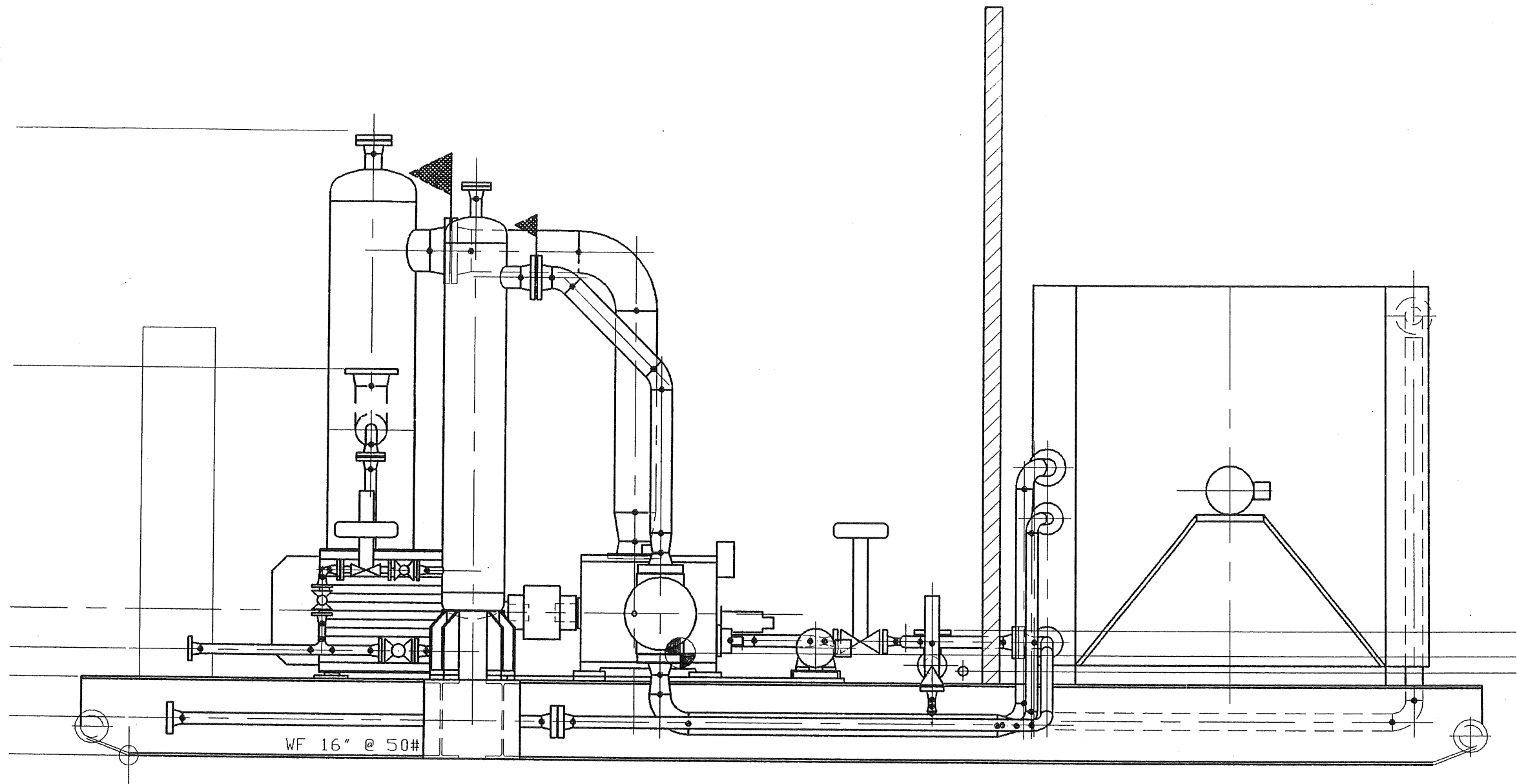


air-x-changers

post office box 1804 • tulsa, oklahoma 74101

Proposal No. 915156A
Date 11-27-91
Page 1 of 1

Buyer	ENERFLEX 274-91A		
Ref. No.	300HP EM	Destination	N T CO-ENERCO/ZAMA 5-22, ALBERTA
	1 Model	54VV	Air-x-changer
PERFORMANCE			
1 Service	IC	AC	
2 Flow	1.5MMSCFD	1.5MMSCFD	
3 Fluid	.841SPGR	.841SPGR	
4 Temperature in, °F	316.0	314.0	
5 Temperature out, °F	110.0	120.0	
6 Pressure, PSI	152PSIG	667PSIG	
7 Pressure Drop, PSI	5.6	5.4	
8 Heat Load, BTU/HR	442530	453083	
9 True MTD	63.7	69.0	
10 Overall Rate	67.2	83.1	
11 Fouling Factor	.0020	.0020	
12 Tube Surface, Sq. Ft.	103	81	
13 Total Surface, Sq. Ft.	1646	1287	
14 Sections, No. of	1	1	
15 Connected	SINGLY	SINGLY	
16 No. Passes	3	6	
17 Design Temp. °F	350/-20	350/-20	
18 Design Press. PSIG	215	750	
19 Test Press. PSIG	323	1125	
20 Nozzles	3-150RF	2-600RF	
21 Tubes, OD x BWG	5/8X16	5/8X16	
22 Material	SA179 STEEL	SA179 STEEL	
23 No./Section, Length	110. 6	86, 6	
24 No. Rows	4	4	
25 FLANGES	SA105SCH160	SA105SCH160	
26 Fins, Type	WHEEL	WHEEL	
27 Material	AL	AL	
28 F.W.H.T.	YES	YES	
29 U.T./X-RAY	100%	100%	
30 Headers, Type	BOX	BOX	
31 Material	STEEL	STEEL	
32 Counterflow			
33 Corrosion Allowance	.1250	.1250	
34 Grd Tube Sheet	DBL	DBL	
35 Plugs, Type	SHOULDER	SHOULDER	
36 Material	STEEL	STEEL	
37 Retarders			
38 Accelerators	.250		
39 ASME Code Stamp	YES	YES	
40 Total SCFM	17821	Temp. In °F. 90	Temp. Out °F 136.3 Elev. 3000
MECHANICAL EQUIPMENT • STRUCTURES			
41 No. Fans	1 HP/Fan 2.4	RPM 870	Dia. 54 No. Blades 6 Material ALUMINUM Make AEROVENT
42 Drive	V-BELT BY 3HP, 900RPM, 230/460V. 3P, 60HZ. X-P MOTOR (CSA)		
43			
44 Draft Type	INDUCED	No. of Bays	Overall Width Length Height
45 Guards	FAN	Assembly PACKAGED	
46			
