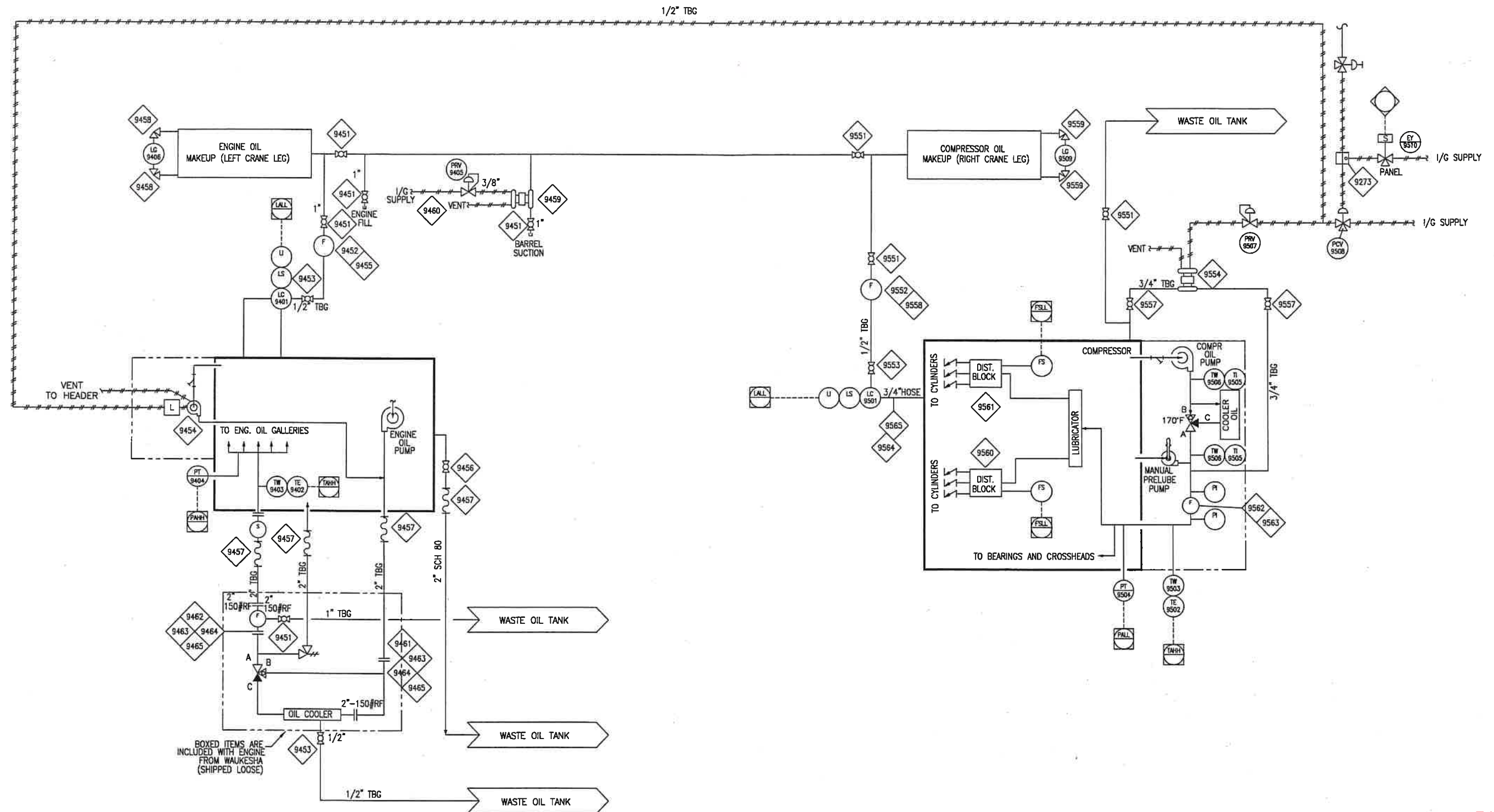




SHOP NOTES

- LOCAL MOUNTED DEVICES
- ⊖ PANEL MOUNTED DEVICES

9400 SERIES ENGINE OIL UTILITIES

REFERENCE DRAWINGS	REVISIONS
STANDARD UC5790E4132EHD	
STANDARD UC7044K4156EHD2	0 ISSUED FOR APPROVAL
DATE 01.23.02	BY LLP
DESCRIPTION	REVISIONS

9500 SERIES COMPRESSOR OIL UTILITIES

CUSTOMER	LOCATION	DATE	BY	CHK
DIRECT ENERGY	CHANNEL LAKE #2	01.23.02	LLP	
3 STAGE COMPRESSOR PACKAGE COMPRESSOR OIL UTILITIES L5774LT / JGE-4 / 144EH	1-18-14-5W4	01.23.02	L. SCOTT	M. CRAWFORD

Collicutt Hanover

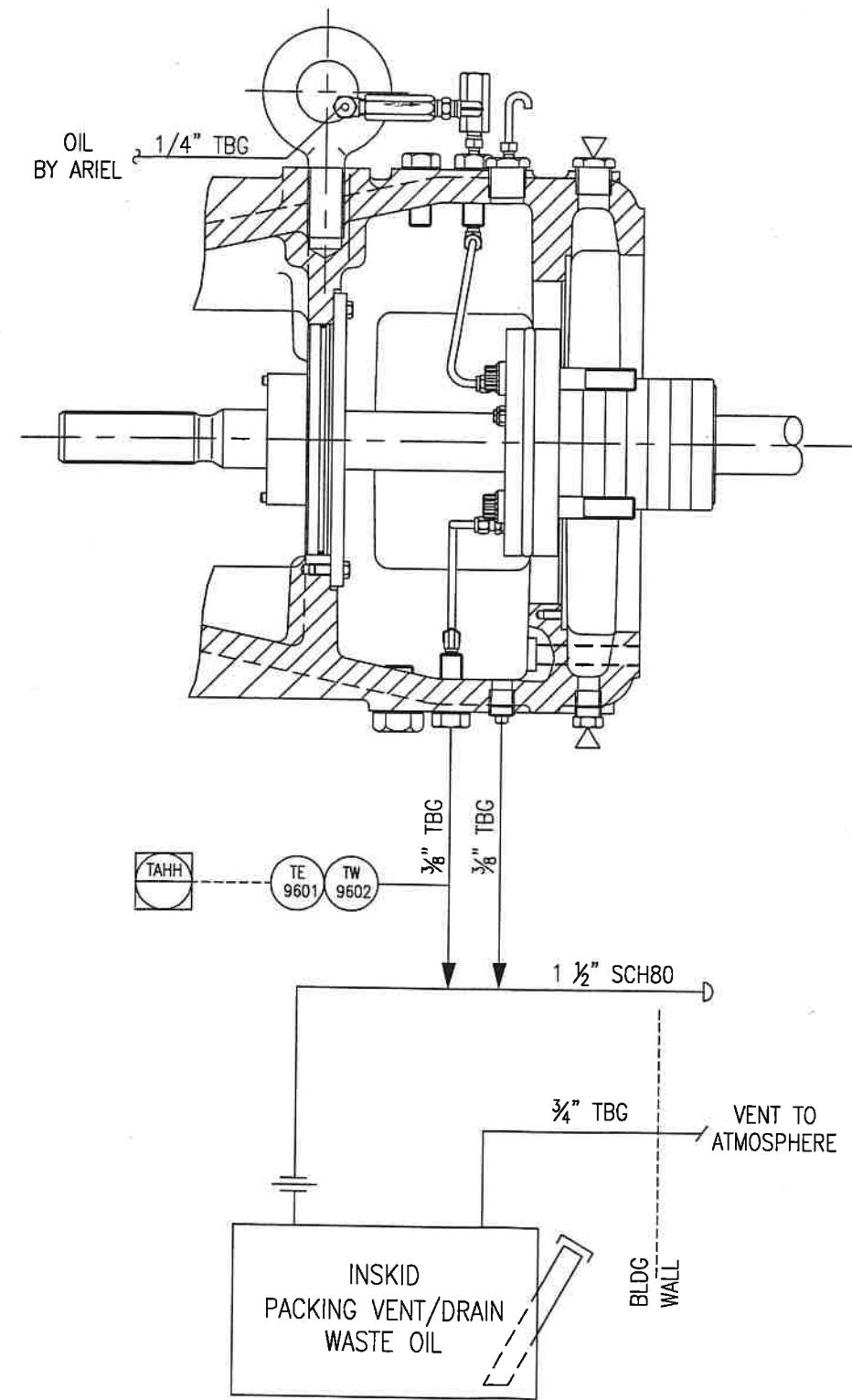
SERVICES LTD.
CORPORATE OFFICE
7550 EDGAR INDUSTRIAL DRIVE RED DEER, AB CANADA
T4P 3R2 PHONE (403) 358-3200 FAX (403) 358-3210

