PROJECT DESCRIPTION

ONE (1) NATURAL GAS COMPRESSOR PACKAGE
FOR: DEVON CANADA CORPORATION
LOCATION NAME: FERRIER CPF BATTERY
LSD: 11–02–39–08 W5M

FABRICATED BY:

ENERFLEX LTD.
CALGARY, ALBERTA, CANADA

TANK CAPACITIES

GLYCOL STORAGE TANK:	2124 LITERS
WASTE OIL STORAGE TANK:	2124 LITERS
ENGINE LUBE OIL DAYTANK:	650 LITERS
EJW SURGE TANK:	197 LITERS
AJW SURGE TANK:	151 LITERS

DESIGN CRITERIA & APPLICABLE CODES

SITE ELEVATION:		1030m ABOVE MEAN SEA LEVEL
BAROMETRIC PRESSURE:		89.6 KPAA
AMBIENT TEMPERATURE:	MAXIMUM	40°C
	MINIMUM	–40°C
WIND SPEED:	MAXIMUM	145 KMPH
SEISMIC	ZONE	A
PROCESS INLET:	DESIGN	1689 KPAG @ 121°C
PROCESS FINAL DISCHARGE:	DESIGN	2068 KPAG @ 121°C
INSTRUMENT AIR:	MINIMUM PRESSURE	550 KPAG
	MAXIMUM PRESSURE	910 KPAG
	GALVANIZED PIPE FOR INSTRUMENT AIR HEADER (PIPE CLASS AU23)	
APPLICABLE CODE:	CODE PIPING	B31.3 – 2010
	NON–CODE PIPING	EFX C01, 1mm CA; FULL PEN. WELD ON COUPLING
	VESSEL	ASME SECTION VIII
	EXCHANGER	ASME SECTION VIII
	STRUCTURAL	CWB
	ELECTRICAL	CSA
REGISTRATION:	VESSEL	AB
MISCELLANEOUS:	GASKETS	CGI TYPE, FLEXITALLIC FLEXICARB, SPIRAL WOUND, 316 WINDINGS AND INNER RING
	BOLTING	STUDS – SA–193–B7, NUTS – SA–194–2H
	PROCESS PIPE	CARBON STEEL
	UTILITY PIPE	CARBON STEEL
	FLANGES	RAISED FACE (UNLESS OTHERWISE NOTED)
ELECTRICAL:		RIGID ALUMINUM CONDUIT; CABLE TRAY FOR MOTOR 575 VAC POWER SUPPLY
SUITABLE FOR USE IN:		CLASS 1, ZONE 2, GROUP IIA, T3

POWER REQUIREMENTS

CONTROL PANEL	VOL: 24 VDC	AMPS:	NOM: 4.0	MAX: 10
FIRE DETECTION:	VOL: 24 VDC	AMPS:	NOM: 0.1	MAX: 0.3
LEL DETECTION:	VOL: 24 VDC	AMPS:	NOM: 0.1	MAX: 0.3
INT. LIGHTS:	VOL: 120 VAC	AMPS:	NOM: 0.2	MAX: 0.5
EXT. LIGHTS:	VOL: 120 VAC	AMPS:	NOM: 0.2	MAX: 0.5
OIL PUMP MOTOR:	VOL: 575 VAC/3 PH/60HZ		5.6 kW (7.5 HP)	
GLYCOL PUMP MOTOR:	VOL: 575 VAC/3 PH/60HZ		2.24 kW (3 HP)	
ENGINE GLYCOL HEATER PUMP MOTOR:	VOL: 575 VAC/3 PH/60HZ		0.75 kW (1 HP)	
ENGINE OIL HEATER PUMP MOTOR:	VOL: 575 VAC/3 PH/60HZ		0.75 kW (1 HP)	
BUILDING FAN MOTORS (5+1):	VOL: 575 VAC/3 PH/60HZ		0.56 kW (0.75HP)	
AIR COOLED FAN MOTOR (2):	VOL: 575 VAC/3 PH/60HZ		14.9 kW (20 HP)	
ENGINE GLYCOL HEATER:	: 575 VAC/3 PH/60HZ		18 kW (24.1 HP)	
ENGINE OIL HEATER:	VOL: 575 VAC/3 PH/60HZ		6 kW (8 HP)	
IMMERSION HEATER:	VOL: 575 VAC/3 PH/60HZ		9 kW (12 HP)	
BUILDING HEATER MOTOR:	VOL: 575 VAC/3 PH/60HZ		0.375 kW (0.5 HP)	

SYSTEM CONSUMABLES

COMPRESSOR LUBE OIL:	CPI–S5–150 1915 LITERS, 506 GALLONS
COMPRESSOR SEAL POT OIL:	ROYAL PURPLE FDA (GRADE 22) 31 LITERS
ENGINE CRANKCASE LUBE OIL:	SAE 40, LOW ASH, 708 LITERS
GLYCOL:	50% ETHYLENE INHIBITED GLYCOL/WATER SOLUTION EJW CAPACITY: 341 LITERS AJW CAPACITY: 61 LITERS

DESIGN SPECIFICATION:

ENERFLEX LTD. (EFX) SCOPE OF SUPPLY ON THIS PROJECT CONSISTS OF ONE SKIDDED GAS COMPRESSOR PACKAGE.

PACKAGE CONSISTS OF ONE (1) CATERPILLAR 3606 ENGINE DRIVING A FRICK SGCB–3524, SWEET NATURAL GAS COMPRESSOR.

PRIMER:	–SSPC–SP6/NACE NO. 3, EPOXY
PAINT:	–SSPC–SP6/NACE NO. 3 ALIFATIC URETHANE, COLOR: GRAY/BLUE OEM, ENGINE, COMPRESSOR, CONTROL VALVES
PROCESS PIPING:	–10% RADIOGRAPHIC TESTING –1.6mm (1/16") CORROSION ALLOWANCE –NO PWHT –SSPC–SP6 –NO PICKLING –OILED AFTER HYDRO
VESSELS:	–10% RADIOGRAPHIC TESTING – RT2 –1.6mm (1/16") CORROSION ALLOWANCE –NO PWHT –SSPC–SP6 –NO PICKLING –OILED AFTER HYDRO

PROCESS	
TUBING SPECIFICATION	DL74
TUBING MATERIAL	316SS
FITTING MATERIAL	316SS C/W SS FRONT AND BACK FERRULE
TUBING TRAYS	–
OD	MINIMUM WALL THICKNESS*
1/4"	0.035"
3/8"	0.035"
1/2"	0.049"
3/4"	0.065"
1"	0.083"
SPECIAL REQUIREMENT(S):	

UTILITY	
TUBING SPECIFICATION	DL74
TUBING MATERIAL	316SS
FITTING MATERIAL	316SS C/W SS FRONT & BACK FERRULE
TUBING TRAYS	–
OD	MINIMUM WALL THICKNESS*
1/4"	0.035"
3/8"	0.035"
1/2"	0.049"
3/4"	0.065"
1"	0.083"
SPECIAL REQUIREMENT(S):	

FINAL AS BUILT
NAME C.SMITH DATE JAN 02/14

REV	DESCRIPTION	DATE	BY	APR
3	FINAL AS BUILT	JAN 02/14	CS	SG
2	FINAL AS BUILT	NOV 21/13	AR	SG
1	ISSUED FOR CONSTRUCTION	JUN 21/13	CS	SG
0	ISSUED FOR CONSTRUCTION	APR 09/13	AT	SG
B	ISSUED FOR APPROVAL	FEB 08/13	AH	SG
A	ISSUED FOR APPROVAL	JAN 18/13	AH	SG

DATE DEC 10/12 | SCALE NTS
DRAWN BY A.HAMMOND | CHECKED BY S.GURI | APPROVED BY B.MINSHULL
PROJECT MANAGER B.MINSHULL | PROJECT ENGINEER S.GURI
CUST PO 4100000964
APEGGA PERMIT No: P8651 | OPER. CODE | WORK ORDER 12618–01

DEVON CANADA FERRIER CPF
BATTERY SCREW
CATERPILLAR G3606LE
FRICK SGCB–3524

ENERFLEX
Calgary, Alberta, Canada

P & I DIAGRAM
PROJECT DESCRIPTION
& OVERVIEW

DWG NO 12618–01–099 | SHT 1 | REV 3

001-PK-02-1000
BATTERY GAS COMPRESSOR PACKAGE #1

001-V-02-1010
SUCTION SCRUBBER

MFG: EFX
SIZE: 1219mm(48") OD X 2591mm(102") S/S
MAWP: 1689kPag(245 PSIG) @ 121°c(250°F)
MDMT: -29°C(-20°F) @ 1689kPag(245 PSIG)
CA: 1.6mm(1/16")
MAT'L: CARBON STEEL
ELEMENTS: NON-REMOVABLE VANEPACK
MTR: STAINLESS STEEL (316)
S/N: 12618014211
CRN: W1465.2

1689 KPAG @ 121°C

168-150# RF HIGH PRESSURE VENT HEADER 3
168-150#
168-HF-AL11-09053 S/STD
AL11 A11
168-HF-A11-09051 S/STD
FROM 001-PSV-02-1016
FROM 12618-111 SHT 2

FROM 001-BDV-02-1000
FROM 12618-01-111 SHT. 2
60-HF-A11-09054 S/XS
60-150#
89-150#
89-150#

FROM 001-PSV-02-1012B
FROM 12618-01-115 SHT 1
89-HF-A11-09055 S/STD

VENT TO ATMOSPHERE
INCREASE
HS 1000 DECREASE
HS 1000
HS 1000 AUTO/ MANUAL
PDIC 1000
XC
PYI 1000
PCV 1000A
SET @ 241 kPag
21 BA8202A
21
1/4
PCV 1000
324 X 219
219-300# FO

324-300# RF GAS OUTLET 2
324-300#
324-PG-BL11-1064 S/STD
BL11 B11
324-PG-B11-1064 S/STD
FROM 001-E-02-1013
FROM 12618-01-111 SHT 2

SKID EDGE RATING 2068 KPAG @ 121°C

89-HF-A11-09052 S/XS
89 X 60
60-150#
PSV 1010
SET @ 1689 kPaG (SIZED FOR FIRE)
D
33-150#
60 X 33
114-300#
VENT

VENT TO ATMOSPHERE
PCV 1010C
POS
PYI 1010B
XC
PIC 1010B
FROM: PIT-1011
FROM 12618-01-111 SHT 2
21
1/4
21 BA8202A
SET @ 241 kPag

60-PG-A11-01052 S/XS
60-300#
SP 1010B
TG 1010
27
356-150#
SP 1010A
356-PG-A11-01053 S/STD
TO 001-K-02-1011
TO 12618-01-111 SHT 2
60 BA0306A
NC
33 BA8202A

SKID EDGE RATING 1689 kPag MAWP @ 121°C
356-150# RF GAS INLET 1
AL11 A11
356-150#
356-PG-AL11-01051 S/STD
356 X 273
273-300# F.C
PCV 1010B
406 X 273
406-HG-A11-01051 S/STD
406-150#
SP 1010
NOTE 2
001-V-02-1010
168-150#
SP 1010C
168-PG-A11-01054 S/STD
FROM PCV-1000B
TO 12618-01-111 SHT 1

IMPORTANT:
OVER PRESSURE PROTECTION TO BE PROVIDED OFF-SKID BY CUSTOMER

60-150#
60 LA0106A1
LAHH 1010A
XC
LSHH 1010A
SET @ 559 mm
60-300#
PG 1010A
27 NB8612A
21
508mm
(MANWAY)
LCH
LIC 1010
LCL
XC
HLL 457mm
NLL 381mm
LLL 229mm
PCV 1010D
PG 1010D
LYS 1010
21 BA8202A
SET @ 241 kPag
VENT
LCV 1010
60 BA0306A1
60 BA0306A1
60-300# FC
27 GA0802A
SP 1010D
60-300#
LSH 1010B
LSL 1010C
LG 1010E
LALL 1010D
XC
LSLL 1010D
60-300#
60-300#
SP 1010E
60 BA0106A1
NC
60 X 21
21 BA8202A
1/2" T
21 BA8202A

BY OTHERS
ENVIROBOX CONNECTION
TRUCK OUT 4A
60-150#
IMPORTANT:
OVER PRESSURE PROTECTION TO BE PROVIDED OFF-SKID BY CUSTOMER
SKID EDGE RATING 1689 kPag MAWP @ 121°C
60-150# HYDROCARBON DRAIN 4B
60-150#
AL11 A11
60-HCD-A11-23050 S/XS
27-NPT
SLOPE
60 CK0106A
A13 A11
27-21
FROM FL-02-1033
FROM 12618-01-115 SHT. 1
1/2" T

NOTES:
1. LSLL-1010D TO HAVE "C" TIMER ON THE PLC.
2. SPECTACLE BLINDS ARE PCR AND APPLIED ON SUCTION SCRUBBER ONLY.
3. LG TO HAVE 45° FITTINGS.

