 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
- 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
- 10) JOINT NON-DESTRUCTIVE EXAMINATION:
ALL JOINT: 20% VISUAL, BW: 10% RT, SW: 5% RT(FIT-UP) + 10% MT, FILLET WELDS: 10% MT.

BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
PIPE				
1	4	PIPE, SCH STD, ASTM A106B, SMLS, B36.10	4.2'	44.6
2	2	PIPE, SCH 80, ASTM A106B, SMLS, B36.10	5.3'	26.2
FITTINGS				
3	4X2	RED TEE, SCH STDx80, ASTM A234 WPB, B16.9	2	29.0
4	4	BLEED RING, CL300, RF, C/W (1) 3/4" THRD CONN ASTM A516 70N	1	1.0
5	2	90 DEG LR ELBOW, SCH 80, ASTM A234 WPB, B16.9	1	2.2
6	3/4	NIPPLE, SCH 160, ASTM A106B, SMLS, B36.10 TBE (4.0000 LG)	1	2.0
7	3/4	SOLID ROUND HEAD PLUG, THRD, ASTM A105N, B16.11	1	0.4
FLANGES				
8	4	FLANGE, CL300, SCH STD, RFWN, ASTM A105N, B16.5	2	50.0
9	2	FLANGE, CL300, SCH 80, RFWN, ASTM A105N, B16.5	4	36.0
GASKETS				
10	4	GASKET, CL300, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	3	3.0
11	2	GASKET, CL300, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	5	5.0
BOLTS				
12	3/4X6 1/4	(8) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	1	1.0
13	3/4X4 1/2	(8) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	1	1.0
14	5/8X3 1/2	(8) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	5	5.0
VALVES / IN-LINE ITEMS				
15	4	HUB BLIND FLANGE, CL300, RF, ASTM A105N, B16.5 (DRILL & TAP 1/2" NPT)	1	27.0
16	2	BALL VALVE, CL300, RF, LEVER OP, B16.34 (BVD306A)	2	76.0
17	3/4	BALL VALVE, CL800, THRD, LEVER OP, (BAB202A)	1	0.8
PIPE SPOOLS				
5B1107 014A 5B1107 014B				

CUT PIPE LENGTH

PIECE NO	LENGTH (FT-INS)	N.S. (INS)	REMARKS	END ONE	END TWO	ITEM CODE
<A>	8' 1/2"	2		RFVFI	RFVFI	13
	4' 6"	2		BEVEL	BEVEL	13
<C>	4' 1 1/2"	4		BEVEL	BEVEL	24

