

[illegible]

INSTRUMENT LIST

TAG No.	DESCRIPTION
P-0766	HYDROCYCLONE FEED PUMP - CUSTOMER SUPPLIED
P-0768	CHEMICAL INJECTION PUMP - CUSTOMER SUPPLIED
V-0766A/B	12" OD HYDROCYCLONE VESSEL
FE/FT/1/F1 7404	FLOW METER - CUSTOMER SUPPLIED
FE/FT/1/F1 7405/406A/B	FLOW METER - CUSTOMER SUPPLIED
FE/FT/1/F1 7407A/B	FLOW METER - CUSTOMER SUPPLIED
HW/FV/FC 7406A/B	VARIABLE ORIFICE PLATE ACTUATOR - CUSTOMER SUPPLIED
PG 7404/7409	PRESSURE GAUGE - CUSTOMER SUPPLIED
PG 7405A/B	PRESSURE GAUGE - CUSTOMER SUPPLIED
PG 7406A/B	PRESSURE GAUGE - CUSTOMER SUPPLIED
PG 7407A/B	PRESSURE GAUGE - CUSTOMER SUPPLIED
PSV 7404	PRESSURE SAFETY VALVE - CUSTOMER SUPPLIED
PSV 7405	PRESSURE SAFETY VALVE - CUSTOMER SUPPLIED
PG 7405/406A/B/7407	TEMPERATURE GAUGE - CUSTOMER SUPPLIED
PG 7405/406A/B/7407	TEMPERATURE GAUGE - CUSTOMER SUPPLIED
PI/PT/PA/HS 7405	PRESSURE INDICATING TRANSMITTER - CUSTOMER SUPPLIED
PI/PT/PA/HS 7406	PRESSURE INDICATING TRANSMITTER - CUSTOMER SUPPLIED
PG 7405/406A/B/7407	TEMPERATURE GAUGE - CUSTOMER SUPPLIED
PSV 7406A/B	PRESSURE SAFETY VALVE - CUSTOMER SUPPLIED
PV/PI/PT 7406A/B	PRESSURE CONTROL VALVE - CUSTOMER SUPPLIED
PV/PI/PT 7407A/B	PRESSURE CONTROL VALVE - CUSTOMER SUPPLIED
PCV 7409	PRESSURE CONTROL VALVE - CUSTOMER SUPPLIED

VALVE LIST

ITEM	QTY.	DESCRIPTION
BV-1	17	BALL VALVE, 3" ISO ANSI RF RP. (CUSTOMER SUPPLIED)
BV-2		BALL VALVE, 2" ISO ANSI RF RP. (CUSTOMER SUPPLIED)
BV-3		BALL VALVE, 1" SW X NPT 3M RP. SPRING HANDLE (CUSTOMER SUPPLIED)
BV-4	3	BALL VALVE, 3/4"NPT 3M RP. SPRING HANDLE (CUSTOMER SUPPLIED)
BV-5	4	BALL VALVE, 3/8" NPT 3M RP. (CUSTOMER SUPPLIED)
BV-6	6	BALL VALVE, 1" NPT 3M RP. (CUSTOMER SUPPLIED)
BV-7	10	BALL VALVE, 3/4"NPT 3M RP. (CUSTOMER SUPPLIED)
CV-1	9	CHECK VALVE, 3" ISO ANSI RF (CUSTOMER SUPPLIED)
CV-2	3	CHECK VALVE, 2" ISO ANSI RF (CUSTOMER SUPPLIED)
CV-3	1	CHECK VALVE, 3/8" NPT (CUSTOMER SUPPLIED)
MV-1	6	MULTI-PORT VALVE, 3/4" CW 1/2 BLEED AND PLUG (CUSTOMER SUPPLIED)
NV-1	8	NEEDLE VALVE, 1/2"MXF, 55 (CUSTOMER SUPPLIED)
NV-2	6	NEEDLE VALVE, 3/4" X 1/2" MXF, 55 (CUSTOMER SUPPLIED)
ST-1	1	Y-STRAINER, 3" ISO ANSI RF (CUSTOMER SUPPLIED)
BR-1	4	BLEED RING, 3" ISO ANSI RF, 3665S
BR-2	1	BLEED RING, 2" ISO ANSI RF, 3665S

CLIENT:

CENOVUS
ENERGY

BRAMLEY
MECHANICAL & HYDRAULIC
A DIVISION OF ARGO INDUSTRIES LTD.

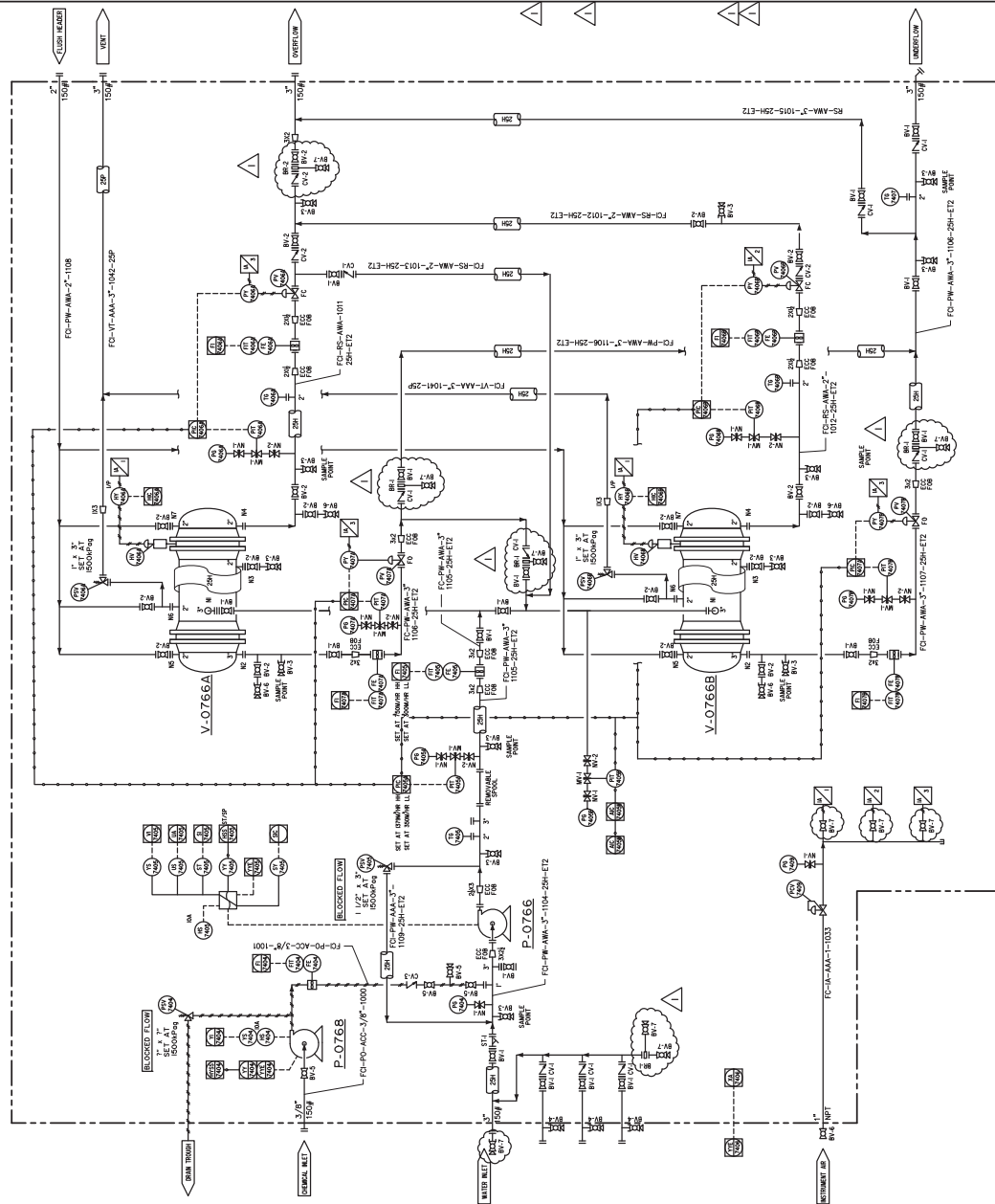
PROJECT:

FOSTER CREEK
S/W 1/4 22-70-04

661

TITLE:

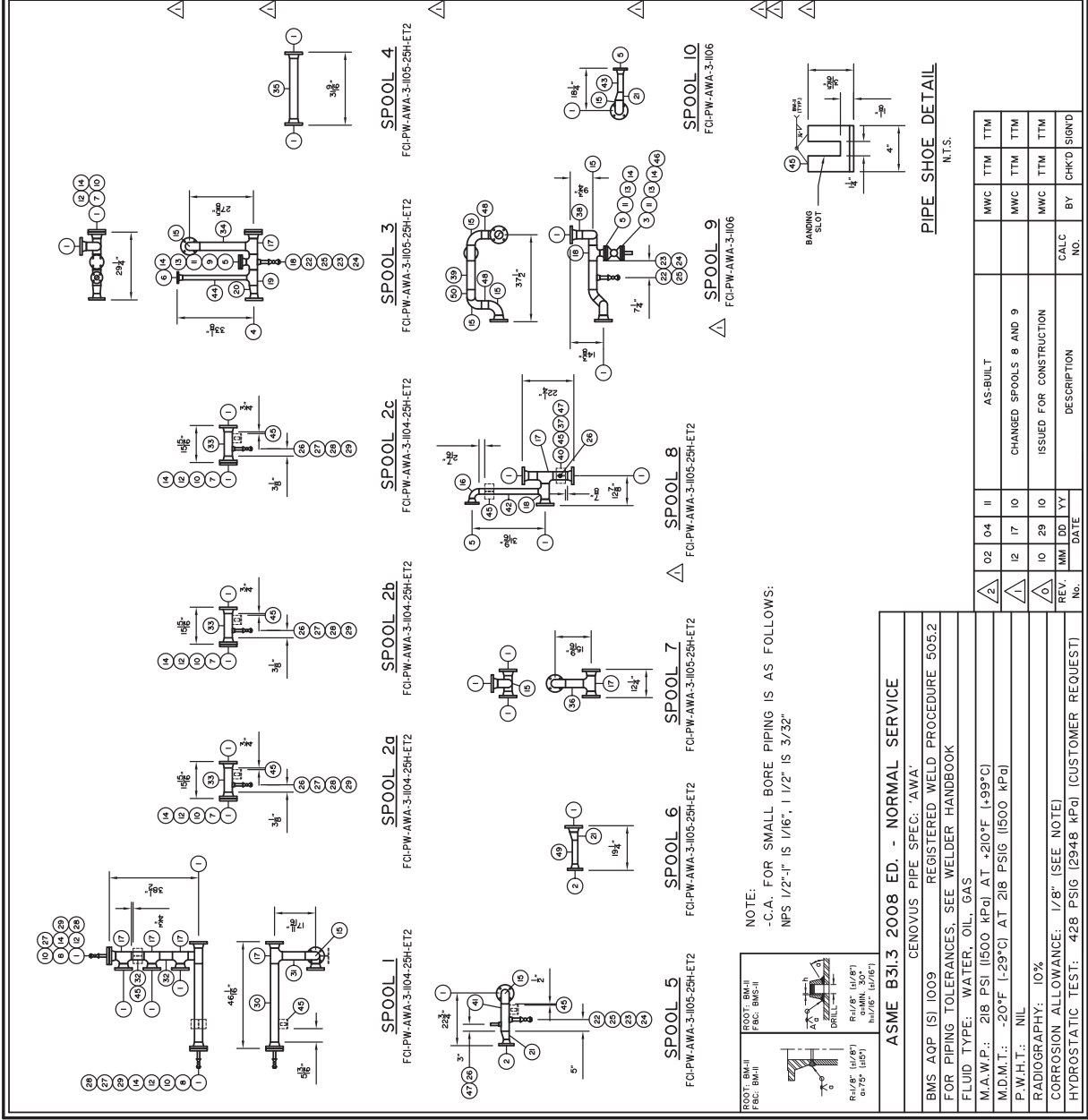
Wo No.: 33754		
DRAWN BY: M. CASH	REV. No.: 2	DATE: MM/DD/YY 02/04/11



NOTES:

