

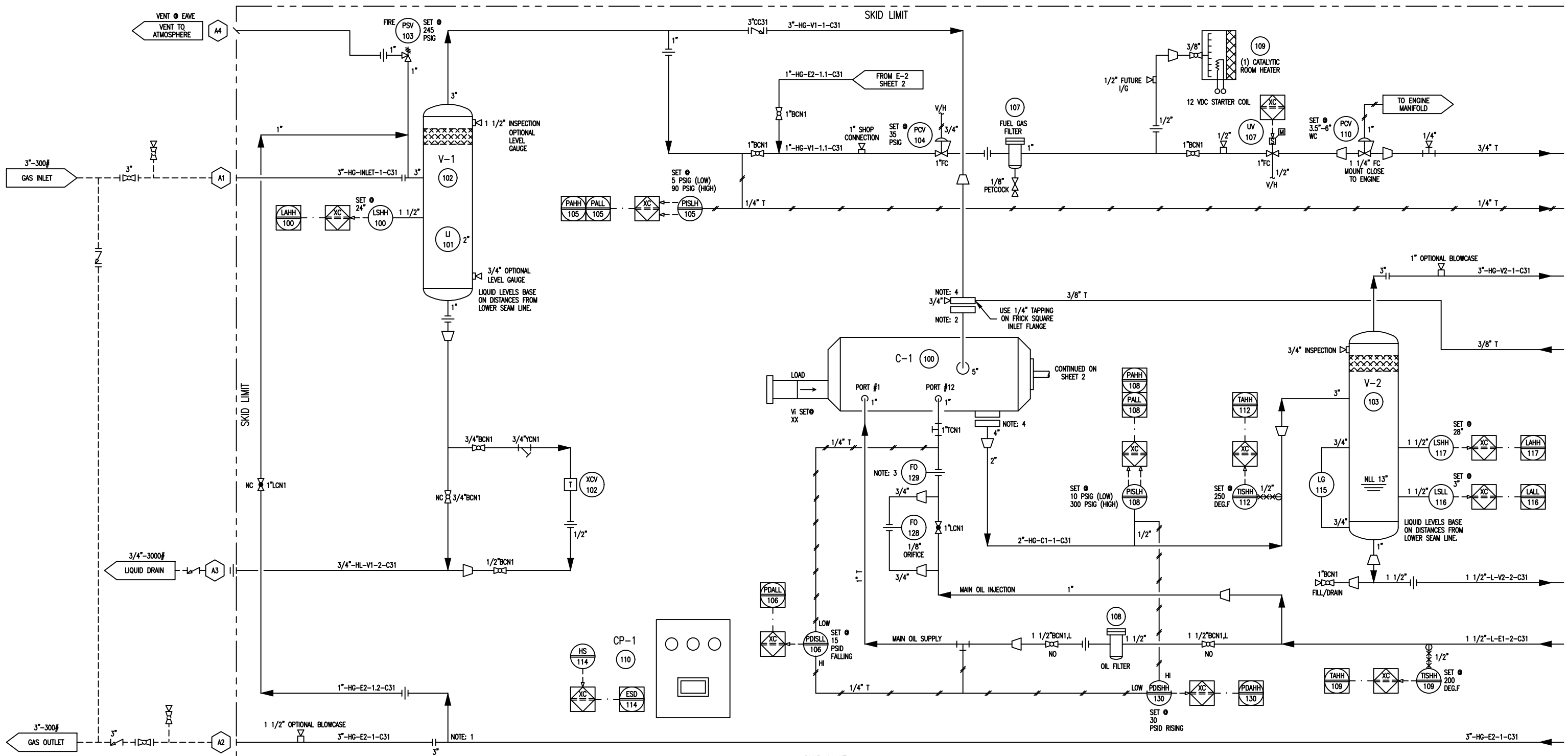
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V-1
SUCTION SCRUBBER
 SIZE: 16" O.D. X 48" S/S
 M.A.W.P.: F.V./400 PSIG @ 250 DEG.F
 M.D.M.T.: -20 DEG.F @ 400 PSIG
 C.A.: 0.0625"
 WEIGHT: 485 LBS.

CP-1
CONTROL PANEL
 TYPE: MURPHYMATIC CONTROL PANEL
 MODEL: TIDJF-IGN-T
 IGNITION POWERED

C-1
GAS COMPRESSOR
 FRICK: MODEL XJF-151M
 INPUT SPEED: 900 TO 1800 RPM
 SUCTION PRESSURE: 5-90 PSIG
 DISCHARGE PRESSURE: 10-300 PSIG
 FLOW: SEE CURVES
 M.A.W.P.: 375 PSIG
 WEIGHT: 1195 LBS

V-2
PRIMARY OIL SEPARATOR
 SIZE: 12 3/4" O.D. X 48" S/S
 M.A.W.P.: 400 PSIG @ 250 DEG.F
 M.D.M.T.: -20 DEG.F @ 400 PSIG
 C.A.: 0.0625"
 WEIGHT: 360 LBS.