TOTAL SHOP WEIGHT 309.9
TOTAL FIELD WEIGHT 22.0
TOTAL WEIGHT-THIS DWG 331.9

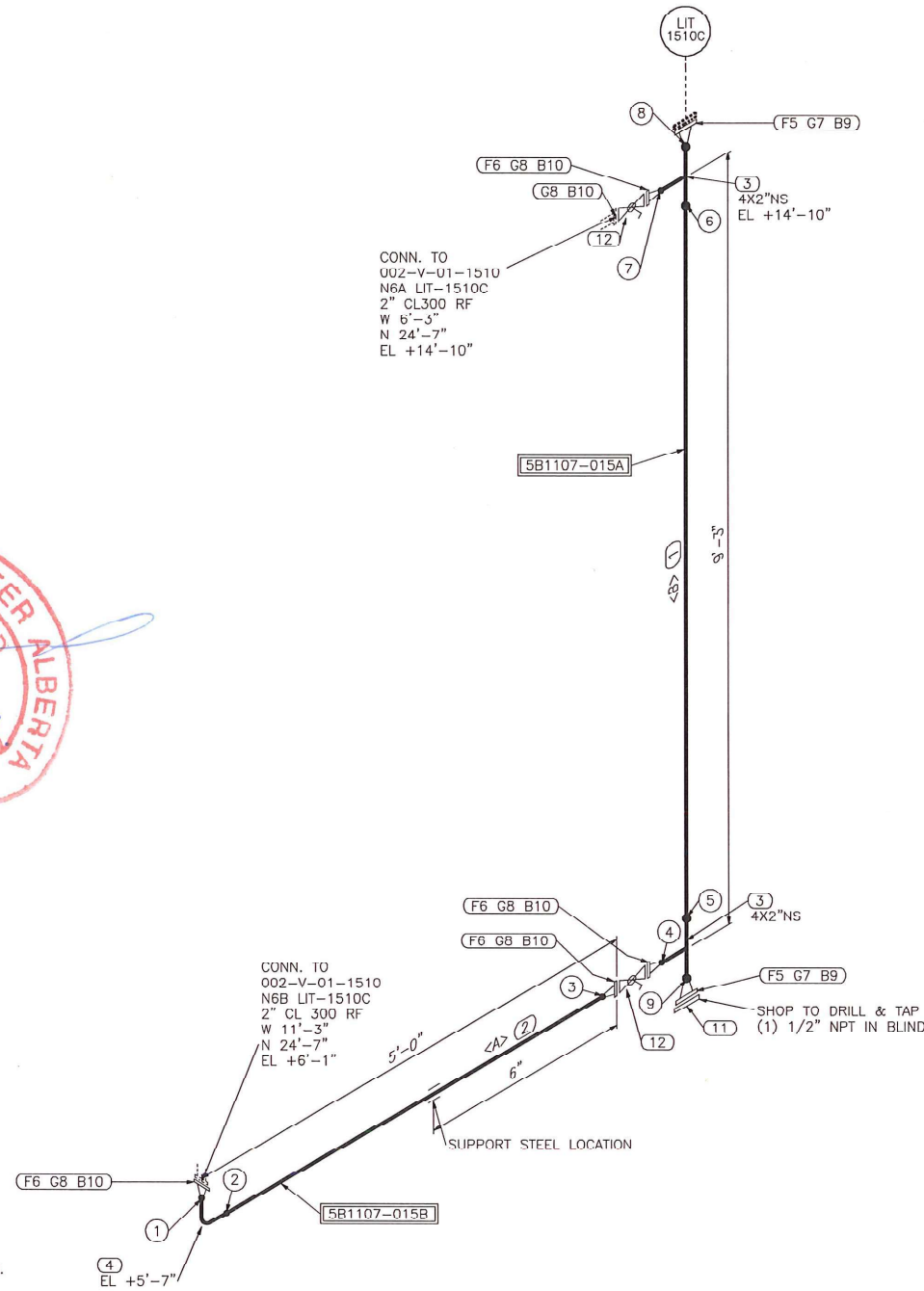
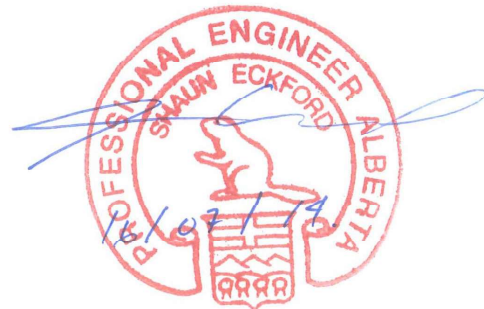
WELD NO.	SIZE	NOM. THK	WELD TYPE	DESCRIPTION	WELDER ID	DATE	NDE REPORT No.	V.T.
10	4"	SCH STD	BW					
9	4"	SCH STD	BW					
8	2"	SCH 80	BW					
7	4"	SCH STD	BW					
6	4"	SCH STD	BW					
5	2"	SCH 80	BW					
4	2"	SCH 80	BW					
3	2"	SCH 80	BW					
2	2"	SCH 80	BW					
1	2"	SCH 80	BW					

REV.	D/M/Y	DESCRIPTION	BY	CHK	APP
0	24/09/2013	ISSUED FOR CONSTRUCTION	RR	BB	[Signature]

LEGEND:		STD WELD PROC:	PAINT SYSTEM:
○	: WELD NO.	5B-102/103	SEE E&IL
○	: MARK NO.	L.T. WELD PROC: 5B-102/103	INSULATION: NA
○	FFW : FIELD FIT WELD	RATING/SPEC: CL150/A11	SANDBLAST: SSPC-SP6
○	: FIELD WELD	HYDROTEST PSIG: 428	DESIGN TEMP °F: 100
□	: SPOOL NUMBER	RADIOGRAPHY: 10%	DESIGN PRES PSIG: 285
—	: PIPE SUPPORT	STRESS RELIEVE: NO	