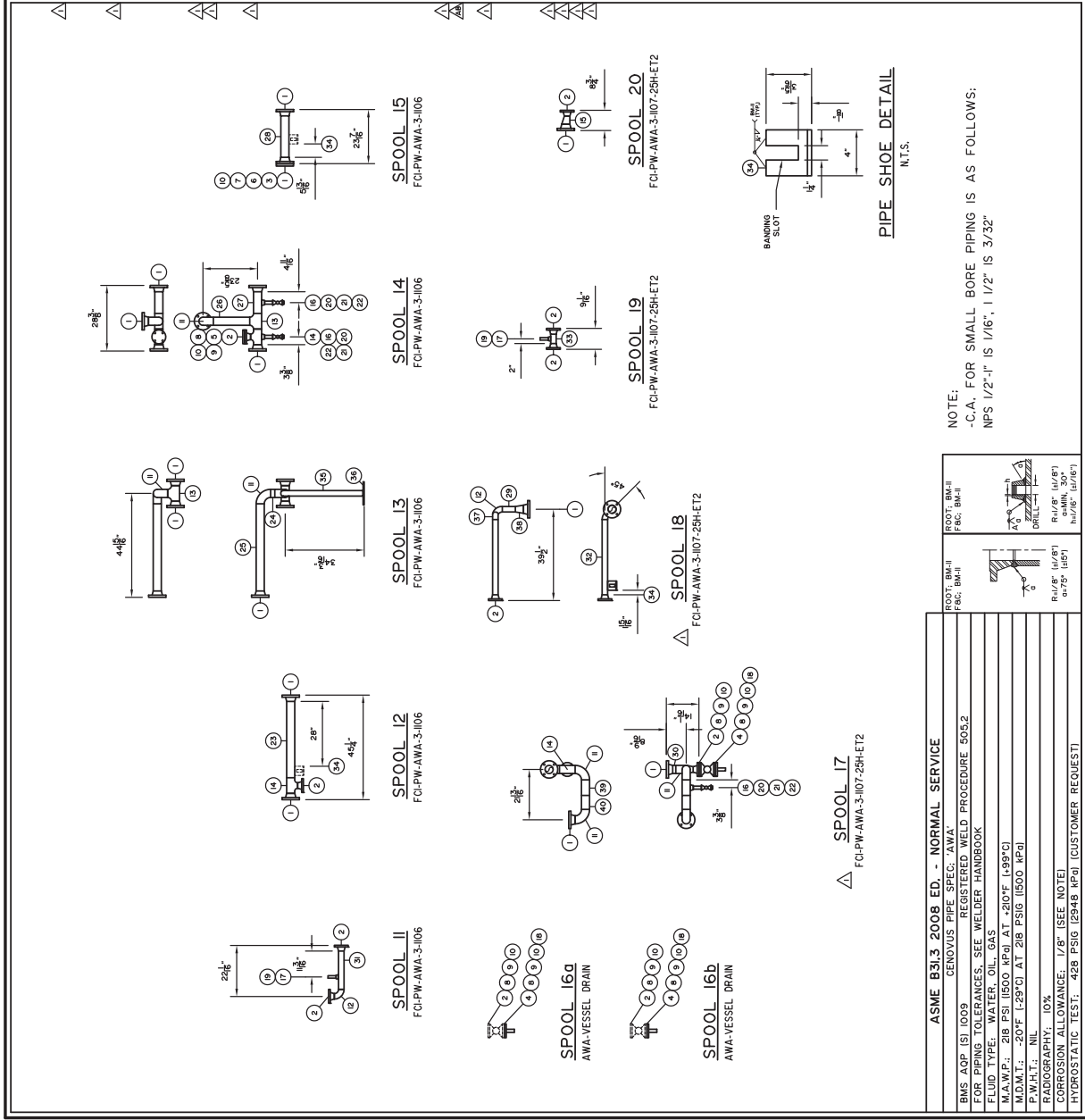
ALL TUBING TO BE 316SS
PROCESS/SENSING; 1/2" X 0.049" W.T. 316SS SMLS TUBING
INSTRUMENT LINES; 3/8" X 0.035" W.T. 316SS SMLS TUBING
ALL TUBE FITTINGS TO BE SWAGelok SS

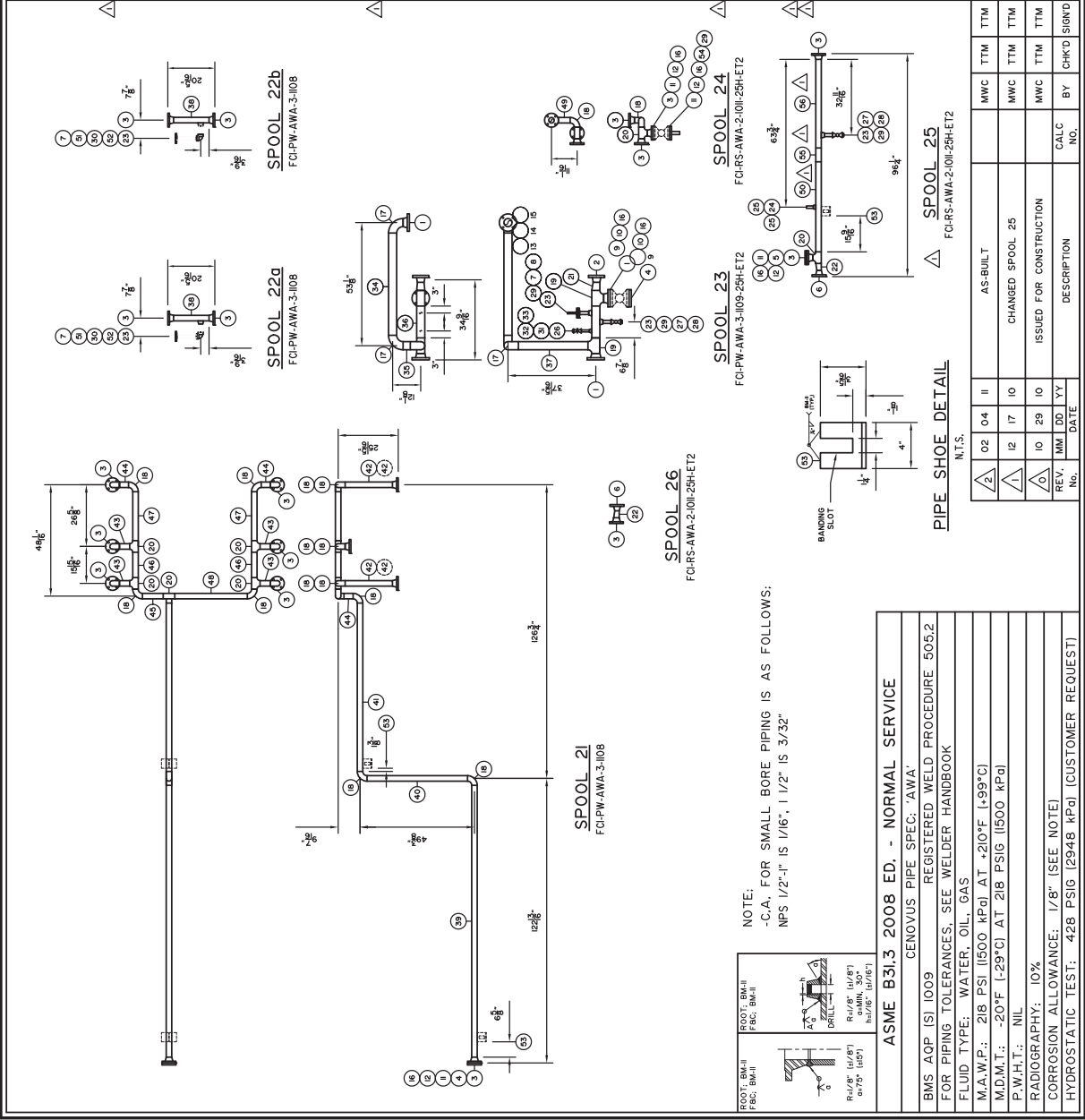
2	02	04	II	AS-BUILT	MWC	TTM	TTM
1	01	06	II	ADDED BLEED RINGS AS REQUESTED BY CUSTOMER	MWC	TTM	TTM
0	10	29	10	ISSUED FOR CONSTRUCTION	MWC	TTM	TTM
REV. NO.	MM	DD	YY	DESCRIPTION	BY	CHK'D	APP'D
DATE							



BILL OF MATERIAL	
ITEM	QTY. DESCRIPTION
1	27 RFWN, 3" ISO ANSI SCH. 40, SA05N
2	2 RFWN, 2" ISO ANSI SCH. 80, SA05N
3	1 RFHB, 2" ISO ANSI TAPPED 1", SA05N
4	1 RFWN, 2 1/2" ISO ANSI SCH. 80, SA05N
5	4 RFWN, 2" ISO ANSI SCH. 80, SA05N
6	1 RFWN, 1 1/2" ISO ANSI SCH. 80, SA05N
7	4 RFHB, 3" ISO ANSI, SA05N
8	2 RFHB, 3" ISO ANSI TAPPED 3/4", SA05N
9	1 RFHB, 2" ISO ANSI TAPPED 1", SA05N
10	6 3/6 SPRALWIND GSCT, 3" ISO ANSI, NASB
11	3 3/6 SPRALWIND GSCT, 2" ISO ANSI, NASB
12	24 B7 ST100, 5/8" X 3 3/4", SA093-B7
13	12 B7 ST100, 5/8" X 3 1/4", SA093-B7
14	36 2H HEX NUT, 5/8", SA094-2H
15	9 WELD 90, 3" SCH. 40 LR, SA234WPB
16	1 WELD 90, 2" SCH. 80 LR, SA234WPB
17	7 WELD TEE, 3" SCH. 40, SA234WPB
18	3 WELD RED TEE, 3" X 2" SCH. 80, SA234WPB
19	1 WELD RED TEE, 3" X 1 1/2" SCH. 80, SA234WPB
20	1 WELD RED ECC, 3" X 2 1/2" SCH. 80, SA234WPB
21	3 WELD RED ECC, 3" X 2" SCH. 80, SA234WPB
22	3 SOL, 1" 3M X 3", SA05N
23	3 BALL VALVE, 1" SW X NPT 3M RP, (CUSTOMER SUPPLIED)
24	3 FS HEX PLUG, 1" 6M, SA05N
25	3 PRE PIPE NIPPLE, 1" X 4" SCH. 80, SA06B
26	5 SOL, 3/4" 3M X 10 - 3", SA05N
27	5 BALL VALVE, 3/4" SW X NPT 3M RP, (CUSTOMER SUPPLIED)
28	5 FS HEX PLUG, 3/4" 6M, SA05N
29	5 PRE PIPE NIPPLE, 3/4" X 4" SCH. 80 (0.1541), SA06B
30	1 PPE, 3" SCH. 40 (0.261) X 33 (3.16) LONG, SA06B
31	1 PPE, 3" SCH. 40 (0.261) X 9 (1.16) LONG, SA06B
32	2 PPE, 3" SCH. 40 (0.261) X 5 (1.27) LONG, SA06B
33	3 PPE, 3" SCH. 40 (0.261) X 10 (2.54) LONG, SA06B
34	1 PPE, 3" SCH. 40 (0.261) X 19 (3.4) LONG, SA06B
35	1 PPE, 3" SCH. 40 (0.261) X 26 (1.6) LONG, SA06B
36	1 PPE, 3" SCH. 40 (0.261) X 7 (1.16) LONG, SA06B
37	1 PPE, 3" SCH. 40 (0.261) X 3 3/4" LONG, SA06B
38	1 PPE, 3" SCH. 40 (0.261) X 2 1/2" LONG, SA06B
39	1 PPE, 3" SCH. 40 (0.261) X 6 1/4" LONG, SA06B
40	1 PPE, 3" SCH. 40 (0.261) X 25 (9.16) LONG, SA06B
41	1 PPE, 2" SCH. 80 (0.261) X 11 3/4" LONG, SA06B
42	1 PPE, 2" SCH. 80 (0.261) X 25 (9.16) LONG, SA06B
43	1 PPE, 2" SCH. 80 (0.261) X 7 (1.16) LONG, SA06B
44	1 PPE, 1 1/2" SCH. 80 (0.2001) X 27 5/8" LONG, SA06B
45	8 PPE SHOE - WA X 9 (1.16) 350W/50W BEAM X 4" LONG (SEE DETAIL)
46	1 PPE X TOE PPE NIPPLE, 1" X 4" SCH. 80, SA06B
47	2 PPE X TOE PPE NIPPLE, 3/4" X 4" SCH. 80 (0.1541), SA06B
48	2 PPE, 3" SCH. 40 (0.261) X 3" LONG, SA06B
49	1 PPE, 2" SCH. 80 (0.261) X 10 1/4" LONG, SA06B
50	1 WELD 45, 3" SCH. 40 LR, SA234WPB

CLIENT:	
CENOVUS ENERGY	
PROJECT:	
II) - FOSTER CREEK S/W 1/4 22-70-04	
TITLE:	
SPOOLS 1-10	
Wo No.: 33754	REV. No.: 2
DATE: MM/DD/YY	DATE: MM/DD/YY
09/30/10	02/04/11
M. CASH	
SCALE: 1/4"=1'-0"	CAD No.: 33754-SPOOLS 1