3380A01 REV 0
FH251 4/5

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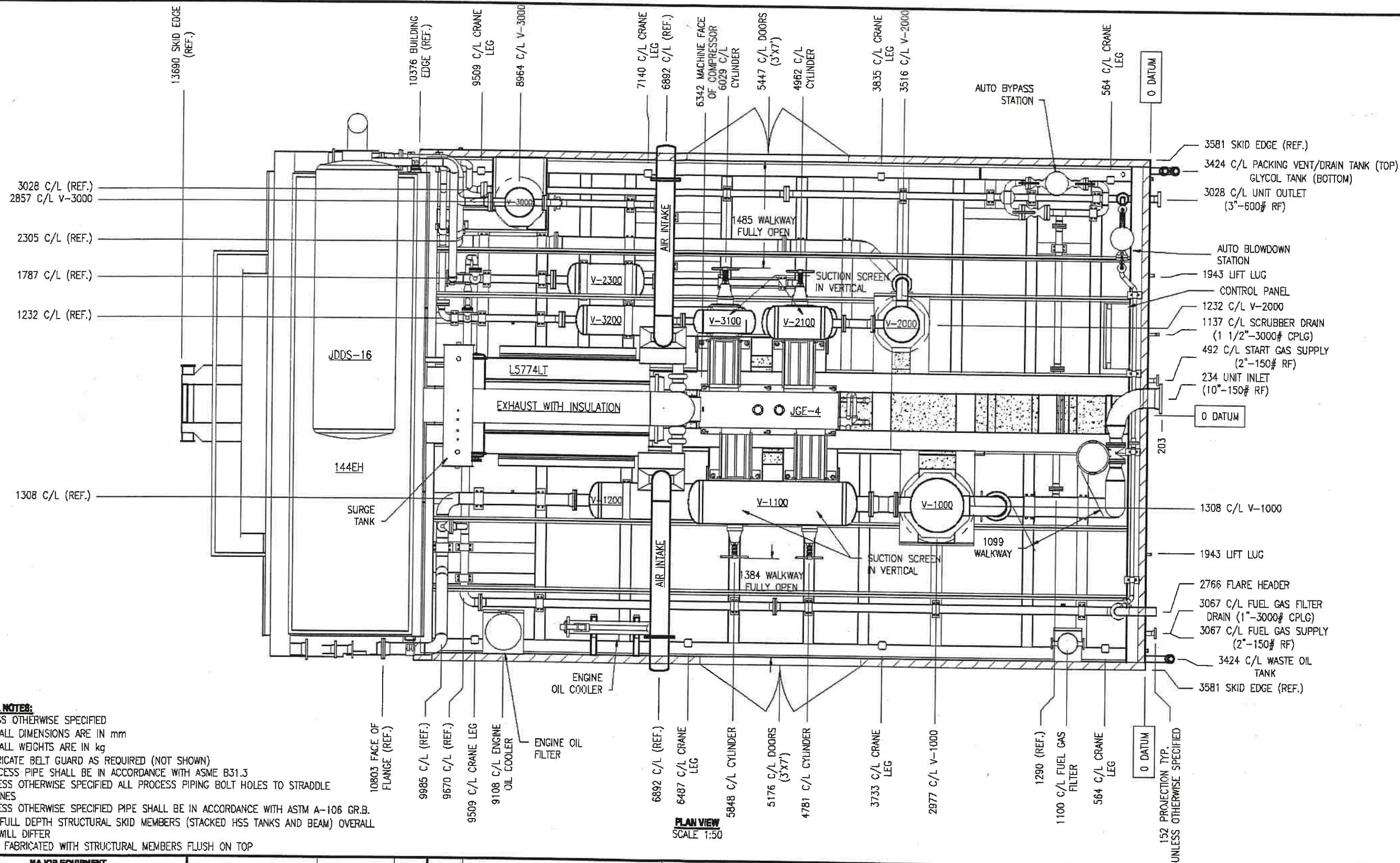
JAN 24 REC'D

STANDARD



FEB 11 2002
JAN 24 REC'D

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GENERAL NOTES:

1. UNLESS OTHERWISE SPECIFIED
 - a) ALL DIMENSIONS ARE IN mm
 - b) ALL WEIGHTS ARE IN kg
2. FABRICATE BELT GUARD AS REQUIRED (NOT SHOWN)
3. PROCESS PIPE SHALL BE IN ACCORDANCE WITH ASME B31.3
4. UNLESS OTHERWISE SPECIFIED ALL PROCESS PIPING BOLT HOLES TO STRADDLE CENTERLINES
5. UNLESS OTHERWISE SPECIFIED PIPE SHALL BE IN ACCORDANCE WITH ASTM A-106 GR.B.
6. ALL FULL DEPTH STRUCTURAL SKID MEMBERS (STACKED HSS TANKS AND BEAM) OVERALL DEPTHS WILL DIFFER
7. SKID FABRICATED WITH STRUCTURAL MEMBERS FLUSH ON TOP

MAJOR EQUIPMENT										
COMPRESSOR	ARIEL JGE-4									
CROSSHEAD GUIDE	LONG SINGLE COMPARTMENT									
CYL BORE/MODEL	15.250" / 14-3/4" E									
CYL BORE/MODEL	15.250" / 14-3/4" E									
CYL BORE/MODEL	9.750" / 9-3/4" E	P&ID	3411A02	1	0	ISSUE FOR APPROVAL		01.17.02	NLT	LS.
CYL BORE/MODEL	6.375" / 6-3/8" E	DESCRIPTION	DRAWING	REV.	REV	DESCRIPTION		DATE	BY	ENG
COUPLING	CMR 700 - 2B.875	REFERENCE DRAWINGS								INITIALS

CUSTOMER

CHC/LEASE

LOCATION

Collecot Transfer
SERVICES LTD.
CORPORATE OFFICE
7888 EDGAR INDUSTRIAL DRIVE RED DEER, AB CANADA
T4P 3R2 PHONE (403) 388-3200 FAX (403) 388-3210

