

PLOT DATE December 22, 2010 F:\10000 Projects\2517 Husky S1340 G5516LE Ariel RG357M\Drafting\PMID\2517-111-A6 BUILT.dwg

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

TAG NO.	DESCRIPTION
FR-0100A/B	INLET VACUUM FILTERS
V-0100	OIL SEPARATOR
E-0100	COOLER SECTION
CE-0100	ENGINE
K-0100	SCREW COMPRESSOR FRAME
CP-0100	CONTROL PANEL
E-0100	AIR/AC/EJW/AJW COOLER
E-0101	COMP. OIL COOLER
FR-0101A/B	COMP. LUBE OIL FILTERS
P-0101	ENGINE PRE-LUBE OIL PUMP
T-0100	WASTE OIL TANK
T-0101	ENGINE OIL DAYTANK
T-0102	COMP OR ENGINE OIL DAYTANK
V-0101	FUEL GAS SCRUBBER
T-0103	WASTE GLYCOL TANK
T-0104	GLYCOL (EJW) SURGE TANK
T-0105	GLYCOL (AJW) SURGE TANK
E-0100	EJW COOLER
E-0100	AJW COOLER

POWER REQUIREMENTS

ENGINE IGNITION SYSTEM: VOL: 24 VDC
CONTROL PANEL: VOL: 24 VDC
LEL & FIRE DETECTION: VOL: 24 VDC
LIGHTS: VOL: 120 VAC
BUILDING FANS: VOL: 120 VAC
KIM HOT START: VOL: 480 VAC
BUILDING HEATERS: VOL: 120 VAC
IMMERSION HEATER: VOL: 480 VAC

SYSTEM CONSUMABLES

COMPRESSOR LUBE OIL: S9-68, 776 L
ENGINE LUBE OIL: SAE 40, LOW ASH, 810 L
GLYCOL: 50% ETHYLENE INHIBITED GLYCOL/WATER SOLUTION
IN ENGINE & AUXILIARY JACKED WATER SYSTEMS
AJW & EJW CAPACITY: 2755 L

DESIGN CRITERIA & APPLICABLE CODES

SITE ELEVATION:	575 M ABOVE MEAN SEA LEVEL
BAROMETRIC PRESSURE:	94.53 KPAA
AMBIENT TEMPERATURE:	40°C
	-45°C
PROCESS INLET:	DESIGN
PROCESS FINAL DISCHARGE:	DESIGN
INSTRUMENT AIR:	MINIMUM PRESSURE
	MAXIMUM PRESSURE
	QUALITY
APPLICABLE CODE:	CODE PIPING
	NON-CODE PIPING
	VESSEL
	EXCHANGER
	STRUCTURAL
	ELECTRICAL
REGISTRATION:	VESSEL
MISCELLANEOUS:	GASKETS
	PROCESS PIPE
	UTILITY PIPE
	FLANGES
	THREAD SEALANT
	MTR's REQUIRED
TUBING & FITTINGS:	TUBING - 316(SS) SMLS / 3/8" MIN. DIA.
(SPE-010-TUB)	FITTINGS - 316(SS)
	FERRULES - 316(SS) BACK / 316(SS) FRONT
	TUBING - 304(SS)/ 3/8" MIN. DIA.
	FITTINGS - ZINC PLATED CS
	FERRULES - 316(SS) BACK / CS FRONT
	RIGID ALUMINUM CONDUIT
	CLASS 1, ZONE 2, GROUP D
ELECTRICAL:	
SUITABLE FOR USE IN:	
	UTILITY

DESIGN SPECIFICATION:

ENERFLEX LTD. SCOPE OF SUPPLY ON THIS PROJECT CONSISTS OF ONE
SKIDDED AIR COMPRESSOR PACKAGE.

PACKAGE CONSISTS OF ONE (1) CATERPILLAR G3516LE-AFRC ENGINE DRIVING
AN ARIEL RG357M, AIR COMPRESSOR.

PRIMER: -TPS-SP-001, FIN-1, RED OXIDE
PAINT: -TPS-SP-001, FIN-1, WARM GRAY
PROCESS PIPING: -10% RADIOGRAPHIC TESTING
-10% MT ON FILLET WELDS
-1.6MM CORROSION ALLOWANCE
-NO PWHT
-SSPC-SP3
-NO PICKLING
-NDE TO CGSB
-MTR's REQUIRED
VESSELS: -10% RADIOGRAPHIC TESTING
-10% MT ON FILLET WELDS
-NO PWHT
-SSPC-SP3
-NO PICKLING
-1.6MM CORROSION ALLOWANCE
-NDE TO CGSB
-MTR's REQUIRED

										PERMIT TO PRACTISE				APEGGA PERMIT: No. P8651													
4	AS BUILT				12/22/10	JH	KG	DATE		12/09/09	SCALE		NTS		FOR		HUSKY OIL OPERATIONS		ENERFLEX 10121 - BARLOW TRAIL N.E. CALGARY ALBERTA CANADA		TITLE P & I DIAGRAM PROJECT DESCRIPTION AND OVERVIEW						
3	ISSUED FOR CONSTRUCTION TO THE SHOP				07/15/10	KW	AR	DRAWN BY		X. W. L. J. O. N. I.		CHECKED BY		A. B. O. S. S. J.		APPROVED BY		A. B. O. S. S. J.									
2	GENERAL REVISIONS				06/30/10	KW	AR	CUST PO		N/A																	
1	ISSUED FOR FABRICATION				06/25/10	KW	AR																				
A	ISSUED FOR APPROVAL				06/04/10	KW	AR	STEP CODE		N/A						DWG NO		12517-099		SHT		1		REV		4	
REV		DESCRIPTION				DATE		BY		APR																	

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PLOT DATE December 22, 2010 F:\10000 Projects\2517 Husky S1340 G3516LE Ariel RG357M\Drawing\PAID\12517-111-AS BUILT.dwg

K-0100
SCREW GAS COMPRESSOR FRAME

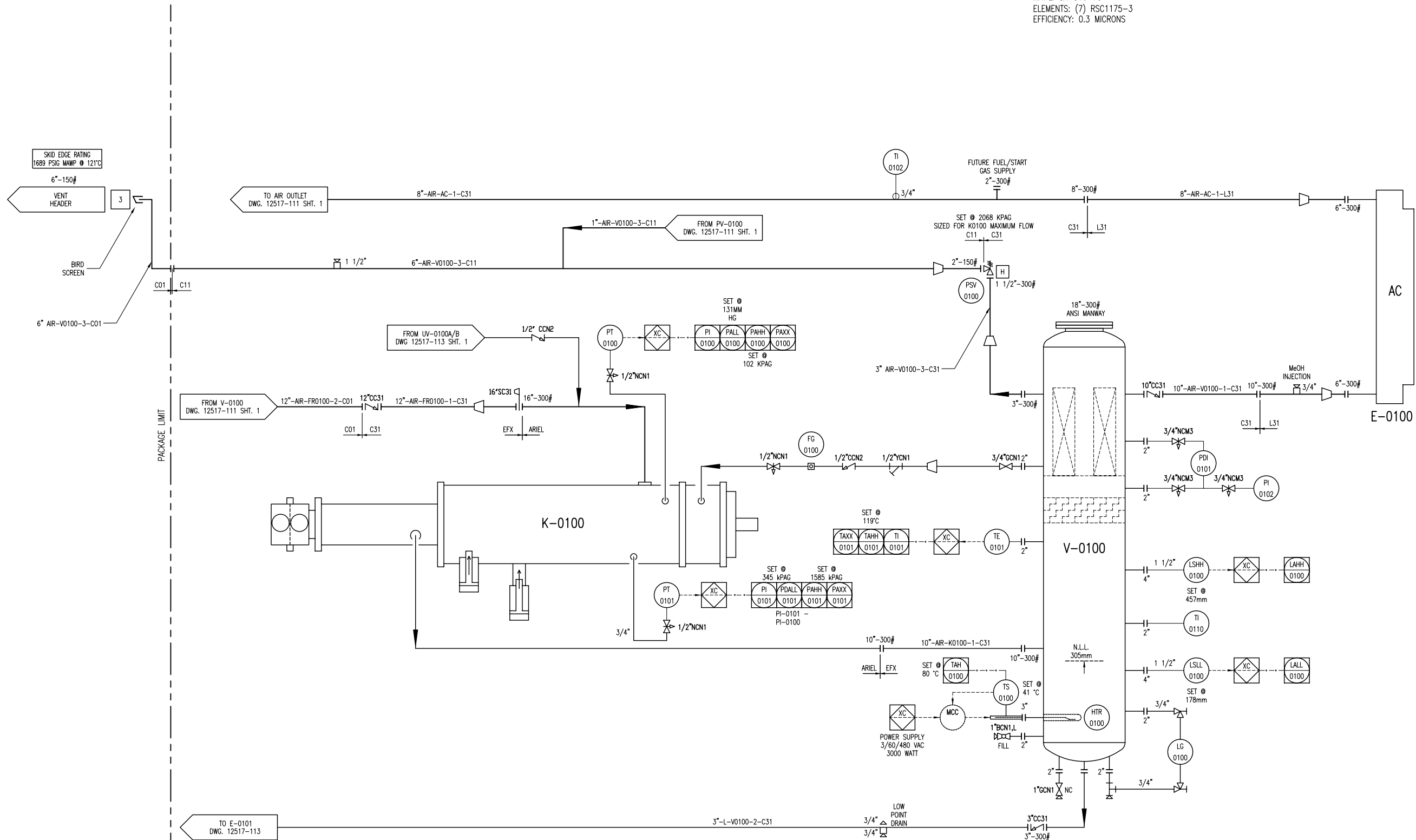
MFG: ARIEL
MODEL: RG357M
OPERATING: 2489 RPM

V-0100
OIL SEPARATOR

MFG: TESI
SIZE: 1219mm x 2591mm S/S
MAWP: 2413 kPAG @ 121°C
MDMT: -29°C @ 2413 kPAG
CA: 1.6mm
MAT'L: SA-516-70
ELEMENTS: (7) RSC1175-3
EFFICIENCY: 0.3 MICRONS

AC (E-0100)
COOLER SECTION

MFG: AIR-X-CHANGERS
MODEL: 156EH-122-24
MAWP: 2413 kPAG @ 149°C
MDMT: -45°C @ 2413 kPAG



**MTR's REQUIRED
ON ALL
PRESSURE RETAINING
PIPE & FITTINGS**

DESTROY PREVIOUS COPIES

NO SWAK ALLOWED

7	AS BUILT	12/22/10	JH	KG
6	FOR REGISTRATION	NOV 23/10	JH	AR
5	TAG REMOVED	SEP 17/10	KW	AR
4	AIR COOLER REVISED	07/21/10	KW	AR
3	ISSUED FOR CONSTRUCTION TO THE SHOP	07/15/10	KW	AR
2	GENERAL REVISIONS	06/30/10	KW	AR
1	ISSUED FOR FABRICATION	06/25/10	KW	AR
A	ISSUED FOR APPROVAL	06/04/10	KW	AR
REV	DESCRIPTION	DATE	BY	APR

DATE	12/09/09	SCALE	NTS
DRAWN BY	J. W. L. J. J.	CHECKED BY	A. J. J. J.
CUST PO	N/A	APPROVED BY	A. J. J. J.
STEP CODE	131 213 214 453		

PERMIT TO PRACTISE	APEGGA PERMIT: No. P8651
FOR	HUSKY OIL OPERATIONS CATERPILLAR G3516LE-AFRC ARIEL RG357M
ENERFLEX	10121 - BARLOW TRAIL N.E. CALGARY ALBERTA CANADA
DWG NO	12517-111

ENG. STAMP	
CERTIFIED AS BUILT	
NAME <i>J. W. L. J. J.</i>	DATE 12/22/10
TITLE	P & I DIAGRAM PROCESS GAS
REV	2
REV	7

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K-0100
SCREW GAS
COMPRESSOR FRAME
MFG: ARIEL
MODEL: RG357M
OPERATING SPEED: 2489 RPM
OIL TEMPERATURE: 77°C

CE-0100
COMPRESSOR ENGINE
MFG: CATERPILLAR
MODEL: G3516LE-AFRC
BORE: 6.7 INCHES
STROKE: 7.5 INCHES
DISPLACEMENT: 4210 IN
COMP RATIO: 8:1
POWER: 1340 BHP @ 1400 RPM

CP-0100
CONTROL PANEL
MFG: TES
POWER: 15A @ 24 VDC
MAKE: ALLEN BRADLEY
PROCESSOR: COMPACT LOGIX

KBU-0100/0101/0102
EXHAUST FANS
16" VENTURI XP FAN
115/230V, 1HP, 60HZ, 1/4AP
CLASS 1, DIV.1, GROUP C & D

E-0100
PACKAGE GAS COOLER FRAME
MFG: AIR-X-CHANGERS
MODEL: 156EH-122-24
TYPE: FORCED DRAFT
AIR FLOW: 239,534 SCFM
FAN TYPE: 1 MOORE 156 DIA x 10 BLADE
FAN POWER: 62.9 BHP @ 240 RPM
AMBIENT AIR: 40°C
EXIT AIR: 58°C