[illegible]



ITEM QTY.		DESCRIPTION
1	3	RFWN, 3" ISO ANSI SCH. 40, SAISON
2	1	RFWN, 1/2" ISO ANSI SCH. 80, SAISON
3	17	RFWN, 2" ISO ANSI SCH. 80, SAISON
4	2	RFB, 2" ISO ANSI, SAISON
5	1	RFB, 2" ISO ANSI TAPPED F, SAISON
6	2	RFWN, 1/2" ISO ANSI SCH. 80, SAISON
7	3	RFSW, 1" ISO ANSI, SAISON
8	1	RFB, 1" ISO ANSI TAPPED 3/8", SAISON
9	2	36 SPIRAL WIND GSKT, 3" ISO ANSI, MASH
10	8	87 STD, 5/8" X 3 3/4", SABS-87
11	4	36 SPIRAL WIND GSKT, 2" ISO ANSI, MASH
12	16	87 STD, 5/8" X 3 1/4", SABS-87
13	1	36 SPIRAL WIND GSKT, 1" ISO ANSI, MASH
14	8	87 STD, 5/8" X 3 1/4", SABS-87
15	8	2H HEX NUT, 1/2", S0M4-2H
16	48	2H HEX NUT, 5/8", S0M4-2H
17	3	WELD 90, 3" SCH. 40 LR, SA233MWP
18	15	WELD 90, 2" SCH. 80 LR, SA233MWP
19	2	WELD TEE, 3" SCH. 40, SA233MWP
20	7	WELD TEE, 2" SCH. 80, SA233MWP
21	1	WELD RED ECG, 3" X 2 1/2" SCH. 80, SA233MWP
22	2	WELD RED ECG, 2" X 1 1/2" SCH. 80, SA233MWP
23	5	SOL, 1" 3M X 10 - 6", SAISON
24	1	SOL, 3/4" 3M X 10 - 6", SAISON
25	2	PDE X TDE PIPE NIPPLE, 3/4" X 4" SCH. 80, SAISON
26	1	SOL, 1/2" 3M X 10 - 3", SAISON
27	2	BALL VALVE, 1" SW X NPT 3M RP, (CUSTOMER SUPPLIED)
28	2	FS HEX PLUG, 1" 6M, SAISON
29	2	FS HEX PLUG, 1" 6M, SAISON
30	2	FS HEX PLUG, 1" 6M, SAISON
31	1	PPE, 1/2" 1/2" X 4" SCH. 80, SAISON
32	1	NEEDLE VALVE, 1/2" WVF, SS (CUSTOMER SUPPLIED)
33	1	FS HEX PLUG, 1/2" 6M, SAISON
34	1	PPE, 3" SCH. 40 10.26T X 44 1/8" LONG, SAISON
35	1	PPE, 3" SCH. 40 10.26T X 3 1/8" LONG, SAISON
36	1	PPE, 3" SCH. 40 10.26T X 13 3/4" LONG, SAISON
37	1	PPE, 3" SCH. 40 10.26T X 30 1/8" LONG, SAISON
38	2	PPE, 2" SCH. 80 10.26T X 15 5/16" LONG, SAISON
39	1	PPE, 2" SCH. 80 10.26T X 17 5/16" LONG, SAISON
40	1	PPE, 2" SCH. 80 10.26T X 43 3/8" LONG, SAISON
41	1	PPE, 2" SCH. 80 10.26T X 72 7/8" LONG, SAISON
42	4	PPE, 2" SCH. 80 10.26T X 20 7/16" LONG, SAISON
43	4	PPE, 2" SCH. 80 10.26T X 4 7/16" LONG, SAISON
44	3	PPE, 2" SCH. 80 10.26T X 3 15/16" LONG, SAISON
45	1	PPE, 2" SCH. 80 10.26T X 8 15/16" LONG, SAISON
46	2	PPE, 2" SCH. 80 10.26T X 10 15/16" LONG, SAISON
47	2	PPE, 2" SCH. 80 10.26T X 21 15/16" LONG, SAISON
48	1	PPE, 2" SCH. 80 10.26T X 31 5/16" LONG, SAISON
49	1	PPE, 2" SCH. 80 10.26T X 5 1/16" LONG, SAISON
50	1	PPE, 2" SCH. 80 10.26T X 38 7/8" LONG, SAISON
51	2	PPE, 1" SCH. 80 10.26T X 9 1/2" LONG, SAISON (PPE)
52	2	PPE, 1" SCH. 80 10.26T X 4 5/8" LONG, SAISON (PPE)
53	3	PPE SHOE - M4 X 9 LIFT, 350W/50W BEAM X 4" LONG (SEE DETAIL)
54	1	RFB, 2" ISO ANSI TAPPED F, SAISON
55	1	PPE, 2" SCH. 80 10.26T X 6" LONG, SAISON
56	1	PPE, 2" SCH. 80 10.26T X 38 1/4" LONG, SAISON

CENOVUS
ENERGY

BROMLEY
MECHANICAL
905 23 Street SW Medicine Hat, Alberta T1A 0R1
Ph: (403) 536-3462 Fax: (403) 536-1061
Toll Free: (800) 265-9606

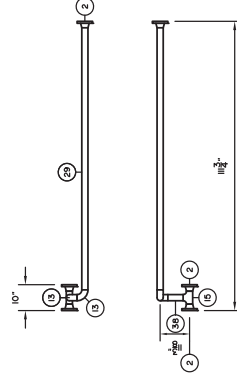
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PROJECT:

TITLE:

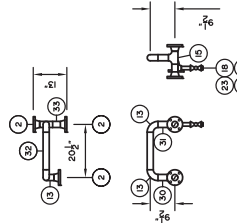
W0 No.: 33754
DRAWN BY: M. CASH
DATE: MM/DD/YY 09/30/10
REV. No.: 2
SCALE: 1/4"=1'-0"
CAD No.: 33754-SPOOLS 3

II) - FOSTER CREEK
S/W 1/4 22-70-04
SPOOLS 21-26



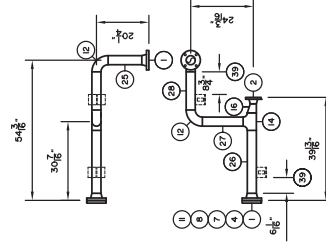
SPPOOL 27

FCI-RS-AWA-2-1011-25H-ET2



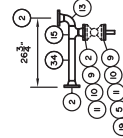
SP00L 28

FCI-RS-AWA-2-1011-25H-ET2



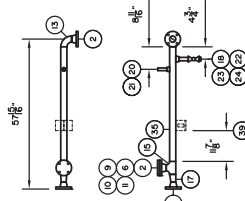
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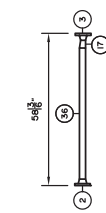
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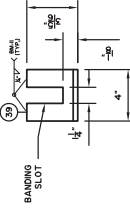
SPOOL 31

FCI-RS-AWA-2-1012-25H-ET2



SPPOOL 32

FCI-RS-AWA-2-1012-25H-ET2



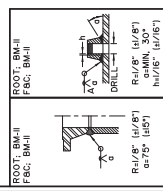
SPPOOL 33

FCI-RS-AWA-2-1012-25H-ET2

N.T.S.

NOTE:

-C.A. FOR SMALL BORE PIPING IS AS FOLLOWS;
NPS 1/2"-1" IS 1/16". 1 1/2" IS 3/32"



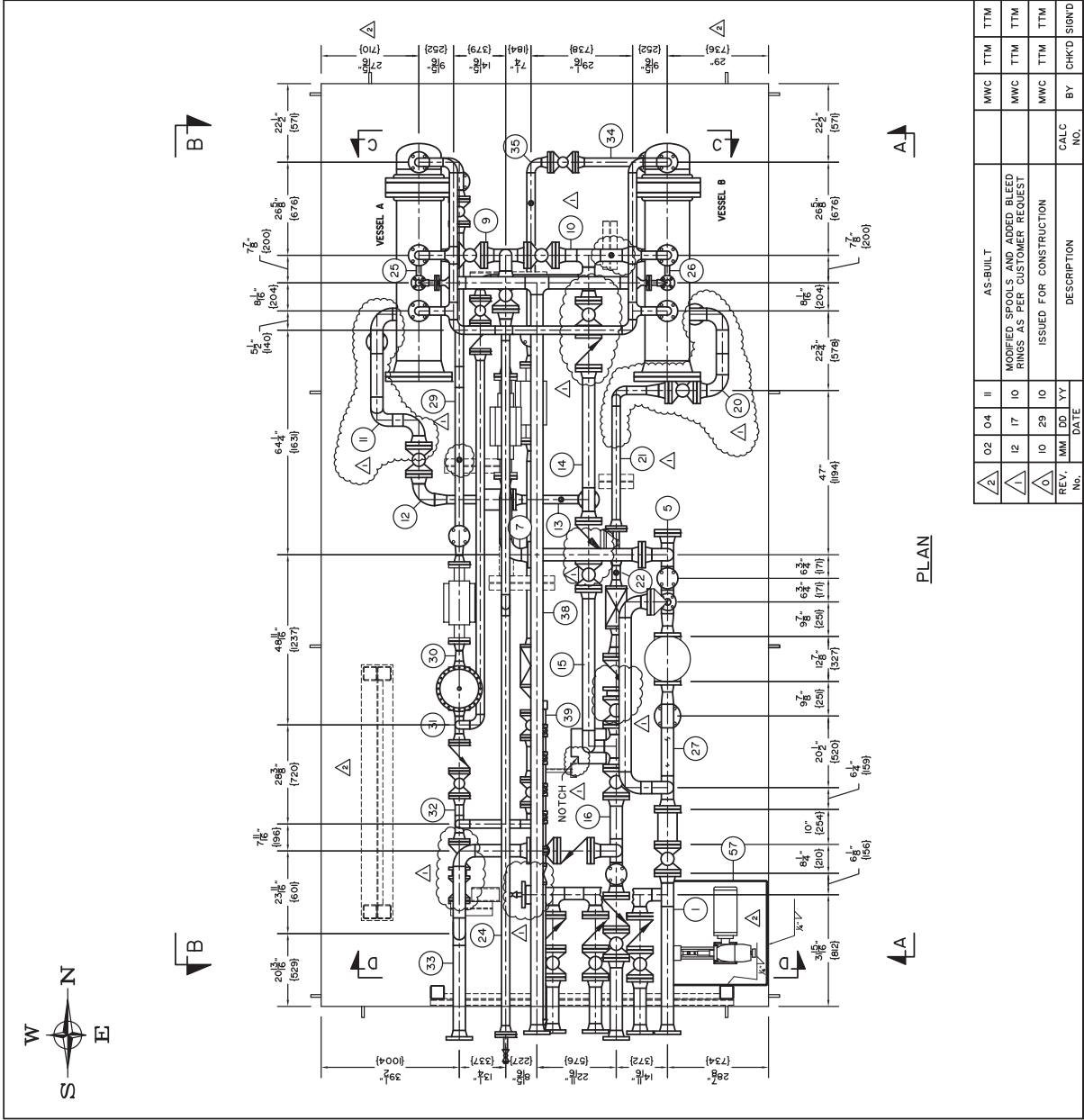
ASME B31.3 2008 ED. - NORMAL SERVICE
CENOVUS PIPE SPEC: 'AWA'
BMS AQP (S) 1009 REGISTERED WELD PROCEDURE 505.2
FOR PIPING TOLERANCES, SEE WELDER HANDBOOK
FLUID TYPE: WATER, OIL, GAS
M.A.W.P.: 218 PSI (1500 kPa) AT +210°F (+99°C)
M.D.M.T.: -20°F (-29°C) AT 218 PSIG (1500 kPa)
P.W.H.T.: NIL
RADIOGRAPHY: 10%
CORROSION ALLOWANCE: 1/8" (SEE NOTE)
HYDROSTATIC TEST: 428 PSIG (29.48 kPa) (CUSTOMER REQUEST)

1	02	04	11	AS-BUILT			MWC	TTM	TTM
2	10	29	10	ISSUED FOR CONSTRUCTION			MWC	TTM	TTM
REV. No.	MM	DD	YY	DESCRIPTION				CALC NO.	BY CHK'D SIGN'D