**THREE STAGE COMP. PACKAGE
GENERAL ARRANGEMENT
L5774LT / JGE-4 / 144EH
ONE PIECE SKID**

DATE: 01.14.02

DATE: 01.14.02

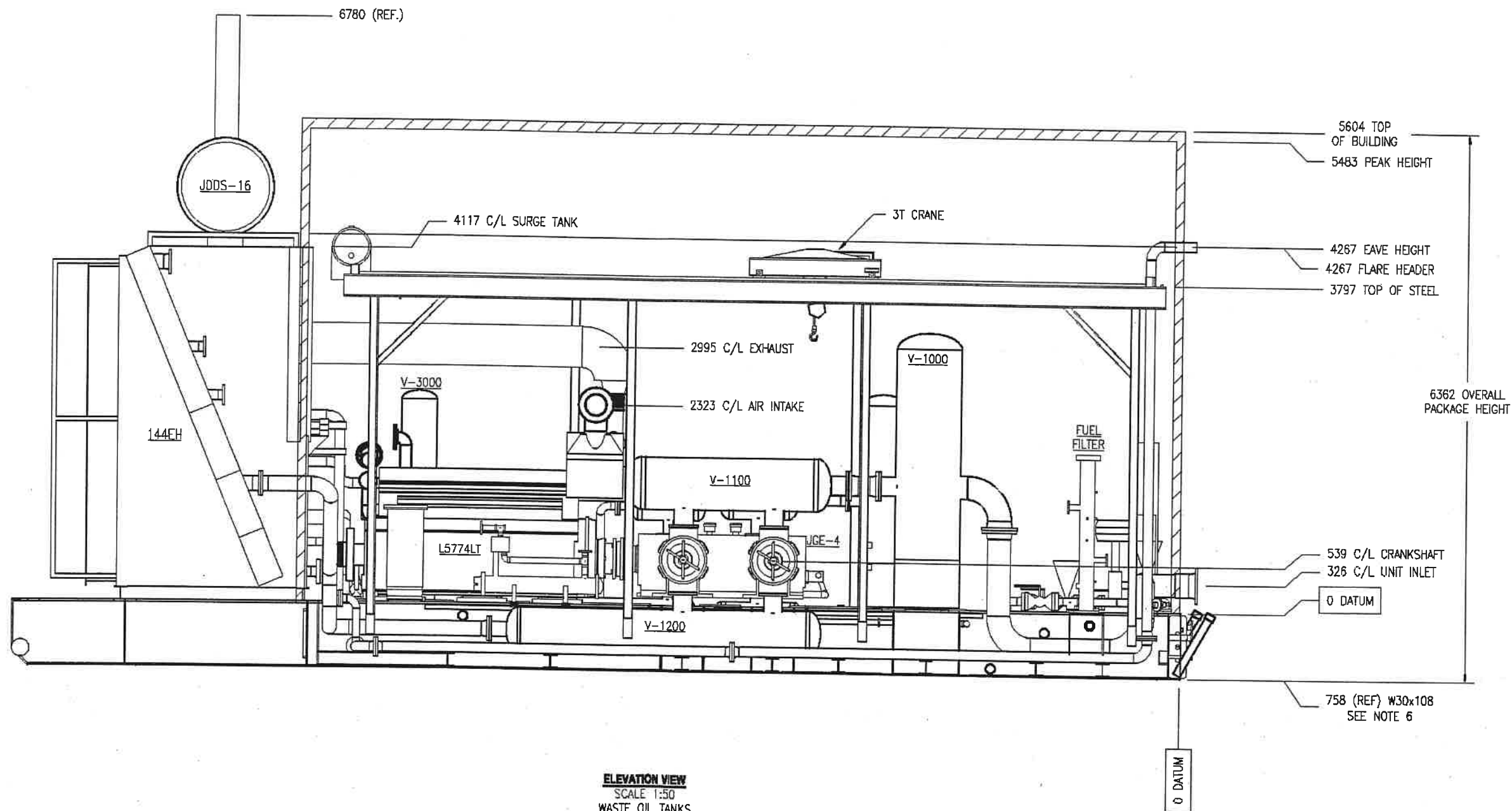
3421B02
FH251/252

02.01.23

FEB 11 2002

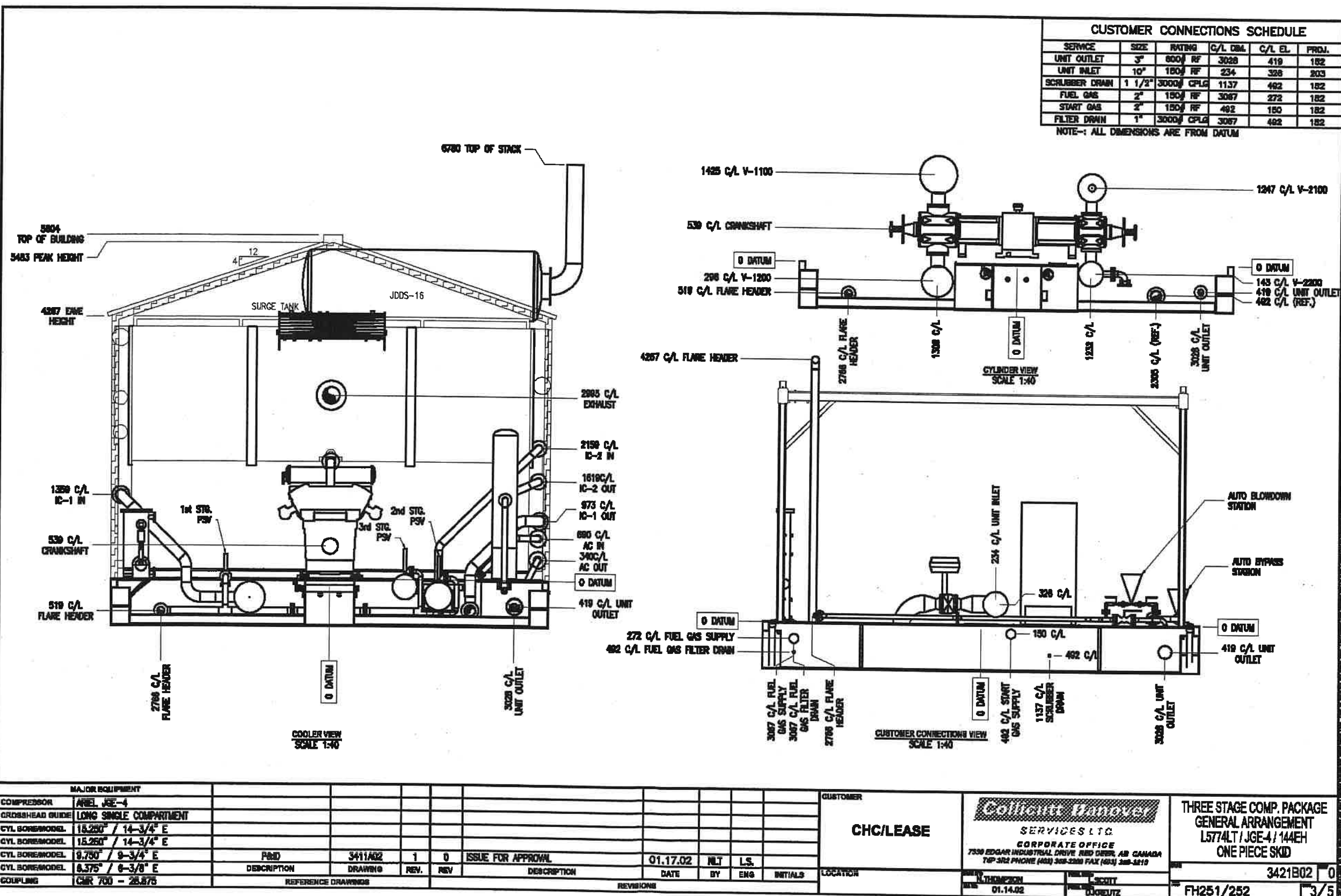
THIS DRAWING IS THE PROPERTY OF COLLECOT TRANSFER SERVICES LTD. AND IS NOT TO BE USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS INTENDED