2101
BUILDING

TDI STARTER TAG
TDI STARTER DECAL
COUPLING DECAL

BELT SIZE DECAL
LUBRICATION DECAL
BUILDING DECAL

UNIT DECALS

JBA-0100
24VDC
ANALOG
JB

JBC-0100
24VDC
DISCRETE
JB

JBP-0100
24VDC
POWER
JB

FROM 120VDC JB
2106 2107
120VAC 150W
HPS LIGHTS
EXTERIOR

FROM 120VDC JB
2108 2109
2110 2111
120VAC 150W
HPS LIGHTS
INTERIOR

TO JBA 0100
AE 0100
LEL DETECTION

TO JBA 0100
AE 0101
LEL DETECTION

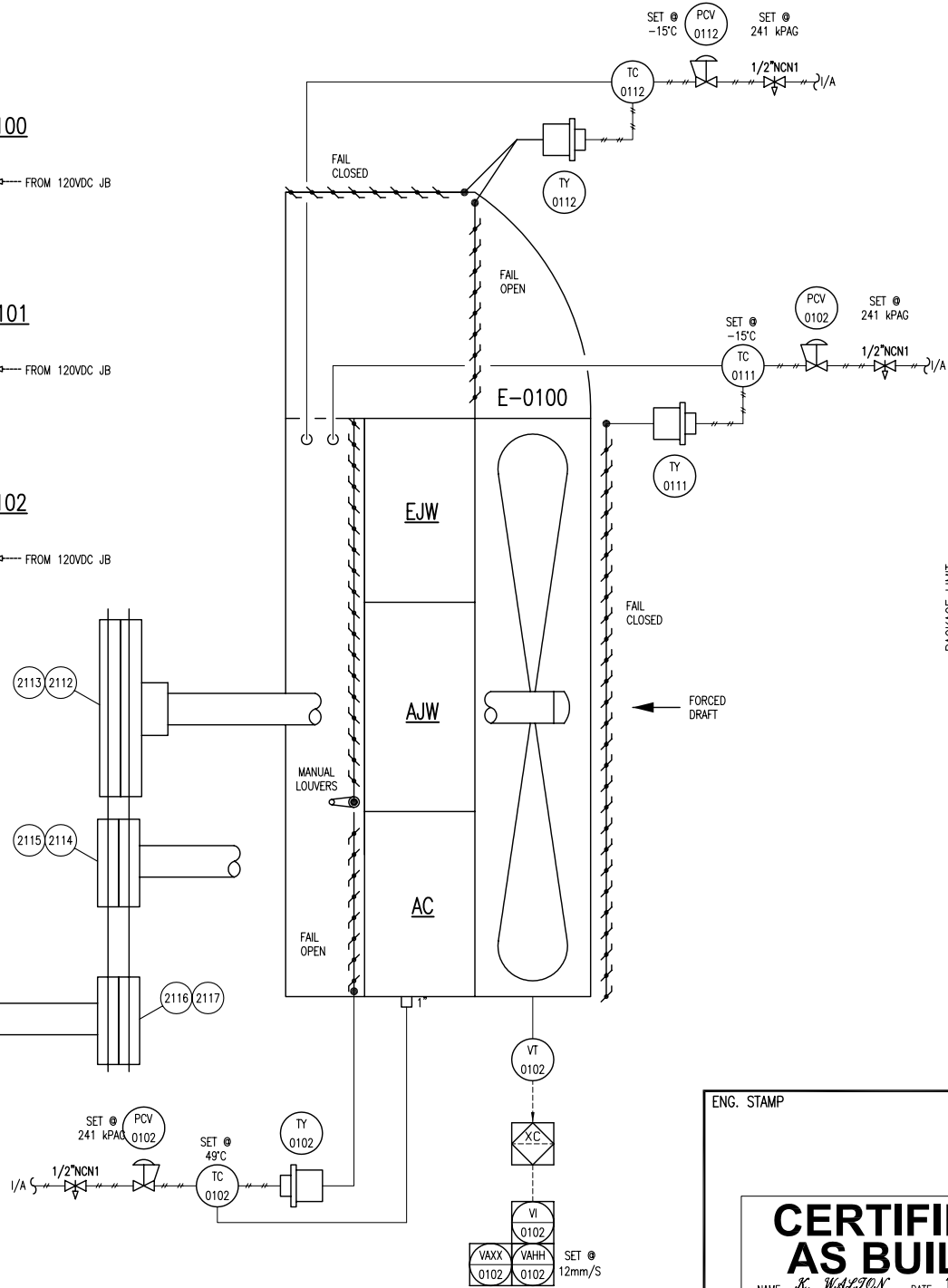
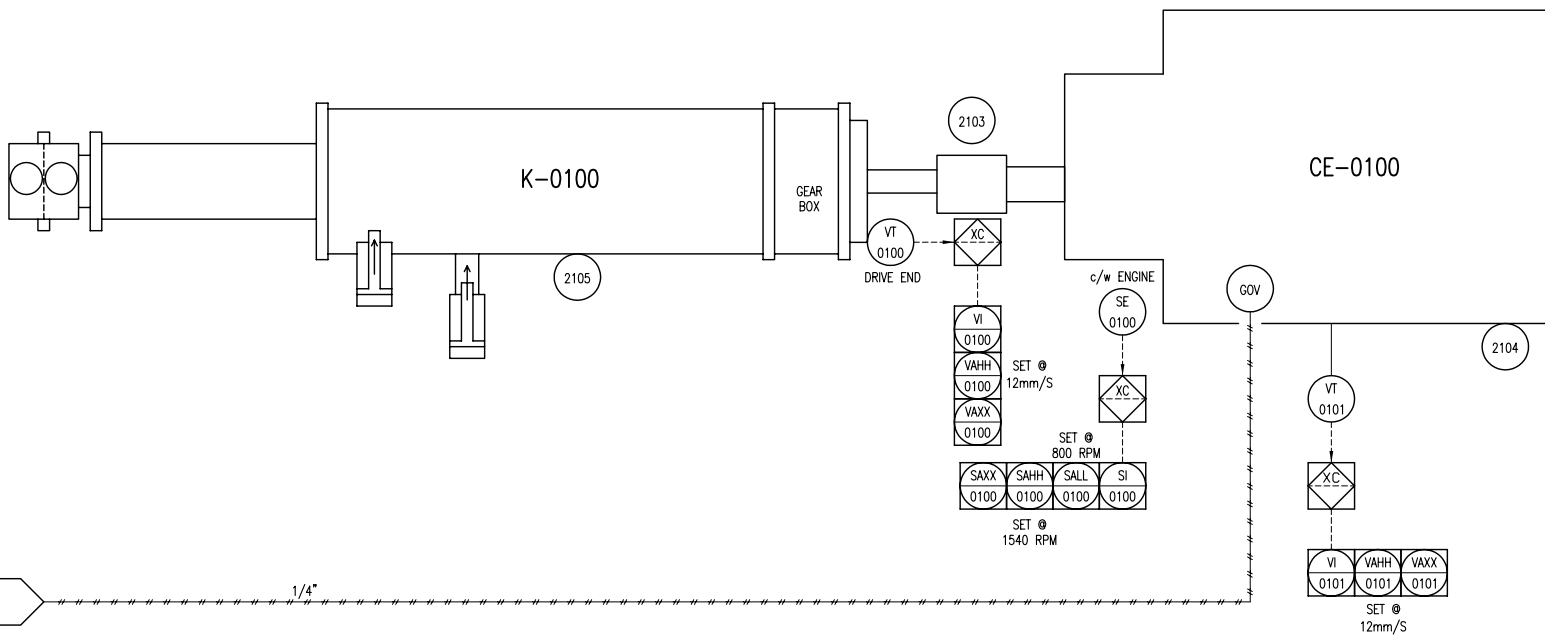
TO JBA 0100
AE 0102
FIRE DETECTION

KBU-0100
120 VAC
BUILDING EXHAUST FAN
HOA FROM 120VDC JB

KBU-0101
120 VAC
BUILDING EXHAUST FAN
HOA FROM 120VDC JB

KBU-0102
120 VAC
BUILDING EXHAUST FAN
HOA FROM 120VDC JB

WIRED FROM 24VDC JB
CP-0100
ETHERNET
XY 0101 STATUS
XY 0102 REMOTE & ESD
MCC



ENG. STAMP
CERTIFIED AS BUILT
NAME *K. WALTON* DATE 12/22/10

DESTROY PREVIOUS COPIES

NO SWAK ALLOWED

MTR's REQUIRED ON ALL PRESSURE RETAINING PIPE & FITTINGS

6	AS BUILT	12/22/10	JH	KG
5	GENERAL REVISIONS	SEP 17/10	KW	AR
4	AIR COOLER REVISED	07/21/10	KW	AR
3	ISSUED FOR CONSTRUCTION TO THE SHOP	07/15/10	KW	AR
2	GENERAL REVISIONS	06/30/10	KW	AR
1	ISSUED FOR FABRICATION	06/25/10	KW	AR
A	ISSUED FOR APPROVAL	06/04/10	KW	AR
REV	DESCRIPTION	DATE	BY	APR

DATE	12/09/09	SCALE	NTS
DRAWN BY	X. WALTON	CHECKED BY	A. WALTON
CUST PO	N/A	APPROVED BY	A. WALTON
STEP CODE	111 112 113 142 531 711		

PERMIT TO PRACTISE	APEGGA PERMIT: No. P8651
FOR	HUSKY OIL OPERATIONS CATERPILLAR G3516LE-AFRC ARIEL RG357M
DWG NO	12517-112

TITLE
P & I DIAGRAM
DRIVE TRAIN /
CONTROL PANEL

SHT 1
REV 6

P-0100
COMPRESSOR LUBE OIL PUMP

MFG: ARIEL (INTEGRAL)
MODEL: P755x3.00
FLOW RATE: 88.4 GPM

FR-0100B
COMPRESSOR BEARING OIL FILTER

MFG: ARIEL
PARTICLE RATING: 6 MICRON

FR-0100A
COMPRESSOR ROTOR OIL FILTER

MFG: ARIEL
PARTICLE RATING: 16 MICRON

FR-0100C
COMPRESSOR PRELUBE OIL FILTER

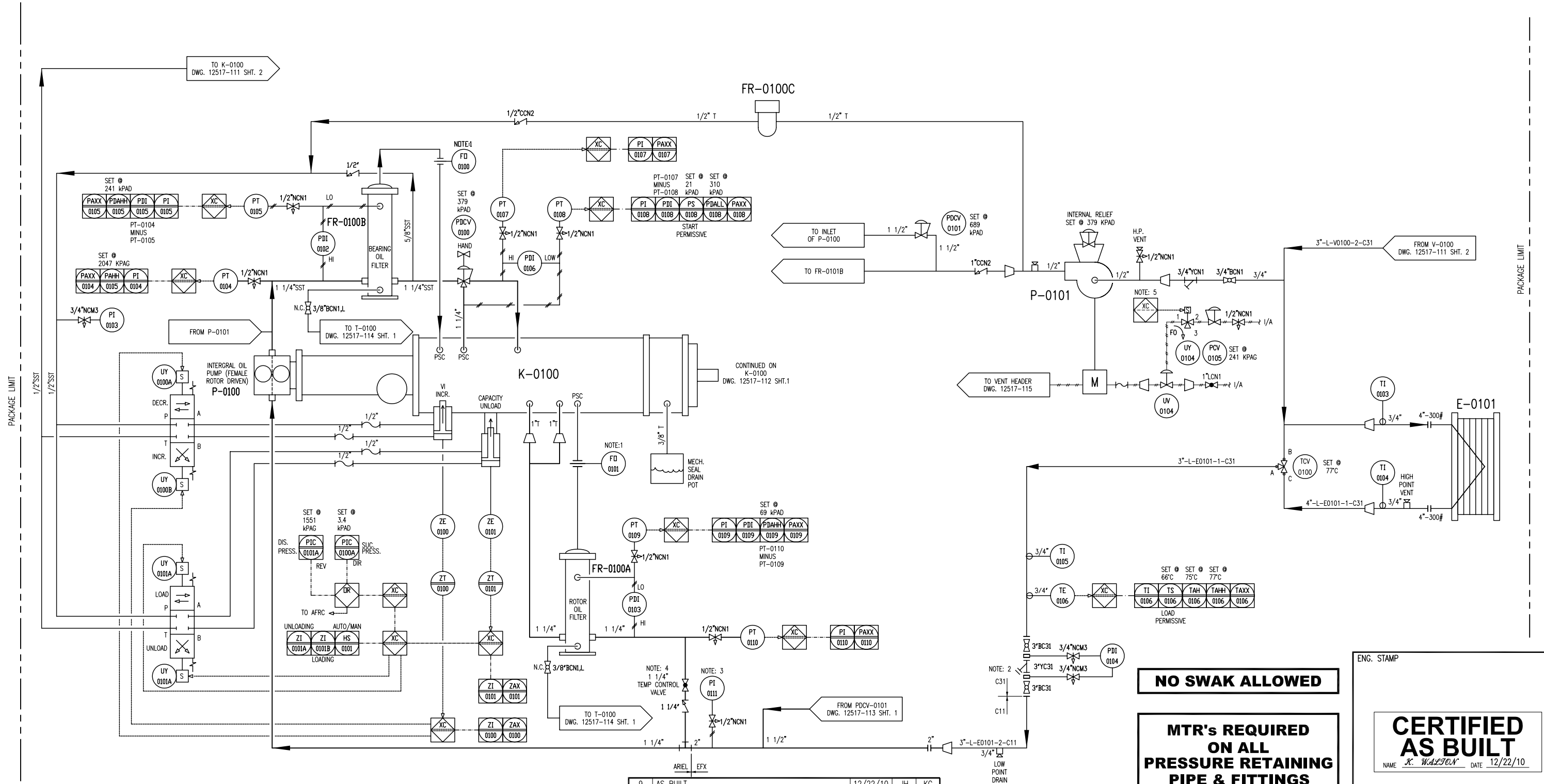
MFG: PARKER
PARTICLE RATING: 5-7 MICRON

P-0101
COMPRESSOR OIL COOLER PUMP

MFG: TUTHILL
MODEL: 4105V-L-7
MAWP: 1724 KPAG
FLOW: 18 LPM
DRIVER: AIR MOTOR

E-0101
COMPRESSOR OIL COOLER

MFG: GEA
MODEL: FPA10X20-360M
CHANNELS: 90
MAWP - OIL SIDE: 2413 KPAG @ 177°C
MAWP - GLYCOL SIDE: 2413 KPAG @ 177°C



- NOTES:
- ORIFICE SUPPLIED WITH COMPRESSOR.
 - 40 MESH MINIMUM.
 - MOUNT PI-0111 REMOTELY.
 - VALVE IS NORMALLY OPEN; THROTTLE TO ADJUST ROTOR OIL TEMP
 - PRE-LUBE ONLY REQUIRED ON FIRST START ATTEMPT