BILL OF MATERIAL		
ITEM	QTY.	DESCRIPTION
1	2	RFWIN, 3" ISO ANSI SCH. 40, SA06N
2	15	RFWIN, 2" ISO ANSI SCH. 80, SA06N
3	2	RFBN, 1 1/2" 300 ANSI SCH.80, SA06N
4	1	RFB, 3" ISO ANSI, SA06N
5	1	RFHB, 2" ISO ANSI TAPPED 1", SA06N
6	1	RFHB, 2" ISO ANSI TAPPED 1", SA06N
7	1	36 SPRALWIND GSKT, 3" ISO ANSI, NAB59
8	4	B7 STUD, 5/8" X 3, 3/4", SA083-B7
9	3	36 SPRALWIND GSKT, 2" ISO ANSI, NAB59
10	12	B7 STUD, 5/8" X 3 1/4", SA093-B7
11	32	2X HEX NUT, 5/8", SA094-2H
12	2	WELD 90, 3" SCH. 40 LR, SA0234WFB
13	7	WELD 90, 2" SCH. 80 LR, SA0234WFB
14	1	WELD TEE, 3" SCH. 40, SA0234WFB
15	4	WELD TEE, 2" SCH. 80, SA0234WFB
16	1	WELD RED ECC, 3" X 2" SCH. 80, SA0234WFB
17	2	WELD RED ECC, 2" X 1 1/2" SCH. 80, SA0234WFB
18	3	SOL, 1" 3M X 10 - 6", SA06N
19	1	POE X TOE PIPE NIPPLE, 1" X 4" SCH.80, SA06B
20	1	SOL, 3/4" 3M X 10 - 3", SA06N
21	1	POE X TOE PIPE NIPPLE, 3/4" X 4" SCH.80, SA06B
22	3	BALL VALVE, 1" SW X RPT 3M RP, (CUSTOMER SUPPLIED)
23	3	FS HEX PLUG, 1" 6M, SA06N
24	3	POE PIPE NIPPLE, 1" X 4" SCH.80, SA06B
25	1	PIPE, 3" SCH. 40 10.261" X 13" LONG, SA06B
26	1	PIPE, 3" SCH. 40 10.261" X 24 5/16" LONG, SA06B
27	1	PIPE, 3" SCH. 40 10.261" X 15 3/4" LONG, SA06B
28	1	PIPE, 3" SCH. 40 10.261" X 14 3/4" LONG, SA06B
29	1	PIPE, 2" SCH. 80 10.281" X 10 1/4" LONG, SA06B
30	1	PIPE, 2" SCH. 80 10.281" X 3 9/16" LONG, SA06B
31	1	PIPE, 2" SCH. 80 10.281" X 4" LONG, SA06B
32	1	PIPE, 2" SCH. 80 10.281" X 1 1/2" LONG, SA06B
33	1	PIPE, 2" SCH. 80 10.281" X 3" LONG, SA06B
34	1	PIPE, 2" SCH. 80 10.281" X 16 1/4" LONG, SA06B
35	1	PIPE, 2" SCH. 80 10.281" X 44 1/4" LONG, SA06B
36	1	PIPE, 2" SCH. 80 10.281" X 5 5/8" LONG, SA06B
37	1	PIPE, 2" SCH. 80 10.281" X 6 7/8" LONG, SA06B
38	1	PIPE, 2" SCH. 80 10.281" X 5 7/8" LONG, SA06B
39	3	PIPE SHOE - WA X 9 L/BFT, 350W/50W BEAM X 4" LONG (SEE DETAIL)
NOTE:		

NOTE:

CLIENT:	CENOVUS ENERGY		902 St Street SW, Medicine Hat, Alberta, Canada T1A 8R1 Ph: (403) 526-3400 Fax: (403) 526-1001 (416) 744-1800 (800) 255-5555																								
PROJECT:	(I) - FOSTER CREEK S/W 1/4 22-70-04																										
TITLE:	SPOOLS 27-33																										
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Wo No.:	33754																										
DRAWN BY:	M. CASH	REV. No.:	0																								
DATE:	MM/DD/YY	SCALE:	1/4"=1'-0"																								
	09/30/10	CAD No.:	33754-SPOOLS 4																								
		DATE:	MM/DD/YY																								
			02/04/11																								



BILL OF MATERIAL	
ITEM	QTY.
DESCRIPTION	
1	SPOOL NO. 1 - SEE DRAWING 33754-SPOOL-S-1
5	SPOOL NO. 3 - SEE DRAWING 33754-SPOOL-S-1
6	SPOOL NO. 4 - SEE DRAWING 33754-SPOOL-S-1
9	SPOOL NO. 5 - SEE DRAWING 33754-SPOOL-S-1
10	SPOOL NO. 7 - SEE DRAWING 33754-SPOOL-S-1
11	SPOOL NO. 8 - SEE DRAWING 33754-SPOOL-S-1
12	SPOOL NO. 9 - SEE DRAWING 33754-SPOOL-S-1
13	SPOOL NO. 10 - SEE DRAWING 33754-SPOOL-S-1
14	SPOOL NO. 12 - SEE DRAWING 33754-SPOOL-S-2
15	SPOOL NO. 13 - SEE DRAWING 33754-SPOOL-S-2
16	SPOOL NO. 14 - SEE DRAWING 33754-SPOOL-S-2
20	SPOOL NO. 17 - SEE DRAWING 33754-SPOOL-S-2
21	SPOOL NO. 18 - SEE DRAWING 33754-SPOOL-S-2
22	SPOOL NO. 19 - SEE DRAWING 33754-SPOOL-S-2
24	SPOOL NO. 21 - SEE DRAWING 33754-SPOOL-S-3
25	SPOOL NO. 22A - SEE DRAWING 33754-SPOOL-S-3
26	SPOOL NO. 22B - SEE DRAWING 33754-SPOOL-S-3
27	SPOOL NO. 23 - SEE DRAWING 33754-SPOOL-S-3
29	SPOOL NO. 25 - SEE DRAWING 33754-SPOOL-S-3
30	SPOOL NO. 27 - SEE DRAWING 33754-SPOOL-S-3
31	SPOOL NO. 28 - SEE DRAWING 33754-SPOOL-S-3
32	SPOOL NO. 29 - SEE DRAWING 33754-SPOOL-S-3
33	SPOOL NO. 30 - SEE DRAWING 33754-SPOOL-S-3
34	SPOOL NO. 31 - SEE DRAWING 33754-SPOOL-S-3
35	SPOOL NO. 34 - SEE DRAWING 33754-SPOOL-S-4
38	SPOOL NO. 35 - SEE DRAWING 33754-SPOOL-S-4
39	SPOOL NO. 36 - SEE DRAWING 33754-SPOOL-S-4
40	2 SPS SPIRAL WIND GSXT. 1 1/2" 5400 ANSL. N45B
41	2 SPS SPIRAL WIND GSXT. 2 1/2" 150 ANSL. N45B
42	2 SPS SPIRAL WIND GSXT. 2 500 ANSL. N45B
43	4 SPS SPIRAL WIND GSXT. 1 1/2" 5400 ANSL. N45B
44	4 SPS SPIRAL WIND GSXT. 1 1/2" 5400 ANSL. N45B
45	16 BT S100. 3/4" X 4". S493-87
46	16 BT S100. 5/8" X 3 1/4". S493-87
47	172 BT S100. 5/8" X 3 3/4". S493-87
48	16 BT S100. 5/8" X 3 1/2". S493-87
49	172 BT S100. 5/8" X 3 1/4". S493-87
50	16 BT S100. 1/2" X 2 3/4". S493-87
51	64 2H HEX NUT. 3/4". S494-2H
52	2H HEX NUT. 1/2". S494-2H
53	32 2H HEX NUT. 1/2". S494-2H
54	4 BLEED RING. 3" 150 ANSL. RF. 3655
55	1 BLEED RING. 2" 150 ANSL. RF. 3655
56	4 BT S100. 5/8" X 4 3/4". S493-87
57	1 PUMP STAND (SEE DRAWING 33754-PUMP STAND)

NOTE:

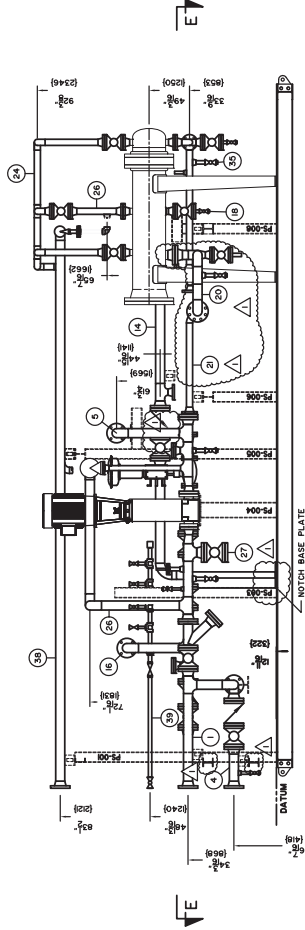
- DRAIN LINES, FLOOR GRATING AND CABLE TRAY REMOVED FOR CLARITY
- ALL PROCESS THREADED PIPE TO BE SCH. 160
- ALL UTILITY THREADED PIPE TO BE SCH. 80
- ALL THREADED FITTINGS TO BE 3000 PSI

CLIENT:	
CENOVUS	ENERGY
BROMLEY MECHANICAL	
905 23 Street SW Medicine Hat, Alberta T1A 8R1 Ph: (403) 526-3142 Fax: (403) 526-1061 Toll Free: (800) 265-9606	

PROJECT:

II) - FOSTER CREEK
S/W 1/4 22-70-04

TITLE: LAYOUT - GENERAL ARRANGEMENT	
Wo No.: 33754	REV. No.: 2
DATE: MM/DD/YY	DATE: MM/DD/YY
9/30/10	02/04/11
M. CASH	
SCALE: 3/8"=1'-0"	CAD No.: 33754-LAYOUT-1



SECTION 'A'

BILL OF MATERIAL

ITEM	QTY.	DESCRIPTION
1	1	SPOOL NO. 1 - SEE DRAWING 33754-SPOOL-S-1
2	1	
3	1	
4	1	SPOOL NO. 28 - SEE DRAWING 33754-SPOOL-S-1
5		
6		
7		
8		
9		
10		
11		
12		
13		
14	1	SPOOL NO. 12 - SEE DRAWING 33754-SPOOL-S-2
15		
16	1	SPOOL NO. 14 - SEE DRAWING 33754-SPOOL-S-2
17		
18	1	SPOOL NO. 16a - SEE DRAWING 33754-SPOOL-S-2
19		
20	1	SPOOL NO. 17 - SEE DRAWING 33754-SPOOL-S-2
21	1	SPOOL NO. 18 - SEE DRAWING 33754-SPOOL-S-2
22		
23		
24	1	SPOOL NO. 21 - SEE DRAWING 33754-SPOOL-S-3
25		
26	1	SPOOL NO. 22b - SEE DRAWING 33754-SPOOL-S-3
27	1	SPOOL NO. 23 - SEE DRAWING 33754-SPOOL-S-3
28		
29		
30		
31		
32		
33		
34		
35	1	SPOOL NO. 31 - SEE DRAWING 33754-SPOOL-S-3
36		
37		
38	1	SPOOL NO. 34 - SEE DRAWING 33754-SPOOL-S-4
39	1	SPOOL NO. 35 - SEE DRAWING 33754-SPOOL-S-4
40		
41		

- NOTE:
- DRAIN LINES, FLOOR GRATING AND CABLE TRAY REMOVED FOR CLARITY
 - ALL PROCESS THREADED PIPE TO BE SCH. 160
 - ALL UTILITY THREADED PIPE TO BE SCH. 80
 - ALL THREADED FITTINGS TO BE 3000 PSI
 - SHIPPING DIMENSIONS 'x' x 'x' x 'x' HIGH
 - PACKAGE WEIGHT APPROX LBS

CLIENT:

CENOVUS
ENERGY



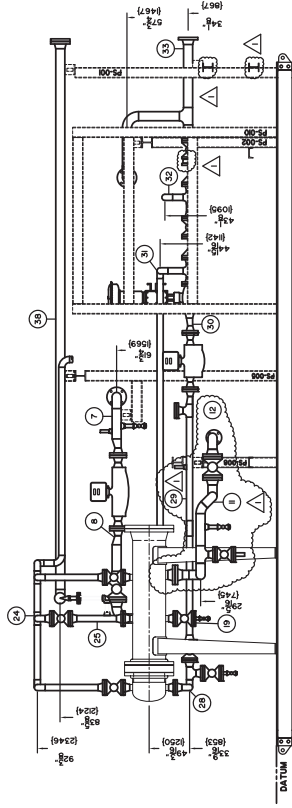
PROJECT:

(I) - FOSTER CREEK
S/W 1/4 22-70-04

TITLE:

LAYOUT - SECTION 'A'

Wo No.: 33754	REV. No.: 2	DATE: MM/DD/YY	02/04/11
DRAWN BY: M. CASH			
DATE: MM/DD/YY	09/30/10	SCALE: 1/4"=1'-0"	CAD No.: 33754-LAYOUT-1