47 Est. Shipping Weight	3100 LBS		
48 Accessories			
49			
50			



76.13
(F.S.)



REV	DESCRIPTION	BY	DATE	APP
-----	-------------	----	------	-----

910 71 Co-Enerco

Site Contact: Luben 1-557-5492
or Wayne of Parnco G.P.

I advised George of G.P.
Parnco that we have
2 options (easy fix):

1) add 6" extension to LC arm
2) cut ~3" from ~~the~~ existing arm
or

3) add cage; possibly with
Murphy bullet float
controller.

Drawing attached.

Supply external cage & float assy

Bill to customer

VESSEL DESIGN DATA

1. CONSTRUCTION IN ACCORDANCE WITH ASME CODE SECTION VIII, DIVISION I, 1989 EDITION & ADDENDA OF 1990.
2. INSPECTION BY THE PROVINCIAL GOVERNMENT BOILER INSPECTOR - YES
3. DESIGN PRESSURE 230 PSIG @ 300°F, CORROSION ALLOWANCE .125 INCH.
4. HYDROSTATIC TEST AT 345 PSIG (LIMITED BY DESIGN).
5. POST WELD HEAT TREATMENT (STRESS RELIEVE), 1100°F FOR 60 MIN.
6. RADIOGRAPHY - FULL PER UV-11(a) INCLUDE ALL NOZZLE BUTT WELDS
7. VESSEL TO BE PICKLED, CLEANED AND OILED INTERNALLY.
8. REPADS, WHEN REQUIRED, WILL HAVE ONE 1/4"NPT TELL TALE HOLE.
9. QUALIFIED WELDING PROCEDURES REGISTERED WP-807.2 .
10. QUALITY CONTROL PROGRAM REGISTERED AQP(S)-1044.
11. LENGTH BETWEEN TANGENTS 76 INCHES (MAXIMUM).
12. LENGTH OVER ALL 112.75 INCHES (MAXIMUM).
13. SEAM TO SEAM 72 INCHES (MAXIMUM).
14. CAPACITY 11.12 CUBIC FEET.
15. VESSEL WEIGHT 1200 POUNDS.
16. VESSEL SANDBLASTED EXTERNALLY & INTERNALLY.
17. ALL FLANGES ARE TO ANSI B16.5 SPECIFICATION.
18. VESSEL SERVICE IS SQR GAS.
19. NO CHARPY IMPACT TEST REQUIRED PER UG-20(f) 1 THROUGH 5.
20. CHEMICAL REQUIREMENTS FOR VESSEL MATERIALS AREA AS FOLLOWS:
1) % Mn / % C =, 3.0
2) % C + (% Mn/6) =< 0.45
21. PHYSICAL REQUIREMENTS BRINELL HARDNESS =< 200
22. ULTRASONIC EXAMINATION REQUIRED ON WELDS NOT COVERED BY RADIOGRAPHY.