SKID GENERAL NOTES:
 - ELECTRICAL CLASSIFICATION: CLASS 1, DIV. 2, GROUP D
 - FIRE AND GAS DETECTION: BY CUSTOMER AS REQUIRED.
 - MINIMUM DESIGN AMBIENT TEMPERATURE: 50 DEG.F
 - MAXIMUM DESIGN AMBIENT TEMPERATURE: 90 DEG.F
 - SITE ELEVATION: 2500 FT.
 - ATMOSPHERIC PRESSURE: 13.4 PSIA
 - COMPRESSOR OIL TYPE: S5-150 (18 USGAL)
 - ENGINE OIL TYPE: ESSO G40, OR EQUAL (14 USGAL)
 - ENGINE GLYCOL CHARGE: 50 / 50 EGLY (22 USGAL)

NOTE 1
 TAKE CONNECTION FROM THE TOP OF PIPE
 NOTE 2
 INTEGRAL STRAINER SUPPLIED WITH FRICK COMPRESSOR
 NOTE 3
 ORIFICE SUPPLIED WITH COMPRESSOR
 NOTE 4
 FLANGE SUPPLIED WITH COMPRESSOR

REV.	DESCRIPTION	DATE	BY	APPR.
1	ISSUED FOR CONSTRUCTION	FEB 03/06	AF	

TOROMONT ENERGY SYSTEMS INC.
ISSUED FOR CONSTRUCTION
FEB 03, 2006
 PER AF

ENGINEER STAMP

TOROMONT ENERGY SYSTEMS
 DRAWN BY: STOCK
 DATE: FEB 03, 2006
 CHKD. BY: G. SCHUSTER
 SCALE: N/A
 APPR. BY: G. SCHUSTER
 W.D. No.: 12068101
 CUST. PO No:

TITLE: P & I FLOW DIAGRAM
 FOR: TOROMONT ENERGY SYSTEMS
 90 HP WELLHEAD BOOSTER UNIT
 FRICK XJF 151M COMPRESSOR
 DWG. No: 12068-101
 SHEET No: 1 OF 3
 REV: 1

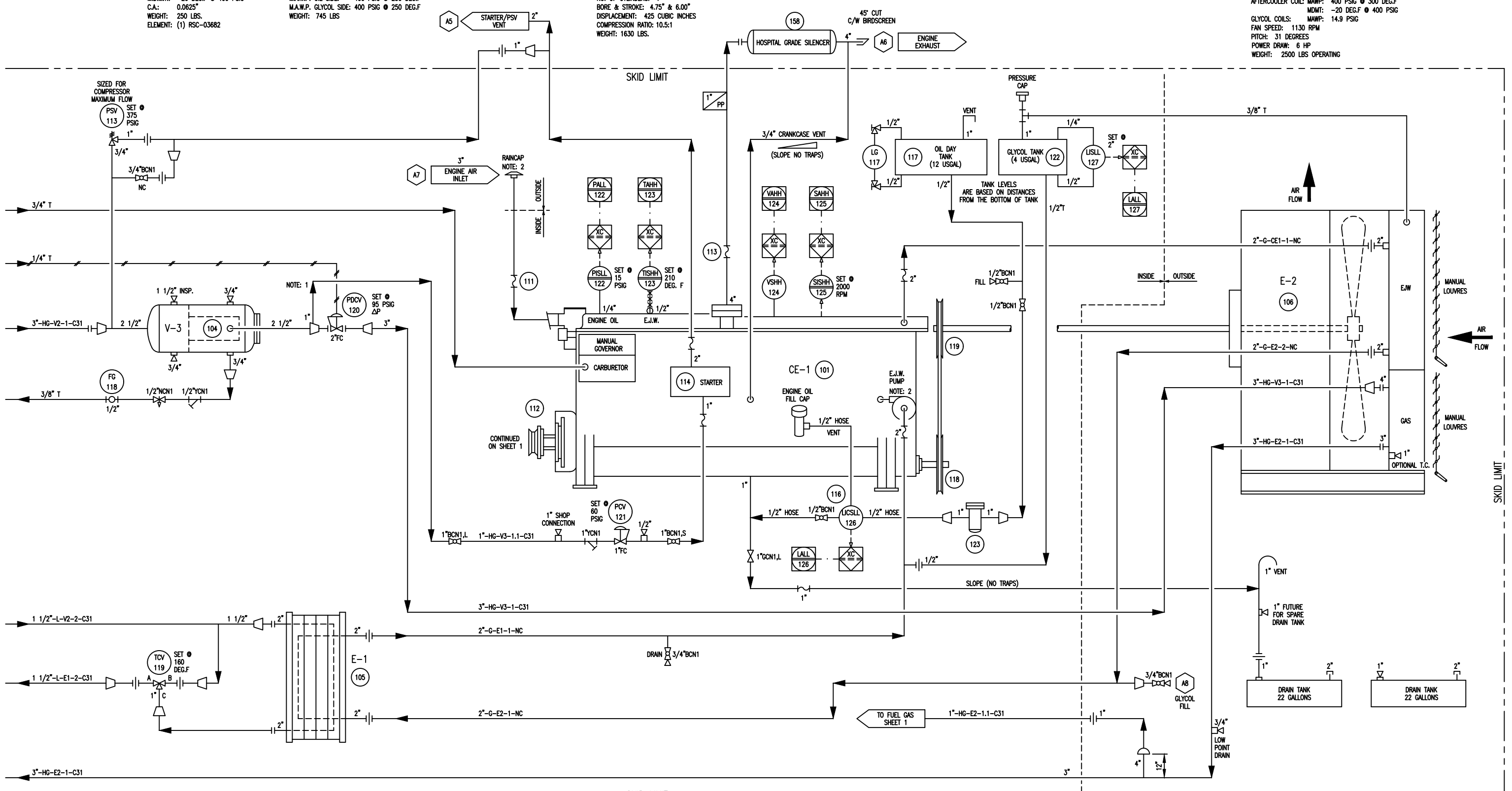
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V-3
SECONDARY OIL SEPARATOR
 CHIL-COM: MODEL COSM-070-T
 SIZE: 12 3/4" O.D. X 36 3/8" O.A.L.
 M.A.W.P.: 400 PSIG @ 400 DEG.F
 M.D.M.T.: -20 DEG.F @ 400 PSIG
 C.A.: 0.0625"
 WEIGHT: 250 LBS.
 ELEMENT: (1) RSC-03682