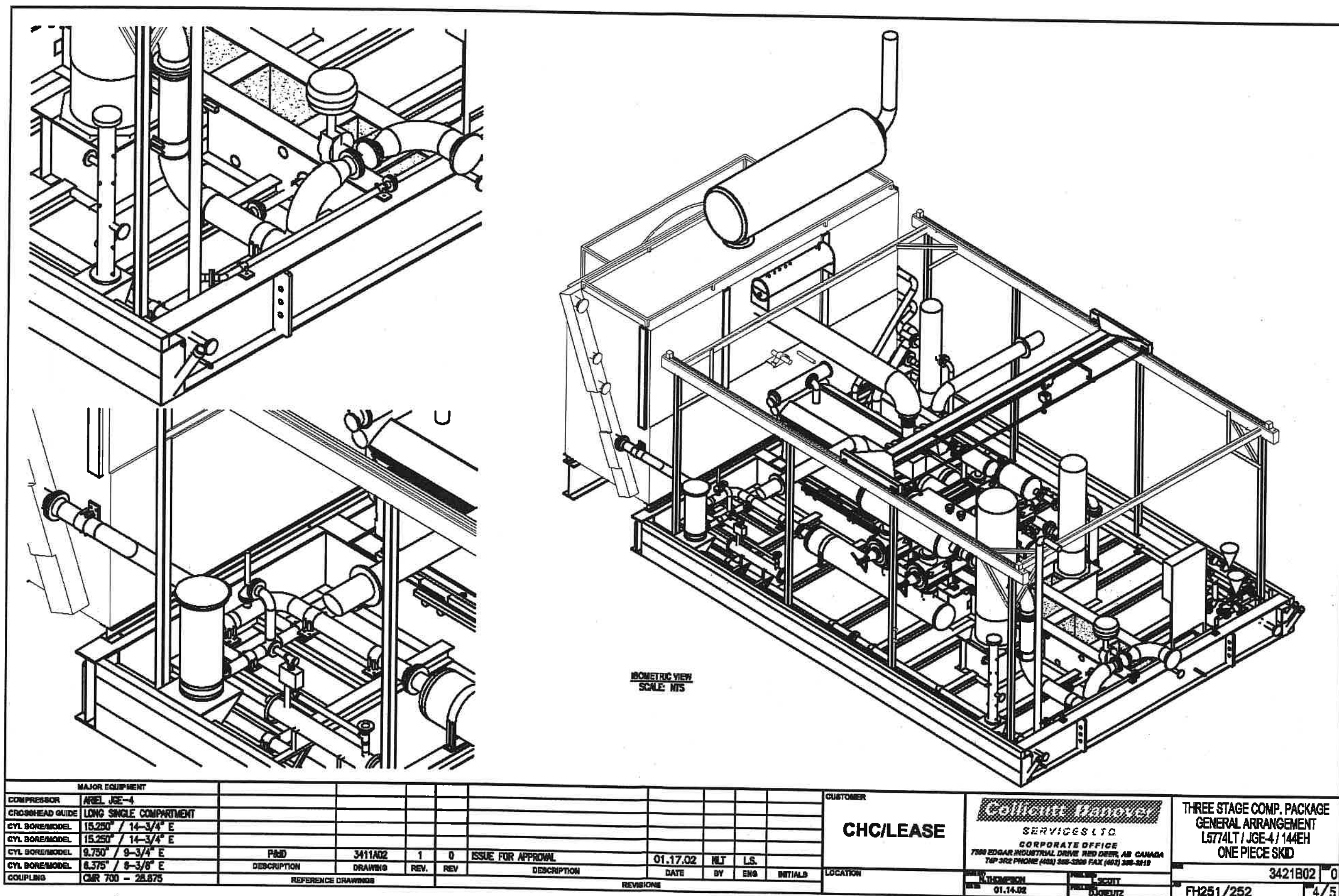
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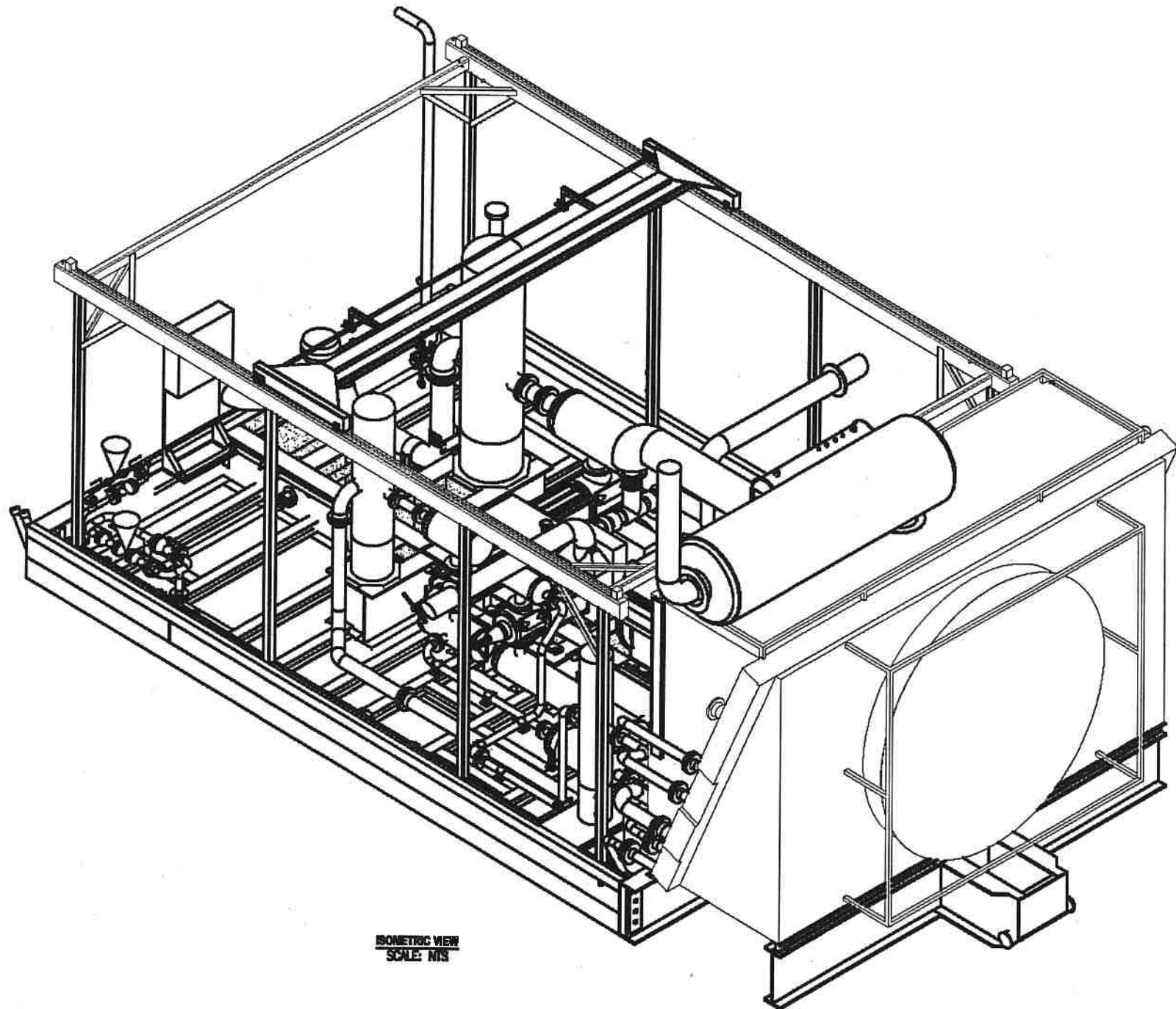
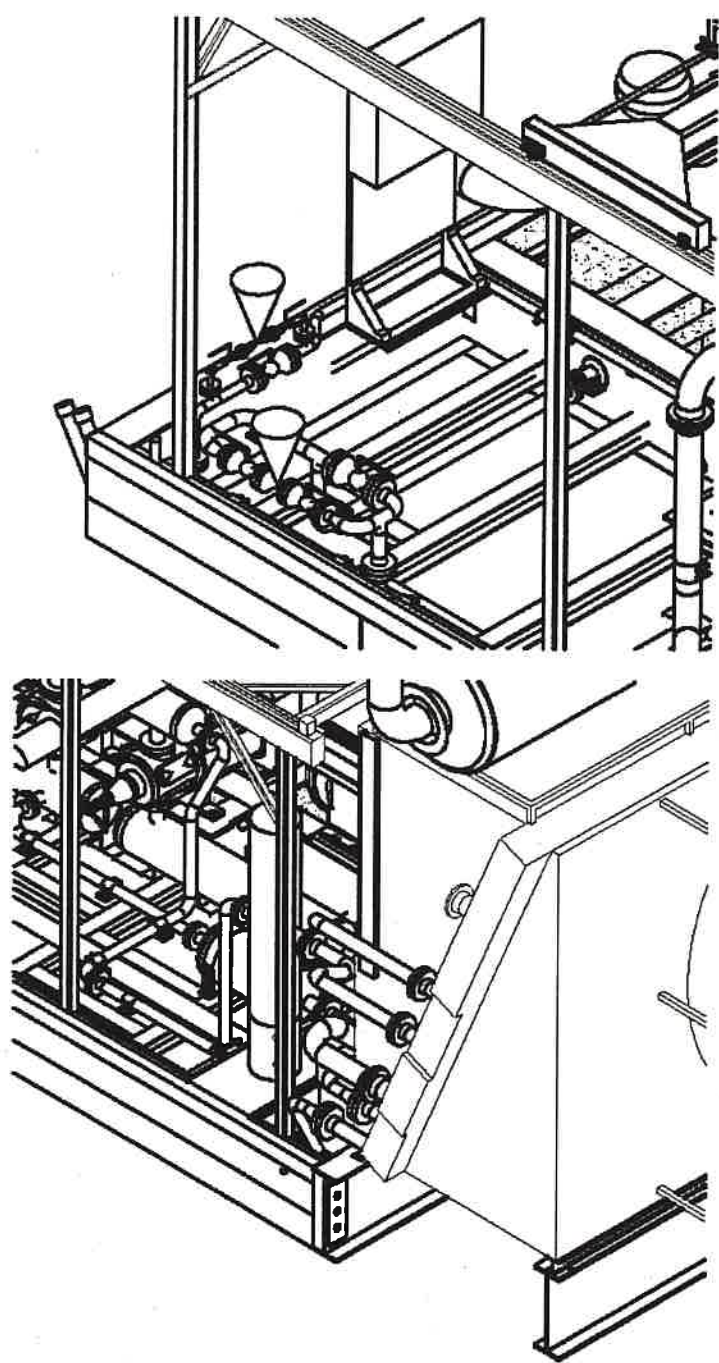