SECTION - B

BILL OF MATERIAL	
ITEM	QTY. DESCRIPTION
1	
2	
3	
4	
5	
6	
7	1 SPOOL NO. 5 - SEE DRAWING 33754-SPOOL-S-1
8	1 SPOOL NO. 6 - SEE DRAWING 33754-SPOOL-S-1
9	
10	
11	1 SPOOL NO. 9 - SEE DRAWING 33754-SPOOL-S-1
12	1 SPOOL NO. 10 - SEE DRAWING 33754-SPOOL-S-1
13	
14	
15	
16	
17	
18	
19	1 SPOOL NO. 16b - SEE DRAWING 33754-SPOOL-S-2
20	
21	
22	
23	
24	1 SPOOL NO. 21 - SEE DRAWING 33754-SPOOL-S-3
25	1 SPOOL NO. 22a - SEE DRAWING 33754-SPOOL-S-3
26	
27	
28	1 SPOOL NO. 24 - SEE DRAWING 33754-SPOOL-S-3
29	1 SPOOL NO. 25 - SEE DRAWING 33754-SPOOL-S-3
30	1 SPOOL NO. 26 - SEE DRAWING 33754-SPOOL-S-3
31	1 SPOOL NO. 27 - SEE DRAWING 33754-SPOOL-S-3
32	1 SPOOL NO. 28 - SEE DRAWING 33754-SPOOL-S-3
33	1 SPOOL NO. 29 - SEE DRAWING 33754-SPOOL-S-3
34	
35	
36	
37	
38	1 SPOOL NO. 34 - SEE DRAWING 33754-SPOOL-S-4
39	
40	
41	
NOTE:	
- DRAIN LINES, FLOOR GRATING AND CABLE TRAY REMOVED FOR CLARITY	
- ALL PROCESS THREADED PIPE TO BE SCH. 160	
- ALL UTILITY THREADED PIPE TO BE SCH. 80	
- ALL THREADED FITTINGS TO BE 3000 PSI	
- SHIPPING DIMENSIONS "- X "- X "- HIGH	
- PACKAGE WEIGHT APPROX LBS	

CLIENT:

CENOVUS
ENERGY

PROJECT:

(I) - FOSTER CREEK
S/W 1/4 22-70-04

TITLE:

LAYOUT - SECTION 'B'

Wo No.: 33754

Drawn By: M. CASH

DATE: MM/DD/YY 09/30/10

REV. No.: 2

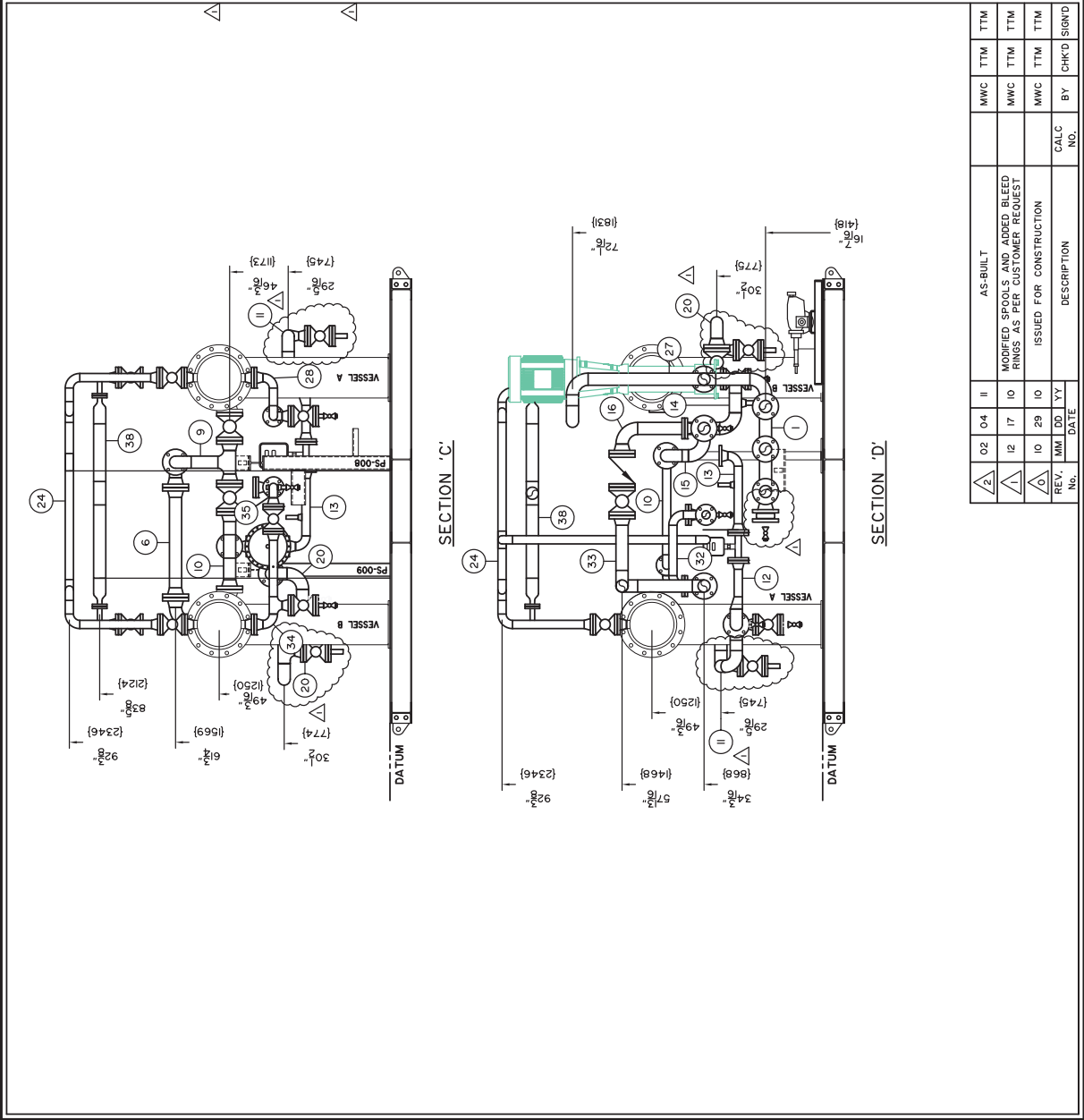
SCALE: 1/4"=1'-0"

CAD No.: 33754-LAYOUT-I

DATE: MM/DD/YY 02/04/11

905 23 Street SW Medicine Hat, Alberta Canada T1A 8B1
Ph: (403) 526-3442 Fax: (403) 526-0061
Toll Free: (800) 265-9806

REV.	NO.	DATE	DESCRIPTION	CALC NO.	BY	CHK'D	SIGN'D
2	02	04	II	AS-BUILT		MWC	TTM
1	12	17	IO	MODIFIED SPOOLS AND ADDED BLEED RINGS AS PER CUSTOMER REQUEST		MWC	TTM
0	10	29	IO	ISSUED FOR CONSTRUCTION		MWC	TTM
0	MM	DD	YY				



BILL OF MATERIAL	
ITEM	QTY. DESCRIPTION
1	1 SPOOL NO. 1 - SEE DRAWING 33754-SPOOL-S-1
2	
3	
4	
5	
6	1 SPOOL NO. 4 - SEE DRAWING 33754-SPOOL-S-1
7	
8	
9	1 SPOOL NO. 7 - SEE DRAWING 33754-SPOOL-S-1
10	1 SPOOL NO. 8 - SEE DRAWING 33754-SPOOL-S-1
11	1 SPOOL NO. 9 - SEE DRAWING 33754-SPOOL-S-1
12	1 SPOOL NO. 10 - SEE DRAWING 33754-SPOOL-S-1
13	1 SPOOL NO. 11 - SEE DRAWING 33754-SPOOL-S-2
14	1 SPOOL NO. 12 - SEE DRAWING 33754-SPOOL-S-2
15	1 SPOOL NO. 13 - SEE DRAWING 33754-SPOOL-S-2
16	1 SPOOL NO. 14 - SEE DRAWING 33754-SPOOL-S-2
17	
18	
19	
20	1 SPOOL NO. 17 - SEE DRAWING 33754-SPOOL-S-2
21	
22	
23	
24	1 SPOOL NO. 21 - SEE DRAWING 33754-SPOOL-S-3
25	
26	
27	1 SPOOL NO. 23 - SEE DRAWING 33754-SPOOL-S-3
28	1 SPOOL NO. 24 - SEE DRAWING 33754-SPOOL-S-3
29	
30	
31	
32	1 SPOOL NO. 28 - SEE DRAWING 33754-SPOOL-S-3
33	1 SPOOL NO. 29 - SEE DRAWING 33754-SPOOL-S-3
34	1 SPOOL NO. 30 - SEE DRAWING 33754-SPOOL-S-3
35	1 SPOOL NO. 31 - SEE DRAWING 33754-SPOOL-S-3
36	
37	
38	1 SPOOL NO. 34 - SEE DRAWING 33754-SPOOL-S-4
39	
40	
41	
NOTE:	
- DRAIN LINES, FLOOR GRATING AND CABLE TRAY REMOVED FOR CLARITY	
- ALL PROCESS THREADED PIPE TO BE SCH. 160	
- ALL UTILITY THREADED PIPE TO BE SCH. 80	
- ALL THREADED FITTINGS TO BE 3000 PSI	
- SHIPPING DIMENSIONS "x" x "x" x "x" HIGH	
- PACKAGE WEIGHT APPROX LBS	

CLIENT:

CENOVUS
ENERGY



Bromley

MECHANICAL INC.

905 23 Street SW, Medicine Hat, Alberta T1A 6R1
Ph: (403) 526-3442 Fax: (403) 526-0061
Toll Free: (800) 265-9806

PROJECT:

(I) - FOSTER CREEK
S/W I/4 22-70-04

TITLE:

LAYOUT - SECTIONS 'C' AND 'D'

C.R.N.:

N/A

Wo. No.:

33754

SERIAL No.:

N/A

DRAWN BY:

M. CASH

REV. No.:

2

DATE:

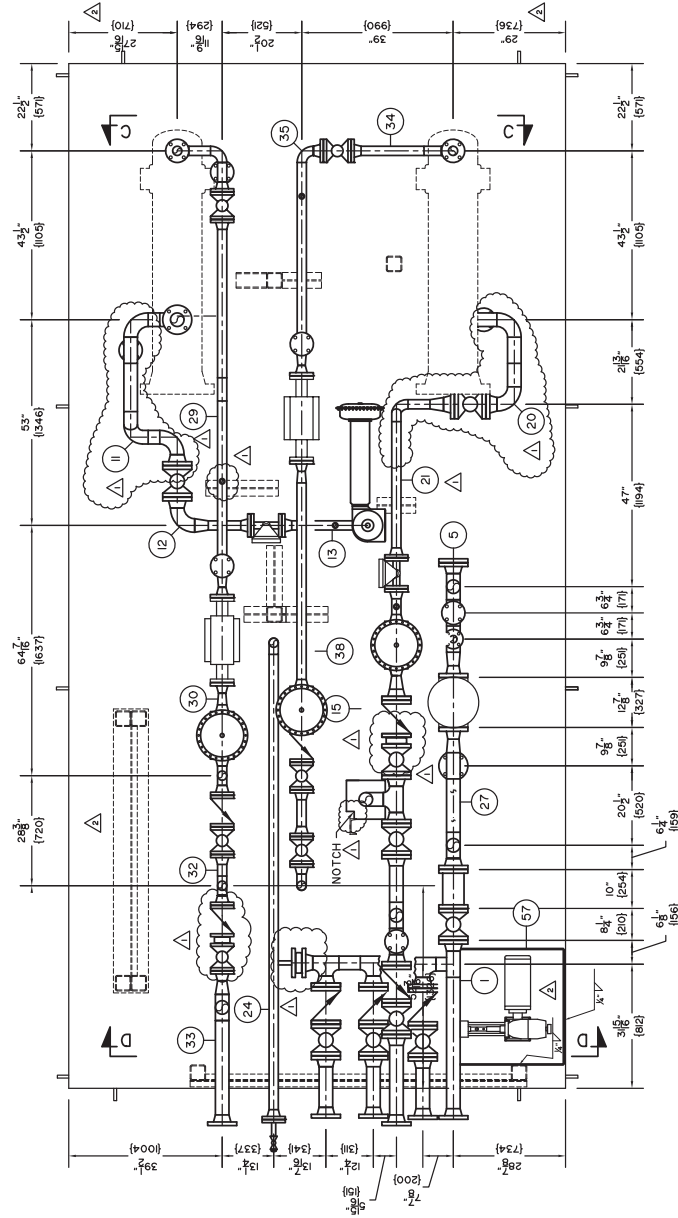
MM/DD/YY

02/04/11

CAD No.:

33754-LAYOUT-I

REV.	NO.	DATE	DESCRIPTION	CALC NO.	BY	CHK'D	SIGN'D
AS-BUILT	02	04	II				
MODIFIED SPOOLS AND ADDED BLEED RINGS AS PER CUSTOMER REQUEST	12	17	IO				
ISSUED FOR CONSTRUCTION	10	29	IO				
REV.	MM	DD	YY				