E-1
OIL COOLER
 MAKE: VIEX INC.
 MODEL: VX-20-SS-FMR-2-50
 PLATES: 31
 M.A.W.P. OIL SIDE: 400 PSIG @ 250 DEG.F
 M.A.W.P. GLYCOL SIDE: 400 PSIG @ 250 DEG.F
 WEIGHT: 745 LBS

CE-1
COMPRESSOR ENGINE
 MAKE: CATERPILLAR
 MODEL: G3304NA
 POWER: 90 HP @ 1800 RPM
 NO. OF CYLINDERS: 4
 BORE & STROKE: 4.75" & 6.00"
 DISPLACEMENT: 425 CUBIC INCHES
 COMPRESSION RATIO: 10.5:1
 WEIGHT: 1630 LBS.

E-2
GLYCOL COOLER/AFTERCOOLER
 TYPE: AIR-X-HEMPHILL
 MODEL: 42 VIS
 DESIGN AMB: 90 DEG.F
 AFTERCOOLER COIL: MAMP: 400 PSIG @ 300 DEG.F
 MDMT: -20 DEG.F @ 400 PSIG
 GLYCOL COILS: MAMP: 14.9 PSIG
 FAN SPEED: 1130 RPM
 PITCH: 31 DEGREES
 POWER DRAW: 6 HP
 WEIGHT: 2500 LBS OPERATING



NOTE 1
 START GAS CONNECTION FROM TOP OF PIPE
 NOTE 2
 SUPPLIED WITH ENGINE

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APPR. BY: G. SCHUSTER	W.D. No: 12068101
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TITLE: P & I FLOW DIAGRAM
 FOR: TOROMONT ENERGY SYSTEMS
 90 HP WELLHEAD BOOSTER UNIT
 FRICK XJF 151M COMPRESSOR
 DWG. No: 12068-101
 SHEET No: 2 OF 3
 REV: 1

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LINE IDENTIFICATION

Aⁿ-B-CD-E-FGH-IJ,K

- A : NOMINAL LINE SIZE IN INCHES
- B : FLUID
 - FG FUEL GAS
 - G GLYCOL
 - HG HYDROCARBON GAS
 - HL HYDROCARBON LIQUID
 - I/A INSTRUMENT AIR
 - I/G INSTRUMENT GAS
 - L LUBE OIL (COMPRESSOR)
 - W COOLING WATER
- C : EQUIPMENT TYPE
 - E COMPRESSOR
 - E EXCHANGER
 - F FILTER
 - G GENERATOR
 - H HEATER
 - P PUMP
 - S SPEED INCREASER
 - T TANK
 - V PRESSURE VESSEL
- MODIFIER
 - E ENGINE
 - M MOTOR

- D : EQUIPMENT NUMBER:
1 TO 9 SEQUENTIAL NUMBERS
- E : LINE NUMBER:
1 TO 9 SEQUENTIAL NUMBERS FROM EQUIPMENT

- FGH : PIPING SPECIFICATION
- F : MATERIAL GROUP
 - C CARBON STEEL
 - L LOW TEMPERATURE CARBON STEEL
 - S STAINLESS STEEL

- G : ANSI 16.5 FLANGE CLASS
 - 0 NON CODE
 - 1 150#
 - 3 300#
 - 6 600#
 - 9 900#
 - 15 1500#
 - 25 2500#
- H : LINE MATERIAL SPECIFICATION REFERENCE:
1 TO 9 SEQUENTIAL NUMBERS

- I : INSULATION TYPE (IF REQUIRED)
 - C COLD
 - H HOT
 - HC HOT/COLD
 - HT HEAT TRACING
 - PP PERSONAL PROTECTION

- J : INSULATION THICKNESS (IF REQUIRED)
THICKNESS IN MILLIMETERS OR INCHES

- K : TRACING (IF REQUIRED)
 - ET ELECTRICAL TRACING
 - GT GLYCOL TRACING
 - ST STEAM TRACING

- EXAMPLE: 3"-HG-V1-2-C11-HTXX,ET
- 3" - LINE SIZE
 - HG - HYDROCARBON GAS
 - V1 - PRESSURE VESSEL TAG NUMBER (V-1)
 - 2 - SECOND LINE FROM VESSEL
 - C11 - C CARBON STEEL LINE
 - 1 150# ANSI FLANGE RATING
 - 1 LINE MATERIAL SPECIFICATION REFERENCE
 - HT - HEAT TRACING INSULATION
 - XX - THICKNESS IN MILLIMETERS OR INCHES (*)
 - ET - ELECTRICAL TRACING