DESTROY PREVIOUS COPIES

9	AS BUILT	12/22/10	JH	KG
8	VALVE ADDED	SEP 17/10	KW	AR
7	PSV-0101 CHANGED TO PDCV-0101	SEP 13/10	KW	AR
6	PUMP VENT DESCRIPTIONS REVISED	SEP 10/10	KW	AR
5	PUMP VENT DESCRIPTIONS REVISED	SEP 02/10	KW	AR
4	GENERAL REVISIONS	AUG 26/10	KW	AR
3	ISSUED FOR CONSTRUCTION TO THE SHOP	07/15/10	KW	AR
2	GENERAL REVISIONS	06/30/10	KW	AR
1	ISSUED FOR FABRICATION	06/25/10	KW	AR
A	ISSUED FOR APPROVAL	06/04/10	KW	AR
REV	DESCRIPTION	DATE	BY	APR

DATE	12/09/09	SCALE	NTS
DRAWN BY	X. WALTON	CHECKED BY	A. BOGGS
CUST PO	N/A	APPROVED BY	A. BOGGS
STEP CODE	113	550	

PERMIT TO PRACTISE APEGGA PERMIT: No. P8651

FOR HUSKY OIL OPERATIONS
CATERPILLAR G3516LE-AFRC
ARIEL RC357M

ENERFLEX
10121 - BARLOW TRAIL N.E.
CALGARY ALBERTA CANADA

DWG NO 12517-113

TITLE P & I DIAGRAM
COMPRESSOR LUBE
OIL / UTILITIES

SHT 1
REV 9

NO SWAK ALLOWED

**MTR's REQUIRED
ON ALL
PRESSURE RETAINING
PIPE & FITTINGS**

ENG. STAMP

**CERTIFIED
AS BUILT**
NAME X. WALTON DATE 12/22/10

PLOT DATE December 22, 2010 F:\10000 Projects\12517 Husky S1340 G3516LE Ariel RC357M\Drawing\PAID\12517-111-AS BUILT.dwg

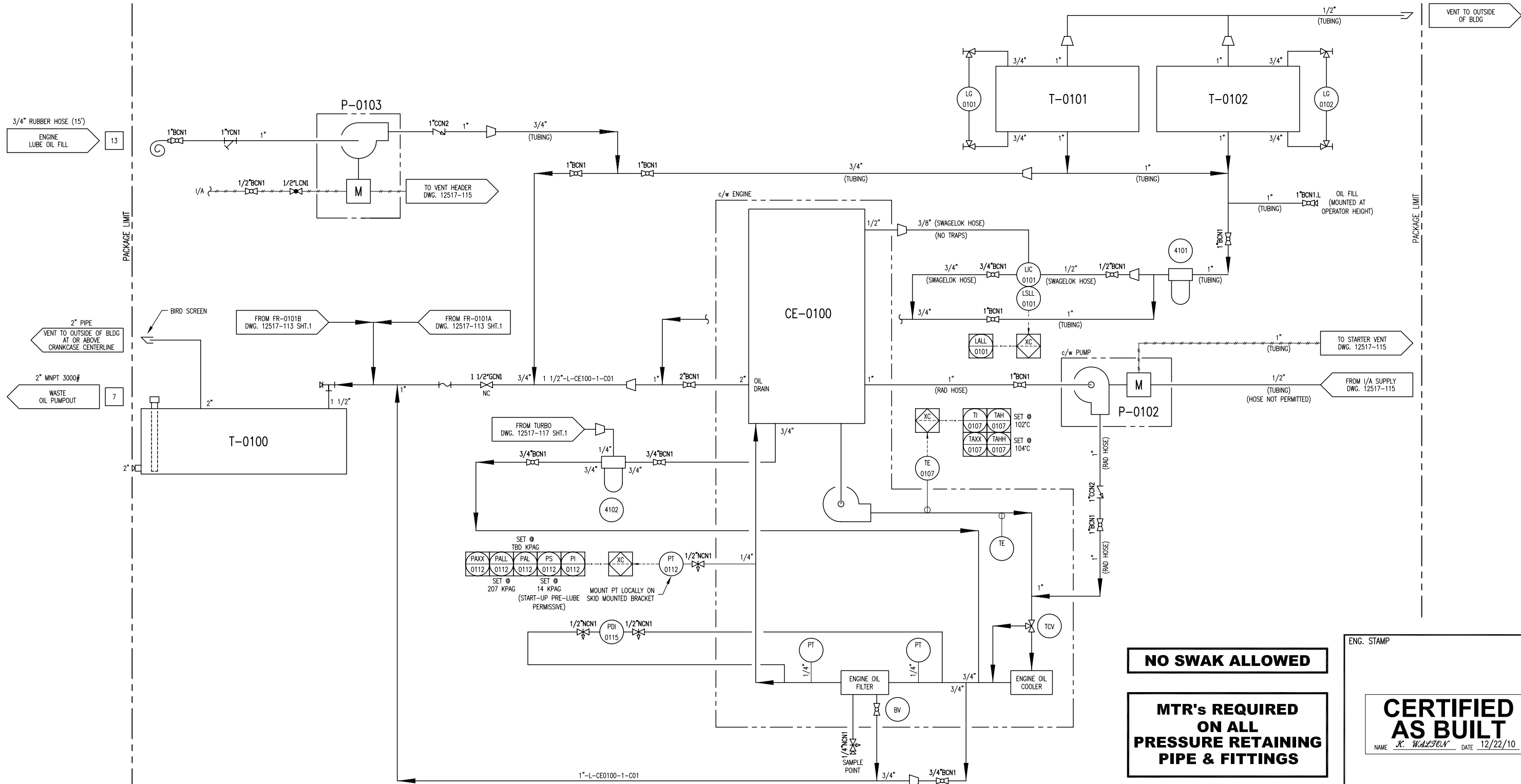
T-0100
WASTE OIL TANK
MFG: EFX
CAPACITY: 1281L
SIZE: 24"x8"x480", 3/8" THK
MAT'L: G40.21350W

P-0102
ENGINE PRE-LUBE
OIL PUMP
MFG: WARREN RUPP
MODEL: G1FB1ABTXNSX00
INLET GAS PRESSURE: 689 KPAG
FLOW: 95 LPM @ 138 KPAG

P-0103
ENGINE OIL
TRANSFER PUMP
MFG: YAMADA
MODEL: NDP-25BAN
INLET GAS PRESSURE: 138-689 KPAG
FLOW: 100 LPM @ 276 KPAG

T-0101
COMPRESSOR/ENGINE
OIL DAYTANK
MFG: EFX
CAPACITY: 480L
SIZE: 12"x8"x340", 1/4" THK
MATERIAL: G40.21350W

T-0102
COMPRESSOR/ENGINE
OIL DAYTANK
MFG: EFX
CAPACITY: 480L
SIZE: 12"x8"x340", 1/4" THK



DESTROY PREVIOUS COPIES

6	AS BUILT	12/22/10	JH	KG
5	TAG ADDED	SEP 17/10	KW	AR
4	PUMP VENT DESCRIPTIONS REVISED/TAG REVISED	SEP 02/10	KW	AR
3	ISSUED FOR CONSTRUCTION TO THE SHOP	07/15/10	KW	AR
2	GENERAL REVISIONS	06/30/10	KW	AR
1	ISSUED FOR FABRICATION	06/25/10	KW	AR
A	ISSUED FOR APPROVAL	06/04/10	KW	AR
REV	DESCRIPTION	DATE	BY	APR

DATE	12/09/09	SCALE	NTS
DRAWN BY	X. W. ALLEN	CHECKED BY	A. ROSS
CUST PO	N/A	APPROVED BY	A. ROSS
STEP CODE	112 540		

PERMIT TO PRACTISE	APEGGA PERMIT: No. P8651
FOR	HUSKY OIL OPERATIONS CATERPILLAR G3516LE-AFRC ARIEL RC357M

ENERFLEX
10121 - BARLOW TRAIL N.E.
CALGARY ALBERTA CANADA

DWG NO 12517-114

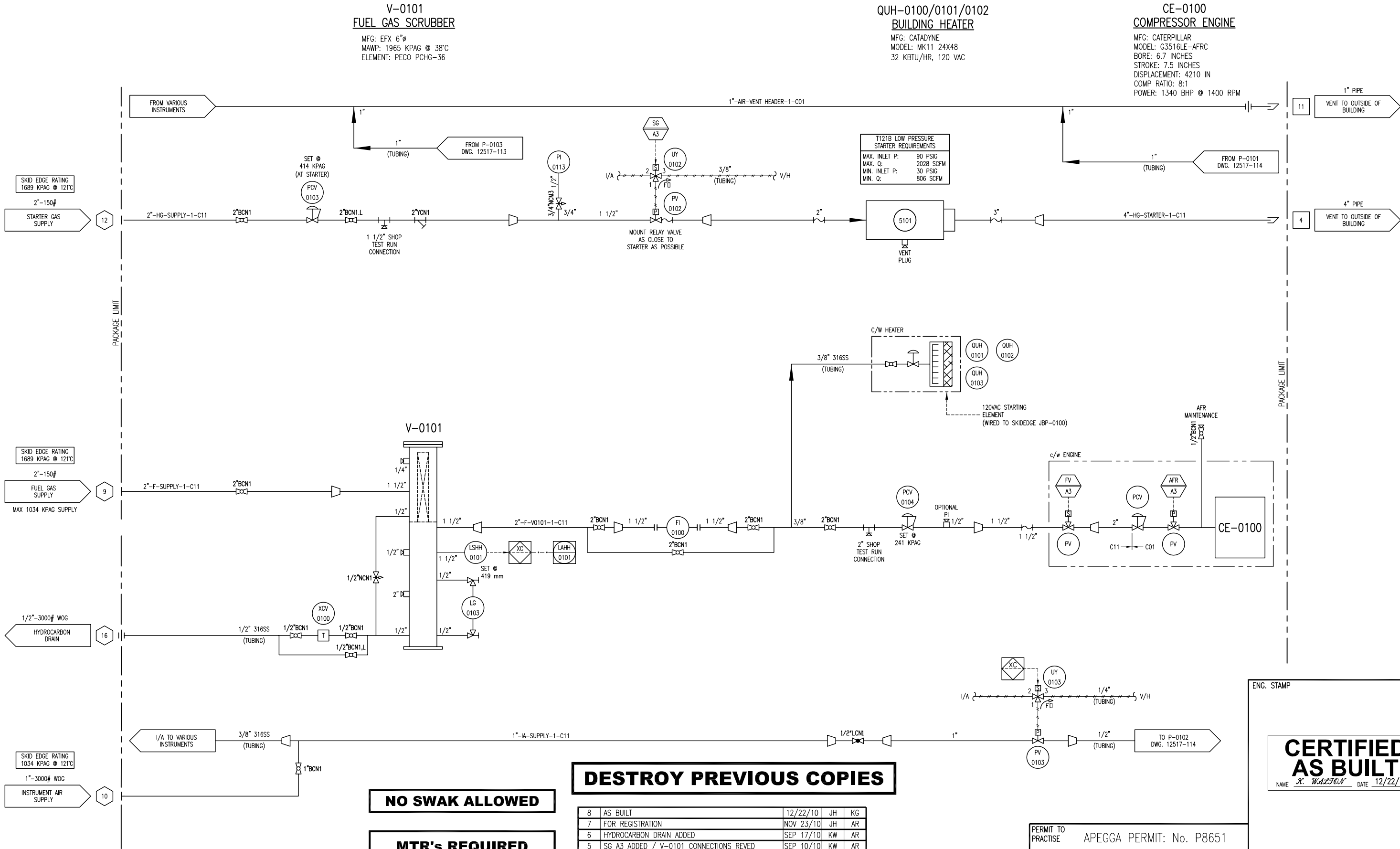
ENG. STAMP
CERTIFIED AS BUILT
NAME X. W. ALLEN DATE 12/22/10

TITLE P & I DIAGRAM
ENGINE LUBE OIL

SHT 1 REV 6

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MTR's REQUIRED
ON ALL
PRESSURE RETAINING
PIPE & FITTINGS

8	AS BUILT	12/22/10	JH	KG
7	FOR REGISTRATION	NOV 23/10	JH	AR
6	HYDROCARBON DRAIN ADDED	SEP 17/10	KW	AR
5	SG A3 ADDED / V-0101 CONNECTIONS REVED	SEP 10/10	KW	AR
4	PUMP VENT DESCRIPTIONS REVISED/TAG REVISED	SEP 02/10	KW	AR
3	ISSUED FOR CONSTRUCTION TO THE SHOP	07/15/10	KW	AR
2	GENERAL REVISIONS	06/30/10	KW	AR
-	-	-	-	-
A	ISSUED FOR APPROVAL	06/04/10	KW	AR
REV	DESCRIPTION	DATE	BY	APR

DATE	12/09/09	SCALE	NTS
DRAWN BY	J. W. L. JONES	CHECKED BY	A. B. B. B. B.
CUST PO	N/A	APPROVED BY	A. B. B. B. B.
STEP CODE	112 240 244 510	PERMIT TO PRACTISE	APEGGA PERMIT: No. P8651
FOR	HUSKY OIL OPERATIONS CATERPILLAR G3516LE-AFRC ARIEL RC357M	ENERFLEX	10121 - BARLOW TRAIL N.E. CALGARY ALBERTA CANADA
DWG NO	12517-115	SHT	1
REV	8		