ELEVATION VIEW
SCALE 1:50
WASTE OIL TANKS
REMOVED IN THE VIEW
FOR CLARITY

MAJOR EQUIPMENT										CUSTOMER		Collett-Hunter SERVICES LTD. CORPORATE OFFICE 7550 EDGAR INDUSTRIAL DRIVE RED DEER, AB CANADA T4P 2R2 PHONE (403) 268-3200 FAX (403) 268-3210		THREE STAGE COMP. PACKAGE GENERAL ARRANGEMENT L5774LT / JGE-4 / 144EH ONE PIECE SKID			
COMPRESSOR	ARIEL JGE-4	CROSSHEAD GUIDE	LONG SINGLE COMPARTMENT	CYL BORE/MODEL	15.250" / 14-3/4" E	CYL BORE/MODEL	15.250" / 14-3/4" E	CYL BORE/MODEL	9.750" / 9-3/4" E							CYL BORE/MODEL	6.375" / 6-3/8" E
REFERENCE DRAWINGS										CHC/LEASE		LOCATION		3421B02		REV 0	
DESCRIPTION	DRAWING	REV.	REV	ISSUE FOR APPROVAL	DATE	BY	ENG	INITIALS	DATE		BY		ENG		INITIALS		
	3411A02	1	0		01.17.02	NLT	L.S.										
REVISIONS																	







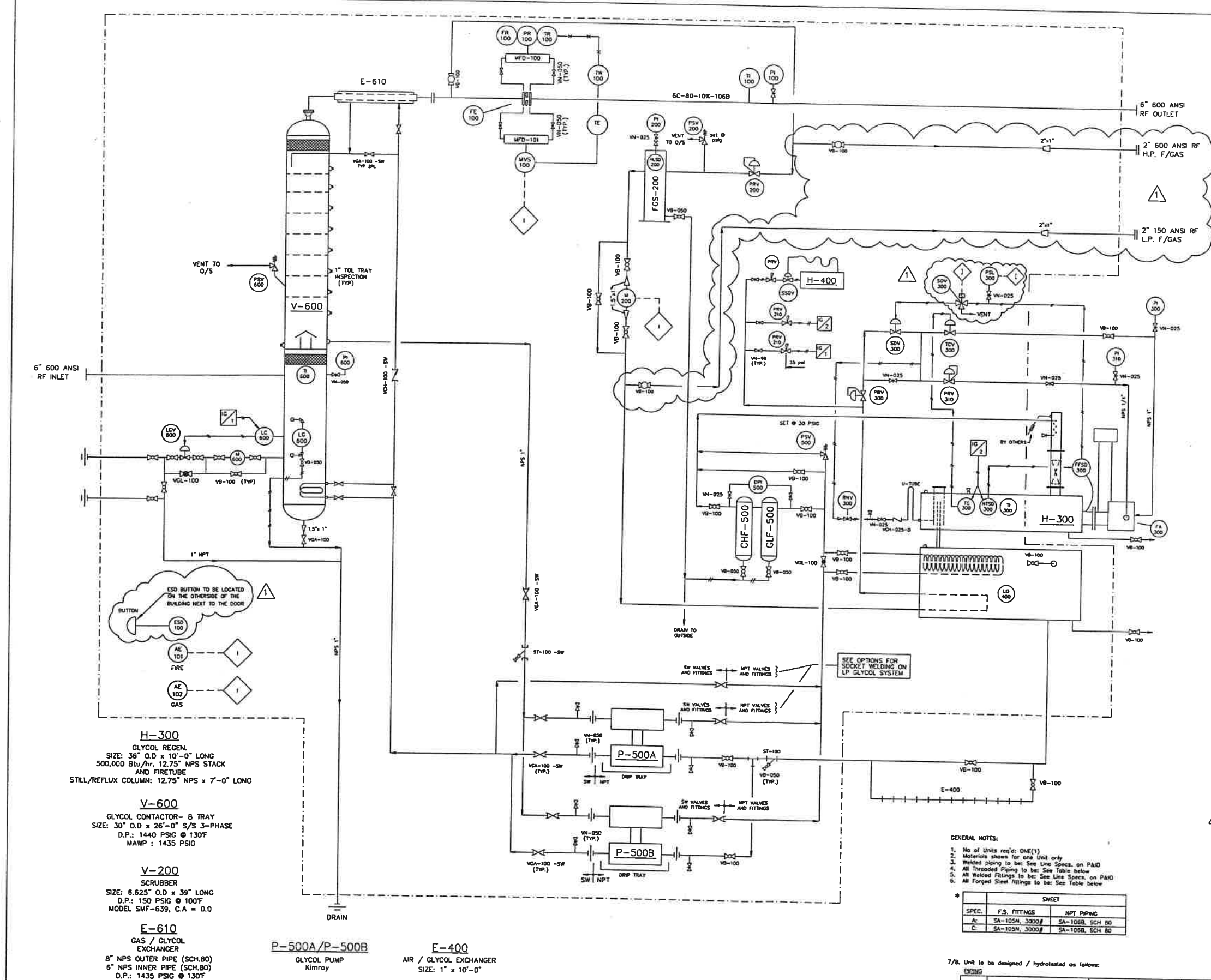
ISOMETRIC VIEW
SCALE: NTS

MAJOR EQUIPMENT										CUSTOMER CHC/LEASE  SERVICES LTD. CORPORATE OFFICE 7300 EDGAR INDUSTRIAL DRIVE RED OAK, AB CANADA T4P 3R2 PHONE (403) 238-3200 FAX (403) 238-3219				THREE STAGE COMP. PACKAGE GENERAL ARRANGEMENT L5774LT / JGE-4 / 144EH ONE PIECE SKID					
COMPRESSOR	AREL JGE-4																		
CROSSHEAD GUIDE	LONG SINGLE COMPARTMENT																		
CYL BORE/MODEL	18.250" / 14-3/4" E																		
CYL BORE/MODEL	15.250" / 14-3/4" E																		
CYL BORE/MODEL	9.750" / 9-3/4" E	P&ID	3411A02	1	0	ISSUE FOR APPROVAL				01.17.02	NJT	LS.							
CYL BORE/MODEL	6.375" / 6-3/8" E	DESCRIPTION	DRAWING	REV.	REV	DESCRIPTION				DATE	BY	ENG	INITIALS	LOCATION					
COUPLING	CMR 700 - 28.875	REFERENCE DRAWINGS			REVISIONS														
										DATE				01.14.02	BY		SCOTT	FH251/252	
															KLOEUTZ		5/5		

107

FEB 11 2002

02.01.23.