CERTIFIED BY:		YEAR	1992
Enerflex Systems Ltd.		CRN	K6456.2
CALGARY, ALBERTA		SN	91071-01
C.A. 0.125"	MODEL		
U	MAWP	230	PSI @ 300 °F
V	MDMT	-20	°F @ 230 PSI
RT-1	SH.THK	.375"	MAT'L SA-106-B
HT	HD.THK	PER MTR	MAT'L SA-516-70M
REG. NO.		A2753874	

NAME PLATE DATA

STAMPS

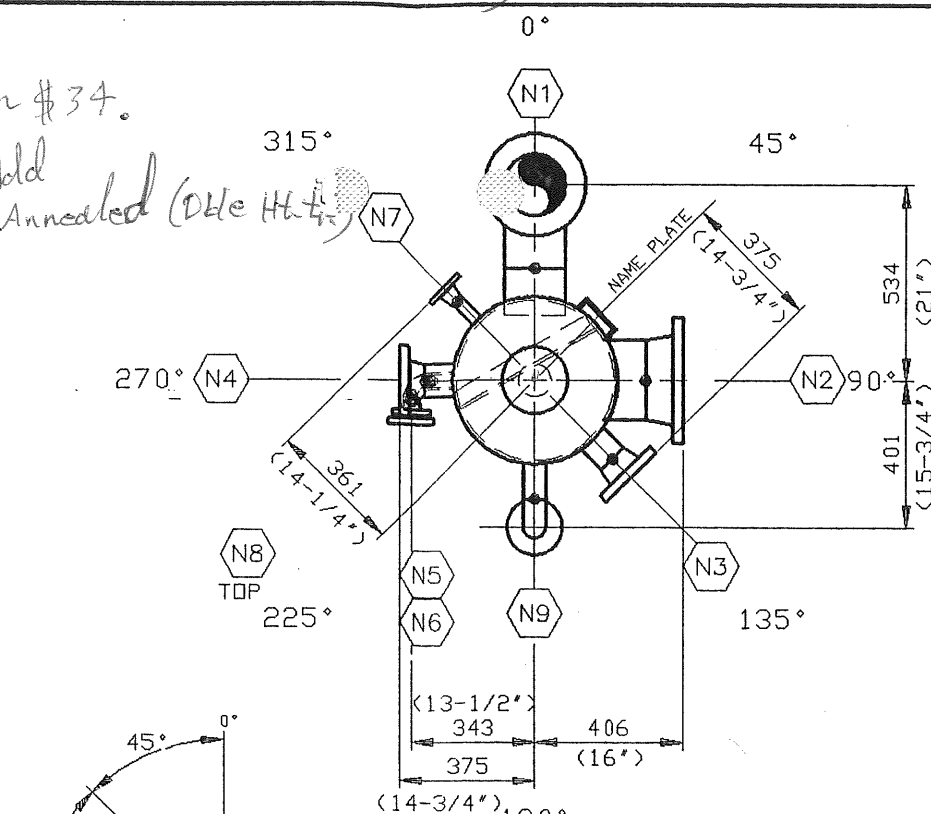
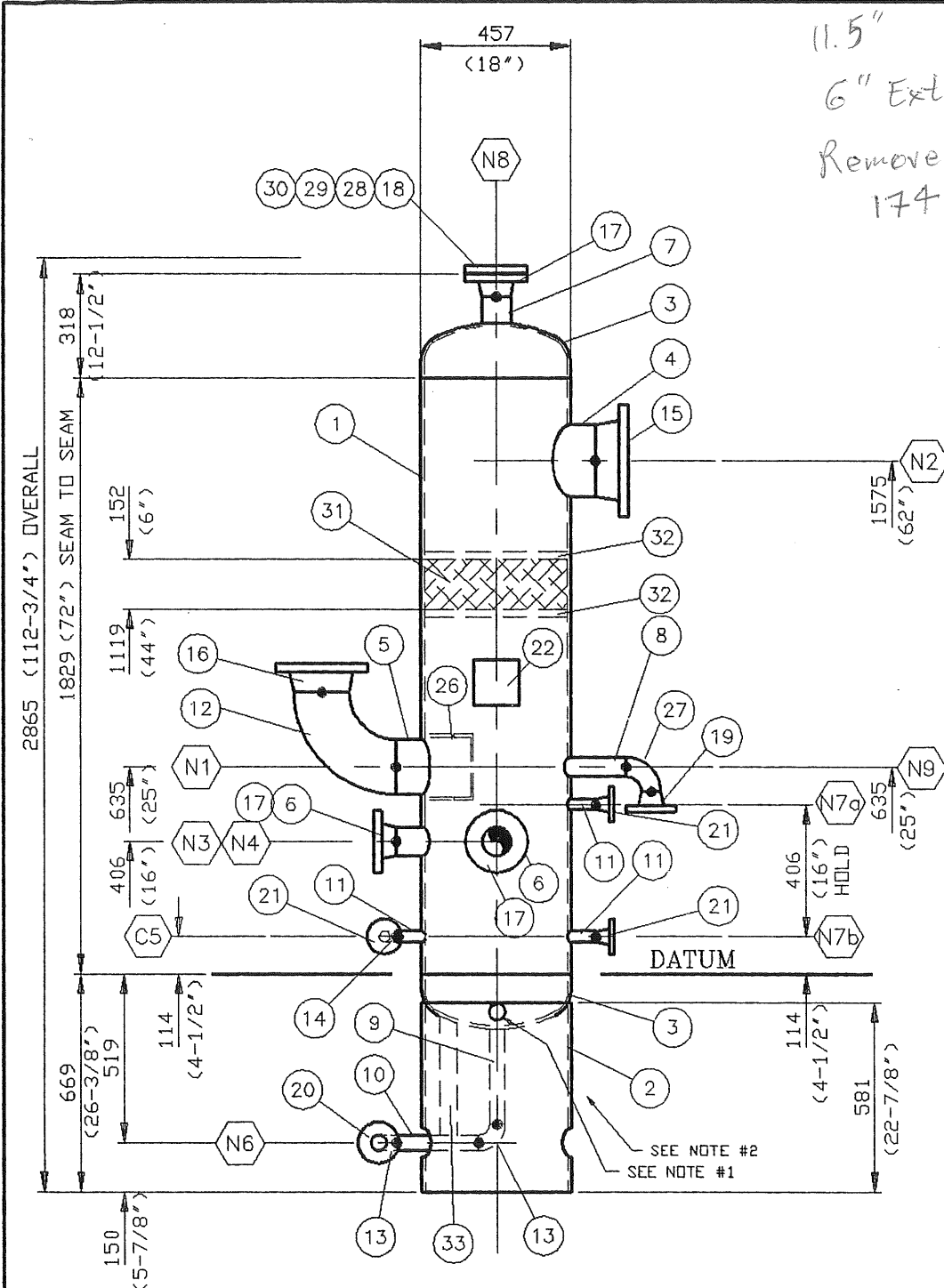
4	INPUT CORRECT CRN No	92-04-08	J.McD	
3	AS-BUILT	92-03-12	TJD	
2	REV'D N1 ON ELEV./ADDED ITEM #27	92-01-24	J.K.	
1	FOR CONSTRUCTION	92-01-22	J.K.	J.McD.
A	FOR APPROVAL	92-01-20	J.K.	
REV	DESCRIPTION	DATE	DRAWN BY	CHECKED BY
Enerflex Systems Ltd.		CALGARY EDMONTON GRANDE PRAIRIE MEDICINE HAT RED DEER FORT McMURRAY 7720-48th STREET SOUTH EAST CALGARY, ALBERTA, CANADA		
TITLE:		VESSEL TYPE: STAGE 1 SCRUBBER D.P. 230 PSIG @ 300°F / 18" O.D. / .125" C.A.		
FOR:		CO-ENERCO RESOURCES LTD. ZAMA EXPANSION OIL BATTERY		
LSD: 05-22-117-05 W6M		JOB No.: 91071		
DATE: 92-01-20	DESIGN BY: F.ZAHNER	DATE: 92-01-20	DWG. NO. VE91071A	REV. 4
DWN BY: J.KRUSE	CHECKED BY: J.McD.	DATE: 92-01-20		
SCALE: 1:20	APPROV'D BY: F.ZAHNER	DATE: 92-01-20		

3"-150# RF NACE LC (Fisher 2660A)

11.5"

6" Extension #34.

