

INTRINSICALLY SAFE CIRCUIT ONLY

NOTE: GREY PANDUIT PROVIDED FOR I.S. WIRING

EXPLOSION PROOF CIRCUIT ONLY

WARNING:

INSTALLATION OF CONTROL PANEL SHALL CONFORM TO CANADIAN ELECTRIC CODE APPENDIX 'F' IN ORDER TO MAINTAIN ELECTRICAL APPROVAL.

WIRE AND TERMINAL LEGEND

PANEL WIRE
FIELD WIRE
ALTRONIC XP TERMINAL

WIRE COLOR CODE

INTRINSIC CIRCUIT---YELLOW
COMMON---PURPLE
GROUND---GREEN

CUSTOMER CONNECTION

E10 CONTROL PANEL POWER SUPPLY 24V DC
E11 REMOTE SHUTDOWN 24V DC
E13 COMPRESSOR DRIVER MCC SIGNAL 24V DC
REMOTE STATUS, DRY CONTACT (IN MCC)
E14 COMPRESSOR PRELUBE MOTOR MCC SIGNAL 24V DC

POLY TUBING

COLOR CODE

LINE USE	COLOR	SYMBOL
SPEED CONTROL PROCESS	BLUE	BL
SUPPLY	GREEN	G
FUEL GAS VALVE	YELLOW	Y
INTERCONNECTING	ORANGE	O
VENT	WHITE	W
TRIP	RED	R
PROCESS PRESSURE	METALLIC	M

MATERIAL LIST

NO.	PART NUMBER	QTY	DESCRIPTION
18A	BCV-P4S006	1	PRESSURE INDICATOR, C.V.S. 4" DIAL, LIQUID
18B	BCV-P4S030	1	FILLED PANEL MOUNT, (1) @ 60#, (1) @ 300#, (1) @ 1500#.
18C	BCV-P4S150	1	
20A-C	BMU-PDB184	3	ISOLATING VALVE/PULSATION DAMPENER; MURPHY PDB184, 1/4".
22A	NPN	1	PRESSURE SWITCH; SUR 6AG-EF3-M4-C2A-CS SET @ 20# FALLING.
24A	NPN	1	PRESSURE SWITCH; SUR 6AG-EF45-M1-C2A-CS SET @ 170# RISING.
25A	NPN	1	PRESSURE SWITCH; SUR 6AG-EF45-M1-C2A-CS SET @ 675# RISING.
30A	NPN	1	CABINET; 24" WIDE X 15" DEEP X 72" HIGH, FRONT ACCESS DOOR c/w LOCKING HARDWARE; MOUNTING RAILS, SKID MOUNTED, NO BULKHEAD.
40	BAL-DA32NC/16NC	1	ANNUNCIATOR; ALTRONIC DA-16NC (16PTS)
41	BAL-102	1	CABLE ASSEMBLY (16 PTS.); ALTRONIC 693-102-2
42	BAL-012	1	'C' CLASS ADAPTOR; ALTRONIC 691-012
43	BAL-105	1	D.C. POWER SUPPLY; ALTRONIC 690-105
44	BAL-690107	2	XP/IS BARRIER; ALTRONIC 690-107
45	BAL-6931061	2	CABLE ASSEMBLY; ALTRONIC 693-106-1
47	BAL-DK4	17	TERMINAL BLOCK; WEIDMULLER DK4
48	BVE-APDK4	1	TERMINAL PLATE; WEIDMULLER APDK4
49	DVE-EWK1	2	TERMINAL RETAINER; WEIDMULLER EWK1

AS-BUILT

DATE

NOTES:

- MALFUNCTION - UNIT WILL AUTOMATICALLY SHUT DOWN. NUMBER DISPLAYED ON ANNUNCIATOR WILL INDICATE MALFUNCTION CONDITION.
- MANUAL SHUTDOWN - PRESS 'STOP' BUTTON ON ANNUNCIATOR.
- CABINET ENCLOSED WITH PARTIAL FRONT ACCESS DOOR.
- FINISH PAINT COLOUR: E.S.L. SILVER GREY ENAMEL.
- ALL COMPONENTS SHOWN IN DE-ENERGIZED STATE.
- CIRCUIT TUBING TO BE COLOUR CODED POLYETHYLENE.
- PROCESS TUBING TO BE 304 STAINLESS STEEL.
- CIRCUIT TUBE FITTINGS TO BE 316 SS STEEL C/W S FERRULES
- PROCESS TUBE FITTINGS TO BE 316 STAINLESS STEEL SWAGelok C/W STAINLESS STEEL FERRULES.
- ALL TUBING TO BE 1/4" UNLESS OTHERWISE NOTED (OIL PRESS. GAUGES REQUIRE 3/8").

CAD
MAKE NO REVISIONS
TO THIS REPRODUCIBLE

Enerflex
Systems Ltd.

CALGARY
EDMONTON
GRANDE PRAIRIE
MEDICINE HAT
RED DEER
FORT MCMURRAY
FORT ST. JOHN, B.C.
LLOYDMINSTER, SASKATCHEWAN

TITLE: **ELECTRONIC SHUTDOWN PANEL**
ELECTRONIC LOGIC

FOR: **CO-ENERGO RESOURCES LTD.**
ZAMA EXPANSION OIL BATTERY LSD: 05-22-117-05 W6M
CONSULTANT:
P.O.: **JOB No.: 91071**
DATE: 92-01-09
DWN BY: J. KRUSE
SCALE: N.T.S.
DESIGN BY: F. ZAHNER DATE:
APPROV'D BY: F. ZAHNER DATE:
DWG. NO.
CP91071

REV	DESCRIPTION	DATE	DRAWN BY	CHECKED BY
5				
4				
3	AS-BUILT	92-03-12	TJO	
2	CORRECTED E13, E14 LABELS	92-01-27	JK	
1	FOR CONSTRUCTION	92-01-23	JK	
A	FOR APPROVAL	92-01-09	JK	