TAG	QTY	BRAND	DESCRIPTION
AC-101	1	General	Flame Detector, 24 VDC, 4-20 mA, model FL-3100-321-100-121 c/w mounting bracket
AC-102	1	General	Combustible Gas Detector, 24 VDC, 4-20 mA, model S4000C-319-101-000 c/w sensor housing & test gas applicator
CHF-500	1	Cuno	Glycol Filter, 3/4" NPT model 182, c/w charcoal filtration element (Standard Process Trn)
DPI-500	1	OrangeArc	Diff. pressure Indicator, 0-500 psig
FA-300	1	Enord	Flame arrester c/w Eclipse burners, 300,000 btu/hr, 12" FireTube, (Standard Process Trn)
FE-100	1	Northstar	SDH/DI Type HSR, Run, NPS 5" Sch 80, 600 ANSI, built to AGA 3C specs, Beta 0.7, c/w Seal ring & one (1) orifice plate(s), 3/4" & 1" connections, (Standard Process Trn)
FFSD-300	1	Kinray	Flame Failure shut down, HT12PG
FR-100	1	Barton	RECONDITIONED Model 202A 2 Pen Recorder c/w 24 hour/7 day clock, (0-15000) Static, (0-100" VC) Differential, (0-150 deg F) Temperature Range
GLF-500	1	Cuno	Glycol Filter, 3/4" NPT model 182, c/w element
H-400	1	Catadyne	24,000 BTU/hr Burst Heater c/w Safety Shut Down Valve, Regulator, 25ft Sdu cables & 12 volt start (Standard Instrument Trn)
HLSD-200	1	Venco	Fuel Gas High Level Shut Down, Model GSV-12
HTSD-200	1	Kinray	Temp. controller, HT-12 Base assembly c/w 3/4" NPT x 12" Lg C/Steel TV
LC-600	1	Fisher	Level Controller, 2" NPT Model 2680A, 0-300 Snap & Direct Acting signal, 15000 HWP
LCV-600	1	Morrissey	Relief Valve, 1" NPT Model 2275, 1/4" port, 3-15# Fail Close signal
LG-400	1	Penburth	Tubular sight glass c/w cocks (Glass gauge) RMTA
LG-600	1	Jerguson	Reflex Sight Glass Model 15R20 (c/w cocks), 15000 HWP
M-200	1	Ronet	PT Corrected Fuel Gas Meter, Model EDM-50, cubic meter read-out c/w electrical barrier, Model HIL-301L, 24 volt (Standard Process Trn)
M-600	1	Cliffhock	Turbine Meter, 1" NPT c/w totalizer
MFD-101	1	Agco	Flange Mount 5-Valve CS Manifold M6T-VDC-4
MFD-100	1	Agco	RECONDITIONED 5-Valve CS Manifold
MVS-101	1	Rosenmount	Multivariable Transmitter, Model 3095F8208A13A011CHDF, (0-15000) Static, (0-250" VC) Differential, (0-150 deg F) Temperature Range c/w RTD assembly, (Standard Process Trn)
P-500A	2	Kinray	Kinray Model 45015 PV Pump (Standard Process Trn)
PI-100	1	Vika	Pressure Indicator, 1/2" NPT x 4" Liquid Filled, dual Scale (0-1500 psig) SS dial
PI-200	1	Vika	Pressure Indicator, 1/4" NPT x 2.5" Lq. Filled, dual Scale (0-200 psig) SS dial
PI-300	2	Vika	Pressure Indicator, 1/4" NPT x 2.5" Lq. Filled, dual Scale (0-300 psig) SS dial
PI-600	1	Vika	Pressure Indicator, 1/2" NPT x 4" Liquid Filled, dual Scale (0-1500 psig) SS dial
PRV-200	1	Fisher	Regulator 1" NPT Model 627 Std. Body c/w 100 psig set spring, 1/8" port NYLON trim
PRV-210	2	Fisher	Regulator 1/4" NPT Model 67CFR, 35# Set Spring
PRV-300	1	Fisher	Regulator, 1" npt Model 627 (H body) 5-15# spring
PRV-310	1	Fisher	Regulator, Fisher 67AFR, 1/4" npt
PSL-300	1	Asco	Pressure Switch, 3-port, STD. Service, 24 V DC, 3P, set R 10 psig Felling Model -----, (minimum SPDT)
PSV-200	1	Mercer	Relief Valve, 1" x 1" NPT 9100-VCB Set R 150#
PSV-500	1	Mercer	Threaded Relief Valve, 1" NPT x 1" NPT Model 9100-VCB, set R 30#
PSV-600	1	Mercer	Threaded Relief Valve, 1 1/2" NPT x 2" NPT Model 8100-VCB, Grrific, set R 135 (max 2000) psig
PVN-300	1	Agco	Needle Valve, 1/4" NPT Model H1VDC-22 NSF (Standard Process Trn)
SDV-300	1	Kinray	1" npt 112 SMT-DAB (CI body) Motor Valve
SDV-300	1	Skinner	Solenoid Valve, 3-port, STD. Service, 24 V DC, 3P, Model -----, 100 psig HWP
ST-100	1	Hueller	Threaded strainer, 1" npt CS body # 581
ST-100-SV	1	Hueller	SV Strainer, 1" NPS 1500# HWP # 581
TC-300	1	Kinray	Temp. controller, HT-12 Base assembly c/w 3/4" NPT x 12" Lg C/Steel TV
TCV-300	1	Kinray	1" npt 112 SMT-DAB (CI body) Motor Valve
TI-100	1	Trend	Temperature Indicator, 1/2" x 3" dual scale (-20. +120 deg C) c/w 3/4" NPT x 6" Lg SS Thermowell
TI-300	1	Trend	Temperature Indicator, 1/2" x 3" dual scale (-20. +250 deg C) c/w 3/4" NPT x 6" Lg SS Thermowell
TI-600	1	Trend	Temperature Indicator, 1/2" x 3" dual scale (-20. +120 deg C) c/w 3/4" NPT x 6" Lg SS Thermowell
TV-100	1		Thermowell for Temperature Recorder element, 3/4" NPT x 2 1/2" Lg
VB-050	6	Navco	1/2" NPT Reg. port ball valve, 2000# VDG
VB-100	25	Navco	1" NPT Reg. port ball valve, 2000# VDG
VCH-025-B	1	Mupre	Check valve, 1/4" npt (brass), 18 cracking Pressure
VCH-100-SV	1	Navco	SV check valve, NPS 1" class 800
VGA-100	1	Navco	Threaded gate valve, 1" NPT class 800
VGA-100-SV	13	Navco	SV gate valve, NPS 1" class 800
VGL-100	2	Navco	Threaded globe valve, 1" NPT class 800
VN-025	8	Agco	Needle Valve, 1/4" NPT Model H1VDC-22 NSF
VN-025	1	Agco	Needle Valve, 1/4" NPT FxP
VN-050	4	Agco	Needle Valve, 1/2" NPT Model H1VDC-40 NSF
VN-050	10	Agco	Needle Valve, 1/2" NPT Model H1VDC-40 FxP
VN-99	3	Agco	Mini Valve Model HSRDC -2 F x F

GENERAL NOTES:
 1. No of Units req'd: ONE(1)
 2. Materials shown for one Unit only
 3. Welded piping to be: See Line Specs. on P&ID
 4. All Threaded Piping to be: See Table below
 5. All Welded Fittings to be: See Line Specs. on P&ID
 6. All Forged Steel fittings to be: See Table below