ENG. STAMP

CERTIFIED AS BUILT

NAME J. W. L. JONES DATE 12/22/10

TITLE P & I DIAGRAM
START / FUEL SUPPLY

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T-0103
WASTE GLYCOL TANK

MFG: EFX
CAPACITY: 1281L
SIZE: 24" X 8" X 480", 3/8" THK.
MAT'L: G40.21350W

ECE-0100
GLYCOL HEATER

MFG: KIM HOT START
MODEL: CLER31804
POWER: 480V/3Ph/60Hz
FLOW RATE: 40 GPM

P-0104
GLYCOL TRANSFER PUMP

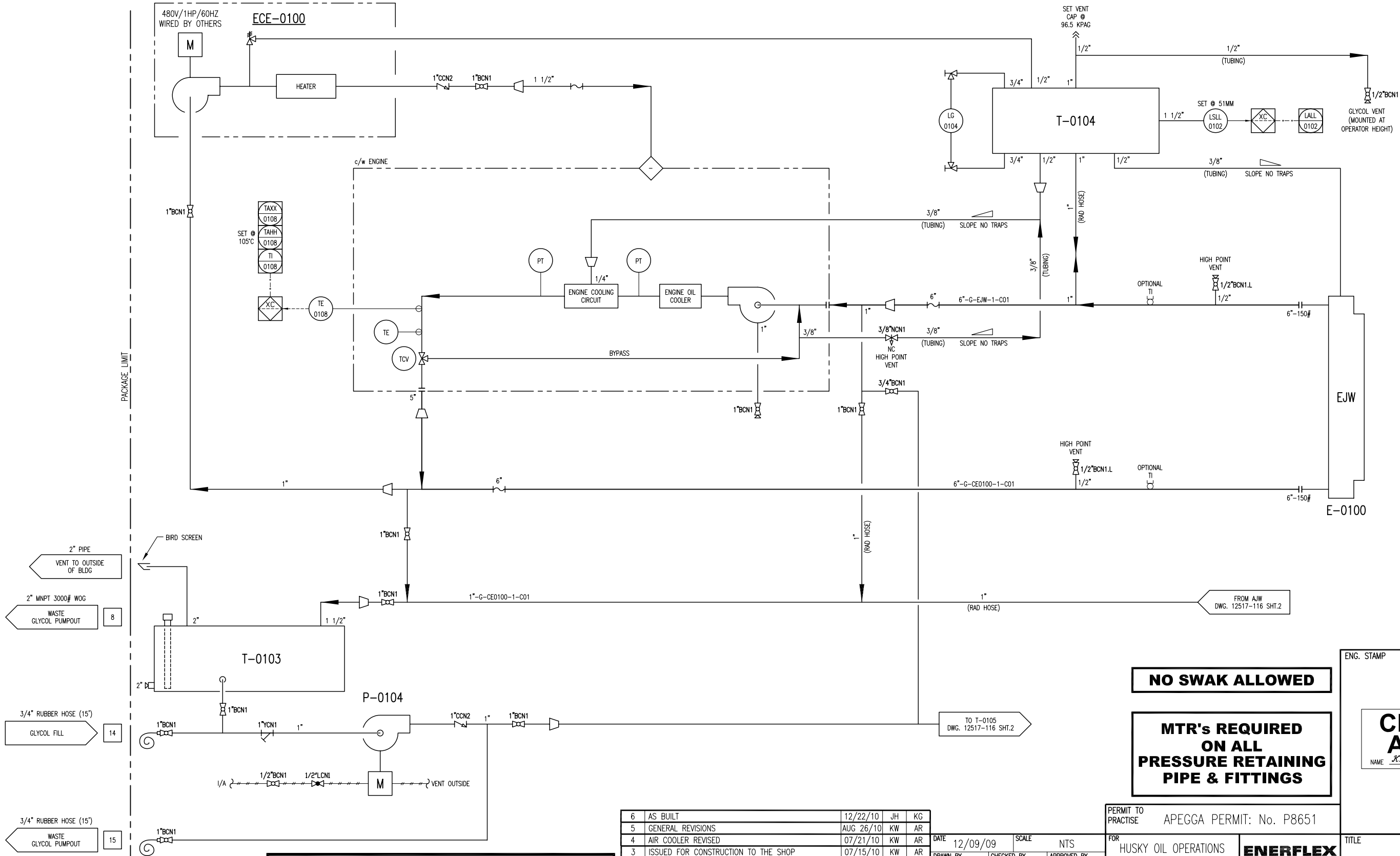
MFG: YAMADA
MODEL: NDP-25BAN
INLET GAS PRESSURE: 138-689 KPAG
FLOW: 100 LPM @ 276 KPGA

T-0104
GLYCOL (EJW) SURGE TANK

MFG: EFX
CAPACITY: 103L
SIZE: 12" X 12" X 48", 1/4" THK
MAT'L: G40.21350W

EJW (E-0100)
ENGINE JACKET WATER
COOLER SECTION

MAWP: 97 KPAG @ 149°C
MDMT: -29°C @ 97 KPAG



DESTROY PREVIOUS COPIES

NO SWAK ALLOWED

**MTR's REQUIRED
ON ALL
PRESSURE RETAINING
PIPE & FITTINGS**

ENG. STAMP
**CERTIFIED
AS BUILT**
NAME *X. W. ALLEN* DATE 12/22/10

6	AS BUILT	12/22/10	JH	KG
5	GENERAL REVISIONS	AUG 26/10	KW	AR
4	AIR COOLER REVISED	07/21/10	KW	AR
3	ISSUED FOR CONSTRUCTION TO THE SHOP	07/15/10	KW	AR
2	GENERAL REVISIONS	06/30/10	KW	AR
1	ISSUED FOR FABRICATION	06/25/10	KW	AR
A	ISSUED FOR APPROVAL	06/04/10	KW	AR
REV	DESCRIPTION	DATE	BY	APR

DATE	12/09/09	SCALE	NTS
DRAWN BY	X. W. ALLEN	CHECKED BY	A. ALLEN
CUST PO	N/A	APPROVED BY	A. ALLEN
STEP CODE	112 412 521		

PERMIT TO PRACTISE	APEGGA PERMIT: No. P8651
FOR	HUSKY OIL OPERATIONS CATERPILLAR G3516LE-AFRC ARIEL RC357M
ENERFLEX	10121 - BARLOW TRAIL N.E. CALGARY ALBERTA CANADA
DWG NO	12517-116

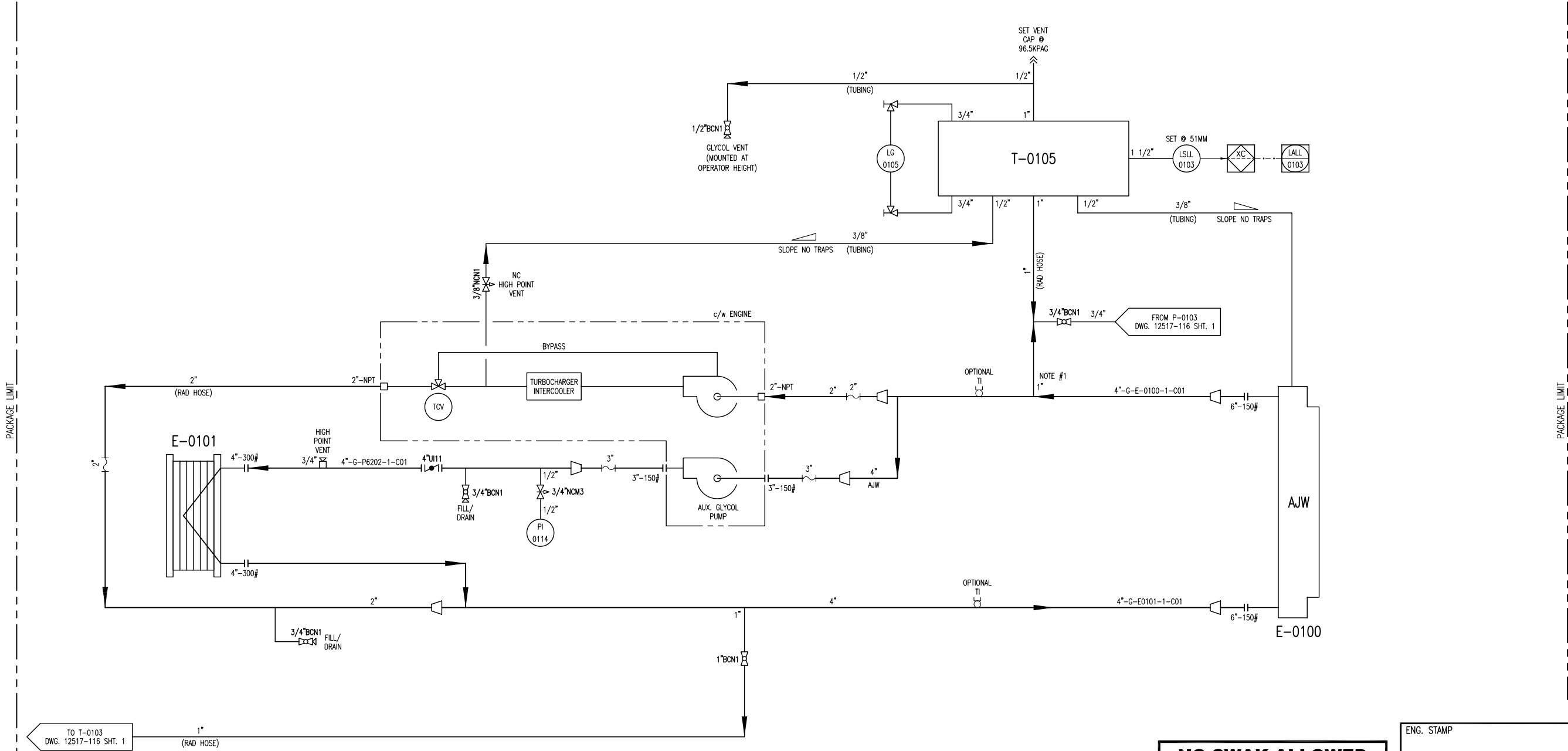
TITLE	P & I DIAGRAM COOLING SYSTEM ENGINE JACKET WATER
SHT	1
REV	6

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E-0101
COMPRESSOR OIL COOLER
SEE DWG. #12517-113

T-0105
GLYCOL (AJW) SURGE TANK
MFG: EFX
CAPACITY: 103L
SIZE: 12" X 12" X 48", 1/4" THK
MAT'L: G40.21350W

AJW (E-0100)
AUXILIARY JACKET WATER
COOLER SECTION
MAWP: 97 KPAG @ 149°C
MDMT: -29°C @ 97 KPAG



NOTES:
1. LOCATE STATIC HEAD CONNECTION CLOSE TO PUMP INLET.

5	AS BUILT	12/22/10	JH	KG
4	AIR COOLER REVISED	07/21/10	KW	AR
3	ISSUED FOR CONSTRUCTION TO THE SHOP	07/15/10	KW	AR
2	GENERAL REVISIONS	06/30/10	KW	AR
1	ISSUED FOR FABRICATION	06/25/10	KW	AR
A	ISSUED FOR APPROVAL	06/04/10	KW	AR
REV	DESCRIPTION	DATE	BY	APR

DATE	12/09/09	SCALE	NTS
DRAWN BY	X. WALTON	CHECKED BY	A. BOBBS
CUST PO	N/A	APPROVED BY	A. BOBBS
STEP CODE	412 521		

NO SWAK ALLOWED

**MTR's REQUIRED
ON ALL
PRESSURE RETAINING
PIPE & FITTINGS**

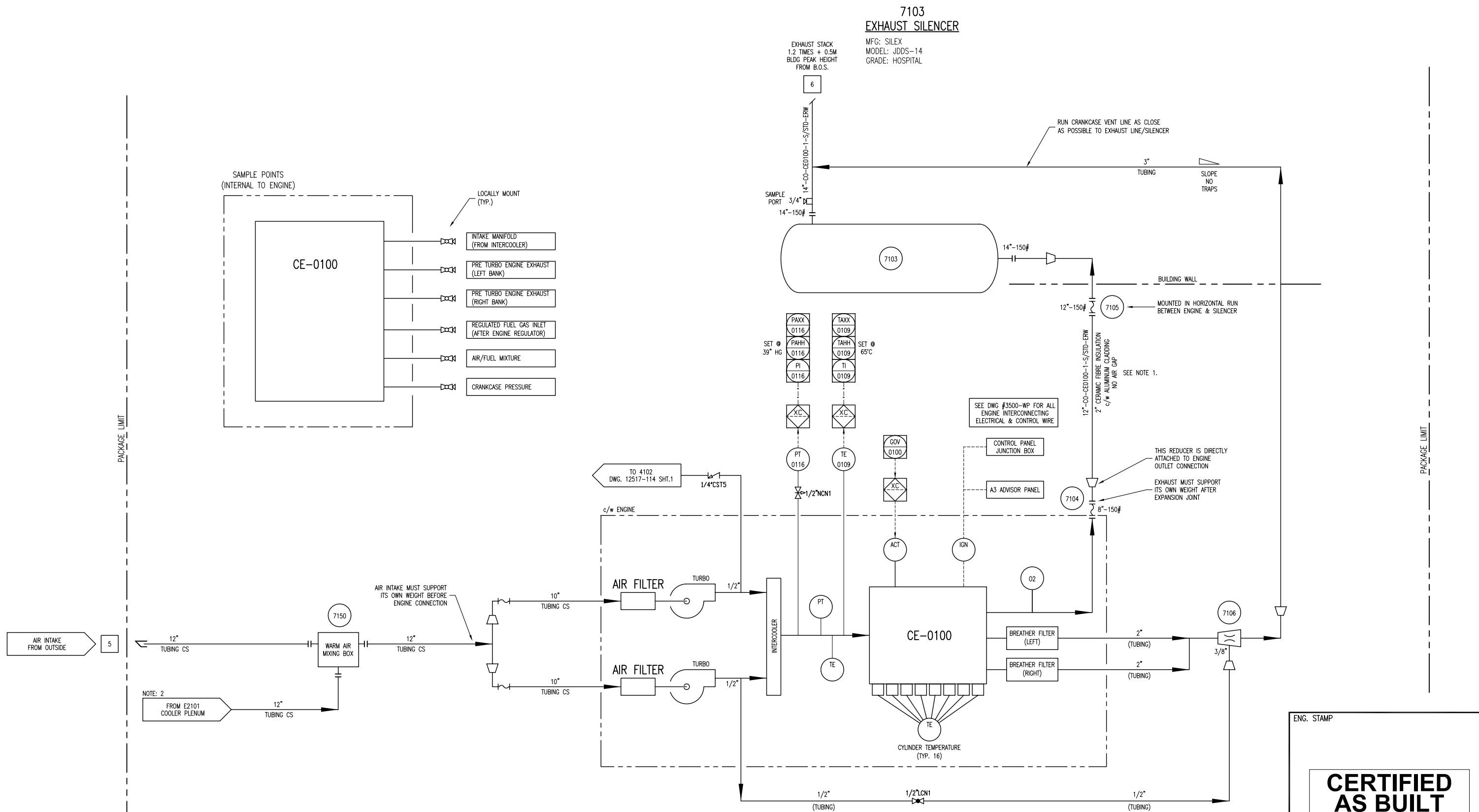
PERMIT TO PRACTISE	APEGGA PERMIT: No. P8651
FOR	HUSKY OIL OPERATIONS CATERPILLAR G3516LE-AFRC ARIEL RC357M
ENERFLEX	10121 - BARLOW TRAIL N.E. CALGARY ALBERTA CANADA
DWG NO	12517-116

