LOW DIAGRAM	FLOW REV.	ENERFLEX LINE NUMBER	SPOOL SHEET #	SERVICE	SIZE (in.)	FROM	то	PIPE SPEC	WALL THICKNESS (SCHEDULE)	DESIGN PRESSURE (kPag)	DESIGN TEMP. (°C)	CORROSION ALLOWANCE (mm.)	TEST PRESSURE (kPag)	X-RAY (%)	NOTES	PIPE MATERIAL	FLANGE MATERIAL	CODE	PWH
12605-111-1	1	12"-AIR-INLET-1-C01	1	AIR	12"	SKID EDGE CONNECTION 1  AIR INLET /  E-0300 COOLER PLENUM	WARM AIR MIXING BOX 1359	C01	STD	103	-29/121	1.6	-	-	4	SA-106-B	SA-105	-	NC
12605-111-1	1	12"-AIR-INLET-2-C01	2	AIR	12"	WARM AIR MIXING BOX 1359	VACUUM FILTERS FR-0300A/B	C01	STD	103	-29/121	1.6	-		4	SA-106-B	SA-105		NO.
12605-111-1	1	12"-AIR-FR0300-1-C01	3	AIR	12"	VACUUM FILTERS FR-0300A/B	12"-AIR-FR0300-2-C01	C01	STD	103	-29/121	1.6	-	-	4	SA-106-B	SA-105	-	NO
12605-111-1/2	1/2	12"-AIR-FR0300-2-C01	4	AIR	12"	12"-AIR-FR0300-1-C01	12"-AIR-FR0300-1-C31	C01	STD	103	-29/121	1.6	-	-	4	SA-106-B	SA-105	-	NC
12605-111-2	2	12"-AIR-FR0300-1-C31	4	AIR	12" / 16"	12"-AIR-FR0300-2-C01	SCREW COMPRESSOR K-0300	C31	STD	2068	-29/121	1.6	3351	10%	1, 3	SA-106-B	SA-105	B31.3 2010	
12605-111-2	2	10"-AIR-K0300-1-C31	5	AIR	10"	SCREW COMPRESSOR K-0300	OIL SEPARATOR V-0300	C31	STD	2068	-29/121	1.6	3351	10%	1, 3	SA-106-B	SA-105	B31.3 2010	
12605-111-2	2	10"-AIR-V0300-1-C31	6	AIR	10"	OIL SEPARATOR V-0300	10"-AIR-V0300-1-L31	C31	STD	2068	-29/121	1.6	3351	10%	1, 3	SA-106-B	SA-105	B31.3 2010	
12605-111-2	2	10"-AIR-V0300-1-L31	6	AIR	6" / 10"	10"-AIR-V0300-1-C31	AFTERCOOLER E-0300	L31	STD	2068	-45/121	1.6	3351	10%	1, 3	SA-333 GR.6	SA-350-LF2	B31.3 2010	-
12605-111-2	2	8"-AIR-AC-1-L31	7	AIR	6" / 8"	AFTERCOOLER E-0300	8"-AIR-AC-1-C31	L31	STD	2068	-45/121	1.6	3351	10%	1, 3	SA-333 GR.6	SA-350-LF2	B31.3 2010	
12605-111-1/2	1/2	8"-AIR-AC-1-C31	7	AIR	2" / 8"	8"-AIR-AC-1-L31	8"-AIR-AC-2-C31	8"-AIR-AC-2-C31 C31 ST		2068	-29/121	1.6	3351	10%	1, 3	SA-106-B	SA-105	B31.3 2010	+
12605-111-1	1	8"-AIR-AC-2-C31	8	AIR	3" / 6" / 8"	8"-AIR-AC-1-C31	8"-AIR-AC-2-L31 / 2"-AIR-AC-3-C31	C31	STD	2068	-29/121	1.6 3351 10% 1, 3 SA-106-B			SA-105	B31.3 2010			
12605-111-1	1	8"-AIR-AC-2-L31	8	AIR	8"	8"-AIR-AC-2-C31	SKID EDGE CONNECTION 2 AIR OUTLET	L31	STD	2068	-45/121	1.6	3351	10%	1, 3	SA-333 GR.6	SA-350-LF2	B31.3 2010	
12605-111-1	1	2"-AIR-AC-3-C31	-	AIR	2"	8"-AIR-AC-2-C31	2"-AIR-AC-3-C11 / PV-0307	C31	XS	2068	-29/121	1.6	2275	_	2	SA-106-B	SA-105	B31.3 2010	
12605-111-1/2	1/2	2"-AIR-AC-3-C11	-	AIR	1.5" / 2"	2"-AIR-AC-3-C31	6"-AIR-V0300-3-C11	C11	xs	1670	-29/121	1.6	1837	-	2	SA-106-B	SA-105	B31.3 2010	-
12605-111-2 / 12605-113-1	2/0	3"-L-V0300-2-C31	9	OIL	3" / 4"	OIL SEPARATOR V-0300	OIL COOLER E-0301 / TCV-0300	C31	STD	2068	-29/121	1.6	3351	10%	1, 3	SA-106-B	SA-105	B31.3 2010	
12605-113-1	0	4"-L-E0301-1-C31	10	OIL	3" / 4"	OIL COOLER E-0301	TCV-0300	C31	STD	2068	-29/121	1.6	3351	10%	1, 3	SA-106-B	SA-105	B31.3 2010	10000
12605-113-1	0	3"-L-E0301-2-C31	11	OIL	2" / 3"	TCV-0300	VARIOUS CONNECTIONS	C31	STD	2068	-29/121	1.6	3351	10%	1, 3	SA-106-B	SA-105	B31.3 2010	
12605-111-2	2	3"-AIR-V0300-3-C31	16	AIR	1.5" / 3"	OIL SEPARATOR V-0300	6"-AIR-V0300-3-C11	C31	XS / STD	2068	-29/121	1.6	3351	10%	1, 3	SA-106-B	SA-105	3622-0-70-2-70-2-70-2-70-2-70-2-70-2-70-2	
12605-111-2	2	6"-AIR-V0300-3-C11	16	AIR	2" / 6"	3"-AIR-V0300-3-C31 / 2"-AIR-AC-3-C11	6"-AIR-V0300-3-C01	C11	STD	1689	-29/121	1.6	2737	10%	1, 3	SA-106-B	SA-105	B31.3 2010	+-
12605-111-2	2	6"-AIR-V0300-3-C01	16	AIR	6"	6"-AIR-V0300-3-C11	VENT HEADER	C01	STD	103	-29/121	1.6		-	4	SA-106-B	5000 Market 2000 CO	B31.3 2010 B31.3 2010	-
12605-115-1	1	2"-HG-SUPPLY-1-C11	-	START GAS	1.5" / 2"	SKID EDGE CONNECTION 12 STARTER GAS SUPPLY	ENGINE STARTER 5301	C11	xs	1034	-29/121	1.6	1137	_	2	SA-106-B			-
12605-115-1	1	4"-HG-STARTER-1-C11	-	START GAS	4"	ENGINE STARTER 5301	SKID EDGE CONNECTION 4 STARTER VENT	JECTION 4		1034	-29/121	1.6	1137		2	SA-106-B	SA-105	B31.3 2010	
12605-115-1	1	2"-F-SUPPLY-1-C11	-	FUEL GAS	1.5" / 2"	SKID EDGE CONNECTION 9 FUEL GAS SUPPLY	FUEL GAS SCRUBBER V-0301	C11	XS	1034	-29/121	1.6	1137	-	2		SA-105	B31.3 2010	+ -
12605-115-1	1	2"-F-V0301-1-C11	-	FUEL GAS	1.5" / 2"	FUEL GAS SCRUBBER V-0301	QUH-0301 / QUH-0301 / QUH-0302 /	C11	xs	1034	-29/121	1.6	1137	-	2	SA-106-B SA-106-B	SA-105 SA-105	B31.3 2010	
12605-115-1	1	1"-IA-SUPPLY-1-C11	-	INSTRUMENT AIR	1"	SKID EDGE CONNECTION 10 INSTRUMENT AIR SUPPLY	ENGINE CE-0300  VARIOUS INSTRUMENTS	C11	XS	1034	-29/121	1.6	1137		2	SA-106-B	SA-105	B31.3 2010 B31.3 2010	-

PSV TAG# PSV-0300

NOTE 2: TEST MEDIUM TO BE AIR NOTE 3: 10% MPI ON ALL FILLET WELDS INCLUDING PSV GUSSETS NOTE 4: LEAK TEST

DRAWING #

12605-111-2

REVISIONS		
NO.	ISSUE	DATE
0	RELEASED FOR REGISTRATION	11-May-12
1	UPDATED LINE LIST FORMAT	6/25/2012
2	UPDATED BLOWDOWN LINE	8/7/2012

DRAWING REV.

MAKE

MERCER

MODEL#

91-34H12T82U1

INLET

1.5" 300# RF

OUTLET

2" 150# RF

HUSKY OIL OPERATIONS LSD: 03-35-078-25-W4M Engine: CATERPILLAR G3516LE-AFRC Frame: ARIEL RG357M Cooler: AIR-X-CHANGERS 156EH-122-24

VESSELS PROTECTED

V-0300, K-0300

NOTE: THE FLOW DRAWINGS AND THIS LINE LIST HAVE BEEN P. ENG STAMPED BASED ON THE ORIGINAL COMPRESSOR PACKAGE DESIGN DURING FABRICATION ENERFLEX IS NOT RESPONSIBLE FOR THE CHANGES THAT MAY HAVE OCCURRED DURING THE FIELD INSTALLATION AND OPERATION OF THE UNIT