SPEC.	F.S. FITTINGS	NPT PIPING
A:	SA-105N, 3000#	SA-105B, SCH 80
C:	SA-105N, 3000#	SA-105B, SCH 80

7/8. Unit to be designed / hydrotested as follows:

SPEC.	DESIGN	HYDROTEST @ ROOM TEMP.	STRESS RELIEF
A:	150 PSIG @ 150 °F	225 PSIG	NO
C:	1435 PSIG @ 130 °F	2153 PSIG	NO

TAG #	DESIGN	HYDROTEST @ ROOM TEMP.	STRESS RELIEF
V-600	1435 PSIG @ 130 °F	2153 PSIG	NO
FCS-200	150 PSIG @ 150 °F	225 PSIG	NO

9. REFER TO DWG# L-01-3657-1957 FOR NOTE #9 TO 18

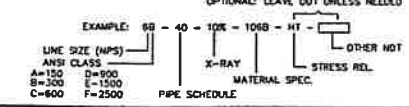
18. All bleeding type of instruments with bleed ports (excluding diaphragms & regulator bonnets) to be vented to skid-degas.

SERVICE	SIZE	TUBE	FITTINGS	FERRULES
ALL TUBING	3/8"	CS	CPCS	CS



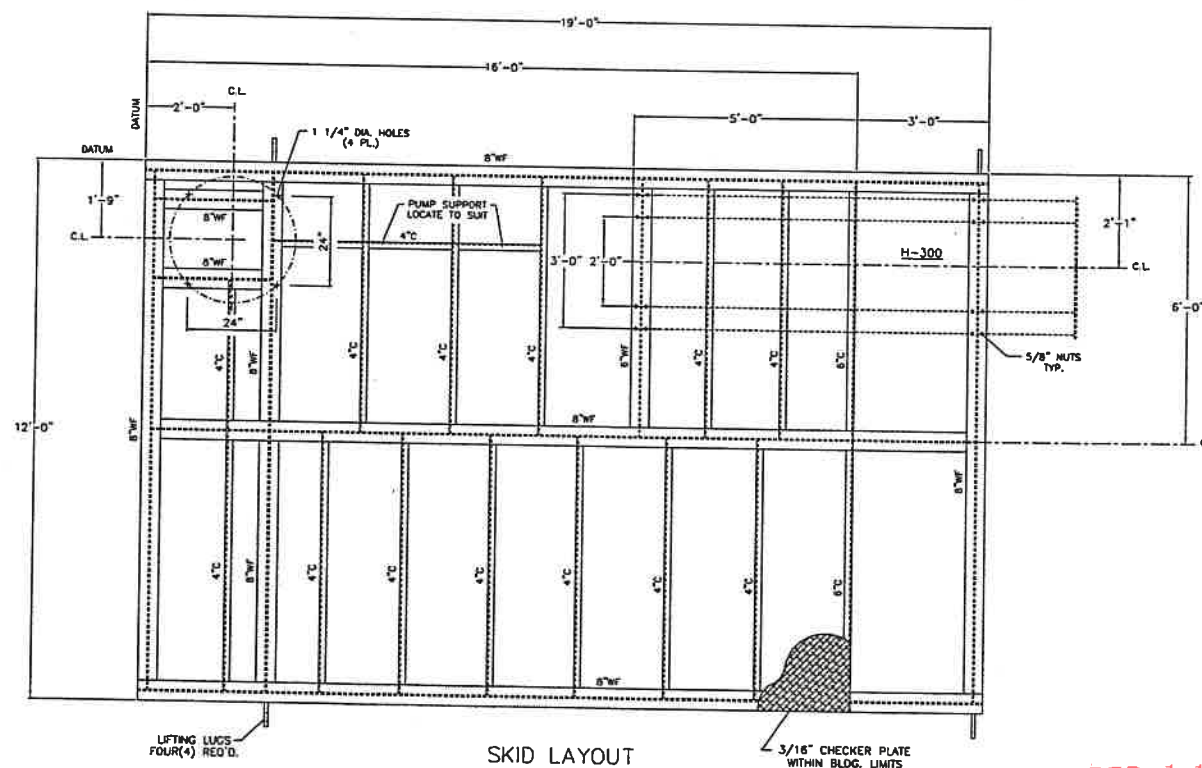
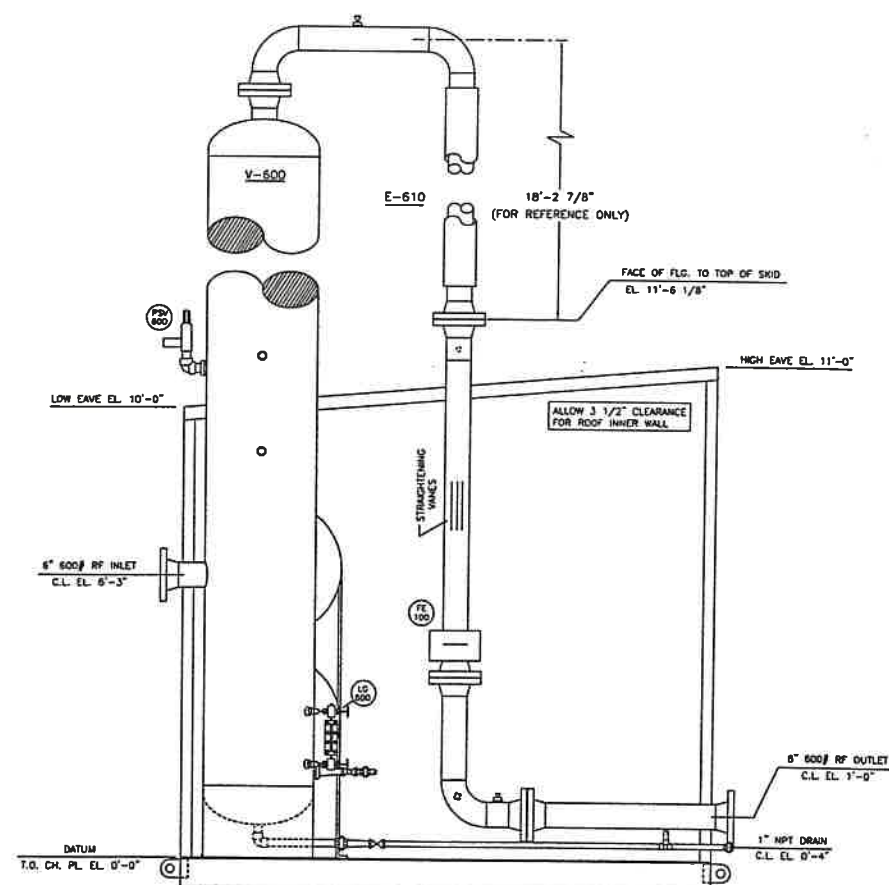
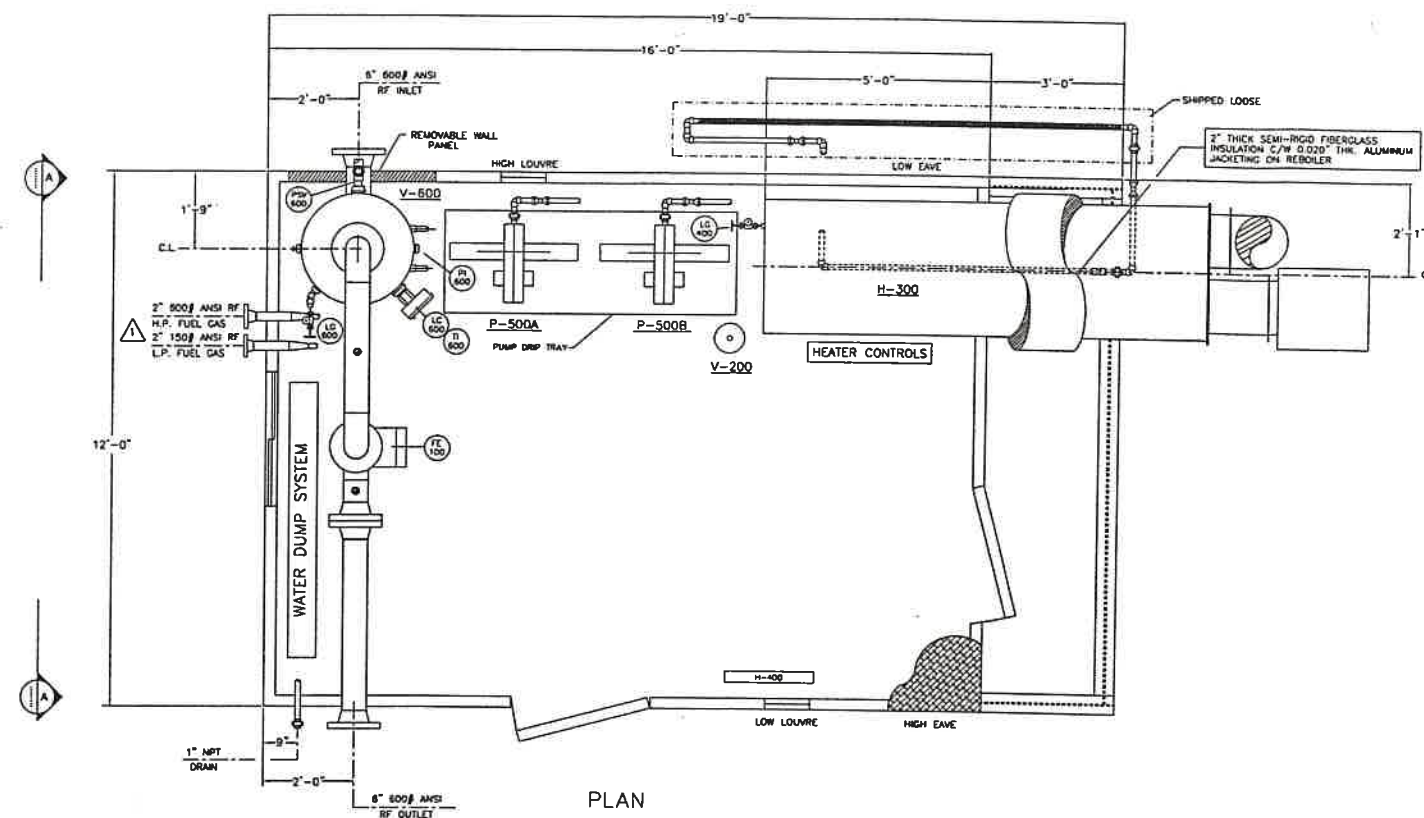
CLIENT: DIRECT ENERGY RESOURCES
 PROJECT: 30" SWEET DEHY PACKAGE
 TITLE: FLOW DIAGRAM
 Scale: 1" = 10'-0"
 NTS: JM-01-3657
 DWG No: F-01-3657-950
 REV: 1