ENG. STAMP

**CERTIFIED
AS BUILT**

NAME X. WALTON DATE 12/22/10

TITLE	P & I DIAGRAM COOLING SYSTEM AUXILIARY JACKET WATER
REV	5



NO SWAK ALLOWED

MTR's REQUIRED
ON ALL
PRESSURE RETAINING
PIPE & FITTINGS

- NOTES:
1. INSULATION FROM ENGINE EXHAUST TO BUILDING WALL.
2. TAKE WARM AIR FROM BOTTOM OF COOLER PLENUM.

DESTROY PREVIOUS COPIES

5	AS BUILT	12/22/10	JH	KG	DATE	12/09/09	SCALE	NTS
4	GENERAL REVISIONS	AUG 26/10	KW	AR	DRAWN BY	X. WALTON	CHECKED BY	A. BOBBS
3	ISSUED FOR CONSTRUCTION TO THE SHOP	07/15/10	KW	AR	CUST PO	N/A	APPROVED BY	A. BOBBS
2	GENERAL REVISIONS	06/30/10	KW	AR				
1	ISSUED FOR FABRICATION	06/25/10	KW	AR				
A	ISSUED FOR APPROVAL	06/04/10	KW	AR				
REV	DESCRIPTION	DATE	BY	APR	STEP CODE	112	531	

PERMIT TO PRACTISE	APEGGA PERMIT: No. P8651
FOR	HUSKY OIL OPERATIONS CATERPILLAR G3516LE-AFRC ARIEL RG357M
10121 - BARLOW TRAIL N.E. CALGARY ALBERTA CANADA	DWG NO 12517-117

ENG. STAMP	
CERTIFIED AS BUILT	
NAME X. WALTON	DATE 12/22/10
TITLE	P & I DIAGRAM AIR INTAKE & EXHAUST
10121 - BARLOW TRAIL N.E. CALGARY ALBERTA CANADA	DWG NO 12517-117
SHT 1	REV 5

P:\0000 Projects\12517 Husky S1340 G3516LE Ariel RG357M\Drafting\2517-111-AS BUILT.dwg
PLOT DATE December 22, 2010

LINE IDENTIFICATION

A-B-CD-E-FGHI-J,J,J

A: NOMINAL LINE SIZE IN INCHES

B: FLUID

A AMMONIA L LUBE OIL
C CARBON DIOXIDE N NATURAL GAS
CO CARBON MONOXIDE O OXYGEN
F FUEL GAS P PROPANE
G GLYCOL PG PURGE GAS
HG HYDROCARBON GAS S STEAM
HL HYDROCARBON LIQUID SG SYNGAS
IA INSTR. AIR SUPPLY V WASTE PROCESS WATER
IG INSTR. GAS SUPPLY W WATER

C: EQUIPMENT TYPE

AC AFTER COOLER IC INTERSTAGE COOLER
B BLOWER/FAN M MOTOR
C COMPRESSOR P PUMP
E EXCHANGER S OIL SKIMMER
F FILTER T TANK
H HEATER V PRESSURE VESSEL

D: EQUIPMENT NUMBER 1 TO 9 SEQUENTIAL NUMBERS

E: LINE NUMBER 1 TO 9 SEQUENTIAL NUMBERS FROM EQUIPMENT

FGHI: PIPING SPECIFICATION

F: MATERIAL GROUP

C CARBON STEEL
L LOW TEMPERATURE CARBON STEEL
S STAINLESS STEEL

G: FLANGE CLASS (ANSI 16.5)

1 150# 9 900#
3 300# 15 1500#
6 600# 25 2500#

H: LINE MATERIAL SPECIFICATION REFERENCE

1 TO 9 SEQUENTIAL NUMBERS

I: SPECIFICATION REFERENCE

R RECIPROCATING SPECIFICATION
BLANK SCREW SPECIFICATION

JJJ: MODIFIER / GENERAL

H HOT INSULATION THICKNESS IN INCHES
C COLD INSULATION THICKNESS IN INCHES
PP PERSONAL PROTECTION THICKNESS IN INCHES
HT HEAT TRACING
ST STEAM TRACING
GT GLYCOL TRACING
ET ELECTRICAL TRACING

EXAMPLE: 3"-A-V401-2-C11R-ET,1"

3" LINE-SIZE
A AMMONIA
V401 OIL SEPARATOR
2 SECOND LINE FROM VESSEL
C11R C CARBON STEEL LINE
1 150# ANSI FLANGE RATING
1 LINE MATERIAL SPECIFICATION REFERENCE
R RECIPROCATING SPECIFICATION REFERENCE
ET,1" ELECTRICAL TRACING, 1" THICK INSULATION

VALVE IDENTIFICATION

A"BCDE.F

A: NOMINAL VALVE SIZE IN INCHES

B: TYPE

A ANGLE GLOBE M MANIFOLD
B BALL N NEEDLE
C CHECK P PLUG
G GATE S STRAINER
L GLOBE U BUTTERFLY

C: BODY MATERIAL

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

D: END CONNECTIONS

1 FLANGED 150# C SW BY NPT
3 FLANGED 300# F NPT BY FLANGE MANIFOLD
6 FLANGED 600# N NPT (SCREWED)
9 FLANGED 900# M NPT MALE BY NPT FEMALE
15 FLANGED 1500# S SW (SOCKETWELD)
25 FLANGED 2500# T TUBE (SWAGELOCK)

E: IDENTIFIER - NUMBER USED TO SPECIFY VALVE

REFER TO VALVE DATA SHEETS

F: MODIFIER

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

EXAMPLE: 6"GC11.C
6" VALVE SIZE C CARBON STEEL 1 API-600
G GATE 1 FLANGED 150# C CHAIN OPERATOR

LINE CODE

MAIN PROCESS LINE
SECONDARY PROCESS LINE
AUXILIARY LINE
INSTRUMENT LINE
ELECTRIC LINE
FILLED CAPILLARY TUBE
PNEUMATIC LINE
MECHANICAL LINK
INSTRUMENT DATA LINK
INTERCONNECTING PIPING
SKID LIMIT
FUTURE

VALVES

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

CONTROL VALVES

POSITIONER
DIAPHRAGM CONTROL VALVE
TWO-WAY SOLENOID VALVE
OUTLET PRESSURE REGULATOR
SELF-CONTAINED
THREE-WAY SOLENOID VALVE
INLET PRESSURE REGULATOR
SELF-CONTAINED
MOTOR ACTUATOR
PRESSURE DIFFERENTIAL
CONTROL VALVE
SELF-CONTAINED
HAND CONTROL VALVE
DIAPHRAGM CONTROL VALVE
PRESSURE SAFETY /
RELIEF VALVE
DESIGNATES ORIFICE
LETTER (SIZE)
HYDRAULIC / PNEUMATIC
PISTON OPERATED

MISCELLANEOUS

CUSTOMER
SKID TIE-POINTS
SKID EDGE
NOT REQ'D
CUSTOMER TIE-IN
CONTINUOUS LIQUID DRAINER
OR STEAM TRAP
FLEXIBLE/ EXPANSION
CONNECTION
SPECTACLE BLIND
(LINE OPEN)
SPECTACLE BLIND
(LINE CLOSED)
BALL CHECK VALVE
THROTTLE BLOCK
ORIFICE
CONE STRAINER
BASKET STRAINER
Y-PATTERN STRAINER
TEE STRAINER
OPEN DRAIN
SPACER / FUTURE
ORIFICE
UNION
SIGHT GLASS
LINE SIZE CHANGE
SPECIALTY ITEM
THICKNESS
INSULATION - (C) COLD
(H) HOT
(HT) HEAT TRACING
(PP) PERSONNEL PROTECTION
ELECTRIC HEAT TRACE
STEAM OR GLYCOL
HEAT TRACE

VORTEX BREAKER
DIAPHRAGM SEAL
RUPTURE DISC FOR
PRESSURE RELIEF
RUPTURE DISC FOR
VACUUM RELIEF
VENTURI

(MODIFIER)

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

VALVE CONNECTIONS

SCREWED (NPT) FLANGED
SOCKET WELDED (SW) NPT BY SW
BUTT WELDED (BW)

INSTRUMENTS

LOCAL MOUNTED
LOCAL PANEL MOUNTED
MOUNTED BEHIND OR
IN LOCAL PANEL
MAIN PANEL MOUNTED
MOUNTED BEHIND OR
IN MAIN PANEL
BY OTHERS
HUMAN MACHINE INTERFACE(HMI)
ACCESSIBLE TO OPERATOR
HUMAN MACHINE INTERFACE(HMI)
ACCESSIBLE TO OPERATOR
THROUGH LOCAL PLC
BY OTHERS
CAT ADEM III
INTERNAL SIGNAL
THERMOWELL (FLANGED)
THERMOWELL (THREADED)
THERMOWELL (WELDED)

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

ABBREVIATIONS

BW BUTT WELD
CA CORROSION ALLOWANCE
CS CARBON STEEL
C/W COMPLETE WITH
CSC CAR SEALED CLOSED
CSO CAR SEALED OPEN
CUST CUSTOMER
DB DEAD BAND
DIR DELTA (DIFFERENTIAL)
DIR DIRECT ACTING
ESD EMERGENCY SHUTDOWN
FC FAIL CLOSED
FF FLAT FACED
FO FAIL OPEN
FLP FAIL LAST POSITION
FX FROST EXTENSION
FOT FLAT ON TOP
HI HIGH
HLL HIGH LIQUID LEVEL
HS HAND SWITCH
I/A INSTRUMENT AIR
I/G INSTRUMENT GAS
I/P CURRENT TO PRESSURE
I/O INPUT / OUTPUT
LLL LOW LIQUID LEVEL
LPD LOW POINT DRAIN
MAX MAXIMUM
MAWP MAXIMUM ALLOWABLE WORKING PRESSURE
MDMT MAXIMUM DESIGN METAL TEMPERATURE
MCC MOTOR CONTROL CENTER
MIN MINIMUM
NLL NORMAL LIQUID LEVEL
NC NORMALLY CLOSED
NO NORMALLY OPEN
NPT NATIONAL PIPE THREAD (SCREWED)
PB PUSH BUTTON
PL PILOT LIGHT
PLC PROGRAMMABLE LOGIC CONTROLLER
REV REVERSE ACTING
RF RAISED FACE
RTD RESISTANCE TEMPERATURE DEVICE
RTJ RING TYPE JOINT
S/F SEAM TO FACE OF FLANGE
SS STAINLESS STEEL
S/S SEAM TO SEAM
SO SLIP-ON
SW SOCKET WELD
SVU SUCTION VALVE UNLOADER
T TUBING
TESI TOROMONT ENERGY SYSTEMS INC.
V/H VENT HEADER
VTA VENT TO ATMOSPHERE
WCP VARIABLE VOLUME CONTROL POCKET
FVCP FIXED VOLUME CONTROL POCKET
W/ WITH
W/O WITHOUT