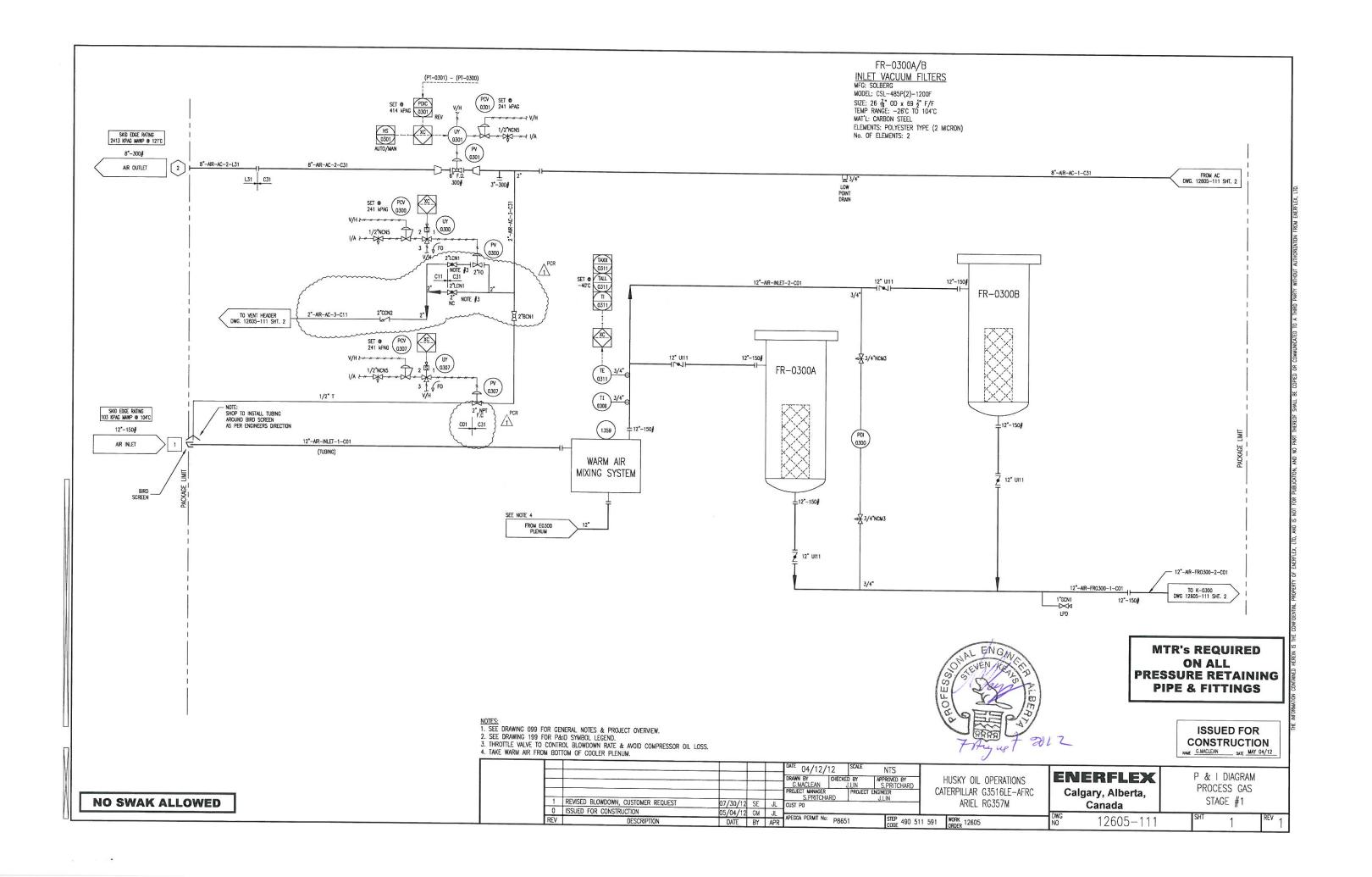
PROFESSIONAL ENGINEER STAMP
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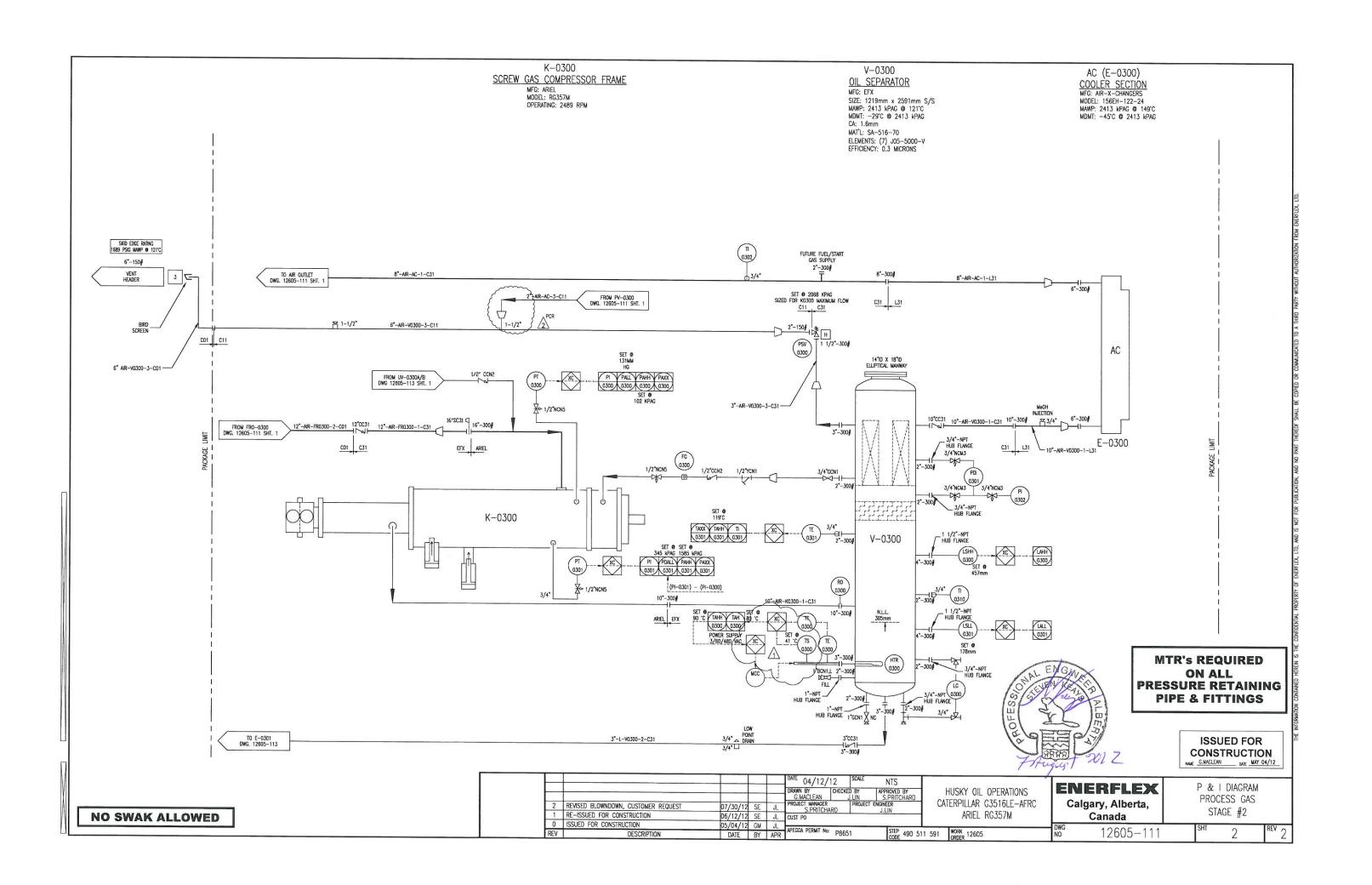
Page No. 1 of 1 APEGGA PERMIT: NO. P8651

