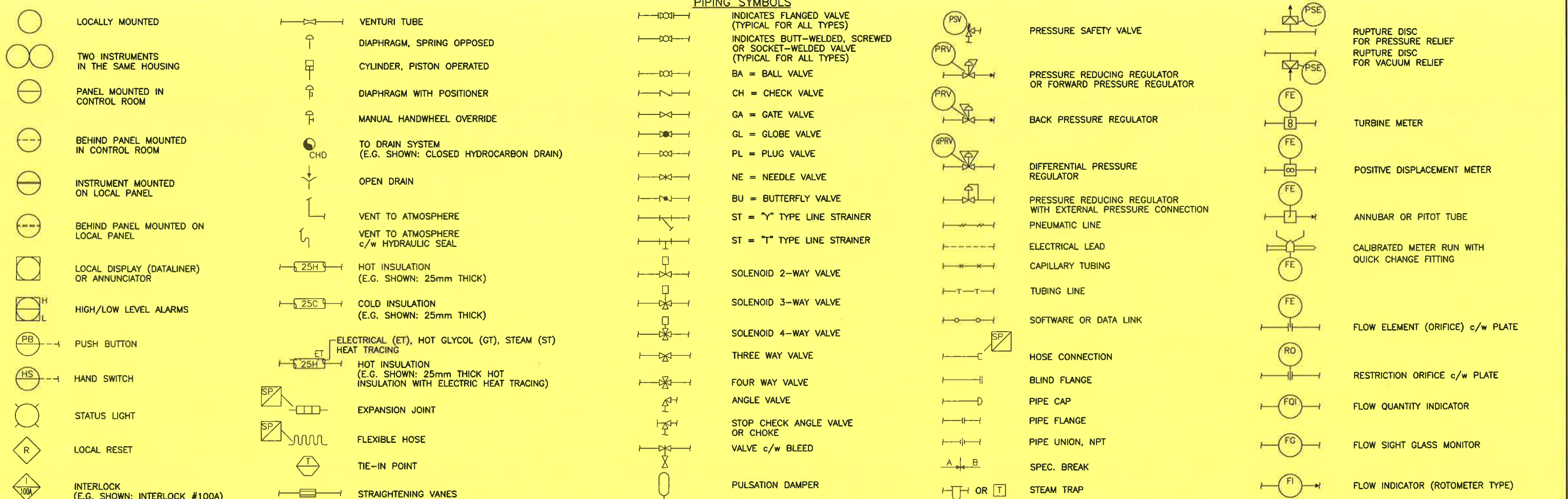


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	A	AH	AHL	AL	C	CV	DR	DV	E	FIC	G	GM	I	IC	IS	IT	K	L	PH	Q	R	RC	RR	S	SC	SD	SDH	SDL	SE	SH	SL	SLL	SM	SO	SV	T	V	W	Y	
A	ANALYSIS	AAH	AHL	AAL	AC	ACV	ADR		AE				AI	AIC		AIT					AR	ARC	ARR	AS			ASDH	ASDL		ASH	ASL		ASM			AT		AY		
BJ	BURNER FAILURE	BJA																					BJS		BJSD															
C	CONDUCTIVITY	CAH	CHL	CAL	CC	CCV	CDR		CE				CI	CIC	CIS	CIT		CL			CR	CRC	CRR	CS			CSDH	CSDL		CSH	CSL		CSM			CT		CY		
D	DENSITY	DAH	DAHL	DAL	DC	DCV	DDR		DE	DG			DI	DIC	DIS	DIT	DK	DL			DR	DRC	DRR	DS			DSDH	DSDL	DSE	DSH	DSL		DSM			DT		DY		
dP	DIFFERENTIAL PRESSURE	dPA	dPAH	dPAL	dPAL	dPCV	dPR						dPI	dPIC	dPIS	dPIT		dPL			dPRC	dPS			dPSD	dPSDH	dPSDL	dPSH	dPSL						dPT			dPY		
E	EMERGENCY																								ESD											ESDV		EY		
F	FLOW	FAH	FAHL	FAL	FC	FCV	FDR		FE	FFIC	FG		FI	FIC	FIS	FIT	FK	FL		FQ	FR	FRC	FRR	FS			FSDH	FSDL		FSH	FSL		FSM		FSV	FT		FY		
G	GAS DETECTION	GAH							GE																	GSDH			GSH											
H	HAND (MANUAL)				HC	HCV								HRC									HS														HV	HY		
J	POWER														JIC																				JT		JY			
K	TIME	KA			KC	KCV	KDR										KL		KQ				KS												KT		KV	KY		
L	LEVEL	LAH	LAHL	LAL	LC	LCV	LDR		LE	LG	LGM		LI	LIC	LIS	LIT		LL			LR	LRC	LRR	LS		LSD	LSDH	LSDL		LSH	LSL	LSLL	LSM			LT		LY		
M	MOISTURE	MAH	MAHL	MAL	MC	MCV	MDR		ME				MI	MIC	MIS	MIT		ML			MR	MRC	MRR	MS			MSDH	MSDL		MSH	MSL		MSM			MT		MY		
P	PRESSURE	PAH	PAHL	PAL	PC	PCV	PDR		PE				PI	PIC	PIS	PIT	PK	PL	PPH		PR	PRC	PRR	PS			PSDH	PSDL	PSE	PSH	PSL		PSM		PSV	PT		PY		
R	REMOTE																																			RSDV		RY		
S	SPEED	SAH	SAHL	SAL	SC	SCV	SDR		SE				SI	SIC	SIS	SIT	SK	SL			SR	SRC	SRR	SS			SSDH	SSDL		SSH	SSL		SSM			ST		SY		
T	TEMPERATURE	TAH	TAHL	TAL	TC	TCV	TDR		TE				TI	TIC	TIS	TIT	TK	TL			TR	TRC	TRR	TS			TSDH	TSDL	TSE	TSH	TSL		TSM			TT		TW	TY	
U	UNIT	UA						UDV									UL								USD															
V	VIBRATION	VAH			VC				VE				VI								VR		VIR	VS		VSDH			VSH						VT					
VI	VISCOSITY	VIAH	VIAHL	VIAL	VIC	VICV	VIDR		VIE				VII	VIIC	VIIS	VIT		VIL			VIR	VIRC	VIRR	VIS	VISD			VISH	VISL		VISM			VIT		VY				
X	FIRE DETECTION	XA							XE																XSD			XSH												
Z	LIMIT OR POSITION	ZAH	ZAHL	ZAL					ZE							ZIS	ZIT	ZL							ZSC	ZSDH	ZSDL		ZSH	ZSL		ZSM	ZSO		ZT		ZY			

GENERAL NOTES		GENERAL NOTES		REVISION		APPROVED		DRAWN		APACHE CANADA LIMITED	
5	AS BUILT - PER CLIENT REVISIONS	H. LE	00/10/25	JLW	GW	MECH./STRUCT.	DATE	J. LINANTUD	DATE	1478 HP HAMBURG COMPRESSOR PACKAGE LEGEND MECHANICAL FLOWSHEET	
4	CLIENT REVISIONS	H. LE	00/09/21	GW	GW	BY	DATE	DEC. 08/99			
3	AS BUILT	H. LE	00/08/25	CG	CG	ELECTRICAL	DATE	CHECKED			
2	RE-ISSUED FOR CONSTRUCTION	J. LINA	00/06/06	SW	SW	BY	DATE	DEC. 30/99			
1	ISSUED FOR CONSTRUCTION	S. SULZ	99/12/30	PC	PC	PROJECT	DATE	DEC. 30/99			
A	ISSUED FOR APPROVAL	J. LINA	99/12/08	DHS	DHS	DATE	SCALE			DWG. No.: D-MFS-99404-100 SHT. 1 OF 11 REV. 5	

DATE: 2000.10.25 1:23pm FILE NAME: J:\jobs99\DWG\99404\FLW\MFS-99404-100-01.dwg

PROPAC
 440 East Lake Road,
 Postal Bag #2
 Airdrie, Alberta
 Canada T4B 2C3

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GENERAL SPECIFICATIONS

CLASS	TYPICAL SERVICE	TEMP. RANGE (°C)	PRESS. RATING (ANSI)
A	SWEET HYDROCARBON, PROPANE REFRIGERANT, FUEL GAS AND FLARE GAS	-29°C TO 260°C	150 # RF
B	SWEET HYDROCARBON, PROPANE REFRIGERANT, FUEL GAS AND FLARE GAS	-29°C TO 260°C	300 # RF
C	SWEET HYDROCARBON, PROPANE REFRIGERANT, FUEL GAS AND FLARE GAS	-29°C TO 260°C	600 # RF
D	SWEET HYDROCARBON	-29°C TO 260°C	900 # RF
E	SWEET HYDROCARBON	-29°C TO 260°C	1500 # RF
F	SWEET HYDROCARBON	-29°C TO 260°C	2500 # RF
H	COMPRESSED AIR AND UTILITY WATER	0°C TO 38°C	150 # RF
J	DRAIN SYSTEM PIPING	5°C TO 95°C	150 # RF
K	GLYCOL	1.21 MPa @ 177°C	150 # RF TO 1500 # RF
AS	SOUR HYDROCARBON, RICH AMINE AND SOUR WATER	-29°C TO 260°C	150 # RF
BS	SOUR HYDROCARBON, RICH AMINE AND SOUR WATER	-29°C TO 260°C	300 # RF
CS	SOUR HYDROCARBON, RICH AMINE AND SOUR WATER	-29°C TO 260°C	600 # RF
DS	SOUR HYDROCARBON	-29°C TO 260°C	900 # RF
ES	SOUR HYDROCARBON	-29°C TO 260°C	1500 # RF
FS	SOUR HYDROCARBON	-29°C TO 260°C	2500 # RF
AL	SWEET HYDROCARBON, PROPANE REFRIGERANT	-46°C TO 66°C	150 # RF
BL	SWEET HYDROCARBON, PROPANE REFRIGERANT	-46°C TO 66°C	300 # RF
CL	SWEET HYDROCARBON, PROPANE REFRIGERANT	-46°C TO 66°C	600 # RF
AC	SWEET HYDROCARBON	-184°C TO 66°C	150 # RF
BC	SWEET HYDROCARBON	-184°C TO 66°C	300 # RF
CC	SWEET HYDROCARBON	-184°C TO 66°C	600 # RF

GENERAL NOTES (ABBREVIATIONS)

- AC - AIR CLOSERS
- AO - AIR OPENS
- AVT - AUTOVENT TRAP
- BD - BLOWDOWN
- BF - BLIND FLANGE
- CBD - CONTINUOUS BD
- CD - CLOSED DRAIN
- CO - CHAIN OPERATED
- CSC - CAR SEAL CLOSED
- CSO - CAR SEAL OPEN
- DC - DRAIN CONNECTION
- EBD - EMERGENCY BD
- ESD - EMERGENCY SHUTDOWN
- ET - ELECTRICAL HEAT TRACE
- FO - FAIL OPEN
- FC - FAIL CLOSED
- FP - FULL PORT
- GT - GLYCOL HEAT TRACE
- HH - HAND HOLE
- HC - HOSE CONNECTION
- L - LOW
- LC - LOCK CLOSED
- LO - LOCK OPEN
- LPD - LOW POINT DRAIN
- ML - MANUAL LOADING
- MW - MANWAY
- NC - NORMALLY CLOSED
- NE - NORMALLY ENERGIZED UNDER OPER. COND.
- NO - NORMALLY OPEN
- ND - NORMALLY DE-ENERGIZED UNDER OPER. COND.
- PC - PISTON CHECK VALVE
- PO - PUMPOUT
- PP - PERSONNEL PROTECTION
- QO - QUICK OPENING
- SC - SAMPLE CONNECTION
- SO - STEAM OUT
- SP - SET POINT
- ST - STEAM HEAT TRACE
- UG - UNDERGROUND
- VB - VACUUM BREAKER
- WC - WATER COLUMN

COMMODITY (ABBREVIATIONS)

- AG - ACID GAS
- AGF - ACID GAS FLARE
- AMD - AMINE DRAIN
- AV - ATMOSPHERIC VENTS
- BD - BLOWDOWN
- C - CAUSTIC
- CCD - CLOSED CRYOGENIC DRAIN
- CHD - CLOSED HYDROCARBON DRAIN
- CSD - CLOSED SOUR DRAIN
- CV - CRYOGENIC VENT
- CWD - CLOSED WATER DRAIN
- DR - DRAIN (ATMOSPHERIC)
- EQL - EQUALIZING
- FG - FUEL GAS
- FL - FLARE
- FO - FUEL OIL
- FW - FIRE WATER
- GD - GLYCOL DRAIN
- GL - GLYCOL
- HC - HIGH PRESSURE STEAM CONDENSATE
- HCL - HYDROCARBON LIQUIDS
- HCV - HYDROCARBON VAPOUR
- HM - HEAT MEDIUM
- HPF - HIGH PRESSURE FLARE
- HS - HIGH PRESSURE STEAM
- I/A - INSTRUMENT AIR
- I/G - INSTRUMENT GAS
- IS - INSTRUMENT SUPPLY
- JW - JACKET WATER
- K - CHEMICALS
- LAM - LEAN AMINE
- LC - LOW PRESSURE STEAM CONDENSATE
- LO - LUBE OIL
- LOD - LUBE OIL DRAIN
- LPF - LOW PRESSURE FLARE
- LPG - LOW PRESSURE GAS
- LS - LOW PRESSURE STEAM
- MC - MEDIUM PRESSURE STEAM CONDENSATE
- MS - MEDIUM PRESSURE STEAM
- P - PROCESS GAS/LIQUID
- PDW - PRODUCED WATER
- POD - PACKING OIL DRAIN/VENT
- POW - POTABLE WATER
- PS - SOUR PROCESS GAS
- PSW - SOUR PROCESS WATER
- PW - PROCESS WATER
- RAM - RICH AMINE
- RLRV - REFRIG. LIQUID, REFRIG. VAPOUR
- ROD - REFRIG. OIL DRAIN
- SO - SEAL OIL
- SOD - SEAL OIL DRAIN
- UW - UTILITY WATER

MISCELLANEOUS EQUIPMENT (ABBREVIATIONS)

- ACT - ACTUATOR
- BLT - BELT
- BUS - BUSHING
- CPL - COUPLING
- EM - HEAT EXCHANGER MOTOR
- ES - EXHAUST SILENCER
- F - FILTER
- FW - FLYWHEEL
- H - HEATER
- INS - INSULATION
- LUB - LUBRICATOR
- MIS - MISCELLANEOUS
- PIP - PIPE
- PM - PUMP MOTOR
- RC - RADIATOR CAP
- SB - SPECTACLE BLIND
- SHF - SHAFT
- SHV - SHEAVE
- SP - SPACER
- STR - STARTER (ELECTRIC/PNEUMATIC)
- T - TANK
- TSS - TEMPORARY SUCTION SCREEN
- TUB - TUBING

TUBING SIZES

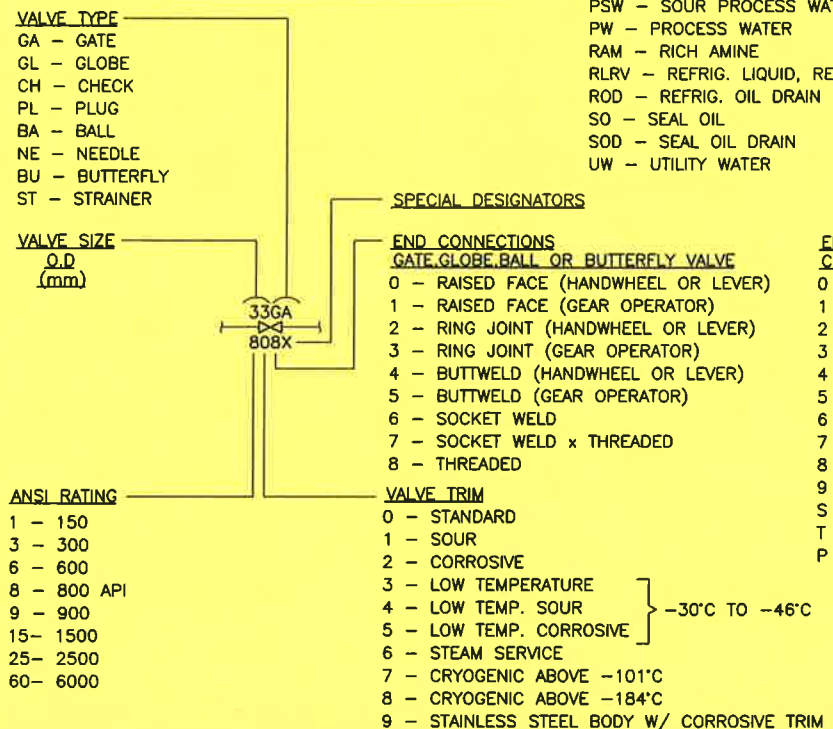
METRIC O.D. (mm)	IMP O.D. (INCH.)	IMP NPS (INCH.)	METRIC O.D. (mm)	METRIC DIN (mm)
3	1/8"	1/4"	14	8
6	1/4"	3/8"	17	10
9	3/8"	1/2"	21	15
13	1/2"	3/4"	27	20
19	3/4"	1"	33	25
25	1"	1-1/2"	48	40
		2"	60	50
		3"	89	80
		4"	114	100
		6"	168	150
		8"	219	200
		10"	273	250
		12"	324	300
		14"	356	350
		16"	406	400
		18"	457	450
		20"	508	500
		24"	610	600
		36"	914	900
		42"	1067	1050

PIPE SIZES

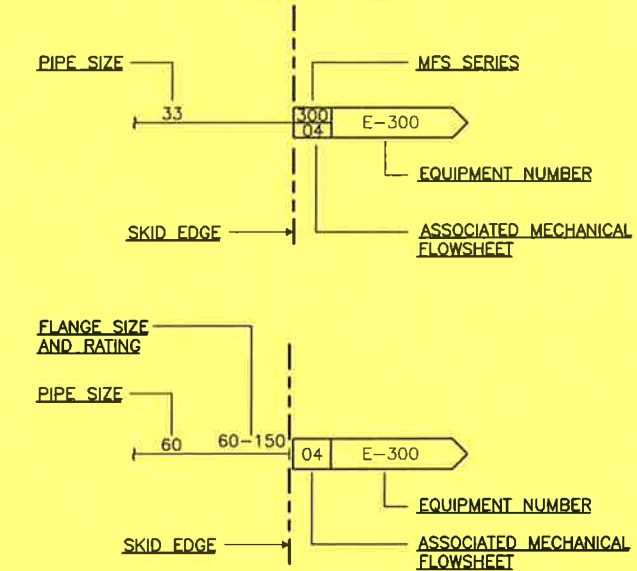
METRIC O.D. (mm)	METRIC DIN (mm)
14	8
17	10
21	15
27	20
33	25
48	40
60	50
89	80
114	100
168	150
219	200
273	250
324	300
356	350
406	400
457	450
508	500
610	600
914	900
1067	1050

NOTES:
NPS - NOMINAL PIPE SIZE

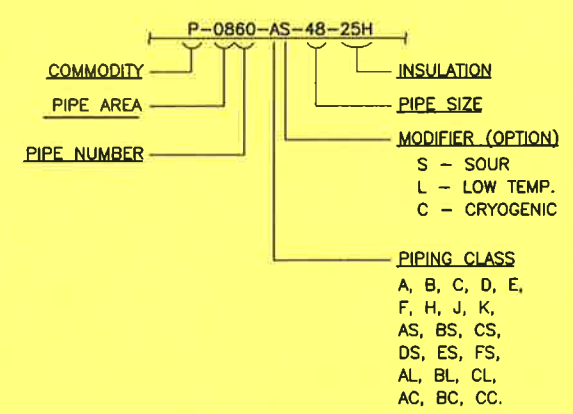
TYPICAL VALVE IDENTIFICATION



TYPICAL PIPE FLAGS



TYPICAL PIPE IDENTIFICATION



TYPICAL EQUIPMENT IDENTIFICATION

TAG No: T-820
 DESCRIPTION: DEETHANIZER
 DIMENSIONS: ...mm O.D. x ...mm S/S
 DESIGN PRESSURE @ DESIGN TEMP., CORROS. ALLOWANCE: ... kPa @ ... °C, ...mm C.A.
 GAS FLOW RATES: ... m3/d
 LIQUID FLOW RATES: ... m3/h
 DUTIES: ... kW
 MOTOR POWER: ... kW @ V/φ/Hz
 STRESS RELIEVING AND X-RAY: S.R.: YES/NO, X-RAY: FULL/100%/SPOT
 MAKE AND MODEL:

GENERAL NOTES		GENERAL NOTES		APPROVED		DRAWN		APACHE CANADA LIMITED	
5	AS BUILT - PER CLIENT REVISIONS	H. LE	00/10/25	GW	GW	BY	J. LINANTUD	440 East Lake Road,	
4	CLIENT REVISIONS	H. LE	00/09/21	GW	GW	DATE	DEC. 08/99	Postal Bag #2	
3	AS BUILT	H. LE	00/08/25	CG	CG	ELECTRICAL	CHECKED	Airdrie, Alberta	
2	RE-ISSUED FOR CONSTRUCTION	J. LINA	00/06/08	SW	SW	DATE	DEC. 30/99	Canada T4B 2C3	
1	ISSUED FOR CONSTRUCTION	S. SULZ	99/12/30	PC	PC	PROJECT	P. CRAWFORD	MECHANICAL FLOWSHEET	
A	ISSUED FOR APPROVAL	J. LINA	99/12/08	DHS	DHS	DATE	DEC. 30/99	DWG. No.: D-MFS-99404-100	
No.	REVISION	BY	DATE	CKD	ENG	SCALE		SHT. 2 OF 11	
								REV. 5	

ENGINE CONNECTION INDEX

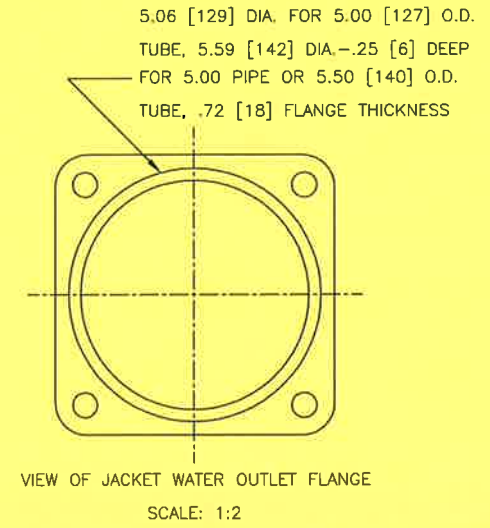
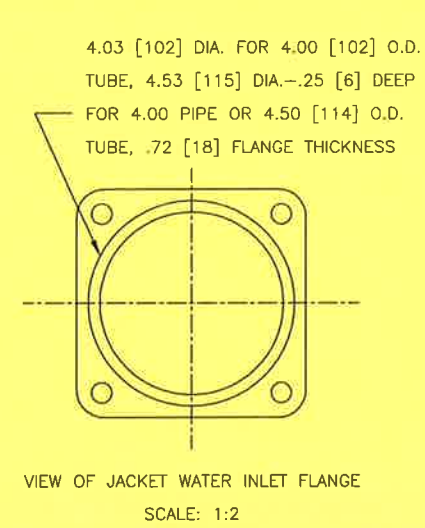
1. NATURAL GAS INLET 2.00-11.5 N.P.T.
NOTE: FLEXIBLE CONNECTION REQUIRED AT THE FUEL INLET LOCATION(S) TO ISOLATE ENGINE VIBRATION FROM FUEL PIPING. LOCATE AS CLOSE TO ENGINE AS POSSIBLE.
2. STARTING MOTOR PAD .625-11 UNC-2B TAP THRU 3 HOLES FOR STARTING MOTOR WITH S.A.E. NUMBER 3 MOUNTING FLANGE.
4. JACKET WATER OUTLET FLANGE. (SEE VIEW OF FLANGE)
5. FRONT LIFTING EYES 3.00 [76] DIA. HOLE.
6. REAR LIFTING EYES 3.00 [76] DIA. HOLE.
8. CRANKSHAFT PULLEY - (2) 9.88 [251] NOMINAL DIAMETER X .500 [13] WIDE S.A.E. AUTOMOTIVE GROOVES.
9. .88 [22] DIAMETER - 12 ENGINE MOUNTING HOLES.
10. LUBE OIL DRAIN 2.00-11.5 N.P.T.
11. .75-10 UNC-2B TAP 1.25 [32] DEEP, 12 HOLES EQUALLY SPACED.
12. .75-10 UNC-2B TAP 1.25 [32] DEEP, 12 HOLES EQUALLY SPACED.
13. .625-11 UNC-2B TAP 1.00 [25] DEEP, 12 HOLES EQUALLY SPACED.
14. .250 [6] NOMINAL DIAMETER TUBE, AIR/GAS VENT CONNECTION.
(SEE VIEW "A") (SEE NOTE 1)
15. .250 [6] NOMINAL DIAMETER TUBE, AIR/GAS SUPPLY CONNECTION.
(SEE VIEW "A")
16. .375-18 N.P.T. AIR/GAS PRELUBE SUPPLY CONNECTION.
17. .250 [6] NOMINAL DIAMETER TUBE, AIR/GAS START CONNECTION.
(SEE VIEW "A")
18. LUBE OIL STRAINER INLET FROM LUBE OIL FILTER,
2.00 RAISED FACE 150 LB. A.N.S.I. WELD NECK FLANGE.
19. JACKET WATER INLET FLANGE, 2 PLACES. (SEE VIEW OF FLANGE)
22. LUBE OIL FILTER INLET FROM LUBE OIL COOLER ASSEMBLY,
2.00 RAISED FACE 150 LB. A.N.S.I. FLANGE.
23. LUBE OIL FILTER OUTLET TO ENGINE LUBE OIL STAINER,
2.00 RAISED FACE 150 LB. A.N.S.I. FLANGE.
24. .56 [14] DIAMETER - 4 PLACES EQUALLY SPACED IN MOUNTING FEET FOR LUBE OIL FILTER MOUNTING.
25. EXHAUST OUTLET FLANGE - FITS 8.00 FLAT FACE 125 LB. A.N.S.I. CAST IRON PIPE FLANGE. NOTE: EXHAUST SYSTEM MUST SUPPORT ITS OWN WEIGHT BEYOND THIS POINT.
27. AUXILIARY WATER INLET FROM COOLING SYSTEM,
2.50 125 LB. A.N.S.I. FLANGE.
28. 375-18 N.P.T. AIR/GAS PRE-LUBE MOTOR EXHAUST.
(SEE NOTE 1)

NOTE 1: ALL GAS VENTED AND/OR DISCHARGED FROM ENGINE EQUIPMENT SHOULD BE PIPED TO A SAFE AREA TO MEET APPLICABLE CODES.
NOTE 2. ROTATIONS ARE VIEWED FROM FLYWHEEL END.

33. LUBE OIL COOLER ASSEMBLY OUTLET TO LUBE OIL FILTER. 2.00 RAISED FACE 150 LB. A.N.S.I. FLANGE.
34. PRESSURE REGULATING VALVE OUTLET ON LUBE OIL COOLER ASSEMBLY TO ENGINE OIL PAN. 1.50 RAISED FACE 150 LB. A.N.S.I. FLANGE.
35. AUXILIARY WATER INLET AT LUBE OIL COOLER ASSEMBLY,
2.50 FLAT FACE 125 LB. A.N.S.I. FLANGE.
36. AUXILIARY WATER OUTLET AT LUBE OIL COOLER ASSEMBLY TO THERMOSTATIC VALVE AND COOLING SYSTEM, 2.50 FLAT FACE 125 LB. A.N.S.I. FLANGE.
37. .69 X 1.25 [18 X 32] SLOT - 4 PLACES FOR LUBE OIL COOLER ASSEMBLY MOUNTING.
38. AUXILIARY WATER BYPASS CONNECTION FROM LUBE OIL COOLER,
2.00 FLAT FACE 125 LB A.N.S.I. FLANGE.
39. .750-14 N.P.T. AUXILIARY WATER CONNECTION FROM EXPANSION TANK.
40. CLEARANCE REQUIRED TO REMOVE LUBE OIL FILTER ELEMENT.
41. AUXILIARY WATER OUTLET TO LUBE OIL COOLER ASSEMBLY.
1.50 FLAT 150 LB. A.N.S.I. FLANGE.
42. LUBE OIL INLET FROM PRESSURE REGULATING VALVE ON LUBE OIL COOLER ASSEMBLY, 1.50 LAP JOINT 150 LB. A.N.S.I. FLANGE WITH STUB END.
43. LUBE OIL OUTLET TO LUBE OIL COOLER ASSEMBLY, 2.00 LAP JOINT 150 LB A.N.S.I. FLANGE WITH STUB END.
44. LUBE OIL COOLER ASSEMBLY INLET FROM ENGINE LUBE OIL PUMP.
2.00 RAISED FACE 150 LB. A.N.S.I. FLANGE.
54. ENGINE PRESSURE BLOCK, OIL AND INTAKE MANIFOLD PRESSURE .125-27 N.P.T. 6 PLACES (4 OIL, 2 AIR.)(SEE VIEW "B")
55. ENGINE IGNITION POWER JUNCTION BOX 24 VOLT DC.
56. ENGINE TEMPERATURE CONNECTION POINTS. THERMOCOUPLE TYPE K, AND CUSTOM CONTROLS JUNCTION BOX.
57. FRONT FACE OF CRANKCASE.
59. DSM FILTER SIGNAL INPUT. INCLUDES 11 FOOT LONG CABLE.
60. DSM FILTER SIGNAL OUTPUT, INCLUDES 15 FOOT LONG CABLE.
61. DSM FILTER POWER INPUT.
62. DSM SIGNAL INPUT. FROM CONNECTION 60.
63. DSM POWER INPUT.
64. DSM SIGNAL OUTPUT. INCLUDES 15 FOOT LONG CABLE.
65. .31-18 UNC-2A 4 PLACES, FOR MOUNTING DSM.
66. .31-18 UNC-2A 4 PLACES, FOR MOUNTING DSM FILTER.

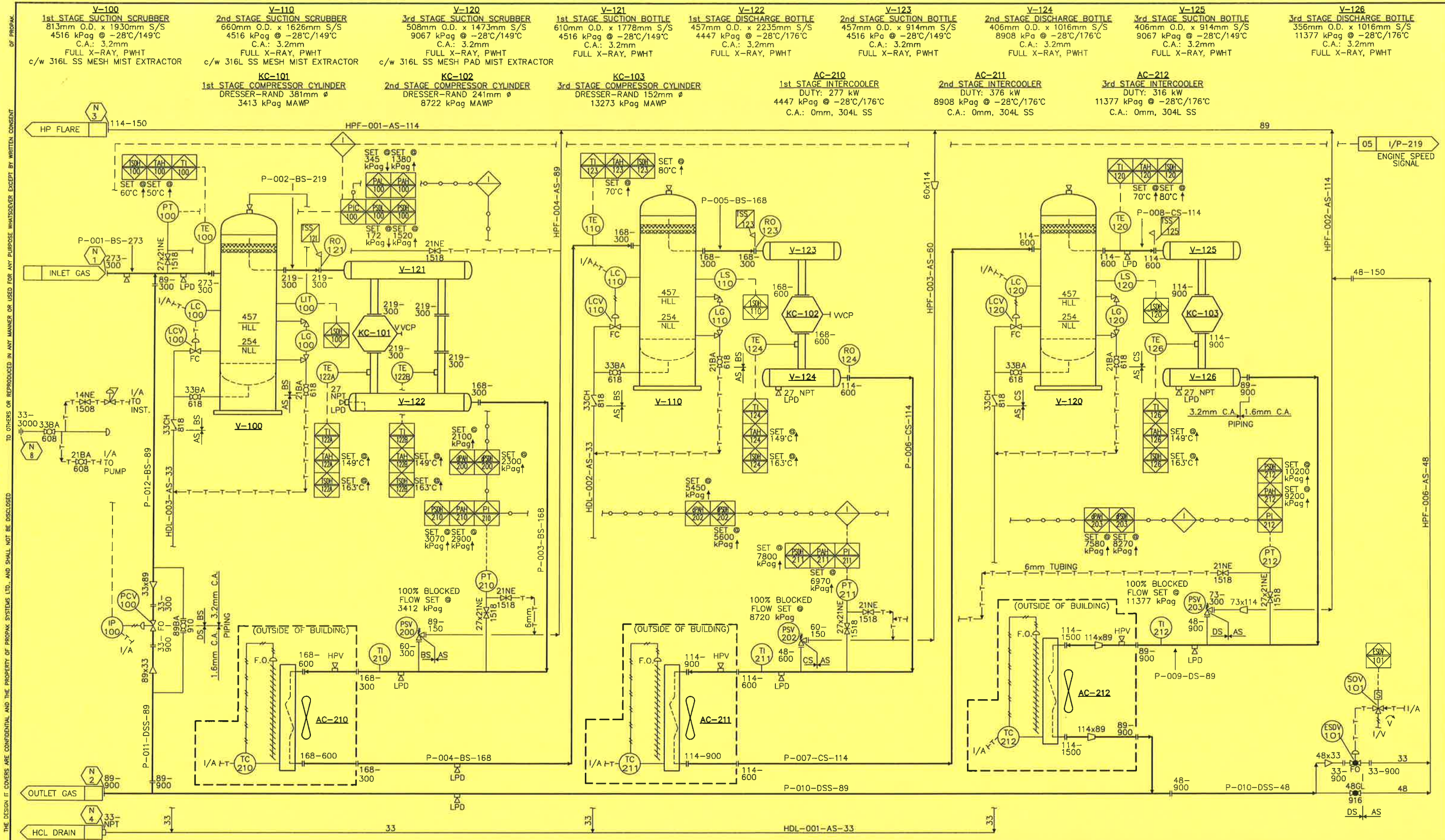
EQUIPMENT INDEX

- A. S.A.E NUMBER 00 FLYWHEEL HOUSING
- B. TIMING HOLE PAD
- C. ENGINE WATER DRAIN
- D. GOVERNOR, HYDRAULIC
- E. SAFETY GUARD
- F. LUBE OIL DIPSTICK (BOTH SIDES)
- G. LUBE OIL FILLER
- H. LUBE OIL STRAINER
- J. AIR/GAS MOTORIZED PRE-LUBE PUMP
- K. LUBE OIL FILTER ASSEMBLY (SHIPPED LOOSE)
- L. CRANKCASE BREATHER (2)
- M. AIR CLEANERS (2)
- P. MANUAL BARRING DEVICE
- Q. ENGINE LEVELING BOLTS (4) 1.00-8 UNC-2B THREAD
- R. 24.00 [610] LONG FLEXIBLE METAL HOSE (SHIPPED LOOSE)
- S. 24.00 [610] LONG FLEXIBLE METAL HOSE (SHIPPED LOOSE)
- T. GOVERNOR SPEED CONTROL HAND LEVER
- U. THROTTLE LEVER
- V. LUBE OIL COOLER ASSEMBLY (SHIPPED LOOSE)
- W. FLEXIBLE EXHAUST CONNECTION (SHIPPED LOOSE)
- X. 24.00 [610] LONG FLEXIBLE METAL HOSE (SHIPPED LOOSE)
- UU. PNEUMATIC CONTROL PANEL CONSISTING OF START, STOP, PRELUBE, AND SAFETY RESET.
- XX. CEC IGNITION MODULE
- BA. DETONATION SENSING MODULE (DSM) (SHIPPED LOOSE)
- CA. DSM FILTER (SHIPPED LOOSE)



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GENERAL NOTES DATE: 2000.10.25 1:25pm FILE NAME: J:\jobs99\DWG\99404\FLW\MFS-99404-100-03.dwg		GENERAL NOTES No. REVISION		<table border="1"> <tr> <th>BY</th> <th>DATE</th> <th>CKD</th> <th>ENG</th> </tr> <tr> <td>H. LE</td> <td>00/10/25</td> <td>HL</td> <td>HL</td> </tr> <tr> <td>H. LE</td> <td>00/09/21</td> <td>GW</td> <td>GW</td> </tr> <tr> <td>H. LE</td> <td>00/08/25</td> <td>CG</td> <td>CG</td> </tr> <tr> <td>H. LE</td> <td>00/06/06</td> <td>SW</td> <td>SW</td> </tr> <tr> <td>S.SULZ</td> <td>99/12/30</td> <td>PC</td> <td>PC</td> </tr> <tr> <td>J. LINA</td> <td>99/12/08</td> <td>DHS</td> <td>DHS</td> </tr> </table>				BY	DATE	CKD	ENG	H. LE	00/10/25	HL	HL	H. LE	00/09/21	GW	GW	H. LE	00/08/25	CG	CG	H. LE	00/06/06	SW	SW	S.SULZ	99/12/30	PC	PC	J. LINA	99/12/08	DHS	DHS	<table border="1"> <tr> <th colspan="2">APPROVED</th> <th colspan="2">DRAWN</th> </tr> <tr> <td>MECH./STRUCT.</td> <td>DATE</td> <td>BY</td> <td>DATE</td> </tr> <tr> <td></td> <td></td> <td>J. LINANTUD</td> <td>DEC. 08/99</td> </tr> <tr> <th colspan="2">ELECTRICAL</th> <th colspan="2">CHECKED</th> </tr> <tr> <td>DATE</td> <td>BY</td> <td>P. CRAWFORD</td> <td></td> </tr> <tr> <td>PROJECT</td> <td>P. CRAWFORD</td> <td>DATE</td> <td>DEC. 30/99</td> </tr> <tr> <td>DATE</td> <td>DEC. 30/99</td> <td>SCALE</td> <td></td> </tr> </table>		APPROVED		DRAWN		MECH./STRUCT.	DATE	BY	DATE			J. LINANTUD	DEC. 08/99	ELECTRICAL		CHECKED		DATE	BY	P. CRAWFORD		PROJECT	P. CRAWFORD	DATE	DEC. 30/99	DATE	DEC. 30/99	SCALE		APACHE CANADA LIMITED 1478 HP HAMBURG COMPRESSOR PACKAGE EQUIPMENT AND ENGINE CONNECTION INDEX MECHANICAL FLOWSHEET DWG. No.: D-MFS-99404-100 SHT. 3 OF 11 REV. 5		PROPAK 440 East Lake Road, Postal Bag #2 Airdrie, Alberta Canada T4B 2C3	
BY	DATE	CKD	ENG																																																																		
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PROJECT	P. CRAWFORD	DATE	DEC. 30/99																																																																		
DATE	DEC. 30/99	SCALE																																																																			



1. USE XXH NIPPLE ON NPT CONNECT FOR "DS", "CS" & "BS"
 2. USE SCH 160 NIPPLE ON NPT CONNECT FOR "AS"
 3. VENT ALL VENTING INSTS TO VENT HEADER.