ENG. STAMP

CERTIFIED
AS BUILT

NAME X. WILSON DATE 12/22/10

PERMIT TO
PRACTISE APEGGA PERMIT: No. P8651

FOR
HUSKY OIL OPERATIONS
CATERPILLAR G3516LE-AFRC
ARIEL RG357M

ENERFLEX

10121 - BARLOW TRAIL N.E.
CALGARY ALBERTA CANADA

DWG
NO 12517-199

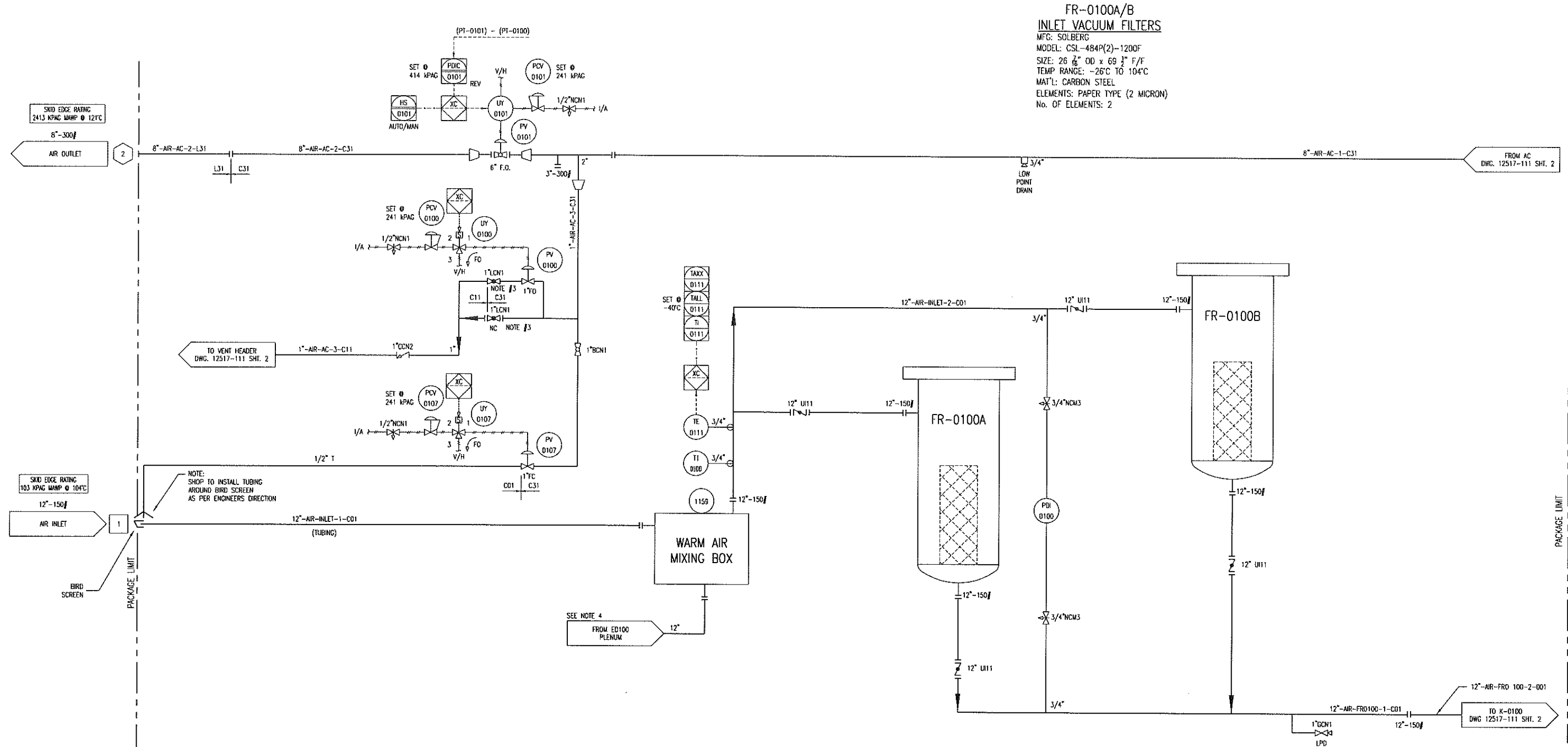
TITLE LEGEND

SHT 1 REV 4

4	AS BUILT	12/22/10	JH	KG	DATE	12/09/09	SCALE	NTS
3	ISSUED FOR CONSTRUCTION TO THE SHOP	07/15/10	KW	AR	DRAWN BY	X. WILSON	CHECKED BY	A. BOSS
2	GENERAL REVISIONS	06/30/10	KW	AR	CUST PO	N/A	APPROVED BY	A. BOSS
1	ISSUED FOR FABRICATION	06/25/10	KW	AR	STEP CODE	112 531		
A	ISSUED FOR APPROVAL	06/04/10	KW	AR				
REV	DESCRIPTION	DATE	BY	APR				

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PLDT DATE: December 20, 2019 P:\10000 Project\12517 Husky S140 G3516LE (Ariel RG357M) (Drawing) (P&ID) (2517-111) - FOR REGISTRATION.dwg



FR-0100A/B
INLET VACUUM FILTERS
MFG: SOLBERG
MODEL: CSL-484P(2)-1200F
SIZE: 26 7/8" OD x 69 3/4" F/F
TEMP RANGE: -26°C TO 104°C
MAT'L: CARBON STEEL
ELEMENTS: PAPER TYPE (2 MICRON)
NO. OF ELEMENTS: 2

SKID EDGE RATING
2413 KPAC WAMP @ 121°C

SKID EDGE RATING
103 KPAC WAMP @ 104°C

NOTE:
SHOP TO INSTALL TUBING
AROUND BIRD SCREEN
AS PER ENGINEERS DIRECTION

SEE NOTE 4
FROM ED100
PLENUM

NO SWAK ALLOWED

MTR's REQUIRED
ON ALL
PRESSURE RETAINING
PIPE & FITTINGS

DESTROY PREVIOUS COPIES

- NOTES:
1. SEE DRAWING 099 FOR GENERAL NOTES & PROJECT OVERVIEW.
 2. SEE DRAWING 199 FOR P&ID SYMBOL LEGEND.
 3. THROTTLE VALVE TO CONTROL BLOWDOWN RATE & AVOID COMPRESSOR OIL LOSS.
 4. TAKE WARM AIR FROM BOTTOM OF COOLER PLENUM.

6	FOR REGISTRATION	NOV 23/10	JH	AR
5	TE 0111 ADDED	SEP 10/10	KW	AR
4	GENERAL REVISIONS	AUG 26/10	KW	AR
3	ISSUED FOR CONSTRUCTION TO THE SHOP	07/15/10	KW	AR
2	GENERAL REVISIONS	06/30/10	KW	AR
1	ISSUED FOR FABRICATION	06/25/10	KW	AR
A	ISSUED FOR APPROVAL	06/04/10	KW	AR
REV	DESCRIPTION	DATE	BY	APR

DATE 12/09/09 SCALE NTS
DRAWN BY X. WALLSTON
CHECKED BY A. BODD
APPROVED BY A. BODD
CUST PO N/A
STEP CODE 131 211 212 453

PERMIT TO
PRACTISE APEGGA PERMIT: No. P8651
FOR
HUSKY OIL OPERATIONS
CATERPILLAR G3516LE-AFRC
ARIEL RG357M
ENERFLEX
10121 - BARLOW TRAIL N.E.
CALGARY ALBERTA CANADA
DWG NO 12517-111
SHT 1
REV 6

ENG. STAMP

PROFESSIONAL ENGINEER
ALBERTA
REGISTERED FOR
FABRICATION
WALLSTON
SEP 10/10

dec
20/2010

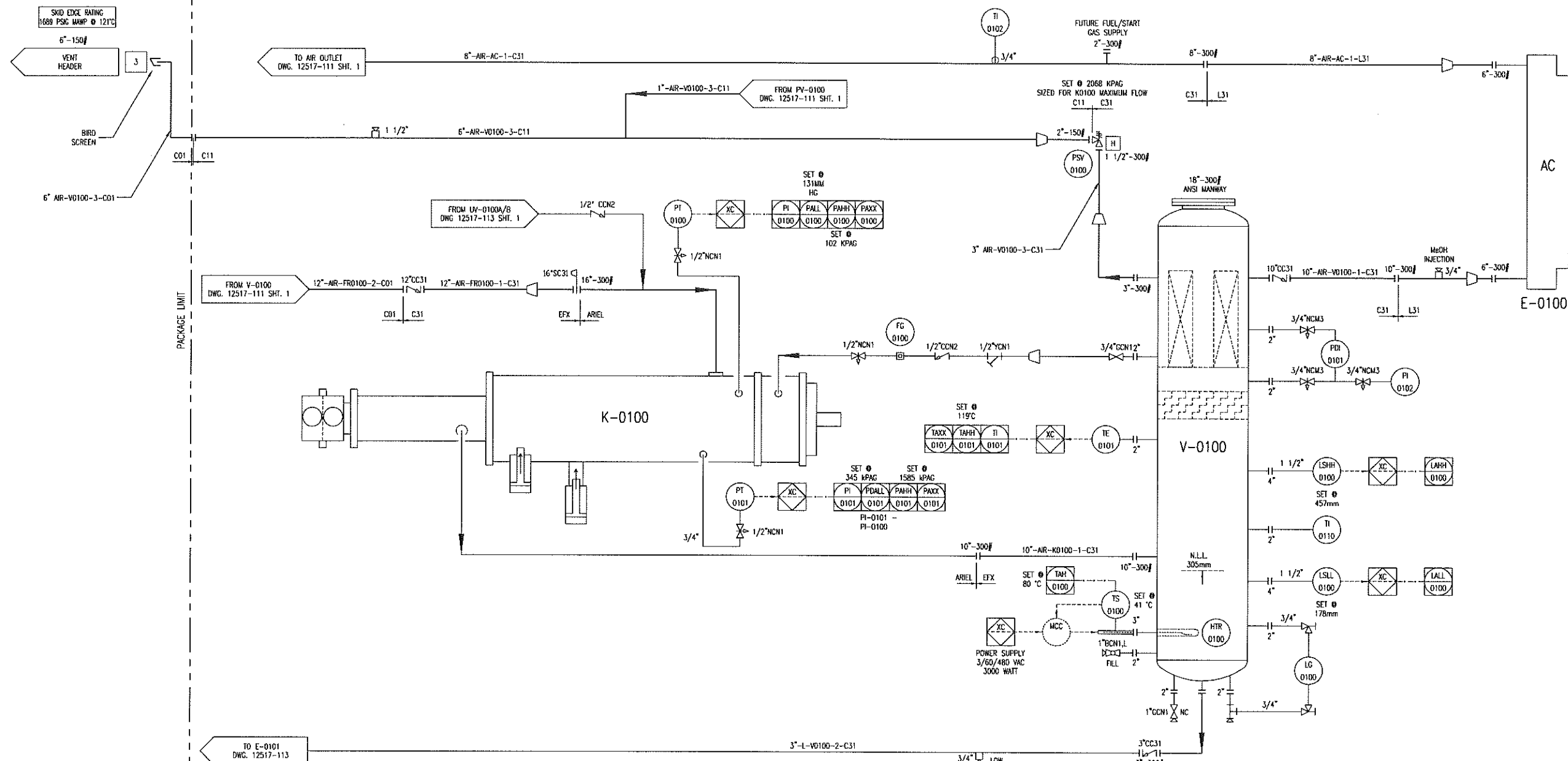
TITLE P & I DIAGRAM
PROCESS GAS

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K-0100
SCREW GAS COMPRESSOR FRAME
MFG: ARIEL
MODEL: RC357M
OPERATING: 2489 RPM

V-0100
OIL SEPARATOR
MFG: TESI
SIZE: 1219mm x 2591mm S/S
MAWP: 2413 kPAG @ 121°C
MDMT: -29°C @ 2413 kPAG
CA: 1.6mm
MAT'L: SA-516-70
ELEMENTS: (7) RSC1175-3
EFFICIENCY: 0.3 MICRONS

AC (E-0100)
COOLER SECTION
MFG: AIR-X-CHANGERS
MODEL: 156EH-122-24
MAWP: 2413 kPAG @ 149°C
MDMT: -45°C @ 2413 kPAG



**MTR's REQUIRED
ON ALL
PRESSURE RETAINING
PIPE & FITTINGS**

DESTROY PREVIOUS COPIES

NO SWAK ALLOWED

6	FOR REGISTRATION	NOV 23/10	JH	AR
5	TAG REMOVED	SEP 17/10	KW	AR
4	AIR COOLER REVISED	07/21/10	KW	AR
3	ISSUED FOR CONSTRUCTION TO THE SHOP	07/15/10	KW	AR
2	GENERAL REVISIONS	06/30/10	KW	AR
1	ISSUED FOR FABRICATION	06/25/10	KW	AR
A	ISSUED FOR APPROVAL	06/04/10	KW	AR
REV	DESCRIPTION	DATE	BY	APR