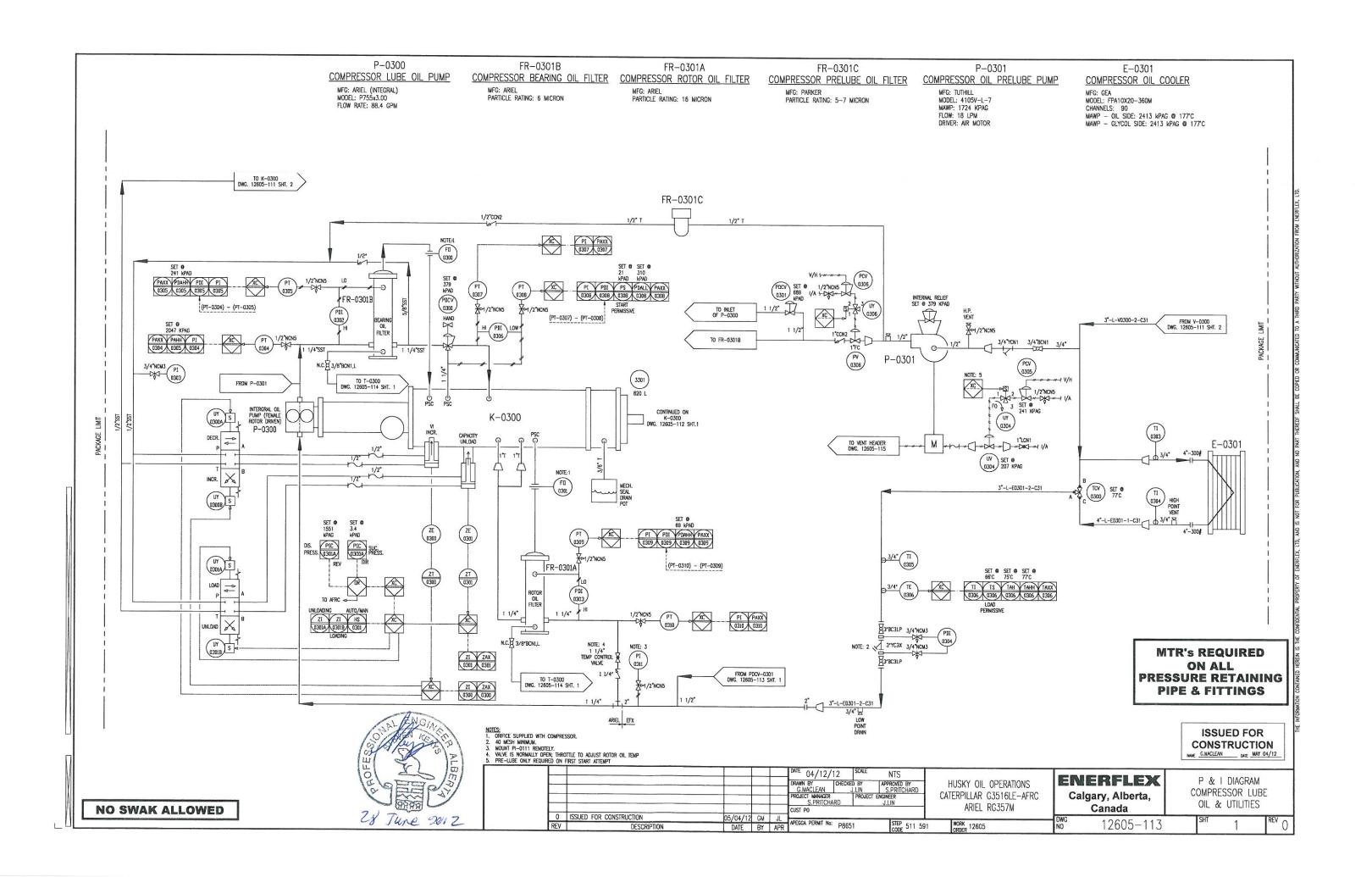
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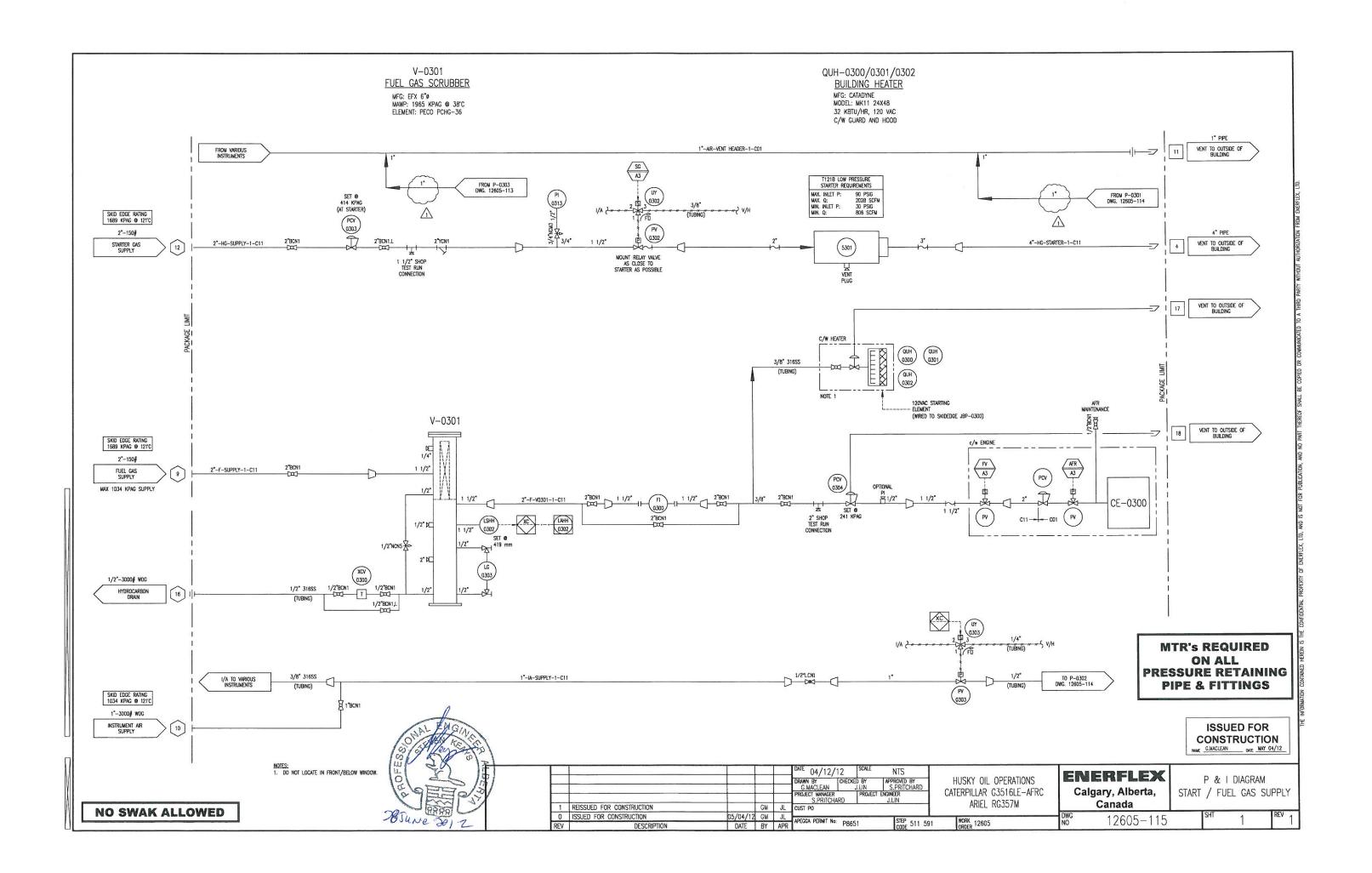
2068 kPag

Date: REV 7-Aug-12 2 By: Checked:





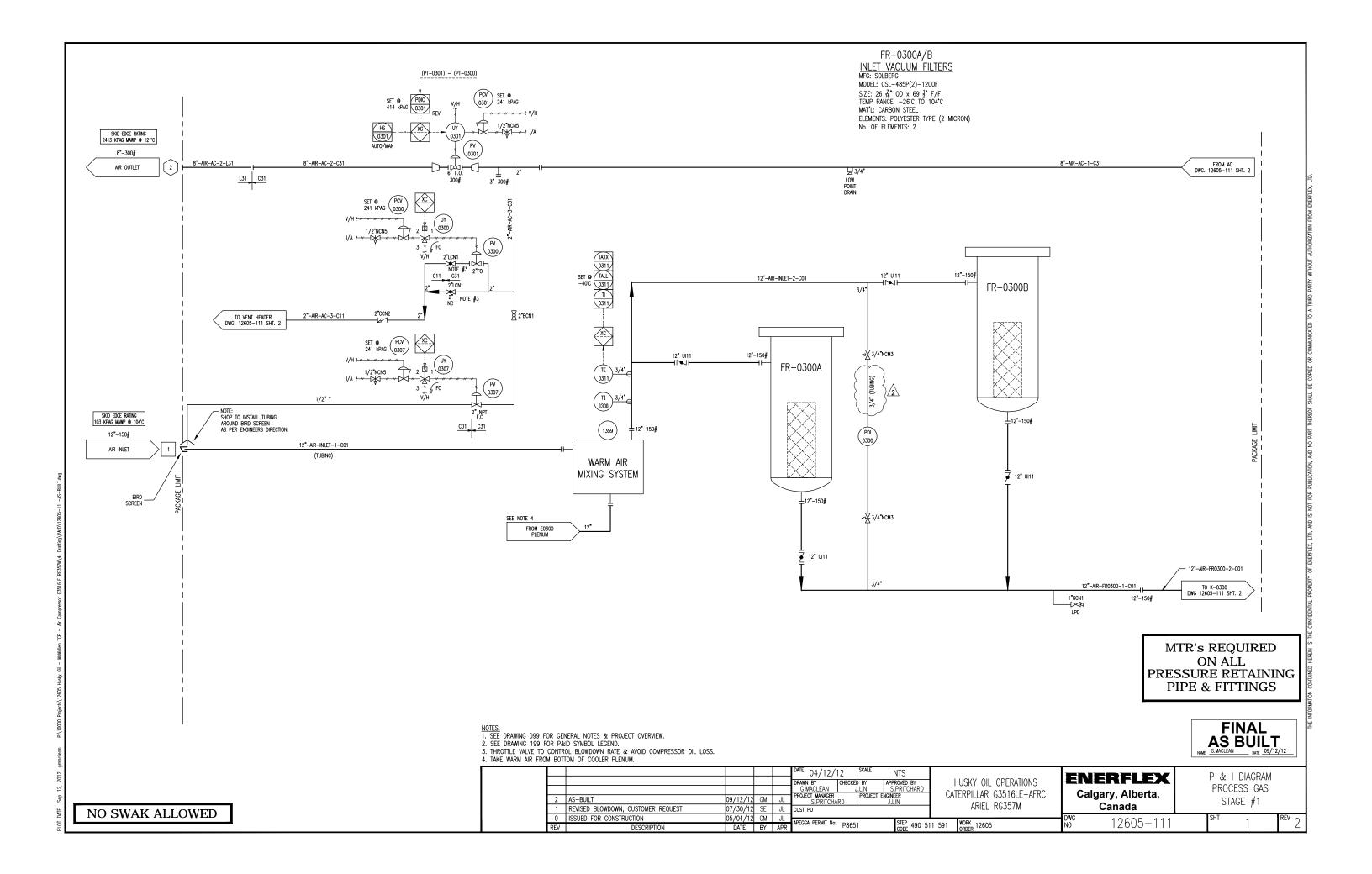


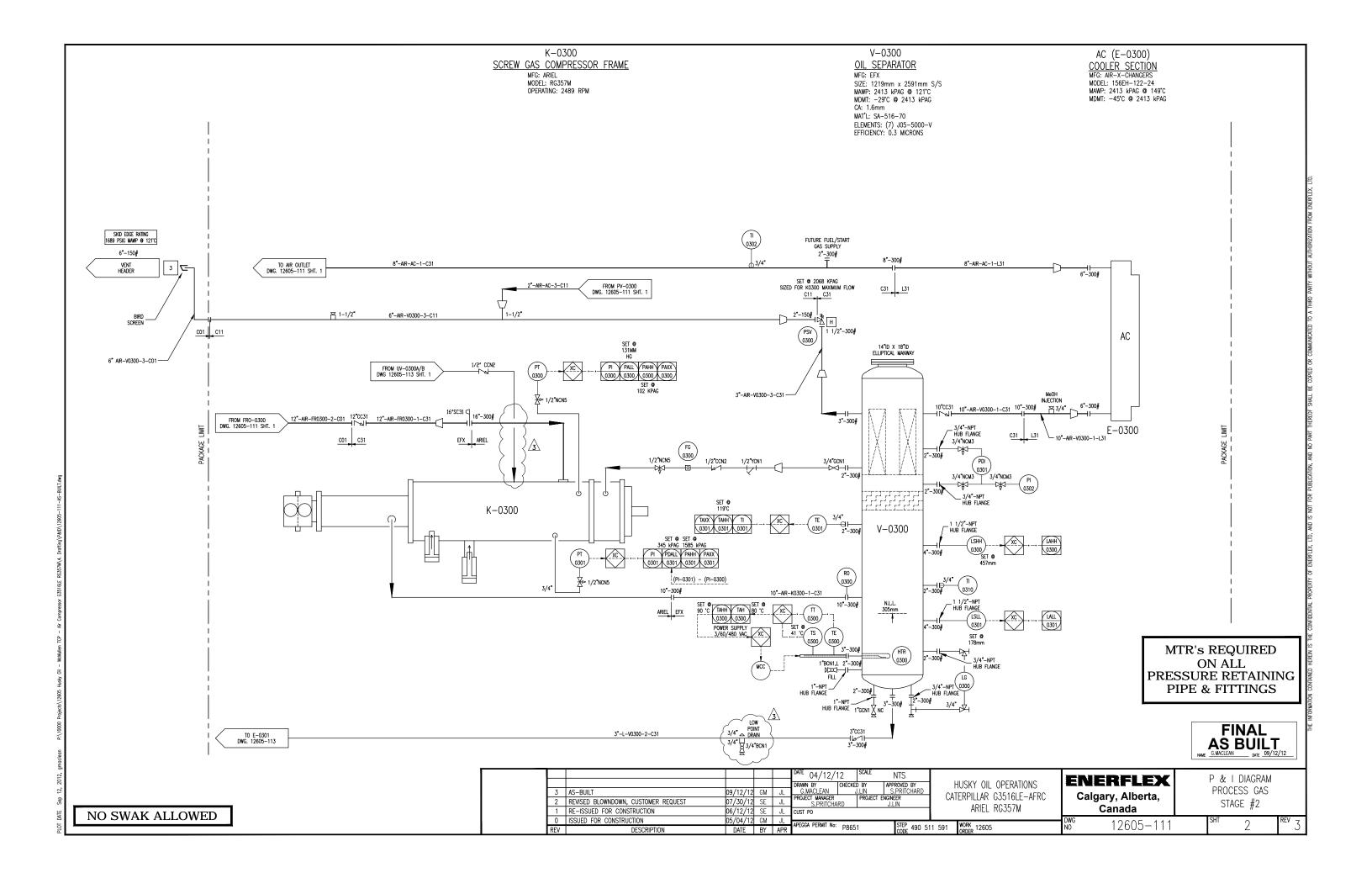


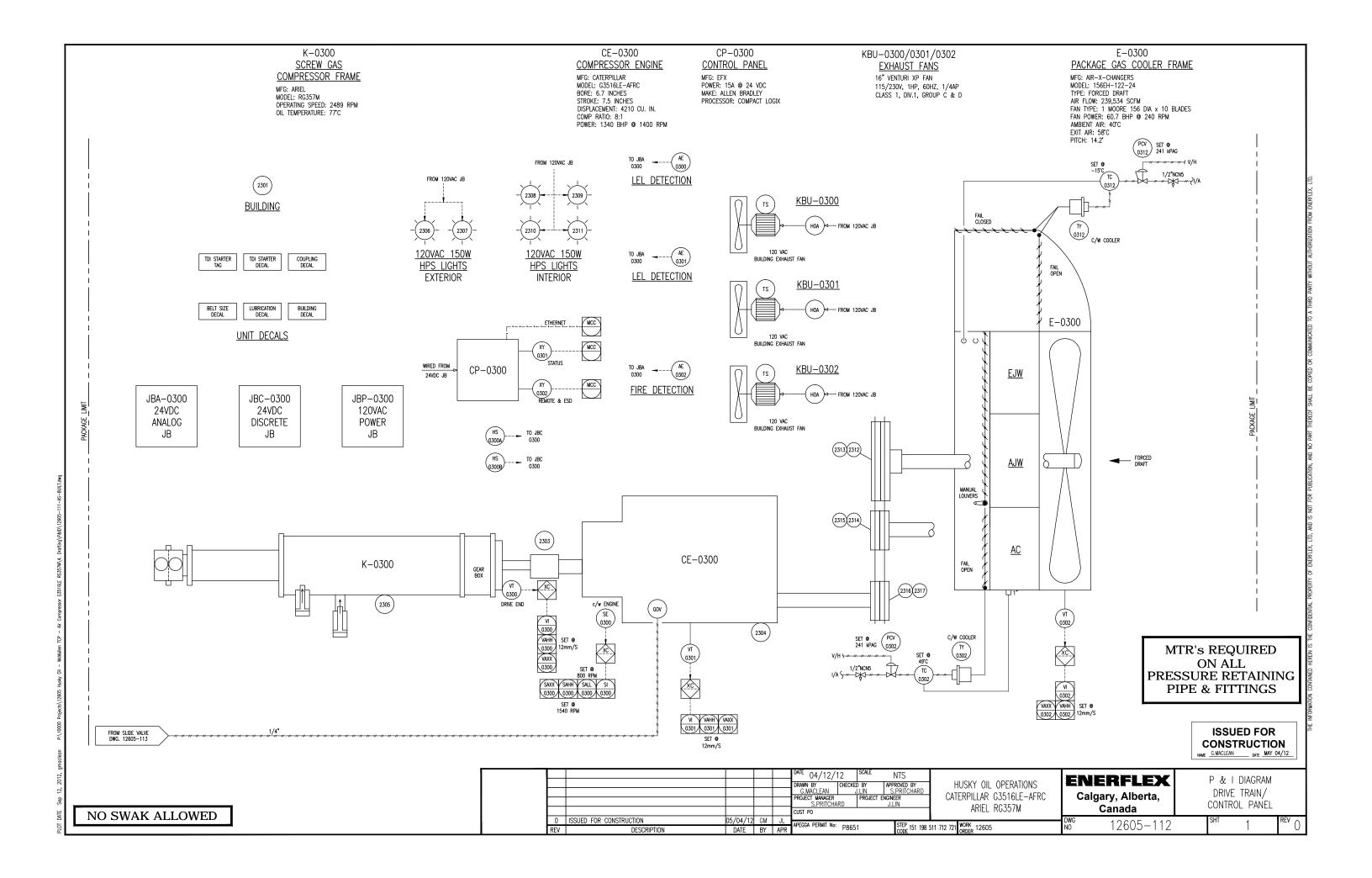
PROJECT DESCRIPTION  ONE (1) AIR COMPRESSOR PACKAGE FOR: HUSKY OIL OPERATIONS LTD. LOCATION NAME: MCMULLEN THERMAL CONDUCTION PILOT (TCP) PROJECT LSD: 03-35-078-25 W4  FABRICATED BY: ENERFLEX LTD CALGARY, ALBERTA, CANADA  TANK CAPACITIES  GLYCOL (EJW) SURGE TANK: 103L GLYCOL (AJW) SURGE TANK: 103L WASTE OIL STORAGE TANK: 1281L COMP/ENGINE OIL DAYTANK: 2 X 480L WASTE GLYCOL STORAGE TANK: 1281L EQUIPMENT LIST	POWER REQUIREMENTS  ENGINE IGNITION SYSTEM: CONTROL PANEL: LEL & FIRE DETECTION: LIGHTS: BUILDING FANS: KIM HOT START: BUILDING HEATERS: IMMERSION HEATER:  SYSTEM CONSUMABLES COMPRESSOR LUBE OIL: ENGINE LUBE OIL: GLYCOL:	VOL: 24 VDC VOL: 24 VDC VOL: 24 VDC VOL: 120 VAC VOL: 120 VAC VOL: 480 VAC VOL: 480 VAC VOL: 480 VAC I SAE 40, LOW ASH, 810 L SO% ETHYLENE INHIBITED GLYCO IN ENGINE & AUXILIARY JACKED AJW & EJW CAPACITY: 1490 L		SKIDDED AIR COMPF PACKAGE CONSISTS AN ARIEL RG357M, PRIMER: PAINT: PROCESS PIPING:  VESSELS:	OF ONE (1) CATERPILLAR G3516LE—AFRC ENGINE DRIVING AIR COMPRESSOR.  -TPS—SP—001, FIN—1, RED OXIDE -TPS—SP—001, FIN—1, WARM GRAY -10% RADIOGRAPHIC TESTING -10% MT ON FILLET WELDS -1.6MM CORROSION ALLOWANCE -NO PWHT -SSPC—SP3 -NO PICKLING -NDE TO CGSB -MTR'S REQUIRED -10% RADIOGRAPHIC TESTING -10% MT ON FILLET WELDS -10% RADIOGRAPHIC TESTING -10% MT ON FILLET WELDS -NO PWHT -SSPC—SP3
TAG NO.  FR-0300A/B  INLET VACUUM FILTERS  V-0300  OIL SEPARATOR  E-0300  AC COOLER  CE-0300  ENGINE  K-0300  CONTROL PANEL  E-0300  E-0301  COMP. OIL COOLER  FR-0301A/B  COMP. OIL FILTERS  P-0301  ENGINE PRE-LUBE OIL FILTERS  P-0301  ENGINE PRE-LUBE OIL DAYTANK  T-0301  T-0300  WASTE OIL TANK  T-0301  FUEL GAS SCRUBBER  T-0303  WASTE GLYCOL (EJW) SURGE TANK  T-0304  GLYCOL (AJW) SURGE TANK  E-0300  E-0300  AJW COOLER	P&ID  12605-111 SHT. 1  12605-111 SHT. 2  12605-112 SHT. 1  12605-112 SHT. 1  12605-112 SHT. 1  12605-113 SHT. 1  12605-113 SHT. 1  12605-113 SHT. 1  12605-114 SHT. 1  12605-114 SHT. 1  12605-114 SHT. 1  12605-114 SHT. 1  12605-115 SHT. 1  12605-116 SHT. 1  12605-116 SHT. 1  12605-116 SHT. 2  12605-116 SHT. 2	DESIGN CRITERIA & APP  SITE ELEVATION: BAROMETRIC PRESSURE: AMBIENT TEMPERATURE:  PROCESS INLET: PROCESS FINAL DISCHARGE: INSTRUMENT AIR:  APPLICABLE CODE:  REGISTRATION: MISCELLANEOUS:  TUBING & FITTINGS: (SPE-010-TUB)  ELECTRICAL: SUITABLE FOR USE IN:	MAXIMUM MINIMUM DESIGN DESIGN MINIMUM PRESSURE MAXIMUM PRESSURE QUALITY CODE PIPING NON—CODE PIPING VESSEL EXCHANGER STRUCTURAL ELECTRICAL VESSEL GASKETS PROCESS PIPE UTILITY PIPE FLANGES THREAD SEALANT PROCESS	575 M ABOVE MEAN SEA LEVEL 94.53 KPAA 40°C -45°C ATM @ AMBIENT 2413 KPAG @ 121°C 241 KPAG	-NO PICKLING -1.6MM CORROSION ALLOWANCE -NDE TO CGSB -MTR's REQUIRED
			I I I I I I I I I I I I I I I I I I I	/12 /12   SCALE NITC	ISSUED FOR CONSTRUCTION  NAME G.MACLEAN DATE MAY 04/12