GENERAL NOTES

DATE: 2000.10.25 1:26pm FILE NAME: J:\jobs99\DWG\99404\FLW\MFS-99404-100-04.dwg

No.	REVISION
5	AS BUILT - PER CLIENT REVISIONS
4	CLIENT REVISIONS
3	AS BUILT
2	RE-ISSUED FOR CONSTRUCTION
1	ISSUED FOR CONSTRUCTION
A	ISSUED FOR APPROVAL

BY	DATE	CHKD	ENG
H. LE	00/10/25	GW	GW
H. LE	00/09/21	CG	CG
H. LE	00/08/25	SW	SW
S. SULZ	99/12/30	PC	PC
J. LINANTUD	99/12/08	DHS	DHS

APPROVED	DRAWN
MECH./STRUCT.	BY J. LINANTUD
DATE	DATE DEC. 08/99
ELECTRICAL	CHECKED
DATE	BY P. CRAWFORD
PROJECT	DATE DEC. 30/99
DATE	SCALE

APACHE CANADA LIMITED
 1478 HP HAMBURG COMPRESSOR PACKAGE
 COMPRESSOR
 MECHANICAL FLOWSHEET

DWG. No.: D-MFS-99404-100 SHT. 4 OF 11 REV. 5

PROPAK
 440 East Lake Road,
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 Airdrie, Alberta
 Canada T4B 2C3

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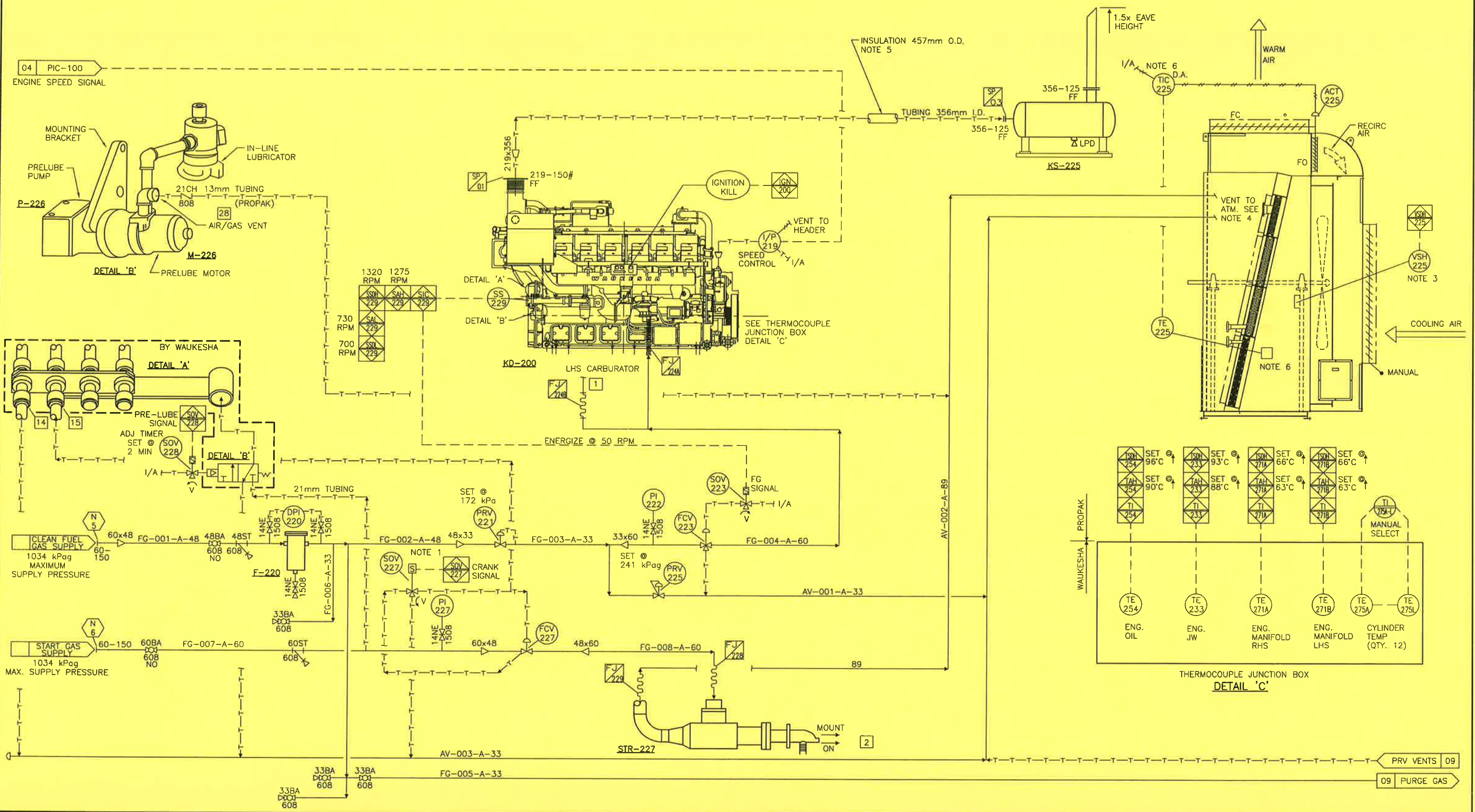
F-220
FUEL GAS FILTER
HEAD LINE 385-AP-70C-1-1/2"
1724 kPag @ 93°C
c/w 70-C FILTER ELEMENT

P-226/M-226
ENGINE PRELUBE PUMP
GAS DRIVEN MOTOR
c/w ENGINE

KD-200
COMPRESSOR DRIVER
WAUKESHA 7042GL
1478 BHP @ 1200 RPM
54°C INTERCOOLER INLET TEMPERATURE

STR-227
ENGINE STARTER
TDI TURBO TWIN
M/N T112B PIN T112-60001-BIR
30.875 sm³/min @ 827 kPag

KS-225
COMPRESSOR SILENCER
MODEL: JAT-14-S012
CRITICAL GRADE SILENCER
356mm-125# IN/OUT



- | | |
|--|-----------------------------------|
| 1. HIGH PRESSURE SOV. AT 45° AS SHOWN AT APPROXIMATELY THE SAME ELEVATION. | 5. AS BUILT- PER CLIENT REVISIONS |
| 2. ENGINE CONNECTION INDEX SEE 99404-100-03 | 4. CLIENT REVISIONS |
| 3. LOCATE VSH CLOSE TO FAN SHAFT ON BEARING SUPPORT. | 3. AS BUILT |
| 4. VENTS TO ATM. INSIDE COOLER PLENUM TO TERMINATE HORIZONTALLY WITH PIPE ENDS CUT | 2. RE-ISSUED FOR CONSTRUCTION |
| | 1. ISSUED FOR CONSTRUCTION |
| | A. ISSUED FOR APPROVAL |

No.	REVISION	BY	DATE	CKD	ENG
5	AS BUILT- PER CLIENT REVISIONS	H. LE	00/10/25	DW	bw
4	CLIENT REVISIONS	H. LE	00/09/21	GW	GW
3	AS BUILT	H. LE	00/08/23	CG	CG
2	RE-ISSUED FOR CONSTRUCTION	H. LE	00/06/06	SW	SW
1	ISSUED FOR CONSTRUCTION	S.SULZ	99/12/30	PC	PC
A	ISSUED FOR APPROVAL	J. LINA	99/12/08	DHS	DHS

APPROVED		DRAWN	
MECH./STRUCT.	BY	J. LINANTUD	
DATE	DATE	DEC. 08/99	
ELECTRICAL	BY	P. CRAWFORD	
DATE	DATE	DEC. 30/99	
PROJECT	P. CRAWFORD		
DATE	DEC. 30/99		
SCALE			

APACHE CANADA LIMITED
1478 HP HAMBURG COMPRESSOR PACKAGE
ENGINE FUEL START GAS
MECHANICAL FLOWSHEET

PROPAK
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Postal Bag #2
Airdrie, Alberta
Canada T4B 2C3

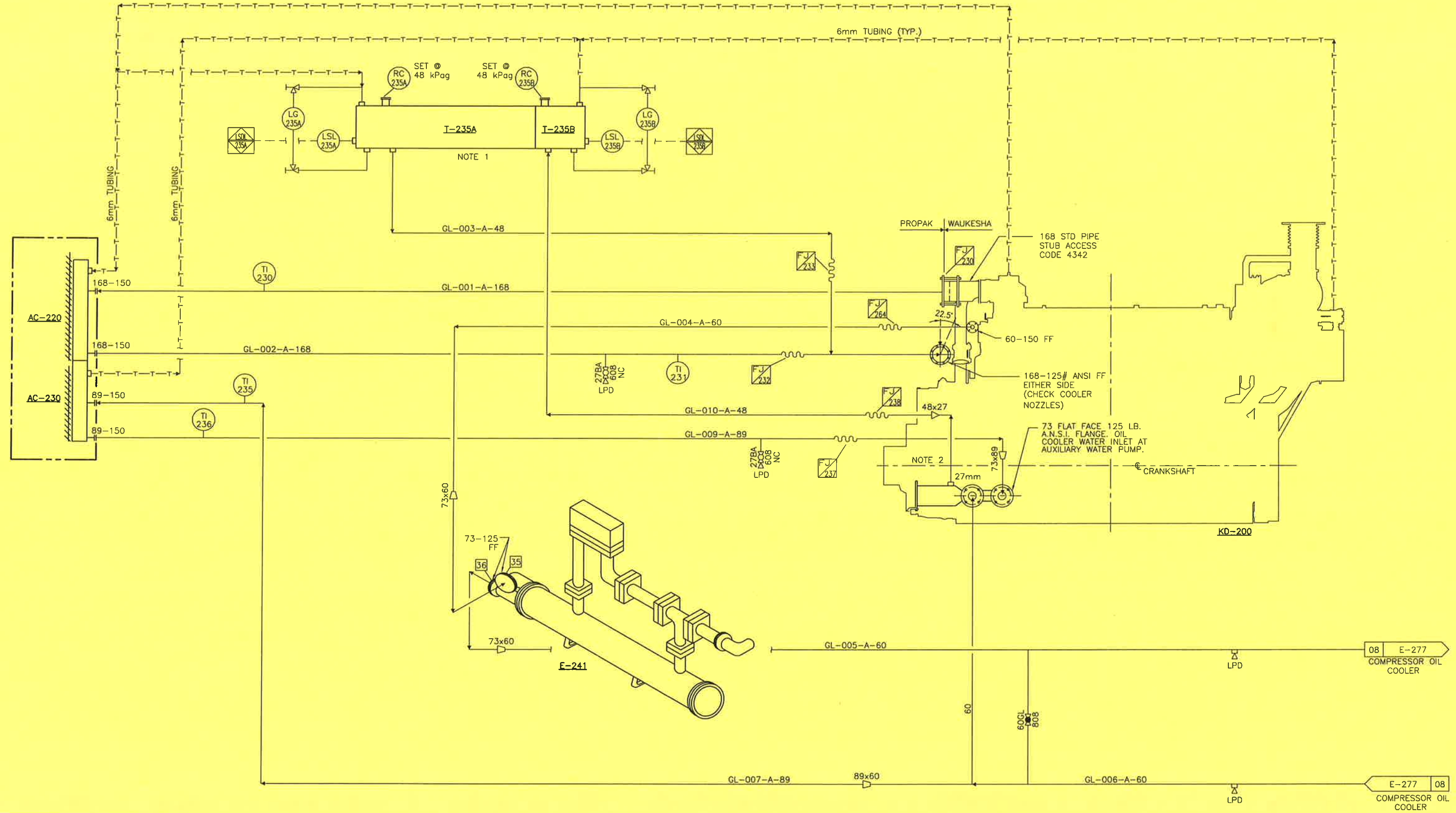
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AC-220
 ENGINE JW COOLER
 96.5 kPag MAWP
 DUTY: 4.01mm BTU/hr (117.4 kW/hr)
 0mm C.A.

AC-230
 ENGINE AW COOLER
 96.5 kPag MAWP
 DUTY: 0.775mm BTU/hr (22.7 kW/hr)
 0mm C.A.

T-235A/T-235B
 ENGINE JW/AW SURGE TANK
 160/74 L CAPACITY
 96.5 kPag MAWP

E-241
 ENGINE OIL COOLER
 c/w ENGINE



1. MOUNT T-235A/T-235B ON TOP OF COOLER, AS CLOSE AS POSSIBLE TO EDGE.
2. SHOP DISCRETION TO RUN 19mm TUBING INTO GL-010-A-48

No.	REVISION	BY	DATE	CKD	ENG
5	AS BUILT- PER CLIENT REVISIONS	H. LE	00/10/25	<i>DW</i>	<i>AW</i>
4	CLIENT REVISIONS	H. LE	00/09/21	GW	GW
3	AS BUILT	H. LE	00/08/25	CG	CG
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DATE	DATE	DEC. 08/99	
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DATE	BY	P. CRAWFORD	
PROJECT	DATE	DEC. 30/99	
DATE	SCALE		

APACHE CANADA LIMITED
 1478 HP HAMBURG COMPRESSOR PACKAGE
 GLYCOL COOLING SYSTEM
 MECHANICAL FLOWSHEET
 DWG. No.: D-MFS-99404-100 SHT. 6 OF 11 REV. 5

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F-253
ENGINE OIL FILTER
c/w ENGINE
SHIPLOOSE

F-241
ENGINE OIL COOLER
c/w ENGINE
SHIPLOOSE

KD-200
COMPRESSOR DRIVER
WAUKESHA L7042GL
1478 HP @ 1200 RPM

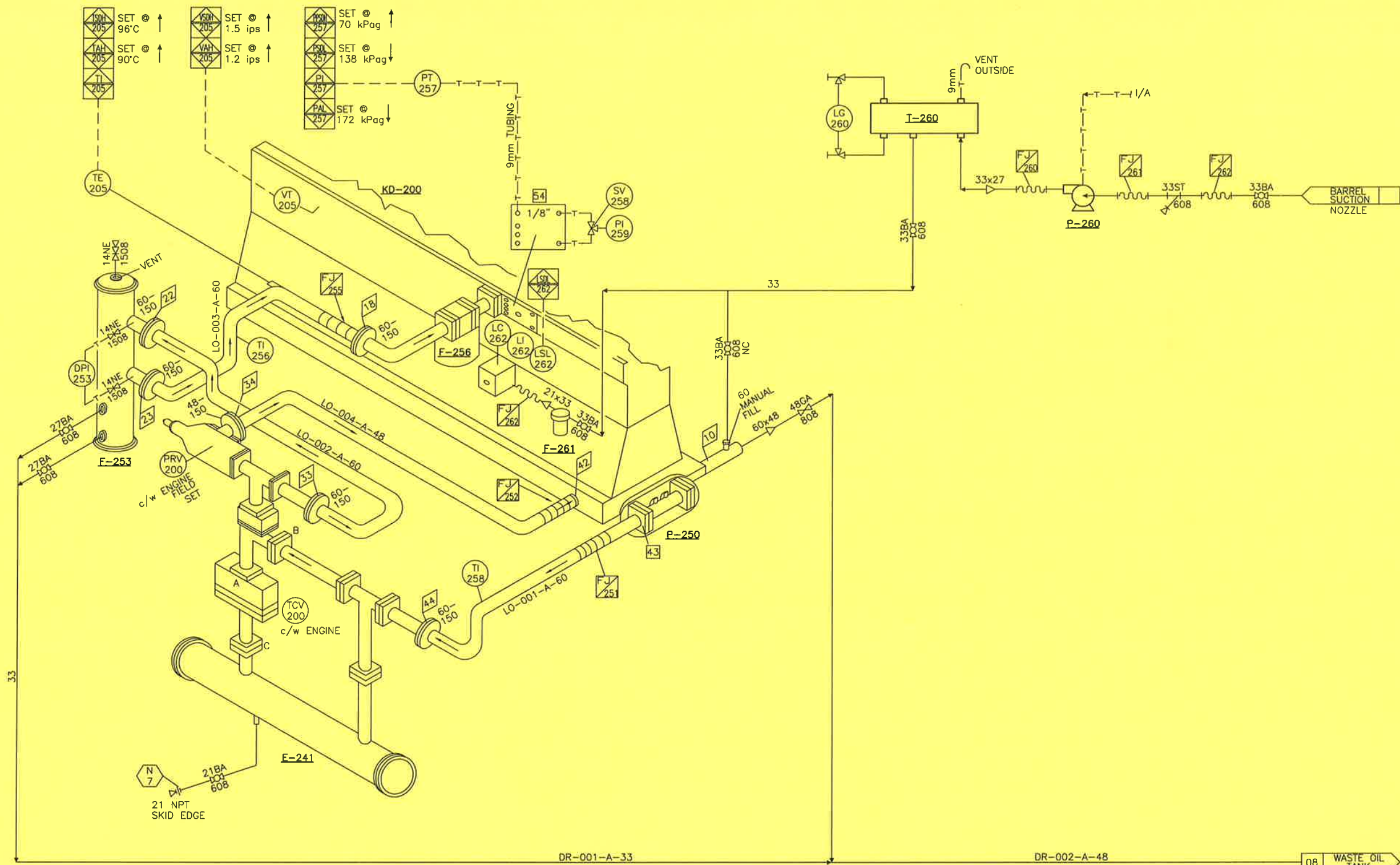
F-256
ENGINE OIL STRAINER
c/w MAGNETIC FILTER ELEMENT
(SEE NOTE 1)

F-261
OIL SUPPLY FILTER
BALDWIN BF914 HOUSING
c/w BALDWIN BF915 FILTER ELEMENT

P-250
ENGINE OIL PUMP
c/w ENGINE

T-260
ENGINE LUBE OIL SUPPLY
TANK INTEGRAL w/ CRANE
STRUCTURE (425L) (RHS)
ATM DESIGN

P-260
PNEUMATIC DIAPHRAGM PUMP
WILDEN T2 M/N: AAAB/BN/BN/ABN
75 L/MIN



1. INSTALL PAPER ELEMENT IN F-256 RUN PRE LUBE PUMP FOR OIL FLUSH PROCEDURE. REPLACE PAPER ELEMENT PRIOR TO FIELD START-UP.
2. ENGINE CONNECTION INDEX SEE MFS-98147-100-P. 10.

GENERAL NOTES

- 5 AS BUILT- PER CLIENT REVISIONS
- 4 CLIENT REVISIONS
- 3 AS BUILT
- 2 RE-ISSUED FOR CONSTRUCTION
- 1 ISSUED FOR CONSTRUCTION
- A ISSUED FOR APPROVAL

GENERAL NOTES

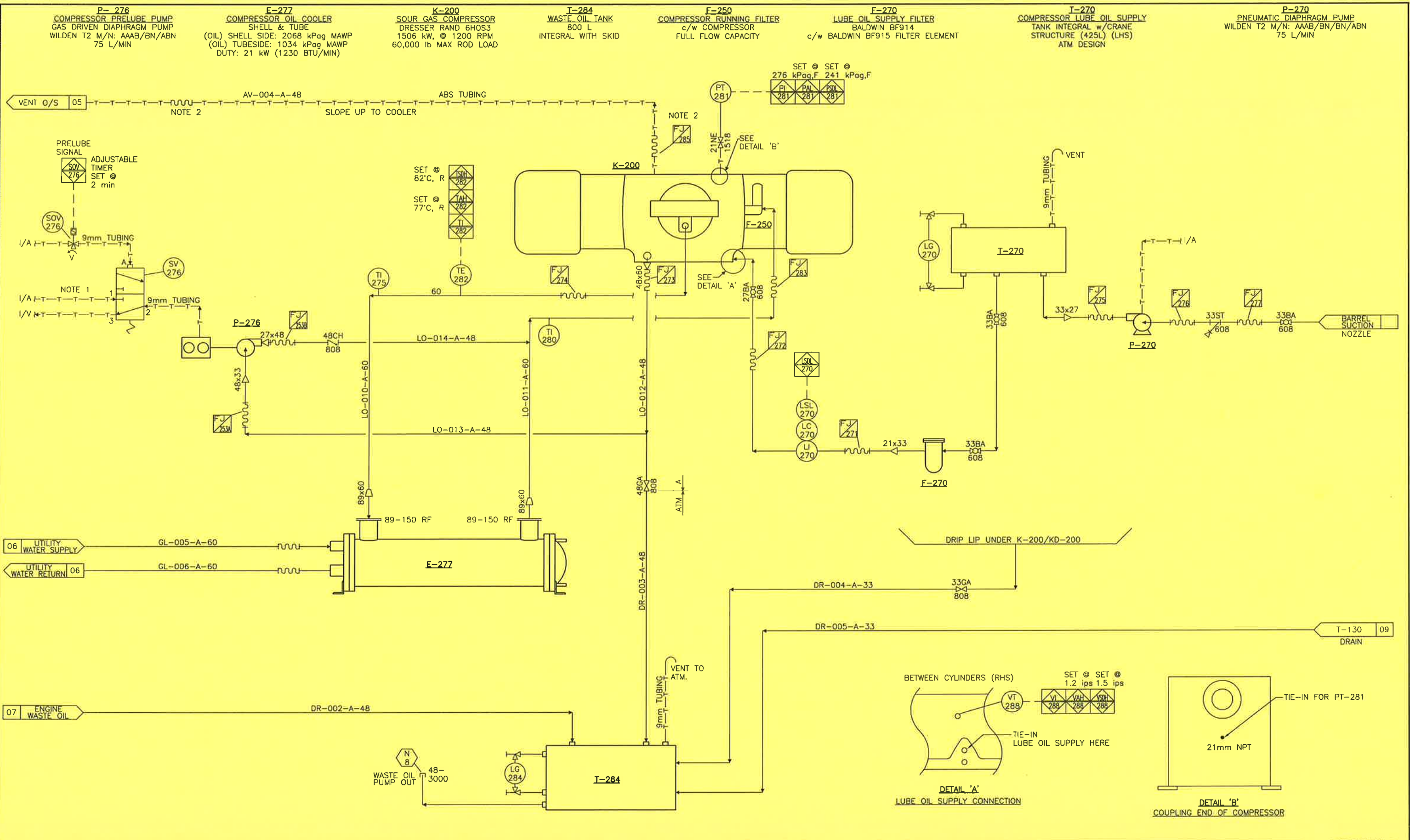
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4	CLIENT REVISIONS	H. LE	00/09/21	GW	GW
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2	RE-ISSUED FOR CONSTRUCTION	H. LE	00/06/06	SW	SW
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MECH./STRUCT.	BY	J. LINANTUD	DATE
DATE	DATE	DEC. 08/99	
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DATE	BY	P. CRAWFORD	DATE
PROJECT	DATE	DEC. 30/99	
DATE	SCALE		

APACHE CANADA LIMITED
1478 HP HAMBURG COMPRESSOR PACKAGE
ENGINE UTILITIES
MECHANICAL FLOWSHEET

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1. NO REGULATOR ON THIS I/S.
2. SHOP FIT, RUBBER HOISING

No.	REVISION
5	AS BUILT- PER CLIENT REVISIONS
4	CLIENT REVISIONS
3	AS BUILT
2	RE-ISSUED FOR CONSTRUCTION
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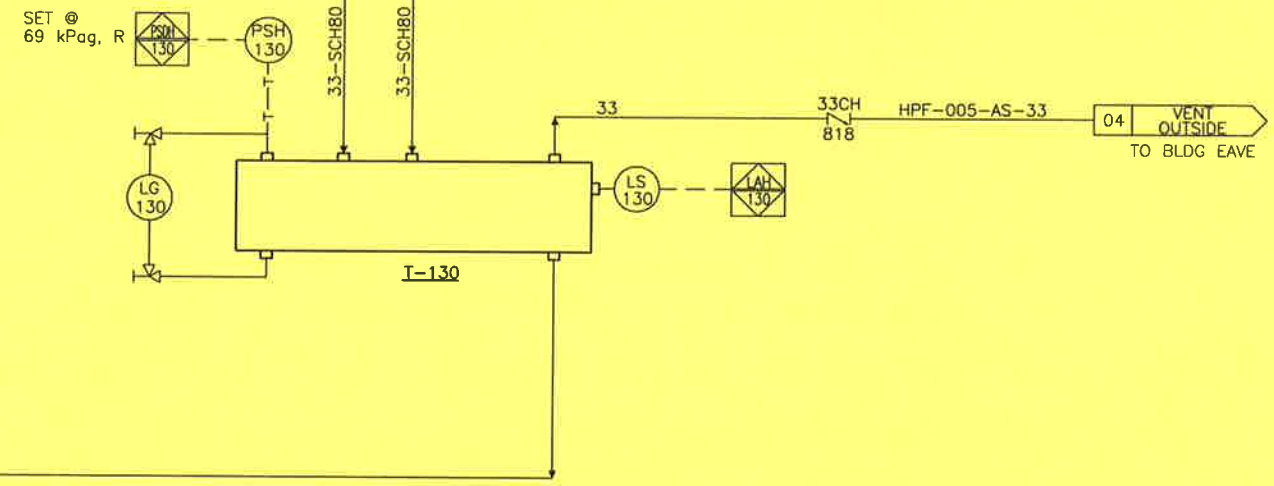
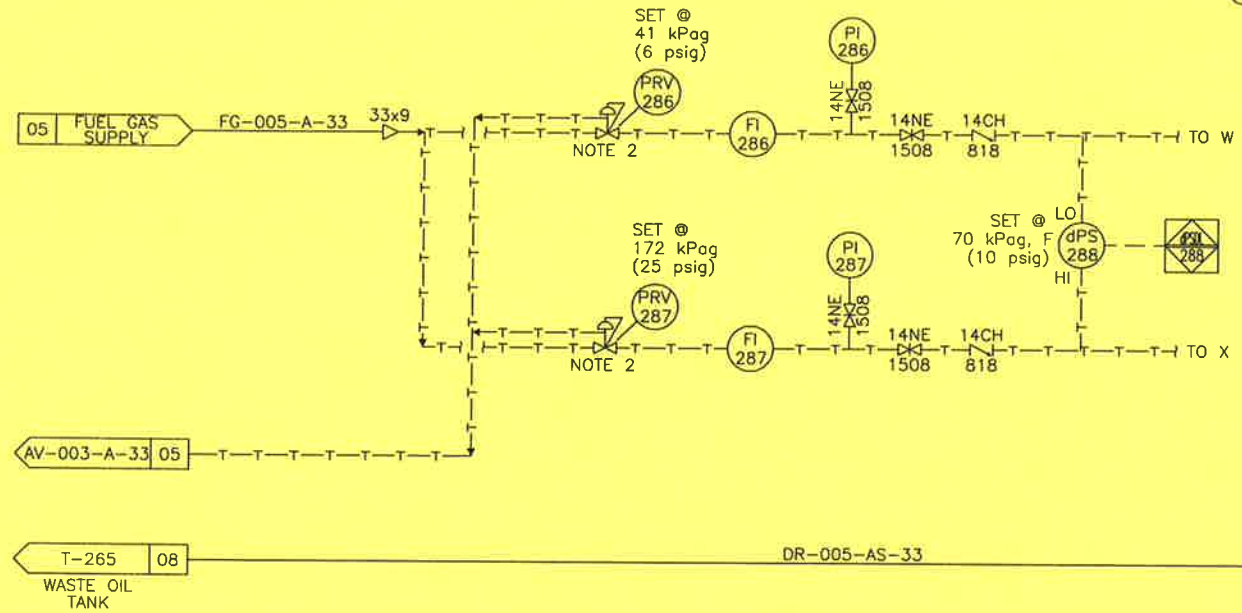
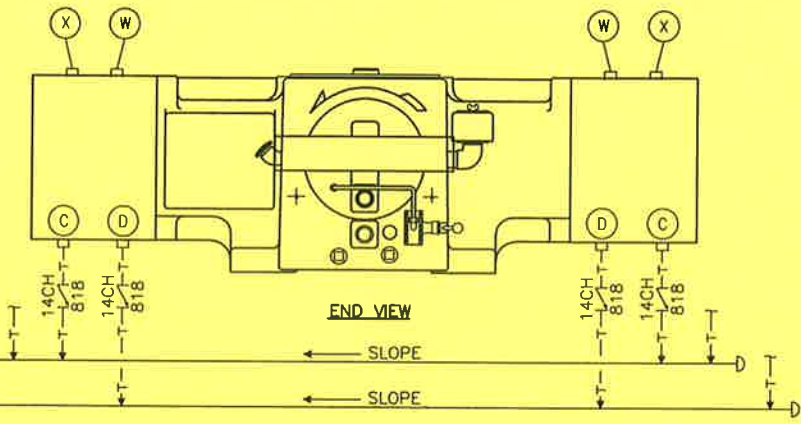
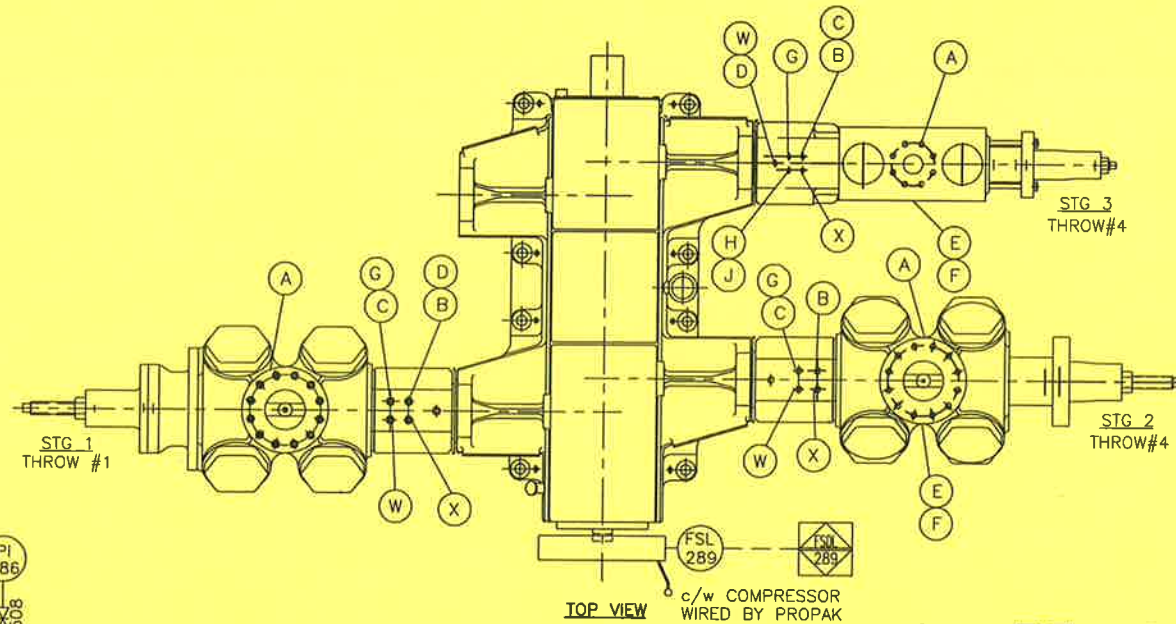
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MECH/STRUCT.		J. LINA	
ELECTRICAL		P. CRAWFORD	
PROJECT	P. CRAWFORD	DATE	DEC. 30/99
DATE	DEC. 30/99	SCALE	

DRAWN	DATE	CHECKED	DATE
J. LINA	DEC. 08/99	P. CRAWFORD	DEC. 30/99

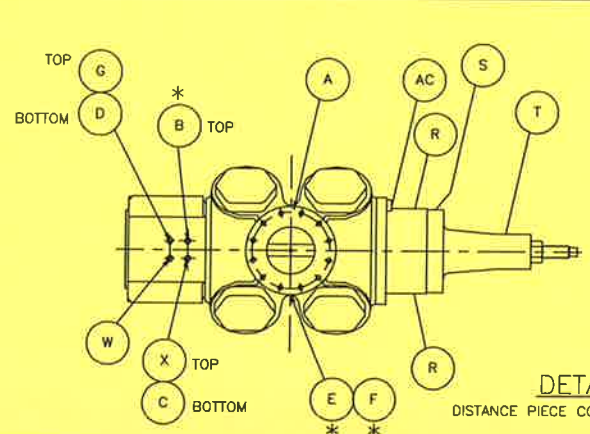
APACHE CANADA LIMITED
 1478 HP HAMBURG COMPRESSOR PACKAGE
 SOUR GAS COMPRESSOR-COMPRESSOR FRAME OIL & GLYCOL
 MECHANICAL FLOWSHEET
 DWG. No.: D-MFS-99404-100 SHT. 8 OF 11 REV. 5

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 440 East Lake Road,
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 Canada T4B 2C3

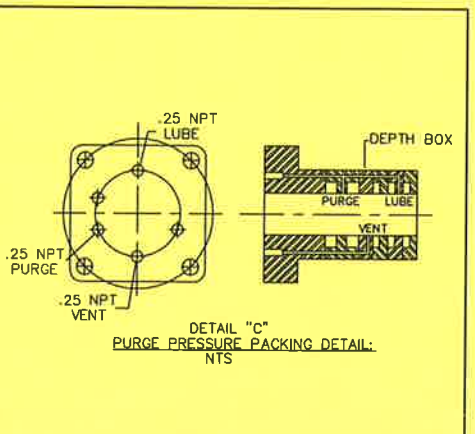
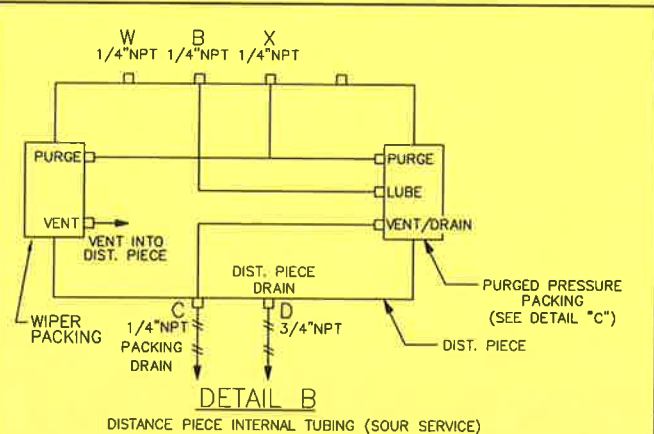
T-130
PACKING VENT & DRAIN SEAL POT
273mm O.D. x 813mm S/S
101 kPag DESIGN



DISTANCE PIECE EVACUATION SYSTEM



- A) FLANGE CONN-INLET TOP & DISCHARGE BOTTOM.
 - * B) 1/4" NPT PACKING LUBE CONN.-TOP.
 - C) 1/4" NPT PACKING VENT/DRAIN CONN.-BOTTOM.
 - D) 3/4" NPT DISTANCE PIECE DRAIN CONN.-BOTTOM.
 - * E) 1/4" NPT CYL BORE LUBE CONN.-TOP.
 - * F) 1/4" NPT CYL BORE LUBE CONN.-BOTTOM.
 - G) 3/4" NPT YOKE VENT CONN.-TOP.
 - R) 1/8" NPT WVCP HEAD VENT TO NON-HAZARDOUS AREA-TOP OR BOTTOM.
 - S) 1/8" NPT WVCP ROD PKG. VENT TO NON-HAZARDOUS AREA -TOP OR BOTTOM.
 - T) 1/8" NPT GREASE FITTING.
 - W) 1/4" NPT DISTANCE PIECE PURGE-TOP.
 - X) 1/4" NPT PACKING PURGE CONN.-TOP.
- NOTE: PROPAC COMP. SERVICEMAN TO DOUBLE CHECK LOCATIONS OF (A-X) PRIOR TO HOOK-UP.
* BY DRESSER-RAND



1. CHECK VALVES TO BE ADDED TO 'C' AND 'D' CYLINDER CONNECTION POINTS AS CLOSE TO DISTANCE PIECE AS POSSIBLE ON EACH CYLINDER.