2	02	04	II	AS-BUILT MODIFIED SPOOLS AND ADDED BLEED RINGS AS PER CUSTOMER REQUEST ISSUED FOR CONSTRUCTION	MWC	T/M
1	12	17	IO		MWC	T/M
0	10	29	IO		MWC	T/M
REV.	MM	DD	YY		CALC	NO.
DATE				DESCRIPTION	BY	CHKD
						SIGND

NOTE:

- DRAIN LINES, FLOOR GRATING AND CABLE TRAY REMOVED FOR CLARITY
- ALL PROCESS THREADED PIPE TO BE SCH. 160
- ALL UTILITY THREADED PIPE TO BE SCH. 80
- ALL THREADED FITTINGS TO BE 3000 PSI
- SHIPPING DIMENSIONS "x" X "x" X "x" HIGH
- PACKAGE WEIGHT APPROX. LBS

Bramley
A Division of Anglo American
MECHANICAL SERVICES
925 23 Street SW, Medicine Hat, Alberta, Canada T1A
Ph: (403) 526-3442 Fax: (403) 526-1061
Toll Free (800) 295-8805

TITLE: LAYOUT - SECTION 'E'

C.R.N.:	N/A	Wo No.:	33754	SERIAL
DRAWN BY:	M. CASH	REV. No.:	2	DATE: MM/DD
DATE: MM/DD/YY	09/30/10	SCALE:	3/8"=1'-0"	CAD No

BILL OF MATERIAL

ITEM QTY.	DESCRIPTION
1	FLAT SKIDDER PLATE 1/4" X 24" X 48" (6098) SEE DETAIL
2	W 10 X 15.5 S413 X 25 1/4" X 100" (2007/20) BEAM
3	W 10 X 15.5 S413 X 25 1/4" X 100" (2007/20) BEAM
4	W 10 X 15.5 S413 X 25 1/4" X 100" (2007/20) BEAM
5	W 10 X 15.5 S413 X 25 1/4" X 100" (2007/20) BEAM
6	W 10 X 15.5 S413 X 25 1/4" X 100" (2007/20) BEAM
7	W 10 X 15.5 S413 X 25 1/4" X 100" (2007/20) BEAM
8	W 10 X 15.5 S413 X 25 1/4" X 100" (2007/20) BEAM
9	W 10 X 15.5 S413 X 25 1/4" X 100" (2007/20) BEAM
10	W 10 X 15.5 S413 X 25 1/4" X 100" (2007/20) BEAM
11	W 10 X 15.5 S413 X 25 1/4" X 100" (2007/20) BEAM
12	W 10 X 15.5 S413 X 25 1/4" X 100" (2007/20) BEAM
13	W 10 X 15.5 S413 X 25 1/4" X 100" (2007/20) BEAM
14	W 10 X 15.5 S413 X 25 1/4" X 100" (2007/20) BEAM
15	W 10 X 15.5 S413 X 25 1/4" X 100" (2007/20) BEAM
16	W 10 X 15.5 S413 X 25 1/4" X 100" (2007/20) BEAM
17	W 10 X 15.5 S413 X 25 1/4" X 100" (2007/20) BEAM
18	W 10 X 15.5 S413 X 25 1/4" X 100" (2007/20) BEAM
19	W 10 X 15.5 S413 X 25 1/4" X 100" (2007/20) BEAM
20	W 10 X 15.5 S413 X 25 1/4" X 100" (2007/20) BEAM
21	W 10 X 15.5 S413 X 25 1/4" X 100" (2007/20) BEAM
22	W 10 X 15.5 S413 X 25 1/4" X 100" (2007/20) BEAM
23	W 10 X 15.5 S413 X 25 1/4" X 100" (2007/20) BEAM
24	W 10 X 15.5 S413 X 25 1/4" X 100" (2007/20) BEAM
25	W 10 X 15.5 S413 X 25 1/4" X 100" (2007/20) BEAM

NOTES:
 1. REWORK APPROXIMATELY 4 TONS 48"
 2. SEE BRIMLEY INTERNAL DRAWING NO. 18MS-SKID-FAB-1000 WELDING SPECS FOR FURTHER
 WELDING AND CORROSION DETAILS

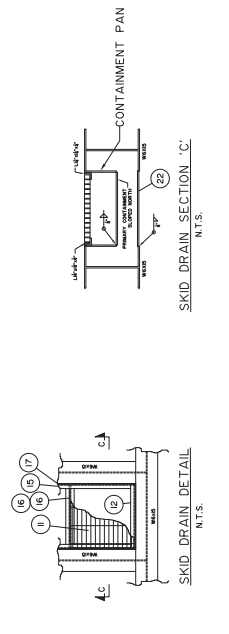
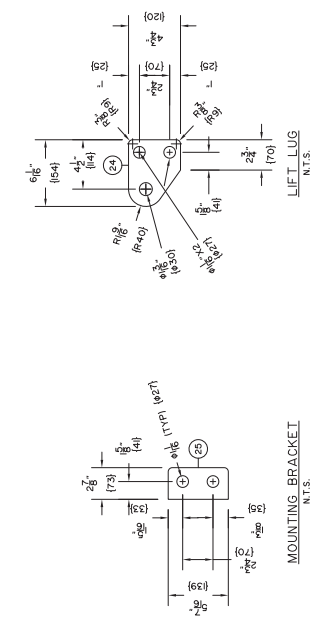
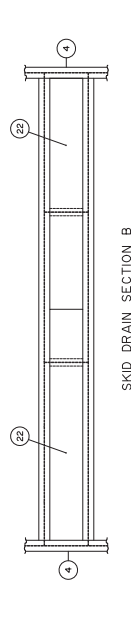
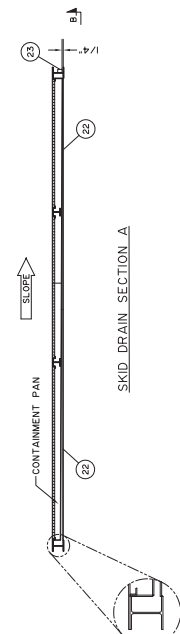
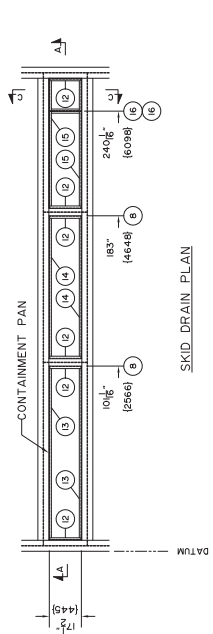
Q2	Q4	II	AS-BUILT	WVC	TTM	TTM
Q2	Q4	II	ISSUED FOR CONSTRUCTION	WVC	TTM	TTM
REV.	MM	DD	YY	DESCRIPTION	BY	CHKD
No.						APPD

CENOVUS ENERGY

802 23 Street SW, Medicine Hat, Alberta, Canada T1A 8H1
 PH: (403) 293-1000
 FAX: (403) 293-1001
 E-MAIL: info@cenovus.com

PROJECT: I) - FOSTER CREEK
 S/W 1/4 22-70-04

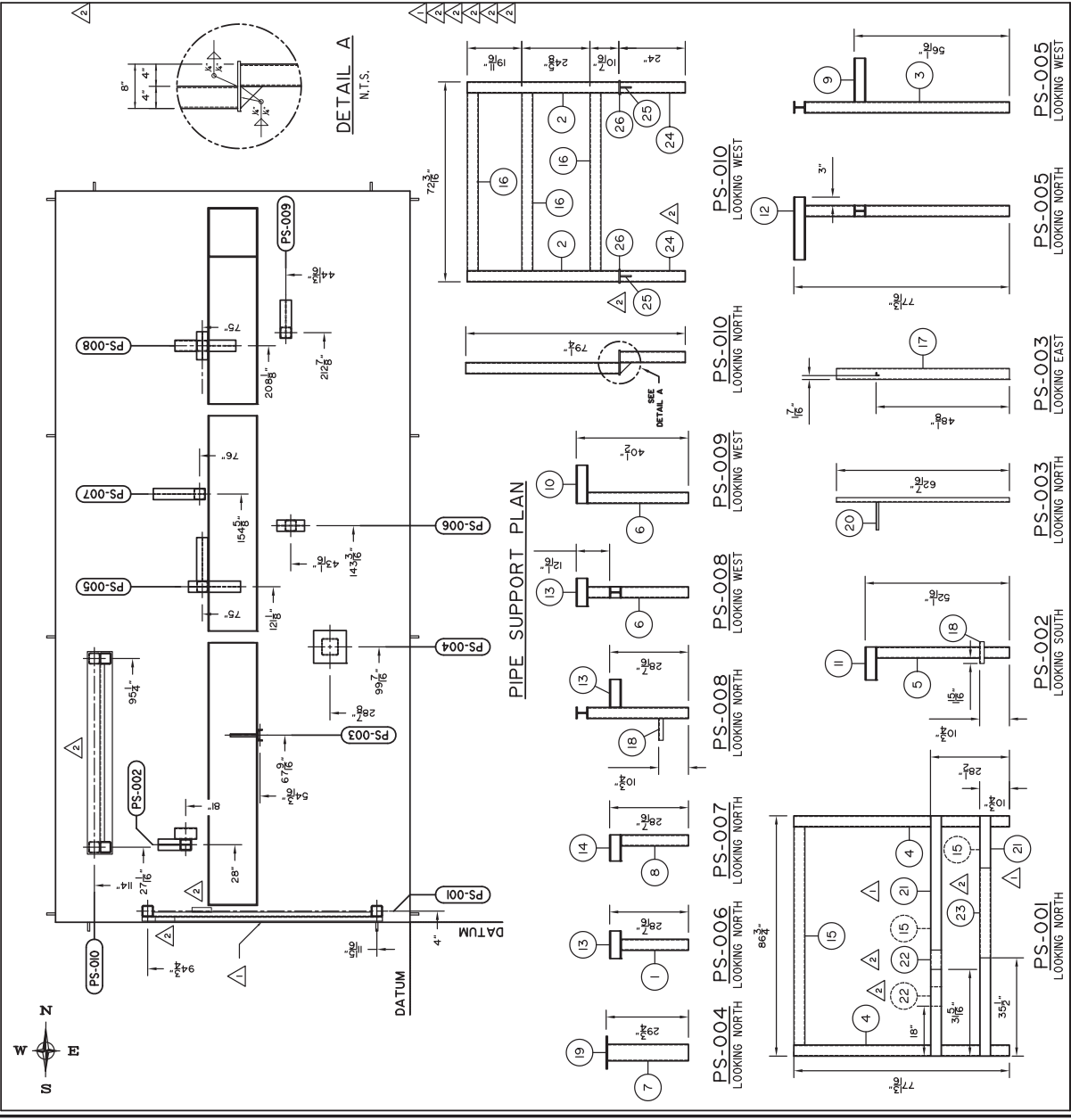
CLIENT: SKID			
WVC No.: 33754	REV. No.: 1	DATE: 02/04/11	02/04/11
WVC: M. CASH	SCALE: 3/8"=1'-0"	CAD No.: 33754	



ITEM	QTY.	DESCRIPTION
1	1	HSS 4" X 4" X 0.250" X 24 5/16" LONG, 350W
2	2	HSS 4" X 4" X 0.250" X 54 3/4" LONG, 350W
3	1	HSS 4" X 4" X 0.250" X 73 11/16" LONG, 350W
4	2	HSS 4" X 4" X 0.250" X 77 13/16" LONG, 350W
5	1	HSS 4" X 4" X 0.250" X 47 15/16" LONG, 350W
6	2	HSS 4" X 4" X 0.250" X 36 3/8" LONG, 350W
7	1	HSS 4" X 4" X 0.250" X 29 1/4" LONG, 350W
8	1	HSS 4" X 4" X 0.250" X 24 5/16" LONG, 350W
9	1	W4 X 13 LB/FT X 16 3/4" LONG, 350W/50W BEAM
10	1	W4 X 13 LB/FT X 13 3/4" LONG, 350W/50W BEAM
11	1	W4 X 13 LB/FT X 12" LONG, 350W/50W BEAM
12	1	W4 X 13 LB/FT X 22 5/8" LONG, 350W/50W BEAM
13	3	W4 X 13 LB/FT X 10" LONG, 350W/50W BEAM
14	1	W4 X 13 LB/FT X 9 1/2" LONG, 350W/50W BEAM
15	3	STD CHANNEL, C4 X 5.4 LB/FT X 78 3/4" LONG, A36/44W
16	3	STD CHANNEL, C4 X 5.4 LB/FT X 78 3/4" LONG, A36/44W
17	1	STD CHANNEL, C4 X 5.4 LB/FT X 62 7/16" LONG, A36/44W
18	2	STD CHANNEL, C4 X 5.4 LB/FT X 7 1/2" LONG, A36/44W
19	1	PLATE, 1/2" X 12" X 1/2" SQUARE, SA36/44W
20	1	ANGLE, L10000" X 10000" X 3/16" X 10" LONG, A36/44W
21	2	STD CHANNEL, C4 X 5.4 LB/FT X 86 3/4" LONG, A36/44W
22	2	STD CHANNEL, C4 X 5.4 LB/FT X 7" LONG, A36/44W
23	1	STD CHANNEL, C4 X 5.4 LB/FT X 32 1/2" LONG, A36/44W
24	2	HSS 4" X 4" X 0.250" X 23 1/2" LONG, 350W
25	2	GUSSET - PLATE, 1/2" X 4" X 4" SA36/44W
26	2	PLATE, 1/2" X 9" X 5", SA36/44W