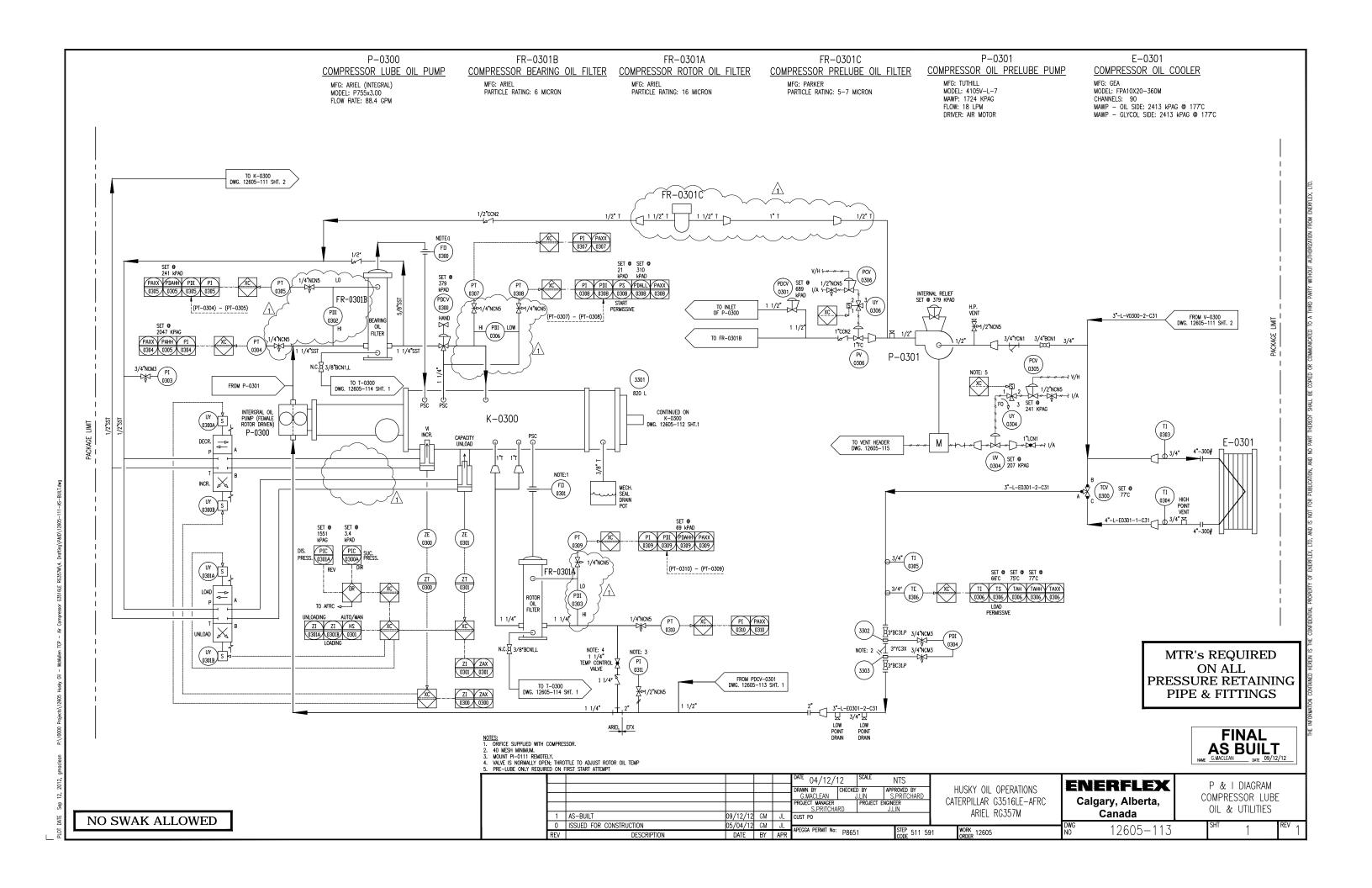
DATE 04/12/12 SCALE NTS
DRAWN BY CHECKED BY S.PRITCHARD
C.MACLEAN J.LIN S.PRITCHARD
PROJECT MANAGER PROJECT ENGINEER
S.PRITCHARD J.LIN S.PRITCHARD
O ISSUED FOR CONSTRUCTION
O ISSUED FOR CONSTRUCTION
DATE BY APR APEGGA PERMIT No: P8651 SIEP N/A CODE N/A

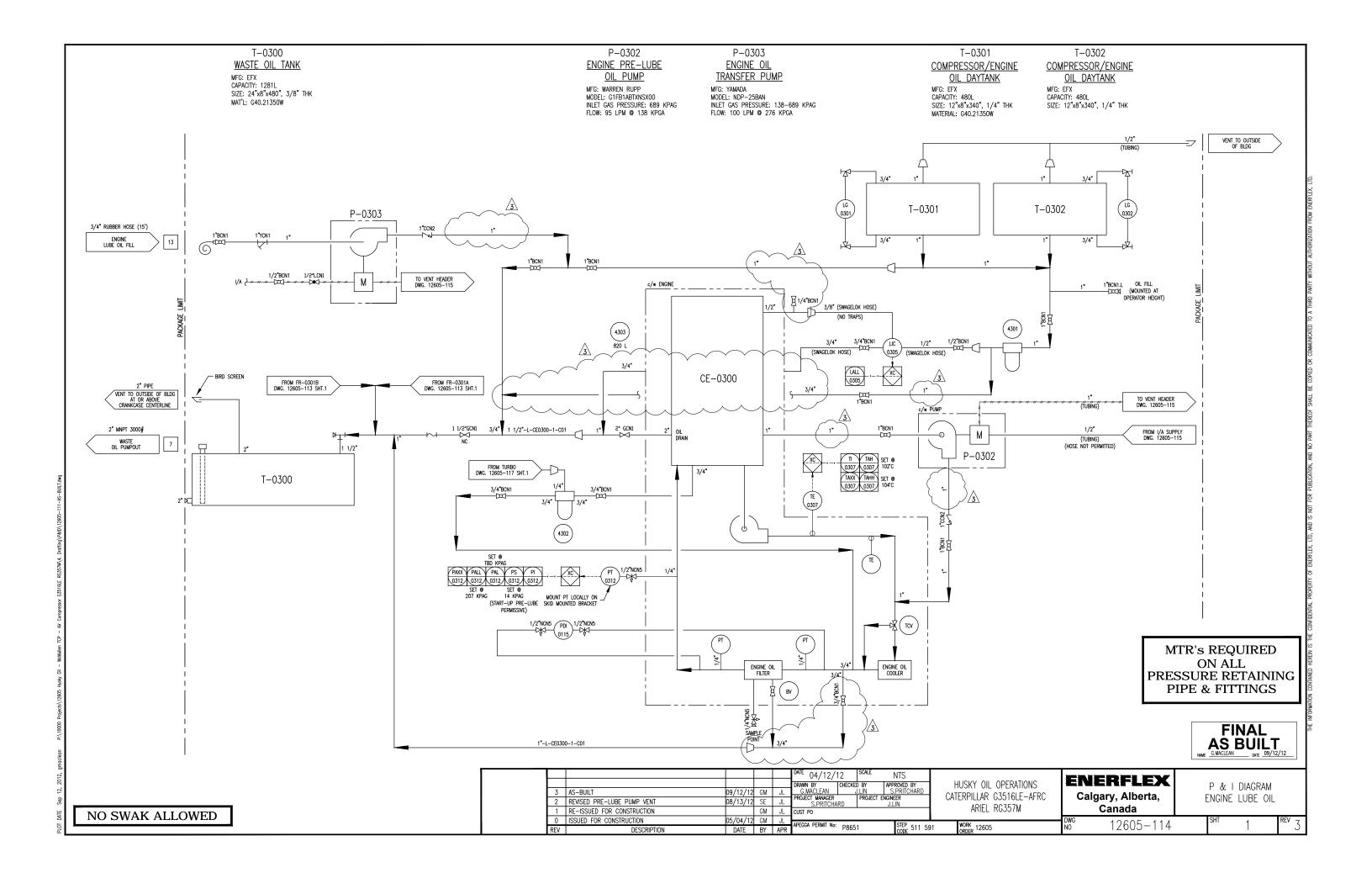
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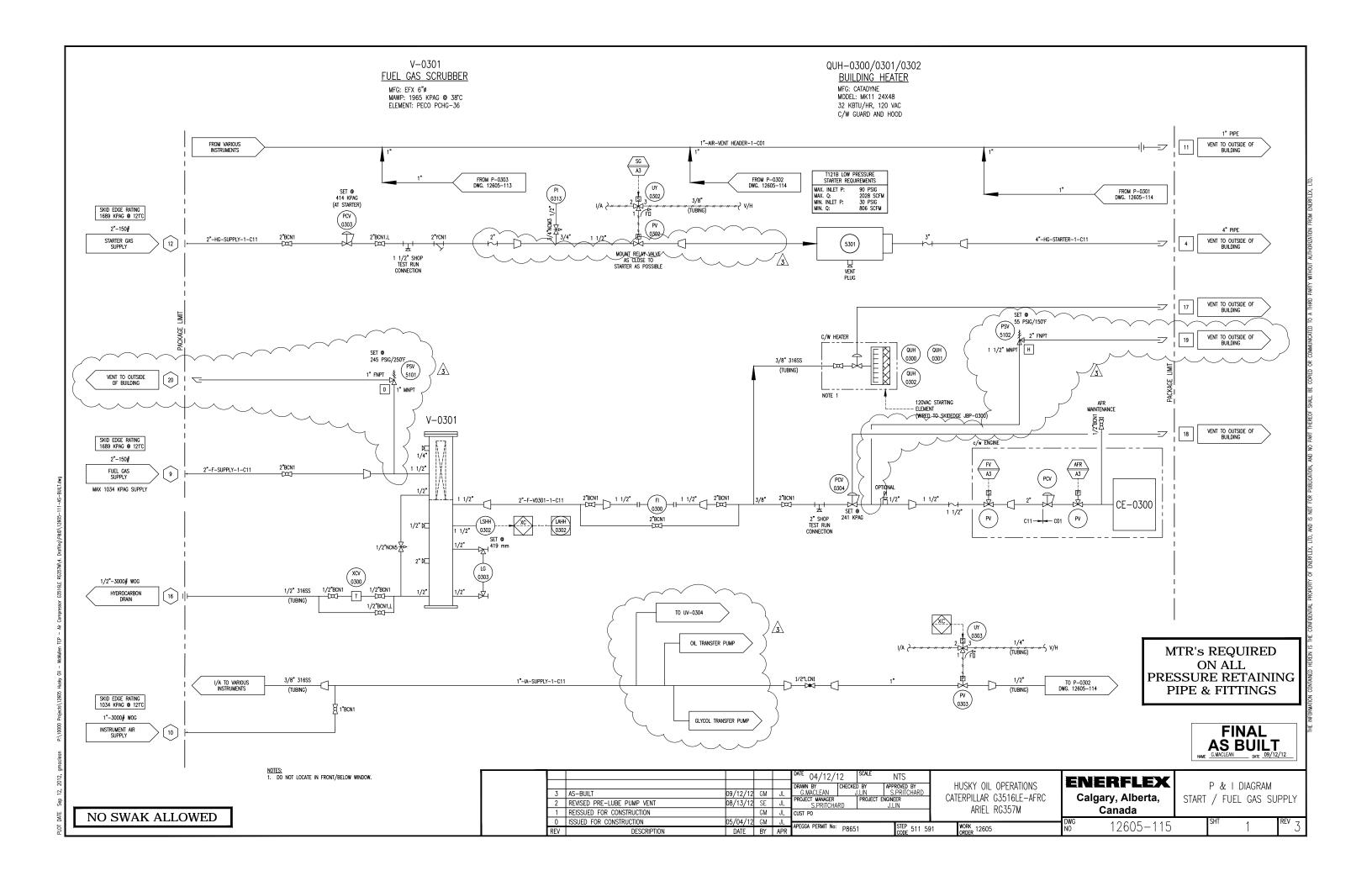