2. INTERNAL TUBING TO BE INSPECTED BY PROPAC SERVICE, PRIOR TO HOOKING UP.

GENERAL NOTES

5 AS BUILT- PER CLIENT REVISIONS

4 CLIENT REVISIONS

3 AS BUILT

2 RE-ISSUED FOR CONSTRUCTION

1 ISSUED FOR CONSTRUCTION

A ISSUED FOR APPROVAL

No.	REVISION	BY	DATE	CRD	ENG
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1	ISSUED FOR CONSTRUCTION	S. SULZ	99/12/30	PC	PC
A	ISSUED FOR APPROVAL	J. LINA	99/12/08	DHS	DHS

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PROJECT	P. CRAWFORD	DATE DEC. 30/99	
DATE DEC. 30/99		SCALE	

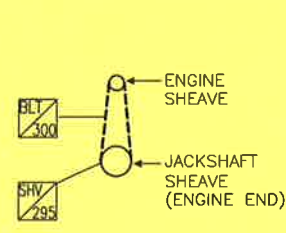
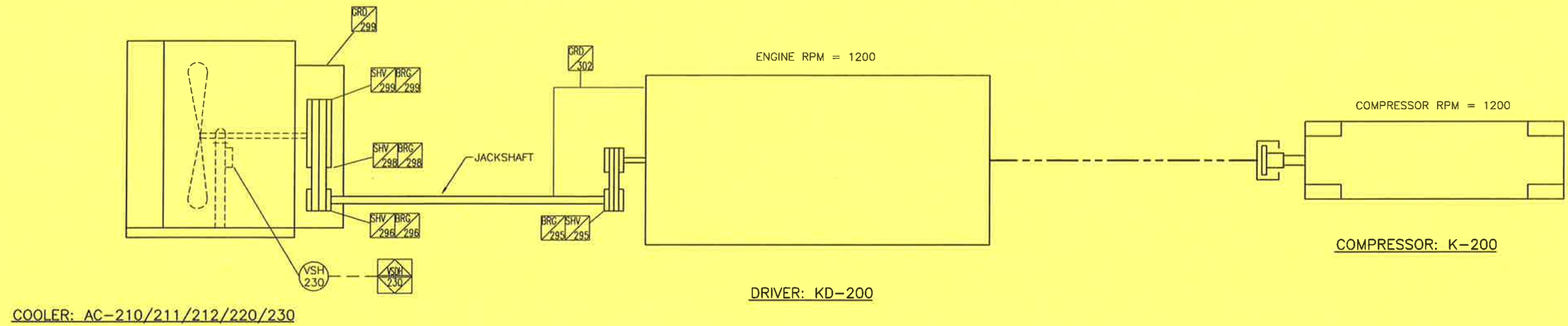
APACHE CANADA LIMITED

1478 HP HAMBURG COMPRESSOR PACKAGE
CYLINDER & PACKING LUBRICATION
MECHANICAL FLOWSHEET

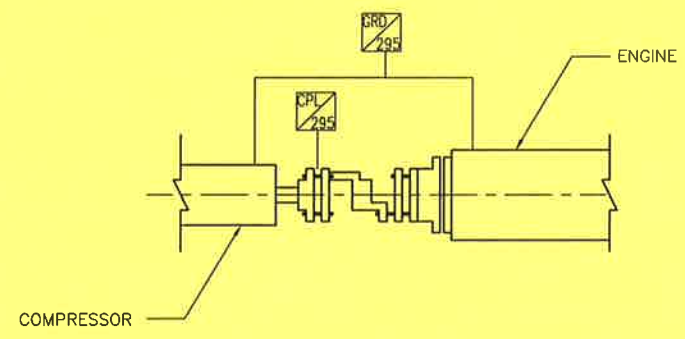
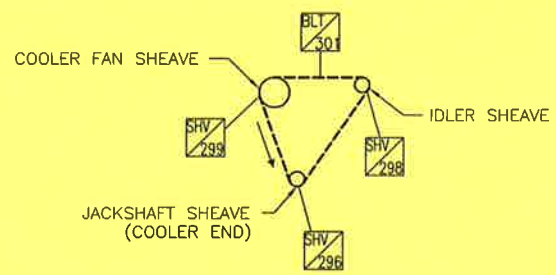
PROPAC

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Postal Bag #2
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Canada T4B 2C3

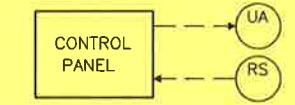
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FAN DRIVE SHEAVES



ENGINE & COMPRESSOR COUPLING



CONTROL PANEL

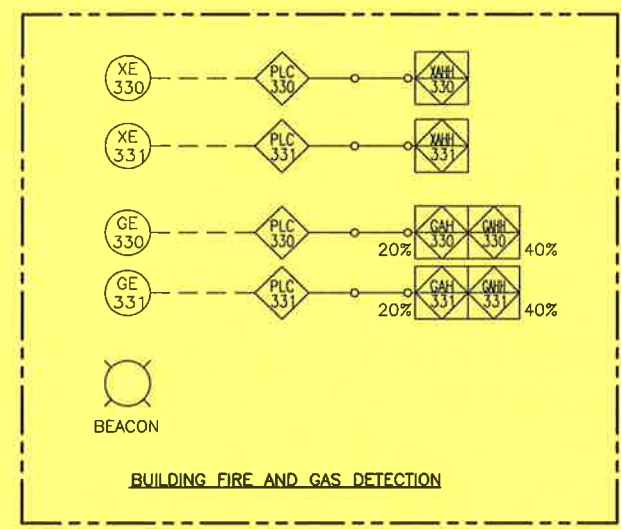
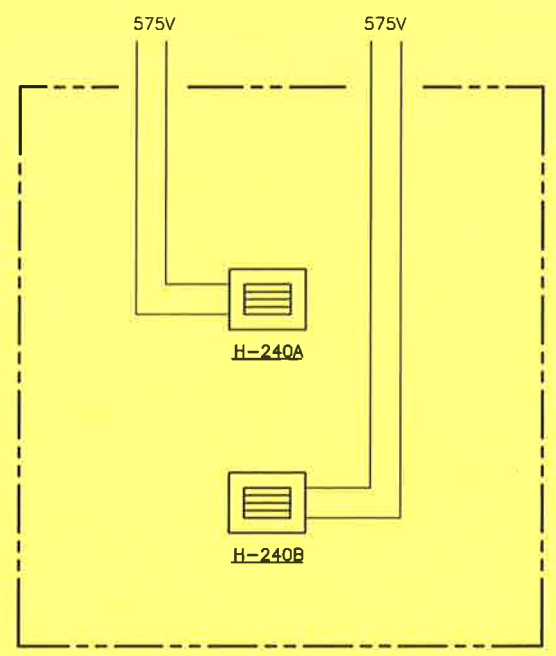
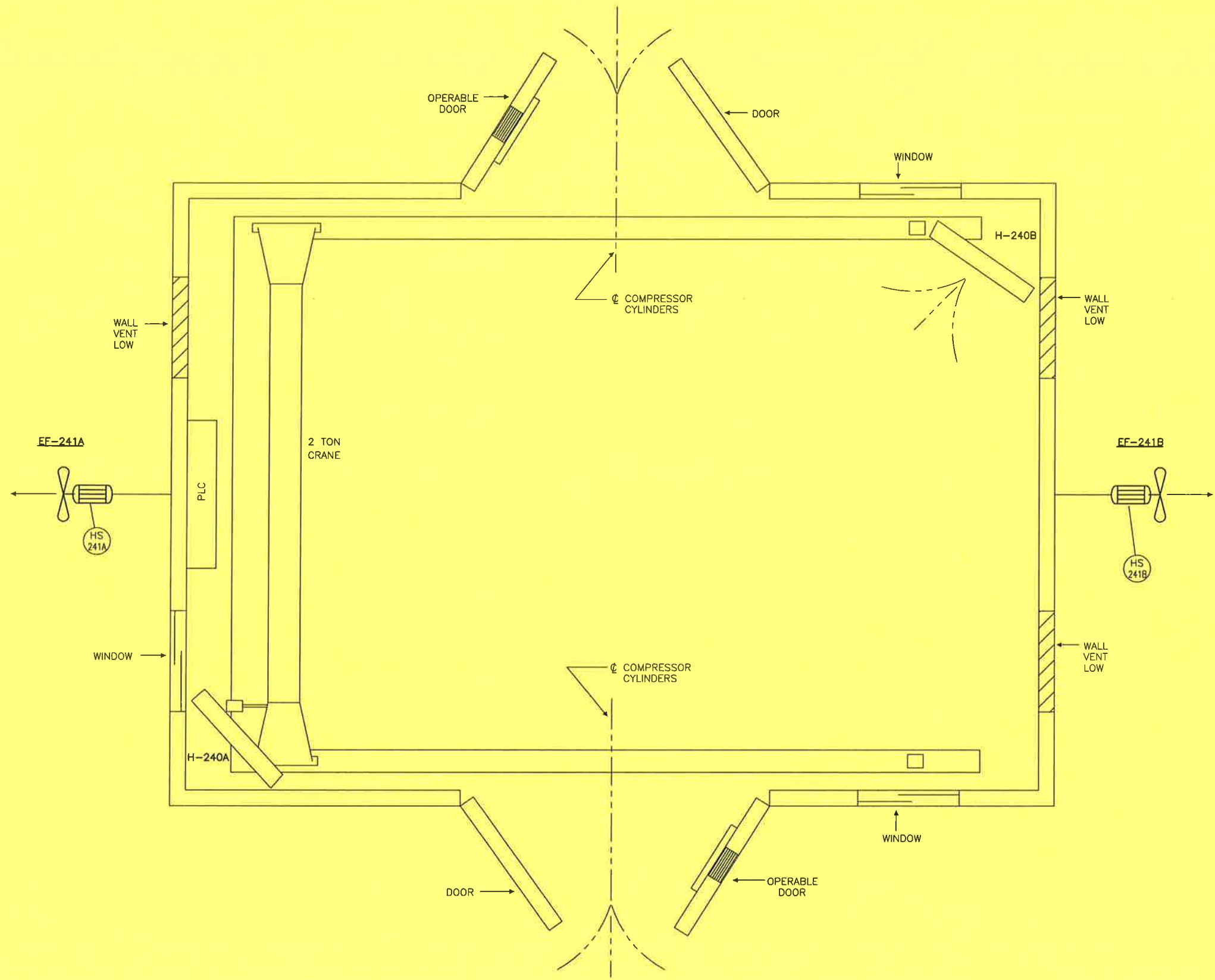
GENERAL NOTES		GENERAL NOTES		NO.	REVISION	BY	DATE	CKD	ENG	APPROVED	DRAWN	APACHE CANADA LIMITED	
				5	AS BUILT- PER CLIENT REVISIONS	H. LE	00/10/25	HL	HL	MECH./STRUCT.	BY J. LINANTUD	440 East Lake Road,	
				4	CLIENT REVISIONS	H. LE	00/09/21	GW	GW	DATE	DATE DEC. 10/99	Postal Bag #2	
				3	AS BUILT	H. LE	00/08/25	CG	CG	ELECTRICAL	CHECKED	Airdrie, Alberta	
				2	RE-ISSUED FOR CONSTRUCTION	H. LE	00/06/06	SW	SW	DATE	BY P. CRAWFORD	Canada T4B 2C3	
				1	ISSUED FOR CONSTRUCTION	J. LINA	99/12/30	PC	PC	PROJECT	DATE DEC. 30/99		
				A	ISSUED FOR APPROVAL	J. LINA	99/12/10	DHS	DHS	DATE	SCALE	DWG. No.1	D-MFS-99404-100
DATE: 2000.10.25 1:33pm FILE NAME: J:\jobs99\DWG\99404\FLW\MFS-99404-100-10.dwg												SHT. 10 OF 11	REV. 5

PROPAK
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 Airdrie, Alberta
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 THIS DRAWING AND

EF-241A/B
 EXHAUST FAN
 M/N: ET-12-2
 XP: 120/1/60

H-240A/B
 BUILDING HEATERS
 RUFFNECK XL 416-575360-15 kW



GENERAL NOTES		GENERAL NOTES	
5	AS BUILT - PER CLIENT REVISIONS	H. LE	00/10/25
4	CLIENT REVISIONS	H. LE	00/09/21
3	AS BUILT	H. LE	00/08/25
2	RE-ISSUED FOR CONSTRUCTION	H. LE	00/06/06
1	ISSUED FOR CONSTRUCTION	J. LINA	99/12/30
A	ISSUED FOR APPROVAL	J. LINA	99/12/10

No.	REVISION	BY	DATE	CKD	ENG
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APACHE CANADA LIMITED	
1478 HP HAMBURG COMPRESSOR PACKAGE	
BUILDING UTILITIES	
MECHANICAL FLOWSHEET	
DWG. No.:	D-MFS-99404-100
SHT.	11 OF 11
REV.	5

PROPAK
 440 East Lake Road,
 Postal Bag #2
 Airdrie, Alberta
 Canada T4B 2C3

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PIPING SYMBOLS

	LOCALLY MOUNTED		VENTURI TUBE		INDICATES FLANGED VALVE (TYPICAL FOR ALL TYPES)		PRESSURE SAFETY VALVE		RUPTURE DISC FOR PRESSURE RELIEF RUPTURE DISC FOR VACUUM RELIEF
	TWO INSTRUMENTS IN THE SAME HOUSING		DIAPHRAGM, SPRING OPPOSED		INDICATES BUTT-WELDED, SCREWED OR SOCKET-WELDED VALVE (TYPICAL FOR ALL TYPES)		PRESSURE REDUCING REGULATOR OR FORWARD PRESSURE REGULATOR		TURBINE METER
	PANEL MOUNTED IN CONTROL ROOM		CYLINDER, PISTON OPERATED		CH = CHECK VALVE		DIFFERENTIAL PRESSURE REGULATOR		POSITIVE DISPLACEMENT METER
	BEHIND PANEL MOUNTED IN CONTROL ROOM		DIAPHRAGM WITH POSITIONER		GA = GATE VALVE				ANNUBAR OR PITOT TUBE
	INSTRUMENT MOUNTED ON LOCAL PANEL		MANUAL HANDWHEEL OVERRIDE		GL = GLOBE VALVE				CALIBRATED METER RUN WITH QUICK CHANGE FITTING
	BEHIND PANEL MOUNTED ON LOCAL PANEL		TO DRAIN SYSTEM (E.G. SHOWN: CLOSED HYDROCARBON DRAIN)		PL = PLUG VALVE				FLOW ELEMENT (ORIFICE) c/w PLATE
	LOCAL DISPLAY (DATALINER) OR ANNUNCIATOR		OPEN DRAIN		NE = NEEDLE VALVE				RESTRICTION ORIFICE c/w PLATE
	HIGH/LOW LEVEL ALARMS		VENT TO ATMOSPHERE		BU = BUTTERFLY VALVE				FLOW QUANTITY INDICATOR
	PUSH BUTTON		VENT TO ATMOSPHERE c/w HYDRAULIC SEAL		ST = "Y" TYPE LINE STRAINER				FLOW SIGHT GLASS MONITOR
	HAND SWITCH		HOT INSULATION (E.G. SHOWN: 25mm THICK)		ST = "T" TYPE LINE STRAINER				FLOW INDICATOR (ROTOMETER TYPE)
	STATUS LIGHT		COLD INSULATION (E.G. SHOWN: 25mm THICK)		SOLENOID 2-WAY VALVE				
	LOCAL RESET		ELECTRICAL (ET), HOT GLYCOL (GT), STEAM (ST) HEAT TRACING		SOLENOID 3-WAY VALVE				
	INTERLOCK (E.G. SHOWN: INTERLOCK #100A)		HOT INSULATION (E.G. SHOWN: 25mm THICK HOT INSULATION WITH ELECTRIC HEAT TRACING)		SOLENOID 4-WAY VALVE				
	DISTRIBUTED CONTROL SYSTEM		EXPANSION JOINT		THREE WAY VALVE				
	PROGRAMMABLE LOGIC CONTROL SYSTEM		FLEXIBLE HOSE		FOUR WAY VALVE				
	DISTRIBUTED CONTROL SYSTEM (DCS) PANEL (E.G. SHOWN: DCS CONTROL PANEL #100)		TIE-IN POINT		STOP CHECK ANGLE VALVE OR CHOKE				
	PROGRAMMABLE LOGIC CONTROL (PLC) PANEL (E.G. SHOWN: PLC CONTROL PANEL #900)		STRAIGHTENING VANES		VALVE c/w BLEED				
	MOTOR CONTROL CENTRE (MCC)		CURRENT/PRESSURE TRANSDUCER		PULSATION DAMPER				
	LOW SELECT		SPECIALTY ITEM						
	CONICAL STRAINER OR TEMPORARY SUCTION STRAINER		CONCENTRIC REDUCER/INCREASER						
	SPADE/SUJP BLIND		ECCENTRIC REDUCER/INCREASER						
	SPECTACLE BLIND NORMALLY CLOSED		SWAGE						
	SPECTACLE BLIND NORMALLY OPEN								

	A	AH	AHL	AL	C	CV	DR	DV	E	FIC	G	GM	I	IC	IS	IT	K	L	PH	Q	R	RC	RR	S	SC	SD	SDH	SDL	SE	SH	SL	SLL	SM	SO	SV	T	V	W	Y
A ANALYSIS		AAH	AHL	AAL	AC	ACV	ADR		AE				AI	AIC		AIT					AR	ARC	ARR	AS			ASDH	ASDL		ASH	ASL		ASM			AT		AY	
BJ BURNER FAILURE	BJA																						BS			BJSD													
C CONDUCTIVITY		CAH	CHL	CAL	CC	CCV	CDR		CE				CI	CIC	CIS	CIT		CL			CR	CRC	CRR	CS			CSDH	CSDL		CSH	CSL		CSM			CT		CY	
D DENSITY		DAH	DAHL	DAL	DC	DCV	DDR		DE		DG		DI	DIC	DIS	DIT	DK	DL			DR	DRC	DRR	DS			DSDH	DSDL	DSE	DSH	DSL		DSM			DT		DY	
dP DIFFERENTIAL PRESSURE	dPA	dPAH	dPAHL	dPAL	dPC	dPCV	dPR						dPI	dPIC	dPIS	dPIT		dPL			dPRC		dPS			dPSD	dPSDH	dPSDL	dPSE	dPSH	dPSL				dPT		dPY		
E EMERGENCY																																				ESDV		EY	
F FLOW		FAH	FAHL	FAL	FC	FCV	FDR		FE	FFIC	FG		FI	FIC	FIS	FIT	FK	FL		FQ	FR	FRC	FRR	FS			FSDH	FSDL		FSH	FSL		FSM	FSV	FT		FY		
G GAS DETECTION		GAH			HC	HCV			GE																												HV	HY	
H HAND (MANUAL)														HRC										HS															
J POWER															JIC																					JT		JY	
K TIME	KA				KC	KCV	KDR													KQ				KS											KT	KV		KY	
L LEVEL		LAH	LAHL	LAL	LC	LCV	LDR		LE		LG	LGM	LI	LIC	LIS	LIT		LL			LR	LRC	LRR	LS		LSD	LSDH	LSDL		LSH	LSL	LSLL	LSM			LT		LY	
M MOISTURE		MAH	MAHL	MAL	MC	MCV	MDR		ME				MI	MIC	MIS	MIT		ML			MR	MRC	MRR	MS			MSDH	MSDL		MSH	MSL		MSM			MT		MY	
P PRESSURE		PAH	PAHL	PAL	PC	PCV	PDR		PE				PI	PIC	PIS	PIT	PK	PL	PPH		PR	PRC	PRR	PS			PSDH	PSDL	PSE	PSH	PSL		PSM		PSV	PT		PY	
R REMOTE																																				RSDV		RY	
S SPEED		SAH	SAHL	SAL	SC	SCV	SDR		SE				SI	SIC	SIS	SIT	SK	SL			SR	SRC	SRR	SS			SSDH	SSDL		SSH	SSL		SSM			ST		SY	
T TEMPERATURE		TAH	TAHL	TAL	TC	TCV	TDR		TE				TI	TIC	TIS	TIT	TK	TL			TR	TRC	TRR	TS			TSDH	TSDL	TSE	TSH	TSL		TSM		TT		TW	TY	
U UNIT	UA							UDV										UL								USD													
V VIBRATION		VAH			VC				VE				VI								VR		VS				VSDH			VSH					VT				
VI VISCOSITY		VIAH	VIAHL	VIAL	VIC	VICV	VIDR		VIE				VII	VIIC	VIIS	VIIT		VIL			VIR	VIRC	VIRR	VIS			VISD			VISH	VISL		VISM		VIT		VIV		
X FIRE DETECTION	XA								XE																														
Z LIMIT OR POSITION	ZAH	ZAHL	ZAL						ZE						ZIS	ZIT		ZL									XSD			XSH									

GENERAL NOTES		GENERAL NOTES		REVISION		APPROVED		DRAWN		LEGEND		MECHANICAL FLOWSHEET	
4 CLIENT REVISIONS		3 AS BUILT		2 RE-ISSUED FOR CONSTRUCTION		1 ISSUED FOR CONSTRUCTION		A ISSUED FOR APPROVAL		No.		No.:	
DATE: 2000.09.22 9:05am		FILE NAME: J:\jobs99\DWG\99404\FLW\MFS-99404-100-01.dwg		BY: H. LE		DATE: 00/09/21		CKD: <i>HL</i>		ENG: <i>HL</i>		DATE: DEC. 30/99	
												SCALE:	
												Dwg. No.: D-MFS-99404-100	
												SHT. 1 OF 11	
												REV. 4	

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GENERAL SPECIFICATIONS

CLASS	TYPICAL SERVICE	TEMP. RANGE (°C)	PRESS. RATING (ANSI)
A	SWEET HYDROCARBON, PROPANE REFRIGERANT, FUEL GAS AND FLARE GAS	-29°C TO 260°C	150 # RF
B	SWEET HYDROCARBON, PROPANE REFRIGERANT, FUEL GAS AND FLARE GAS	-29°C TO 260°C	300 # RF
C	SWEET HYDROCARBON, PROPANE REFRIGERANT, FUEL GAS AND FLARE GAS	-29°C TO 260°C	600 # RF
D	SWEET HYDROCARBON	-29°C TO 260°C	900 # RF
E	SWEET HYDROCARBON	-29°C TO 260°C	1500 # RF
F	SWEET HYDROCARBON	-29°C TO 260°C	2500 # RF
H	COMPRESSED AIR AND UTILITY WATER	0°C TO 38°C	150 # RF
J	DRAIN SYSTEM PIPING	5°C TO 95°C	150 # RF
K	GLYCOL	1.21 MPa @ 177°C	150 # RF TO 1500 # RF
AS	SOUR HYDROCARBON, RICH AMINE AND SOUR WATER	-29°C TO 260°C	150 # RF
BS	SOUR HYDROCARBON, RICH AMINE AND SOUR WATER	-29°C TO 260°C	300 # RF
CS	SOUR HYDROCARBON, RICH AMINE AND SOUR WATER	-29°C TO 260°C	600 # RF
DS	SOUR HYDROCARBON	-29°C TO 260°C	900 # RF
ES	SOUR HYDROCARBON	-29°C TO 260°C	1500 # RF
FS	SOUR HYDROCARBON	-29°C TO 260°C	2500 # RF
AL	SWEET HYDROCARBON, PROPANE REFRIGERANT	-46°C TO 66°C	150 # RF
BL	SWEET HYDROCARBON, PROPANE REFRIGERANT	-46°C TO 66°C	300 # RF
CL	SWEET HYDROCARBON, PROPANE REFRIGERANT	-46°C TO 66°C	600 # RF
AC	SWEET HYDROCARBON	-184°C TO 66°C	150 # RF
BC	SWEET HYDROCARBON	-184°C TO 66°C	300 # RF
CC	SWEET HYDROCARBON	-184°C TO 66°C	600 # RF

GENERAL NOTES (ABBREVIATIONS)

- AC - AIR CLOSERS
- AO - AIR OPENS
- AVT - AUTOVENT TRAP
- BD - BLOWDOWN
- BF - BLIND FLANGE
- CBD - CONTINUOUS BD
- CD - CLOSED DRAIN
- CO - CHAIN OPERATED
- CSC - CAR SEAL CLOSED
- CSO - CAR SEAL OPEN
- DC - DRAIN CONNECTION
- EBD - EMERGENCY BD
- ESD - EMERGENCY SHUTDOWN
- ET - ELECTRICAL HEAT TRACE
- FO - FAIL OPEN
- FC - FAIL CLOSED
- FP - FULL PORT
- GT - GLYCOL HEAT TRACE
- HH - HAND HOLE
- HC - HOSE CONNECTION
- L - LOW
- LC - LOCK CLOSED
- LO - LOCK OPEN
- LPD - LOW POINT DRAIN
- ML - MANUAL LOADING
- MW - MANWAY
- NC - NORMALLY CLOSED
- NE - NORMALLY ENERGIZED UNDER OPER. COND.
- NO - NORMALLY OPEN
- ND - NORMALLY DE-ENERGIZED UNDER OPER. COND.
- PC - PISTON CHECK VALVE
- PO - PUMPOUT
- PP - PERSONNEL PROTECTION
- QO - QUICK OPENING
- SC - SAMPLE CONNECTION
- SO - STEAM OUT
- SP - SET POINT
- ST - STEAM HEAT TRACE
- UG - UNDERGROUND
- VB - VACUUM BREAKER
- WC - WATER COLUMN

COMMODITY (ABBREVIATIONS)

- AG - ACID GAS
- AGF - ACID GAS FLARE
- AMD - AMINE DRAIN
- AV - ATMOSPHERIC VENTS
- BD - BLOWDOWN
- C - CAUSTIC
- CCD - CLOSED CRYOGENIC DRAIN
- CHD - CLOSED HYDROCARBON DRAIN
- CSD - CLOSED SOUR DRAIN
- CV - CRYOGENIC VENT
- CWD - CLOSED WATER DRAIN
- DR - DRAIN (ATMOSPHERIC)
- EQL - EQUALIZING
- FG - FUEL GAS
- FL - FLARE
- FO - FUEL OIL
- FW - FIRE WATER
- GD - GLYCOL DRAIN
- GL - GLYCOL
- HC - HIGH PRESSURE STEAM CONDENSATE
- HCL - HYDROCARBON LIQUIDS
- HCV - HYDROCARBON VAPOUR
- HM - HEAT MEDIUM
- HPF - HIGH PRESSURE FLARE
- HS - HIGH PRESSURE STEAM
- I/A - INSTRUMENT AIR
- I/G - INSTRUMENT GAS
- IS - INSTRUMENT SUPPLY
- JW - JACKET WATER
- K - CHEMICALS
- LAM - LEAN AMINE
- LC - LOW PRESSURE STEAM CONDENSATE
- LO - LUBE OIL
- LOD - LUBE OIL DRAIN
- LPF - LOW PRESSURE FLARE
- LPG - LOW PRESSURE GAS
- LS - LOW PRESSURE STEAM
- MC - MEDIUM PRESSURE STEAM CONDENSATE
- MS - MEDIUM PRESSURE STEAM
- P - PROCESS GAS/LIQUID
- PDW - PRODUCED WATER
- POD - PACKING OIL DRAIN/VENT
- POW - POTABLE WATER
- PS - SOUR PROCESS GAS
- PSW - SOUR PROCESS WATER
- PW - PROCESS WATER
- RAM - RICH AMINE
- RLRV - REFRIG. LIQUID, REFRIG. VAPOUR
- ROD - REFRIG. OIL DRAIN
- SO - SEAL OIL
- SOD - SEAL OIL DRAIN
- UW - UTILITY WATER

MISCELLANEOUS EQUIPMENT (ABBREVIATIONS)

- ACT - ACTUATOR
- BLT - BELT
- BUS - BUSHING
- CPL - COUPLING
- EM - HEAT EXCHANGER MOTOR
- ES - EXHAUST SILENCER
- F - FILTER
- FW - FLYWHEEL
- H - HEATER
- INS - INSULATION
- LUB - LUBRICATOR
- MIS - MISCELLANEOUS
- PIP - PIPE
- PM - PUMP MOTOR
- RC - RADIATOR CAP
- SB - SPECTACLE BLIND
- SHF - SHAFT
- SHV - SHEAVE
- SP - SPACER
- STR - STARTER (ELECTRIC/PNEUMATIC)
- T - TANK
- TSS - TEMPORARY SUCTION SCREEN
- TUB - TUBING

TUBING SIZES

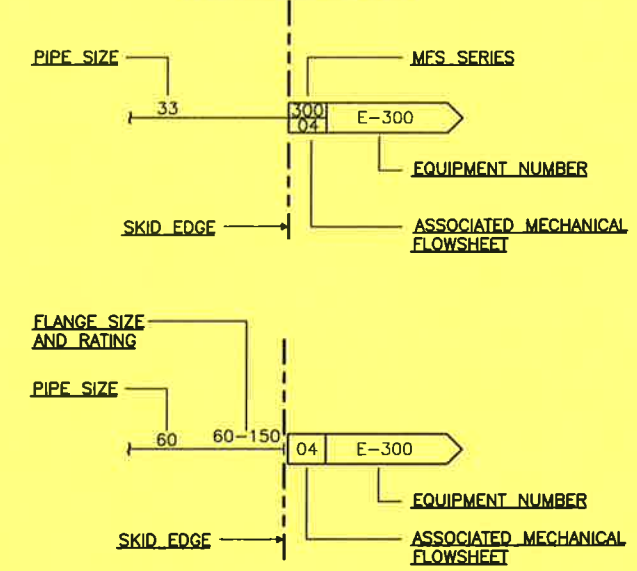
METRIC O.D. (mm)	IMP O.D. (INCH.)	IMP NPS (INCH.)
3	1/8"	1/4"
6	1/4"	3/8"
9	3/8"	1/2"
13	1/2"	3/4"
19	3/4"	1"
25	1"	1-1/2"
		2"
		3"
		4"
		6"
		8"
		10"
		12"
		14"
		16"
		18"
		20"
		24"
		36"
		42"

PIPE SIZES

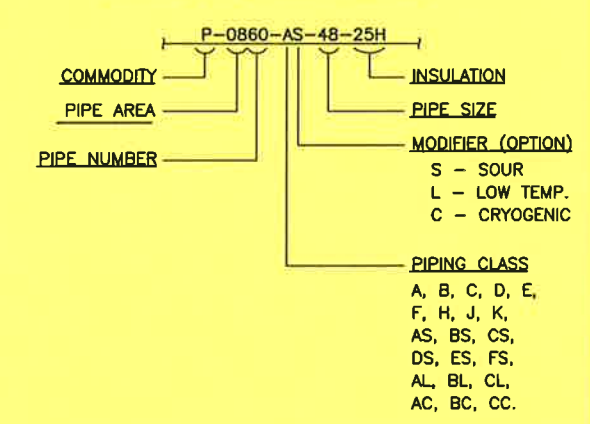
METRIC O.D. (mm)	METRIC DIN (mm)
14	8
17	10
21	15
27	20
33	25
48	40
60	50
89	80
114	100
168	150
219	200
273	250
324	300
356	350
406	400
457	450
508	500
610	600
914	900
1067	1050

NOTES:
NPS - NOMINAL PIPE SIZE

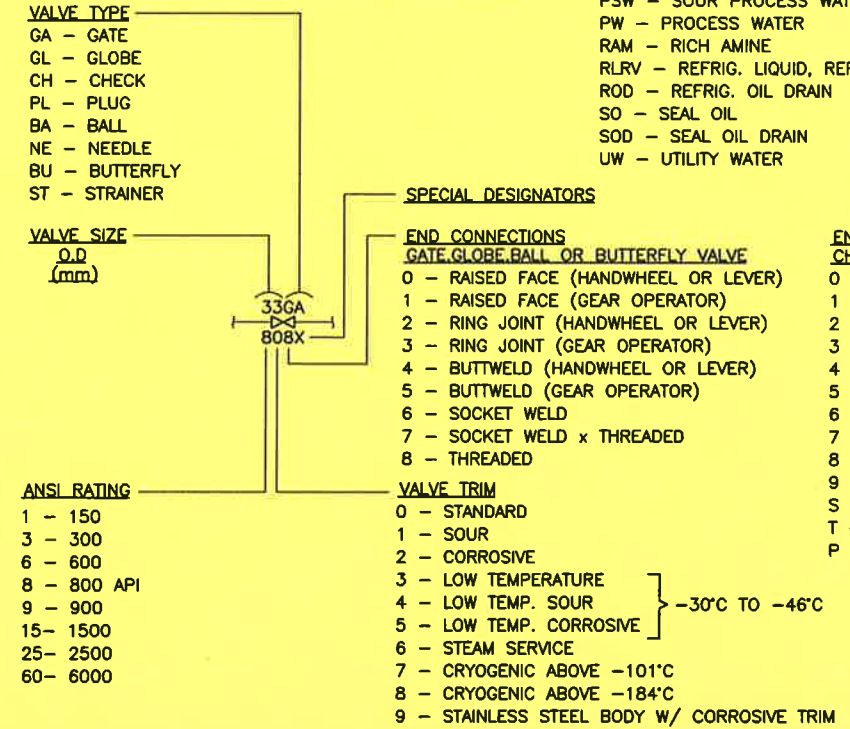
TYPICAL PIPE FLAGS



TYPICAL PIPE IDENTIFICATION



TYPICAL VALVE IDENTIFICATION



TYPICAL EQUIPMENT IDENTIFICATION

TAG No:	T-820
DESCRIPTION:	DEETHANIZER
DIMENSIONS:	...mm O.D. x ...mm S/S
DESIGN PRESSURE @ DESIGN TEMP., CORROS. ALLOWANCE:	... kPa @ ... °C, ...mm C.A.
GAS FLOW RATES:	... m3/d
LIQUID FLOW RATES:	... m3/h
DUTIES:	... kW
MOTOR POWER:	... kW @ V/φ/Hz
STRESS RELIEVING AND X-RAY:	S.R.: YES/NO, X-RAY: FULL/100%/SPOT
MAKE AND MODEL:	

<p>APPROVED</p> <p>MECH/STRUCT. BY J. LINANTUD DATE DEC. 08/99</p> <p>ELECTRICAL CHECKED P. CRAWFORD DATE DEC. 30/99</p> <p>PROJECT P. CRAWFORD DATE DEC. 30/99</p>		<p>DRAWN</p> <p>BY J. LINANTUD DATE DEC. 08/99</p> <p>DATE DEC. 30/99</p>		<p>LEGEND</p> <p>MECHANICAL FLOWSHEET</p>		<p>PROPAC</p> <p>440 East Lake Road, Postal Bag #2 Airdrie, Alberta Canada T4B 2C3</p>	
<p>GENERAL NOTES</p> <p>DATE: 2000.09.22 9:01am FILE NAME: J:\jobs99\DWG\99404\FLW\MFS-99404-100-02.dwg</p>		<p>GENERAL NOTES</p> <p>No. REVISION</p>		<p>BY DATE CKD ENG</p>		<p>DWG. No.: D-MFS-99404-100 SHT. 2 OF 11 REV. 4</p>	

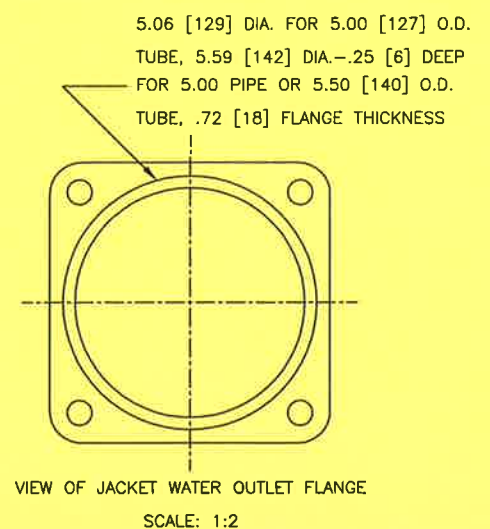
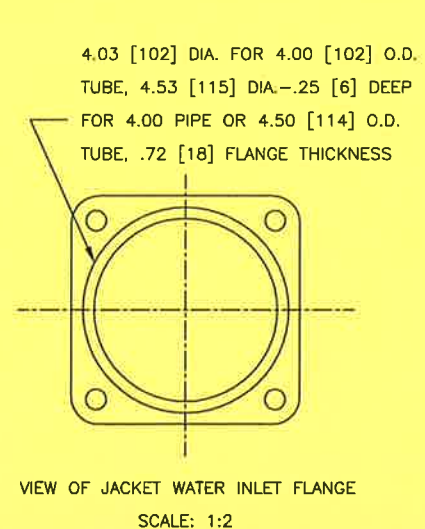
ENGINE CONNECTION INDEX

1. NATURAL GAS INLET 2.00-11.5 N.P.T.
NOTE: FLEXIBLE CONNECTION REQUIRED AT THE FUEL INLET LOCATION(S) TO ISOLATE ENGINE VIBRATION FROM FUEL PIPING. LOCATE AS CLOSE TO ENGINE AS POSSIBLE.
2. STARTING MOTOR PAD .625-11 UNC-2B TAP THRU 3 HOLES FOR STARTING MOTOR WITH S.A.E. NUMBER 3 MOUNTING FLANGE.
4. JACKET WATER OUTLET FLANGE. (SEE VIEW OF FLANGE)
5. FRONT LIFTING EYES 3.00 [76] DIA. HOLE.
6. REAR LIFTING EYES 3.00 [76] DIA. HOLE.
8. CRANKSHAFT PULLEY - (2) 9.88 [251] NOMINAL DIAMETER X .500 [13] WIDE S.A.E. AUTOMOTIVE GROOVES.
9. .88 [22] DIAMETER - 12 ENGINE MOUNTING HOLES.
10. LUBE OIL DRAIN 2.00-11.5 N.P.T.
11. .75-10 UNC-2B TAP 1.25 [32] DEEP, 12 HOLES EQUALLY SPACED.
12. .75-10 UNC-2B TAP 1.25 [32] DEEP, 12 HOLES EQUALLY SPACED.
13. .625-11 UNC-2B TAP 1.00 [25] DEEP, 12 HOLES EQUALLY SPACED.
14. .250 [6] NOMINAL DIAMETER TUBE, AIR/GAS VENT CONNECTION. (SEE VIEW "A") (SEE NOTE 1)
15. .250 [6] NOMINAL DIAMETER TUBE, AIR/GAS SUPPLY CONNECTION. (SEE VIEW "A")
16. .375-18 N.P.T. AIR/GAS PRELUBE SUPPLY CONNECTION.
17. .250 [6] NOMINAL DIAMETER TUBE, AIR/GAS START CONNECTION. (SEE VIEW "A")
18. LUBE OIL STRAINER INLET FROM LUBE OIL FILTER, 2.00 RAISED FACE 150 LB. A.N.S.I. WELD NECK FLANGE.
19. JACKET WATER INLET FLANGE, 2 PLACES. (SEE VIEW OF FLANGE)
22. LUBE OIL FILTER INLET FROM LUBE OIL COOLER ASSEMBLY, 2.00 RAISED FACE 150 LB. A.N.S.I. FLANGE.
23. LUBE OIL FILTER OUTLET TO ENGINE LUBE OIL STAINER, 2.00 RAISED FACE 150 LB. A.N.S.I. FLANGE.
24. .56 [14] DIAMETER - 4 PLACES EQUALLY SPACED IN MOUNTING FEET FOR LUBE OIL FILTER MOUNTING.
25. EXHAUST OUTLET FLANGE - FITS 8.00 FLAT FACE 125 LB. A.N.S.I. CAST IRON PIPE FLANGE. NOTE: EXHAUST SYSTEM MUST SUPPORT ITS OWN WEIGHT BEYOND THIS POINT.
27. AUXILIARY WATER INLET FROM COOLING SYSTEM, 2.50 125 LB. A.N.S.I. FLANGE.
28. 375-18 N.P.T. AIR/GAS PRE-LUBE MOTOR EXHAUST. (SEE NOTE 1)
33. LUBE OIL COOLER ASSEMBLY OUTLET TO LUBE OIL FILTER. 2.00 RAISED FACE 150 LB. A.N.S.I. FLANGE.
34. PRESSURE REGULATING VALVE OUTLET ON LUBE OIL COOLER ASSEMBLY TO ENGINE OIL PAN, 1.50 RAISED FACE 150 LB, A.N.S.I. FLANGE.
35. AUXILIARY WATER INLET AT LUBE OIL COOLER ASSEMBLY, 2.50 FLAT FACE 125 LB. A.N.S.I. FLANGE.
36. AUXILIARY WATER OUTLET AT LUBE OIL COOLER ASSEMBLY TO THERMOSTATIC VALVE AND COOLING SYSTEM, 2.50 FLAT FACE 125 LB. A.N.S.I. FLANGE.
37. .69 X 1.25 [18 X 32] SLOT - 4 PLACES FOR LUBE OIL COOLER ASSEMBLY MOUNTING.
38. AUXILIARY WATER BYPASS CONNECTION FROM LUBE OIL COOLER. 2.00 FLAT FACE 125 LB A.N.S.I. FLANGE.
39. .750-14 N.P.T. AUXILIARY WATER CONNECTION FROM EXPANSION TANK.
40. CLEARANCE REQUIRED TO REMOVE LUBE OIL FILTER ELEMENT.
41. AUXILIARY WATER OUTLET TO LUBE OIL COOLER ASSEMBLY. 1.50 FLAT 150 LB. A.N.S.I. FLANGE.
42. LUBE OIL INLET FROM PRESSURE REGULATING VALVE ON LUBE OIL COOLER ASSEMBLY, 1.50 LAP JOINT 150 LB. A.N.S.I. FLANGE WITH STUB END.
43. LUBE OIL OUTLET TO LUBE OIL COOLER ASSEMBLY, 2.00 LAP JOINT 150 LB A.N.S.I. FLANGE WITH STUB END.
44. LUBE OIL COOLER ASSEMBLY INLET FROM ENGINE LUBE OIL PUMP. 2.00 RAISED FACE 150 LB. A.N.S.I. FLANGE.
54. ENGINE PRESSURE BLOCK, OIL AND INTAKE MANIFOLD PRESSURE .125-27 N.P.T. 6 PLACES (4 OIL, 2 AIR.)(SEE VIEW "B")
55. ENGINE IGNITION POWER JUNCTION BOX 24 VOLT DC.
56. ENGINE TEMPERATURE CONNECTION POINTS. THERMOCOUPLE TYPE K, AND CUSTOM CONTROLS JUNCTION BOX.
57. FRONT FACE OF CRANKCASE.
59. DSM FILTER SIGNAL INPUT. INCLUDES 11 FOOT LONG CABLE.
60. DSM FILTER SIGNAL OUTPUT. INCLUDES 15 FOOT LONG CABLE.
61. DSM FILTER POWER INPUT.
62. DSM SIGNAL INPUT. FROM CONNECTION 60.
63. DSM POWER INPUT.
64. DSM SIGNAL OUTPUT. INCLUDES 15 FOOT LONG CABLE.
65. .31-18 UNC-2A 4 PLACES, FOR MOUNTING DSM.
66. .31-18 UNC-2A 4 PLACES, FOR MOUNTING DSM FILTER.