FINAL AS BUILT
NAME T.WELSH DATE AUG 28/14

REV	DESCRIPTION	DATE	BY	APR
4	FINAL AS BUILT	AUG 28/14	TW	AA
3	FINAL AS BUILT	JAN 02/13	CS	SG
2	FINAL AS BUILT	NOV 21/13	AR	SG
1	ISSUED FOR CONSTRUCTION	JUN 21/13	CS	SG
0	ISSUED FOR CONSTRUCTION	APR 09/13	AT	SG
B	ISSUED FOR APPROVAL	FEB 08/13	AH	SG

DATE DEC 10/12 SCALE NTS
DRAWN BY A.HAMMOND CHECKED BY S.GURI APPROVED BY B.MINSHULL
PROJECT MANAGER B.MINSHULL PROJECT ENGINEER S.GURI
CUST PO 4100000964
APEGGA PERMIT No: P8651 OPER. CODE WORK ORDER 12618-01

DEVON CANADA FERRIER CPF
BATTERY SCREW
CATERPILLAR G3606LE
FRICK SGCB-3524

ENERFLEX
Calgary, Alberta, Canada

P & I DIAGRAM
PROCESS GAS

DWG NO 12618-01-111 SHT 1 REV 4

PLOT 21 Oct, 2014-2:47pm, dtran

001-V-02-1016
OIL SEPARATOR

MFG: EFX
SIZE: 1829mm(72") OD X 2845mm 112" S/S
MAWP: 2068 kPag(300 PSIG) @ 121°C(250°F)
MDMT: -29°C(-20°F) @ 2068 kPag(300 PSIG)
MAEDP: 103 kPag(15 PSID) @ 121°C(250°F)
CA: 1/16"(1.6mm)
MAT'L: CS
FILTER ELEMENT: JOS-500 (QT-22)
S/N: 12618014236
CRN: W1476.2

001-P-02-1017
COMPRESSOR LUBE OIL PUMP

MFG: MYCON
MODEL: HT-M80P-4PM
FLOW RATE: 5181/min @ 235 kPAG
POWER: 5.5KW(7.5HP) @ 1800 RPM
VOLT/PHASE/HZ: 575VAC/3/60

001-PM-02-1017
COMP.LUBE PUMP MOTOR

MFG: TECO WESTING HOUSE
MODEL: APH7/54-841
POWER: 7.5 HP
ELECTRICAL: 575 VAC/3 PH/60 HZ
VFD COMPATIBLE

001-E-02-1013
AFTER-COOLER SECTION

MAWP: 2068 kPag @ 177°C
MDMT: -46°C @ 2068 kPag
CA: 1.6mm(1/16")
DUTY: 2264745 BTU/HR
TOTAL SURFACE: 24678 Sq.Ft.

001-EH-02-1018
IMMERSION HEATER

MAKE: CALORITECH
MODEL: CXFT6093F345X-0XX600V309KW
POWER: 575V/3PH/60HZ
WATT DENSITY: 17 W/in.
BUILT IN THERMOSTAT
RATING: 9 KW

AUTO BLOWDOWN

AUTO BYPASS

TO HPV
TO 12618-01-111 SHT 1

TO GAS OUTLET
TO 12618-01-111 SHT. 1

TO VENT HEADER
TO 12618-01-111 SHT.1

FROM 001-V-02-1010
FROM 12618-01-111 SHT. 1

TO 001-PIC-02-1010B
TO 12618-01-111 SHT 1

TO 001-PIC-02-1011F
TO 12618-01-113 SHT 1

TO 001-PIC-02-1011C
TO 12618-01-113 SHT 1

TO 001-PIC-02-1011G
TO 12618-01-113 SHT 1

TO V-02-1010
TO 12618-01-111 SHT 1

001-K-02-1011

001-V-02-1016

001-E-02-1013

001-P-02-1017

001-PM-02-1017

001-EH-02-1018

TO 001-CPM-02-1015
TO 001-12618-01-112 SHT 1

TO E-02-1025 / E-02-1021
TO 12618-01-113

ENVIROBOX CONNECTION BY OTHERS

TRUCK OUT

IMPORTANT:
OVER PRESSURE PROTECTION TO BE PROVIDED OFF-SKID BY CUSTOMER

NOTES:
1. REMOVABLE SPOOL WITH LIFTING LUGS
2. DAVIT ARM.
3. BOROSCOPE INSPECTION POINT TO BE LOCATED CLOSE TO STRAINER.
4. CORROSION COUPONS.
5. INJECTION OF CORROSION INHIBITOR.
6. SIGHT GLASS AND GAUGE TO HAVE 45° FITTING
7. SOLENOID WILL BE ACTIVATED AT 400 RPM DECREASING ON ENGINE.

FINAL AS BUILT
NAME T.WELSH DATE AUG 28/14

REV	DESCRIPTION	DATE	BY	APR
5	FINAL AS BUILT	AUG 28/14	TW	AA
4	FINAL AS BUILT	JAN 02/14	CS	SG
3	FINAL AS BUILT	NOV 21/13	AR	SG
2	REVISED TAGGING	AUG 28/13	AT	LD
1	ISSUED FOR CONSTRUCTION	AUG 22/13	CS	SG
0	ISSUED FOR CONSTRUCTION	APR 09/13	AT	SG

DATE DEC 10/12 | SCALE NTS
DRAWN BY A.HAMMOND | CHECKED BY S.GURI | APPROVED BY B.MINSHULL
PROJECT MANAGER B.MINSHULL | PROJECT ENGINEER S.GURI
CUST PO 4100000964
APEGGA PERMIT No: P8651 | OPER. CODE | WORK ORDER 12618-01

DEVON CANADA FERRIER CPF
BATTERY SCREW
CATERPILLAR G3606LE
FRICK SGCB-3524

ENERFLEX
Calgary, Alberta, Canada

P & I DIAGRAM
PROCESS GAS

DWG NO 12618-01-111 | SHT 2 | REV 5

PLOT: 21 Oct., 2014 - 2:47pm, dtron

001-K-02-1011
SCREW GAS COMPRESSOR

MFG: FRICK
MODEL: SGCB 3524
OPERATING SPEED: 3600 RPM
SUCTION PRESS: 280 KPAG
DISCHARGE PRESS: 800 KPAG
SUCTION FLOW DESIGN: 24.83 MMSCFD
OIL TEMP: 71°C (160°F)
MAWP: 2758 KPAG (400 PSIG)
MAWT: 121°C (250°F)
MDWP: FULL VACUUM
S/N: 10241B31410623Z

001-E-02-1019
SPEED INCREASER OIL COOLER

MAKE: PACIFIC RIM
MODEL: EK-1048
MAWP: 1034 KPAG (150 PSIG)
OIL IN/OUT: 60mm (2" NPT)
GLYCOL IN (OUT): 48mm (1 1/2" NPT)
HEAT LOAD: 103,534 BTU/HR

001-SP-02-1022
SPEED INCREASER

MAKE: PACIFIC RIM
MODEL: EMPB 1000A-DD1
RATIO: 1:3.612
INPUT: 1000 RPM
OUTPUT: 3612 RPM

001-KM-02-1012
COMPRESSOR GAS ENGINE

MFG: CATERPILLAR
MODEL: G3606LE
BORE: 11.8 IN.
STROKE: 11.8 IN.
DISPLACEMENT: 7,762 IN CU
COMP. RATIO:
POWER: 1775 BHP @ 1000 RPM

001-CF-02-1014
AIR COOLER FAN #1

MAKE: MOORE
MODEL: 10K-42EC
POWER: 16.8 HP
FAN DIAMETER: 3353mm (132")
NR. BLADES: 6
RPM: 227
PITCH: 11.6 DEGREE

001-CFM-02-1014
AIR COOLER FAN MOTOR #1

MAKE: TECO
MODEL: IEEE 841
POWER: 20 HP
RPM: 1800 RPM : V-BELT
POWER SUPPLY: 575 VAC/60 HZ/ 3 PH
VFD: COMPATIBLE

001-CF-02-1015
AIR COOLER FAN #2

MAKE: MOORE
MODEL: 10K-42EC
POWER: 16.8 HP
FAN DIAMETER: 3353mm (132")
NR. BLADES: 6
RPM: 227
PITCH: 11.6 DEGREE

001-CFM-02-1015
AIR COOLER FAN MOTOR #2

MAKE: TECO
MODEL: IEEE 841
POWER: 20 HP
RPM: 1800 RPM : V-BELT
POWER SUPPLY: 575 VAC/60 HZ/ 3 PH
VFD: COMPATIBLE

001-E-02-1049
PACKAGE COOLER FRAME

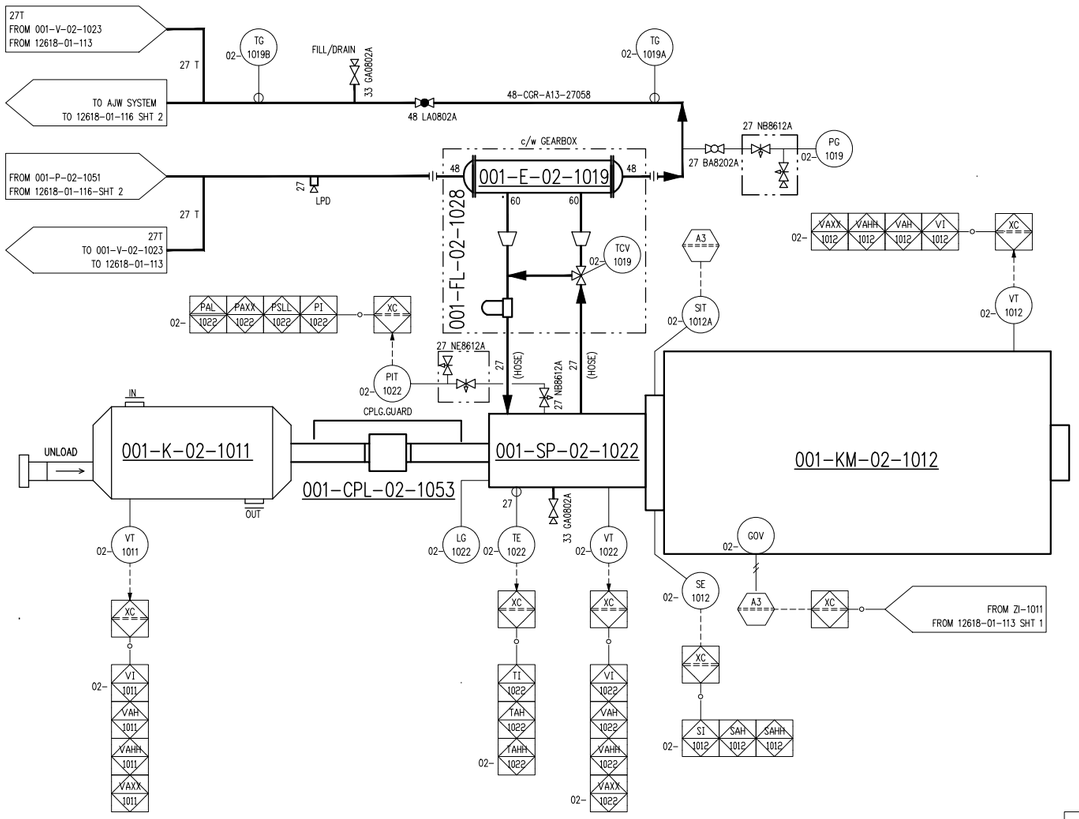
MFG: AIR-X-LIMITED
MODEL: 132-2ZF-R
TYPE: FORCED DRAFT
REQ'D AIR FLOW: 215,114 SCFM
AMBIENT AIR TEMP: 35°C (95°F)
AIR TEMP OUT: 53°C (127.5°F)
C/W: RECIRC. CHAMBER