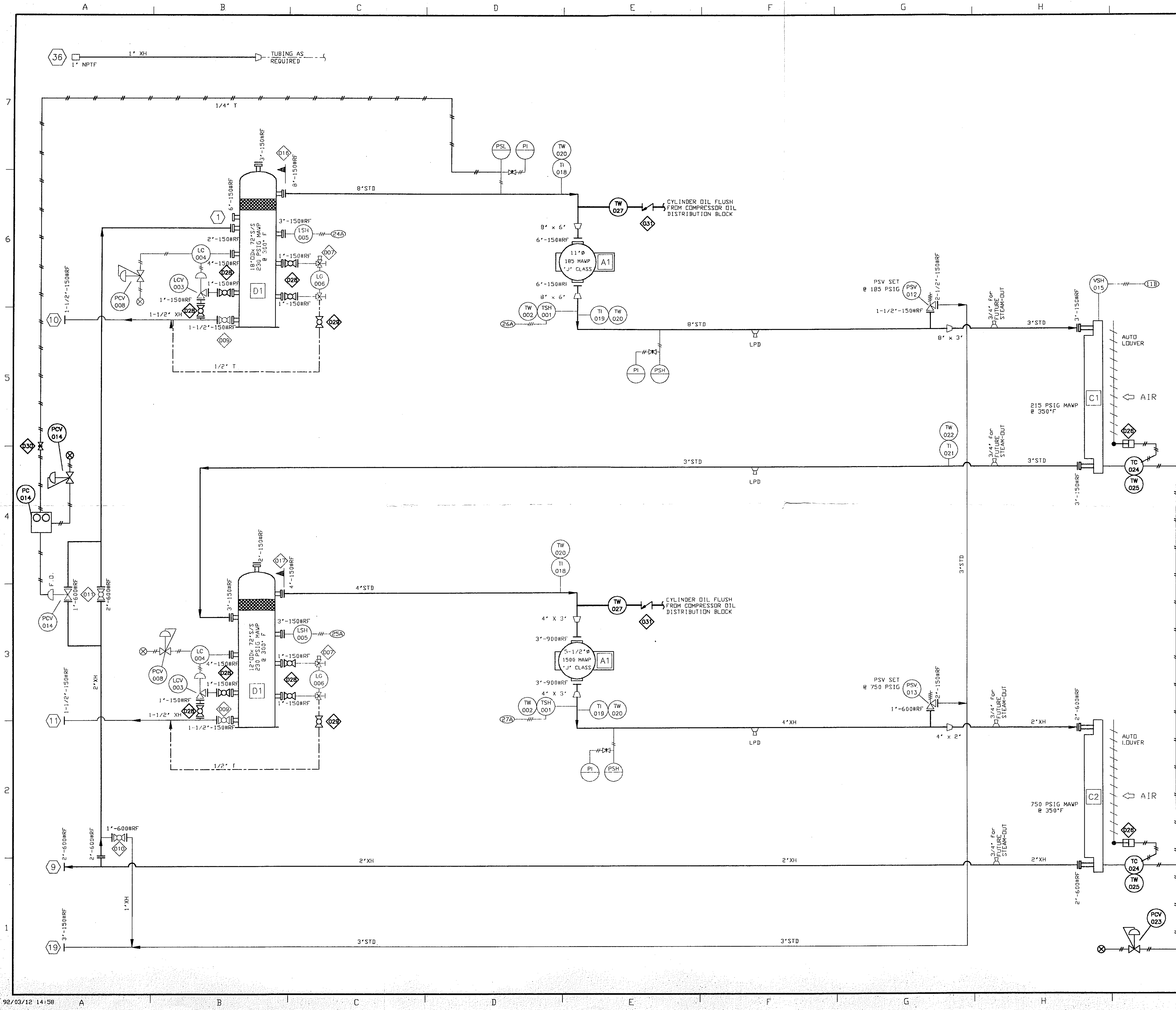
24
25

4

3

2

1



BILL OF MATERIAL				
ITEM	SEC	QTY.	CODE No.	DESCRIPTION
001	03	2	NPN	TEMPERATURE SWITCH, SDR 203-AG-EF115-U9 C7A-CS, SET 320 DEG F
002	03	2	NPN	THERMOWELL, SDR 24STW-RM075, 3/4\" NPTM
003	10	2	NPN	DUMP VALVE, 1\" NPT, FISHER 357-7031 RF1, 1/4\" DRIFICE, 17-4 SST (PHT) TRIM, NACE, 0-20 PSI
004	10	2	NPN	LEVEL CONTROLLER, 2\" NPT, FISHER 2660A, NACE, PVC DISPLACER
005	10	2	NPN	LEVEL SWITCH, SDR 1510C-G3C-C-V9-ES, 3\"-150# RF
006	10	2	BPE-RS17	LEVEL GAUGE, PENBERTHY RS-17-NQ CS, W1 REFLEX FLAT GLASS, NACE
007	10	2	BPE-305ND	SET GAUGE VALVES, PENBERTHY 305-NQ 3/4\" NPTM CS, NACE.
008	10	2	BTI-067	REGULATOR, 1/4\" NPT FISHER #67AFR-362, 5-35 PSI (VD P1)
009	10	2	BVK-100X14	BALL VALVE, 1 1/2\"-150# RF WKM B100 CS2-02-S2-HL RP THREE PIECE NACE WITH HANDLE
010	13	1	BNV-T3X6010	BALL VALVE, 1\" 600# RF NUTRON T3R10R06S NACE RP
011	13	1	NPN	BALL VALVE, 2\"-600# RF WKM B114 CS2-02-S2-WB, FP, NACE
012	13	1	NPN	RELIEF VALVE, FARRIS 26 GA10-120/S6/SP, NACE
013	13	1	NPN	RELIEF VALVE, FARRIS 26DA13-120/S6/SP, NACE
014	13	1	NPN	AUTO BY-PASS, FISHER 657-D-30,, FD, 1\" - 600 RF, NACE, C/W FISHER 4150K PRESSURE CONTROLLER, 0-100 PSI SSBT AND FISHER 67 AFR, REGULATOR
015	08	1	BMU-VS2	VIBRATION SWITCH, MURPHY VS2, XP, CSA
016	13	1	BCS-0811	CONE STRAINER, 8\" 150# CS, 100% FLOW AREA 316SS, 40 MESH SCREEN
017	13	1	BCS-0411	CONE STRAINER, 4\" 150# CS, 100% FLOW AREA 316SS, 40 MESH SCREEN
018	16	2	RPF-3BM61	TEMPERATURE INDICATOR, PFORTNER 3BM6, 6\" STEM, BACK MOUNT, 3\" DIAL, DUAL SCALE, 0-250 DEG. F
019	16	2	RPF-3BM62	TEMPERATURE INDICATOR, PFORTNER 3BM6, 6\" STEM, BACK MOUNT, 3\" DIAL, DUAL SCALE, 50-550 DEG. F
020	16	4	RTW-066	THERMOWELL, 1/2\" X 3/4\" NPTM X 6\" LONG 304SS