NOTE 1: ALL GAS VENTED AND/OR DISCHARGED FROM ENGINE EQUIPMENT SHOULD BE PIPED TO A SAFE AREA TO MEET APPLICABLE CODES.
NOTE 2. ROTATIONS ARE VIEWED FROM FLYWHEEL END.

EQUIPMENT INDEX

- A. S.A.E NUMBER 00 FLYWHEEL HOUSING
- B. TIMING HOLE PAD
- C. ENGINE WATER DRAIN
- D. GOVERNOR, HYDRAULIC
- E. SAFETY GUARD
- F. LUBE OIL DIPSTICK (BOTH SIDES)
- G. LUBE OIL FILLER
- H. LUBE OIL STRAINER
- J. AIR/GAS MOTORIZED PRE-LUBE PUMP
- K. LUBE OIL FILTER ASSEMBLY (SHIPPED LOOSE)
- L. CRANKCASE BREATHER (2)
- M. AIR CLEANERS (2)
- P. MANUAL BARRING DEVICE
- Q. ENGINE LEVELING BOLTS (4) 1.00-8 UNC-2B THREAD
- R. 24.00 [610] LONG FLEXIBLE METAL HOSE (SHIPPED LOOSE)
- S. 24.00 [610] LONG FLEXIBLE METAL HOSE (SHIPPED LOOSE)
- T. GOVERNOR SPEED CONTROL HAND LEVER
- U. THROTTLE LEVER
- V. LUBE OIL COOLER ASSEMBLY (SHIPPED LOOSE)
- W. FLEXIBLE EXHAUST CONNECTION (SHIPPED LOOSE)
- X. 24.00 [610] LONG FLEXIBLE METAL HOSE (SHIPPED LOOSE)
- UU. PNEUMATIC CONTROL PANEL CONSISTING OF START, STOP, PRELUBE, AND SAFETY RESET.
- XX. CEC IGNITION MODULE
- BA. DETONATION SENSING MODULE (DSM) (SHIPPED LOOSE)
- CA. DSM FILTER (SHIPPED LOOSE)



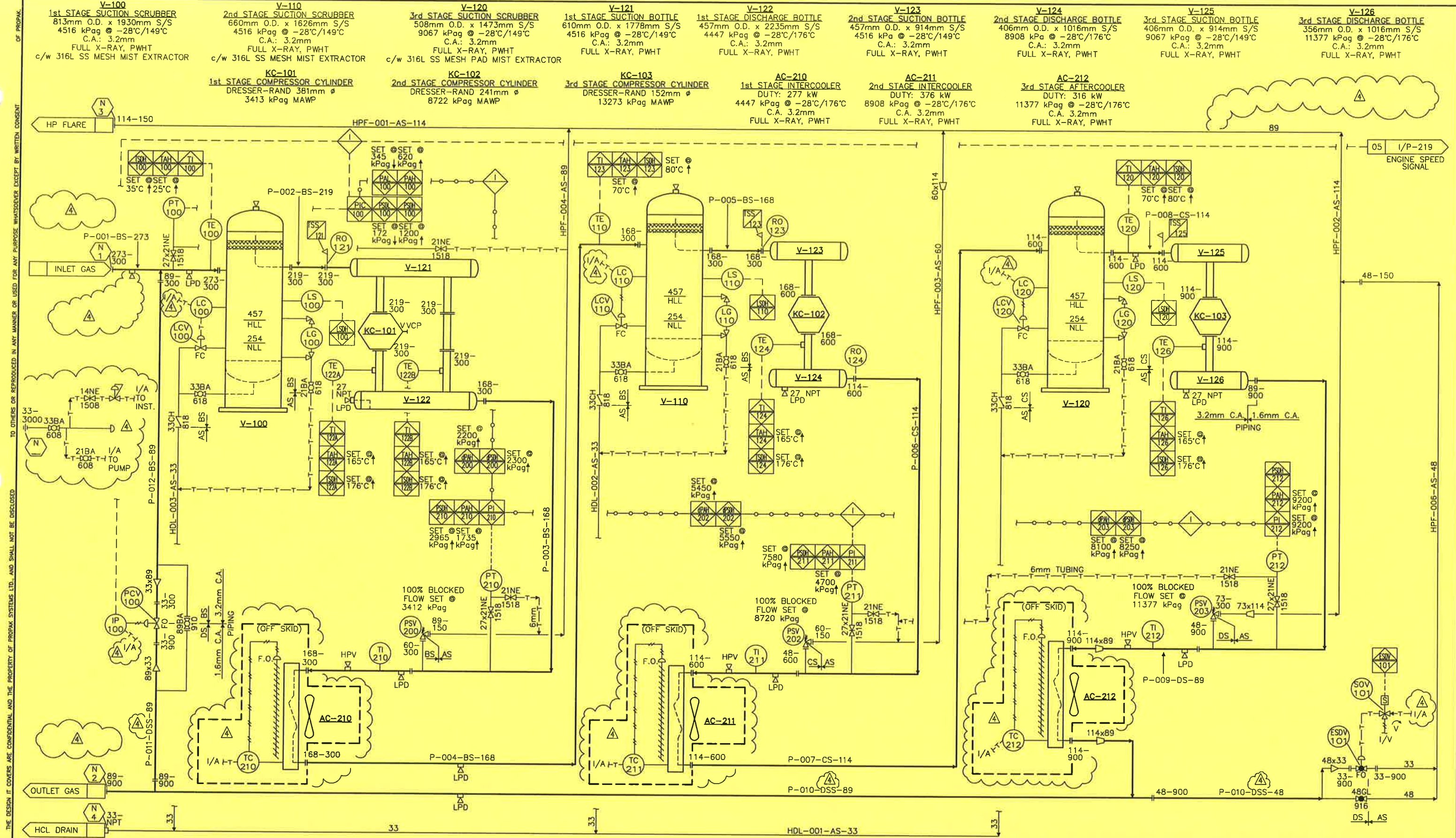
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GENERAL NOTES		GENERAL NOTES		No.	REVISION	BY	DATE	CKD	ENG
4	CLIENT REVISIONS	H. LE	00/09/21						
3	AS BUILT	H. LE	00/08/25	CG	CG				
2	RE-ISSUED FOR CONSTRUCTION	H. LE	00/06/06	SW	SW				
1	ISSUED FOR CONSTRUCTION	S.SULZ	99/12/30	PC	PC				
A	ISSUED FOR APPROVAL	J. LINA	99/12/08	DHS	DHS				

APPROVED		DRAWN	
MECH./STRUCT.	BY	J. LINANTUD	
DATE	DATE	DEC. 08/99	
ELECTRICAL	CHECKED		
DATE	BY	P. CRAWFORD	
PROJECT	DATE	DEC. 30/99	
DATE	DEC. 30/99		
	SCALE		

EQUIPMENT AND ENGINE CONNECTION INDEX MECHANICAL FLOWSHEET		DWG. No.: D-MFS-99404-100	SHT. 3 OF 11	REV. 4
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GENERAL NOTES
 1. USE XXH NIPPLE ON NPT CONNECT FOR 'DS', 'CS' & 'BS'
 2. USE SCH 160 NIPPLE ON NPT CONNECT FOR 'AS'
 3. VENT ALL VENTING INSTS. TO VENT HEADER.

GENERAL NOTES
 4. CLIENT REVISIONS
 3. AS BUILT
 2. RE-ISSUED FOR CONSTRUCTION
 1. ISSUED FOR CONSTRUCTION
 A. ISSUED FOR APPROVAL

No.	REVISION	BY	DATE	CKD	ENG
4	CLIENT REVISIONS	H. LE	00/09/21	HL	HL
3	AS BUILT	H. LE	00/08/25	CG	CG
2	RE-ISSUED FOR CONSTRUCTION	H. LE	00/06/06	SW	SW
1	ISSUED FOR CONSTRUCTION	S. SULZ	99/12/30	PC	PC
A	ISSUED FOR APPROVAL	J. UNWILD	99/12/08	DHS	DHS

APPROVED		DRAWN	
MECH./STRUCT.	BY	J. LINANTUD	
DATE	DATE	DEC. 08/99	
ELECTRICAL	BY	P. CRAWFORD	
DATE	DATE	DEC. 30/99	
PROJECT	P. CRAWFORD	DATE	DEC. 30/99
DATE	DEC. 30/99	SCALE	

COMPRESSOR
 MECHANICAL FLOWSHEET
 DWG. No.: D-MFS-99404-100 SHT. 4 OF 11 REV. 4

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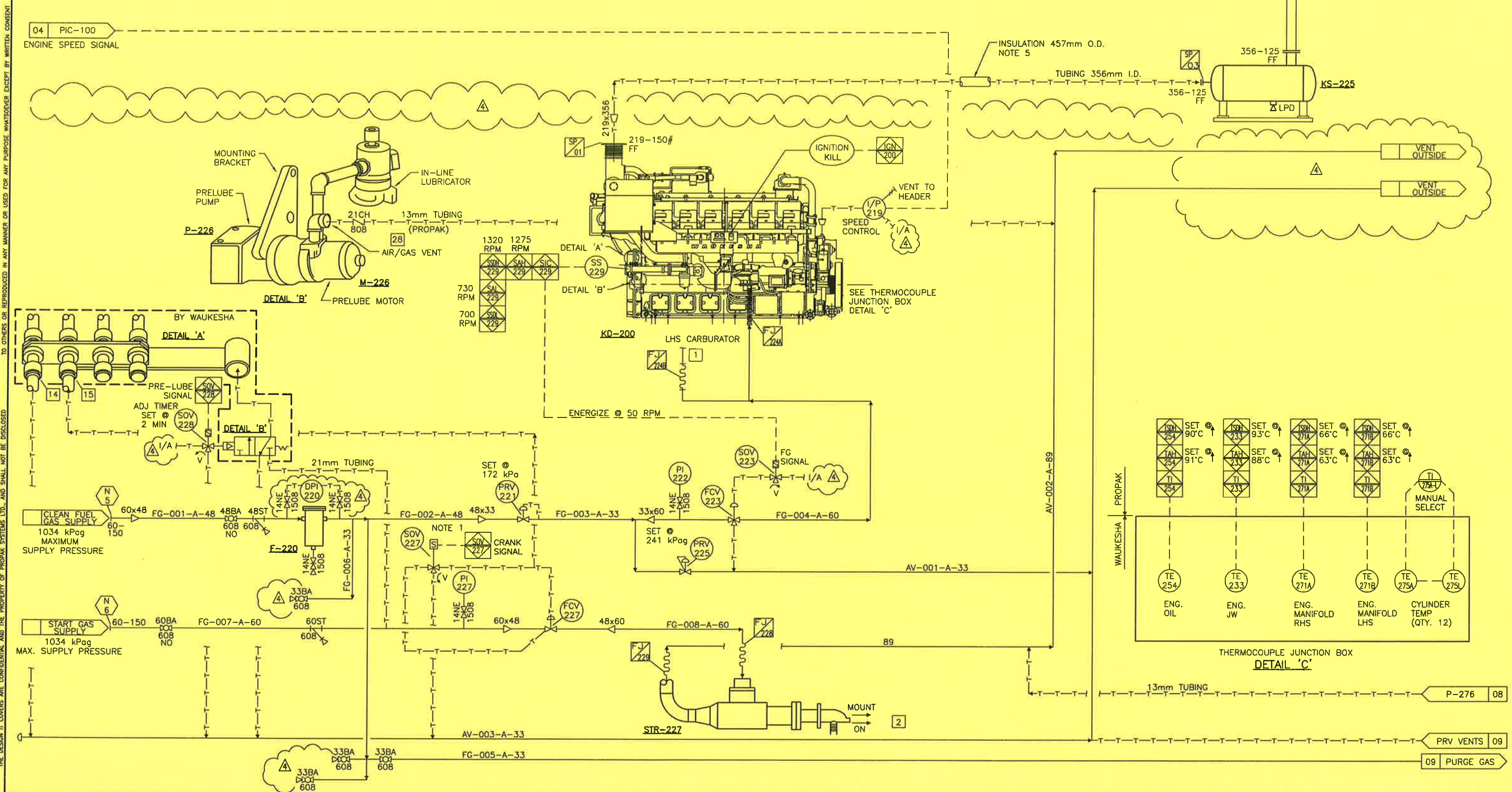
F-220
FUEL GAS FILTER
 HEAD LINE 385-AP-70C-1-1/2"
 1724 kPag @ 93°C
 c/w 70-C FILTER ELEMENT

P-226/M226
ENGINE PRELUBE PUMP
 GAS DRIVEN MOTOR
 c/w ENGINE

KD-200
COMPRESSOR DRIVER
 WAUKESHA 7042GL
 1478 BHP @ 1200 RPM
 54°C INTERCOOLER INLET TEMPERATURE

STR-227
ENGINE STARTER
 TDI TURBO TWIN
 MIN T112B PIN T112-60001-BIR
 30.875 sm³/min @ 827 kPag

KS-225
COMPRESSOR SILENCER
 MODEL: JAT-14-S012
 CRITICAL GRADE SILENCER
 356mm-125# IN/OUT



GENERAL NOTES	
1. HIGH PRESSURE SOV.	AT 45° AS SHOWN AT APPROXIMATELY THE SAME ELEVATION.
2. ENGINE CONNECTION INDEX SEE 99404-100-03	
3. LOCATE VSH CLOSE TO FAN SHAFT ON BEARING SUPPORT.	5. INSULATE TO BUILDING WALL ONLY.
4. VENTS TO ATM. INSIDE COOLER PLENUM TO TERMINATE HORIZONTALLY WITH PIPE ENDS CUT	

CLIENT REVISIONS	
4	CLIENT REVISIONS
3	AS BUILT
2	RE-ISSUED FOR CONSTRUCTION
1	ISSUED FOR CONSTRUCTION
A	ISSUED FOR APPROVAL

BY	DATE	CKD	ENG
H. LE	00/09/21	DU	DU
H. LE	00/08/25	CG	CG
H. LE	00/06/06	SW	SW
S.SULZ	99/12/30	PC	PC
J. LINA	99/12/08	DHS	DHS

APPROVED		DRAWN	
MECH./STRUCT.	BY J. LINANTUD	DATE	DEC. 08/99
ELECTRICAL	CHECKED	DATE	DEC. 30/99
PROJECT	P. CRAWFORD	DATE	DEC. 30/99
DATE	DEC. 30/99	SCALE	

ENGINE FUEL START GAS MECHANICAL FLOWSHEET

DWG. No.: D-MFS-99404-100 SHT. 5 OF 11 REV. 4

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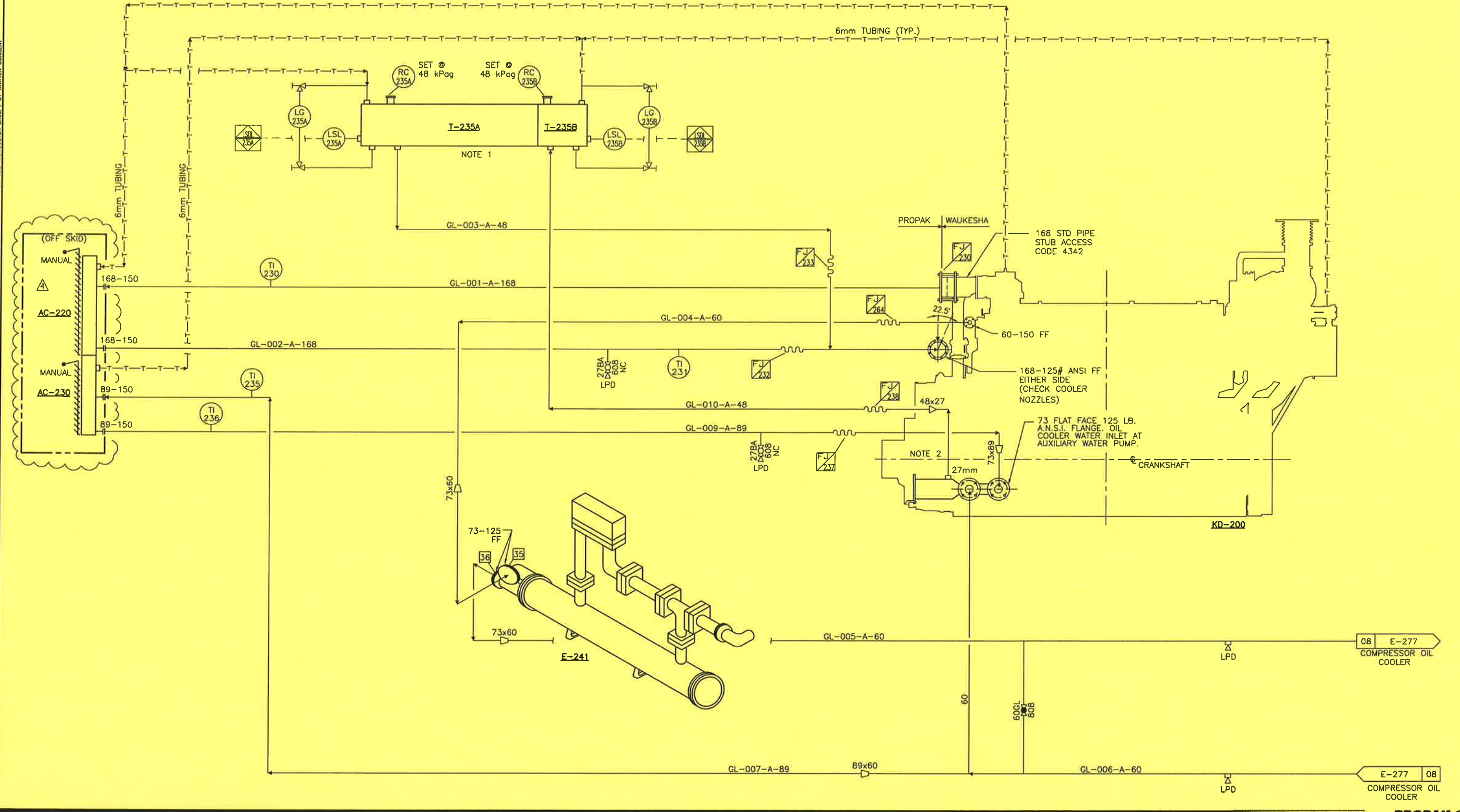
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AC-220
ENGINE JW COOLER
96.5 kPag MAWP
DUTY: 4.01mm BTU/hr (117.4 kW/hr)
0mm C.A.

AC-230
ENGINE AW COOLER
96.5 kPag MAWP
DUTY: 0.775mm BTU/hr (22.7 kW/hr)
0mm C.A.

T-235A/T-235B
ENGINE JW/AW SURGE TANK
160/74 L CAPACITY
96.5 kPag MAWP

E-241
ENGINE OIL COOLER
c/w ENGINE



1. MOUNT T-235A/T-235B ON TOP OF COOLER, AS CLOSE AS POSSIBLE TO EDGE.
2. SHOP DISCRETION TO RUN 19mm TUBING INTO GL-010-A-48

GENERAL NOTES

DATE: 2000.09.22 8:59am FILE NAME: J:\jobs99\DWG\99404\FLW\MFS-99404-100-06.dwg

GENERAL NOTES

No.	REVISION
4	CLIENT REVISIONS
3	AS BUILT
2	RE-ISSUED FOR CONSTRUCTION
1	ISSUED FOR CONSTRUCTION
A	ISSUED FOR APPROVAL

BY	DATE	CHKD	ENG
H. LE	00/09/21	AW	AW
H. LE	00/08/25	CG	CG
H. LE	00/06/06	SW	SW
S. SULZ	99/12/30	PC	PC
J. LINA	99/12/08	DHS	DHS

APPROVED		DRAWN	
MECH./STRUCT.	BY	J. LINA	
DATE	DATE	DEC. 08/99	
ELECTRICAL	BY	P. CRAWFORD	
DATE	DATE	DEC. 30/99	
PROJECT	P. CRAWFORD		
DATE	DEC. 30/99		
	SCALE		

**GLYCOL COOLING SYSTEM
MECHANICAL FLOWSHEET**

DWG. No.: D-MFS-99404-100 SHT. 6 OF 11 REV. 4

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F-253
ENGINE OIL FILTER
c/w ENGINE
SHIPLOOSE

F-241
ENGINE OIL COOLER
c/w ENGINE
SHIPLOOSE

KD-200
COMPRESSOR DRIVE
WAUKESHA L7042GL
1478 HP @ 1200 RPM

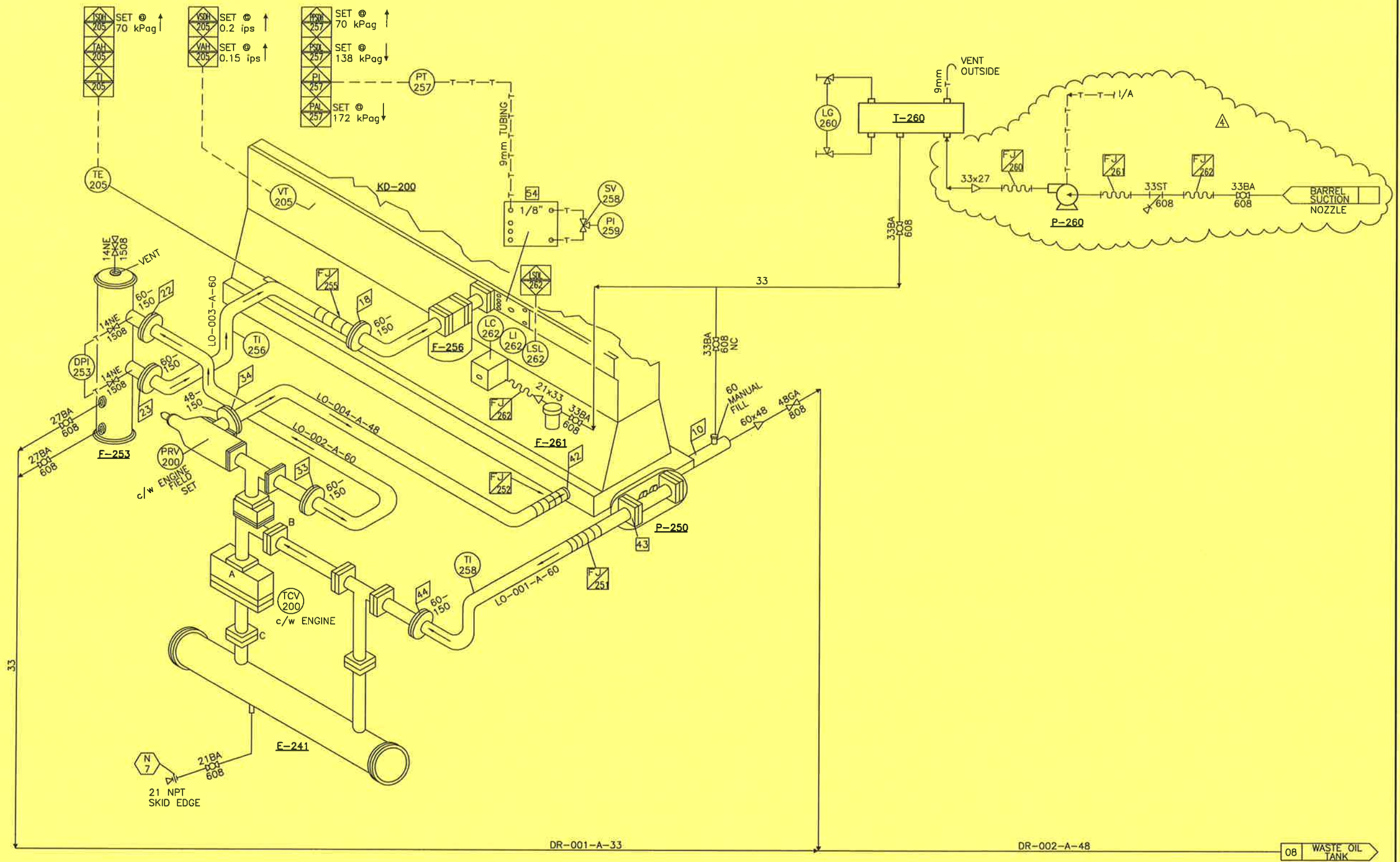
F-256
ENGINE OIL STRAINER
c/w MAGNETIC FILTER ELEMENT
(SEE NOTE 1)

F-261
OIL SUPPLY FILTER
BALDWIN BF914 HOUSING
c/w BALDWIN BF915 FILTER ELEMENT

P-250
ENGINE OIL PUMP
c/w ENGINE

T-260
ENGINE LUBE OIL SUPPLY
TANK INTEGRAL w/ CRANE
STRUCTURE (425L) (RHS)

P-260
PNEUMATIC DIAPHRAGM PUMP
WILDEN T2 M/N: AAAB/BN/BN/ABN
75 L/MIN



1. INSTALL PAPER ELEMENT IN F-256 RUN PRE LUBE PUMP FOR OIL FLUSH PROCEDURE. REPLACE PAPER ELEMENT PRIOR TO FIELD START-UP.
2. ENGINE CONNECTION INDEX SEE MFS-98147-100-P. 10.

GENERAL NOTES	
No.	REVISION

BY	DATE	CKD	ENG
H. LE	00/09/21		
H. LE	00/08/25	CG	CG
H. LE	00/06/06	SW	SW
J. LINA	99/12/30	PC	PC
J. LINA	99/12/08	DHS	DHS

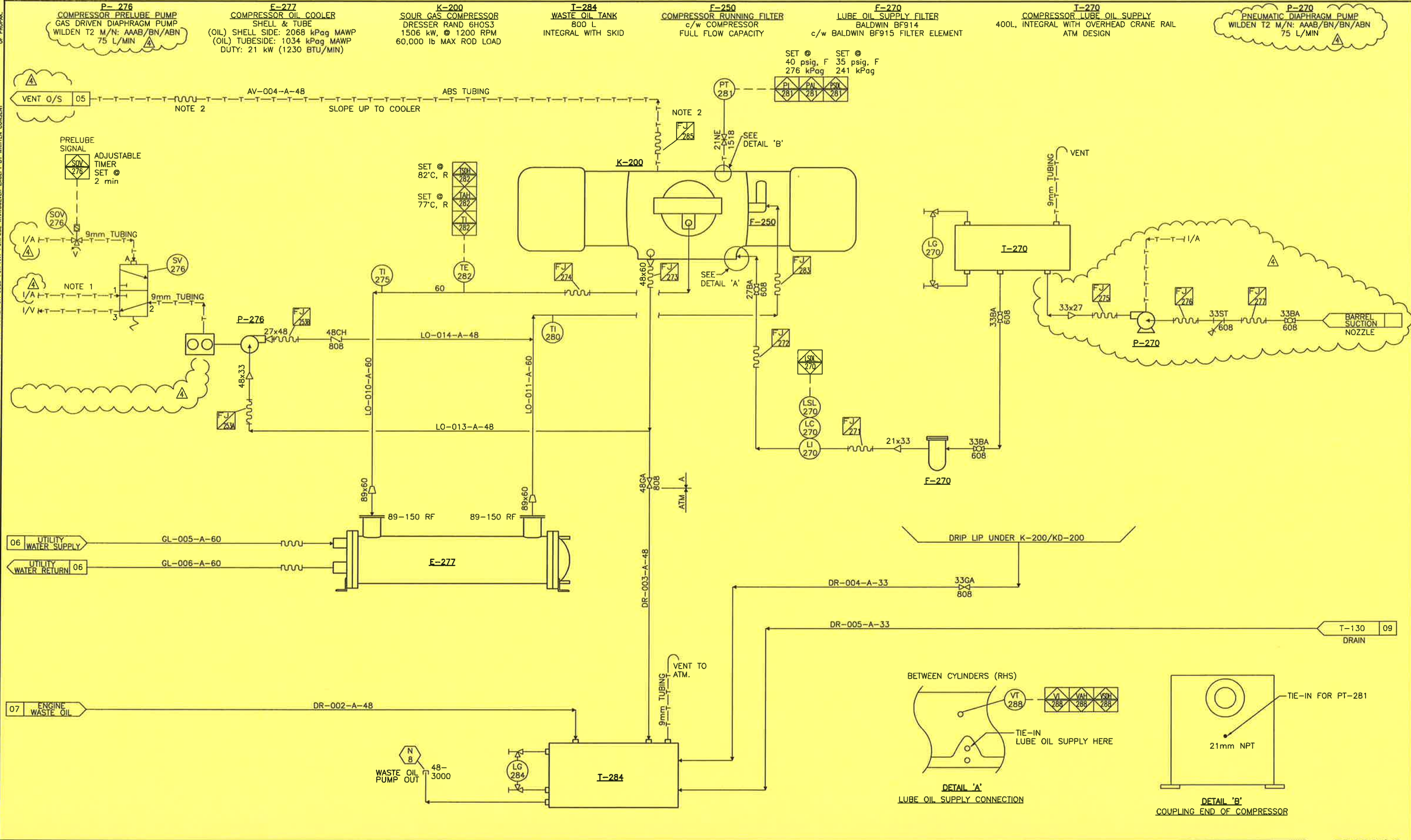
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MECH./STRUCT.	BY	J. LINANTUD	
DATE	DATE	DEC. 08/99	
ELECTRICAL	BY	P. CRAWFORD	
DATE	DATE	DEC. 30/99	
PROJECT	DATE		
DATE	SCALE		

**ENGINE UTILITIES
MECHANICAL FLOWSHEET**

DWG. No.: D-MFS-99404-100 SHT. 7 OF 11 REV. 4

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1. NO REGULATOR ON THIS I/S.
 2. SHOP FIT, RUBBER HOISING

No.	REVISION
4	CLIENT REVISIONS
3	AS BUILT
2	RE-ISSUED FOR CONSTRUCTION
1	ISSUED FOR CONSTRUCTION
A	ISSUED FOR APPROVAL

BY	DATE	CKD	ENG
H. LE	00/09/21	SL	SL
H. LE	00/08/25	CG	CG
H. LE	00/06/06	SW	SW
S. SULZ	99/12/30	PC	PC
J. LINA	99/12/08	DHS	DHS

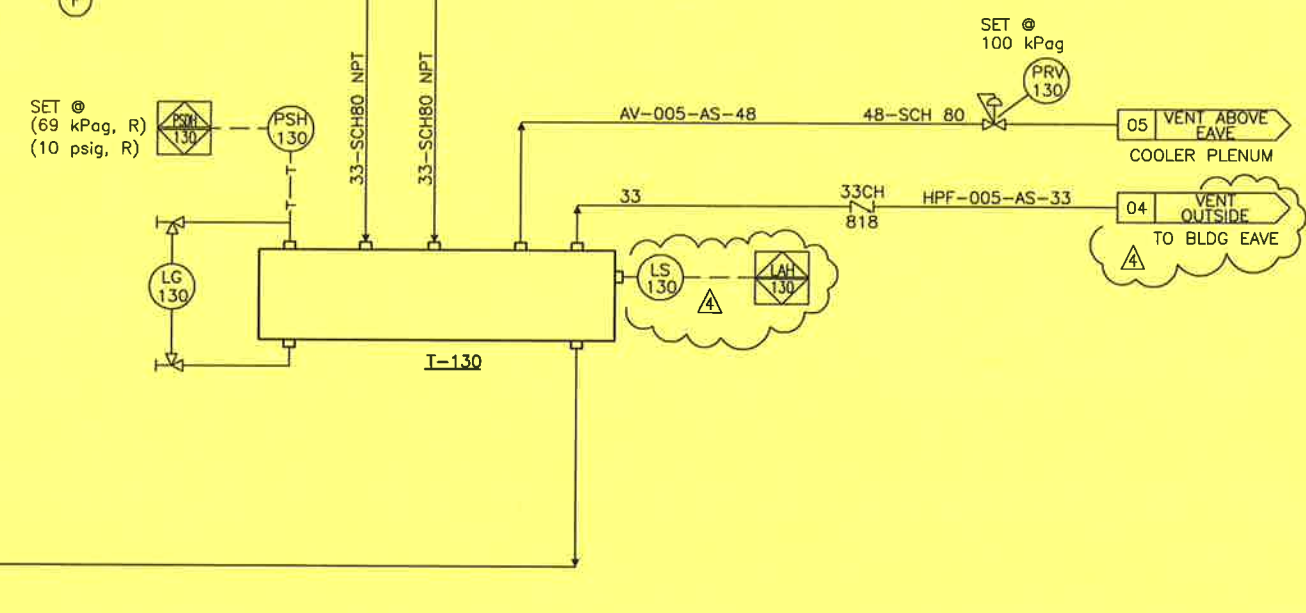
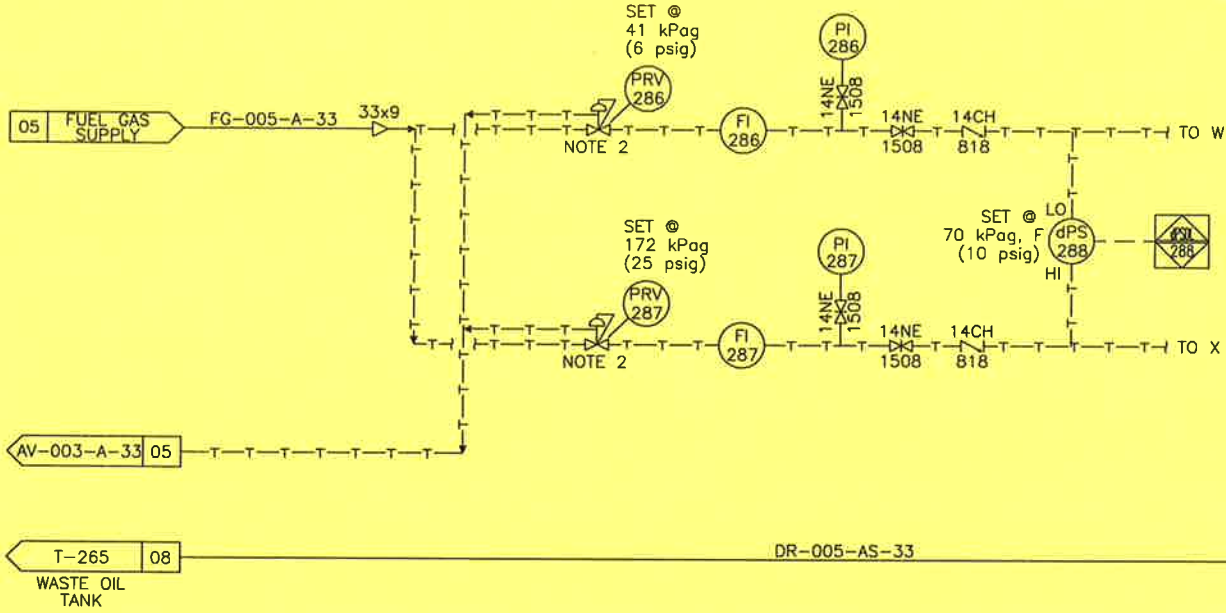
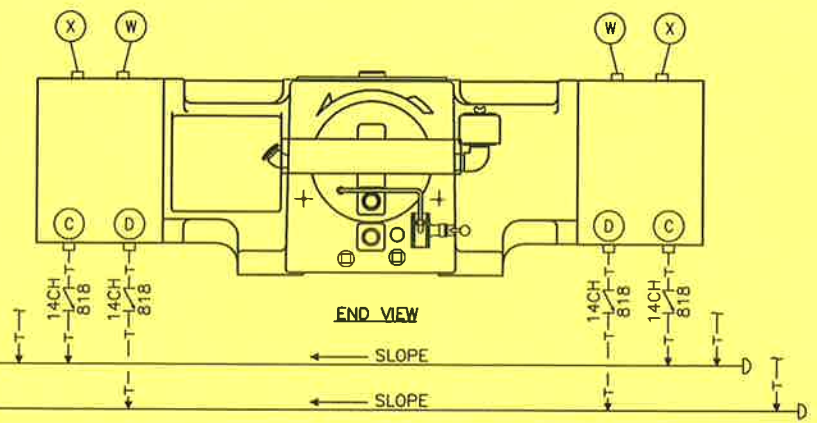
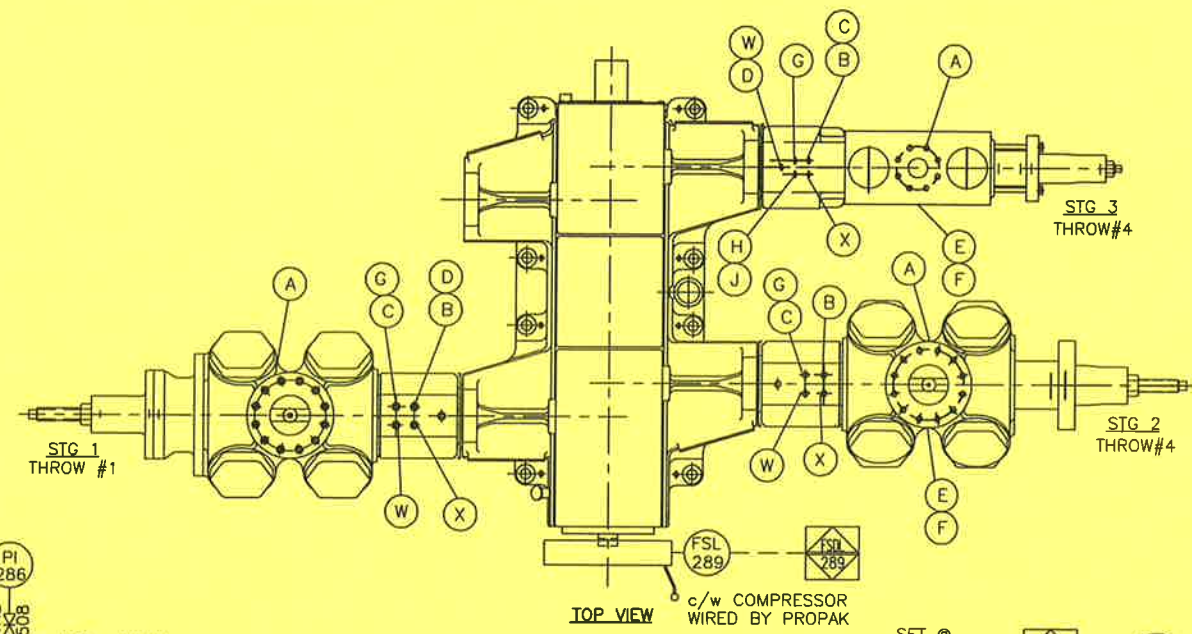
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MECH./STRUCT.	BY	J. LINA	
DATE	DATE	DEC. 08/99	
ELECTRICAL	CHECKED		
DATE	BY	P. CRAWFORD	
PROJECT	DATE	DEC. 30/99	
DATE	SCALE		