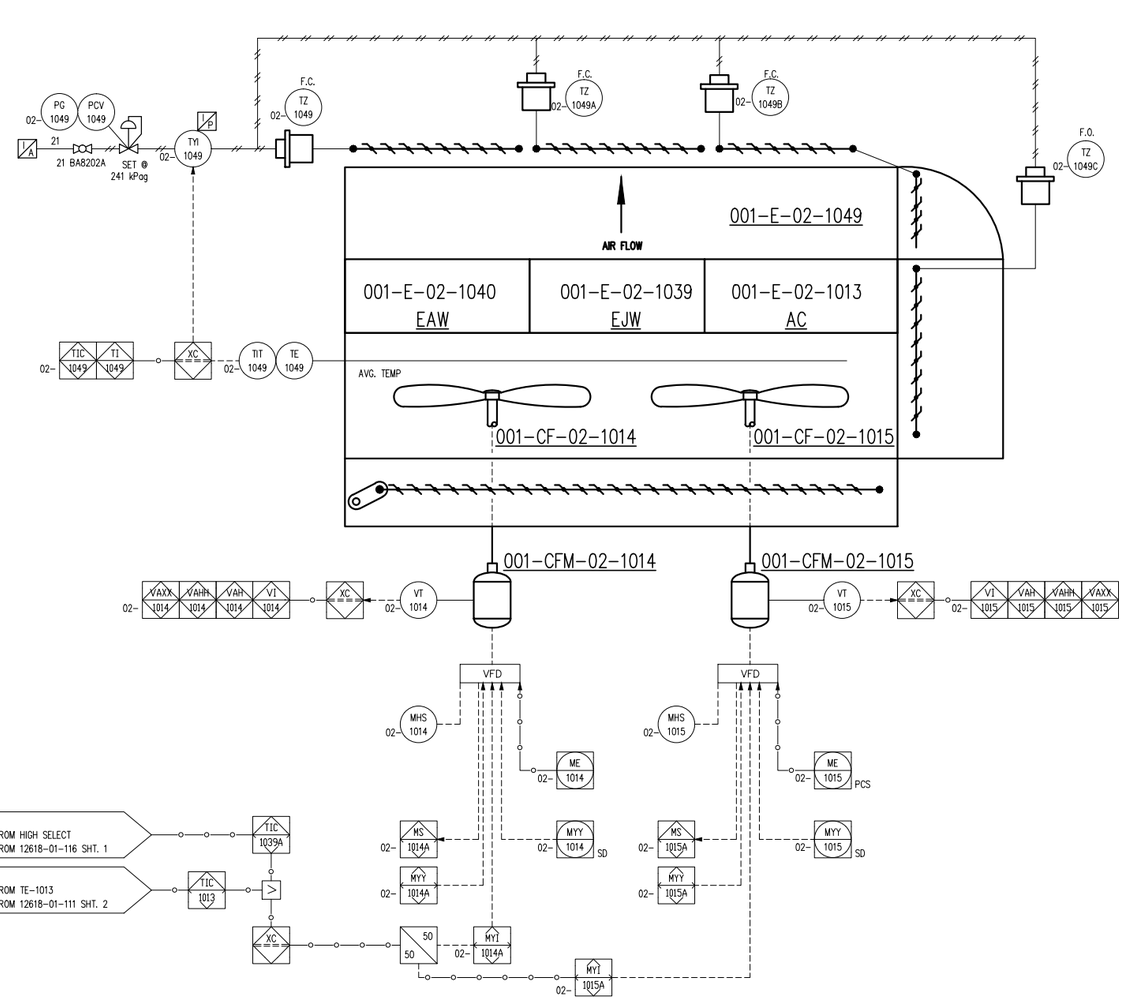
001-FL-02-1028
OIL FILTER

MAKE: PACIFIC RIM
SUPPLIED WITH GEARBOX

001-CPL-02-1053
COMPRESSOR COUPLING

MFG: REXNORD
MODEL: 375 SERIES 71





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NAME T.WELSH DATE AUG 28/14

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DEVON CANADA FERRIER CPF
BATTERY SCREW
CATERPILLAR G3606LE
FRICK SGCB-3524

ENERFLEX
Calgary, Alberta, Canada

P & I DIAGRAM
DRIVE TRAIN/
CONTROL PANEL

DWG NO 12618-01-112 | SHT 1 | REV 5

PLOT 21 Oct, 2014 - 2:47pm, atron

001-UHG-02-1080/81/82
GLYCOL BLDG. HEATERS

MFG: RUFFNECK
MODEL: AH-24A-A5
MAWP: 2068 kPag (300 PSIG)
MAWT: 150°C (300°F)

001-UHM-02-1080/81/82
GLYCOL BLDG. HEATERS MOTORS

MFG: TECO
POWER: 0.5 HP (0.373 kW)
ELECTRICAL: 575VAC/60HZ/3PH

001-BU-02-1000
PACKAGE UNIT BUILDING

MAKE: NOISE SOLUTION
DIMENSIONS: 24'x40'x15'-6" EAVE, 4:12 ROOF
ACOUSTIC INSOLATION WALL & ROOF
REMOVABLE ROOF PANELS
ACOUSTIC SKIRTING
P.ENG. STAMPED

001-EF-02-1095
BLDG PURGE FAN

POWER: 0.75 HP (0.56 KW)
16" DIA.
6ACPH, 1957 CFM

001-EFM-02-1095
BLDG PURGE FAN MOTOR

MAKE: MARATHON
POWER: 0.75 HP (0.56 KW)
ELEC: 575 VAC/3PH/60HZ

001-EF-02-1090/1/2/3/4
BLDG. EXHAUST FAN

MFG: NSI
MODEL: BVDFVRE065036030
POWER: 0.75 HP (0.56 KW)
24" LOW NOISE FAN
4200 SCFM @ 0.25" WC STATIC PRESSURE

001-EFM-02-1090/1/2/3/4
BLDG. EXHAUST FAN MOTOR

MFG: MARATHON
POWER: 0.75 HP (0.56 KW)
ELECTRICAL: 575VAC/60HZ/3PH

001-PLC-02-1011
COMPRESSOR CONTROL PANEL

MAKE: SPARTAN CONTROLS
MODEL: REMVUE-500

001-BU-02-1000

BUILDING

1000L 1000M 1000N 1000P 1000Q
1000R 1000S 1000T 1000U 1000V

LED LIGHTS
INTERIOR MOUNTED (WALL MOUNTED)
(VM4L)

1000J 1000K

EXTERIOR LIGHTS
(ONE ABOVE EACH DOOR)
(VM1L)

AIT 1000 SD 02- AIT 1000 — FIRE DETECTION

AIT 1000A SD 02- AIT 1000A — FIRE DETECTION

HH H AIT 1000B SD 02- AIT 1000B — LEL DETECTION

HH H AIT 1000C SD 02- AIT 1000C — LEL DETECTION

XA 1000 SD 02- XA 1000 RED — XA 1000A SD 02- XA 1000A RED

XA 1000B SD 02- XA 1000B AMBER — XA 1000C SD 02- XA 1000C AMBER

TIT 1000 02- TE 1000 02- TIT 1000
TYPE K

AMBIENT TEMPERATURE

1000W 1000X

RECEPTACLES
INSIDE

XA 1000D SD — HORN
(INTERIOR MOUNTED)

001-PLC-02-1001

COMPRESSOR CONTROL PANEL

1000AJ 1000AK

EXIT SIGNS
(2- ABOVE EACH DOOR)
INTERIOR

1000AG 1000AH

EMERGENCY LIGHTS

HS 1000AA HS 1000AB
HS 1000AC HS 1000AD
HS 1000AE HS 1000AF

3-WAY SWITCH
(ONE BY EACH DOOR)
(INTERIOR LIGHTS)

1000Y 1000Z

RECEPTACLES
OUTSIDE THE COOLER

UYY 1000 SD 02- XC 02- UYY 1000 — COMPRESSOR SHUTDOWN
US 1000 SD 02- XC 02- US 1000 — COMPRESSOR RUN STATUS
UE 1000 PCS 02- XC 02- UE 1000 — MODULE BUS
UYY 1000A SD 02- XC 02- UYY 1000A — COMPRESSOR NORMAL STOP

001-JBC-02-1001
120VAC CONTROL J.B.

001-JBE-02-1002
120VAC POWER J.B.

001-JBF-02-1009
FIRE AND GAS J.B.

001-JBDA-02-1005
120VAC CONTROL J.B.

001-JBE-02-1003
208VAC CONTROL POWER SUPPLY J.B.

60-300#
HEAT MEDIUM RETURN
9
60-UHMR-A11a-21052
NOTE 1
60-300#

60-300#
HEAT MEDIUM SUPPLY
8
60-UHMS-A11a-21050
NOTE 1
60-300#

60 GL803A — 27 LA0823A HPV — 001-UHG-02-1082
MTS 1082 02- MHS 1082 02- MCC MYY 1082 SD 02- 001-UHM-02-1082 ME 1082 02- PCS
60 GA0P03A — LPD 27 GA0823A — 27 LA0823A HPV

60 GL803A — 001-UHG-02-1080
MTS 1080 02- MHS 1080 02- MCC MYY 1080 SD 02- 001-UHM-02-1080 ME 1080 02- PCS
60 GA0P03A — LPD 27 GA0823A — 27 GA0823A HPV

60 GL803A — 60-UHMR-A11a-21053 — 001-UHG-02-1081
MTS 1081 02- MHS 1081 02- MCC MYY 1081 SD 02- 001-UHM-02-1081 ME 1081 02- PCS
60 GA0P03A — LPD 27 GA0823A

60-UHMS-A11a-21051

WIRED, SUPPLIED AND CONTROLLED BY OTHERS — 001-EF-02-1090
MHS 1090 02- MCC MYY 1090 SD 02- 001-EFM-02-1090 ME 1090 02- PCS

WIRED, SUPPLIED AND CONTROLLED BY OTHERS — 001-EF-02-1092
MHS 1092 02- MCC MYY 1092 SD 02- 001-EFM-02-1092 ME 1092 02- PCS

WIRED, SUPPLIED AND CONTROLLED BY OTHERS — 001-EF-02-1094
MHS 1094 02- MCC MYY 1094 SD 02- 001-EFM-02-1094 ME 1094 02- PCS

WIRED, SUPPLIED AND CONTROLLED BY OTHERS — 001-EF-02-1091
MHS 1091 02- MCC MYY 1091 SD 02- 001-EFM-02-1091 ME 1091 02- PCS

WIRED, SUPPLIED AND CONTROLLED BY OTHERS — 001-EF-02-1093
MHS 1093 02- MCC MYY 1093 SD 02- 001-EFM-02-1093 ME 1093 02- PCS

WIRED, SUPPLIED AND CONTROLLED BY OTHERS — 001-EF-02-1095
MHS 1095 02- MCC MYY 1095 SD 02- 001-EFM-02-1095 ME 1095 02- PCS

IMPORTANT:
OVER PRESSURE PROTECTION TO BE PROVIDED OFF-SKID BY CUSTOMER

RATING
1693 kPag MAWP @ 120°C

FINAL AS BUILT
NAME T.WELSH DATE AUG 28/14

NOTES:
1. ALL HEAT MEDIUM PIPING TO BE KEPT 7' ABOVE TOP OF STEEL.

REV	DESCRIPTION	DATE	BY	APR
4	FINAL AS BUILT	AUG 28/14	TW	AA
3	FINAL AS BUILT	JAN 02/14	CS	SG
2	FINAL AS BUILT	NOV 21/13	AR	SG
1	ISSUED FOR CONSTRUCTION	JUN 21/13	CS	SG
0	ISSUED FOR CONSTRUCTION	APR 09/13	AT	SG
B	ISSUED FOR APPROVAL	FEB 08/13	AH	SG

DATE DEC 10/12 SCALE NTS
DRAWN BY A.HAMMOND CHECKED BY S.GURI APPROVED BY B.MINSHULL
PROJECT MANAGER B.MINSHULL PROJECT ENGINEER S.GURI
CUST PO 4100000964
APEGGA PERMIT No: P8651 OPER. CODE WORK ORDER 12618-01

DEVON CANADA FERRIER CPF
BATTERY SCREW
CATERPILLAR G3606LE
FRICK SGCB-3524

ENERFLEX
Calgary, Alberta, Canada

P & I DIAGRAM
DRIVE TRAIN/
BUILDING COMPONENTS

DWG NO 12618-01-112 SHT 2 REV 4

PLOT 21 Oct, 2014-2:47pm, atran

001-E-02-1025
COMPRESSOR OIL COOLER #2

MFG: GEA
MODEL: FPA 10X20-130/9156-UM
PLATE MATERIAL: 316 STAINLESS STEEL
MAWP: 2758 KPAG (400 PSIG)
MAWT: 177°C (350°F)
LOAD: 1.124096 BTU/HR
CONNECTIONS: 60mm (2")-300 IN/OUT
WEIGHT: 70.7 KG (156 LBS)

001-E-02-1021
COMPRESSOR OIL COOLER #1

MFG: GEA
MODEL: FPA 10X20-130/9156-UM
PLATE MATERIAL: 316 STAINLESS STEEL
MAWP: 2758 KPAG (400 PSIG)
MAWT: 177°C (350°F)
LOAD: 1.124096 BTU/HR
CONNECTIONS: 60mm (2")-300 IN/OUT
WEIGHT: 70.7 KG (156 LBS)