021	16	1	RPF-3BM41	TEMPERATURE INDICATOR, PFORTNER 3BM6, 4\" STEM, BACK MOUNT, 3\" DIAL, DUAL SCALE, 0-250 DEG. F
022	16	1	RTW-064	THERMOWELL, 1/2\" X 3/4\" NPTM X 4\" LONG 304SS
023	08	1	BTI-067	REGULATOR, 1/4\" NPT FISHER #67AFR-362, 5-35 PSI (VD P1)
024	08	2	BND-5012	TEMPERATURE CONTROLLER, NORRISEAL 5000 INDIRECT ACTING, 1\" NPT WITH 12\" PROBE
025	08	2	BND-TW12	THERMOWELL, 12\" X 1\" NPT SS, 3000 PSIG MAMP
026	07	2	NPN	PNEUMATIC ACTUATOR, GARZO 501-06, AIR-X-C SUPPLIED
027	02	2	NPN	THERMOWELL, 3/4\" X 1/2\" NPTM, 304SS, DRILL 1/16\" HOLE IN SIDE AT END FOR OIL INJECTION.
028	10	8	BVK-100X10	BALL VALVE, 1\"-150# RF, WKM, NACE.
029	10	2	BVK-136X04	BALL VALVE, 1/2\" NPT, WKM, NACE.
030	13	1	BWH-2NVS5	NEEDLE VALVE, WHITEY SS-1VS4, 1/4\" TBG, 316SS
031	16	2	BNV-SS4C1	CHECK VALVE, NUPRO, 1/4\" SS-AC-1

GENERAL NOTES

- THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNLESS STAMPED 'RELEASED FOR MANUFACTURE'.
- ALL PROCESS PIPING TO BE CLAMPED AS NEAR TO ALL ELBOWS AS POSSIBLE, REFER TO DRAWING 12.8006.
- FOR DESIGN PARAMETERS REFER TO PROJECT SCOPE SUMMARY DRAWING No. 5S91071
- FOR CUSTOMER CONNECTIONS REFER TO GENERAL ARRANGEMENT DRAWING No. GA91071
- PIPE NIPPLES 1-1/2" AND SMALLER TO BE MIN. XXH WALL THICKNESS.

LEGEND

○ CUSTOMER CONNECTIONS	▽ LOW POINT DRAIN (PLUGGED)
○ LOCALLY MOUNTED	○ FULL BORE SPACER PLATE 1/8" THK
○ MAIN CONTROL PANEL	▽ 3/16" VEEP HOLE DRAIN
○ LOCAL GAUGE PANEL	◇ MANUFACTURED COMPONENTS
— V VENT LINE (TUBING)	□ MAJOR COMPONENTS
— D DRAIN LINE (TUBING)	
— O OIL LINE (TUBING)	
— I INSTRUMENT LINE (TUBING)	
⊗ INSTRUMENT SUPPLY GAS	

AS BUILT

ITEM TO BE SHIPPED LOOSE FOR FIELD INSTALLATION

REV	DESCRIPTION	DATE	DRAWN BY	CHECKED BY
5		DATE MAR 17 1992		
4	AS-BUILT	92-03-12	TJD	
3	REV'D BYPASS MANUAL VALVE	92-01-27	JK	
2	FOR CONSTRUCTION	92-01-23	JK	
1	FOR APPROVAL	92-01-08	JK	F.Z.