VALVE IDENTIFICATION

AⁿBCDEF

- A : NOMINAL VALVE SIZE IN INCHES
- B : TYPE
 - A ANGLE GLOBE
 - B BALL
 - C CHECK
 - G GATE
 - L GLOBE
 - M MANIFOLD
 - N NEEDLE
 - P PLUG
 - S START-UP STRAINER
 - T TEE STRAINER
 - U BUTTERFLY
 - Y Y PATTERN STRAINER
- C : BODY MATERIAL
 - B BRONZE
 - C CARBON STEEL
 - I CAST IRON
 - L LOW TEMP. CARBON STEEL
 - S STAINLESS STEEL
- D : END CONNECTIONS
 - 1 FLANGED 150#
 - 3 FLANGED 300#
 - 6 FLANGED 600#
 - 9 FLANGED 900#
 - 15 FLANGED 1500#
 - 25 FLANGED 2500#
 - B BUTT WELD
 - C SW BY NPT
 - F NPT BY FLANGE (MANIFOLD)
 - M NPT MALE BY NPT FEMALE
 - N NPT (THREADED)
 - S SW (SOCKETWELD)
 - T TUBE (SWAGELock)
- E : UNIQUE DESCRIPTION
REFER TO VALVE DATA SHEETS
- F : MODIFIER
 - C CHAIN OPERATOR
 - E EXTENDED BONNET
 - G GEAR OPERATOR
 - L LOCKING DEVICE
 - N NACE TRIM
 - O OXYGEN SERVICE/CLEANING
 - P FULL PORT DESIGN
 - R RTJ FLANGED
 - S SPRING HANDLE (CLOSE)
 - X SPECIAL SPECIFICATIONS

EXAMPLE: 6"GC11,C
6" VALVE SIZE
G GATE
C CARBON STEEL

VALVE TYPES

- ANGLE GLOBE VALVE
- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- GATE VALVE
- GLOBE VALVE
- NEEDLE VALVE
- PLUG VALVE
- 3-WAY VALVE
- 4-WAY VALVE
- VALVE W/BLEED
- VALVE W/PLUG

VALVE CONNECTIONS

- THREADED
- WELDED (BUTT OR SOCKET)
- THREADED BY WELDED
- FLANGED

LINE CODE

- PRIMARY PROCESS LINE
- SECONDARY PROCESS LINE
- INSTRUMENT PROCESS LINE (TUBING)
- BY OTHERS
- SKID LIMIT
- PNEUMATIC SIGNAL
- ELECTRIC SIGNAL
- CAPILLARY TUBING
- INSTRUMENT SYSTEM LINK (ELECTRONIC MEMORY SHARING)

CONTROL VALVES

- POSITIONER DIAPHRAGM CONTROL VALVE
- OUTLET PRESSURE REGULATOR (SELF-CONTAINED)
- INLET PRESSURE REGULATOR (SELF-CONTAINED)
- PRESSURE DIFFERENTIAL CONTROL VALVE (SELF-CONTAINED)
- TWO-WAY SOLENOID VALVE
- THREE-WAY SOLENOID VALVE
- MOTOR ACTUATOR
- HYDRAULIC/PNEUMATIC PISTON OPERATED

MISCELLANEOUS

- PRESSURE SAFETY/RELIEF VALVE
- DESIGNATES API ORIFICE SIZE
- RUPTURE DISC FOR PRESSURE RELIEF
- RUPTURE DISC FOR VACUUM RELIEF
- SPECTACLE BLIND (LINE OPEN)
- SPECTACLE BLIND (LINE CLOSED)
- CONE START-UP STRAINER
- BASKET START-UP STRAINER
- Y-PATTERN STRAINER
- TEE STRAINER
- FLEXIBLE CONNECTION
- CONTINUOUS LIQUID DRAINER OR STEAM TRAP
- VORTEX BREAKER
- DIAPHRAGM SEAL
- SKID TIE-POINTS
- OPEN DRAIN
- INSULATION TYPE
- ELECTRIC HEAT TRACE
- GLYCOL OR STEAM HEAT TRACE

(MODIFIER)

FIRST LETTER	SUCCEEDING LETTERS	PRIMARY ELEMENT	INDICATOR	RECORDER	CONTROLLER			TRANS-MITTER	CONTROL		CONTROL VALVE OR REGULATOR	SELF-ACTIVATED VALVE	RELAY OR CONVERTOR
					BLIND	INDICATING	RECORDING		SWITCH	ALARM			
A	ANALYSIS												
B	USER'S CHOICE												
C	CONDUCTIVITY												
D	DENSITY OR MASS (DIFFERENTIAL)												
E	VOLTAGE												
F	FLOW (RATIO OR FRACTION)												
G	GAUGING												
H	HAND												
I	CURRENT												
J	POWER (SCAN)												
K	TIME												
L	LEVEL												
M	MOISTURE, HUMIDITY												
N	USER'S CHOICE												
O	USER'S CHOICE												
P	PRESSURE OR VACUUM												
Q	QUANTITY OR EVENT (INTEGRATE/TOTALIZE)												
R	RELIEF OR RESTRICTION												
S	SPEED OR FREQUENCY												
T	TEMPERATURE												
U	MULTI-VARIABLE												
V	VIBRATION												
W	WEIGHT OR FORCE												
X	LIGHT												
Y	USER'S CHOICE												
Z	POSITION												