001-V-02-1023
SEAL POT

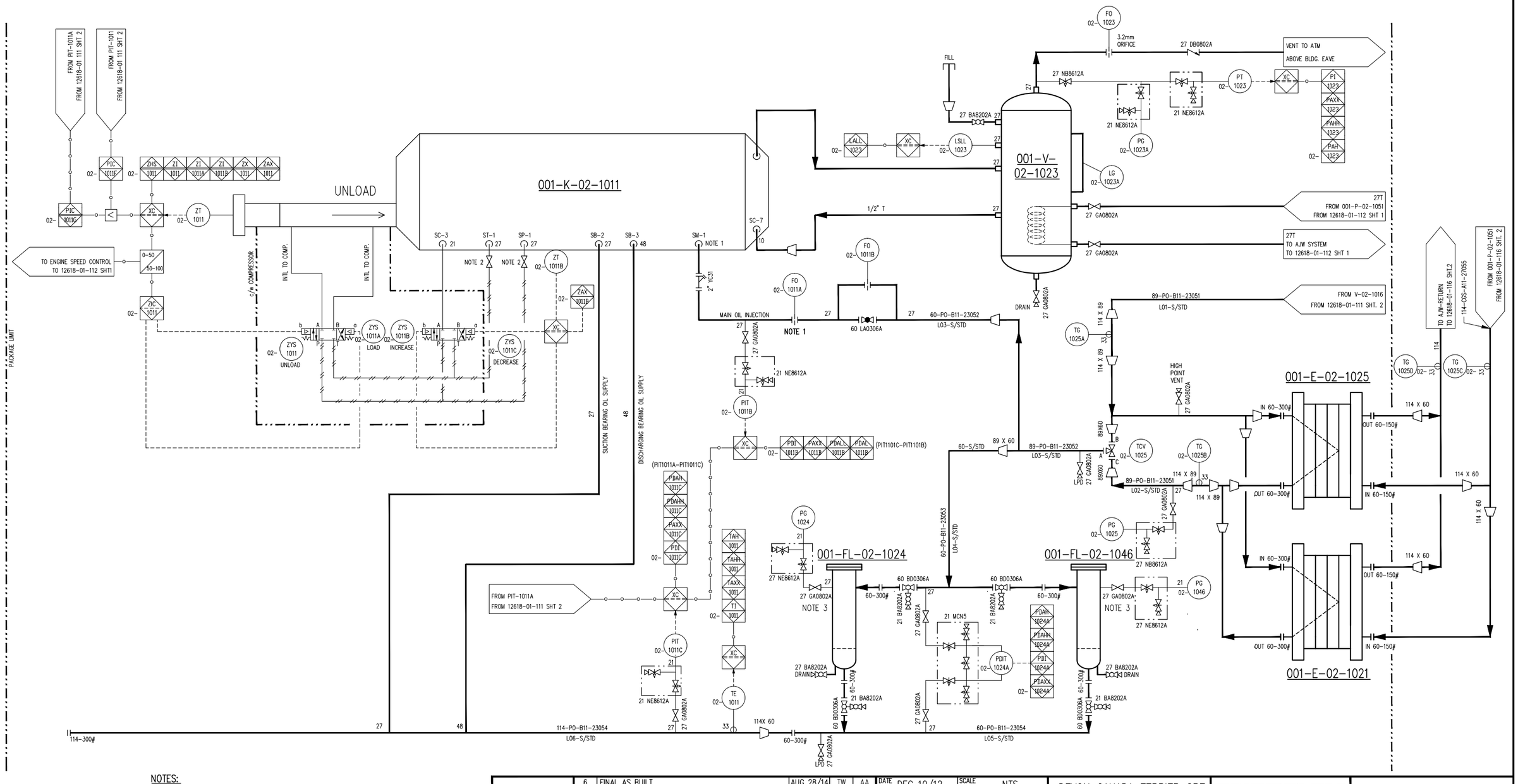
MFG: EFX
MODEL: API-PLAN 52
SIZE: 219 mm(8") OD x 958 mm(38") OAL
MAWP: 1723 kPag @ 93°C
SHELL MTL: 316 SS
HEAD MTL: 316 SS
S/N: 12618014259
CRN: V9745.2

001-FL-02-1024
LUBE OIL FILTER

MFG: EFX
SIZE: 219mm(8 5/8") OD X 660mm(26") S/F
MAWP: 3103 kPag @ 121°C
MDWT: -29°C @ 3103 kPag
CA: 1.6mm(1/16")
ELEMENT: (1) MODEL 1833C10 10 MICRON
MTR'L: CARBON STEEL
S/N: 12618014242
CRN: T4404.213

001-FL-02-1046
LUBE OIL FILTER

MFG: EFX
SIZE: 219mm(8 5/8") OD X 660mm(26") S/F
MAWP: 3103 kPag @ 121°C
MDWT: -29°C @ 3103 kPag
CA: 1.6mm(1/16")
ELEMENT: (1) MODEL 1833C10 10 MICRON
MTR'L: CARBON STEEL
S/N: 12618014241
CRN: T4404.213



NOTES:
1. ORIFICE SUPPLIED WITH COMPRESSOR.
2. VALVES SUPPLIED WITH COMPRESSOR.
3. LOCATE AS HIGH AS POSSIBLE.

FINAL AS BUILT
NAME T.WELSH DATE AUG 28/14

REV	DESCRIPTION	DATE	BY	APR
6	FINAL AS BUILT	AUG 28/14	TW	AA
5	FINAL AS BUILT	MAY 30/14	TW	SG
4	FINAL AS BUILT	MAY 28/14	TW	SG
3	FINAL AS BUILT	JAN 02/14	CS	SG
2	FINAL AS BUILT	NOV 21/13	AR	SG
1	ISSUED FOR CONSTRUCTION	JUN 21/13	CS	SG

DATE DEC 10/12 | SCALE NTS
DRAWN BY A.HAMMOND | CHECKED BY S.GURI | APPROVED BY B.MINSHULL
PROJECT MANAGER B.MINSHULL | PROJECT ENGINEER S.GURI
CUST PO 4100000964
APEGGA PERMIT No: P8651 | OPER. CODE | WORK ORDER 12618-01

DEVON CANADA FERRIER CPF
BATTERY SCREW
CATERPILLAR G3606LE
FRICK SGCB-3524

ENERFLEX
Calgary, Alberta, Canada

P & I DIAGRAM
COMPR. LUBE OIL & UTILITIES

DWG NO 12618-01-113 | SHT 1 | REV 6

PLOT 21 Oct, 2014-2:47pm, atran

001-UHE-02-1026
ENGINE OIL/HEATER

MFG: KIM HOTSTART
HEATER: 6KW (805HP)
PUMP: 1HP (0.746 KW)
11GPM @ 1750RPM
POWER: 575V/3PH/60HZ
WIRED BY OTHERS

001-T-02-1027
WASTE OIL TANK

MFG: EFX
CAPACITY: 2124 L (561 CISG)

001-P-02-1030
ENGINE LUBE OIL PUMP

MFG: CATERPILLAR
CAPACITY: 1401 LPM (370 GPM) @ 1000 RPM

001-P-02-1029
ENGINE PRE/POST LUBE OIL PUMP

MFG: CATERPILLAR (TDI)
CAPACITY: 76 LPM (20 GPM)
AIR CONSUMPTION: 239 SCFM @ 120 PSIG

001-FL-02-1031
ENG OIL FILTER

MFG: CATERPILLAR

001-FL-02-1044/45
ENGINE OIL SPINNER/FILTER

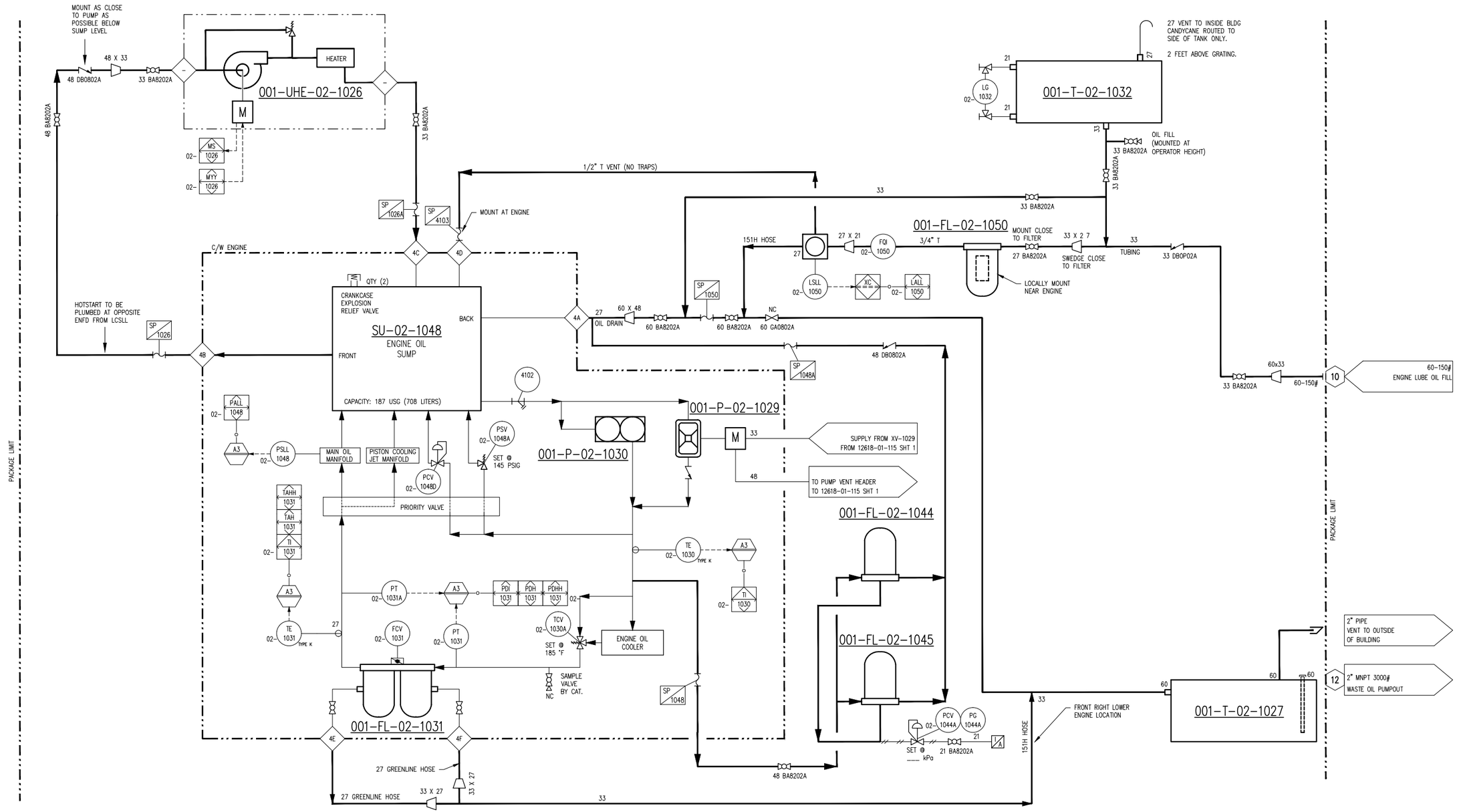
MFG: T.F. HUDGINS INC.
MODEL: SPINNER2 (600-12HD)

001-FL-02-1050
OIL SUPPLY FILTER

MFG: BALDWIN
MODEL: BT-251
27mm (3/4") NPT IN/OUT
DESIGN PRESSURE: 689 kPag

001-T-02-1032
ENGINE OIL DAY TANK

MFG: EFX (INTEGRAL WITH CRANE RAIL)
CAPACITY: 650 L (172 CISG)



FINAL AS BUILT
NAME C.SMITH DATE JAN 02/14

REV	DESCRIPTION	DATE	BY	APR
3	FINAL AS BUILT	JAN 02/14	CS	SG
2	FINAL AS BUILT	NOV 21/13	AR	SG
1	ISSUED FOR CONSTRUCTION	JUN 21/13	CS	SG
0	ISSUED FOR CONSTRUCTION	APR 09/13	AT	SG
B	ISSUED FOR APPROVAL	FEB 08/13	AH	SG
A	ISSUED FOR APPROVAL	JAN 18/13	AH	SG

DATE DEC 10/12 | SCALE NTS
DRAWN BY A.HAMMOND | CHECKED BY S.GURI | APPROVED BY B.MINSHULL
PROJECT MANAGER B.MINSHULL | PROJECT ENGINEER S.GURI
CUST PO 4100000964
APEGGA PERMIT No: P8651 | OPER. CODE | WORK ORDER 12618-01