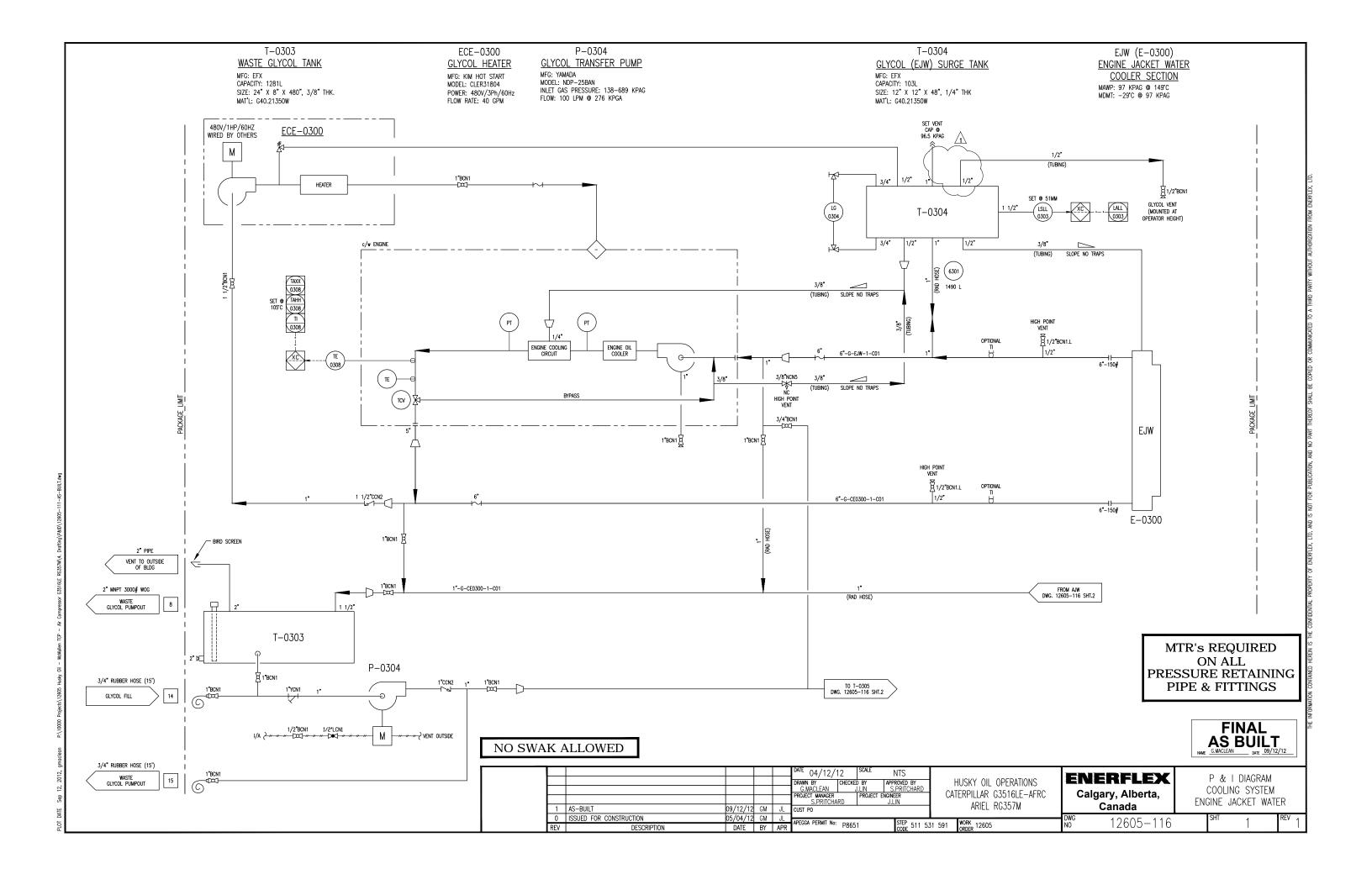


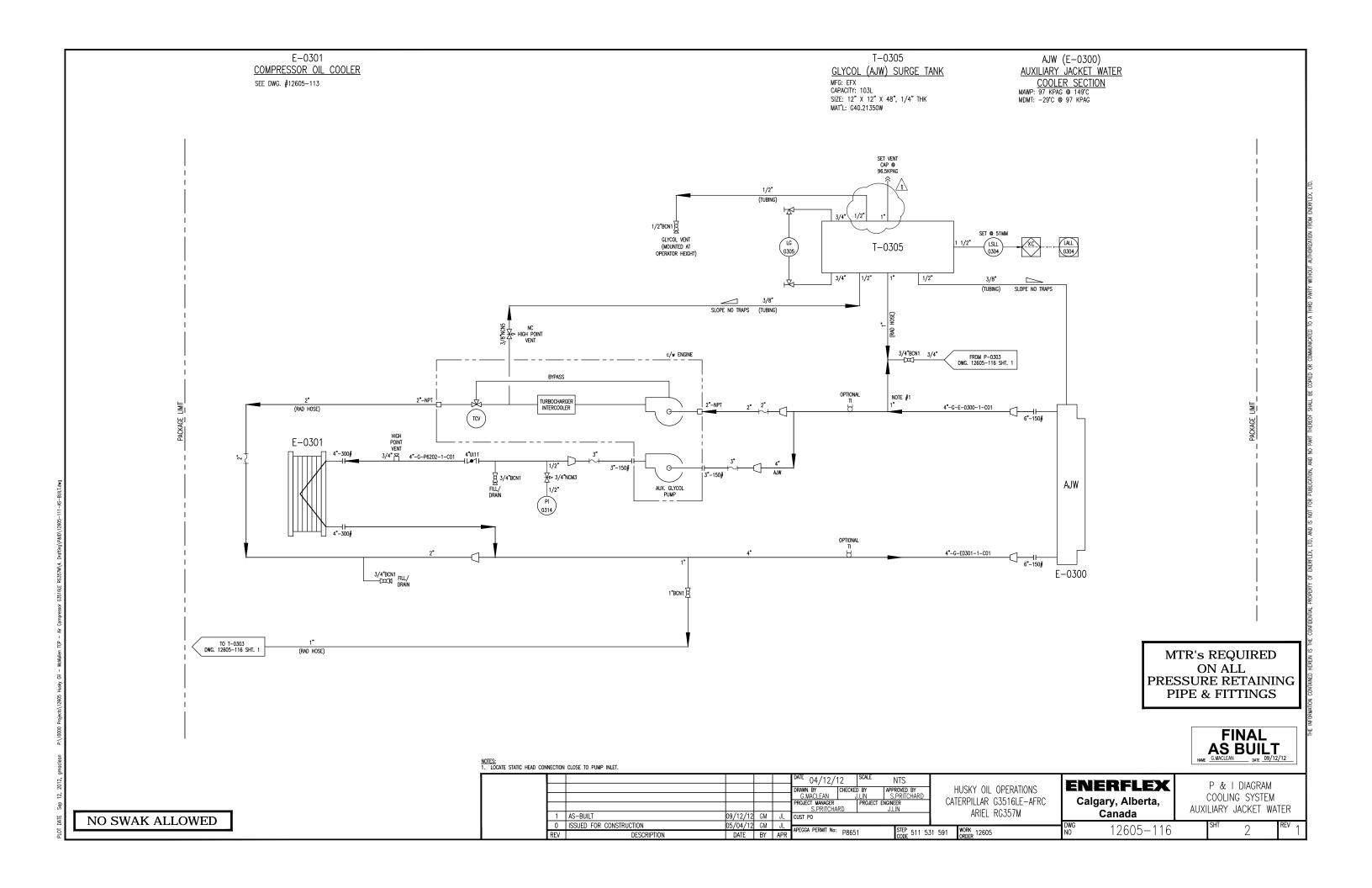


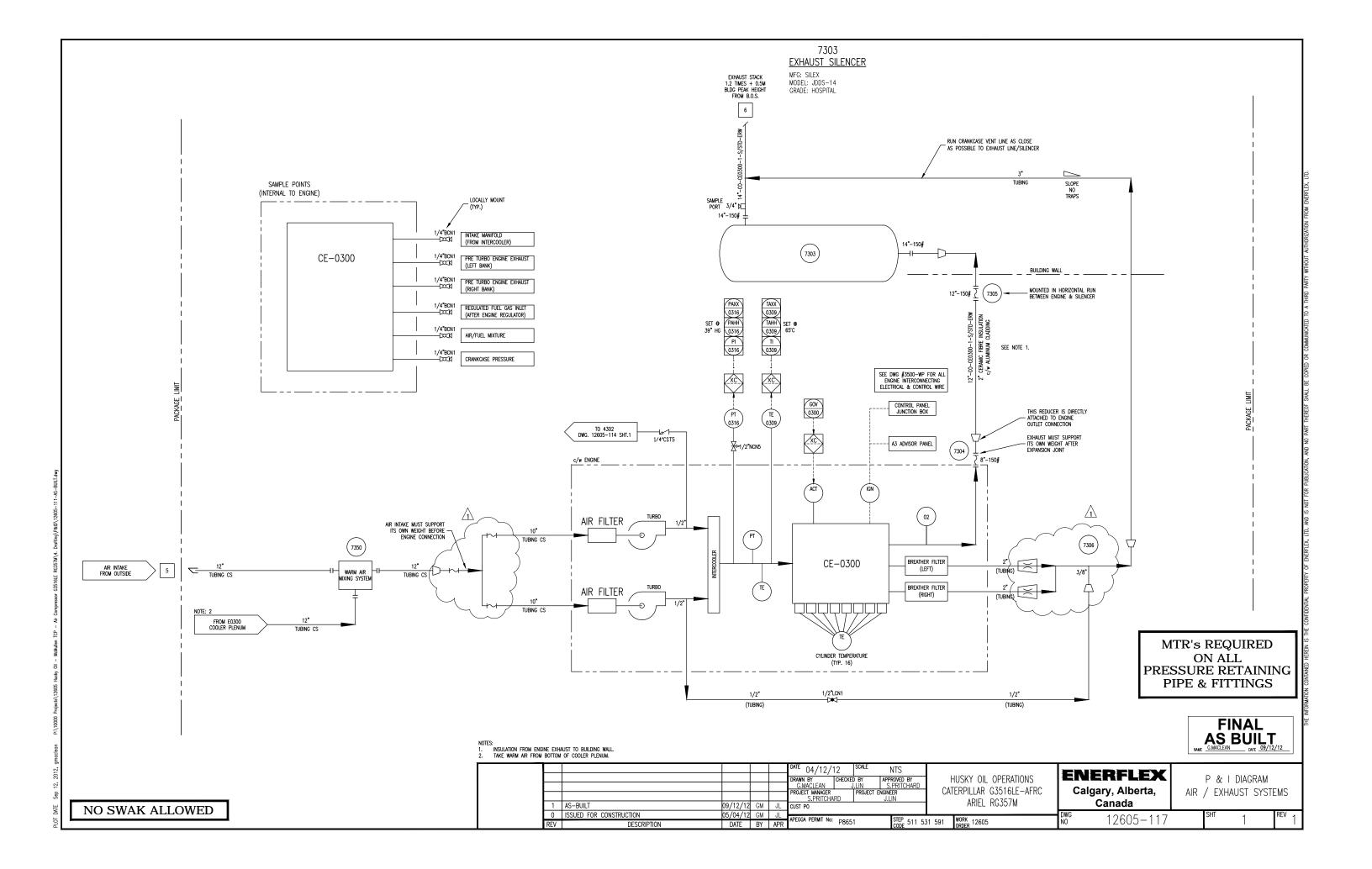


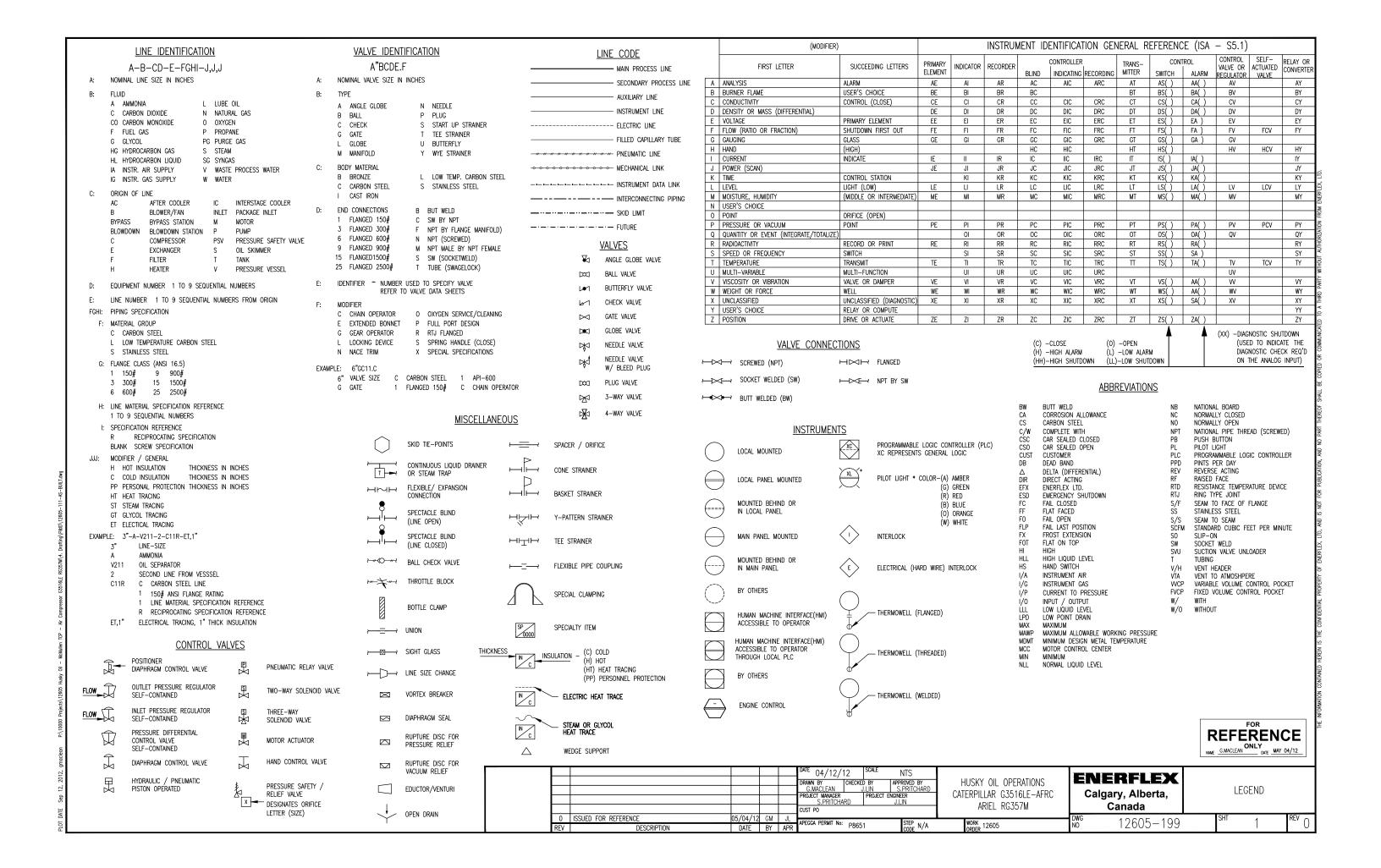


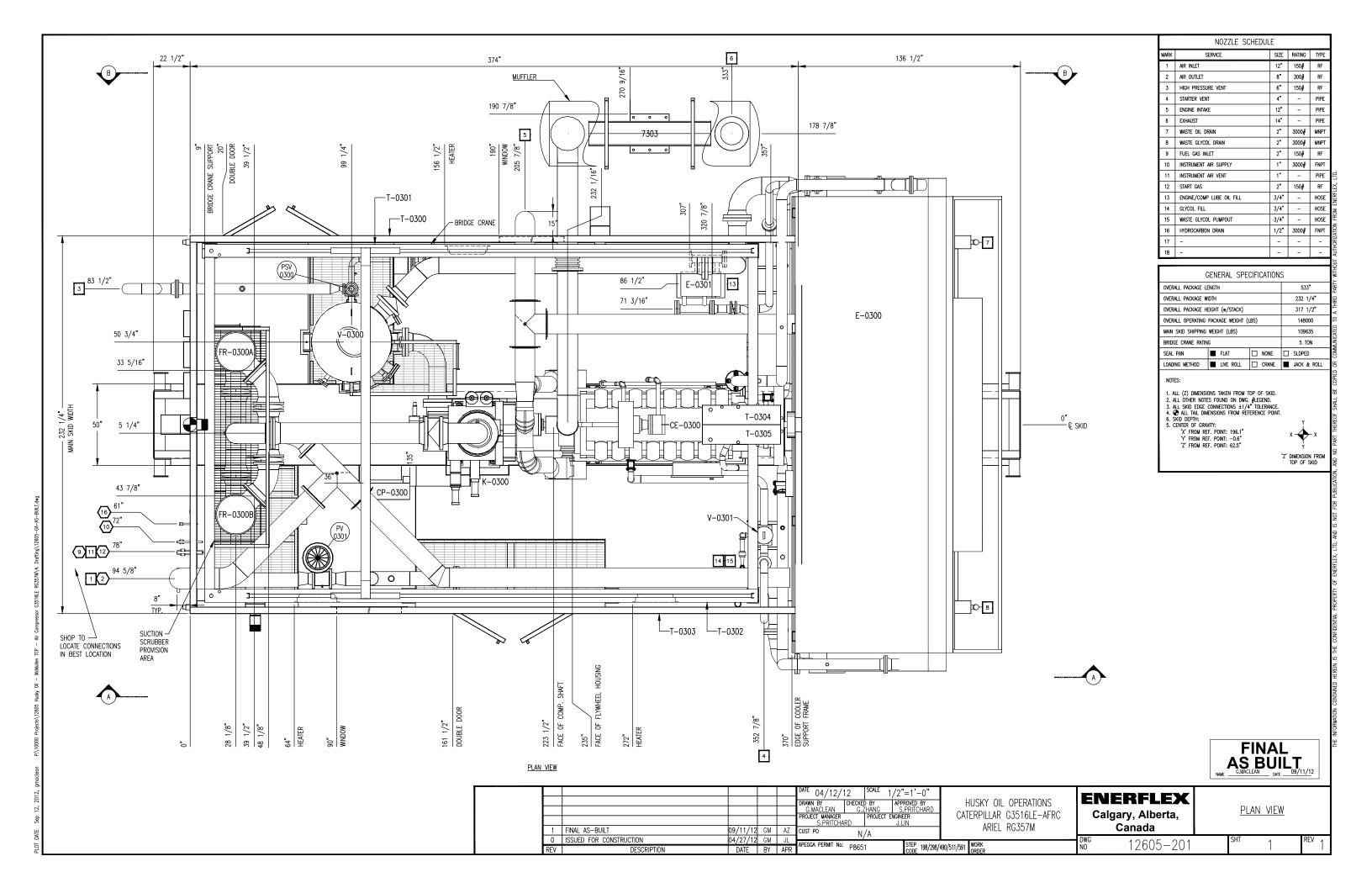


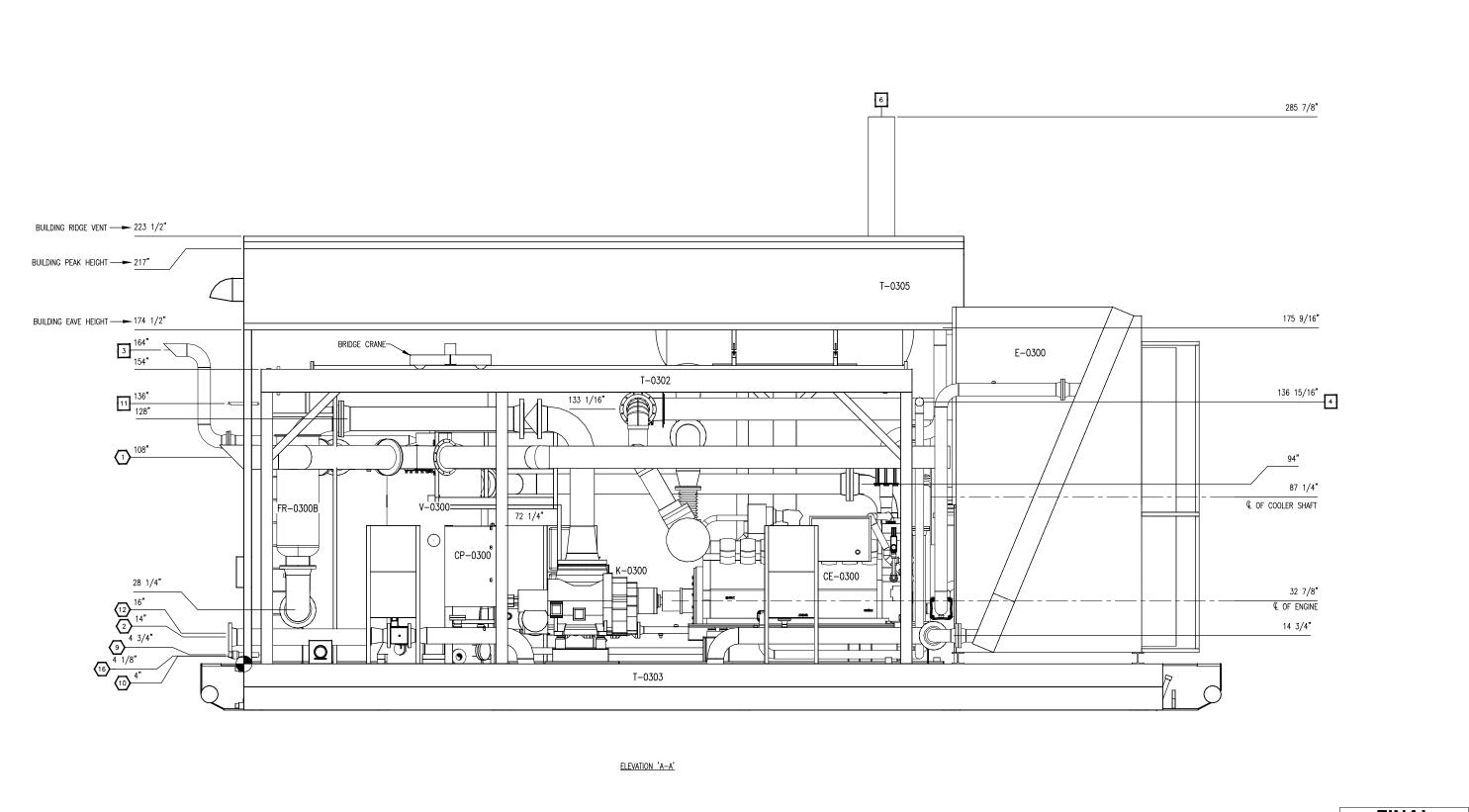










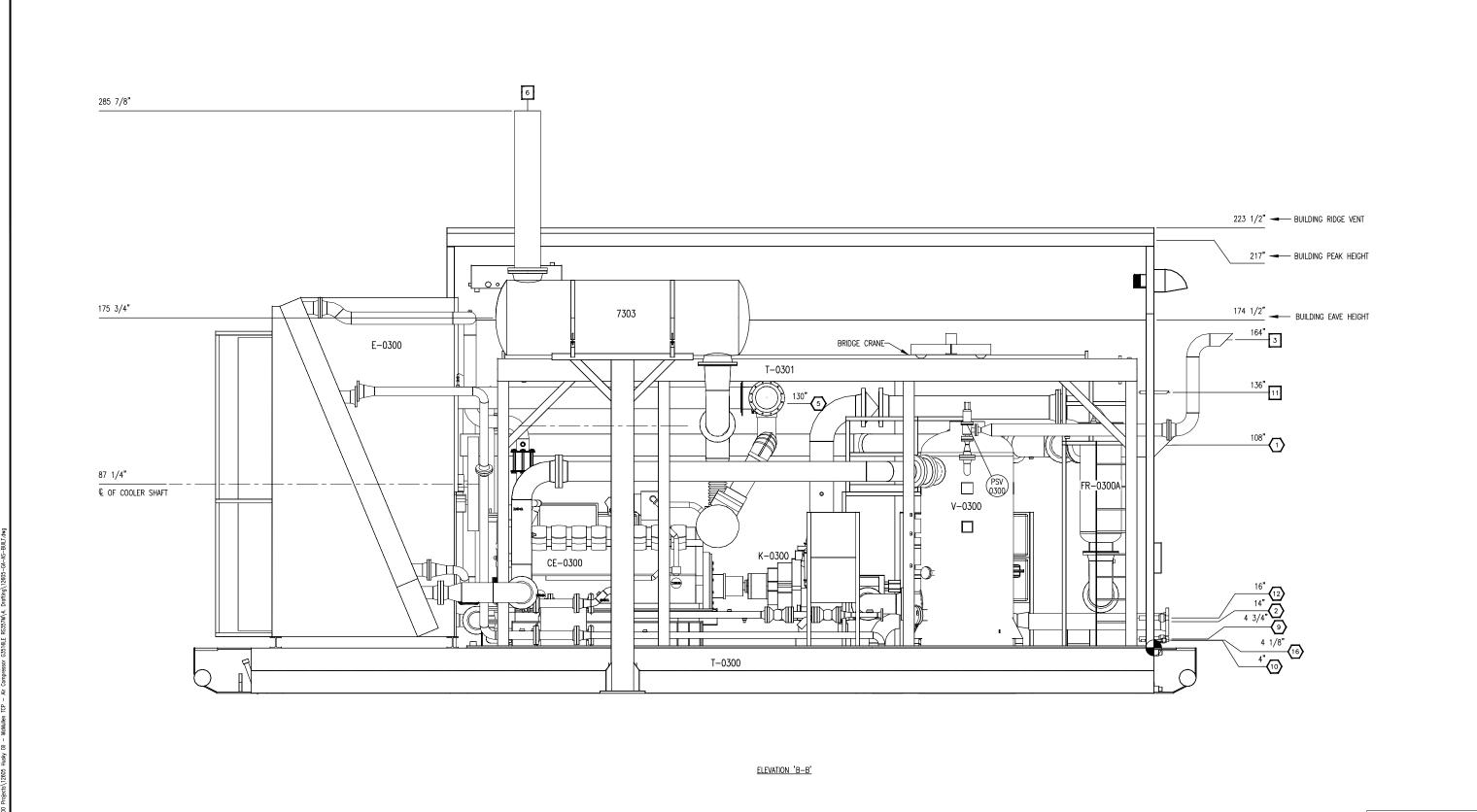


FINAL AS BUILT G.MACLEAN DATE 09/11/12

ELEVATION 'A-A'

NOTE:
ALL TAIL DIMENSIONS ARE
TAKEN FROM REFERENCE
POINT & AT TOP OF SKID