INSTRUMENTS

- LOCAL MOUNTED
- LOCAL PANEL MOUNTED
- MOUNTED BEHIND OR IN LOCAL PANEL
- MAIN PANEL MOUNTED
- MOUNTED BEHIND OR IN MAIN PANEL
- MAN MACHINE INTERFACE IN MAIN PANEL
- BY OTHERS
- PILOT LIGHT
- RELAY OR CONVERTER
- PROGRAMMABLE LOGIC CONTROLLER (PLC)
- INTERLOCK
- ELECTRICAL (HARD WIRE) INTERLOCK
- THERMOWELL (THREADED)
- THERMOWELL (WELDED)

- (C) -CLOSE
- (H) -HIGH ALARM
- (HH) -HIGH SHUTDOWN
- (O) -OPEN
- (L) -LOW ALARM
- (LL) -LOW SHUTDOWN
- (XX) -DIAGNOSTIC SHUTDOWN (USED TO INDICATE THE DIAGNOSTIC CHECK REQ'D ON THE ANALOG INPUT)

ABBREVIATIONS

- AOUT AUTOMATIC OUTPUT
- CA CORROSION ALLOWANCE
- CSO CAR SEAL OPEN
- CUST CUSTOMER
- DEG.C DEGREES CELSIUS
- DEG.F DEGREES FARENHEIT
- DIR DIRECT ACTING
- DB DEADBAND
- Δ DELTA (DIFFERENTIAL)
- ESD EMERGENCY SHUTDOWN
- FC FAIL CLOSED
- FO FAIL OPEN
- FOT FLAT ON TOP
- FLP FAIL LAST POSITION
- FT2 SQUARE FEET
- FT3 CUBIC FEET
- HI HIGH
- HLL HIGH LIQUID LEVEL
- HR HOUR
- HTR HEATER
- I/A INSTRUMENT AIR
- I/G INSTRUMENT GAS
- I/O INPUT / OUPUT
- I.D. INSIDE DIAMETER
- KGS KILOGRAMS
- KPAA KILOPASCAL ABSOLUTE
- KPAD KILOPASCAL DIFFERENTIAL
- KPAG KILOPASCAL GAUGE
- KW KILOWATTS
- LBS POUNDS
- LC LOCKED CLOSED
- LO LOCKED OPEN
- LP LOCKED IN POSITION
- M2 SQUARE METERS
- M3 CUBIC METERS
- MAX MAXIMUM
- MAWP MAXIMUM ALLOWABLE WORKING PRESSURE
- MCC MOTOR CONTROL CENTER
- MDMT MINIMUM DESIGN METAL TEMPERATURE
- MIN MINIMUM
- MM MILLIMETER
- MOUT MANUAL OUTPUT
- MS MOTOR STARTER
- NC NORMALLY CLOSED
- NLL NORMAL LIQUID LEVEL
- NO NORMALLY OPEN
- NPT NATIONAL PIPE THREAD
- OIC OPERATOR INTERFACE COMPUTER
- O.D. OUTSIDE DIAMETER
- PB PUSH BUTTON
- PSIA POUNDS / SQUARE INCH ABSOLUTE
- PSID POUNDS / SQUARE INCH DIFFERENTIAL
- PSIG POUNDS / SQUARE INCH GAUGE
- PLC PROGRAMMABLE LOGIC CONTROLLER
- REV REVERSE ACTING
- RST RESET (INTEGRAL)
- SCR SILICON CONTROLLED RECTIFIER
- S/F SEAM TO FACE OF FLANGE
- SP SETPOINT
- SPC CALCULATED SETPOINT
- SS SELECTOR SWITCH
- S/S SEAM TO SEAM
- T/T TANGENT TO TANGENT
- TS/TS TUBESHEET TO TUBESHEET
- T/L TUBE LENGTH
- V/H VENT HEADER

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TOROMONT ENERGY SYSTEMS INC.