PERMIT TO
PRACTISE APEGGA PERMIT: No. P8651

FOR
HUSKY OIL OPERATIONS
CATERPILLAR G3516LE-AFRC
ARIEL RC357M

ENERFLEX

10121 - BARLOW TRAIL, N.E.
CALGARY, ALBERTA, CANADA

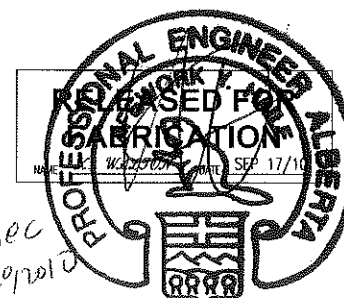
TITLE
P & I DIAGRAM
PROCESS GAS

DWG
NO 12517-111

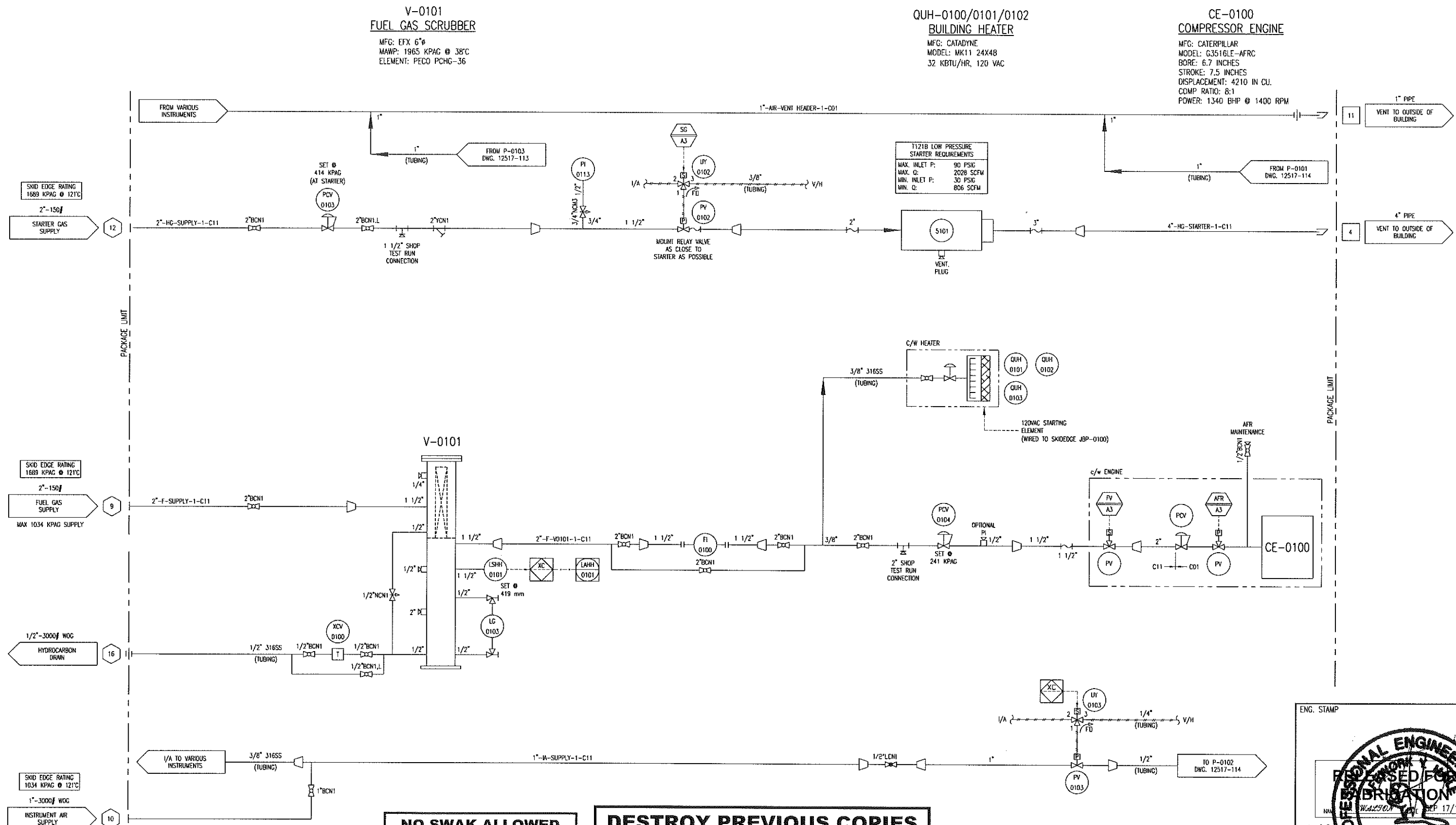
SHT
2

REV
6

ENG. STAMP



P:\10000 Projects\12517 Husky S1340 C3516LE ARIEL RC357M\Drawings\A000\12517-111-1 FOR REGISTRATION.dwg
PLOT DATE: December 20, 2010



NO SWAK ALLOWED

**MTR's REQUIRED
ON ALL
PRESSURE RETAINING
PIPE & FITTINGS**

DESTROY PREVIOUS COPIES					
7	FOR REGISTRATION	NOV 23/10	JH	AR	
6	HYDROCARBON DRAIN ADDED	SEP 17/10	KW	AR	
5	SG A3 ADDED / V-0101 CONNECTIONS REV'D	SEP 10/10	KW	AR	
4	PUMP VENT DESCRIPTIONS REVISED/TAG REVISED	SEP 02/10	KW	AR	
3	ISSUED FOR CONSTRUCTION TO THE SHOP	07/15/10	KW	AR	
2	GENERAL REVISIONS	06/30/10	KW	AR	
-	-	-	-	-	
A	ISSUED FOR APPROVAL	06/04/10	KW	AR	
REV	DESCRIPTION	DATE	BY	APR	

**V-0101
FUEL GAS SCRUBBER**
MFG: EFX 6"Ø
MAWP: 1965 KPAG @ 38°C
ELEMENT: PECO PCHG-36

**QUH-0100/0101/0102
BUILDING HEATER**
MFG: CATADYNE
MODEL: MK11 24X48
32 KBTU/HR, 120 VAC

**CE-0100
COMPRESSOR ENGINE**
MFG: CATERPILLAR
MODEL: G3516LE-AFRC
BORE: 6.7 INCHES
STROKE: 7.5 INCHES
DISPLACEMENT: 4210 IN CU.
COMP. RATIO: 8:1
POWER: 1340 BHP @ 1400 RPM

**1121B LOW PRESSURE
STARTER REQUIREMENTS**
MAX. INLET P: 90 PSIG
MAX. Q: 2028 SCFM
MIN. INLET P: 30 PSIG
MIN. Q: 806 SCFM

ENG. STAMP

**PROFESSIONAL ENGINEER
ALBERTA**

W. A. Z. O. N. 17/10

Dec 29 2010

PERMIT TO PRACTISE APEGGA PERMIT: No. P8651

FOR
HUSKY OIL OPERATIONS
CATERPILLAR G3516LE-AFRC
ARIEL RC357M

ENERFLEX
10121 - BARLOW TRAIL N.E.
CALGARY ALBERTA CANADA

TITLE
P & I DIAGRAM
START / FUEL SUPPLY

DWG NO 12517-115

SHT 1

REV 7

PLD DATE December 20, 2010 P:\0000 Projects\12517 Husky S1340 C5516LE And RC357M (Drilling\PAID)\12517-111-FOR REGISTRATION.dwg

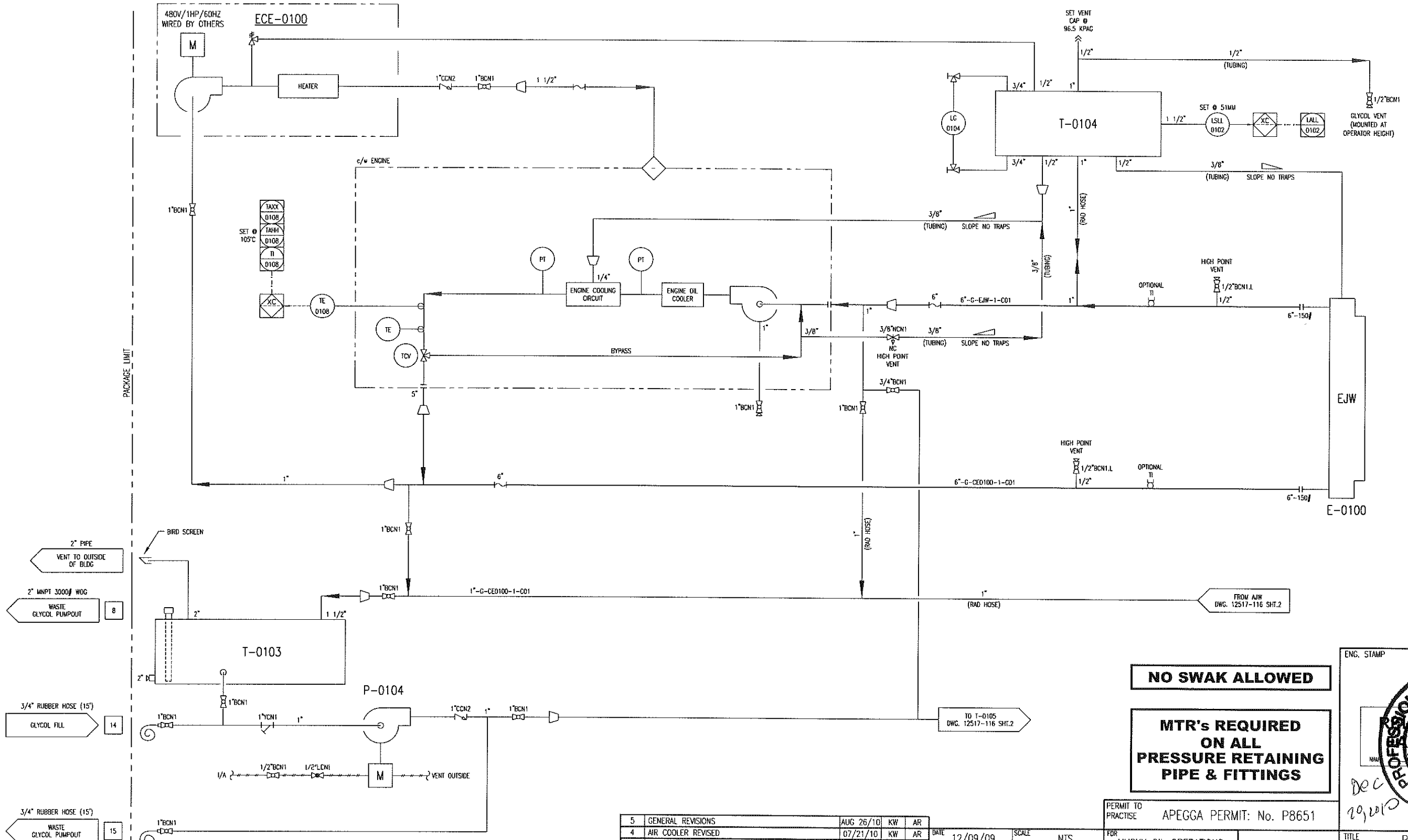
T-0103
WASTE GLYCOL TANK
MFG: EFX
CAPACITY: 1281L
SIZE: 24" X 8" X 480", 3/8" THK.
MAT'L: G40.21350W

ECE-0100
GLYCOL HEATER
MFG: KIM HOT START
MODEL: CLER31804
POWER: 480V/3Ph/60Hz
FLOW RATE: 40 GPM

P-0104
GLYCOL TRANSFER PUMP
MFG: YAMADA
MODEL: NDP-25BAN
INLET GAS PRESSURE: 138-689 KPAC
FLOW: 100 LPM @ 276 KPAC

T-0104
GLYCOL (EJW) SURGE TANK
MFG: EFX
CAPACITY: 103L
SIZE: 12" X 12" X 48", 1/4" THK
MAT'L: G40.21350W

EJW (E-0100)
ENGINE JACKET WATER
COOLER SECTION
MAWP: 97 KPAC @ 149°C
MDMT: -29°C @ 97 KPAC



DESTROY PREVIOUS COPIES

NO SWAK ALLOWED

MTR's REQUIRED ON ALL PRESSURE RETAINING PIPE & FITTINGS

5	GENERAL REVISIONS	AUG 26/10	KW	AR
4	AIR COOLER REVISED	07/21/10	KW	AR
3	ISSUED FOR CONSTRUCTION TO THE SHOP	07/15/10	KW	AR
2	GENERAL REVISIONS	06/30/10	KW	AR
1	ISSUED FOR FABRICATION	05/25/10	KW	AR
A	ISSUED FOR APPROVAL	06/04/10	KW	AR
REV	DESCRIPTION	DATE	BY	APR

DATE	12/09/09	SCALE	NTS
DRAWN BY	X. WAZZ/091	CHECKED BY	A. ROSS/091
CUST PO	N/A	APPROVED BY	A. ROSS/091
STEP CODE	112 412 521		