2	02	04	II	AS-BUILT	MWC	TTM	TTM
2	01	28	II	ADDED ITEMS TO PS-001 AND PS-010	MWC	TTM	TTM
1	12	17	IO	ADDED ITEMS 21 TO PS-001	MWC	TTM	TTM
0	10	28	IO	ISSUED FOR CONSTRUCTION	MWC	TTM	TTM
REV.	MM	DD	YY	DESCRIPTION	BY	CHK'D	SIGN'D
No.	DATE						

W/o No.: 33754					
DRAWN BY: M. CASH	REV. No.: 3	DATE: MM/DD/YY	02/04/11		
DATE: MM/DD/YY 09/30/10	SCALE: 1/4"=1'-0"	CAD No.:	33754.PS		



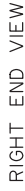
ITEM	QTY.	DESCRIPTION
1	S.E. HEAD, 12.75" X 0.375" NOM (0.325" MIN) C/W 4" STRAIGHT FLANGE, S4567-70N	
2	SHELL, 1" PIPE, 12" SCH. STD (0.375") X 3/4" LONG, SA068	
3	SHELL, 2" PIPE, 12" SCH. STD (0.375") X 3/4" LONG, SA068	
4	ROLLED HEAD, 3/8" X 7" X 3/8" LONG, ROLLED TO 12 3/4" ID, S566-70N	
5	ROLLED HEAD, 3/8" X 7" X 3/8" LONG, ROLLED TO 12 3/4" ID, S4567-70N (SEE DETAIL)	
6	SOFT PLATE - PLATE, 3/16" X 42 1/4" X 1/8" X 3/16" S4567-70N (SEE DETAIL)	
7	SOFT PLATE - PLATE, 3/16" X 42 1/4" X 1/8" X 3/16" S361/44N (SEE DETAIL)	
8	BASE PLATE - PLATE, 1/2" X 9 1/8" X 3/16" X 4", 44N (SEE DETAIL)	
9	RFW, 12" ISO ANSI SCH. STD, SA058N	
10	1 RFR, 12" ISO ANSI, SA058N	
11	87 STD, 7/8" X 4 3/4", S4933-87	
12	RF50, 12" ISO ANSI, SA058N	
13	3/8" STRAIGHT 60K1, 12" ISO ANSI, N458	
14	3/8" STRAIGHT 60K1, 12" ISO ANSI, N458	
15	2H HEX NUT, 7/16", S4842-2H	
16	1 CUSTOMER SUPPLIED VALVE	
17	RFW, 3" ISO ANSI SCH. 40D, SA058N	
18	1 RFR, 3" ISO ANSI SCH. 40D, SA058N	
19	PIPE, 3" SCH. 40 (0.267") X 3 9/16" LONG, SA068	
20	RFW, 2" ISO ANSI SCH. 80, SA058N	
21	PIPE, 2" SCH. 80 (0.267") X 1 1/2" LONG, SA068	
22	PERFORATED PLATE, 2 5/8" X 1 1/2" LONG, SA068	
23	PERFORATED PLATE, 2 5/8" X 1 1/2" LONG, SA068	
24	PERFORATED PLATE, 2 5/8" THICK (CUSTOMER SUPPLIED)	

ASME 2007 ED. 2009 ADD. CODE SECT. VIII DIV. 1
BMS AQP (S) 1009 REGISTERED WELD PROCEDURE 505.2
FOR VESSEL TOLERANCES SEE WELDER HANDBOOK

[illegible]

Bromley
MECHANICAL DIVISION
A DIVISION OF ARBO MUR LTD.
23 Street SW, Medicine Hat, Alberta, Canada T1A
Ph: (403) 526-3442 Fax: (403) 526-1061
Toll Free (800) 215-9906

TITLE: 12"OD X 257 PSI HYDROCYCLONE VESSEL			
CRN No.:	V2773.2	Wo No.:	33754
DRAWN BY:	M. CASH	REV. No.:	2
DATE: MM/DD/YY	10/19/10	SCALE:	3/4"=1'-0"
		SERIAL No.:	029772
		DATE: MM/DD/YY	02/04/11
		CAD No.:	33754-VESSEL A

[illegible]

BILL OF MATERIAL	
ITEM	QTY. DESCRIPTION
1	2 PIPE, 2 1/2" SCH. 40 (10.2037) X 9 1/8" LONG, SA106B
2	2 PLATE, 1/4" X 2" X 6", SA36/44W
3	1 PLATE, 1" X 2" X 6", SA36/44W (SEE DETAIL)
4	1 PLATE, 1" X 2" X 6", SA36/44W (SEE DETAIL)
5	1 PLATE, 1" X 4" X 6", SA36/44W (SEE DETAIL)
6	1 PIPE, 2" SCH. 160 (10.3447) X 21 3/4" LONG, SA106B
7	1 PIPE, 2" SCH. 160 (10.3447) X 13" LONG, SA106B
8	2 WELD 90, 2" SCH. 160 LR, SA234WPB
9	2 FLAT, 1/4" X 2" X 10 3/16" LONG, A36/44W
10	2 PLATE, 1/4" X 2" X 10 3/16" LONG, A36/44W
11	2 BALL BEARING, 1 3/8" OD, CS
12	2 RED-ROD, 3/4", CS
13	1 2H HEX NUT, 3/4", SA194-2H
14	1 5/8" EYE NUT, 3/4" UNC.
15	1 RED-ROD, 3/8", CS
16	1 2H HEX NUT, 3/8", SA194-2H
17	1 3/8" EYE NUT, 3/8" UNC.
18	2 SCREW PIN SHACKLE - 1/2" CROSBY G-209

NOTES:
- ALL STRUCTURAL WELDS TO BE MIN. 1/4" FILLET
- ALLOWABLE HOLE DISTANCE IS A 2" MIN. FROM END

AS-BUILT	ISSUED FOR CONSTRUCTION	DESCRIPTION	CALC. NO.	BY	CHK'D	SIG'D
02 04 II	02 04 II	02 04 II	02 04 II	02 04 II	02 04 II	02 04 II
REV. MM DD YY	REV. MM DD YY	REV. MM DD YY	REV. MM DD YY	REV. MM DD YY	REV. MM DD YY	REV. MM DD YY

CENOVOUS
ENERGY LTD.

PROJECT:
I) - FOSTER CREEK
S/W 1/4 22-70-04

TITLE:
DAVIT ARMS VESSEL A

CLIENT:
CENOVOUS
ENERGY LTD.

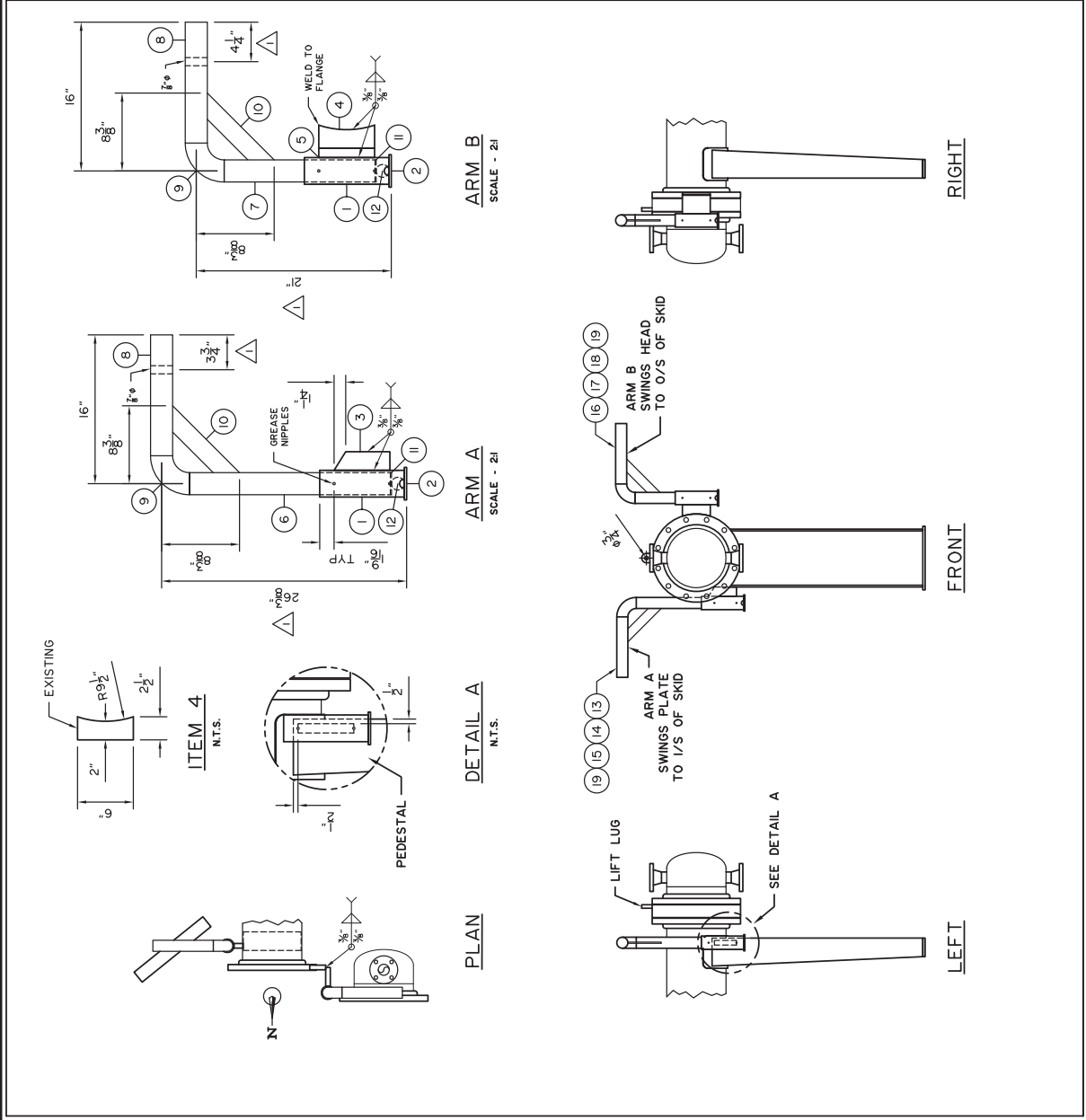
PROJECT:
I) - FOSTER CREEK
S/W 1/4 22-70-04