ISSUED FOR CONSTRUCTION

FEB 03, 2006

PER **AF**

ENGINEER STAMP

TOROMONT ENERGY SYSTEMS

DRAWN BY: STOCK
CHKD. BY: G. SCHUSTER
APPR. BY: G. SCHUSTER

DATE: FEB 03, 2006
SCALE: N/A
W.O. No: 12068101

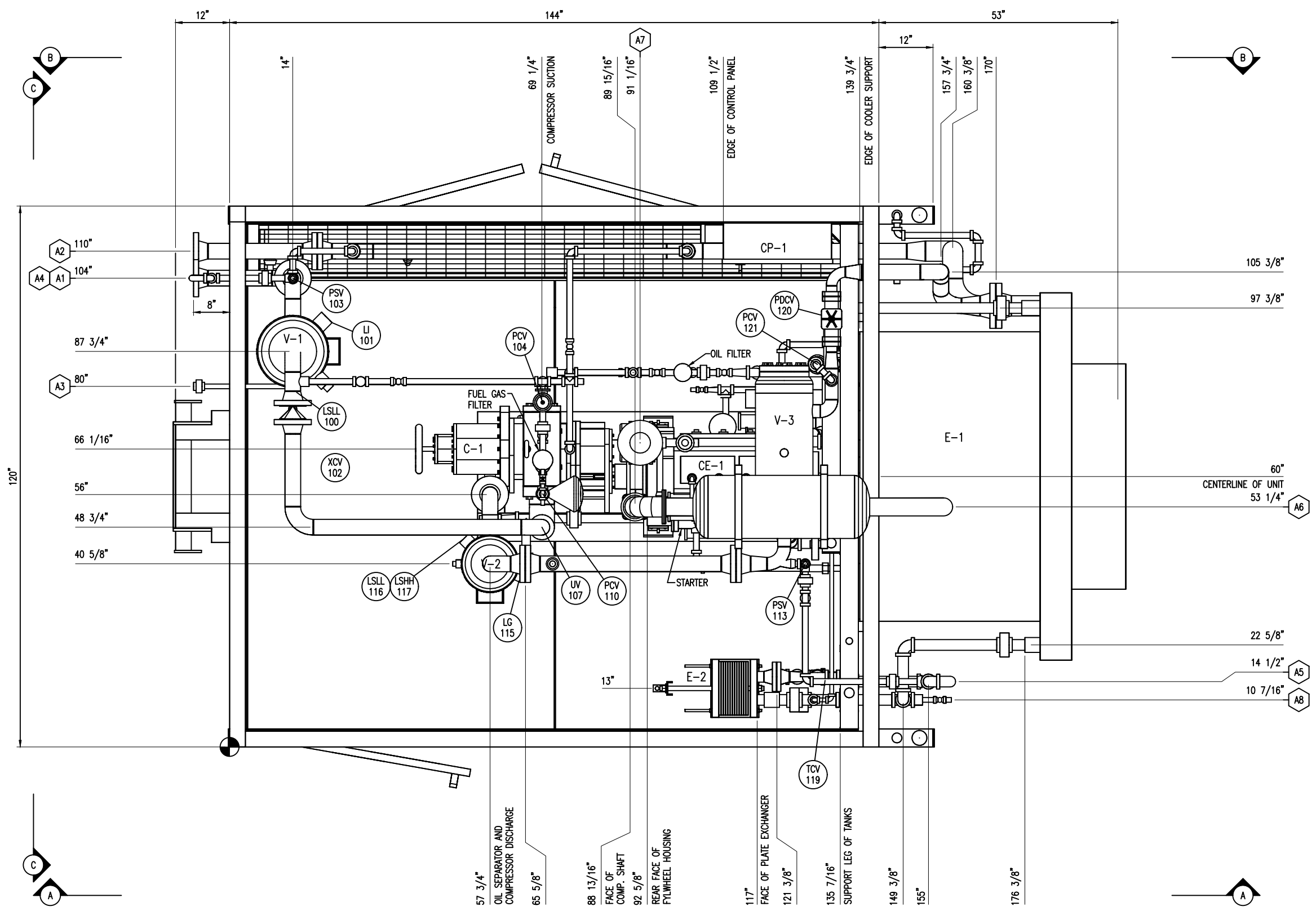
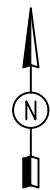
CUST. PO No:

TITLE: P & I FLOW DIAGRAM LEGEND

FOR: TOROMONT ENERGY SYSTEMS
90 HP WELLHEAD BOOSTER UNIT
FRICK XJF 151M COMPRESSOR

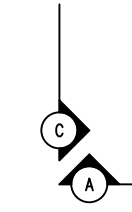
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NOZZLE SCHEDULE				
MARK	SERVICE	SIZE	RATING	TYPE
A1	GAS INLET	3"	300#	RFWN
A2	GAS OUTLET	3"	300#	RFWN
A3	LIQUID DRAIN	3/4"	3000#	NPT
A4	VENT TO ATMOSPHERE	1"	-	STUB
A5	STARTER/PSV VENT	2"	-	STUB
A6	ENGINE EXHAUST	4"	-	STUB
A7	ENGINE AIR INLET	3"	-	STUB
A8	GLYCOL FILL	3/4"	2000#	NPT

- GENERAL NOTES:**
- ALL TAIL DIMENSIONS FROM REFERENCE POINT.
 - SHIPPING LENGTH: 210"
SHIPPING WIDTH: 126"
SHIPPING HEIGHT: 130"
 - SHIPPING WEIGHT: 17800 LBS
 - OPERATING WEIGHT: 18000 LBS
 - OVERALL SKID DEPTH: 8 3/16"
 - NOZZLE ELEVATIONS ARE FROM CENTERLINE OF PIPE TO TOP OF BASE (REFERENCE POINT).
 - (*) DENOTES ELEVATION FROM FACE OF FLANGE TO TOP OF BASE (REFERENCE POINT).
 - CENTER OF GRAVITY:
 'X' FROM REFERENCE POINT: 96 3/8"
 'Y' FROM REFERENCE POINT: 61 1/8"
 'Z' FROM REFERENCE POINT: 28 1/2"
 (Note: 'Z' DIMENSION FROM TOP OF BASE)