TITLE: DEVON NEC CORPORATION, FERRIER CENTRAL PROCESSING FACILITY, CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP) PIPING ISOMETRIC
LINE NO. 002-V-01-1510-LB-1510B

CLIENT DOCUMENT NUMBER	ISOMETRIC NUMBER	REV.
TBD	5B1107-02-DR-80-014-1	0



GENERAL NOTES:

- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL UNLESS OTHERWISE SPECIFIED.
- 2) REFER TO SB1107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
- 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
- 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
- 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION GS-5210 PIPING CLASS SPECIFICATIONS.
- 6) PIPING SPEC A13 IS TO SUPERCEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER 5BLUE RFI #4.
- 7) HYDRO TEST TO BE CHARTED FOR 1 HR.
- 8) 1/8" WFLD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
- 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
- 10) JOINT NON-DESTRUCTIVE EXAMINATION:
 ALL JOINT: 20% VISUAL, BW: 10% RT, SW: 5% RT(FIT-UP) + 10% MT, FILLET WELDS: 10% MT.

BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
PIPE				
1	4"	PIPE, SCH STD, ASTM A106B, SMLS, B36.10	8.6'	92.2
2	2"	PIPE, SCH 80, ASTM A106B, SMLS, B36.10	4.5'	22.6
FITTINGS				
3	4X2	RED TEE, SCH STDx80, ASTM A234 WPB, B16.9	2	29.0
4	2"	90 DEG LR ELDOW, SCH 80, ASTM A234 WPB, B16.9	1	2.2
FLANGES				
5	4"	FLANGE, CL300, SCH STD, RFWN, ASTM A105N, B16.5	2	50.0
6	2"	FLANGE, CL300, SCH 80, RFWN, ASTM A105N, B16.5	4	36.0
CASKETS				
7	4"	CASKET, CL300, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	2	2.0
8	2"	CASKET, CL300, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	5	5.0
BOLTS				
9	3/4x4 1/2	(8) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	2	2.0
10	5/8x3 1/2	(8) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR D7, A194 GR 2H, B16.5	5	5.0
VALVES / IN-LINE ITEMS				
11	4"	HUB BLIND FLANGE, CL300, RF, ASTM A105N, B16.5 (DRILL & TAP 1/2" NPT)	1	27.0
12	2"	BALL VALVE, CL300, RF, LEVER OP, B16.34 (BV0306A)	2	76.0
PIPE SPOOLS				
SB1107-015A SB1107-015B				

PIECE NO	LENGTH (FT-INS)	N.S. (INS)	REMARKS	END ONE	END TWO	ITEM CODE
<A>	4'6"	2		BEVEL	BEVEL	33
	8'6 1/2"	4		BEVEL	BEVEL	24

TOTAL SHOP WEIGHT 349.0
 TOTAL FIELD WEIGHT 22.0
 TOTAL WEIGHT-THIS DWG 371.0

WELD NO.	SIZE	NOM. THK	WELD TYPE	DESCRIPTION	WELDER ID	DATE	NDE REPORT No.	V.I.
9	4"	SCH STD	BW					
8	4"	SCH STD	BW					
7	2"	SCH 80	BW					
6	4"	SCH STD	BW					
5	4"	SCH STD	BW					
4	2"	SCH 80	RW					
3	2"	SCH 80	BW					
2	2"	SCH 80	BW					
1	2"	SCH 80	BW					

REV.	D/M/Y	DESCRIPTION	BY	CHK	APP
0	24/09/2013	ISSUED FOR CONSTRUCTION	RR	BB	[Signature]