DEVON CANADA FERRIER CPF
BATTERY SCREW
CATERPILLAR G3606LE
FRICK SGCB-3524

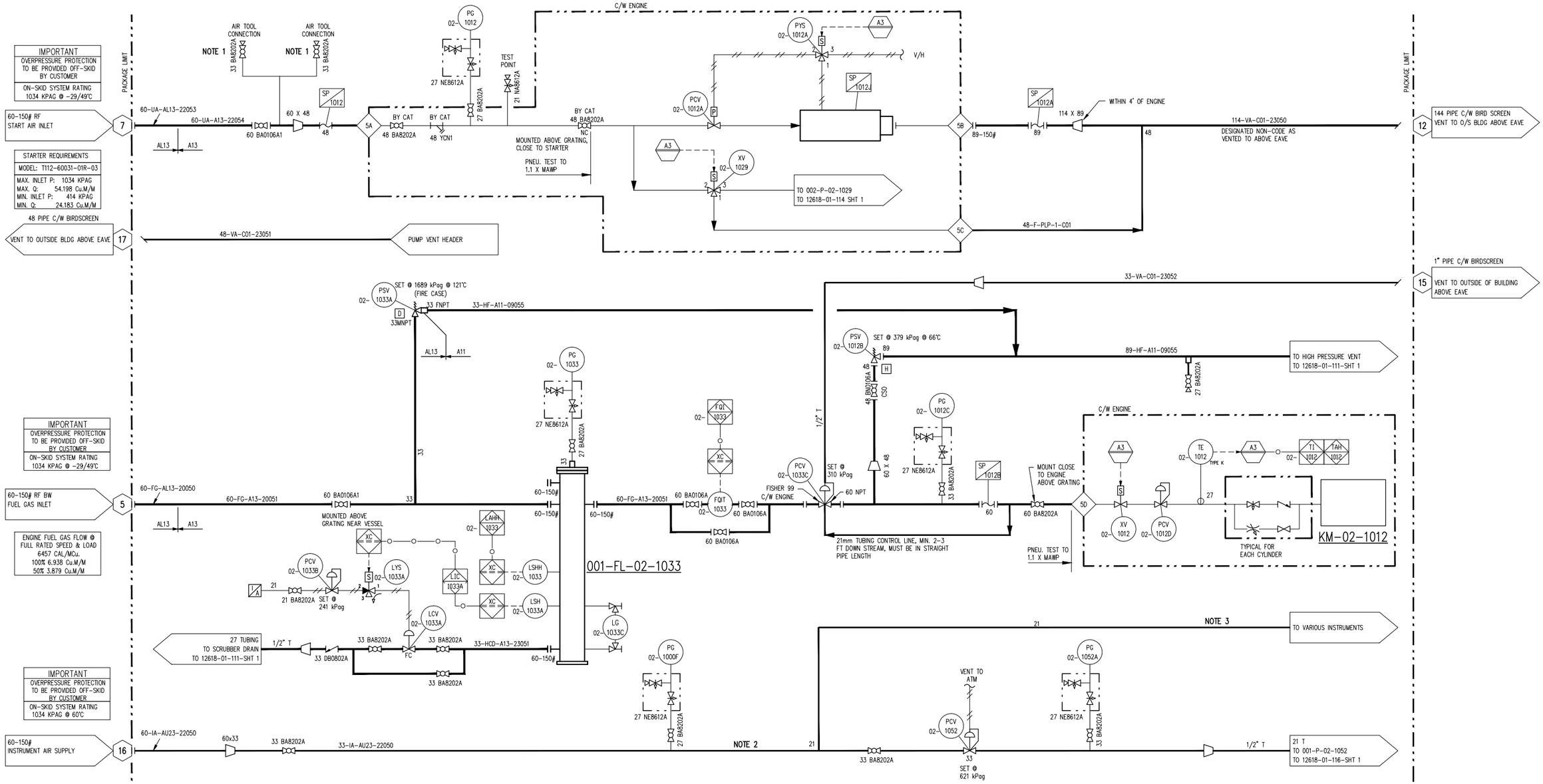
ENERFLEX
Calgary, Alberta, Canada

P & I DIAGRAM
ENGINE LUBE OIL SYSTEM

DWG NO 12618-01-114 | SHT 1 | REV 3

001-FL-02-1033
FUEL GAS FILTER

MFG: EFX FF-8-245-125-00
SIZE: 219mm (8.625") OD FILTER
MAWP: 1689 KPAG @ 121°C (245 PSIG @ 150°F)
FILTER MODEL: GCA3P30K03V
MFG: DANVIL
RISER MODEL: GA3630P222SS
S/N: 12618014240
CRN: V2458.213



NOTES:
1. AIR TOOL CONNECTION TO BE PROVIDED ON BOTH SIDES OF SKID.
2. GALVANIZED PIPE UP TO INSTRUMENT ISOLATION VALVE.
3. ISOLATION VALVE 21 BA8202A TO BE INSTALLED ON 21mm PIPE ABOVE GRATING.

FINAL AS BUILT
NAME T.WELSH DATE AUG 28/14

REV	DESCRIPTION	DATE	BY	APR
5	FINAL AS BUILT	AUG 28/14	TW	AA
4	FINAL AS BUILT	JAN 02/14	CS	SG
3	FINAL AS BUILT	NOV 21/13	AR	SG
2	ADDED DRAIN VALVE	OCT 09/13	GP	SG
1	ISSUED FOR CONSTRUCTION	JUN 21/13	CS	SG
0	ISSUED FOR CONSTRUCTION	APR 09/13	AT	SG

DATE DEC 10/12 | SCALE NTS
DRAWN BY A.HAMMOND | CHECKED BY S.GURI | APPROVED BY B.MINSHULL
PROJECT MANAGER B.MINSHULL | PROJECT ENGINEER S.GURI
CUST PO 4100000964
APEGGA PERMIT No: P8651 | OPER. CODE | WORK ORDER 12618-01

DEVON CANADA FERRIER CPF
BATTERY SCREW
CATERPILLAR G3606LE
FRICK SGCB-3524

ENERFLEX
Calgary, Alberta, Canada

P & I DIAGRAM
START FUEL/ GAS SUPPLY

DWG NO 12618-01-115 | SHT 1 | REV 5

001-UHE-02-1034
ENGINE GLYCOL HEATER

MFG: KIM HOTSTART
HEATER: 18KW (24.1HP)
PUMP: 1HP (0.746KW)
40 GPM @ 3450 RPM
POWER: 575V/3PH/60HZ
WIRED BY OTHERS

001-T-02-1035
GLYCOL TANK

MFG: EFX
CAPACITY: 2124L (561USG)

001-P-02-1037
ENGINE JACKET WATER PUMP

MFG: CATERPILLAR
MAX. FLOW: 1596 LPM (422 GPM) @ 0.10m (33 FT) H2O
HEAD PRESS.

001-P-02-1052
GLYCOL TRANSFER PUMP

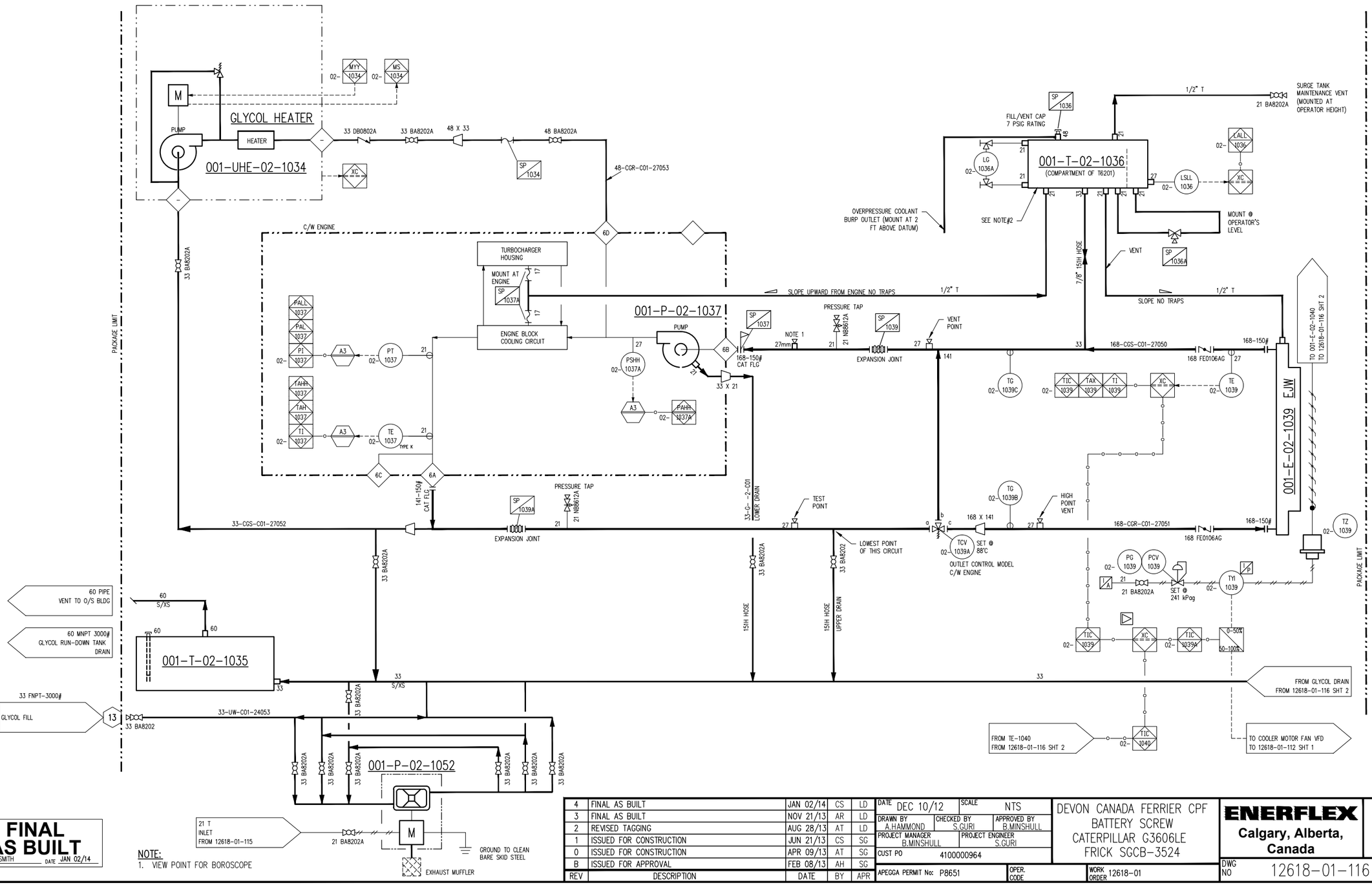
MAKE: YAMADA
MODEL: NDP-25BAA
FLOW RATE: 46.2 GPM
IN/OUT CONNECTION: (1") 33mm NPT
AIR SUPPLY: 20-100 PSIG

001-T-02-1036
EJW SURGE TANK

MFG: EFX
CAPACITY: 197 LITERS (52 GALLONS)
MAWP: 97 kPag

001-E-02-1039
ENGINE JACKET WATER COOLER SECTION

MFG: AIR-X-LIMITED
MAWP: 97 kPag @ 149°C
MDMT: -29°C @ 97 kPag
CAPACITY: 247L (8.707 FT)³
HEAT DUTY: 1622175 BTU/HR



FINAL AS BUILT
NAME C.SMITH DATE JAN 02/14

NOTE:
1. VIEW POINT FOR BOROSCOPE

REV	DESCRIPTION	DATE	BY	APR
4	FINAL AS BUILT	JAN 02/14	CS	LD
3	FINAL AS BUILT	NOV 21/13	AR	LD
2	REVISED TAGGING	AUG 28/13	AT	LD
1	ISSUED FOR CONSTRUCTION	JUN 21/13	CS	SG
0	ISSUED FOR CONSTRUCTION	APR 09/13	AT	SG
B	ISSUED FOR APPROVAL	FEB 08/13	AH	SG

DATE DEC 10/12 | SCALE NTS
DRAWN BY A.HAMMOND | CHECKED BY S.GURI | APPROVED BY B.MINSHULL
PROJECT MANAGER B.MINSHULL | PROJECT ENGINEER S.GURI
CUST PO 4100000964
APEGGA PERMIT No: P8651 | OPER. CODE | WORK ORDER 12618-01

DEVON CANADA FERRIER CPF
BATTERY SCREW
CATERPILLAR G3606LE
FRICK SGCB-3524

ENERFLEX
Calgary, Alberta, Canada

P & I DIAGRAM
COOLING SYSTEM
ENGINE JACKET WATER

DWG NO 12618-01-116 | SHT 1 | REV 4

001-P-02-1051
COMP. OIL COOLANT PUMP

MFG: VIKING
MODEL: CENTRIFUGA 2-3-54
CONNECTION IN/OUT: 89mm (3")-150
IMPALLER DIAMETER: (184mm) (7 1/4")
CAPACITY: 946 LPM (250 GPM) @ 11m (35 FT)
POWER: 3 HP