Remove or Add
174 SS Annealed (Due H.H.)

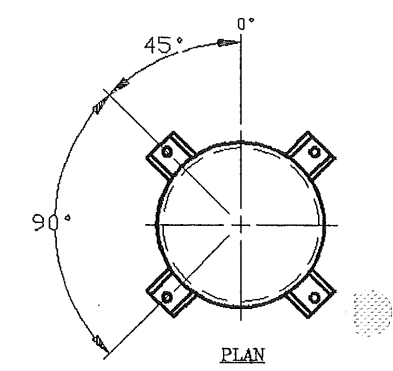


PLAN

(TRUE ORIENTATION)

GENERAL NOTES

- (2) 25mm DIA. HOLES @ 180° APART, DOWN 50 mm ON SKIRT.
- (2) 100mm DIA. HOLES @ 180° APART, (1) FOR BOTTOM DRAIN & (1) FOR INSPECTION.
- ITEM #25 (8) GUSSETS TO BE LOCATED (2) ON EACH FOOT.
- DIM. ARE IN mm & INCHES.
- ALL TAIL DIM. ARE FROM DATUM LINE.
- FLANGED NOZZLES USING PIPE AND BUTT-WELD FITTINGS WILL USE ONE SCHEDULE ONLY (NO TAPER BORES) FOR CIRC. & LONG'L (IF APPLIC.) SEAMS, SEE WELD DETAIL 'E'.
- ALL VESSEL ATTACHMENTS (INTERNAL & EXTERNAL) WILL BE MINIMUM THE EQUIVALENT MATERIAL TO WHICH IT IS WELDED.