1	FINAL AS-BUILT	09/11/12	GM	AZ	DATE   04/12/12   SCALE   1/2"=1'-0"	HUSKY OIL OPERATIONS CATERPILLAR G3516LE-AFRC ARIEL RG357M		IERFLEX algary, Alberta, Canada
0	ISSUED FOR CONSTRUCTION	04/27/12	GM	JL		work	DWG	12605-201
RFV	DESCRIPTION	DATE	RY	APR	APEGGA PERMIT No: P8651 STEP 198/298/	490/511/591 WORK 12605	NO	12003-201



FINAL AS BUILT GIMOLEAN DATE 09/11/12

NOTE:
ALL TAIL DIMENSIONS ARE
TAKEN FROM REFERENCE
POINT • AT TOP OF SKID

1 0	FINAL AS-BUILT ISSUED FOR CONSTRUCTION	09/11/12 04/27/12			DRAWN BY CHECKE G.MACLEAN C PROJECT MANAGER S.PRITCHARD CUST PO N	D BY ZHANG PROJECT E	J.LIN	HUSKY OIL C CATERPILLAR G: ARIEL RI
0	ISSUED FOR CONSTRUCTION	04/27/12	GM	JL			STEP 100 /000 /	/ / WORK
REV	DESCRIPTION	DATE	BY	APR	APEGGA PERMII No: P865	1	CODE 198/298/	190/511/591 WORK 12605 ORDER 12605

HUSKY OIL OPERATIONS
CATERPILLAR G3516LE-AFRC
ARIEL RG357M

Canada

DWG
NO

11/591 WORK 12605

DWG
NO

12605-201

ELEVATION 'B-B'