SOUR GAS COMPRESSOR-COMPRESSOR FRAME OIL & GLYCOL MECHANICAL FLOWSHEET
 DWG. No.: D-MFS-99404-100 SHT. 8 OF 11 REV. 4

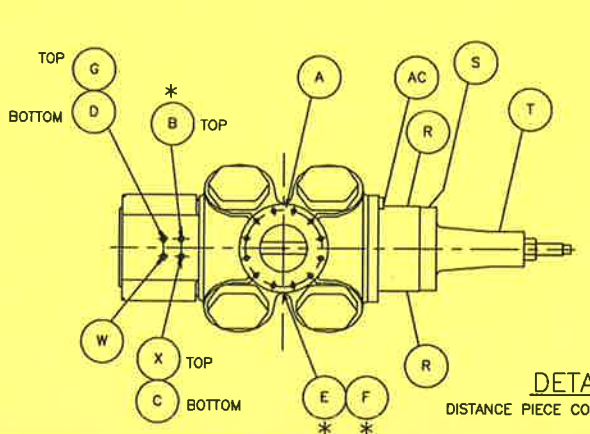
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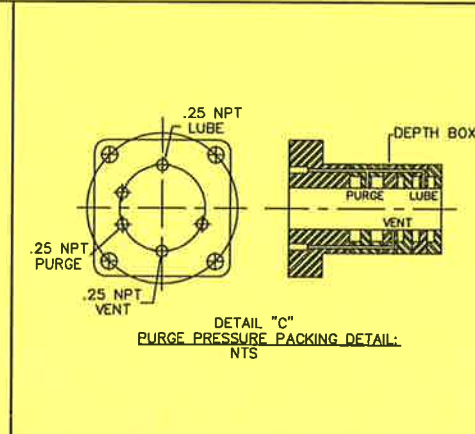
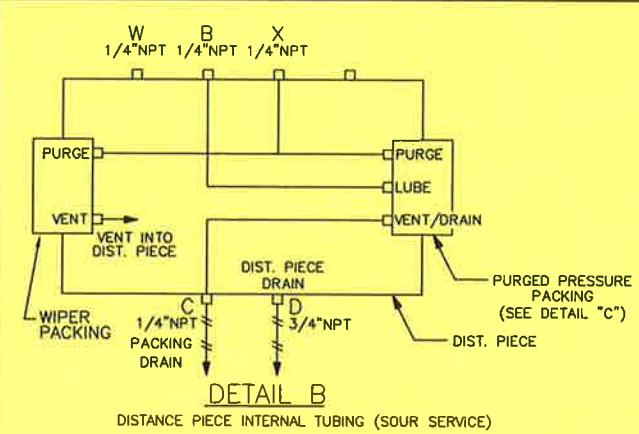
T-130
PACKING VENT & DRAIN SEAL POT
 273mm O.D. x 813mm S/S
 101 kPag DESIGN



DISTANCE PIECE EVACUATION SYSTEM



- A) FLANGE CONN.-INLET TOP & DISCHARGE BOTTOM.
 - * B) 1/4" NPT PACKING LUBE CONN.-TOP.
 - C) 1/4" NPT PACKING VENT/DRAIN CONN.-BOTTOM.
 - D) 3/4" NPT DISTANCE PIECE DRAIN CONN.-BOTTOM.
 - * E) 1/4" NPT CYL BORE LUBE CONN.-TOP.
 - * F) 1/4" NPT CYL BORE LUBE CONN.-BOTTOM.
 - G) 3/4" NPT YOKE VENT CONN.-TOP.
 - R) 1/8" NPT WVCP HEAD VENT TO NON-HAZARDOUS AREA-TOP OR BOTTOM.
 - S) 1/8" NPT WVCP ROD PKG. VENT TO NON-HAZARDOUS AREA -TOP OR BOTTOM.
 - T) 1/8" NPT GREASE FITTING.
 - W) 1/4" NPT DISTANCE PIECE PURGE-TOP.
 - X) 1/4" NPT PACKING PURGE CONN.-TOP.
- NOTE: PROPAG COMP. SERVICEMAN TO DOUBLE CHECK LOCATIONS OF (A-X) PRIOR TO HOOK-UP.
 * BY DRESSER-RAND



1. CHECK VALVES TO BE ADDED TO 'C' AND 'D' CYLINDER CONNECTION POINTS AS CLOSE TO DISTANCE PIECE AS POSSIBLE ON EACH CYLINDER.
 2. INTERNAL TUBING TO BE INSPECTED BY PROPAG SERVICE, PRIOR TO HOOKING UP.

NO.	REVISION	BY	DATE	CHKD	ENG
4	CLIENT REVISIONS	H. LE	00/09/21		
3	AS BUILT	H. LE	00/08/25	CG	CG
2	RE-ISSUED FOR CONSTRUCTION	H. LE	00/06/06	SW	SW
1	ISSUED FOR CONSTRUCTION	S. SULZ	99/12/30	PC	PC
A	ISSUED FOR APPROVAL	J. LINA	99/12/08	DHS	DHS

APPROVED	DRAWN
MECH./STRUCT. DATE	BY J. LINANTUD DATE DEC. 08/99
ELECTRICAL DATE	CHECKED
PROJECT P. CRAWFORD DATE DEC. 30/99	BY P. CRAWFORD DATE DEC. 30/99
SCALE	

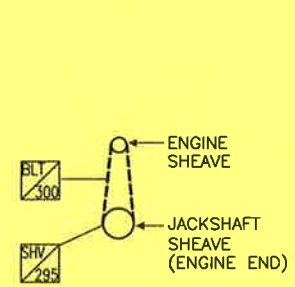
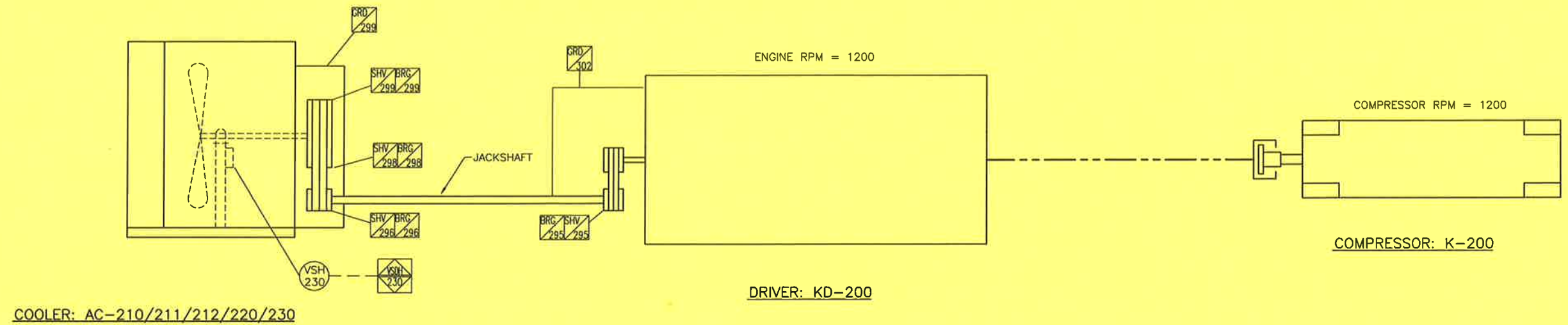
GENERAL NOTES

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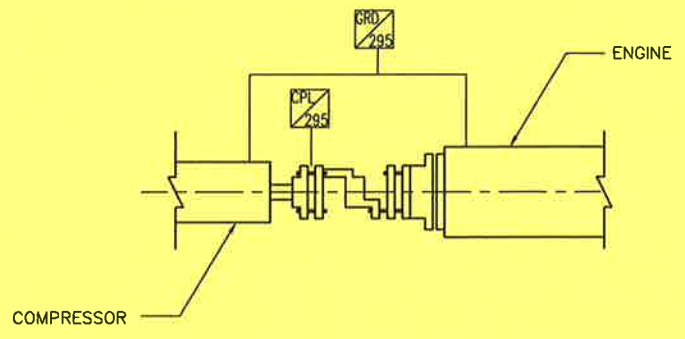
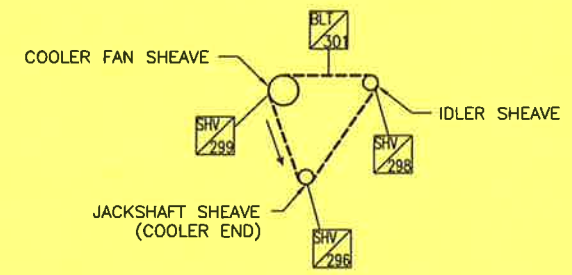
DWG. No.: D-MFS-99404-100 SHT. 9 OF 11 REV. 4

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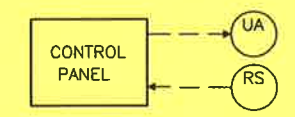
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FAN DRIVE SHEAVES



ENGINE & COMPRESSOR COUPLING



CONTROL PANEL

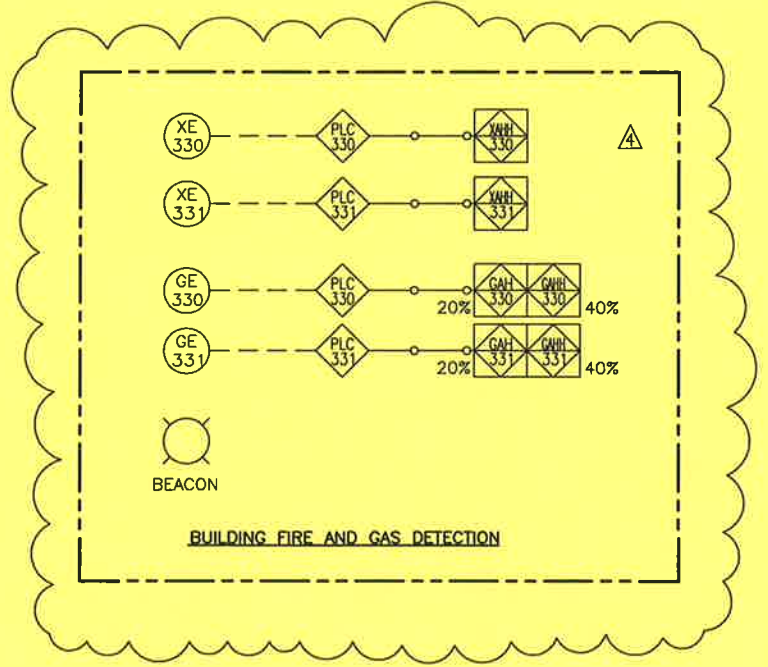
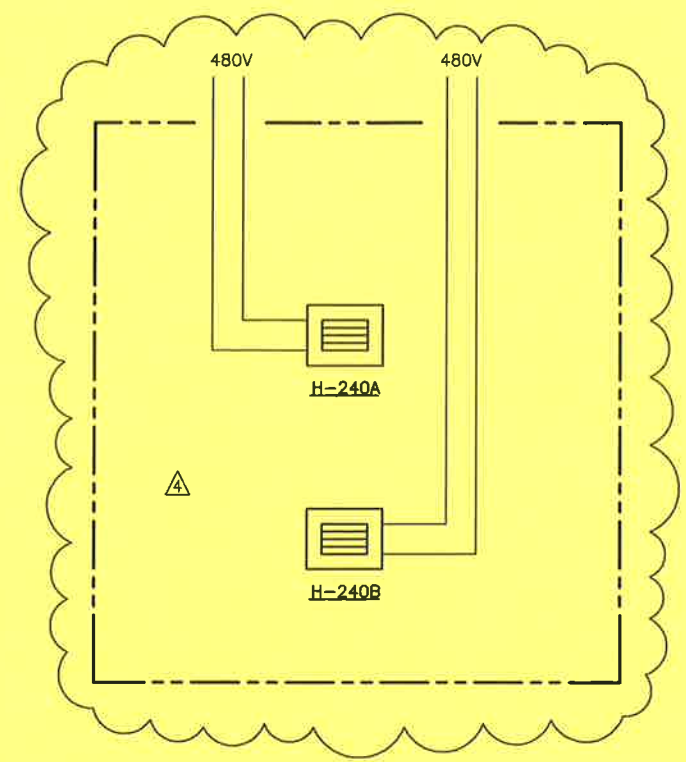
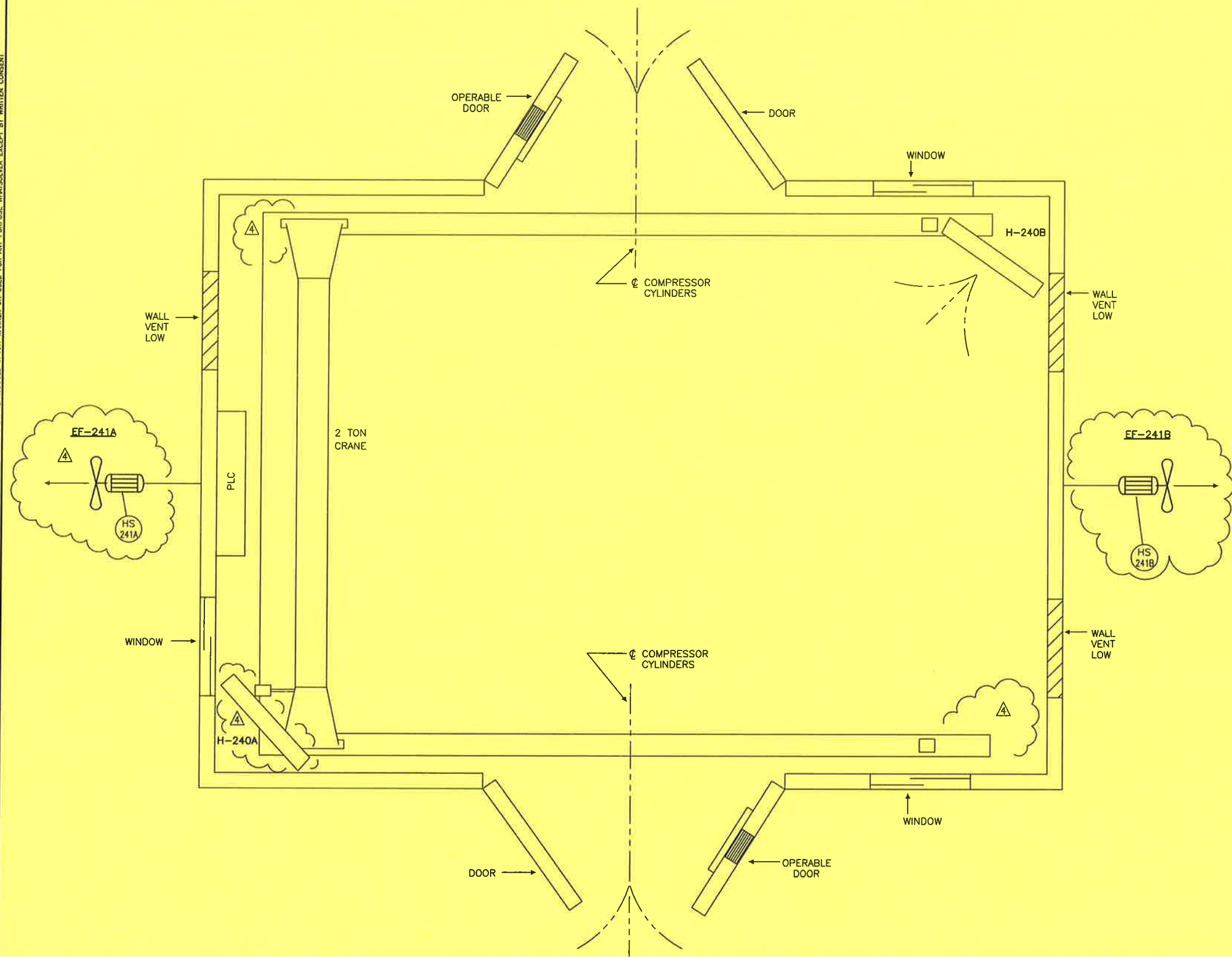
GENERAL NOTES		GENERAL NOTES		REVISION		APPROVED		DRAWN		CONTROL PANEL, COUPLING AND DRIVE DETAILS MECHANICAL FLOWSHEET	DWG. No.: D-MFS-99404-100 SHT. 10 OF 11 REV. 4
4	CLIENT REVISIONS	H. LE	00/09/21	BY	DATE	BY	DATE	J. LINANTUD	DEC. 10/99		
3	AS BUILT	H. LE	00/08/25	CG	CG	BY	DATE				
2	RE-ISSUED FOR CONSTRUCTION	H. LE	00/06/06	SW	SW	BY	DATE	P. CRAWFORD	DEC. 30/99		
1	ISSUED FOR CONSTRUCTION	J. LINA	99/12/30	PC	PC	BY	DATE				
A	ISSUED FOR APPROVAL	J. LINA	99/12/10	DHS	DHS	BY	DATE				

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EF-241A/B
EXHAUST FAN
M/N: ET-20
0.25 kW, 120/1/60

H-240A/B
CATALYTIC HEATERS
RUFFNECK XL 416-480360-15 kW



GENERAL NOTES		GENERAL NOTES	
4	CLIENT REVISIONS		
3	AS BUILT		
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A	ISSUED FOR APPROVAL		

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1	ISSUED FOR CONSTRUCTION	J. LINA	99/12/30	PC	PC
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APPROVED		DRAWN	
MECH./STRUCT.	BY	J. LINANTUD	
DATE	DATE	DEC. 10/99	
ELECTRICAL	CHECKED		
DATE	BY	P. CRAWFORD	
PROJECT	DATE	DEC. 30/99	
DATE	SCALE		

**BUILDING UTILITIES
MECHANICAL FLOWSHEET**

DWG. No.: D-MFS-99404-100 SHT. 11 OF 11 REV. 4

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PIPING SYMBOLS

	LOCALLY MOUNTED		VENTURI TUBE		INDICATES FLANGED VALVE (TYPICAL FOR ALL TYPES)		PRESSURE SAFETY VALVE		RUPTURE DISC FOR PRESSURE RELIEF
	TWO INSTRUMENTS IN THE SAME HOUSING		DIAPHRAGM, SPRING OPPOSED		INDICATES BUTT-WELDED, SCREWED OR SOCKET-WELDED VALVE (TYPICAL FOR ALL TYPES)		PRESSURE REDUCING REGULATOR OR FORWARD PRESSURE REGULATOR		RUPTURE DISC FOR VACUUM RELIEF
	PANEL MOUNTED IN CONTROL ROOM		CYLINDER, PISTON OPERATED		BA = BALL VALVE		BACK PRESSURE REGULATOR		TURBINE METER
	BEHIND PANEL MOUNTED IN CONTROL ROOM		DIAPHRAGM WITH POSITIONER		CH = CHECK VALVE		DIFFERENTIAL PRESSURE REGULATOR		POSITIVE DISPLACEMENT METER
	INSTRUMENT MOUNTED ON LOCAL PANEL		MANUAL HANDWHEEL OVERRIDE		GA = GATE VALVE		PRESSURE REDUCING REGULATOR WITH EXTERNAL PRESSURE CONNECTION		ANNUBAR OR PITOT TUBE
	BEHIND PANEL MOUNTED ON LOCAL PANEL		TO DRAIN SYSTEM (E.G. SHOWN: CLOSED HYDROCARBON DRAIN)		GL = GLOBE VALVE		PNEUMATIC LINE		CALIBRATED METER RUN WITH QUICK CHANGE FITTING
	LOCAL DISPLAY (DATALINER) OR ANNUNCIATOR		OPEN DRAIN		PL = PLUG VALVE		TUBING LINE		FLOW ELEMENT (ORIFICE) c/w PLATE
	HIGH/LOW LEVEL ALARMS		VENT TO ATMOSPHERE		NE = NEEDLE VALVE		SOFTWARE OR DATA LINK		RESTRICTION ORIFICE c/w PLATE
	PUSH BUTTON		VENT TO ATMOSPHERE c/w HYDRAULIC SEAL		BU = BUTTERFLY VALVE		BLIND FLANGE		FLOW QUANTITY INDICATOR
	HAND SWITCH		HOT INSULATION (E.G. SHOWN: 25mm THICK)		ST = "Y" TYPE LINE STRAINER		PIPE CAP		FLOW SIGHT GLASS MONITOR
	STATUS LIGHT		COLD INSULATION (E.G. SHOWN: 25mm THICK)		ST = "T" TYPE LINE STRAINER		PIPE UNION, NPT		FLOW INDICATOR (ROTOMETER TYPE)
	LOCAL RESET		ELECTRICAL (ET), HOT GLYCOL (GT), STEAM (ST) HEAT TRACING		SOLENOID 2-WAY VALVE		SPEC. BREAK		
	INTERLOCK (E.G. SHOWN: INTERLOCK #100A)		HOT INSULATION (E.G. SHOWN: 25mm THICK HOT INSULATION WITH ELECTRIC HEAT TRACING)		SOLENOID 3-WAY VALVE		STEAM TRAP		
	DISTRIBUTED CONTROL SYSTEM		EXPANSION JOINT		SOLENOID 4-WAY VALVE				
	PROGRAMMABLE LOGIC CONTROL SYSTEM		FLEXIBLE HOSE		THREE WAY VALVE				
	DISTRIBUTED CONTROL SYSTEM (DCS) PANEL (E.G. SHOWN: DCS CONTROL PANEL #100)		TIE-IN POINT		FOUR WAY VALVE				
	PROGRAMMABLE LOGIC CONTROL (PLC) PANEL (E.G. SHOWN: PLC CONTROL PANEL #900)		STRAIGHTENING VANES		ANGLE VALVE				
	MOTOR CONTROL CENTRE (MCC)		CURRENT/PRESSURE TRANSDUCER		STOP CHECK ANGLE VALVE OR CHOKE				
	LOW SELECT		SPECIALTY ITEM		VALVE c/w BLEED				
	CONICAL STRAINER OR TEMPORARY SUCTION STRAINER		CONCENTRIC REDUCER/INCREASER		PULSATION DAMPER				
	SPADE/SLIP BLIND		ECCENTRIC REDUCER/INCREASER						
	SPECTACLE BLIND NORMALLY CLOSED		SWAGE						
	SPECTACLE BLIND NORMALLY OPEN								

	A	AH	AHL	AL	C	CV	DR	DV	E	FIC	G	GM	I	IC	IS	IT	K	L	PH	Q	R	RC	RR	S	SC	SD	SDH	SDL	SE	SH	SL	SLL	SM	SO	SV	T	V	W	Y	
A	ANALYSIS	AAH	AHL	AAL	AC	ACV	ADR		AE				AI	AIC		AIT					AR	ARC	ARR	AS			ASDH	ASDL		ASH	ASL		ASM			AT		AY		
BJ	BURNER FAILURE	BJA																																						
C	CONDUCTIVITY	CAH	CHL	CAL	CC	CCV	CDR		CE		DG		CI	CIC	CIS	CIT					CR	CRC	CRR	CS			CSDH	CSDL		CSH	CSL		CSM			CT		CY		
D	DENSITY	DAH	DAHL	DAL	DC	DCV	DDR		DE				DI	DIC	DIS	DIT	DK	DL			DR	DRC	DRR	DS			DSDH	DSDL	DSE	DSH	DSL		DSM			DT		DY		
dP	DIFFERENTIAL PRESSURE	dPA	dPAHL	dPAL	dPC	dPCV	dPR						dPI	dPIC	dPIS	dPIT		dPL			dPRC	DRR	DRR	dPS			dPSDH	dPSDL		dPSH	dPSL				dPT		dPY			
E	EMERGENCY																																							
F	FLOW	FAH	FAHL	FAL	FC	FCV	FDR		FE	FFIC	FG		FI	FIC	FIS	FIT	FK	FL		FQ	FR	FRC	FRR	FS			FSDH	FSDL		FSH	FSL		FSM		FSV	FT		EY		
G	GAS DETECTION	GAH							GE																		GSDH		GSH									FY		
H	HAND (MANUAL)				HC	HCV								HRC																										
J	POWER														JIC																									
K	TIME	KA			KC	KCV	KDR										KL		KQ					KS																
L	LEVEL	LAH	LAHL	LAL	LC	LCV	LDR		LE		LG	LGM	LI	LIC	LIS	LIT		LL			LR	LRC	LRR	LS		LSD	LSDH	LSDL		LSH	LSL	LSLL	LSM			LT		LY		
M	MOISTURE	MAH	MAHL	MAL	MC	MCV	MDR		ME				MI	MIC	MIS	MIT		ML			MR	MRC	MRR	MS			MSDH	MSDL		MSH	MSL		MSM			MT		MY		
P	PRESSURE	PAH	PAHL	PAL	PC	PCV	PDR		PE				PI	PIC	PIS	PIT	PK	PL	PPH		PR	PRC	PRR	PS			PSDH	PSDL	PSE	PSH	PSL		PSM		PSV	PT		PY		
R	REMOTE																																							
S	SPEED	SAH	SAHL	SAL	SC	SCV	SDR		SE				SI	SIC	SIS	SIT	SK	SL			SR	SRC	SRR	SS			SSDH	SSDL		SSH	SSL		SSM			ST		SY		
T	TEMPERATURE	TAH	TAHL	TAL	TC	TCV	TDR		TE				TI	TIC	TIS	TIT	TK	TL			TR	TRC	TRR	TS			TSDH	TSDL	TSE	TSH	TSL		TSM			TT		TY		
U	UNIT	UA						UDV									UL																							
V	VIBRATION	VAH			VC				VE				VI								VR		VS				VSDH		VSH							VT				
VI	VISCOSITY	VIAH	VIAHL	VIAL	VIC	VICV	VIDR		VIE				VII	VIIC	VIIS	VIIT		VIL			VIR	VIRC	VIRR	VIS			VISDH		VISH	VISL		VISM			VIT		VIIY			
X	FIRE DETECTION	XA							XE																				XSH											
Z	LIMIT OR POSITION	ZAH	ZAHL	ZAL					ZE								ZIS	ZIT	ZL								ZSDH	ZSDL		ZSH	ZSL		ZSM	ZSO	ZT			ZY		

<p>APPROVED</p> <p>MECH./STRUCT. BY J. LINANTUD</p> <p>DATE DEC. 08/99</p> <p>ELECTRICAL CHECKED</p> <p>DATE BY P. CRAWFORD</p> <p>PROJECT P. CRAWFORD DATE DEC. 30/99</p> <p>DATE DEC. 30/99 SCALE</p>		<p>DRAWN</p> <p>J. LINANTUD</p> <p>DATE DEC. 08/99</p> <p>CHECKED</p> <p>P. CRAWFORD</p> <p>DATE DEC. 30/99</p> <p>SCALE</p>		<p>PROPAG W-1478 6HOS-3</p> <p>STOCK 1478 HP COMPRESSOR, M/N W 1478, 6HOS-3</p> <p>LEGEND</p> <p>MECHANICAL FLOWSHEET</p> <p>DWG. No.: D-MFS-99404-100 SHT. 1 OF 11 REV. 2</p>		<p>PROPAG</p> <p>440 East Lake Road,</p> <p>Postal Bag #2</p> <p>Airdrie, Alberta</p> <p>Canada T4B 2C3</p>	
<p>GENERAL NOTES</p> <p>2 RE-ISSUED FOR CONSTRUCTION</p> <p>1 ISSUED FOR CONSTRUCTION</p> <p>A ISSUED FOR APPROVAL</p>		<p>GENERAL NOTES</p> <p>No. REVISION</p>		<p>BY DATE CKD ENG</p> <p>J. LINA 00/06/06 SW SW</p> <p>S. SULZ 99/12/30 PC PC</p> <p>J. LINA 99/12/08 DHS DHS</p>		<p>DATE</p>	
<p>DATE: 2000.06.06 10:23am FILE NAME: J:\jobs99\DWG\99404\FLW\MFS-99404-100-01.dwg</p>							

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GENERAL SPECIFICATIONS

CLASS	TYPICAL SERVICE	TEMP. RANGE (°C)	PRESS. RATING (ANSI)
A	SWEET HYDROCARBON, PROPANE REFRIGERANT, FUEL GAS AND FLARE GAS	-29°C TO 260°C	150 # RF
B	SWEET HYDROCARBON, PROPANE REFRIGERANT, FUEL GAS AND FLARE GAS	-29°C TO 260°C	300 # RF
C	SWEET HYDROCARBON, PROPANE REFRIGERANT, FUEL GAS AND FLARE GAS	-29°C TO 260°C	600 # RF
D	SWEET HYDROCARBON	-29°C TO 260°C	900 # RF
E	SWEET HYDROCARBON	-29°C TO 260°C	1500 # RF
F	SWEET HYDROCARBON	-29°C TO 260°C	2500 # RF
H	COMPRESSED AIR AND UTILITY WATER	0°C TO 38°C	150 # RF
J	DRAIN SYSTEM PIPING	5°C TO 95°C	150 # RF
K	GLYCOL	1.21 MPa @ 177°C	150 # RF TO 1500 # RF
AS	SOUR HYDROCARBON, RICH AMINE AND SOUR WATER	-29°C TO 260°C	150 # RF
BS	SOUR HYDROCARBON, RICH AMINE AND SOUR WATER	-29°C TO 260°C	300 # RF
CS	SOUR HYDROCARBON, RICH AMINE AND SOUR WATER	-29°C TO 260°C	600 # RF
DS	SOUR HYDROCARBON	-29°C TO 260°C	900 # RF
ES	SOUR HYDROCARBON	-29°C TO 260°C	1500 # RF
FS	SOUR HYDROCARBON	-29°C TO 260°C	2500 # RF
AL	SWEET HYDROCARBON, PROPANE REFRIGERANT	-46°C TO 66°C	150 # RF
BL	SWEET HYDROCARBON, PROPANE REFRIGERANT	-46°C TO 66°C	300 # RF
CL	SWEET HYDROCARBON, PROPANE REFRIGERANT	-46°C TO 66°C	600 # RF
AC	SWEET HYDROCARBON	-184°C TO 66°C	150 # RF
BC	SWEET HYDROCARBON	-184°C TO 66°C	300 # RF
CC	SWEET HYDROCARBON	-184°C TO 66°C	600 # RF

GENERAL NOTES (ABBREVIATIONS)

- AC - AIR CLOSES
- AO - AIR OPENS
- AVT - AUTOVENT TRAP
- BD - BLOWDOWN
- BF - BLIND FLANGE
- CBD - CONTINUOUS BD
- CD - CLOSED DRAIN
- CO - CHAIN OPERATED
- CSC - CAR SEAL CLOSED
- CSO - CAR SEAL OPEN
- DC - DRAIN CONNECTION
- EBD - EMERGENCY BD
- ESD - EMERGENCY SHUTDOWN
- ET - ELECTRICAL HEAT TRACE
- FO - FAIL OPEN
- FC - FAIL CLOSED
- FP - FULL PORT
- GT - GLYCOL HEAT TRACE
- HH - HAND HOLE
- HC - HOSE CONNECTION
- L - LOW
- LC - LOCK CLOSED
- LO - LOCK OPEN
- LPD - LOW POINT DRAIN
- ML - MANUAL LOADING
- MW - MANWAY
- NC - NORMALLY CLOSED
- NE - NORMALLY ENERGIZED UNDER OPER. COND.
- NO - NORMALLY OPEN
- ND - NORMALLY DE-ENERGIZED UNDER OPER. COND.
- PC - PISTON CHECK VALVE
- PO - PUMPOUT
- PP - PERSONNEL PROTECTION
- QO - QUICK OPENING
- SC - SAMPLE CONNECTION
- SO - STEAM OUT
- SP - SET POINT
- ST - STEAM HEAT TRACE
- UG - UNDERGROUND
- VB - VACUUM BREAKER
- WC - WATER COLUMN

COMMODITY (ABBREVIATIONS)

- AG - ACID GAS
- AGF - ACID GAS FLARE
- AMD - AMINE DRAIN
- AV - ATMOSPHERIC VENTS
- BD - BLOWDOWN
- C - CAUSTIC
- CCD - CLOSED CRYOGENIC DRAIN
- CHD - CLOSED HYDROCARBON DRAIN
- CSD - CLOSED SOUR DRAIN
- CV - CRYOGENIC VENT
- CWD - CLOSED WATER DRAIN
- DR - DRAIN (ATMOSPHERIC)
- EQL - EQUALIZING
- FG - FUEL GAS
- FL - FLARE
- FO - FUEL OIL
- FW - FIRE WATER
- GD - GLYCOL DRAIN
- GL - GLYCOL
- HC - HIGH PRESSURE STEAM CONDENSATE
- HCL - HYDROCARBON LIQUIDS
- HCV - HYDROCARBON VAPOUR
- HM - HEAT MEDIUM
- HPF - HIGH PRESSURE FLARE
- HS - HIGH PRESSURE STEAM
- I/A - INSTRUMENT AIR
- I/G - INSTRUMENT GAS
- IS - INSTRUMENT SUPPLY
- JW - JACKET WATER
- K - CHEMICALS
- LAM - LEAN AMINE
- LC - LOW PRESSURE STEAM CONDENSATE
- LO - LUBE OIL
- LOD - LUBE OIL DRAIN
- LPF - LOW PRESSURE FLARE
- LPG - LOW PRESSURE GAS
- LS - LOW PRESSURE STEAM
- MC - MEDIUM PRESSURE STEAM CONDENSATE
- MS - MEDIUM PRESSURE STEAM
- P - PROCESS GAS/LIQUID
- PDW - PRODUCED WATER
- POD - PACKING OIL DRAIN/VENT
- POW - POTABLE WATER
- PS - SOUR PROCESS GAS
- PSW - SOUR PROCESS WATER
- PW - PROCESS WATER
- RAM - RICH AMINE
- RLRV - REFRIG. LIQUID, REFRIG. VAPOUR
- ROD - REFRIG. OIL DRAIN
- SO - SEAL OIL
- SOD - SEAL OIL DRAIN
- UW - UTILITY WATER

MISCELLANEOUS EQUIPMENT (ABBREVIATIONS)

- ACT - ACTUATOR
- BLT - BELT
- BUS - BUSHING
- CPL - COUPLING
- EM - HEAT EXCHANGER MOTOR
- ES - EXHAUST SILENCER
- F - FILTER
- FW - FLYWHEEL
- H - HEATER
- INS - INSULATION
- LUB - LUBRICATOR
- MIS - MISCELLANEOUS
- PIP - PIPE
- PM - PUMP MOTOR
- RC - RADIATOR CAP
- SB - SPECTACLE BLIND
- SHF - SHAFT
- SHV - SHEAVE
- SP - SPACER
- STR - STARTER (ELECTRIC/PNEUMATIC)
- T - TANK
- TSS - TEMPORARY SUCTION SCREEN
- TUB - TUBING

TUBING SIZES

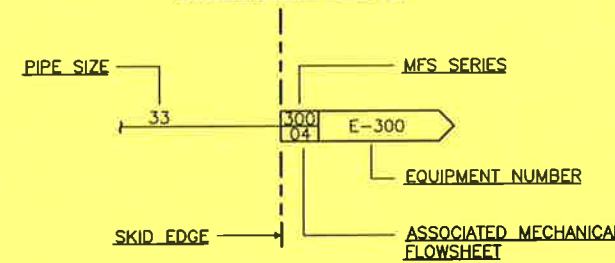
METRIC O.D. (mm)	IMP O.D. (INCH.)	IMP NPS (INCH.)
3	1/8"	1/4"
6	1/4"	3/8"
9	3/8"	1/2"
13	1/2"	3/4"
19	3/4"	1"
25	1"	1-1/2"

PIPE SIZES

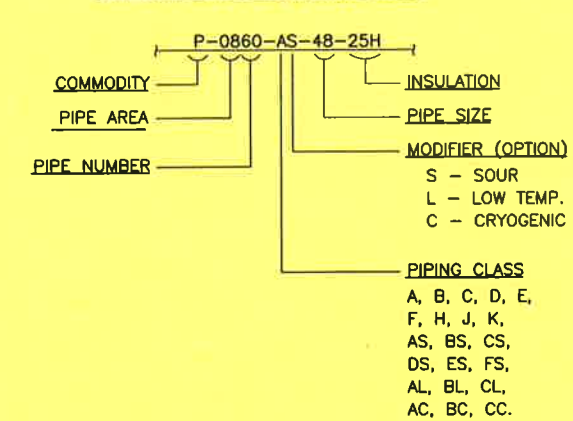
METRIC O.D. (mm)	METRIC DIN (mm)
14	8
17	10
21	15
27	20
33	25
48	40
60	50
89	80
114	100
168	150
219	200
273	250
324	300
356	350
406	400
457	450
508	500
610	600
914	900
1067	1050