PLAN

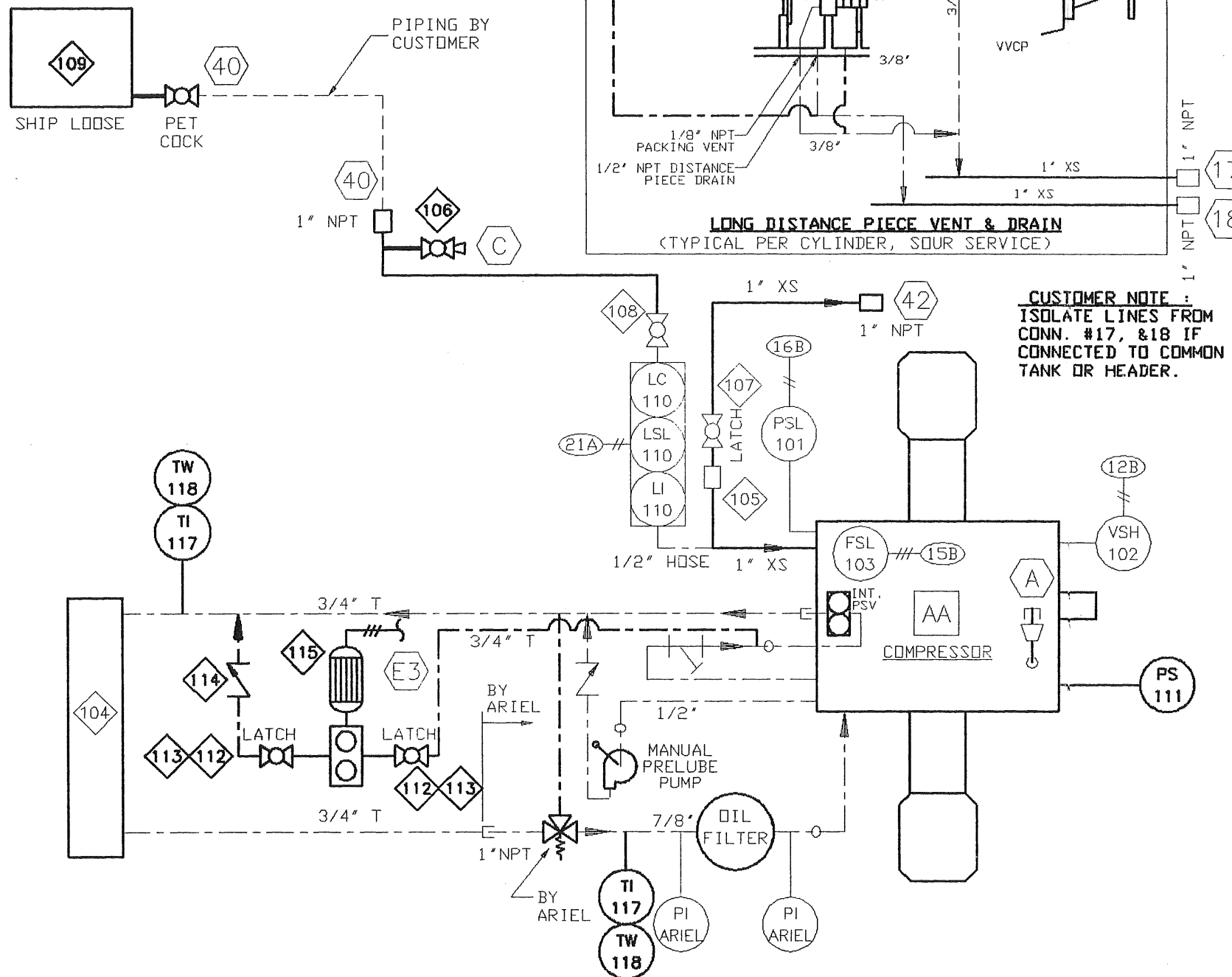
ELEVATION

SOLE PLATE DETAIL

<input checked="" type="checkbox"/> MTR. 'S REQ'D		BILL OF MATERIAL									
<input checked="" type="checkbox"/> SPECIAL CHEMISTRY REQ'D											
ITEM	QTY.	CODE No.	DESCRIPTION	WIDTH	LGTH.						
1	1		18' NOM. SCH STD SMLS PIPE (.375")		1829	SA-106-B					
2	1		18' NOM. SCH STD SMLS PIPE (.375") (S<IRT>		581	SA-106-B					
3	2		3/8" NOM. x 18" O.D., 2:1 SE HEAD								
			MIN. THK. .3125", 2" SF			SA516-70N					
4	1		8' NOM. SCH. XH SMLS PIPE (.500")		127	SA106-B					
5	1		6' NOM. SCH. XH SMLS PIPE (.432")		140	SA106-B					
6	2		3' NOM. SCH. XH SMLS PIPE (.300")		102	SA106-B					
7	1		3' NOM. SCH. XH SMLS PIPE (.300")		102	SA106-B					
8	1		2' NOM. SCH. XXH SMLS PIPE (.436")		102	SA106-B					
9	1		1.5' NOM. SCH. XXH SMLS PIPE (.400")		430	SA106-B					
10	1		1.5' NOM. SCH. XXH SMLS PIPE (.400")		261	SA106-B					
11	3		1' NOM. SCH. XXH SMLS PIPE (.358")		102	SA106-B					
12	1		6' NOM. SCH. XH 90DEG L.R. WELD								
			ELBOW (.432")			SA234-WPB					
13	2		1-1/2" NOM. SCH. XXH 90DEG L.R. WELD								
			ELBOW (.400")			SA234-WPB					
14	1		1' NOM. SCH. XXH 90DEG L.R. WELD								
			ELBOW (.358")			SA234-WPB					
15	1		8" - 150 # RFWN FLANGE SCH. XH BORE			SA105					
16	1		6" - 150 # RFWN FLANGE SCH. XH BORE			SA105					
17	3		3" - 150 # RFWN FLANGE SCH. XH BORE			SA105					
18	1		3" - 150 # RF BLIND FLANGE			SA105					
19	1		2" - 150 # RFWN FLANGE SCH. XXH BORE			SA105					
20	1		1.5" -150# RFWN FLANGE SCH. XXH BORE			SA105					
21	3		1" - 150 # RFWN FLANGE SCH. XXH BORE			SA105					
22	1	DSX-5H13C	3/16" x 1" DEEP FORMED CHANNEL	140	140	SA516-70					
23	4		1' NOM. PLATE STD. DWG. 9.8014	102	110	SA36					
24	4		1' NOM. PLATE STD. DWG. 9.8014	102	110	SA36					
25	8		1/2" FLAT BAR x 4" (GUSSETS)		530	SA36					
26	1		1/4" x 2" x 8" FORMED CHANNEL		418	SA516-70					
27	1		2' NOM. SCH XXH 90DEG L.R. WELD								
			ELBOW (.436")			SA-234-WPB					
28	4		5/8" DIA STUDS		95	SA193-B7M					
29	8		5/8" DIA NUTS			SA194-2HM					
30	1		3" - 150 # RF GASKET			316SS					
31	1		6" THK. 9# DENSITY MESH TYPE MIST								
			EXTRACTOR x 439 O.D.			316LSS					
32	AR		1/4" NOM. PLATE	25	4263	SA516-70N					
33	1	NPN	3/8" x 2" FLATBAR (C.T.S.)			SA516-70					
</											