OPSCO STANDARD WELDED PIPELINE DESIGNATION SYSTEM
 OPTIONAL: LEAVE OUT UNLESS NEEDED



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No.	DATE	REVISIONS	BY	APP.	No.	DATE	REVISIONS	BY	APP.
0	2002-09-29	ISSUED FOR APPROVAL	D.M.						
1	2002-10-24	REVISED AS PER CUST. INST.	D.M.						
		ISSUED FOR CONSTRUCTION							



GENERAL NOTES:

- SEE DVG. # F-01-3657-950
- Unit to be commercially sandblasted to SSPC-SP-6 and shop-prime with One(1) coat Zinc Chromate (HIGH TEMP. ALUMINUM ON REBOILER & STACK)
- Finish Paint: One(1) coat Industrial Enamel (ONE TONE COLOR),
- Under-skin insulation: N/R
- Radiography on piping welding to be: See Line Specs on P&ID
- OPSCO standard pipe supports, as required.
- Unless specified otherwise, all projections beyond building wall to be 6".
- Dimensions may change to reflect customer requests, layout changes, accessibility and non-conformity of OEM supplied components.
- Stress Relieving Details: See Line Specs on P&ID
- XP electrical hook-up of Catalytic Heaters: Yes
- Other Electrical Work: Yes
- SEE DVG. # F-01-3657-950

SKID : OPSCO Standard skid c/w 3/16" checker plate within building limits and Four(4) lifting lugs
SIZE : 12'-0" wide x 19'-0" long

BUILDING: 12'-0" wide x 16'-0" long OPSCO STANDARD building with:
ROOF TYPE : SHED EAVE HEIGHTS: 10'-0" / 11'-0"
EXTERIOR : 22 g. Pre-painted Stl. Tan Code 2M-DC288/SM-OC-315
INTERIOR : 24 g. Aluminum
INSULATION : R-12 Batt type f/glass VAP. BARRIER : 4 MIL
WINDOWS : ONE(1) 36" x 36" double glazed c/w half screen
DOORS : TWO(2) 3' x 7' buy-out panic hardware door(s) c/w
- TWO window
- Lockset & check chain

LOUVRES : TWO(2) louvers c/w sliders & screen, SIZE: 12" x 12"

0630500L

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No.	DATE	REVISIONS	BY	APP.	No.	DATE	REVISIONS	BY	APP.	ENGINEERS RECORD	DATE
0	JAN-29-2002	ISSUED FOR APPROVAL	D.M.							DRAWN BY	DAVID MORGAN
1	JAN-24-2002	REVISED AS CUSTOMER INST.	D.M.							CHECKED BY	
		ISSUED FOR CONSTRUCTION								APPD. BY	
										ISSUED TO	SHOP



CLIENT	DIRECT ENERGY RESOURCES
PROJECT	30" SWEET DEHY PACKAGE
TITLE	LAYOUT/STRUCTURAL SKID
Scale	1:24
JOB No.	JM-01-3657
DWG No.	L-01-3657-1957
REV.	1

FEB 11 2002

107

30" O.D. x 12'-0" S/S
720 PSI @ -20°F/+130°F
CORROSION ALLOWANCE: 0.0625"
X-RAY: RT-2
PWHT: NONE
C/W (19) FILTER ELEMENTS
JONELL# JFG-336-0.5-CE

8.625" O.D. x 2'-2" S/S
285 PSIG @ -20°F/+130°F
CORROSION ALLOWANCE: 0.125"
X-RAY: RT-2
PWHT: NONE



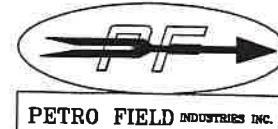
TUBING NOTES:

TUBING: 3/8"ODx0.035" WT EGCS
TUBE FITTINGS: PARKER CPCS
FERRULES: CS
VENT ALL NORMALLY BLEEDING DEVICES OUTSIDE
OTHER:

PIPING CLASS B (300 ANSI RF)

SERVICE:	SWEET, STD-TEMP
DESIGN:	720 PSIG @ -20/+130°F
CORR. ALLOW:	0.0625" (APPROX)
XRAY:	10% (BW ONLY)
PWHT:	NO (BW ONLY)
BW PIPING:	SEE SPOOL ISO DWGS
NPT PIPING:	SA-106B SCH.80
NPT FITTINGS:	SA-105 3000#
OTHER:	

NO.	DESCRIPTION OF REVISION	BY	DATE	CHK'D
0	ISSUED FOR APPROVAL	RF	01/02/02	DZ



CLIENT:

DIRECT ENERGY

	BY	DATE
DRAWN	DZ	12/28/01
CHECKED		
APPROVED		

TITLE

30" O.D. x 12'-0" s/s
FILTER/SEPARATOR
PROCESS & INSTRUMENTATION DIAGRAM
JOB# J-01-298

SCALE	DRAWING NUMBER
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NTS	01-298-PID-01
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FEB 11 2002

107