001-PM-02-1051
COMP. OIL COOLANT PUMP MOTOR

MFG: WEG-NEMA PREMIUM
POWER: 3 HP @1800 RPM
FRAME: 1PLT
ELECTRICS: 575 VAC/3 PH/60 HZ
ENCLOSER: TEFC

001-P-02-1038
ENGINE AUXILIARY JACKET WATER PUMP

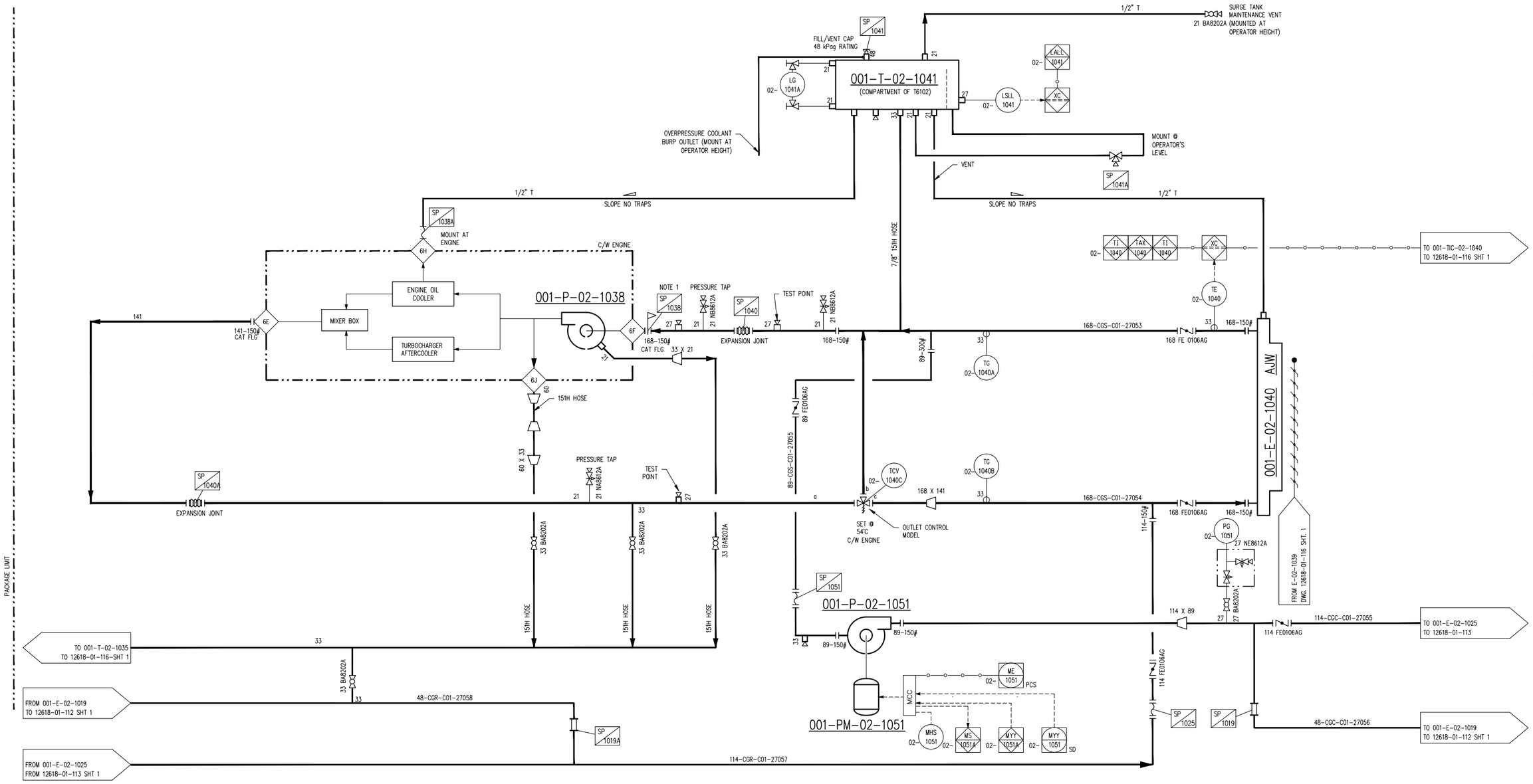
MFG: CATERPILLAR
MAX. FLOW: 1495 LPM (395 GPM) @ 12m (40 FT) H2O HEAD PRESS

001-T-02-1041
GLYCOL (AJW) SURGE TANK

MFG: EFX
CAPACITY:151 LITERS (40 GALLONS)
MAWP: 97 KPAG

001-E-02-1040
ENGINE AUXILIARY WATER COOLER SECTION

MFG: AIR-X-LIMITED
MAWP: 97 kPag @ 149°C
MDMT: -29°C @ 97 kPag
CAPACITY: 439 L (15.486 FT³)
DUTY: 3706340 BTU/HR



NOTE:
1. VIEW POINT FOR BOROSCOPE

ISSUED FOR CONSTRUCTION
NAME C.SMITH DATE JAN 02/14

REV	DESCRIPTION	DATE	BY	APR
3	FINAL AS BUILT	JAN 02/14	CS	SG
2	FINAL AS BUILT	NOV 21/13	CS	SG
1	ISSUED FOR CONSTRUCTION	JUN 21/13	CS	SG
0	ISSUED FOR CONSTRUCTION	APR 09/13	AT	SG
B	ISSUED FOR APPROVAL	FEB 08/13	AH	SG
A	ISSUED FOR APPROVAL	JAN 18/13	AH	SG

DATE DEC 10/12 | SCALE NTS
DRAWN BY A.HAMMOND | CHECKED BY S.GURI | APPROVED BY B.MINSHULL
PROJECT MANAGER B.MINSHULL | PROJECT ENGINEER S.GURI
CUST PO 4100000964
APEGGA PERMIT No: P8651 | OPER. CODE | WORK ORDER 12618-01

DEVON CANADA FERRIER CPF
BATTERY SCREW
CATERPILLAR G3606LE
FRICK SGCB-3524

ENERFLEX
Calgary, Alberta, Canada

P & I DIAGRAM
COOLING SYSTEM
AUXILIARY JACKET WATER

DWG NO 12618-01-116 | SHT 2 | REV 3

001-SL-02-1020
AIR INTAKE SILENCER

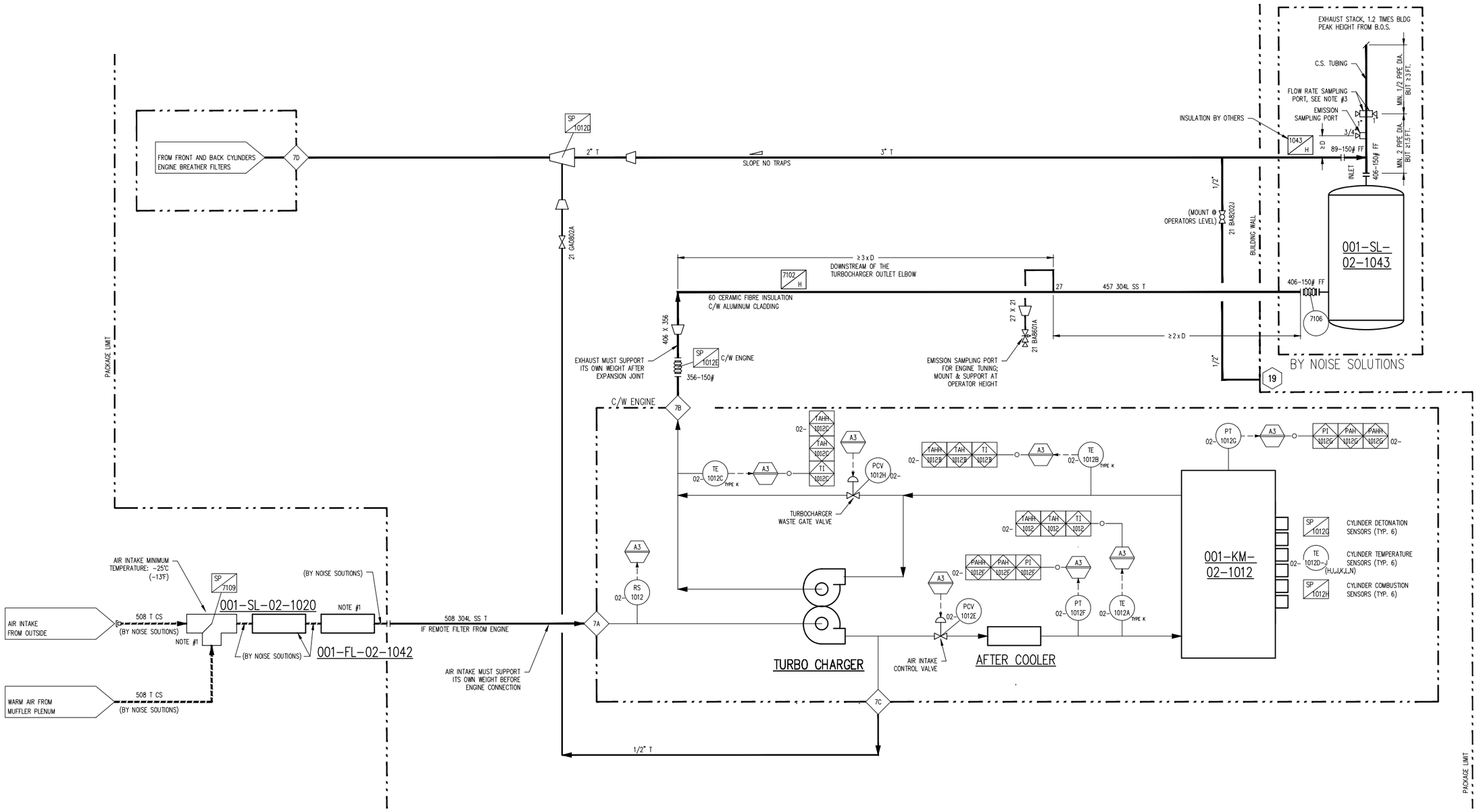
MFG: NOISE SOLUTION INC
MODEL: CAEAVXX082078054
FLOW: 6000 SCFM
P. DROP: 1.2" H20

001-FL-02-1042
AIR FILTER

MFG: CATERPILLAR
STYLE: STANDARD DUTY, DOUBLE ELEMENT HOUSING

001-SL-02-1043
EXHAUST SILENCER

MFG: NOISE SOLUTION INC
MODEL: 2ERON 20,000 PLUS EESW2XP200018XXX
ORIENTATION: VERTICAL
DIMENSIONS: 1829mm (72") OD X 6096mm (240") LENGTH
CONNECTION: 457mm (18")/457mm (18") IN/OUT
WEIGHT: 6123 KG (13,500 LBS)
BACK PRESSURE: 1.98 INCHES H_2O



NOTE:
1. WARM AIR MIXING BOX AND FILTER BOX PROVIDED BY EFX. INTERCONNECT PIPING BY NOISE SOLUTIONS.
2. SAMPLING POINT TUBING AND VALVE SHALL BE POST MOUNTED.
3. TWO FLOW RATE SAMPLING PORTS SHALL BE PERPENDICULAR.