NOTE:
1. SEE THE GENERAL ARRANGEMENT DRAWING
FOR THE CORRECT CYLINDER ORIENTATION.

OIL CAP.	23 L
OIL FLOW	30 L/min.



COMPRESSOR EQUIPMENT AND CONTROLS

CAD
MAKE NO REVISIONS
TO THIS REPRODUCIBLE

BILL OF MATERIAL

ITEM	SEC.	QTY.	CODE No.	DESCRIPTION
101	03	1	NPN	OIL PRESSURE SWITCH, SDR 6AG-EF2-N4-F1A CS, SET 20 PSI FALLING
102	03	1	BMU-VS2	VIBRATION SWITCH, MURPHY VS2, XP, CSA
103	01	1	NPN	LUBRICATOR NO FLOW SWITCH, TRABON, ARIEL SUPPLIED
104	02	1	BHA-K1268	OIL COOLER, HAYDEN SWIRL-COOL K1268 3/4" NPT
105	02	1	BDR-C10L	SLEEVE COUPLING, 1" DRESSER STYLE 90 EL
106	02	1	BDY-VME310	BALL VALVE, 1" NPT DYNA-QUIP VME3-A9 2000# WDG RP WI HANDLE
107	02	1	BNI-T5610	BALL VALVE, 1" NPT NIBCO T560-CS-R-25 2000# WDG RP WI LATCHING HANDLE
108	02	1	BDY-VME304	BALL VALVE, 1/2" NPT DYNA-QUIP VME3-A9 2000# WDG RP WI HANDLE
109	02	1	BRE-RS2S	OIL TANK, REN RS-2 30 US GAL (136L) OIL TANK WI RSS-2 STAND
110	03	1	BKE-LCE9	LEVEL CONTROLLER WI SWITCH, KENCO LCE-9 CSA XP
111	02	1	NPN	PERMISSIVE PRELUBE SWITCH, SDR 6AG-AG2-N4-F1A-CS SET 25 PSIG RISING, DPDT. (MOUNTED IN CONTROL PANEL)
112	02	2	BWK-13606	BALL VALVE, 3/4" NPT WKM B136-CS-02-CS-HL 2250# WDG RP WITH HANDLE
113	02	2	BWK-LD06	LATCHING DEVICE FOR 3/4-1" WKM B136 VALVE, WKM 281738
114	02	1	BNE-48T10	PISTON CHECK VALVE, 1" NPT NEWCO 48TFS2 800# WDG
115	02	1	NPN	PRELUBE ASSEMBLY, ELECTRIC MOTOR 1/ 60/115, 1 HP, CSA, XP C/W VIKING GEAR PUMP
116	03	2	NPN	DISTANCE PIECE PRESSURE SWITCH, SDR 12BA-KB614-M4-C1A-CS SET @ 15" W.C. RISING
117	16	2	BPF-3BM21	TEMPERATURE INDICATOR, PFORTNER 3BM2.5, 2-1/2" STEM, BACK MOUNT, 3" DIAL, DUAL SCALE, 0-250 DEG. F
118	16	2	BTW-062	THERMOWELL, 1/2" NPTF x 3/4" NPTM x 2-1/2" LONG, 304SS