NOTES:
NPS - NOMINAL PIPE SIZE

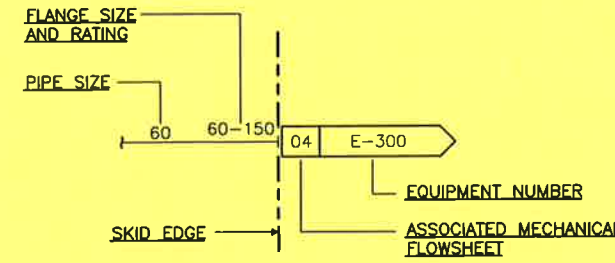
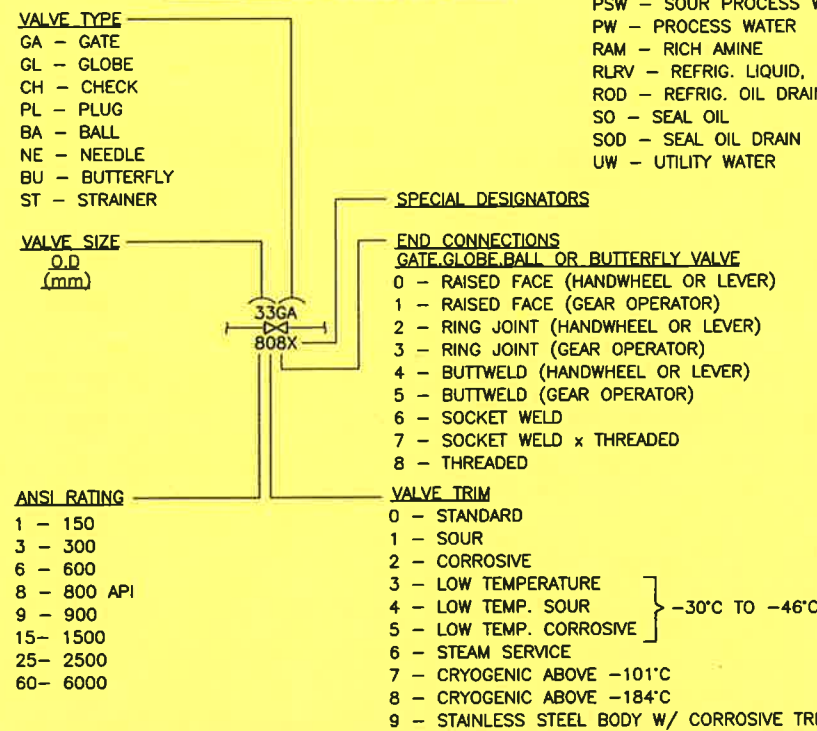
TYPICAL PIPE FLAGS



TYPICAL PIPE IDENTIFICATION



TYPICAL VALVE IDENTIFICATION



TYPICAL EQUIPMENT IDENTIFICATION

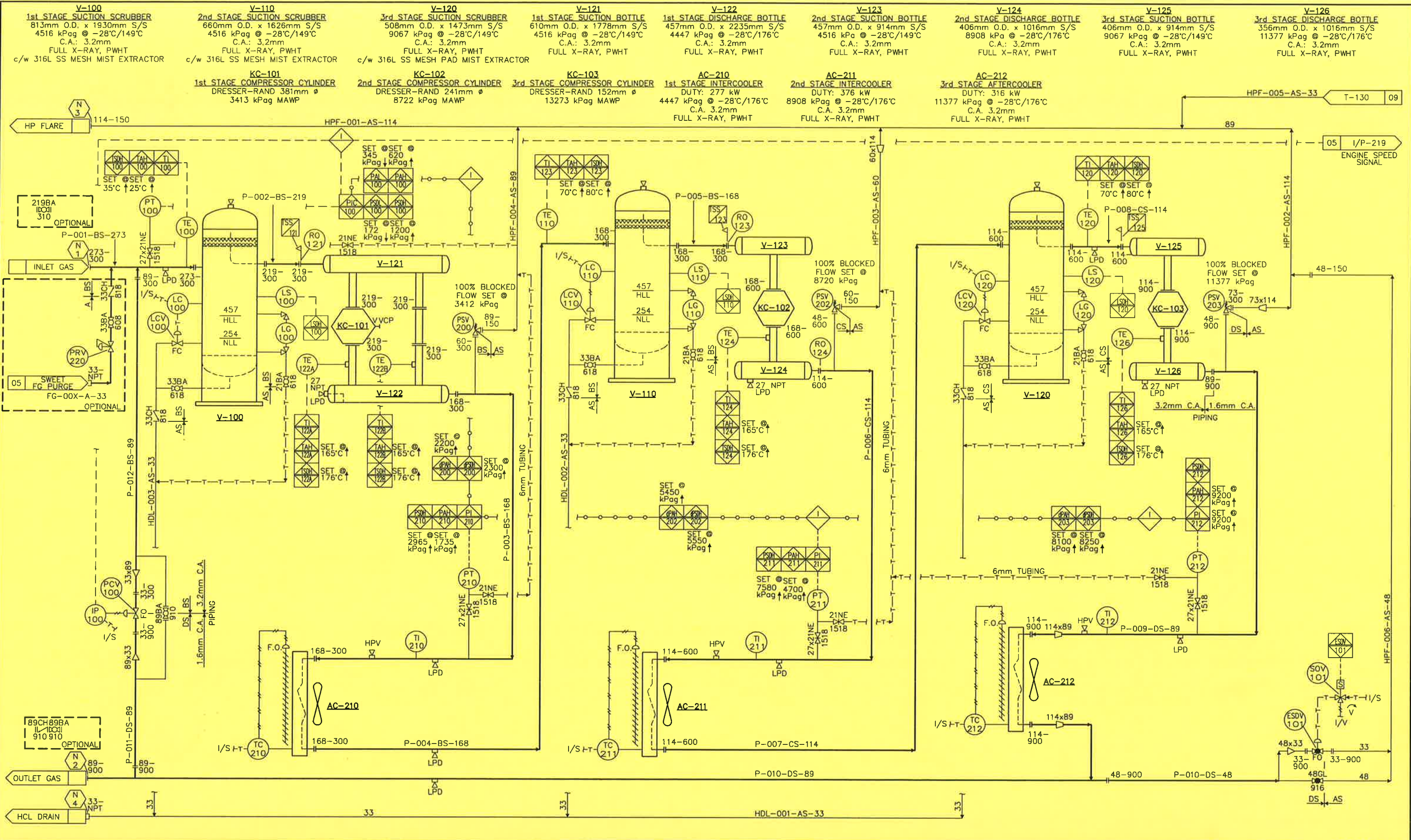
TAG No: T-820
 DESCRIPTION: DEETHANIZER
 DIMENSIONS: ...mm O.D. x ...mm S/S
 DESIGN PRESSURE @ DESIGN TEMP., CORROS. ALLOWANCE: ... kPa @ ... °C, ...mm C.A.
 GAS FLOW RATES: ... m3/d
 LIQUID FLOW RATES: ... m3/h
 DUTIES: ... kW
 MOTOR POWER: ... kW @ V/φ/Hz
 STRESS RELIEVING AND X-RAY: S.R.: YES/NO, X-RAY: FULL/100%/SPOT
 MAKE AND MODEL:

THIS DRAWING AND

<p>GENERAL NOTES</p> <p>2 RE-ISSUED FOR CONSTRUCTION</p> <p>1 ISSUED FOR CONSTRUCTION</p> <p>A ISSUED FOR APPROVAL</p>		<p>GENERAL NOTES</p> <p>No. REVISION</p>		<p>APPROVED</p> <p>MECH./STRUCT. DATE</p> <p>ELECTRICAL DATE</p> <p>PROJECT DATE</p>		<p>DRAWN</p> <p>BY DATE</p> <p>CHECKED DATE</p> <p>BY DATE</p>		<p>PROPAC W-1478 6HOS-3</p> <p>STOCK 1478 HP COMPRESSOR, M/N W 1478, 6HOS-3</p> <p>LEGEND</p> <p>MECHANICAL FLOWSHEET</p>		<p>440 East Lake Road,</p> <p>Postal Bag #2</p> <p>Airdrie, Alberta</p> <p>Canada T4B 2C3</p>	
<p>DATE: 2000.06.06 10:23am FILE NAME: J:\jobs99\DWG\99404\FW\MFS-99404-100-02.dwg</p>		<p>BY DATE CKD ENG</p>		<p>DATE DEC. 30/99</p>		<p>DATE DEC. 30/99</p>		<p>DWG. No.: D-MFS-99404-100</p>		<p>SHT. 2 OF 11 REV. 2</p>	

PROPAC

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1. USE XXH NIPPLE ON NPT CONNECT FOR "DS", "CS" & "BS"
 2. USE SCH 160 NIPPLE ON NPT CONNECT FOR "AS"
 3. VENT ALL VENTING INSTS TO VENT HEADER.

No.	REVISION	BY	DATE	ENG
2	RE-ISSUED FOR CONSTRUCTION	H. LE	00/06/06	SW SW
1	ISSUED FOR CONSTRUCTION	S. SULZ	99/12/30	PC PC
A	ISSUED FOR APPROVAL	J. LINANTUD	99/12/08	DHS DHS

APPROVED		DRAWN	
MECH./STRUCT.	BY J. LINANTUD	DATE	DEC. 08/99
ELECTRICAL	CHECKED	DATE	DEC. 30/99
PROJECT	BY P. CRAWFORD	DATE	DEC. 30/99
DATE	DEC. 30/99	SCALE	

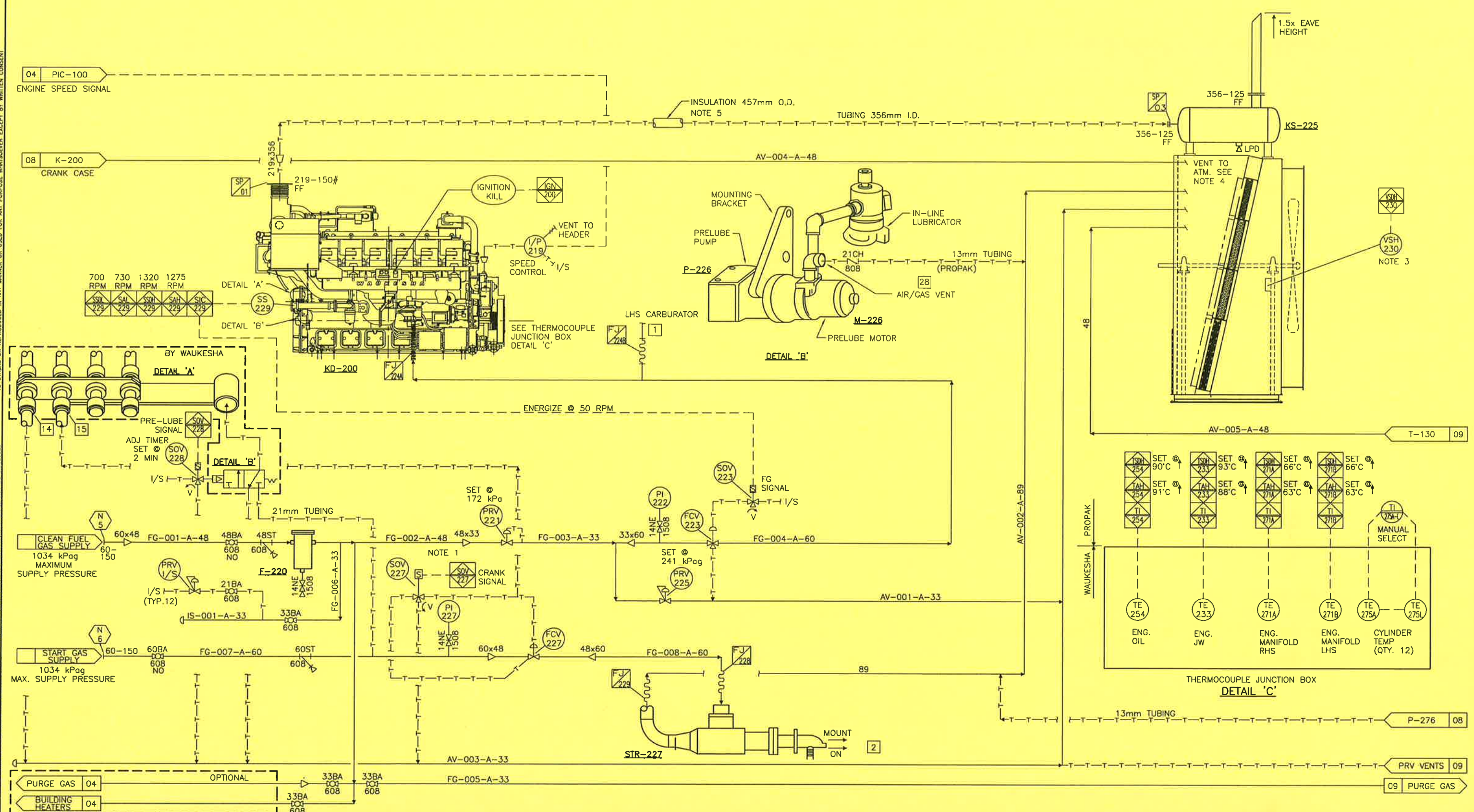
PROPAG
 440 East Lake Road,
 Postal Bag #2
 Airdrie, Alberta
 Canada T4B 2C3

PROPAG W-1478 6HOS-3
 STOCK 1478 HP COMPRESSOR, M/N W 1478, 6HOS-3
 COMPRESSOR
 MECHANICAL FLOWSHEET

DWG. No.: D-MFS-99404-100 SHT. 4 OF 11 REV. 2

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- F-220**
FUEL GAS FILTER
HEAD LINE 385-AP-70C-1-1/2"
1724 kPag @ 93°C
c/w 70-C FILTER ELEMENT
- P-226/M226**
ENGINE PRELUBE PUMP
GAS DRIVEN MOTOR
c/w ENGINE
- KD-200**
COMPRESSOR DRIVER
WAUKESHA 7042GL
1478 BHP @ 1200 RPM
54°C INTERCOOLER INLET TEMPERATURE
- STR-227**
ENGINE STARTER
TDI TURBO TWIN
MIN T112B PIN T112-60001-BIR
30.875 sm³/min @ 827 kPag
- KS-225**
COMPRESSOR SILENCER
MODEL: JAT-14-S012
CRITICAL GRADE SILENCER
356mm-125# IN/OUT



1. HIGH PRESSURE SOV. AT 45° AS SHOWN AT APPROXIMATELY THE
 2. ENGINE CONNECTION INDEX SEE 99404-100-03 SAME ELEVATION.
 3. LOCATE VSH CLOSE TO FAN SHAFT ON BEARING SUPPORT. 5. INSULATE TO BUILDING WALL ONLY.
 4. VENTS TO ATM. INSIDE COOLER PLENUM TO TERMINATE HORIZONTALLY WITH PIPE ENDS CUT.

GENERAL NOTES

No. 2 RE-ISSUED FOR CONSTRUCTION
 1 ISSUED FOR CONSTRUCTION
 A ISSUED FOR APPROVAL

DATE: 2000.06.06 10:25am FILE NAME: J:\jobs99\DWG\99404\FLW\MFS-99404-100-05.dwg

NO.	REVISION	BY	DATE	CKD	ENG
2	RE-ISSUED FOR CONSTRUCTION	H. LE	00/06/06	SW	SW
1	ISSUED FOR CONSTRUCTION	S.SULZ	99/12/30	PC	PC
A	ISSUED FOR APPROVAL	J. LINA	99/12/08	DHS	DHS

APPROVED		DRAWN	
MECH./STRUCT.	BY	J. LINANTUD	
DATE	DATE	DEC. 08/99	
ELECTRICAL	CHECKED		
DATE	BY	P. CRAWFORD	
PROJECT	DATE	DEC. 30/99	
DATE	SCALE		

PROPAC
 440 East Lake Road,
 Postal Bag #2
 Airdrie, Alberta
 Canada T4B 2C3

PROPAC W-1478 6HOS-3
 STOCK 1478 HP COMPRESSOR, M/N W 1478, 6HOS-3
 ENGINE FUEL START GAS
 MECHANICAL FLOWSHEET

DWG. No.: D-MFS-99404-100 SHT. 5 OF 11 REV. 2

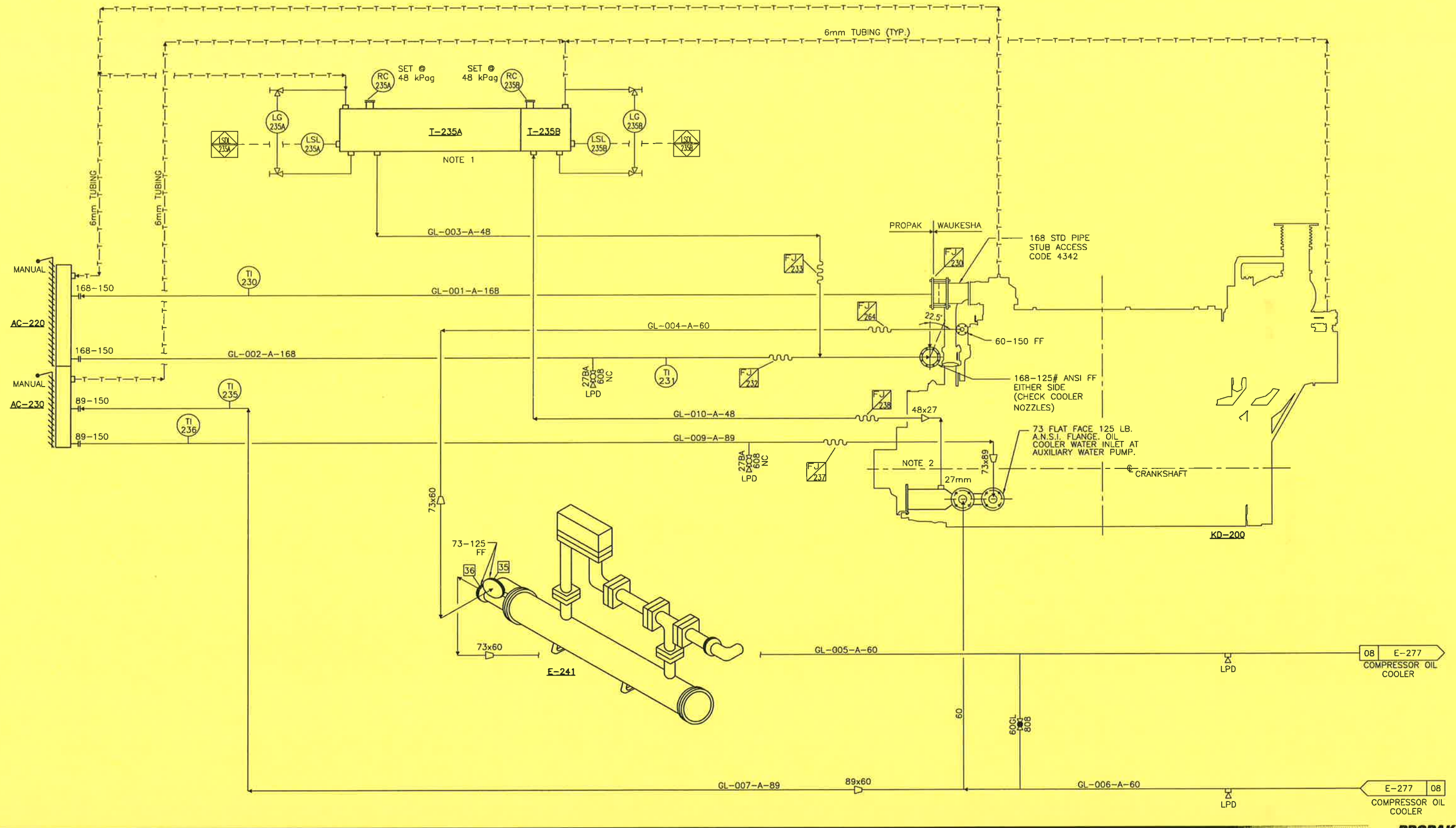
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AC-220
 ENGINE JW COOLER
 96.5 kPag MAWP
 DUTY: 4.01mm BTU/hr (117.4 kW/hr)
 0mm C.A.

AC-230
 ENGINE AW COOLER
 96.5 kPag MAWP
 DUTY: 0.775mm BTU/hr (22.7 kW/hr)
 0mm C.A.

T-235A/T-235B
 ENGINE JW/AW SURGE TANK
 160/74 L CAPACITY
 96.5 kPag MAWP

E-241
 ENGINE OIL COOLER
 c/w ENGINE



GENERAL NOTES
 1. MOUNT T-235A/T-235B ON TOP OF COOLER, AS CLOSE AS POSSIBLE TO EDGE.
 2. SHOP DISCRETION TO RUN 19mm TUBING INTO GL-010-A-48

No.	REVISION
2	RE-ISSUED FOR CONSTRUCTION
1	ISSUED FOR CONSTRUCTION
A	ISSUED FOR APPROVAL

BY	DATE	CKD	ENG
H. LE	00/06/06	SW	SW
S. SULZ	99/12/30	PC	PC
J. LINA	99/12/08	DHS	DHS

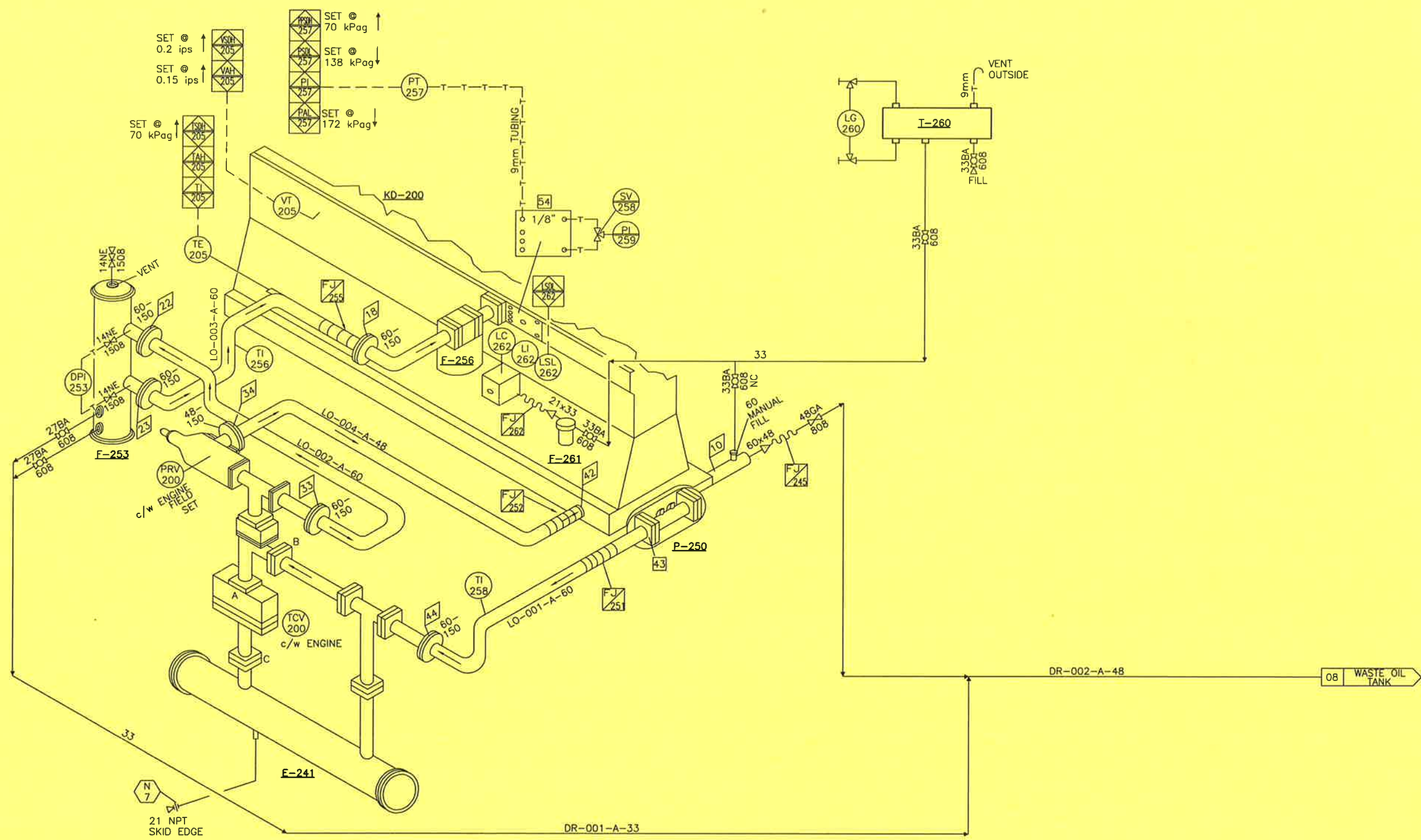
APPROVED		DRAWN	
MECH/STRUCT.	BY	J. LINA	
DATE	DATE	DEC. 08/99	
ELECTRICAL	CHECKED		
DATE	BY	P. CRAWFORD	
PROJECT	DATE	DEC. 30/99	
DATE	SCALE		

PROPAG W-1478 6HOS-3
 STOCK 1478 HP COMPRESSOR, M/N W 1478, 6HOS-3
 GLYCOL COOLING SYSTEM
 MECHANICAL FLOWSHEET

PROPAG
 440 East Lake Road,
 Postal Bag #2
 Airdrie, Alberta
 Canada T4B 2C3

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- F-253**
ENGINE OIL FILTER
c/w ENGINE SHIPLOOSE
- F-241**
ENGINE OIL COOLER
c/w ENGINE SHIPLOOSE
- KD-200**
COMPRESSOR DRIVE
WAUKESHA L7042GL
1478 HP @ 1200 RPM
- F-256**
ENGINE OIL STRAINER
c/w MAGNETIC FILTER ELEMENT
(SEE NOTE 1)
- F-261**
OIL SUPPLY FILTER
BALDWIN BF914 HOUSING
c/w BALDWIN BF915 FILTER ELEMENT
- P-250**
ENGINE OIL PUMP
c/w ENGINE
- I-260**
ENGINE LUBE OIL SUPPLY
TANK INTEGRAL w/ CRANE
STRUCTURE (425L) (RHS)



1. INSTALL PAPER ELEMENT IN F-256. RUN PRE LUBE PUMP FOR OIL FLUSH PROCEDURE. REPLACE PAPER ELEMENT PRIOR TO FIELD START-UP.
 2. ENGINE CONNECTION INDEX SEE MFS-98147-100-P. 10.

GENERAL NOTES		REVISION		BY	DATE	CKD	ENG
No.							
2	RE-ISSUED FOR CONSTRUCTION	H. LE	00/06/06	SW	SW		
1	ISSUED FOR CONSTRUCTION	J. LINA	99/12/30	PC	PC		
A	ISSUED FOR APPROVAL	J. LINA	99/12/08	DHS	DHS		

APPROVED		DRAWN	
MECH/STRUCT.	BY	J. LINANTUD	
DATE	DATE	DEC. 08/99	
ELECTRICAL	BY	CHECKED	
DATE	DATE	P. CRAWFORD	
PROJECT	DATE	DEC. 30/99	
DATE	SCALE		

PROPAK W-1478 6HOS-3
 STOCK 1478 HP COMPRESSOR, M/N W 1478, 6HOS-3
 ENGINE UTILITIES
 MECHANICAL FLOWSHEET
 DWG. No.: D-MFS-99404-100 SHT. 7 OF 11 REV. 2

PROPAK
 440 East Lake Road,
 Postal Bag #2
 Airdrie, Alberta
 Canada T4B 2C3

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P-276
COMPRESSOR PRELUBE PUMP
 GAS DRIVEN DIAPHRAGM PUMP
 WILDEN M2, M/N: 02-10001
 132.5 L/MIN

E-277
COMPRESSOR OIL COOLER
 SHELL & TUBE
 (OIL) SHELL SIDE: 2068 kPag MAWP
 (OIL) TUBESIDE: 1034 kPag MAWP
 DUTY: 21 kW (1230 BTU/MIN)

K-200
SOUR GAS COMPRESSOR
 DRESSER RAND 6HOS3
 1506 kW, @ 1200 RPM
 60,000 lb MAX ROD LOAD

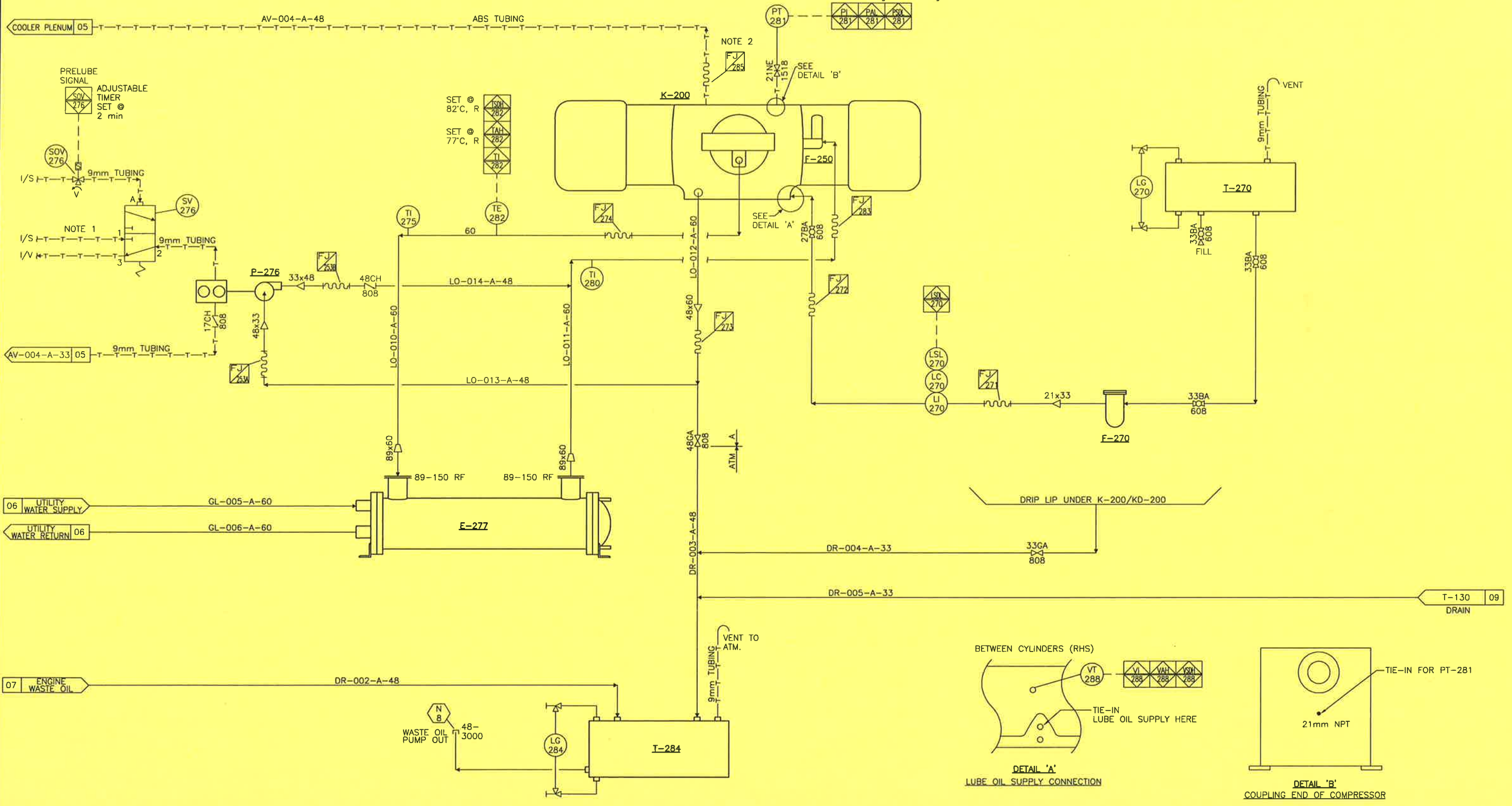
T-284
WASTE OIL TANK
 800 L
 INTEGRAL WITH SKID

F-250
COMPRESSOR RUNNING FILTER
 c/w COMPRESSOR
 FULL FLOW CAPACITY

F-270
LUBE OIL SUPPLY FILTER
 BALDWIN BF914
 c/w BALDWIN BF915 FILTER ELEMENT

T-270
COMPRESSOR LUBE OIL SUPPLY
 400L, INTEGRAL WITH OVERHEAD CRANE RAIL
 ATM DESIGN

SET @ 40 psig, F 276 kPag
 SET @ 35 psig, F 241 kPag



- 1. NO REGULATOR ON THIS I/S.
- 2. SHOP FIT, RUBBER HOISING

GENERAL NOTES	
No.	REVISION

GENERAL NOTES	
2	RE-ISSUED FOR CONSTRUCTION
1	ISSUED FOR CONSTRUCTION
A	ISSUED FOR APPROVAL

BY	DATE	CKD	ENG
H. LE	00/06/06	SW	SW
S. SULZ	99/12/30	PC	PC
J. LINA	99/12/08	DHS	DHS

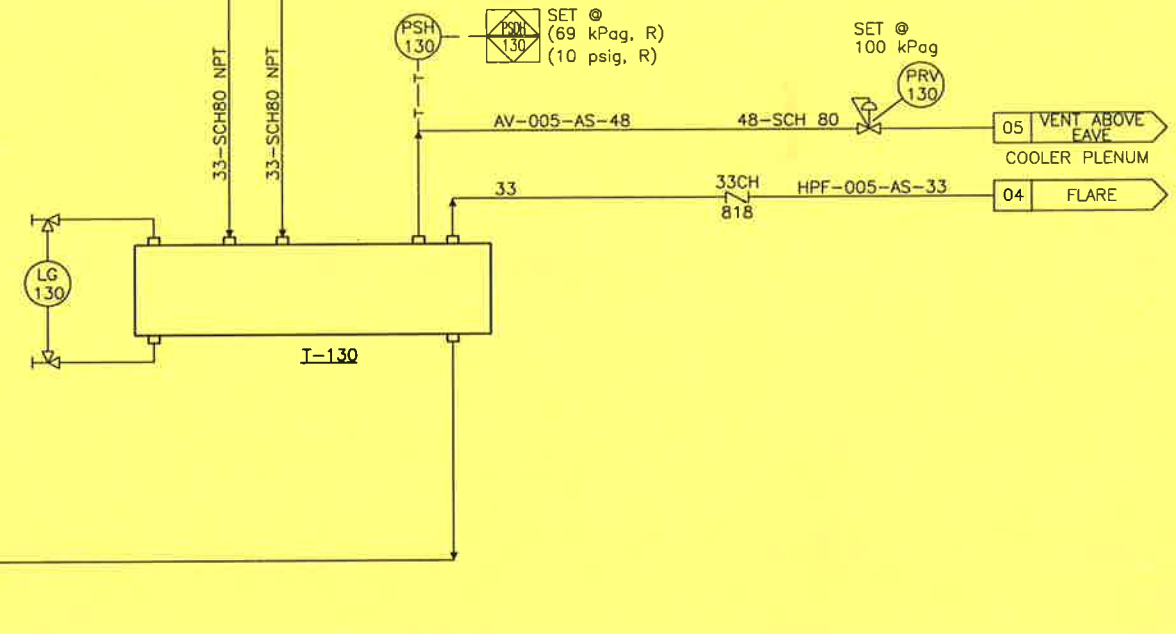
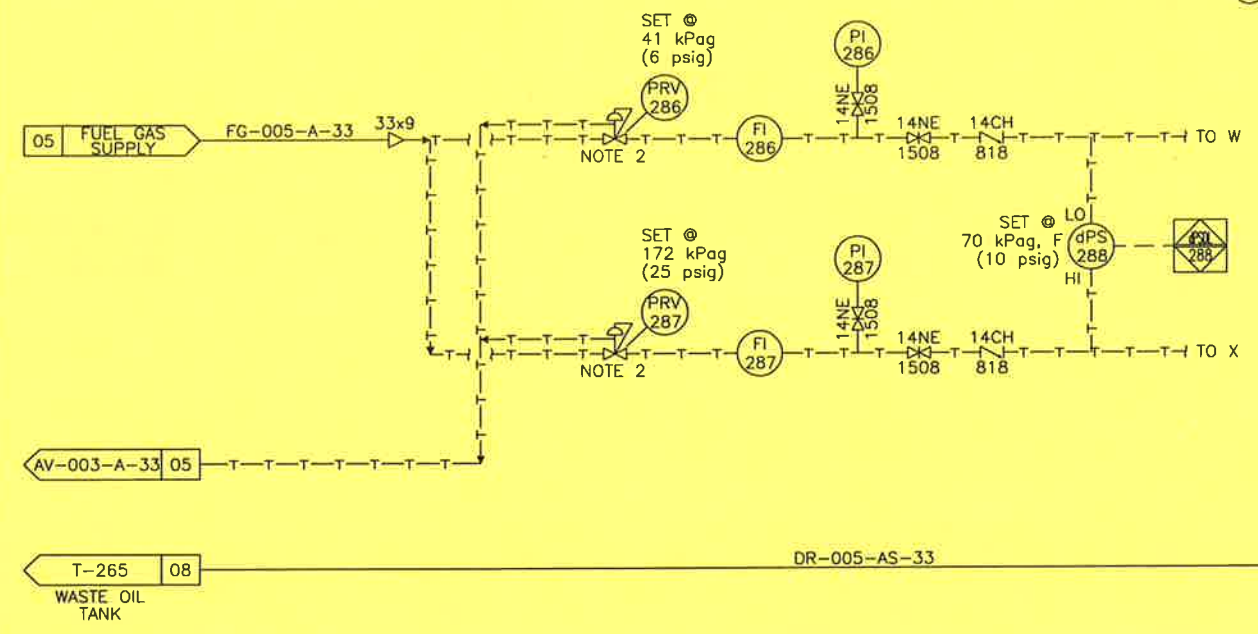
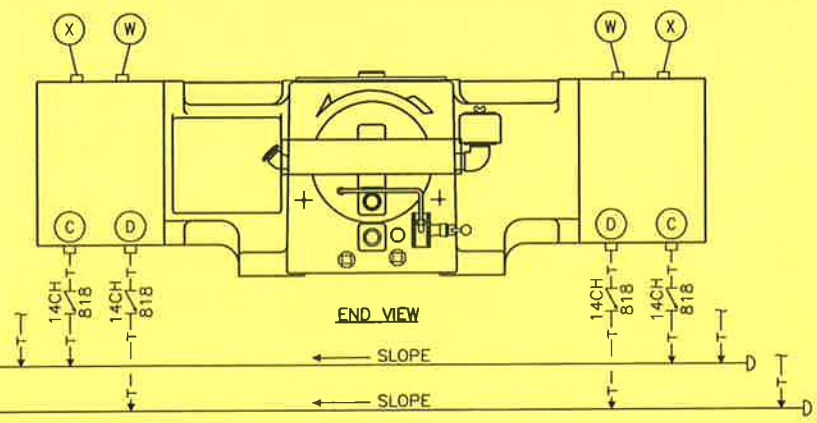
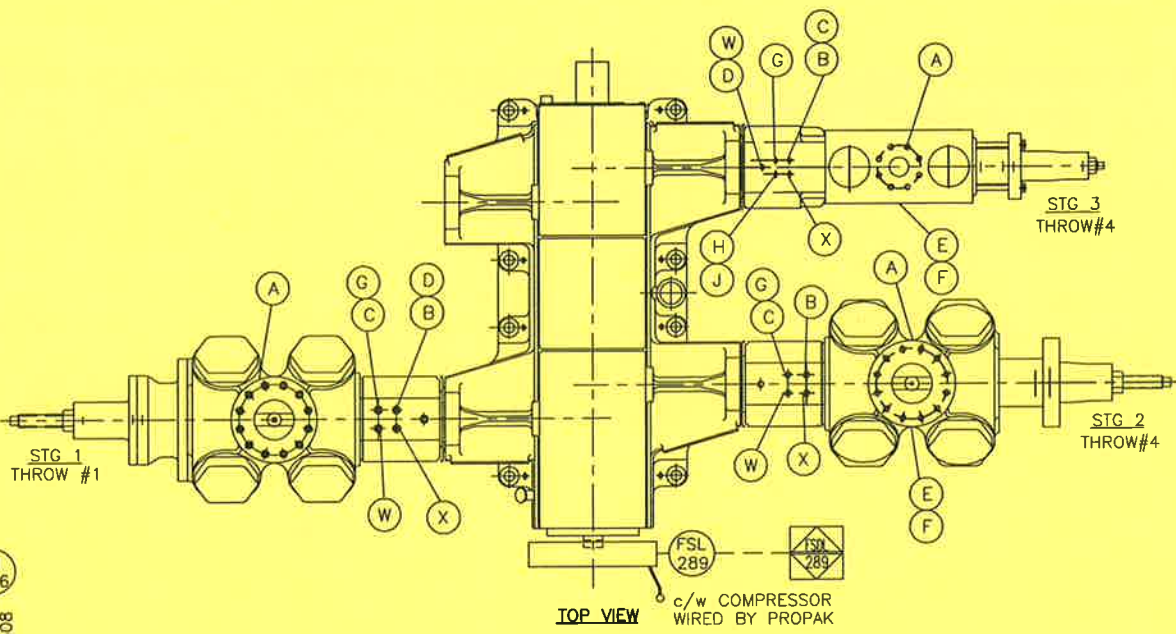
APPROVED		DRAWN	
MECH./STRUCT.	BY	J. LINA	
DATE	DATE	DEC. 08/99	
ELECTRICAL	CHECKED		
DATE	BY	P. CRAWFORD	
PROJECT	DATE	DEC. 30/99	
DATE	DEC. 30/99	SCALE	