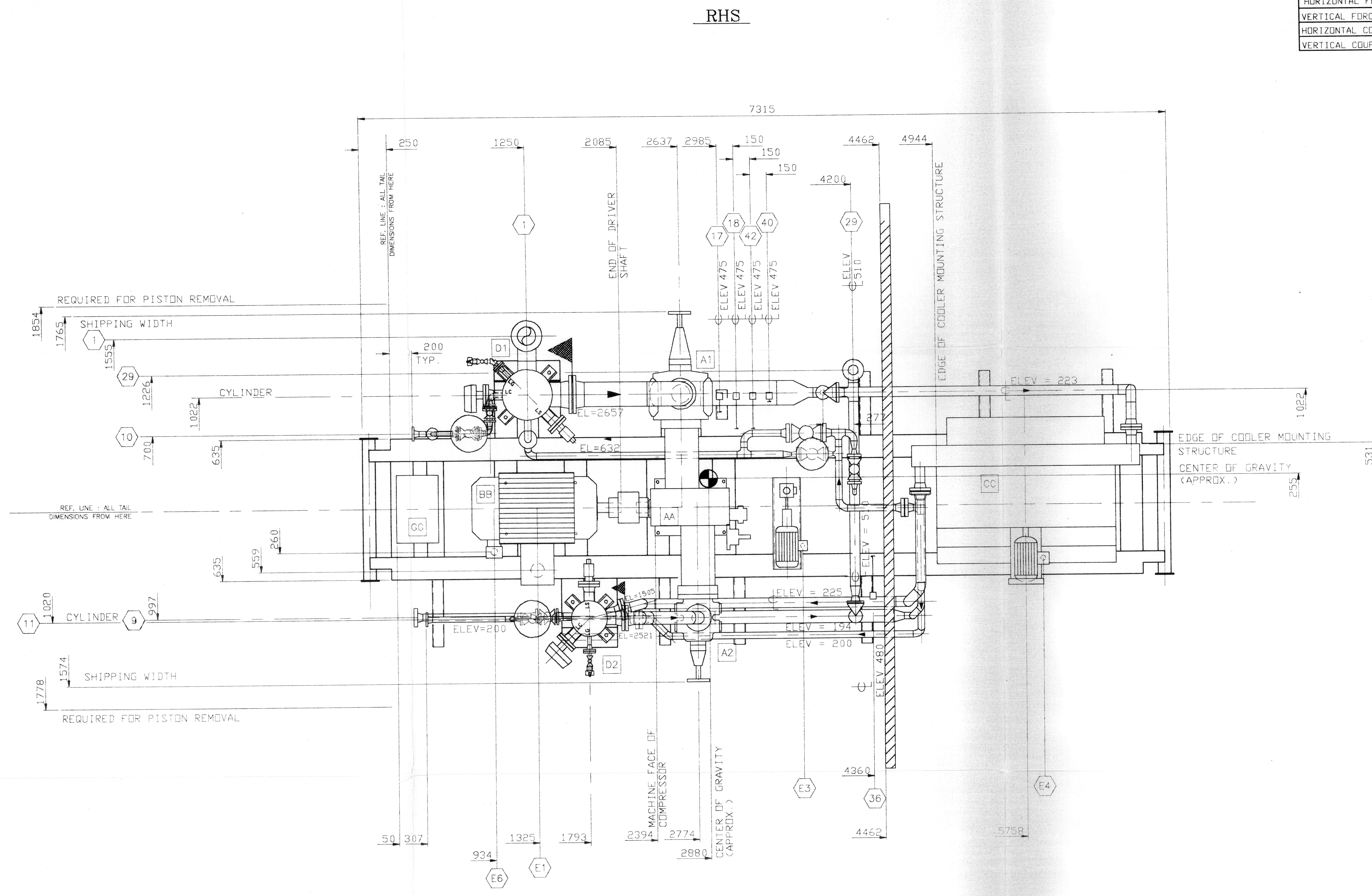
Enerflex Systems Ltd.