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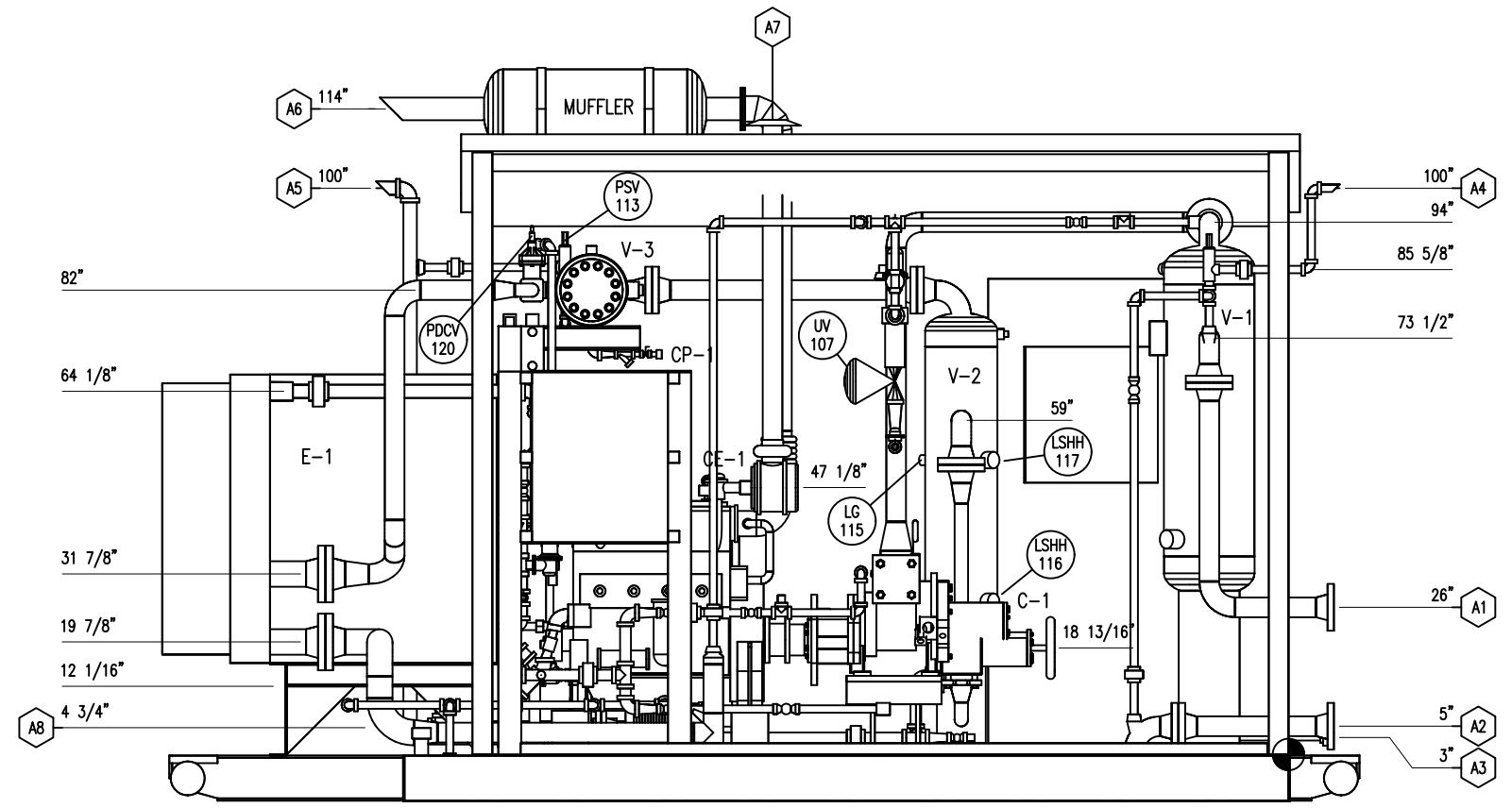
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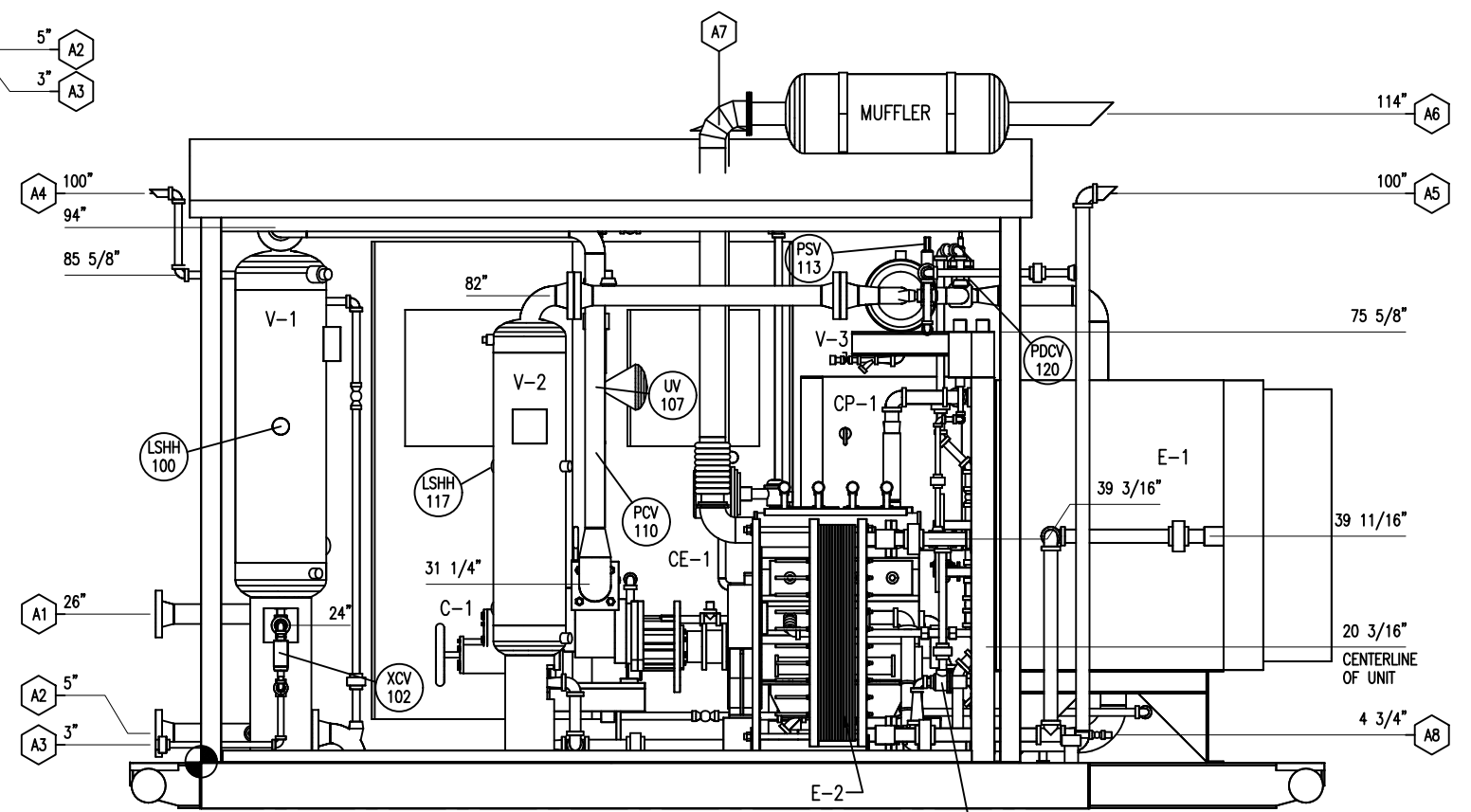
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CHKD. BY: G. SCHUSTER	SCALE: 3/4" = 1'-0"
APPR. BY: G. SCHUSTER	W.O. No.: 12068201
CUST. PO No:	