PROPAK W-1478 6HOS-3	
STOCK 1478 HP COMPRESSOR, M/N W 1478, 6HOS-3	
SOUR GAS COMPRESSOR-COMPRESSOR FRAME OIL & GLYCOL	
MECHANICAL FLOWSHEET	
DWG. No.:	D-MFS-99404-100
SHT.	8 OF 11
REV.	2

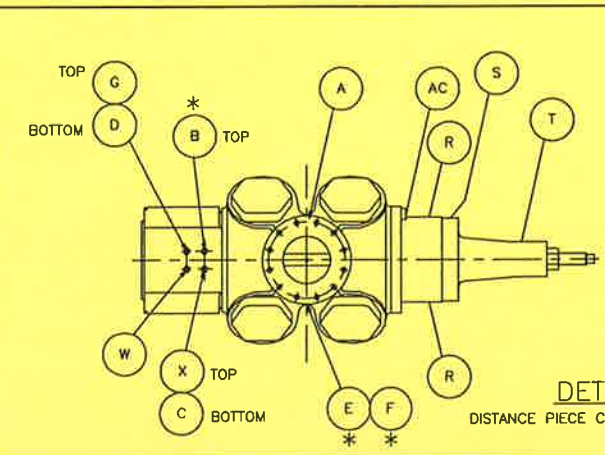
PROPAK
 440 East Lake Road,
 Postal Bag #2
 Airdrie, Alberta
 Canada T4B 2C3

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T-130
PACKING VENT & DRAIN SEAL POT
 273mm O.D. x 813mm S/S
 101 kPag DESIGN

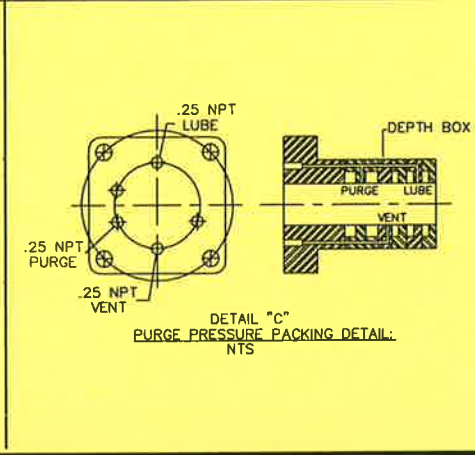
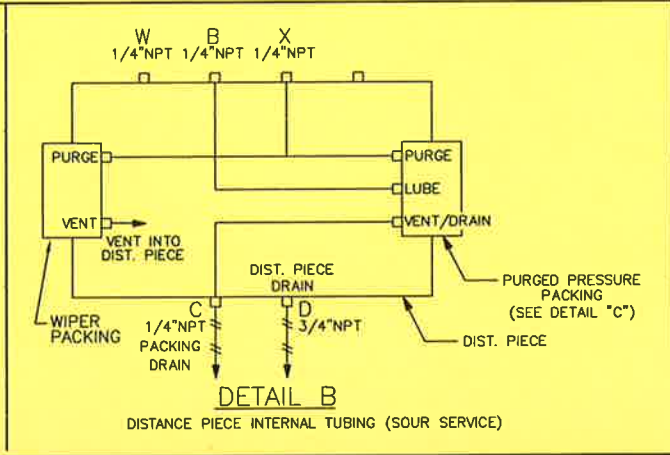


DISTANCE PIECE EVACUATION SYSTEM



- A) FLANGE CONN-INLET TOP & DISCHARGE BOTTOM.
- * B) 1/4" NPT PACKING LUBE CONN.-TOP.
- C) 1/4" NPT PACKING VENT/DRAIN CONN.-BOTTOM.
- D) 3/4" NPT DISTANCE PIECE DRAIN CONN.-BOTTOM.
- * E) 1/4" NPT CYL BORE LUBE CONN.-TOP.
- * F) 1/4" NPT CYL BORE LUBE CONN.-BOTTOM.
- G) 3/4" NPT YOKE VENT CONN.-TOP.
- R) 1/8" NPT WCP HEAD VENT TO NON-HAZARDOUS AREA-TOP OR BOTTOM.
- S) 1/8" NPT WCP ROD PKG. VENT TO NON-HAZARDOUS AREA -TOP OR BOTTOM.
- T) 1/8" NPT GREASE FITTING.
- W) 1/4" NPT DISTANCE PIECE PURGE-TOP.
- X) 1/4" NPT PACKING PURGE CONN.-TOP.

NOTE: PROPAK COMP. SERVICEMAN TO DOUBLE CHECK LOCATIONS OF (A-X) PRIOR TO HOOK-UP.
 * BY DRESSER-RAND



1. CHECK VALVES TO BE ADDED TO 'C' AND 'D' CYLINDER CONNECTION POINTS AS CLOSE TO DISTANCE PIECE AS POSSIBLE ON EACH CYLINDER.
2. INTERNAL TUBING TO BE INSPECTED BY PROPAK SERVICE, PRIOR TO HOOKING UP.

GENERAL NOTES		REVISION	
No.	DESCRIPTION	BY	DATE
2	RE-ISSUED FOR CONSTRUCTION	H. LE	00/06/06
1	ISSUED FOR CONSTRUCTION	S. SULZ	99/12/30
1	ISSUED FOR APPROVAL	J. LINA	99/12/08

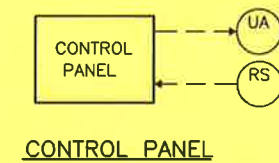
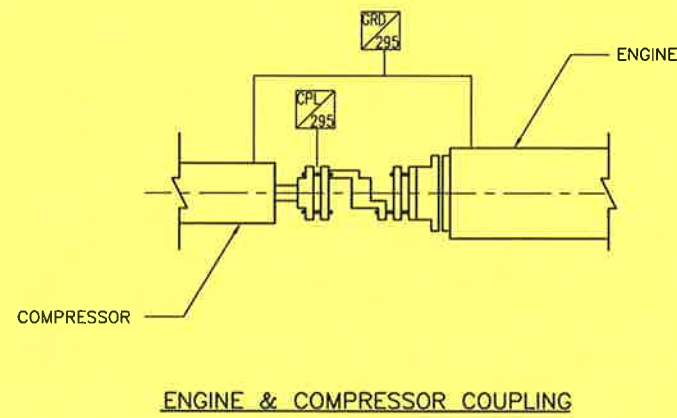
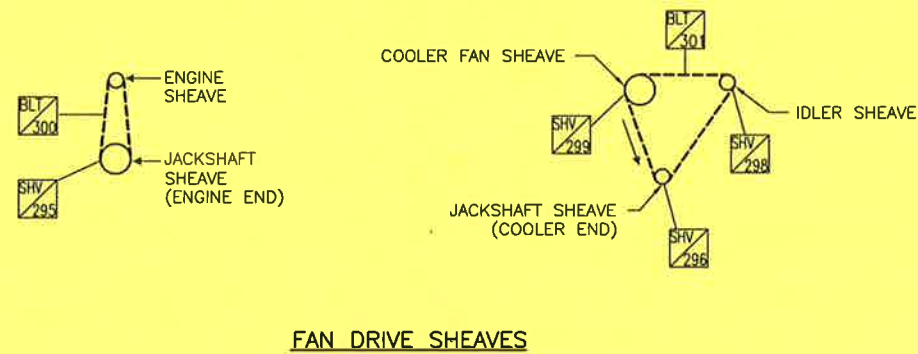
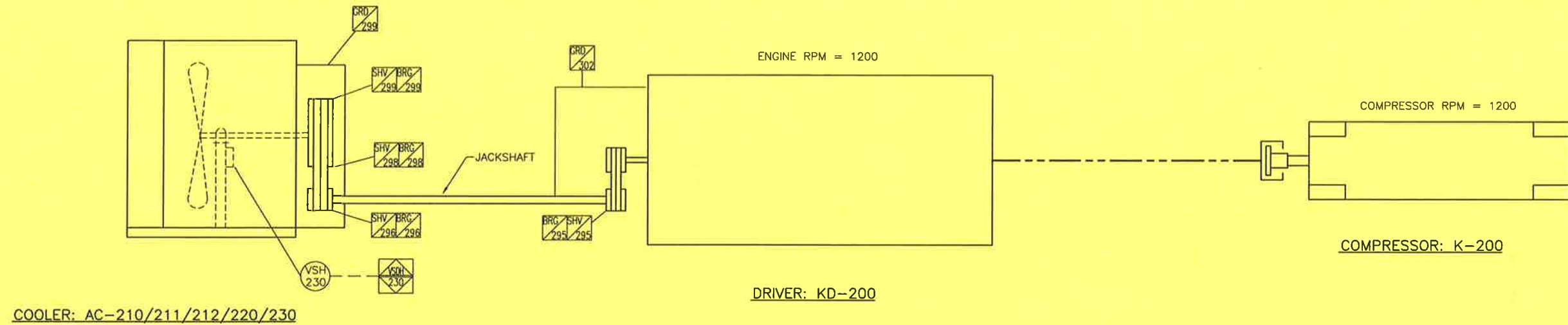
APPROVED		DRAWN	
MECH./STRUCT.	DATE	BY	DATE
ELECTRICAL	DATE	BY	DATE
PROJECT	DATE	BY	DATE
DATE	DATE	BY	DATE

PROPAK W-1478 6HOS-3
 STOCK 1478 HP COMPRESSOR, M/N W 1478, 6HOS-3
 CYLINDER & PACKING LUBRICATION
 MECHANICAL FLOWSHEET

PROPAK
 440 East Lake Road,
 Postal Bag #2
 Airdrie, Alberta
 Canada T4B 2C3

DWG. No.: D-MFS-99404-100 SHT. 9 OF 11 REV. 2

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GENERAL NOTES DATE: 2000.06.06 10:27am FILE NAME: J:\jobs99\DWG\99404\FLW\MFS-99404-100-10.dwg		GENERAL NOTES																			
No.	REVISION	BY	DATE	CKD	ENG																
2	RE-ISSUED FOR CONSTRUCTION	H. LE	00/06/06	SW	SW																
1	ISSUED FOR CONSTRUCTION	J. LINA	99/12/30	PC	PC																
A	ISSUED FOR APPROVAL	J. LINA	99/12/10	DHS	DHS																

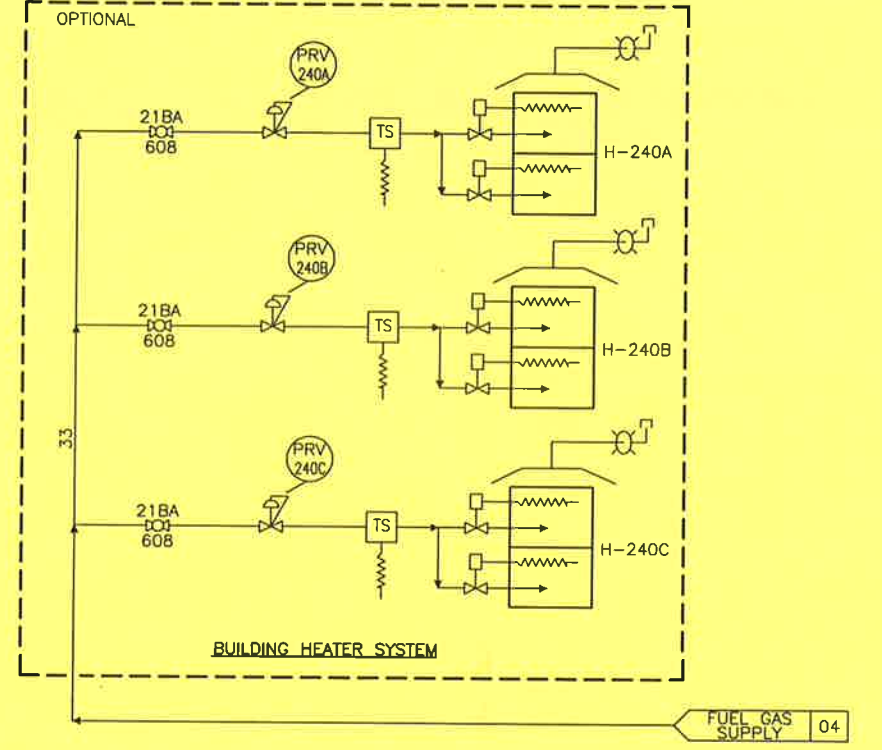
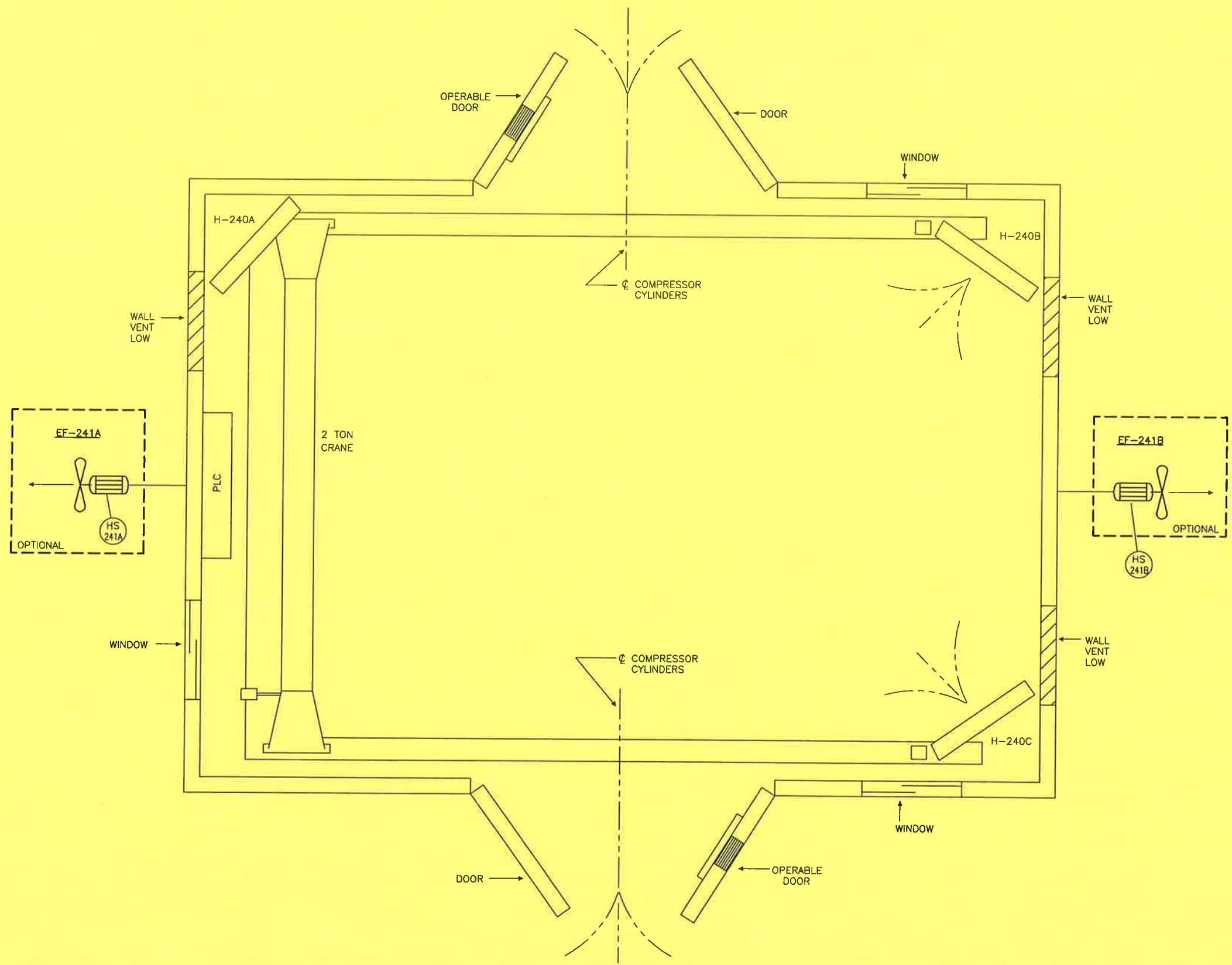
APPROVED MECH./STRUCT. BY J. LINANTUD DATE DEC. 10/99 ELECTRICAL CHECKED DATE BY P. CRAWFORD PROJECT P. CRAWFORD DATE DEC. 30/99 DATE DEC. 30/99		DRAWN BY J. LINANTUD DATE DEC. 10/99 CHECKED BY P. CRAWFORD DATE DEC. 30/99		SCALE							
PROPAC W-1478 6HOS-3 STOCK 1478 HP COMPRESSOR, M/N W 1478, 6HOS-3 CONTROL PANEL, COUPLING AND DRIVE DETAILS MECHANICAL FLOWSHEET						DWG. No.: D-MFS-99404-100		SHT. 10 OF 11		REV. 2	

PROPAC
 440 East Lake Road,
 Postal Bag #2
 Airdrie, Alberta
 Canada T4B 2C3

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EF-241A/B
 EXHAUST FAN
 M/N: ET-12
 0.25 kW, 120/1/60

H-240A/B/C (OPTIONAL)
 CATALYTIC HEATERS, CATADYNE
 610mm x 914mm
 9883 W, 24VDC START



GENERAL NOTES		GENERAL NOTES	
1	ISSUED FOR CONSTRUCTION		
2	RE-ISSUED FOR CONSTRUCTION		
A	ISSUED FOR APPROVAL		

No.	REVISION	BY	DATE	CKD	ENG

APPROVED		DRAWN	
MECH./STRUCT.	BY	J. LINANTUD	
DATE	DATE	DEC. 10/99	
ELECTRICAL	CHECKED		
DATE	BY	P. CRAWFORD	
PROJECT	DATE	DEC. 30/99	
DATE	SCALE		

PROPAK W-1478 6HOS-3
 STOCK 1478 HP COMPRESSOR, M/N W 1478, 6HOS-3
 BUILDING UTILITIES
 MECHANICAL FLOWSHEET
 DWG. No.: D-MFS-99404-100 SHT. 11 OF 11 REV. 2

PROPAK
 440 East Lake Road,
 Postal Bag #2
 Airdrie, Alberta
 Canada T4B 2C3

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GENERAL SPECIFICATIONS

CLASS	TYPICAL SERVICE	TEMP. RANGE (°C)	PRESS. RATING (ANSI)
A	SWEET HYDROCARBON, PROPANE REFRIGERANT, FUEL GAS AND FLARE GAS	-29°C TO 260°C	150 # RF
B	SWEET HYDROCARBON, PROPANE REFRIGERANT, FUEL GAS AND FLARE GAS	-29°C TO 260°C	300 # RF
C	SWEET HYDROCARBON, PROPANE REFRIGERANT, FUEL GAS AND FLARE GAS	-29°C TO 260°C	600 # RF
D	SWEET HYDROCARBON	-29°C TO 260°C	900 # RF
E	SWEET HYDROCARBON	-29°C TO 260°C	1500 # RF
F	SWEET HYDROCARBON	-29°C TO 260°C	2500 # RF
H	COMPRESSED AIR AND UTILITY WATER	0°C TO 38°C	150 # RF
J	DRAIN SYSTEM PIPING	5°C TO 95°C	150 # RF
K	GLYCOL	1.21 MPa @ 177°C	150 # RF TO 1500 # RF
AS	SOUR HYDROCARBON, RICH AMINE AND SOUR WATER	-29°C TO 260°C	150 # RF
BS	SOUR HYDROCARBON, RICH AMINE AND SOUR WATER	-29°C TO 260°C	300 # RF
CS	SOUR HYDROCARBON, RICH AMINE AND SOUR WATER	-29°C TO 260°C	600 # RF
DS	SOUR HYDROCARBON	-29°C TO 260°C	900 # RF
ES	SOUR HYDROCARBON	-29°C TO 260°C	1500 # RF
FS	SOUR HYDROCARBON	-29°C TO 260°C	2500 # RF
AL	SWEET HYDROCARBON, PROPANE REFRIGERANT	-46°C TO 66°C	150 # RF
BL	SWEET HYDROCARBON, PROPANE REFRIGERANT	-46°C TO 66°C	300 # RF
CL	SWEET HYDROCARBON, PROPANE REFRIGERANT	-46°C TO 66°C	600 # RF
AC	SWEET HYDROCARBON	-184°C TO 66°C	150 # RF
BC	SWEET HYDROCARBON	-184°C TO 66°C	300 # RF
CC	SWEET HYDROCARBON	-184°C TO 66°C	600 # RF

GENERAL NOTES (ABBREVIATIONS)

- AC - AIR CLOSURE
- AO - AIR OPENS
- AVT - AUTOVENT TRAP
- BD - BLOWDOWN
- BF - BLIND FLANGE
- CBD - CONTINUOUS BD
- CD - CLOSED DRAIN
- CO - CHAIN OPERATED
- CSC - CAR SEAL CLOSED
- CSO - CAR SEAL OPEN
- DC - DRAIN CONNECTION
- EBD - EMERGENCY BD
- ESD - EMERGENCY SHUTDOWN
- ET - ELECTRICAL HEAT TRACE
- FO - FAIL OPEN
- FC - FAIL CLOSED
- FP - FULL PORT
- GT - GLYCOL HEAT TRACE
- HH - HAND HOLE
- HC - HOSE CONNECTION
- L - LOW
- LC - LOCK CLOSED
- LO - LOCK OPEN
- ML - MANUAL LOADING
- MW - MANWAY
- NC - NORMALLY CLOSED
- NE - NORMALLY ENERGIZED UNDER OPER. COND.
- NO - NORMALLY OPEN
- ND - NORMALLY DE-ENERGIZED UNDER OPER. COND.
- PC - PISTON CHECK VALVE
- PO - PUMPOUT
- PP - PERSONNEL PROTECTION
- QO - QUICK OPENING
- SC - SAMPLE CONNECTION
- SO - STEAM OUT
- SP - SET POINT
- ST - STEAM HEAT TRACE
- UG - UNDERGROUND
- VB - VACUUM BREAKER
- WC - WATER COLUMN

COMMODITY (ABBREVIATIONS)

- AG - ACID GAS
- AGF - ACID GAS FLARE
- AMD - AMINE DRAIN
- AV - ATMOSPHERIC VENTS
- BD - BLOWDOWN
- C - CAUSTIC
- CCD - CLOSED CRYOGENIC DRAIN
- CHD - CLOSED HYDROCARBON DRAIN
- CSD - CLOSED SOUR DRAIN
- CV - CRYOGENIC VENT
- CWD - CLOSED WATER DRAIN
- DR - DRAIN (ATMOSPHERIC)
- EQL - EQUALIZING
- FG - FUEL GAS
- FL - FLARE
- FO - FUEL OIL
- FW - FIRE WATER
- GD - GLYCOL DRAIN
- GL - GLYCOL
- HC - HIGH PRESSURE STEAM CONDENSATE
- HCL - HYDROCARBON LIQUIDS
- HCV - HYDROCARBON VAPOUR
- HM - HEAT MEDIUM
- HPF - HIGH PRESSURE FLARE
- HS - HIGH PRESSURE STEAM
- I/A - INSTRUMENT AIR
- I/G - INSTRUMENT GAS
- IS - INSTRUMENT SUPPLY
- JW - JACKET WATER
- K - CHEMICALS
- LAM - LEAN AMINE
- LC - LOW PRESSURE STEAM CONDENSATE
- LOD - LUBE OIL DRAIN
- LPF - LOW PRESSURE FLARE
- LPG - LOW PRESSURE GAS
- LS - LOW PRESSURE STEAM
- MC - MEDIUM PRESSURE STEAM CONDENSATE
- MS - MEDIUM PRESSURE STEAM
- P - PROCESS GAS/LIQUID
- PDW - PRODUCED WATER
- POD - PACKING OIL DRAIN/VENT
- POW - POTABLE WATER
- PS - SOUR PROCESS GAS
- PSW - SOUR PROCESS WATER
- PW - PROCESS WATER
- RAM - RICH AMINE
- RLRV - REFRIG. LIQUID, REFRIG. VAPOUR
- ROD - REFRIG. OIL DRAIN
- SO - SEAL OIL
- SOD - SEAL OIL DRAIN
- UW - UTILITY WATER

MISCELLANEOUS EQUIPMENT (ABBREVIATIONS)

- ACT - ACTUATOR
- BLT - BELT
- BUS - BUSHING
- CPL - COUPLING
- EM - HEAT EXCHANGER MOTOR
- ES - EXHAUST SILENCER
- F - FILTER
- FW - FLYWHEEL
- H - HEATER
- INS - INSULATION
- LUB - LUBRICATOR
- MIS - MISCELLANEOUS
- PIP - PIPE
- PM - PUMP MOTOR
- RC - RADIATOR CAP
- SB - SPECTACLE BLIND
- SHF - SHAFT
- SHV - SHEAVE
- SP - SPACER
- STR - STARTER (ELECTRIC/PNEUMATIC)
- T - TANK
- TSS - TEMPORARY SUCTION SCREEN
- TUB - TUBING

TUBING SIZES

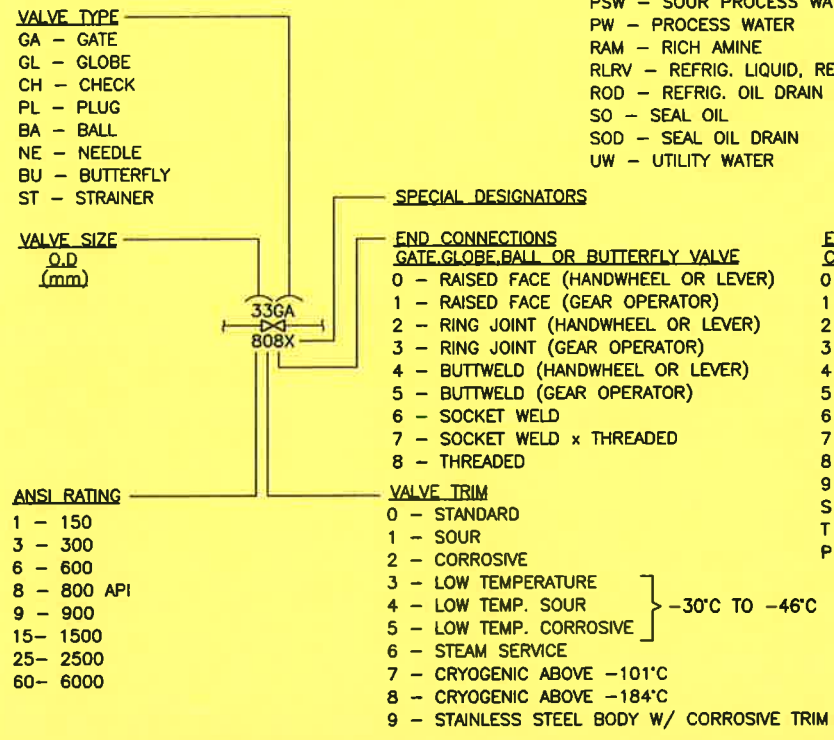
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3	1/8"	1/4"
6	1/4"	3/8"
9	3/8"	1/2"
13	1/2"	3/4"
19	3/4"	1"
25	1"	1-1/2"
		2"
		3"
		4"
		6"
		8"
		10"
		12"
		14"
		16"
		18"
		20"
		24"
		36"
		42"

PIPE SIZES

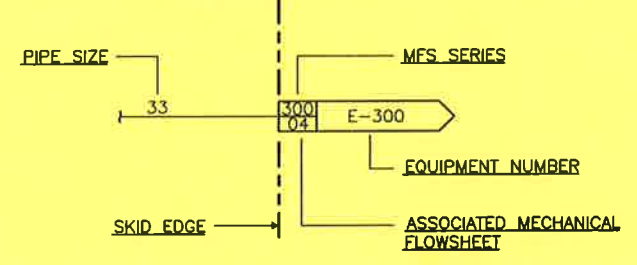
METRIC O.D. (mm)	METRIC DIN (mm)
14	8
17	10
21	15
27	20
33	25
48	40
60	50
89	80
114	100
168	150
219	200
273	250
324	300
356	350
406	400
457	450
508	500
610	600
914	900
1067	1050

NOTES:
NPS - NOMINAL PIPE SIZE

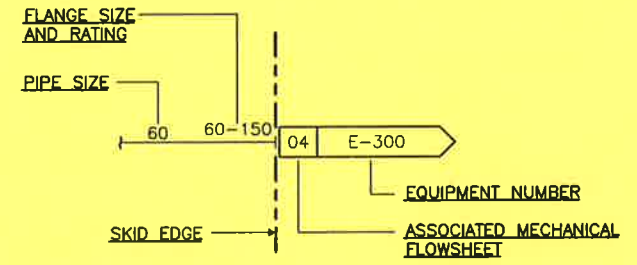
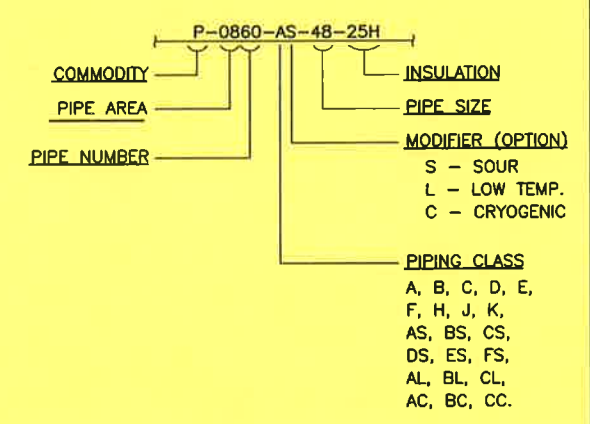
TYPICAL VALVE IDENTIFICATION



TYPICAL PIPE FLAGS



TYPICAL PIPE IDENTIFICATION



TYPICAL EQUIPMENT IDENTIFICATION

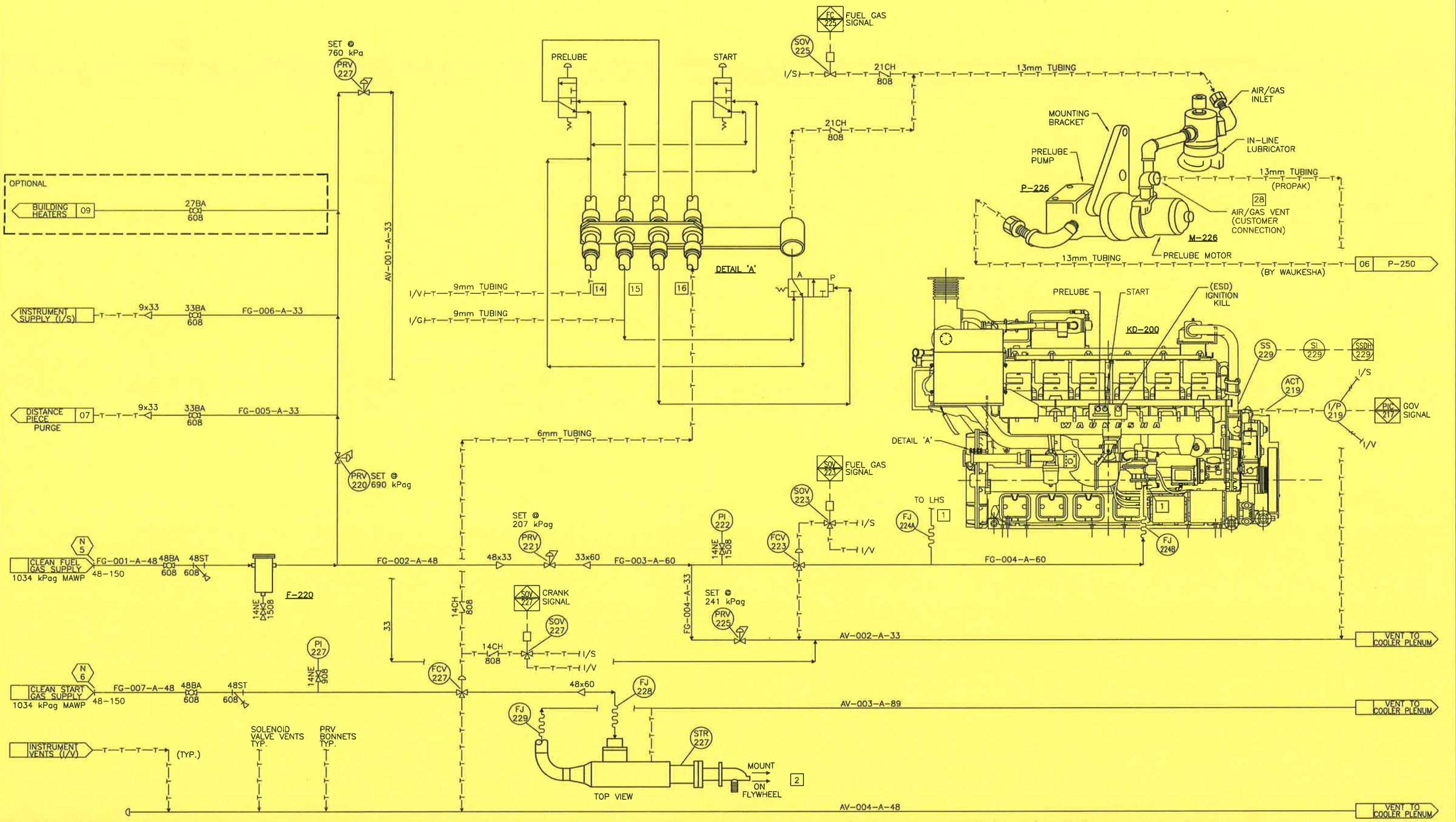
TAG No: T-820
 DESCRIPTION: DEETHANIZER
 DIMENSIONS: ...mm O.D. x ...mm S/S
 DESIGN PRESSURE @ DESIGN TEMP., CORROS. ALLOWANCE: ... kPa @ ... °C, ...mm C.A.
 GAS FLOW RATES: ... m3/d
 LIQUID FLOW RATES: ... m3/h
 DUTIES: ... kW
 MOTOR POWER: ... kW @ V/φ/Hz
 STRESS RELIEVING AND X-RAY: S.R.: YES/NO, X-RAY: FULL/100%/SPOT
 MAKE AND MODEL:

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F-220
FUEL GAS FILTER
HEAD LINE 385-AP-70C-1-1/2"
c/w 70-C FILTER ELEMENT