FINAL AS BUILT
NAME T.WELSH DATE AUG 28/14

REV	DESCRIPTION	DATE	BY	APR
4	FINAL AS BUILT	AUG 28/14	TW	AA
3	FINAL AS BUILT	JAN 02/14	CS	SG
2	FINAL AS BUILT	NOV 21/13	AR	SG
1	ISSUED FOR CONSTRUCTION	JUN 21/13	CS	SG
0	ISSUED FOR CONSTRUCTION	APR 09/13	AT	SG
B	ISSUED FOR APPROVAL	FEB 08/13	AH	SG

DATE DEC 10/12 | SCALE NTS
DRAWN BY A.HAMMOND | CHECKED BY S.GURI | APPROVED BY B.MINSHULL
PROJECT MANAGER B.MINSHULL | PROJECT ENGINEER S.GURI
CUST PO 4100000964
APEGGA PERMIT No: P8651 | OPER. CODE | WORK ORDER 12618-01

DEVON CANADA FERRIER CPF
BATTERY SCREW
CATERPILLAR G3606LE
FRICK SGCB-3524

ENERFLEX
Calgary, Alberta, Canada

P & I DIAGRAM
AIR/EXHAUST SYSTEM

DWG NO 12618-01-117 | SHT 1 | REV 4

LINE IDENTIFICATION

A–B–CD–EF–GHIJ–KL,M–N

A : NOMINAL LINE SIZE IN INCHES

B : FLUID / SERVICE

A	AMMONIA	IG	INSTRUMENT GAS
AM	AMINE	L	LUBE OIL
C	CARBON DIOXIDE	N	NITROGEN
CO	CARBON MONOXIDE	NG	NATURAL GAS
CW	COOLING WATER	O	OXYGEN
F	FREON	P	PROPANE
FG	FUEL GAS	PG	PURGE GAS
G	GLYCOL	R	REFRIGERANT
H	HYDROGEN	S	STEAM
HE	HELIUM	SG	SYNGAS
HG	HYDROCARBON GAS	V	PRODUCED WATER
HL	HYDROCARBON LIQUID	W	WATER
IA	INSTRUMENT AIR		

C : EQUIPMENT TYPE / MODIFIER (IF REQUIRED)

B	BLOWER OR FAN	H	HEATER
C	COMPRESSOR	JB	JUNCTION BOX
CPL	CONTROL PANEL	P	PUMP
D	DRIVER (MOTOR/ENGINE)	T	TOWER OR TANK
E	EXCHANGER	UH	UNIT HEATER
F	FILTER	V	PRESSURE VESSEL
FS	FLARE STACK		

D : EQUIPMENT NUMBER:
101 TO 999 SEQUENTIAL NUMBERS

CD LINES TO/FROM SKID CALLED UP AS
INLET, OUTLET, HEADER, DRAIN, SUPPLY, ETC.

EF : LINE NUMBER:
E : 1 TO 9 SEQUENTIAL NUMBERS FROM EQUIPMENT
1.1 FOR 1ST BRANCH CONNECTION FROM 1ST LINE
1.2 FOR 2ND BRANCH CONNECTION FROM 1ST LINE
F : SKID/AREA REFERENCE LETTER (A, B, C....)
('X' SIGNIFIES OFF SKID/INTERCONNECTING PIPE)

GHIJ : PIPING SPECIFICATION
G : MATERIAL GROUP
C CARBON STEEL
L LOW TEMPERATURE CARBON STEEL
S STAINLESS STEEL
H : ANSI 16.5 FLANGE CLASS
0 NON CODE
1 150# 6 600# 15 1500#
3 300# 9 900# 25 2500#
I : LINE MATERIAL SPECIFICATION REFERENCE:
PIPING SPECIFICATION NUMBER
J : R RECIPROCATING PACKAGE SPECIFICATION
BLANK FOR PROCESS PACKAGE SPECIFICATION

KL,M : INSULATION (IF REQUIRED)
K : INSULATION TYPE

C	COLD	HT	HEAT TRACING
H	HOT	PP	PERSONAL PROTECTION
HC	HOT/COLD		

L : INSULATION THICKNESS IN MILLIMETERS OR INCHES (")
M : TRACING (IF REQUIRED)
ET ELECTRICAL TRACING
GT GLYCOL TRACING
ST STEAM TRACING

N : PED PIPE IDENTIFICATION SUFFIX (IF REQUIRED)
SEP SOUND ENGINEERING PRACTICE LINE
CATI CATEGORY I LINE
CATII CATEGORY II LINE
CATIII CATEGORY III LINE

EXAMPLE: 3"–HG–V101–1A–C61R–HTXX,ET–CATII

3" – NOMINAL LINE SIZE
HG – HYDROCARBON GAS
V101 – PRESSURE VESSEL TAG NUMBER
1A – 1 FIRST LINE FROM VESSEL
A LOCATED ON SKID/AREA 'A'
C61R – C CARBON STEEL LINE
6 600# ANSI FLANGE RATING
1 LINE MATERIAL SPECIFICATION REFERENCE
R RECIPROCATING PACKAGE PIPE SPEC.
HT – HEAT TRACING INSULATION
XX – THICKNESS IN MILLIMETERS OR INCHES (")
ET – ELECTRIC TRACING
CATII – PED CATEGORY II LINE

VALVE IDENTIFICATION

A"BCDE,F

A : NOMINAL VALVE SIZE IN INCHES

B : TYPE

A	ANGLE GLOBE	N	NEEDLE
B	BALL	P	PLUG
C	CHECK	S	START–UP STRAINER
G	GATE	T	TEE STRAINER
L	GLOBE	U	BUTTERFLY
M	MANIFOLD	Y	Y PATTERN STRAINER

C : BODY MATERIAL

B	BRONZE	L	LOW TEMP. CARBON STEEL
C	CARBON STEEL	S	STAINLESS STEEL
I	CAST IRON		

D : END CONNECTIONS

1	FLANGED 150#	B	BUTT WELD
3	FLANGED 300#	C	SW BY NPT
6	FLANGED 600#	F	NPT BY FLANGE (MANIFOLD)
9	FLANGED 900#	M	NPT MALE BY NPT FEMALE
15	FLANGED 1500#	N	NPT (THREADED)
25	FLANGED 2500#	S	SW (SOCKETWELD)
		T	TUBE (IE: SWAGELOK)

E : UNIQUE DESCRIPTION
REFER TO VALVE DATA SHEETS

F : MODIFIER

C	CHAIN OPERATOR	O	OXYGEN SERVICE/CLEANING
E	EXTENDED BONNET	P	FULL PORT DESIGN
G	GEAR OPERATOR	R	RTJ FLANGED
L	LOCKING DEVICE	S	SPRING HANDLE (CLOSE)
N	NACE TRIM	X	SPECIAL SPECIFICATIONS

EXAMPLE: 6"GC11,C

6"	VALVE SIZE	1	150#
G	GATE	1	API–600
C	CARBON STEEL	C	CHAIN OPERATOR

LINE CODE

- PRIMARY PROCESS LINE
- SECONDARY PROCESS LINE
- MINOR PROCESS LINE
- AUXILIARY PROCESS LINE
- INSTRUMENT/IMPULSE LINE
- ELECTRIC SIGNAL
- FILLED CAPILLARY TUBE
- PNEUMATIC LINE
- MECHANICAL LINK
- INSTRUMENT DATA LINK
- INTERCONNECTING PIPING
- SKID LIMIT
- FUTURE
- SONIC OR ELECTRO–MAGNETIC SIGNAL (GUIDED)
- SONIC OR ELECTRO–MAGNETIC SIGNAL (UN–GUIDED)

VALVE CONNECTIONS

(COMBINATIONS MAY BE USED)

- THREADED
- SOCKET WELDED
- BUTT WELDED
- FLANGED

VALVE TYPES

- ANGLE GLOBE VALVE
- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- DIAPHRAGM VALVE
- DUMP VALVE
- GATE VALVE
- GAUGE VALVE
- GLOBE VALVE
- NEEDLE VALVE
- NEEDLE VALVE W/BLEED
- MANIFOLD VALVE
- PLUG VALVE
- PINCH VALVE
- QUICK ACTING VALVE
- VALVE W/PLUG
- 3–WAY VALVE
- 4–WAY VALVE

CONTROL VALVES

- DIAPHRAGM CONTROL VALVE
- DIAPHRAGM CONTROL VALVE W/ POSITIONER
- INLET PRESSURE REGULATOR SELF–CONTAINED
- OUTLET PRESSURE REGULATOR SELF–CONTAINED
- DIFFERENTIAL PRESSURE REGULATOR SELF–CONTAINED
- INLET PRESSURE REGULATOR
- OUTLET PRESSURE REGULATOR
- HYDRAULIC / PNEUMATIC PISTON OPERATED OR SPRING RETURN
- PNEUMATIC RELAY VALVE
- 2–WAY SOLENOID VALVE
- MOTOR ACTUATED
- ROTARY MOTOR ACTUATED
- 3–WAY SOLENOID VALVE
- THERMOSTATIC CONTROL VALVE
- PRESSURE SAFETY /RELIEF VALVE — DESIGNATES API ORIFICE SIZE
- PRESSURE SAFETY /RELIEF VALVE PILOT OPERATED — DESIGNATES API ORIFICE SIZE

INSTRUMENT IDENTIFICATION GENERAL REFERENCE (ISA – S5.1)

	(MODIFIER) FIRST LETTER	(MODIFIER) SUCCEEDING LETTERS	PRIMARY ELEMENT	INDICATOR	RECORDER	CONTROLLER BLIND	CONTROLLER INDICATING	CONTROLLER RECORDING	TRANS–MITTER	CONTROL SWITCH	CONTROL ALARM	CONTROL VALVE OR REGULATOR	SELF–ACTIVATED VALVE	RELAY OR CONVERTOR
A	ANALYSIS	ALARM	AE	AI	AR	AC	AIC	ARC	AT	AS( )	AA( )	AV		AY
B	BURNER FLAME													
C	CONDUCTIVITY	CONTROL OR CLOSE	CE	CI	CR	CC	CIC	CRC	CT	CS( )	CA( )	CV		CY
D	DENSITY OR MASS (DIFFERENTIAL)	DIFFERENTIAL	DE	DI	DR	DC	DIC	DRC	DT	DS( )	DA( )	DV		DY
E	VOLTAGE	PRIMARY ELEMENT	EE	EI	ER	EC	EIC	ERC	ET	ES( )	EA( )	EV		EY
F	FLOW (RATIO OR FRACTION)	SHUTDOWN FIRST OUT	FE	FI	FR	FC	FIC	FRC	FT	FS( )	FA( )	FV	FCV	FY
G	GAUGING	GLASS	GE	GI	GR	GC	GIC	GRC	GT	GS( )	GA( )	GV		
H	HAND	HIGH				HC	HIC	HRC	HT	HS( )		HV	HCV	HY
I	CURRENT	INDICATE	IE	II	IR	IC	IIC	IRC	IT	IS( )	IA( )			IY
J	POWER (SCAN)		JE	JI	JR	JC	JIC	JRC	JT	JS( )	JA( )			JY
K	TIME	CONTROL STATION		KI	KR	KC	KIC	KRC	KT	KS( )	KA( )	KV		KY
L	LEVEL	LOW OR LIGHT	LE	LI	LR	LC	LIC	LRC	LT	LS( )	LA( )	LV	LCV	LY
M	MOISTURE, HUMIDITY	MIDDLE OR INTERMEDIATE	ME	MI	MR	MC	MIC	MRC	MT	MS( )	MA( )	MV		MY
N	USER'S CHOICE													
O	USER'S CHOICE	ORIFICE OR OPEN												
P	PRESSURE OR VACUUM	POINT	PE	PI	PR	PC	PIC	PRC	PT	PS( )	PA( )	PV	PCV	PY
Q	QUANTITY OR EVENT (INTEGRATE/TOTALIZE)			QI	QR	QC	QIC	QRC	QT	QS( )	QA( )	QV		QY
R	RELIEF OR RESTRICTION OR RADIOACTIVITY	RECORD OR PRINT	RE	RI	RR	RC	RIC	RRC	RT	RS( )	RA( )			RY
S	SPEED OR FREQUENCY	SWITCH OR SAFETY		SI	SR	SC	SIC	SRC	ST	SS( )	SA( )			SY
T	TEMPERATURE	TRANSMIT	TE	TI	TR	TC	TIC	TRC	TT	TS( )	TA( )	TV	TCV	TY
U	MULTI–VARIABLE	MULTIFUNCTION		UI	UR	UC	UIC	URC				UV		
V	VIBRATION OR VISCOSITY	VALVE OR DAMPER	VE	VI	VR	VC	VIC	VRC	VT	VS( )	VA( )	VV		VY
W	WEIGHT OR FORCE	WELL	WE	WI	WR	WC	WIC	WRC	WT	WS( )	WA( )	WV		WY
X	LIGHT	UNCLASSIFIED (DIAGNOSTIC)	XE	XI	XR	XC	XIC	XRC	XT	XS( )	XA( )	XV		XY
Y	USER'S CHOICE	RELAY OR COMPUTE												YY
Z	POSITION	DRIVE OR ACTUATE	ZE	ZI	ZR	ZC	ZIC	ZRC	ZT	ZS( )	ZA( )			ZY