TITLE: GENERAL ARRANGEMENT
FOR: TOROMONT ENERGY SYSTEMS 90 HP WELLHEAD BOOSTER UNIT FRICK XJF 151M COMPRESSOR
DWG. No.: 12068-201
SHEET No.: 1 OF 3
REV: 1

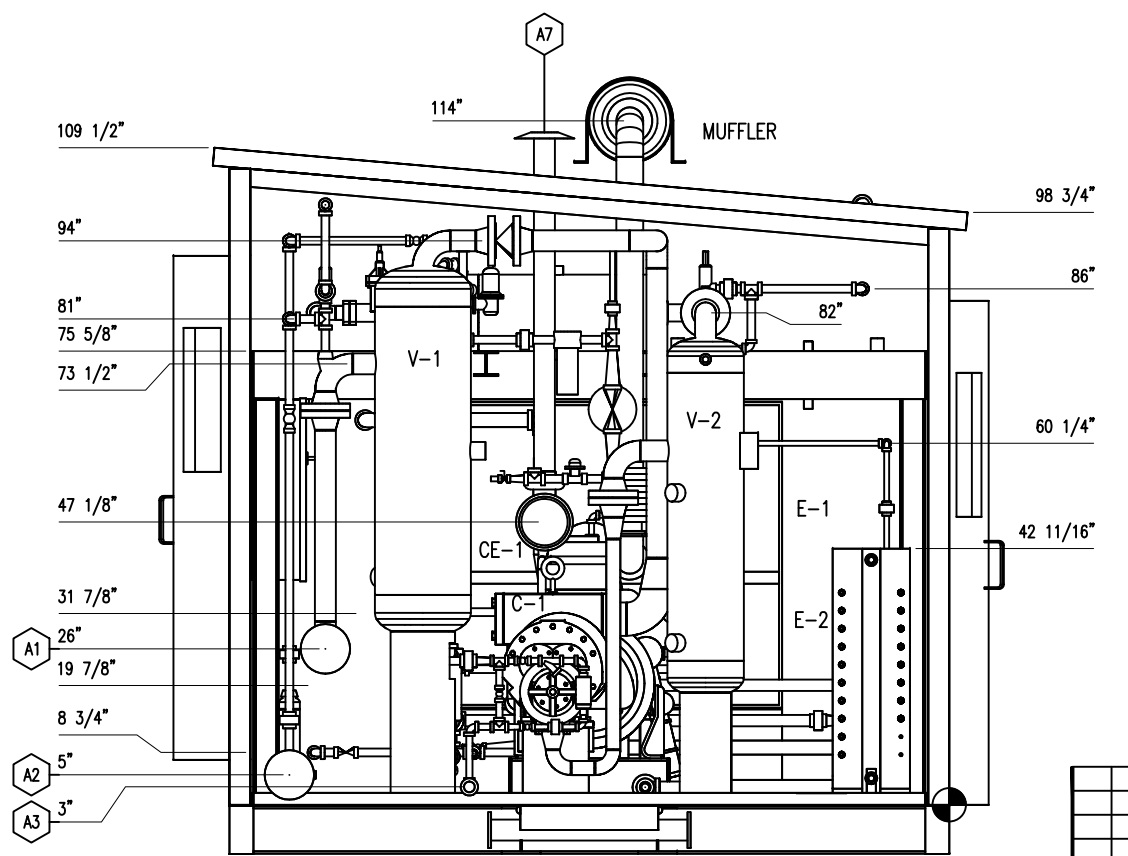
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ELEVATION 'B-B'



ELEVATION 'A-A'



ELEVATION 'C-C'

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TITLE: ELEVATIONS
 FOR: TOROMONT ENERGY SYSTEMS
 90 HP WELLHEAD
 BOOSTER UNIT
 FRICK XJF 151M COMPRESSOR
 DWG. No: 12068-201 SHEET No: 2 OF 3 REV: 1