P-226/M226
ENGINE PRELUBE PUMP
GAS DRIVEN MOTOR
c/w ENGINE

KD-200
COMPRESSOR DRIVER
WAUKESHA L7042GL
1478 BHP @ 1200 RPM



1. ENGINE CONNECTION INDEX SEE
MFS-98147-100-10.

GENERAL NOTES	
No.	REVISION

GENERAL NOTES	
1	ISSUED FOR CONSTRUCTION
A	ISSUED FOR APPROVAL

BY	DATE	CKD	ENG
J. LINA	99/12/30	PC	PC
J. LINA	99/12/08	DHS	DHS

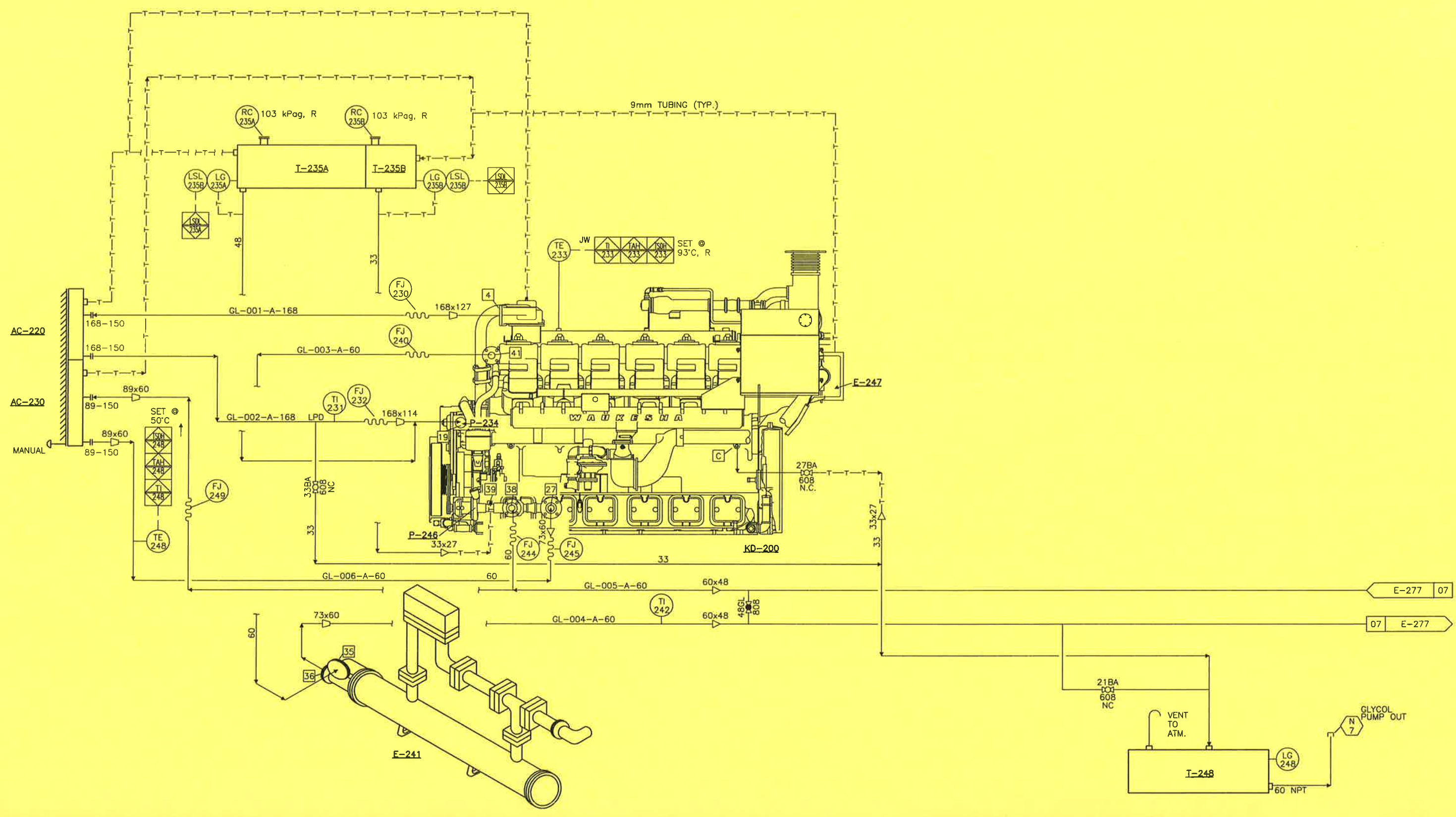
APPROVED		DRAWN	
MECH./STRUCT.	BY J. LINANTUD	DATE	DEC. 08/99
ELECTRICAL	BY P. CRAWFORD	DATE	DEC. 30/99
PROJECT	P. CRAWFORD	DATE	DEC. 30/99
DATE	DEC. 30/99	SCALE	

ENGINE FUEL AND START GAS MECHANICAL FLOWSHEET	
DWG. No.:	D-MFS-99404-100
SHT.	4 OF -
REV.	1

PROPAG
440 East Lake Road,
Postal Bag #2
Airdrie, Alberta
Canada T4B 2C3

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- AC-220
ENGINE JW COOLER
102 kPag MAWP
- AC-230
ENGINE AW COOLER
102 kPag MAWP
- T-235A/B
ENGINE JW/AW SURGE TANK
125/45 L
102 kPag MAWP
- P-246
ENGINE AW PUMP
c/w ENGINE
- E-241
ENGINE OIL COOLER
c/w ENGINE
- P-234
ENGINE JW PUMP
c/w ENGINE
- E-247
ENGINE TURBO AFTERCOOLER
c/w ENGINE
- T-248
WASTE GLYCOL
TANK UNDER COOLER
1800 L
- E-243
ENGINE OIL COOLER
c/w COMPRESSOR



1.	
2.	ENGINE CONNECTION INDEX SEE MFS-98147-100-P. 10.
GENERAL NOTES	
DATE: 1999.12.30 9:13am	FILE NAME: J:\jobs99\DWG\99404\FLW\MFS-99404-100-05.dwg

GENERAL NOTES		1	ISSUED FOR CONSTRUCTION	S.SULZ	99/12/30	PC	PC
		A	ISSUED FOR APPROVAL	J. LINA	99/12/08	DHS	DHS
No.	REVISION	BY	DATE	CKD	ENG		

APPROVED		DRAWN	
MECH./STRUCT.	BY	J. LINANTUD	
DATE	DATE	DEC. 08/99	
ELECTRICAL		CHECKED	
DATE	BY	P. CRAWFORD	
PROJECT	DATE	DEC. 30/99	
DATE	SCALE		

DWG. No.: D-MFS-99404-100 SHT. 5 OF - REV. 1
 GLYCOL COOLING K-200/KD-200
 MECHANICAL FLOWSHEET

PROPAK
 440 East Lake Road,
 Postal Bag #2
 Airdrie, Alberta
 Canada T4B 2C3

OF PROPAC.
 TO OTHERS OR REPRODUCED IN ANY MANNER OR USED FOR ANY PURPOSE WHATSOEVER EXCEPT BY WRITTEN CONSENT
 THE DESIGN IT COVERS ARE CONFIDENTIAL AND THE PROPERTY OF PROPAC SYSTEMS LTD., AND SHALL NOT BE DISCLOSED
 THIS DRAWING AND

F-253
ENGINE OIL FILTER
c/w ENGINE
SHIPLOOSE

F-241
ENGINE OIL COOLER
c/w ENGINE
SHIPLOOSE

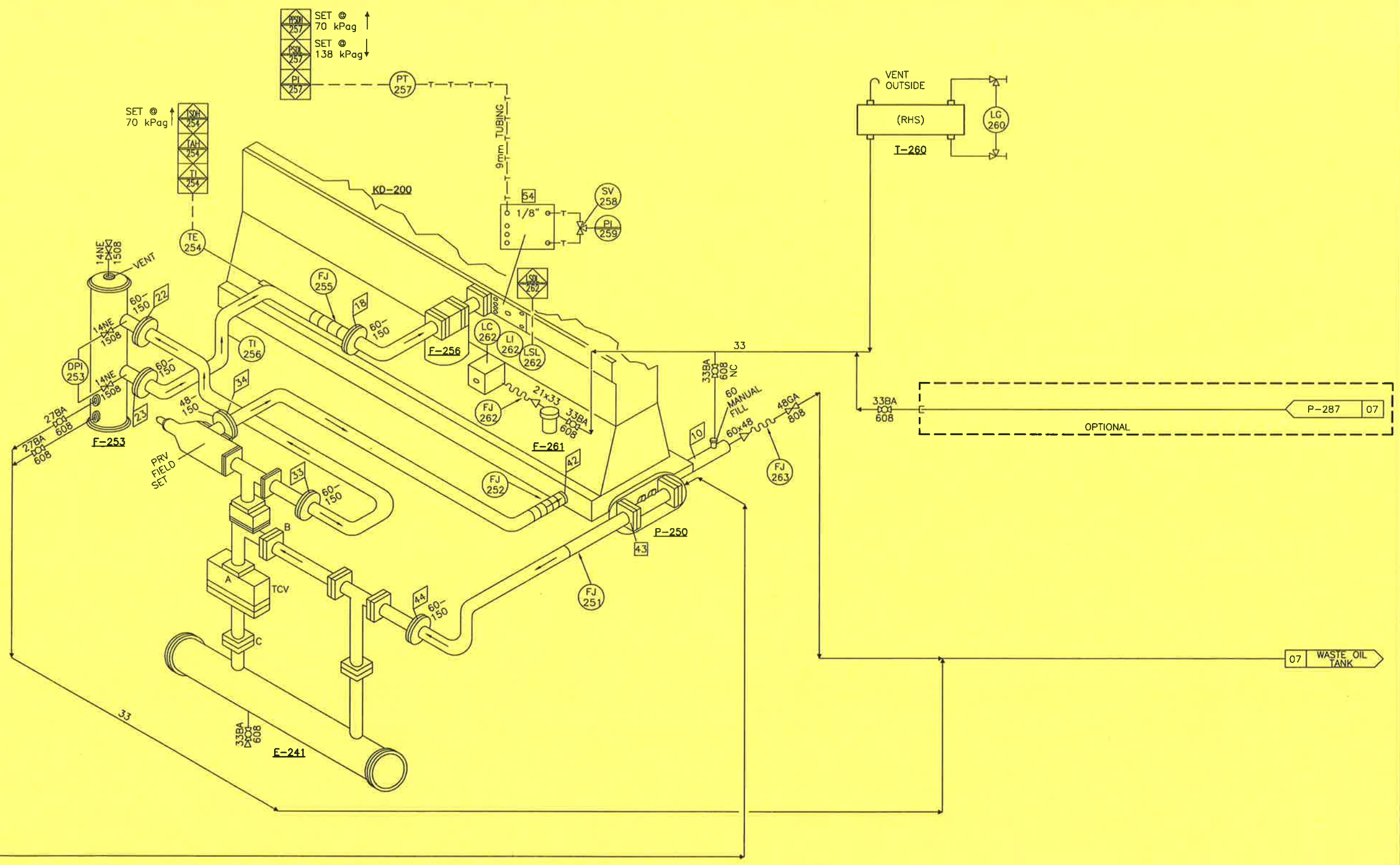
KD-200
COMPRESSOR DRIVE
WAUKESHA L7042GL
1478 HP @ 1200 RPM

F-256
ENGINE OIL STRAINER
c/w MAGNETIC FILTER ELEMENT
(SEE NOTE 1)

F-261
OIL SUPPLY FILTER
BALDWIN BF914 HOUSING
c/w BALDWIN BF915 FILTER ELEMENT

P-250
ENGINE OIL PUMP
c/w ENGINE

I-260
ENGINE LUBE OIL SUPPLY
TANK INTEGRAL w/ CRANE
STRUCTURE (425L) (RHS)



04 P-226

1. INSTALL PAPER ELEMENT IN F-256. RUN PRE LUBE PUMP FOR OIL FLUSH PROCEDURE. REPLACE PAPER ELEMENT PRIOR TO FIELD START-UP.
 2. ENGINE CONNECTION INDEX SEE MFS-98147-100-P. 10.

GENERAL NOTES	
No.	REVISION

1	ISSUED FOR CONSTRUCTION	J. LINA	99/12/30	PC	PC
A	ISSUED FOR APPROVAL	J. LINA	99/12/08	DHS	DHS

APPROVED		DRAWN	
MECH./STRUCT.	BY	J. LINANTUD	
DATE	DATE	DEC. 08/99	
ELECTRICAL	BY	P. CRAWFORD	
DATE	DATE	DEC. 30/99	
PROJECT	P. CRAWFORD		
DATE	DEC. 30/99		
	SCALE		

COMPRESSOR - ENGINE UTILITIES
MECHANICAL FLOWSHEET

DWG. No.: D-MFS-99404-100 SHT. 6 OF - REV. 1

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P-276
 COMPRESSOR PRELUDE PUMP
 MODEL: WILDEN M2

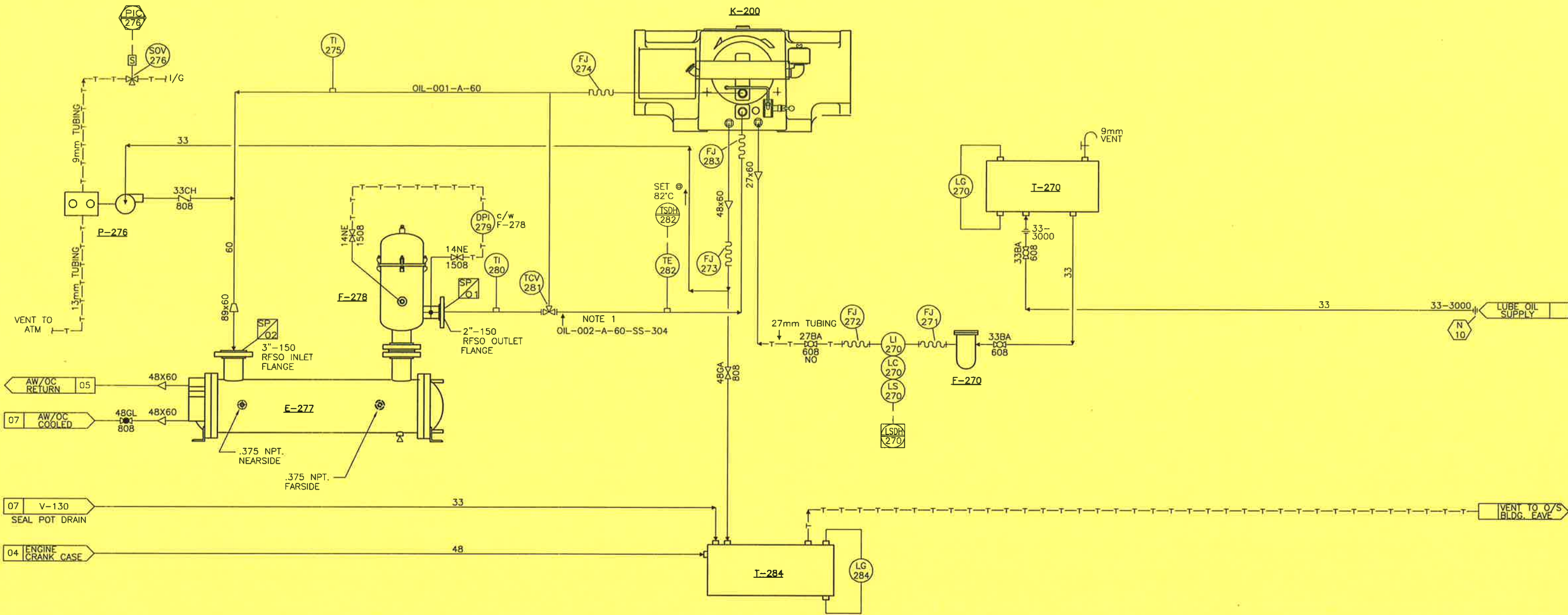
F-278
 COMPRESSOR OIL FILTER
 c/w COMPRESSOR

F-277
 COMPRESSOR LUBE OIL COOLER
 c/w COMPRESSOR
 DUTY: 20.9 kW

I-284
 WASTE OIL TANK
 INTERNAL TO SKID
 550 L

F-270
 COMPRESSOR OIL SUPPLY FILTER
 BALDWIN BF915 HOUSING
 c/w BALDWIN BF914 FILTER ELEMENT
 33NPT, 140 kPag MAWP

I-270
 COMPRESSOR LUBE OIL SUPPLY TANK
 INTERNAL TO CRANE RAIL
 400 L



1. 300 SERIES SS BUTTWELD PIPE TO BE
 INSTALLED DOWNSTREAM OF COMPRESSOR
 OIL FILTER.

GENERAL NOTES

No.	REVISION	BY	DATE	CHKD	ENG
1	ISSUED FOR CONSTRUCTION	S.SULZ	99/12/30	PC	PC
A	ISSUED FOR APPROVAL	J. LINA	99/12/10	DHS	DHS

APPROVED		DRAWN	
MECH./STRUCT.	BY	J. LINANTUD	
DATE	DATE	DEC. 10/99	
ELECTRICAL	BY	CHECKED	
DATE	DATE	P. CRAWFORD	
PROJECT	DATE	DEC. 30/99	
DATE	DATE		
	SCALE		

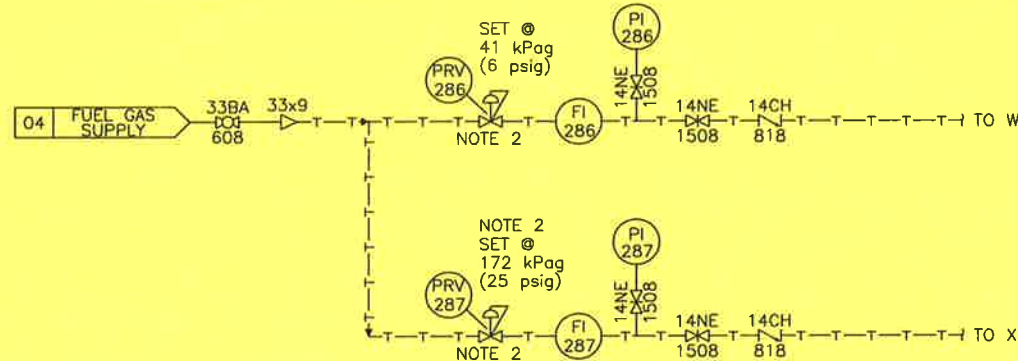
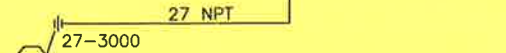
DWG. No.: D-MFS-99404-100 SHT. 7 OF - REV. 1

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ENGINE LUBE OIL
 MECHANICAL FLOWSHEET

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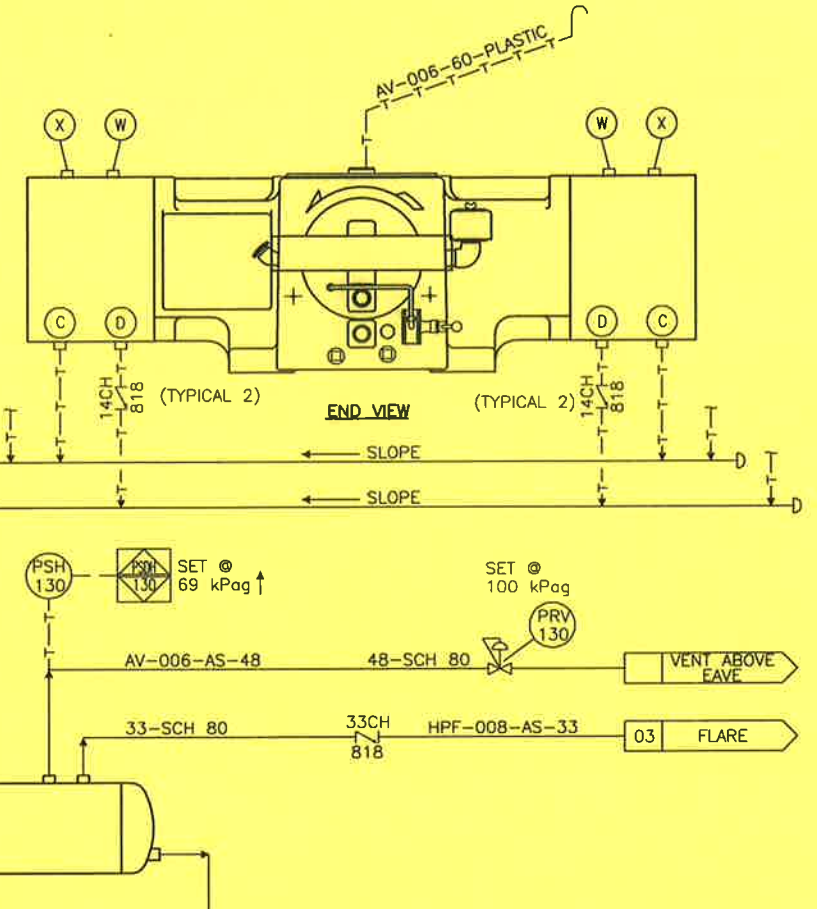
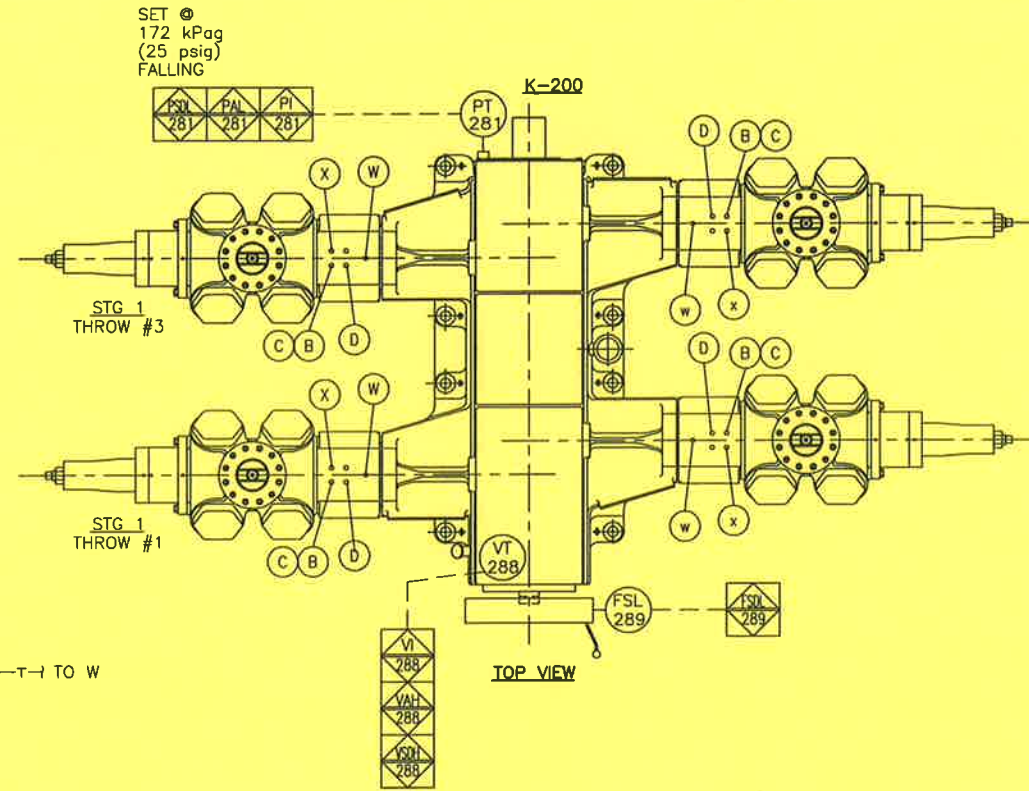
DRIP LIP UNDER ENGINE & COMPRESSOR



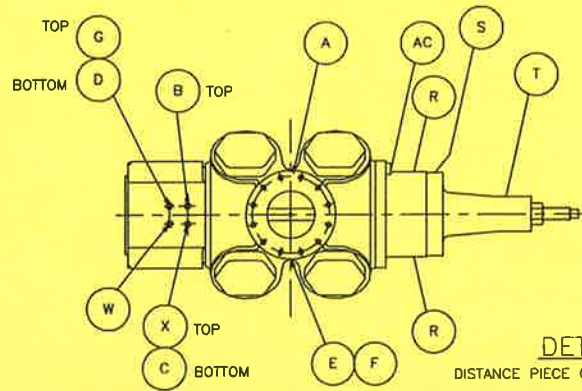
T-284 06
WASTE OIL TANK

K-200
COMPRESSOR
DRESSER-RAND 6 HOS-4

V-130
PACKING VENT & DRAIN SEAL POT
273mm O.D. x 813mm S/S
101 kPag DESIGN



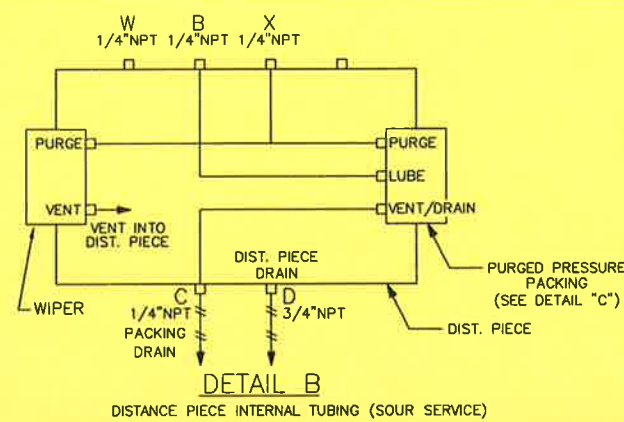
DISTANCE PIECE EVACUATION SYSTEM



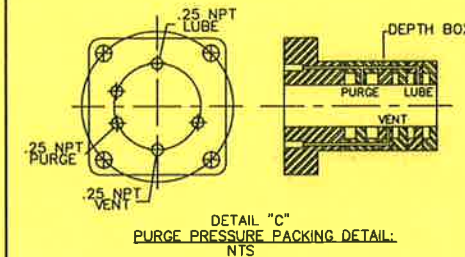
- A) FLANGE CONN.-INLET TOP & DISCHARGE BOTTOM.
- B) 1/4" NPT PACKING LUBE CONN.-TOP.
- C) 1/4" NPT PACKING VENT/DRAIN CONN.-BOTTOM.
- D) 3/4" NPT DISTANCE PIECE DRAIN CONN.-BOTTOM.
- E) 1/4" NPT CYL BORE LUBE CONN.-TOP.
- F) 1/4" NPT CYL BORE LUBE CONN.-BOTTOM.
- G) 3/4" NPT YOKE VENT CONN.-TOP.
- R) 1/8" NPT WCP HEAD VENT TO NON-HAZARDOUS AREA-TOP OR BOTTOM.
- S) 1/8" NPT WCP ROD PKG. VENT TO NON-HAZARDOUS AREA -TOP OR BOTTOM.
- T) 1/8" NPT GREASE FITTING.
- W) 1/4" NPT DISTANCE PIECE PURGE-TOP.
- X) 1/4" NPT PACKING PURGE CONN.-TOP.

NOTE: PROPAC COMP. SERVICEMAN TO DOUBLE CHECK LOCATIONS OF (A-X) PRIOR TO HOOK-UP.

DETAIL A
DISTANCE PIECE CONNECTIONS (TYPICAL)



DETAIL B
DISTANCE PIECE INTERNAL TUBING (SOUR SERVICE)



DETAIL "C"
PURGE PRESSURE PACKING DETAIL: NTS

ALL TAG NUMBERS INDICATED SHALL BE PRECEDED BY 2 FOR THIS UNIT. (e.g. V-100 SHALL BE UNDERSTOOD TO BE V-2100 ON THIS UNIT).

DISTANCE PIECE AS POSSIBLE ON EACH CYLINDER. 2. PRV-286 & PRV-287 REQUIRE VENTABLE BONNETS.

1. CHECK VALVES TO BE ADDED TO 'C' AND 'D' CYLINDER CONNECTION POINTS AS CLOSE TO

3. INTERNAL TUBING TO BE INSPECTED BY PROPAC SERVICE, PRIOR TO HOOKING UP.

GENERAL NOTES

GENERAL NOTES

DATE: 1999.12.30 9:28am FILE NAME: J:\jobs99\DWG\99404\FLW\MFS-99404-100-08.dwg

No.	REVISION	BY	DATE	CKD	ENG
1	ISSUED FOR CONSTRUCTION	J. LINA	99/12/30	PC	PC
A	ISSUED FOR APPROVAL	J. LINA	99/12/10	DHS	DHS

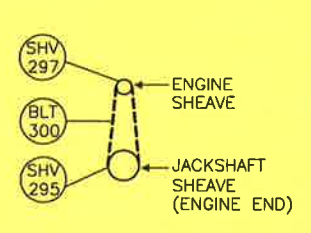
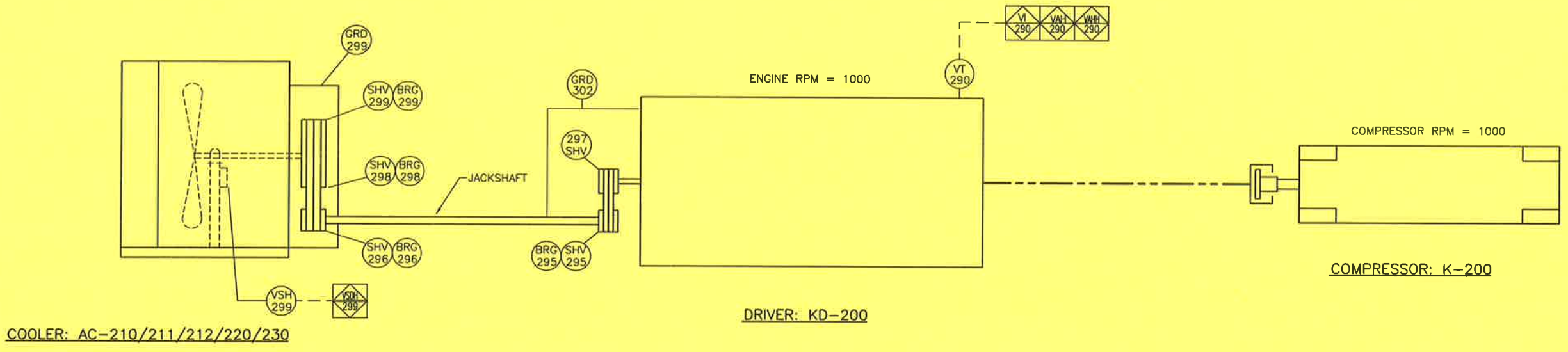
APPROVED		DRAWN	
MECH./STRUCT.	BY	J. LINANTUD	DATE
DATE	DATE	DEC. 10/99	
ELECTRICAL	CHECKED		
DATE	BY	P. CRAWFORD	DATE
PROJECT	DATE	DEC. 30/99	
DATE	SCALE		

CYLINDER & PACKING LUBRICATION
MECHANICAL FLOWSHEET

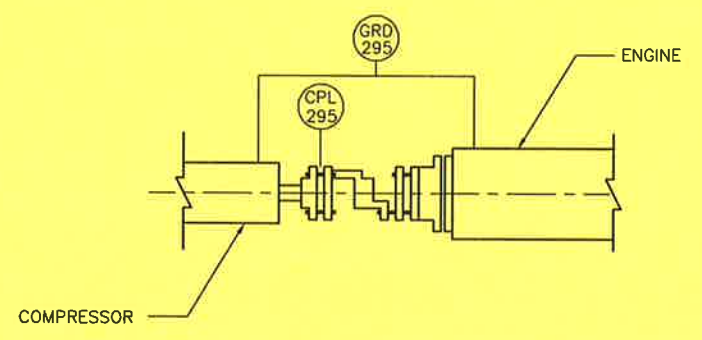
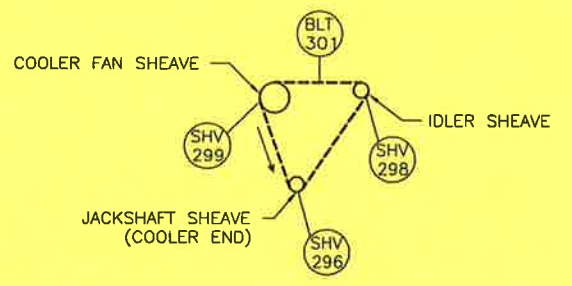
DWG. No.: D-MFS-99404-100 SHT. 8 OF - REV. 1

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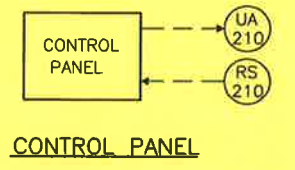
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FAN DRIVE SHEAVES



ENGINE & COMPRESSOR COUPLING



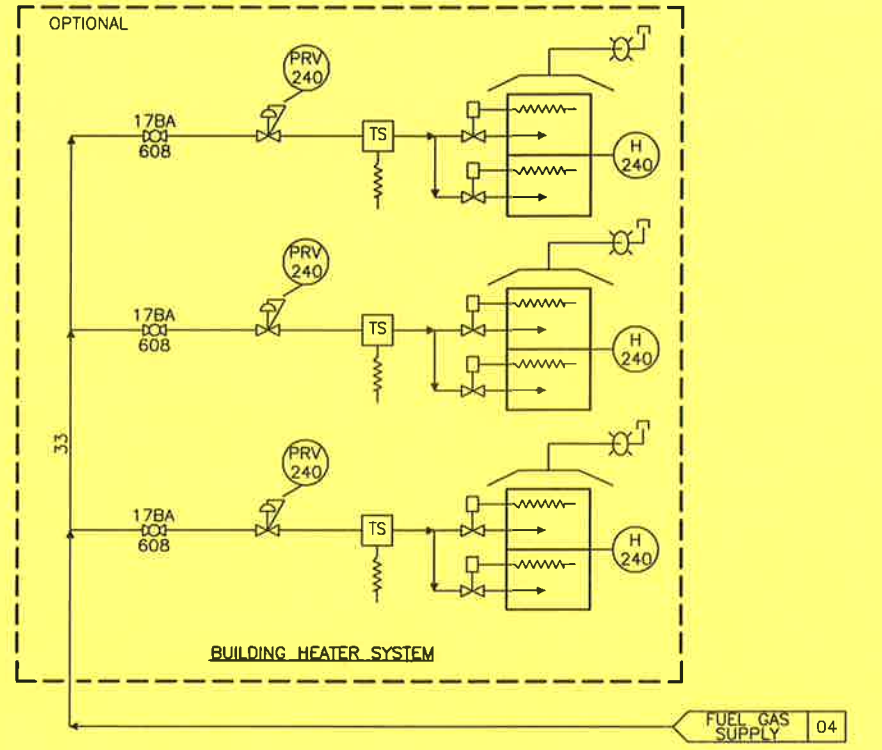
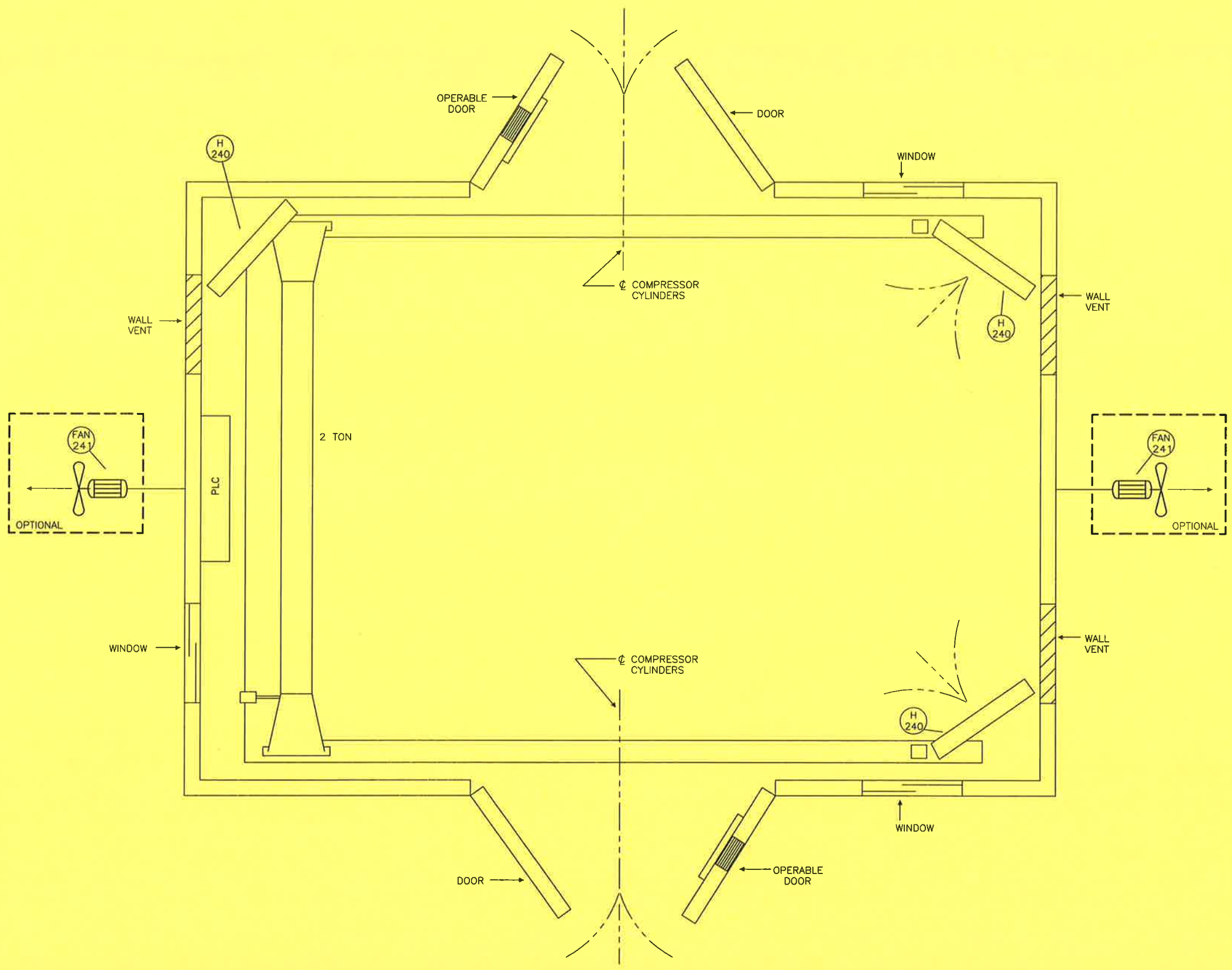
CONTROL PANEL

DATE: 1999.12.30 9:30am		FILE NAME: J:\jobs99\DWG\99404\FLW\MFS-99404-100-09.dwg		No.		REVISION		BY		DATE		CKD		ENG		APPROVED		DRAWN		CYLINDER & PACKING LUBRICATION MECHANICAL FLOWSHEET DWG. No.: D-MFS-99404-100 SHT. 9 OF - REV. 1	
GENERAL NOTES		GENERAL NOTES		1		ISSUED FOR CONSTRUCTION		J. LINA		99/12/30		PC		PC		MECH./STRUCT.		BY J. LINANTUD			
				A		ISSUED FOR APPROVAL		J. LINA		99/12/10		DHS		DHS		ELECTRICAL		DATE DEC. 10/99			
																DATE		CHECKED			
																		PROJECT P. CRAWFORD		BY P. CRAWFORD	
																		DATE DEC. 30/99		DATE DEC. 30/99	
																		SCALE		DWG. No.: D-MFS-99404-100 SHT. 9 OF - REV. 1	

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H-240 (OPTIONAL)
CATALYTIC HEATERS, CATADYNE
 24"x36" 33750 BTU 24VDC START



GENERAL NOTES		GENERAL NOTES	
1	ISSUED FOR CONSTRUCTION	J. LINA	99/12/30
A	ISSUED FOR APPROVAL	J. LINA	99/12/10
No.	REVISION	BY	DATE

MECH/STRUCT.	APPROVED	DATE	BY	DATE	CKD	ENG
			J. LINA	99/12/30	PC	PC
			J. LINA	99/12/10	DHS	DHS

APPROVED		DRAWN	
MECH/STRUCT.	DATE	BY	DATE
ELECTRICAL	DATE	BY	DATE
PROJECT	DATE	BY	DATE
DATE	DEC. 30/99	BY	DATE
		SCALE	

BUILDING UTILITIES MECHANICAL FLOWSHEET		DWG. No.: D-MFS-99404-100	SHT. 10 OF -	REV. 1

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