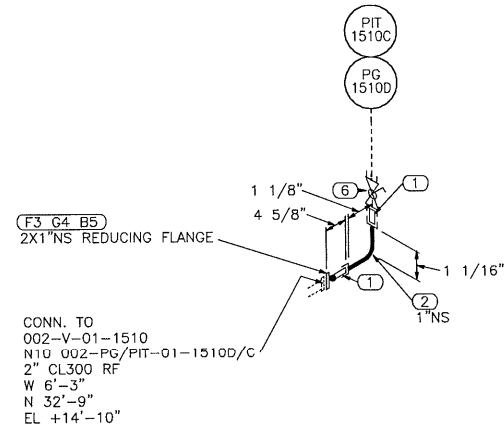
LEGEND:		STD WELD PROC:		PAINT SYSTEM:	
○	: WELD NO.	5B-102/103		SEE E&I	
○	: MARK NO.	L.T. WELD PROC:	5B-102/103	INSULATION:	NA
○	FFW	RATING/SPEC:	CL150/A11	SANDBLAST:	SSPC-SP6
○	: FIELD FIT WELD	HYDROTEST PSIG:	428	DESIGN TEMP °F:	100
○	: FIELD WELD	RADIOGRAPHY:	10%	DESIGN PRES PSIG:	285
□	: SPOOL NUMBER	STRESS RELIEVE:	NO		
—	: PIPE SUPPORT				

TITLE: DEVON NEC CORPORATION
 FERRIER CENTRAL PROCESSING FACILITY
 CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP)
 PIPING ISOMETRIC
 LINE NO. 002-V-01-1510-LB-1510C

CLIENT DOCUMENT NUMBER	ISOMETRIC NUMBER	REV.
TBD	5B1107-02-DR-80-015-1	0

BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
FITTINGS				
1	1	NIPPLE, SCH 160, ASTM A106B, SMLS, B36.10 TBE (4.0000 LG)	2	5.7
2	1	90 DEG LR ELBOW, CL3000, THRD, ASTM A105N, B16.11	1	2.3
FLANGES				
3	2X1	FLANGE, RED, CL300, RF, THRD, ASTM A105N, B16.5	1	7.0
GASKETS				
4	2	GASKET, CL300, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	1	1.0
BOLTS				
5	5/8X3 1/2	(8) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	1	1.0
VALVES / IN-LINE ITEMS				
6	1	BALL VALVE, CL800, THRD, LEVER OP, (BA8202A)	1	1.4



GENERAL NOTES:

- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL UNLESS OTHERWISE SPECIFIED.
- 2) REFER TO 5B1107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
- 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
- 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
- 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION GS-5210 PIPING CLASS SPECIFICATIONS.
- 6) PIPING SPEC A13 IS TO SUPERCEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER SBLUE RFI #4.
- 7) HYDRO TEST TO BE CHARTED FOR 1 HR.
- 8) 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
- 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
- 10) JOINT NON-DESTRUCTIVE EXAMINATION:
ALL JOINT: 20% VISUAL, BW: 10% KI, SW: 5% KI(HI-UP) + 10% MT, FILLET WELDS: 10% MT.

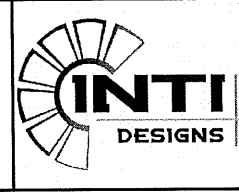
TOTAL SHOP WEIGHT 18.4
TOTAL FIELD WEIGHT 0.0
TOTAL WEIGHT--THIS DWG 18.4

REV.	D/M/Y	DESCRIPTION	BY	CHK	APP
0	05/11/2013	ISSUED FOR CONSTRUCTION	RR	BB	

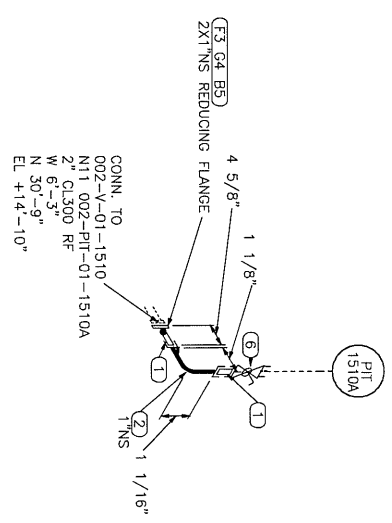
LEGEND:

- : WELD NO.
- : MARK NO.
- FFW : FIELD FIT WELD
- ⊗ : FIELD WELD
- 4 : SPOOL NUMBER
- : PIPE SUPPORT

STD WELD PROC:	5B-102/103	PAINT SYSTEM:	SEE E&IL
L.T. WELD PROC:	5B-102/103	INSULATION:	NA
RATING/SPEC:	CL150/A11	SANDBLAST:	SSPC-SP6
HYDROTEST PSIG:	428	DESIGN TEMP °F:	100
RADIOGRAPHY:	10%	DESIGN PRES PSIG:	285
STRESS RELIEVE:	NO		