CALGARY
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MEDICINE HAT
RED DEER
FORT McMURRAY
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LLOYDMINSTER, SASKATCHEWAN

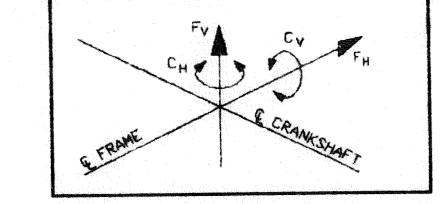
TITLE: **PROCESS & INSTRUMENTATION DIAGRAM**
ARIEL JGJ-2 / 300 HP ELEC. /AIR-X-C 54V
COMPRESSOR PACKAGE

FOR: **CO-ENERCO RESOURCES LTD.**
CONSULTANT: **ZAMA EXPANSION OIL BATTERY** I.S.D: 05-22-117-05 W6M
P.O.: **JOB No.: 91071**

DATE: 92-01-08 DWN BY: J.KRUSE SCALE: N.T.S.	DESIGN BY: F.ZAHNER DATE: CHECKED BY: F.ZAHNER DATE: APPROV BY: F.ZAHNER DATE:	DWG. NO. PF91071
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COMPRESSOR UNBALANCED FORCES @ 1800 RPM		
	PRIMARY	SECONDARY
HORIZONTAL FORCE, KIPS.	0	0
VERTICAL FORCE, KIPS.	0	0
HORIZONTAL COUPLE, KIP-FT	3.46	1.34
VERTICAL COUPLE, KIP-FT	4.42	0



CUSTOMER CONNECTIONS		
NO.	DESCRIPTION	SIZE
1	STAGE ONE INLET	6"-150# RF
9	FINAL DISCHARGE	2"-600# RF
10	SCRUBBER DRAIN HEADER	1-1/2"-150# RF
11	SCRUBBER DRAIN HEADER	1"-NPT
17	PACKING VENT AND DRAIN	1"-NPT
18	DISTANCE PIECE VENT AND DRAIN	3"-150# RF
29	PSV VENT HEADER	1"-NPT
36	INSTRUMENT AIR SUPPLY	1"-NPT
40	COMPRESSOR LUBRICATOR OIL MAKE-UP	1"-NPT
42	COMPRESSOR OIL DRAIN	1"-NPT

OTHER CONNECTIONS		
CONN.	DESCRIPTION	SIZE
E1	MAIN MOTOR SUPPLY	
E3	COMPRESSOR PRELUDE SUPPLY	
E4	COOLER MOTOR SUPPLY	
E6	MOTOR WINDING RTD	
E13	PANEL - COMPRESSOR DRIVER MCC SIGNAL	
E14	PANEL - COMPRESSOR PRE-LUBE MOTOR MCC SIGNAL	
C	COMPRESSOR OIL TANK FILL (CUST. LOCATED)	2" NPT

MAJOR COMPONENTS		
AA COMPRESSOR	(1) ARIEL JGJ-2 TWO THROU, WITH LONG DOUBLE COMPARTMENT DISTANCE PIECE	
A1	(1) 11" DIA. BORE 1/2" CYLINDER	C/W VVCP MAWP = 185 PSIG
A2	(1) 5-1/2" DIA. BORE 1/2" CYLINDER	C/W VVCP MAWP = 1500 PSIG
BB DRIVER	(1) RELIANCE 300 HP ELECTRIC MOTOR FRAME = 449T	
CC COOLER	(1) AIR-X-CHANGERS 54VW	
C1	(1) GAS INTERCOOLING SECTION	MAWP = 215 PSIG
C2	(1) GAS AFTERCOOLING SECTION	MAWP = 750 PSIG
DD SCRUBBERS	(1) 18" DIA., STAGE ONE SUCTION SCRUBBER C/W MESH PAD MIST EXTRACTOR	
D1	(1) 18" DIA., STAGE ONE SUCTION SCRUBBER C/W MESH PAD MIST EXTRACTOR	MAWP = 230 PSIG
D2	(1) 12" DIA., STAGE TWO SUCTION SCRUBBER C/W MESH PAD MIST EXTRACTOR	MAWP = 230 PSIG
GG CONTROL PANEL	(1) ESL, ELECTRIC, 381mm WD x 610mm LG x 1829mm H	