MISCELLANEOUS

- INLINE FLANGE SET
- SPECTACLE BLIND (LINE OPEN)
- SPECTACLE BLIND (LINE CLOSED)
- UNION (NPT)
- ORIFICE FLANGE W/ SPACER
- PADDLE BLIND
- BLEED RING
- BASKET STRAINER
- CONE STRAINER
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- EXPANSION JOINT
- FLEXIBLE HOSE
- FLEXIBLE COUPLING
- TEE STRAINER
- Y–PATTERN STRAINER
- MAGNETIC METER
- VENTURI
- SIGHT GLASS
- SONIC FLOW METER
- POSITIVE DISPLACEMENT METER
- TURBINE OR PROPELLOR METER
- VORTEX METER
- BALL CHECK VALVE
- THROTTLE BLOCK
- PIG LAUNCHER / RECEIVER
- 15U x 50 METER RUN
- FI FLOW INDICATOR
- CONTINUOUS LIQUID DRAINER OR STEAM TRAP
- spec2 spec1 SPEC BREAK
- OPEN DRAIN
- THICKNESS MM OR (") ?? ?? INSULATION TYPE
- ?? ?? INSULATION BLOCK W/ ELECTRIC HEAT TRACE
- ?? ?? INSULATION BLOCK W/ GLYCOL OR STEAM HEAT TRACE
- SP ?? SPECIALTY ITEM
- SIZE –RATING / TYPE PROCESS DESCRIPTION TO/FROM DRAWING/SHEET — CONTINUATION ARROW
- SIZE –RATING / TYPE PROCESS DESCRIPTION TO/FROM DRAWING/SHEET — CONTINUATION ARROW DUAL DIRECTION
- PIPE SLOPE DIRECTION
- VORTEX BREAKER
- DIAPHRAGM SEAL
- RUPTURE DISC FOR PRESSURE RELIEF
- RUPTURE DISC FOR VACUUM RELIEF
- E W EYE WASH
- S S SAFETY SHOWER
- SKID TIE–POINTS
- INSTRUMENT AIR
- INSTRUMENT GAS
- CURRENT/PRESSURE
- SPRAY NOZZLE
- VENT CAP
- BEVELED PIPE END
- END CAP
- PLUG
- LINE BREAK

(C) –CLOSE (O) –OPEN
(H) –HIGH ALARM (L) –LOW ALARM
(HH)–HIGH SHUTDOWN (LL)–LOW SHUTDOWN

(XX)–DIAGNOSTIC SHUTDOWN (USED TO INDICATE THE DIAGNOSTIC CHECK REQ'D ON THE ANALOG INPUT)

INSTRUMENTS

- LOCAL MOUNTED
- LOCAL PANEL MOUNTED
- LOCAL PANEL MOUNTED BEHIND OR INSIDE
- MAIN PANEL MOUNTED
- MAIN PANEL MOUNTED BEHIND OR INSIDE
- BY OTHERS
- HUMAN MACHINE INTERFACE HMI (DCS)
- HUMAN MACHINE INTERFACE HMI (PLC)
- ENGINE CONTROL
- XC PROGRAMMABLE LOGIC CONTROLLER (PLC) XC REPRESENTS GENERAL LOGIC
- YYE ALARM/SHUTDOWN
- I INTERLOCK
- E ELECTRICAL INTERLOCK (HARDWIRE)
- THERMOWELL (THREADED)
- THERMOWELL (SOCKET WELDED)
- THERMOWELL (FLANGED)
- * PILOT LIGHT
  * COLOUR
  (A) AMBER (B) BLUE
  (G) GREEN (O) ORANGE
  (R) RED (W) WHITE

FOR REFERENCE ONLY
NAME A.HAMMOND DATE JAN 18/13

REV	DESCRIPTION	DATE	BY	APR
A	ISSUED FOR REFERENCE	JAN 18/13	AH	SG

DATE DEC 10/12 | SCALE NTS
DRAWN BY G.PAHL | CHECKED BY S.GURI | APPROVED BY B.MINSHULL
PROJECT MANAGER B.MINSHULL | PROJECT ENGINEER S.GURI
CUST PO
APEGGA PERMIT No: P8651 | STEP CODE 490 511 591 | WORK ORDER 12618–01

DEVON CANADA FERRIER CPF
BATTERY SCREW
CATERPILLAR G3606LE
FRICK SGCB–3524

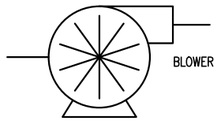
ENERFLEX
Calgary, Alberta, Canada

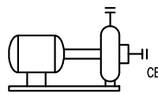
P & I DIAGRAM
LEGEND & SYMBOLS

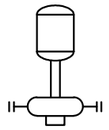
DWG NO 12618–01–199 | SHT 1 OF 2 | REV A

ABBREVIATIONS

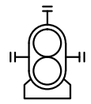
AMB	AMBIENT	M2	SQUARE METERS
ATM	ATMOSPHERE	M3	CUBIC METERS
BW	BUTT WELD	MAX	MAXIMUM
BOP	BOTTOM OF PIPE	MAWP	MAXIMUM ALLOWABLE WORKING PRESSURE
CA	CORROSION ALLOWANCE	MCC	MOTOR CONTROL CENTER
CC	CORROSION COUPON	MDMT	MINIMUM DESIGN METAL TEMPERATURE
CS	CARBON STEEL	MIN	MINIMUM
CSC	CAR SEAL CLOSED	MM	MILLIMETER
CSO	CAR SEAL OPEN	NB	NATIONAL BOARD
CUST	CUSTOMER	NC	NORMALLY CLOSED
DB	DEADBAND	NLL	NORMAL LIQUID LEVEL
△	DELTA (DIFFERENTIAL)	NO	NORMALLY OPEN
DBB	DOUBLE BLOCK & BLEED	NPT	NATIONAL PIPE THREAD
DEG.C	DEGREES CELSIUS	OAL	OVERALL LENGTH
DEG.F	DEGREES FARENHEIT	OD	OUTSIDE DIAMETER
DIR	DIRECT ACTING	PB	PUSH BUTTON
EL	ELEVATION	PL	PILOT LIGHT
ESD	EMERGENCY SHUTDOWN	PLC	PROGRAMMABLE LOGIC CONTROLLER
ESDV	EMERGENCY SHUTDOWN VALVE	PPD	PINTS PER DAY
FC	FAIL CLOSED	PSIA	POUNDS / SQUARE INCH ABSOLUTE
FF	FLAT FACED	PSID	POUNDS / SQUARE INCH DIFFERENTIAL
FL	FAIL LAST	PSIG	POUNDS / SQUARE INCH GAUGE
FLG	FLANGED	REV	REVERSE ACTING
FO	FAIL OPEN	RF	RAISED FACE
FOB	FLAT ON BOTTOM	RFLX	REFLEX GAUGE
FOT	FLAT ON TOP	RO	RESTRICTION ORIFICE
FT2	SQUARE FEET	RTD	RESISTANCE TEMPERATURE DEVICE
FT3	CUBIC FEET	RTJ	RING TYPE JOINT
FV	FULL VACUUM	SCFM	STANDARD CUBIC FEET PER MINUTE
FVCP	FIXED VOLUME CLEARANCE POCKET	SCR	SILICON CONTROLLED RECTIFIER
FX	FROST EXTENSION	S/F	SEAM TO FACE OF FLANGE
HI	HIGH	SO	SLIP ON
HLL	HIGH LIQUID LEVEL	SP	SETPOINT
HP	HIGH POINT	SPC	CALCULATED SETPOINT
HPV	HIGH POINT VENT	SS	SELECTOR SWITCH
HTR	HEATER	S/S	SEAM TO SEAM
ID	INSIDE DIAMETER	SVU	SUCTION VALVE UNLOADER
KGS	KILOGRAMS	SW	SOCKET WELD
KPAA	KILOPASCAL ABSOLUTE	TC/K	THERMOCOUPLE / (TYPE)
KPAD	KILOPASCAL DIFFERENTIAL	T/L	TUBE LENGTH
KPAG	KILOPASCAL GAUGE	TS/TS	TUBESHEET TO TUBESHEET
KW	KILOWATTS	VB	VORTEX BREAKER
LBS	POUNDS	V/H	VENT HEADER
LC	LOCKED CLOSED	VTA	VENT TO ATMOSPHERE
LLL	LOW LIQUID LEVEL	VTH	VENT TO HEADER
LO	LOCKED OPEN	VVCP	VARIABLE VOLUME CLEARANCE POCKET
LP	LOW POINT	W/	WITH
LPD	LOW POINT DRAIN	W/O	WITHOUT


BLOWER OR FAN


CENTRIFUGAL PUMP


INLINE PUMP


OIL PUMP


OIL PUMP ALTERNATE


DIAPHRAGM PUMP

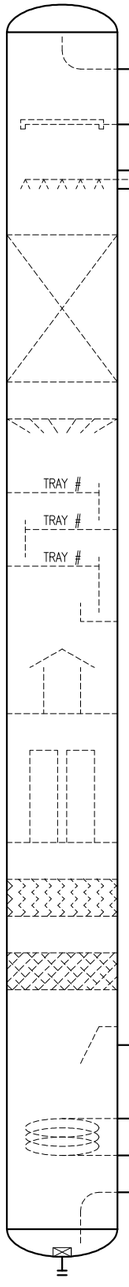

ELECTRIC MOTOR


COOLER FAN

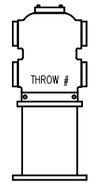

FINTUBE EXCHANGER


PULSATION DAMPENER

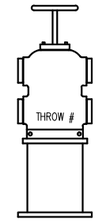

DRIP POT



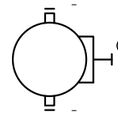
VESSEL INTERNALS

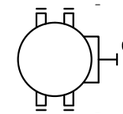


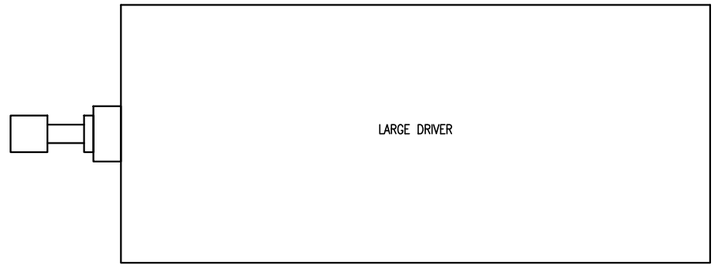
COMPRESSOR CYLINDER DT



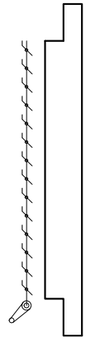
COMPRESSOR CYLINDER DT WITH HANDLE

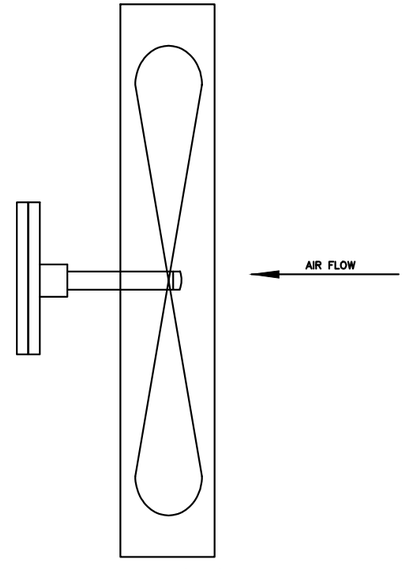

COMPRESSOR CYLINDER PROCESS


COMPRESSOR CYLINDER PROCESS 2

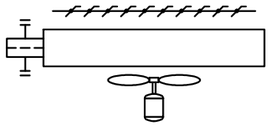


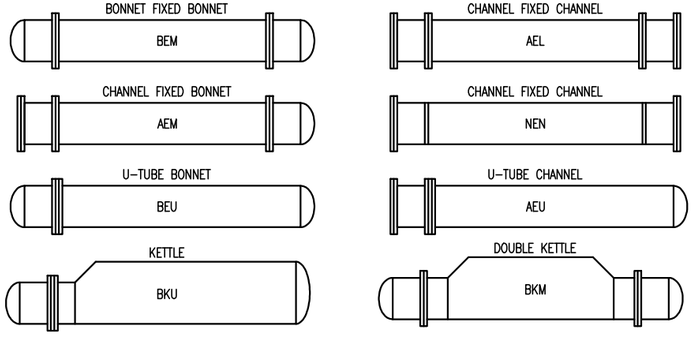

FIXED TURNING VANES


COOLER WITH LOUVER



COOLER FAN (LARGE)


AIR COOLED EXCHANGER



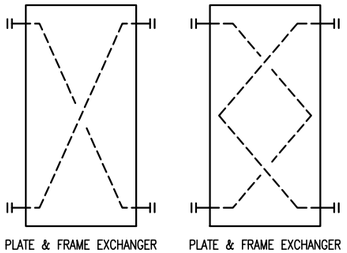


PLATE & FRAME EXCHANGER

PLATE & FRAME EXCHANGER

FOR REFERENCE ONLY
NAME A.HAMMOND DATE JAN 18/13

REV	DESCRIPTION	DATE	BY	APR
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DEVON CANADA FERRIER CPF
BATTERY SCREW
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FRICK SGCB-3524

ENERFLEX
Calgary, Alberta, Canada

P & I DIAGRAM
LEGEND & SYMBOLS

DWG NO 12618-01-199 | SHT 2 OF 2 | REV A