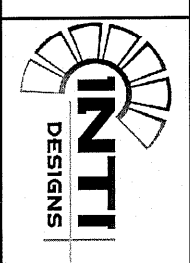
TITLE: DEVON NEC CORPORATION. FERRIER CENTRAL PROCESSING FACILITY CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP) PIPING ISOMETRIC LINE NO. 002-V-01-1510-PG/PIT-1510D/C		
CLIENT DOCUMENT NUMBER	ISOMETRIC NUMBER	REV.
TBD	5B1107-02-DR-80-016-1	0



BILL OF MATERIAL				
MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
FITTINGS				
1	1	NIPPLE, SCH 160, ASTM A106B, SMLS, B36.10, TEE (4.0000 LG)	2	5.7
2	1	90 DEG LR ELBOW, CL3000, THRD, ASTM A105N, B16.11	1	2.3
FLANGES				
3	2X1	FLANGE, RED, CL300, RFTHRD, ASTM A105N, B16.5	1	7.0
GASKETS				
4	2	GASKET, CL300, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CG, CS CENTERING RING, 316 SS INNER RING, B16.20	1	1.0
BOLTS				
5	5/8X3 1/2	(8) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	1	1.0
VALVES / IN-LINE ITEMS				
6	1	BALL VALVE, CL800, THRD, LEVER OP, (B48202A)	1	1.4

- GENERAL NOTES:**
- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL, UNLESS OTHERWISE SPECIFIED.
 - 2) REFER TO 581107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
 - 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE DESIGN CODE B31.3, 2010 EDITION.
 - 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
 - 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION CS-8210 PIPING CLASS SPECIFICATIONS.
 - 6) PIPING SPEC A13 IS TO SUPERSEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER SBBLUE REF #4.
 - 7) HYDRO TEST TO BE CHARTED FOR 1 HR.
 - 8) 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
 - 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
 - 10) JOINT NON-DESTRUCTIVE EXAMINATION: ALL JOINT: 20% VISUAL, BW: 10% RT, SW: 5% RT(FT-UP) + 10% MT, FILET WELDS: 10% MT.

REV.	D/M/Y	DESCRIPTION	BY	CHK	LEGEND:	STD WELD PROC:	L.T. WELD PROC:	RATING/SPEC:	HYDROTEST PSIG:	RADIOGRAPHY:	STRESS RELIEVE:	PAINT SYSTEM:	INSULATION:	SANDBLAST:	DESIGN TEMP °F:	DESIGN PRES PSIG:
0	05/11/2013	ISSUED FOR CONSTRUCTION	RR	BB	○ : WELD NO. ○ : MARK NO. ○ : FIELD FIT WELD ○ : FIELD WELD 4 : SPOOL NUMBER : PIPE SUPPORT	5B-102/103	5B-102/103	CL150/A11	428	10%	NO	SEE EXIL	NA	SSPC-SP6	100	285



TITLE: DEVON NEC CORPORATION, FERRIER CENTRAL PROCESSING FACILITY CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP) PIPING ISOMETRIC LINE NO. 002-V-01-1510-PIT-1510A			
CLIENT DOCUMENT NUMBER	ISOMETRIC NUMBER	REV.	
TBD	581107-02-DR-80-017-1	0	

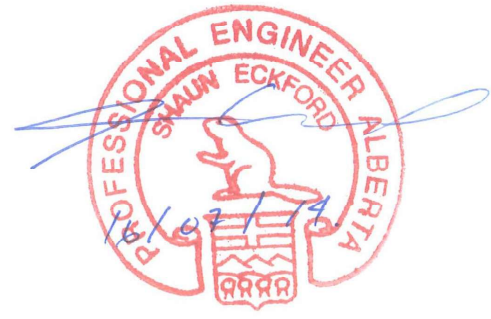
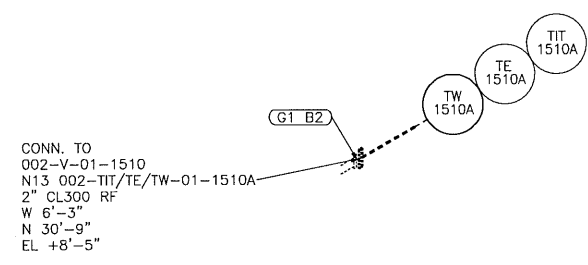
TOTAL SHOP WEIGHT 18.4
 TOTAL FIELD WEIGHT 0.0
 TOTAL WEIGHT-THIS DWG 18.4

BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
------	-------------	-------------	-----	--------------

SHOP MATERIALS

GASKETS				
1	2	GASKET, CL300, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	1	1.0
BOLTS				
2	5/8X3 1/2	(8) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	1	1.0



GENERAL NOTES:

- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL UNLESS OTHERWISE SPECIFIED.
- 2) REFER TO 5B1107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
- 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
- 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
- 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION GS-5210 PIPING CLASS SPECIFICATIONS.
- 6) PIPING SPEC A13 IS TO SUPERCEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER 5BLUE RFI #4.
- 7) HYDRO TEST TO BE CHARTED FOR 1 HR.
- 8) 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
- 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
- 10) JOINT NON-DESTRUCTIVE EXAMINATION:
ALL JOINT: 20% VISUAL, BW: 10% RT, SW: 5% RT(FIT-UP) + 10% MT, FILLET WELDS: 10% MT.

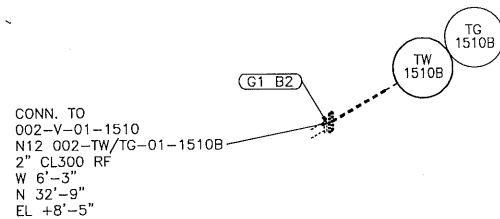
TOTAL SHOP WEIGHT	2.0
TOTAL FIELD WEIGHT	8.0
TOTAL WEIGHT—THIS DWG	10.0

REV.	D/M/Y	DESCRIPTION	BY	CHK	APP	LEGEND:	STD WELD PROC:	PAINT SYSTEM:	5Blue Process Equipment Inc.	INTI DESIGNS	TITLE:	CLIENT DOCUMENT NUMBER	ISOMETRIC NUMBER	REV.
0	05/11/2013	ISSUED FOR CONSTRUCTION	RR	BB	[Signature]	○ : WELD NO. ○ : MARK NO. ○ FFW : FIELD FIT WELD X : FIELD WELD [4] : SPOOL NUMBER — : PIPE SUPPORT	5B-102/103	SEE E&I			DEVON NEC CORPORATION. FERRIER CENTRAL PROCESSING FACILITY CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP) PIPING ISOMETRIC LINE NO. 002-V-01-1510-TIT/TE/TW-1510A	TBD	5B1107-02-DR-80-018-1	0
							L.T. WELD PROC: 5B-102/103	INSULATION: NA						
							RATING/SPEC: CL150/A11	SANDBLAST: SSPC-SP6						
							HYDROTEST PSIG: 428	DESIGN TEMP °F: 100						
							RADIOGRAPHY: 10%	DESIGN PRES PSIG: 285						
							STRESS RELIEVE: NO							

BILL OF MATERIAL



MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
GASKETS				
1	2	GASKET, CL300, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	1	1.0
BOLTS				
2	5/8X3 1/2	(8) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	1	1.0



GENERAL NOTES:

- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL UNLESS OTHERWISE SPECIFIED.
- 2) REFER TO 5B1107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
- 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
- 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
- 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION GS-5210 PIPING CLASS SPECIFICATIONS.
- 6) PIPING SPEC A13 IS TO SUPERCEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER 5BLUE RFI #4.
- 7) HYDRO TEST TO BE CHARTED FOR 1 HR.
- 8) 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
- 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
- 10) JOINT NON-DESTRUCTIVE EXAMINATION:
ALL JOINT: 20% VISUAL, BW: 10% RT, SW: 5% RT(FIT-UP) + 10% MT. FILLET WELDS: 10% MT.