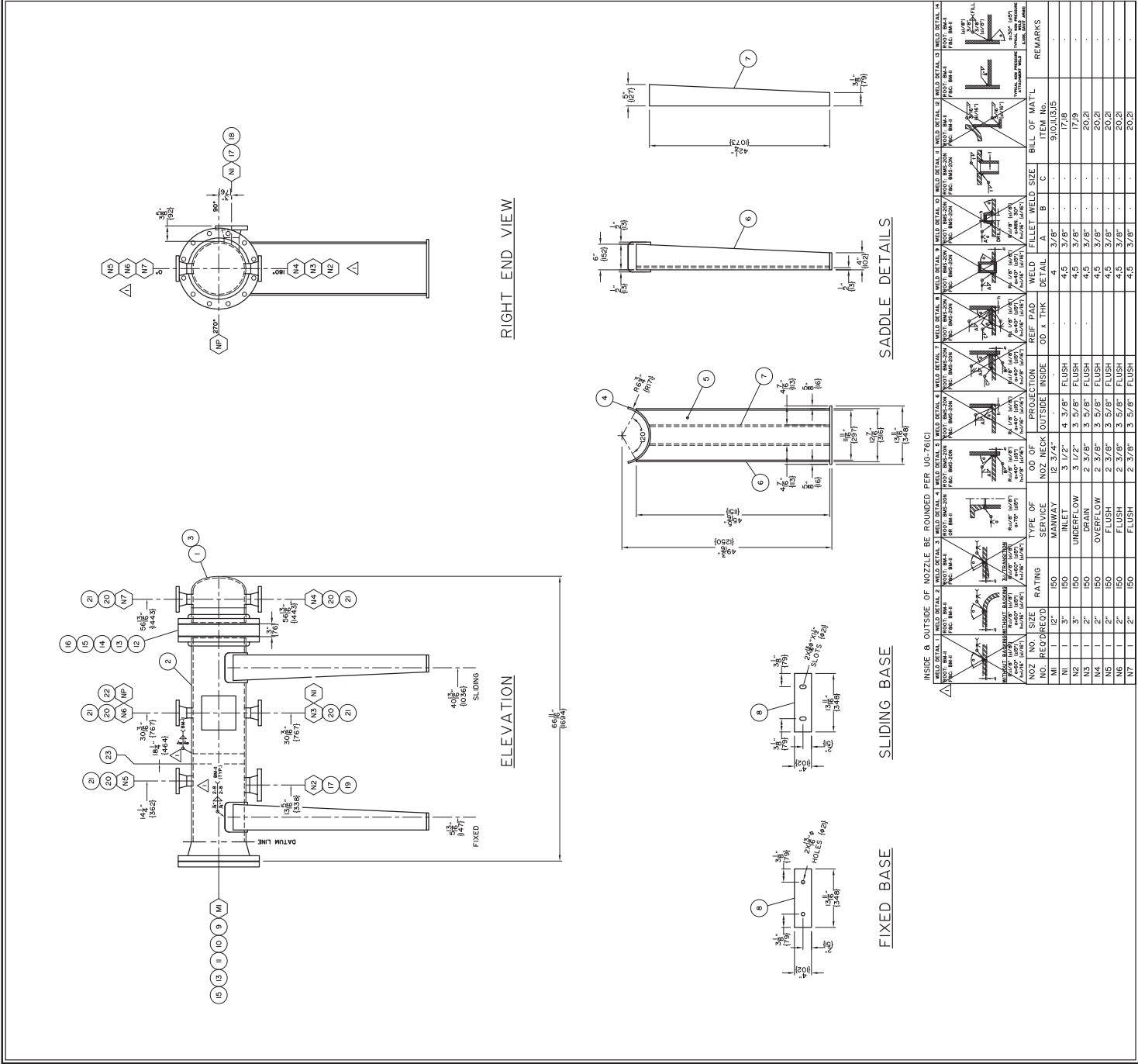
TITLE:
DAVIT ARMS VESSEL A

Wg No.: 33754
DRAWN BY: M. CASH
DATE: MM/DD/YY

REV. No.: I
DATE: MM/DD/YY

CAD No.: 33754-DAVIT A





BILL OF MATERIAL	
ITEM	QTY
1	1
2	1
3	1
4	2
5	2
6	2
7	2
8	2
9	2
10	1
11	2
12	2
13	2
14	2
15	2
16	2
17	2
18	2
19	2
20	2
21	2
22	2
23	2
24	2

NOTE:	
-VESSEL TO BE INTERNALLY COATED	
-NO METALCORE	

ASME 2007 ED. 2009 ADD. CODE SECT. VIII DIV. 1	
BMS APP (S) 1025 - REGISTERED WELD PROCEDURE 5052	
FOR VESSEL TOLERANCES, SEE WELDER HANDBOOK	
VESSEL TYPE: HORIZONTAL	
M.A.W.P.: 257 PSIG (1772 KPa) AT -20°F (-99°C)	
M.D.M.T.: -20°F (-29°C) AT 257 PSIG (1772 KPa)	
IMPACT TESTING EXEMPT PER UG201 (I-5)	
P.W.H.T.: NIL	
RADIOGRAPHY: X-RAY (RT-I) GRACE FULL LONG SMLS	
CORROSION ALLOWANCE: 1/16" HEADS: 100 SHELL: 100	
HYDROSTATIC TEST: 334 PSIG (2303 KPa)	
VOLUME: 4.301P (0.12m³)	
WEIGHT (DRY): 970 lb (440 kg)	
Δ	02 04 II AS-BUILT
Δ	II 03 IO CHANGED WELD DETAILS AND ADDED
Δ	IO 29 IO N2-N7 TAGS IN END VIEW
Δ	IO 29 IO ISSUED FOR CONSTRUCTION
REV	MM DD YY
NO.	DATE
DESCRIPTION	
CALC	NO.
BY	CHK'D
SIGN'D	

CLIENT:	
CENOVUS ENERGY	
929 23 Street SW, Medicine Hat, Alberta, Canada T1A 8B1	
Ph: (403) 835-3400 Fax: (403) 835-0808	
E-Mail: info@cenovus.com	

PROJECT:	
(I) - FOSTER CREEK	
S/W 1/4 22-70-04 VESSEL B	

TITLE: 12"OD X 257 PSI HYDROCYCLONE VESSEL	
CRN No.:	V2773.2
W6 No.:	33754
SERIAL No.:	029771
DRAWN BY:	M. CASH
DATE: mm/dd/yyyy	10/06/10
SCALE:	3/4"=1'-0"
CAD No.:	33754-VESSEL B

BILL OF MATERIAL

ITEM	QTY.	DESCRIPTION
1	2	PPE, 2 1/2" SCH. 40 (10.2037) X 9 1/8" LONG, SA106B
2	2	PLATE, 1/4" X 6" X 6", SA36/44W
3	1	PLATE, 1" X 2" X 6", SA36/70N (SEE DETAIL)
4	1	PLATE, 1" SA36/70N (SEE DETAIL) (EXISTING)
5	1	PLATE, 1" X 4" X 6" SA36/70N (SEE DETAIL)
6	1	PPE, 2" SCH. 160 (10.3447) X 23 1/4" LONG, SA106B
7	1	PPE, 2" SCH. 160 (10.3447) X 16 3/8" LONG, SA106B
8	2	WELD 90, 2" SCH. 160 LR, SA234WPB
9	2	FLAT, 1/4" X 2" X 10 3/16" LONG, A36/44W
10	2	PLATE, 1/4" X 6" X 6", SA36/44W
11	2	BALL BEARING, 1 3/8" OD, CS
12	2	A/R RED-ROD, 3/4", CS
13	1	2H HEX NUT, 3/4", SA194-2H
14	1	5/8" EYE NUT, 3/4" UNC.
15	1	A/R RED-ROD, 3/8", CS
16	1	2H HEX NUT, 3/8", SA194-2H
17	1	3/8" EYE NUT, 3/8" UNC.
18	2	SCREW PIN SHACKLE - 1/2" CROSBY G-209

NOTES:
- ALL STRUCTURAL WELDS TO BE MIN. 1/4" FILLET
- ALLOWABLE HOLE DISTANCE IS A 2" MIN. FROM END

REV.	MM	DD	YY	DATE	DESCRIPTION	CALC	BY	CHK'D	SIGN'D
02	04	02	11		ISSUED FOR CONSTRUCTION				
02	04	02	11		AS-BUILT				

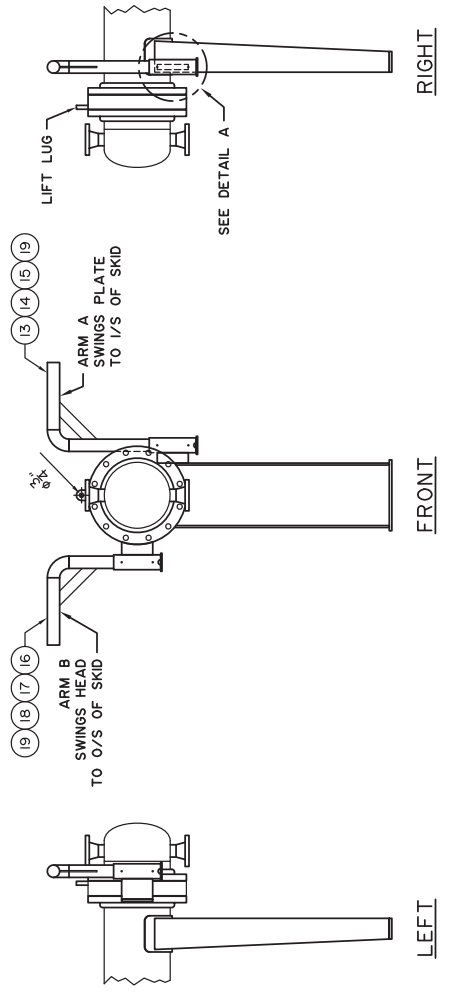
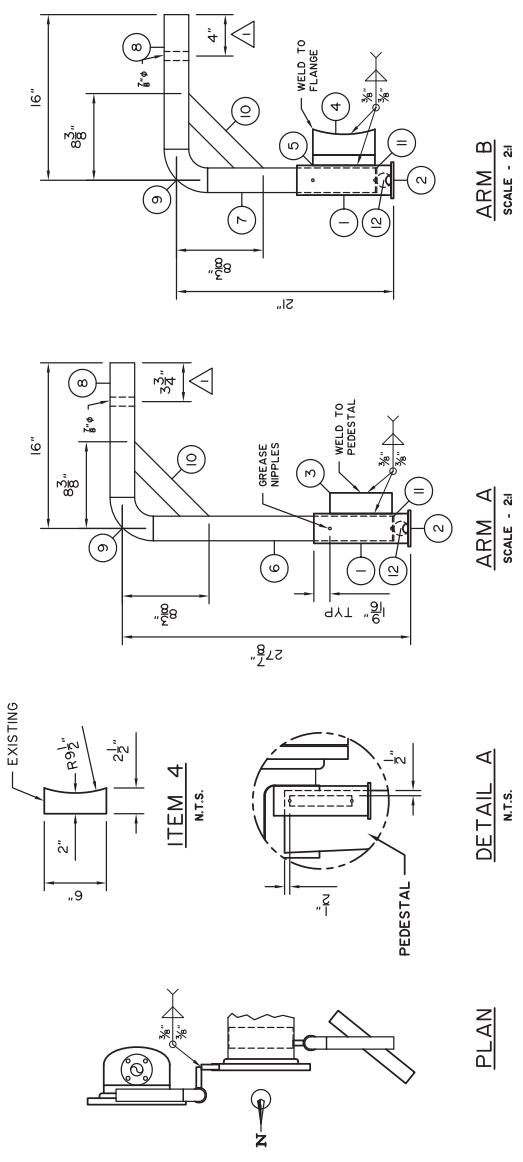
CENOVOUS
ENERGY LTD.

PROJECT:
I) - FOSTER CREEK
S/W 1/4 22-70-04

TITLE:
DAVIT ARMS VESSEL B

CLIENT:
PROMLEY
MECHANICAL FABRICATORS
905 33 Street SW Medicine Hat, Alberta T1A 6R1
Ph: (403) 526-3442 Fax: (403) 526-0561
Toll Free (800) 255-9806

Wd No.: 33754
DRAWN BY: M. CASH
DATE: MM/DD/YY 02/02/11
REV. No.: 1
DATE: MM/DD/YY 02/11/11
SCALE: 1/2"=1'-0"
CAD No.: 33754-DAVIT B

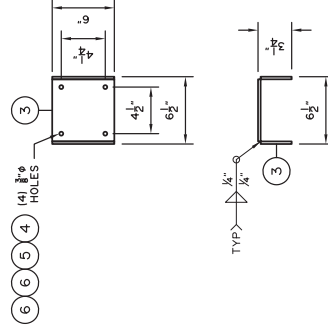


ITEM	QTY.	DESCRIPTION
1	1	PLATE, 1/4" X 29 1/2" X 29 1/2", SA36
2	4	FLAT, 1/4" X 2" X 29 1/2" LONG, A36/44W
3	1	PLATE, 1/4" X 6" X 1/2" X 3 1/4" HIGH, SA36
4	4	BOLT - 5/16" X 1 1/2, GR5
5	4	NUT - 5/16", GR5
6	8	FLAT WASHER - 5/16", GR5

ITEM	QTY.	DESCRIPTION
1	1	PLATE, 1/4" X 29 1/2" X 29 1/2", SA36
2	4	FLAT, 1/4" X 2" X 29 1/2" LONG, A36/44W
3	1	PLATE, 1/4" X 6" X 1/2" X 3 1/4" HIGH, SA36
4	4	BOLT - 5/16" X 1 1/2, GR5
5	4	NUT - 5/16", GR5
6	8	FLAT WASHER - 5/16", GR5

REV.	DATE	AS-BUILT		MWC	TTM
		02	04		
1					
0					
REV.	MM DD YY	ISSUED FOR CONSTRUCTION		MWC	TTM
No.		DESCRIPTION		BY	CHK'D
					SIGN'D

DRAWN BY: M, CASH	REV. No.: 1	DATE: MM/DD/YY 02/04/11
DATE: MM/DD/YY 01/21/11	SCALE: 1"=1'-0"	CAD No.: 33754-PUMP



ITEM 3 DETAIL