- GENERAL NOTES**
- THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNLESS STAMPED "RELEASED FOR MANUFACTURE".
 - DO NOT SCALE THIS DRAWING.
 - ALL DIMENSIONS ARE IN MILLIMETERS.
 - FOR DESIGN PARAMETERS AND PAINT SPECIFICATION REFER TO PROJECT SCOPE SUMMARY DRAWING NO. 5591071.
 - ALL PIPING MUST BE SELF-SUPPORTING BEYOND UNIT CONNECTIONS.
 - LOCATIONS OF CUSTOMER CONNECTIONS ARE NOT GUARANTEED AS THESE DIMENSIONS MAY BE SUBJECT TO AN ACCUMULATION OF TOLERANCES ON SEVERAL COMPONENTS. MINOR CHANGES MAY ALSO BE MADE ON SERVICE PIPING IN ORDER TO FACILITATE INSTALLATION AND MAINTENANCE. ON COMPLETION A FINAL DRAWING WILL BE ISSUED WITH FIELD CONNECTIONS CORRECTED TO 5 mm.
 - IT IS ESL'S RECOMMENDATION THAT ANY PRE-SPoolING TO THIS COMPRESSOR PACKAGE CONTAIN FIELD WELDS AT ALL CUSTOMER CONNECTIONS.
 - DIMENSIONS INDICATED (*) SHALL BE CONFIRMED AND CERTIFIED CORRECT (**) ON A FINAL REVISION.
 - THE FOLLOWING ITEMS WILL BE SHIPPED LOOSE FOR FIELD INSTALLATION BY OTHERS: COMPRESSOR OIL TANK AND STAND

SHIPPING WEIGHTS		
	KG	LBS.
MOTOR	1012	2230
COMPRESSOR	2668	5900
COOLER	1642	3620
VESSELS	844	1860
SKID	9200	20282
MISC. & LIQUIDS	2726	6010
BUILDING	N/A	N/A
CRANE	N/A	N/A
TOTAL SHIPPING WT.	17691	39002
SHIPPED LOOSE ITEMS	227	500
TOTAL UNIT WEIGHT	17918	39502

UNIT DIMENSIONS		
	LENGTH	WIDTH
MAIN SKID W/ ALL EQUIP. MOUNTED	7315 24'-0"	3339 10'-11-1/2"
SHIPPING DIMENSIONS	7315 24'-0"	3339 10'-11-1/2"
COOLER	N/A	SKID MOUNTED

AS-BUILT			
DATE MAR 12 1992			
3	AS-BUILT	92-03-12	TJO
2	REV'D FOR WIDER DIST. PIECE CONFIGURATION	92-02-14	J.K.
1	FOR CONSTRUCTION	92-01-29	J.K.
A	FOR APPROVAL	92-01-10	J.K.
REV	DESCRIPTION	DATE	CHECKED BY

Enflex Systems Ltd.

TITLE: GENERAL ARRANGEMENT
ARIEL JGJ-2 / 300HP ELECTRIC MOTOR / AIR-X-C 54VW
COMPRESSOR PACKAGE

FOR: CO-ENERGO RESOURCES LTD.
ZAMA EXPANSION OIL BATTERY

CONSULTANT: P.O.:
DESIGN BY: F. ZAHNER DATE: 92-01-10
DWG. NO. 91071

DATE: 92-01-10
CHECKED BY: J. Mc D. DATE: 92-01-10
APPROV'D BY: F. ZAHNER DATE: 92-01-10
SCALE: 1:20
DWG. NO. GA91071