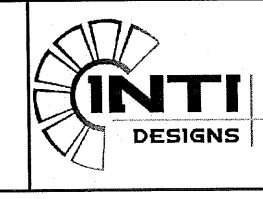
TOTAL SHOP WEIGHT 2.0
TOTAL FIELD WEIGHT 8.0
TOTAL WEIGHT-THIS DWG 10.0

REV.	D/M/Y	DESCRIPTION	BY	CHK	APP
0	05/11/2013	ISSUED FOR CONSTRUCTION	RR	BE	

LEGEND:

- : WELD NO.
- : MARK NO.
- : FIELD FIT WELD
- : FIELD WELD
- : SPOOL NUMBER
- : PIPE SUPPORT

STD WELD PROC:	5B-102/103	PAINT SYSTEM:	SEE E&L
L.T. WELD PROC:	5B-102/103	INSULATION:	NA
RATING/SPEC:	CL150/A11	SANDBLAST:	SSPC-SP6
HYDROTEST PSIG:	428	DESIGN TEMP °F:	100
RADIOGRAPHY:	10%	DESIGN PRES PSIG:	285
STRESS RELIEVE:	NO		



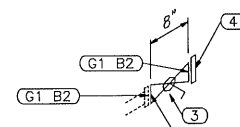
TITLE: DEVON NEC CORPORATION.
FERRIER CENTRAL PROCESSING FACILITY
CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP)
PIPING ISOMETRIC
LINE NO. 002-V-01-1510-TW/TG-1510B

CLIENT DOCUMENT NUMBER	ISOMETRIC NUMBER	REV.
TBD	5B1107-02-DR-80-019-1	0



BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
GASKETS				
1	3	GASKET, CL150, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	2	2.0
BOLTS				
2	5/8X3 3/4	(4) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	2	2.0
VALVES / IN-LINE ITEMS				
3	3	BALL VALVE, CL150, RF, LEVER OP, (BA0106A1)	1	64.0
4	3	BLIND FLANGE, CL150, RF, ASTM A105N, B16.5	1	9.0



CONN. TO
002-V-01-1510
N15 UTILITY CONNECTION
3" CL150 RF
W 6'-3"
N 25'-9"
EL +8'-5"

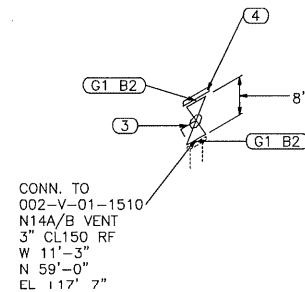
GENERAL NOTES:

- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL UNLESS OTHERWISE SPECIFIED.
- 2) REFER TO 5B1107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
- 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
- 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
- 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION GS-5210 PIPING CLASS SPECIFICATIONS.
- 6) PIPING SPEC A13 IS TO SUPERCEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER 5BLUE RFI #4.
- 7) HYDRO TEST TO BE CHARTED FOR 1 HR.
- 8) 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
- 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
- 10) JOINT NON-DESTRUCTIVE EXAMINATION:
ALL JOINT: 20% VISUAL, BW: 10% RT, SW: 5% RT(FIT-UP) + 10% MT, FILLET WELDS: 10% MT.

TOTAL SHOP WEIGHT 77.0
TOTAL FIELD WEIGHT 0.0
TOTAL WEIGHT-THIS DWG 77.0

				LEGEND: 		STD WELD PROC: 5B-102/103 PAINT SYSTEM: SEE E&IL L.T. WELD PROC: 5B-102/103 INSULATION: NA RATING/SPEC: CL150/A11 SANDBLAST: SSPC-SP6 HYDROTEST PSIG: 428 DESIGN TEMP °F: 100 RADIOGRAPHY: 10% DESIGN PRES PSIG: 285 STRESS RELIEVE: NO				TITLE: DEVON NEC CORPORATION. FERRIER CENTRAL PROCESSING FACILITY CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP) PIPING ISOMETRIC LINE NO. 002-V-01-1510 UTILITY CONNECTION		
0	05/11/2013	ISSUED FOR CONSTRUCTION	RR	BB			CLIENT DOCUMENT NUMBER			ISOMETRIC NUMBER	REV.	
REV.	D/M/Y	DESCRIPTION	BY	CHK	APP		TBD	5B1107-02-DR-80-020-1	0			