AS-BUILT
DATE MAR 12 1992

DRAWING	FILENAME	ISSUE#
"A"	A023.DWG	2

SERVICE DWGS SHEET
2 OF 3
LAST DRAWING SAVE DATE:
92/03/12 10:53

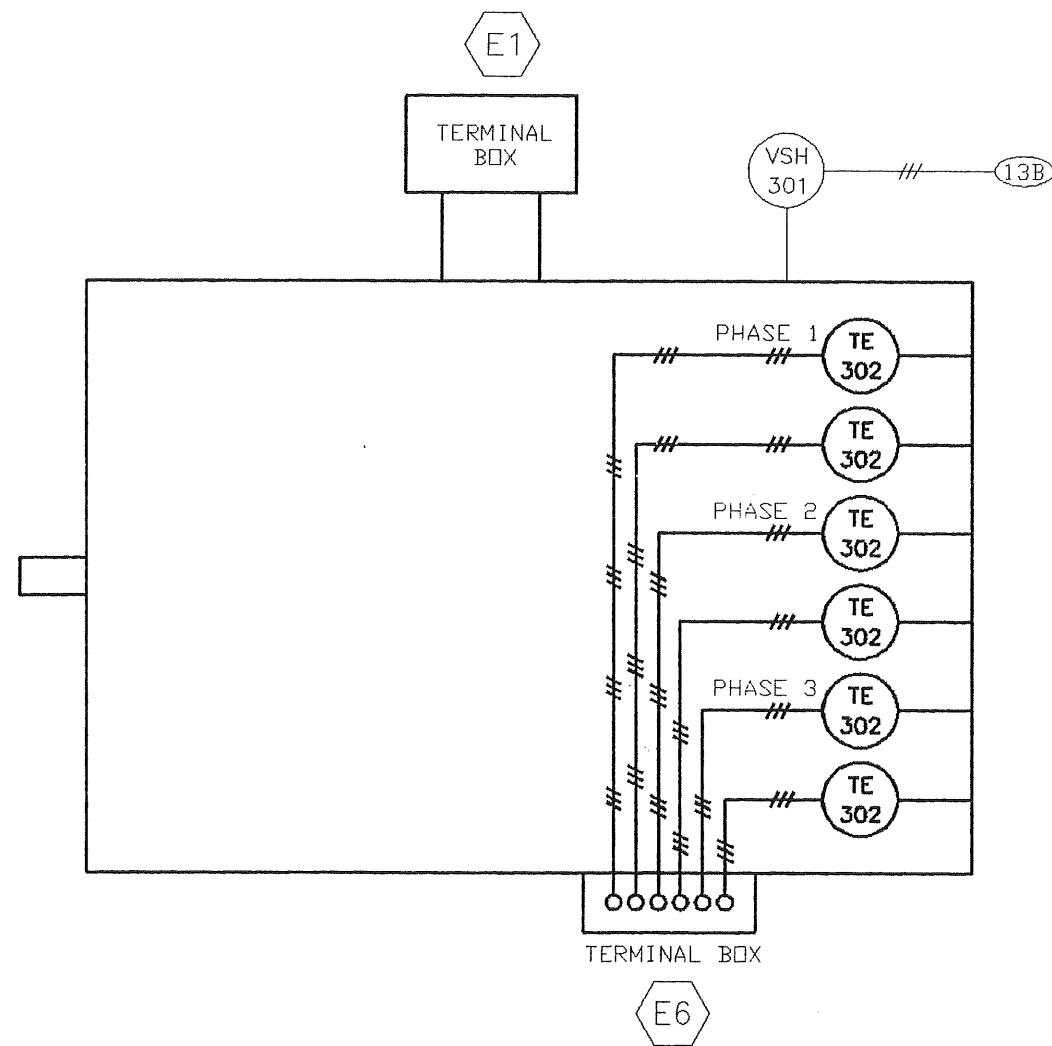
Enerflex
Systems Ltd.

CUSTOMER:
CO-ENERCO RESOURCES LTD.
ZAMA EXPANSION OIL BATTERY
JOB No.: **91071**

Rev.	Description	By	Date
2	AS-BUILT	TJD	92-03-12
1	FOR CONSTRUCTION	JK	92-01-23
A	FOR APPROVAL	JK	92-01-08

DWN BY: J. KRUSE
DATE: 92-01-08
CHK'D BY: _____
DATE: _____

TITLE:
**SCHEMATIC
COMPRESSOR EQUIPMENT AND CONTROLS**
ARIEL JGJ
DWG. **SF91071A** REV. **2**



ELECTRIC MOTOR EQUIPMENT AND CONTROLS

CAD

AS-BUILT

DATE MAR 12 1992

DRAWING "C"	FILENAME: C000.DWG	ISSUE#: A
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Enerflex
Systems Ltd.

CUSTOMER:
CD-ENERCO RESOURCES LTD.
ZAMA EXPANSION OIL BATTERY

DWN BY: J. KRUSE
DATE: 92-01-08