N
 (1) SHOWN
 (2) REQUIRED



BILL OF MATERIAL

MARK	SIZE (INCH)	DESCRIPTION	QTY	WEIGHT (LBS)
SHOP MATERIALS				
GASKETS				
1	3	GASKET, CL150, RF, 1/8" THK, 316 SS SPIRAL WOUND, FLEX FILLER CGI, CS CENTERING RING, 316 SS INNER RING, B16.20	2	2.0
BOLTS				
2	5/8X3 3/4	(4) STUDBOLT c/w 2 HEX NUTS, ASTM A193 GR B7, A194 GR 2H, B16.5	2	2.0
VALVES / IN-LINE ITEMS				
3	3	BALL VALVE, CL150, RF, LEVER OP, (BA0106A1)	1	64.0
4	3	BLIND FLANGE, CL150, RF, ASTM A350 LF2 CL1, B16.5	1	9.0

TOTAL SHOP WEIGHT 77.0
 TOTAL FIELD WEIGHT 0.0
 TOTAL WEIGHT-TOTAL DWG 77.0

GENERAL NOTES:

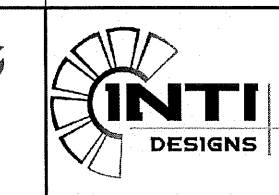
- 1) ALL DIMENSIONS AND ELEVATIONS ARE IN IMPERIAL UNLESS OTHERWISE SPECIFIED.
- 2) REFER TO 5B1107-02-DR-80-000-1 FOR PIPE SUPPORT DRAWINGS.
- 3) SPOOL TO BE BUILT IN ACCORDANCE WITH ASME PRESSURE PIPING CODE B31.3, 2010 EDITION.
- 4) ALL FLANGE BOLT HOLES TO STRADDLE CENTER LINES (UNO).
- 5) THIS ISOMETRIC IS TO BE READ IN CONJUNCTION WITH DEVON NEC CORPORATION GS-5210 PIPING CLASS SPECIFICATIONS.
- 6) PIPING SPEC A13 IS TO SUPERCEDE A11 FOR ALL SMALL BORE VENTS, DRAINS AND INSTRUMENT CONNECTIONS AS PER 5BLUE RFI #4.
- 7) HYDRO TEST TO BE CHARTED FOR 1 HR.
- 8) 1/8" WELD GAP HAS BEEN TAKEN INTO ACCOUNT FOR ALL BW AND SW CONNECTIONS.
- 9) SHOP TO VERIFY ALL DIMENSIONS AND ELEVATIONS AND COORDINATES PRIOR TO FABRICATION.
- 10) JOINT NON-DESTRUCTIVE EXAMINATION:
 ALL JOINT: 20% VISUAL, BW: 10% RT, SW: 5% RT(FIT-UP) + 10% MT, FILLET WELDS: 10% MT.

REV.	D/M/Y	DESCRIPTION	BY	CHK	APP
0	05/11/2013	ISSUED FOR CONSTRUCTION	RR	BB	

LEGEND:

○	: WELD NO.
○	: MARK NO.
○	: FIELD FIT. WELD
○	: FIELD WELD
4	: SPOOL NUMBER
—	: PIPE SUPPORT

STD WELD PROC:	5B-102/103	PAINT SYSTEM:	SEE E&I
L.T. WELD PROC:	5B-102/103	INSULATION:	NA
RATING/SPEC:	CL150/A11	SANDBLAST:	SSPC-SP6
HYDROTEST PSIG:	428	DESIGN TEMP °F:	100
RADIOGRAPHY:	10%	DESIGN PRES PSIG:	285
STRESS RELIEVE:	NO		



TITLE: DEVON NEC CORPORATION. FERRIER CENTRAL PROCESSING FACILITY CENTRAL OIL BATTERY - LIQUID EXTRACTION PLANT (LEP) PIPING ISOMETRIC LINE NO. 002-V-01-1510-VENTS		
CLIENT DOCUMENT NUMBER	ISOMETRIC NUMBER	REV.
TBD	5B1107-02-DR-80-021-1	0