PERMIT TO PRACTISE APEGGA PERMIT: No. P8651

FOR HUSKY OIL OPERATIONS
CATERPILLAR G3516LE-AFRC
ARIEL RC357M

ENERFLEX
10121 - BARLOW TRAIL N.E.
CALGARY ALBERTA CANADA

DWG NO 12517-116

ENG. STAMP

PROFESSIONAL ENGINEER ALBERTA

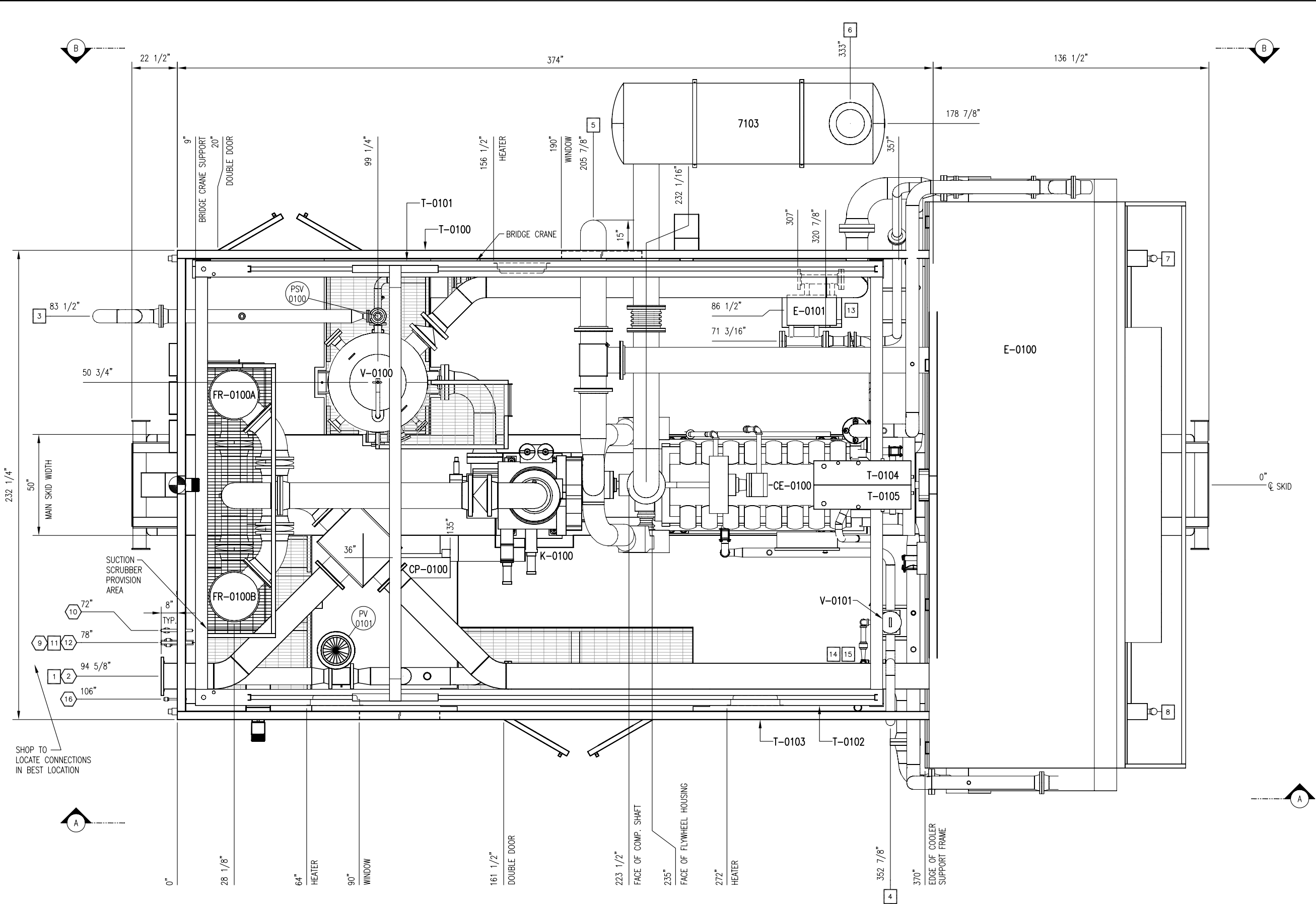
REGISTERED FOR FABRICATION

NAME: [Signature] DATE: 26/10

TITLE: P & I DIAGRAM COOLING SYSTEM ENGINE JACKET WATER

REV 5

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PLAN VIEW

NOZZLE SCHEDULE				
MARK	SERVICE	SIZE	RATING	TYPE
1	AIR INLET	12"	150#	RF
2	AIR OUTLET	8"	300#	RF
3	HIGH PRESSURE VENT	6"	150#	RF
4	STARTER VENT	4"	-	PIPE
5	ENGINE INTAKE	12"	-	PIPE
6	EXHAUST	14"	-	PIPE
7	WASTE OIL PUMPOUT	2"	3000#	MNPT
8	WASTE GLYCOL PUMPOUT	2"	3000#	MNPT
9	FUEL GAS SUPPLY	2"	150#	RF
10	INSTRUMENT AIR SUPPLY	1"	3000#	FNPT
11	INSTRUMENT AIR VENT	1"	-	PIPE
12	START GAS SUPPLY	2"	150#	RF
13	ENGINE LUBE OIL FILL	3/4"	-	HOSE
14	GLYCOL FILL	3/4"	-	HOSE
15	WASTE GLYCOL PUMPOUT	3/4"	-	HOSE
16	HYDROCARBON DRAIN	1/2"	3000#	FNPT

GENERAL SPECIFICATIONS	
OVERALL PACKAGE LENGTH	533"
OVERALL PACKAGE WIDTH	232 1/4"
OVERALL PACKAGE HEIGHT (w/STACK)	317 1/2"
OVERALL OPERATING PACKAGE WEIGHT (LBS)	TBD
MAIN SKID SHIPPING WEIGHT (LBS)	109,635
BRIDGE CRANE RATING	5 TON
SEAL PAN	<input checked="" type="checkbox"/> FLAT <input type="checkbox"/> NONE <input type="checkbox"/> SLOPED
LOADING METHOD	<input checked="" type="checkbox"/> LIVE ROLL <input type="checkbox"/> CRANE <input checked="" type="checkbox"/> JACK & ROLL
NOTES:	
1. ALL (Z) DIMENSIONS TAKEN FROM TOP OF SKID.	
2. ALL OTHER NOTES FOUND ON DWG. #LEGEND.	
3. ALL SKID EDGE CONNECTIONS ±1/4" TOLERANCE.	
4. ALL TAIL DIMENSIONS FROM REFERENCE POINT.	
5. SKID DEPTH: 24"	
6. CENTER OF GRAVITY:	
X' FROM REF. POINT: 196.1"	
Y' FROM REF. POINT: -0.6"	
Z' FROM REF. POINT: 62.5"	

**FINAL
AS BUILT**

NAME *K. WILSON* DATE DEC 21, 2010

PERMIT TO PRACTISE APEGGA PERMIT: No. P8651

TITLE		PLAN VIEW	
DWG NO	12517-201	SHT	1
REV			5

5	AS BUILT	DEC 21/10	KW	KG
4	NOZZLE 16 ADDED	SEP 17/10	KW	AR
3	NOZZLE CHART REVISED/MOVE CONN. AS PER NOTE	SEP 02/10	KW	AR
2	MUFFLER MOVED/PLATFORM AND DIMS ADDED	AUG 26/10	KW	AR
1	ISSUED FOR CONSTRUCTION	15/06/10	KW	AR
A	ISSUED FOR APPROVAL	15/06/10	KW	AR
REV	DESCRIPTION	DATE	BY	APR

DATE	07/06/10	SCALE	1/2" = 1'-0"
DRAWN BY	<i>K. WILSON</i>	CHECKED BY	<i>A. ROSS</i>
APPROVED BY	<i>A. ROSS</i>		
CUST PO	N/A		
STEP CODE	N/A		

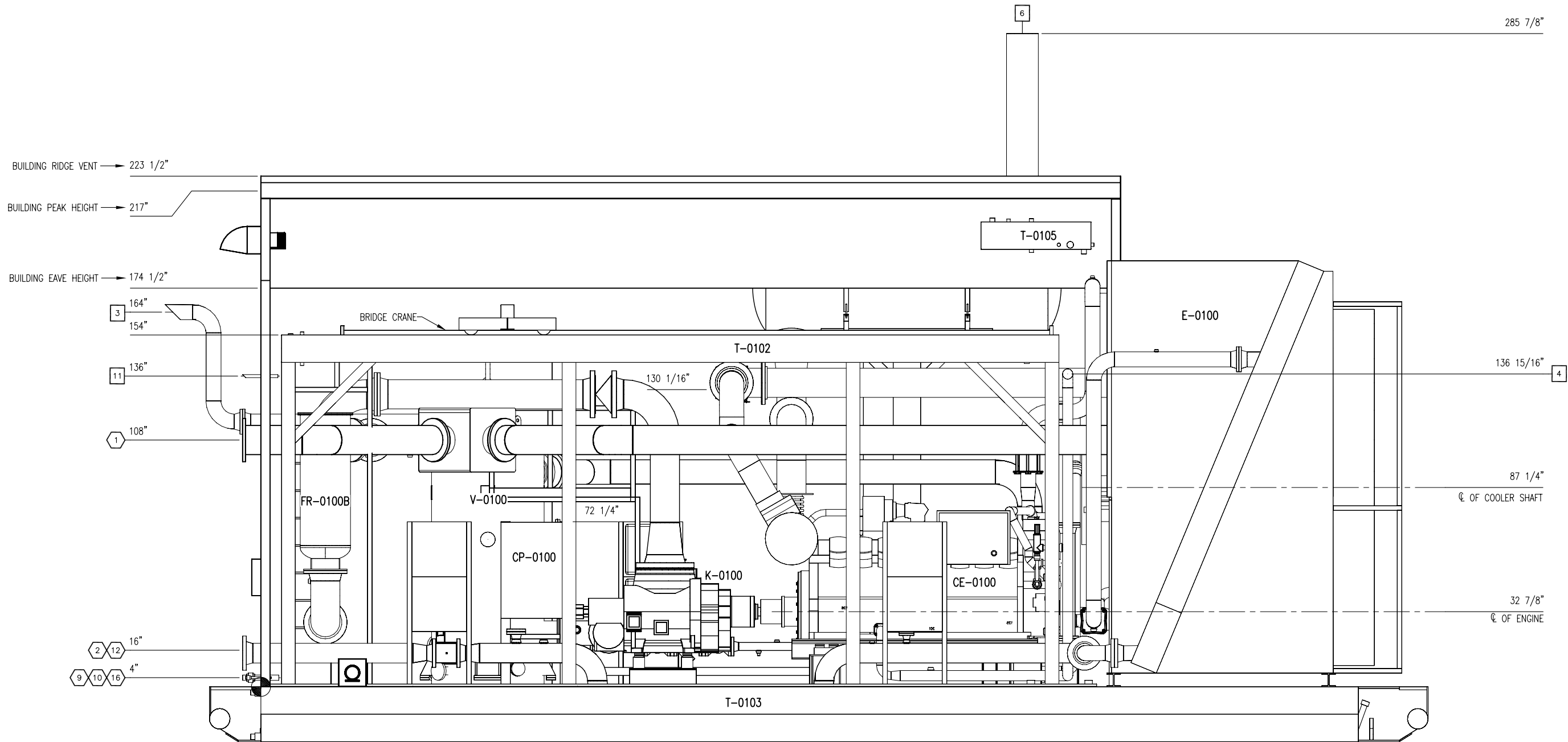
FOR
HUSKY OIL OPERATIONS
CATERPILLAR G3516LE-AFR
ARIEL RC357M

ENERFLEX
10121 - BARLOW TRAIL N.E.
CALGARY ALBERTA CANADA

DWG NO 12517-201

SHT 1 REV 5

P:\10000 Projects\12517 Husky S1340 G3516LE Arel RG357M\Drawings\12517-201-301-AS BULL.dwg
PLOT DATE: December 23, 2010

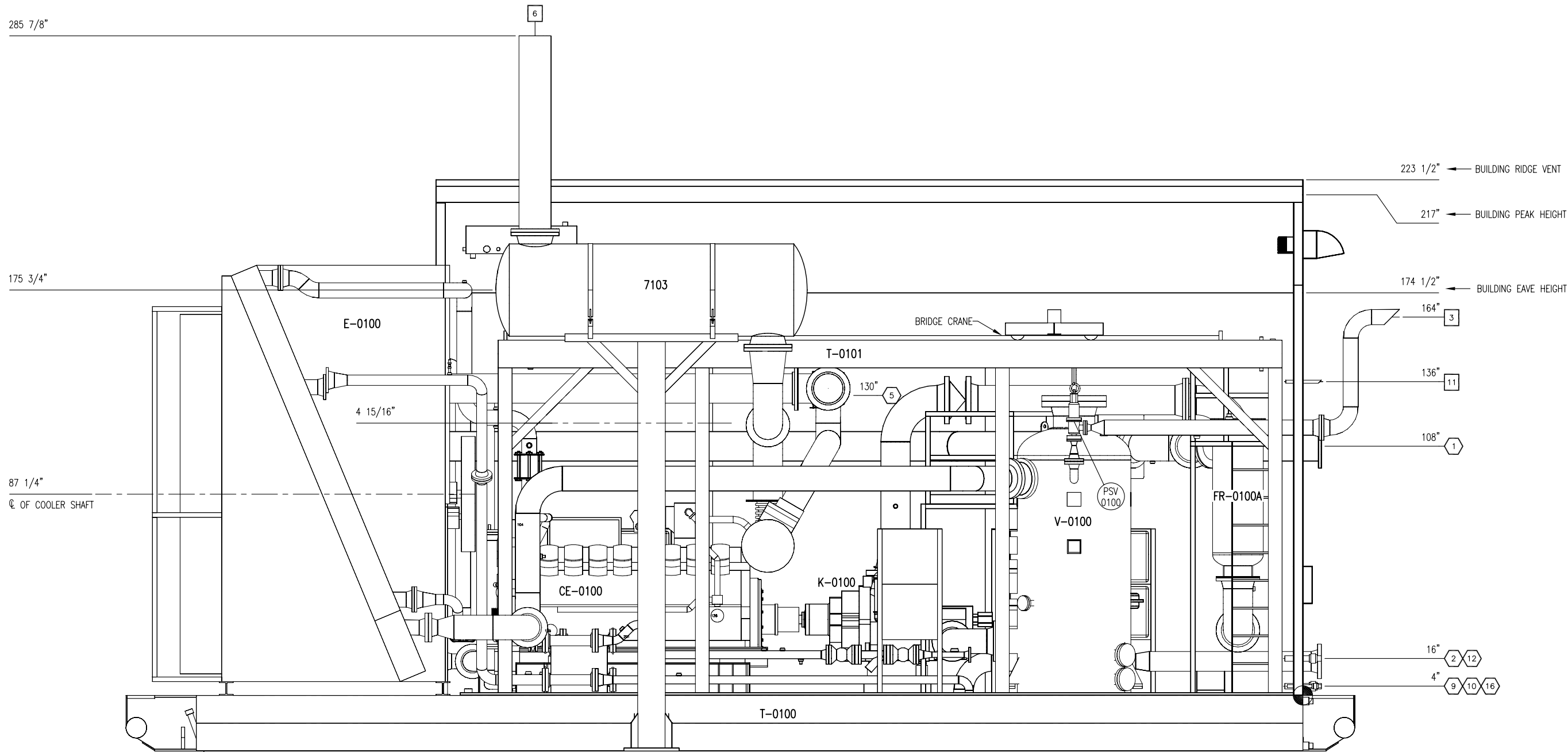


ELEVATION 'A-A'

**FINAL
AS BUILT**
NAME *K. WALTON* DATE DEC 21, 2010

4	AS BUILT	DEC 21/10	KW	KG	DATE	07/06/10	SCALE	1/2" = 1'-0"	FOR HUSKY OIL OPERATIONS CATERPILLAR G3516LE-AFRC ARIEL RG357M	ENERFLEX 10121 - BARLOW TRAIL N.E. CALGARY ALBERTA CANADA	TITLE GENERAL ARRANGEMENT ELEVATION A-A				
3	NOZZLE 16 ADDED	SEP 17/10	KW	AR	DRAWN BY	K. WALTON	CHECKED BY	A. ROSS						APPROVED BY	A. ROSS
2	MUFFLER MOVED/PLATFORM ADDED	AUG 26/10	KW	AR	CUST PO									N/A	
1	ISSUED FOR CONSTRUCTION	15/06/10	KW	AR											
A	ISSUED FOR APPROVAL	11/06/10	KW	AR											
REV	DESCRIPTION	DATE	BY	APR	STEP CODE	N/A			DWG NO	12517-201	SHT	2	REV	4	

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PLOT DATE: December 23, 2010

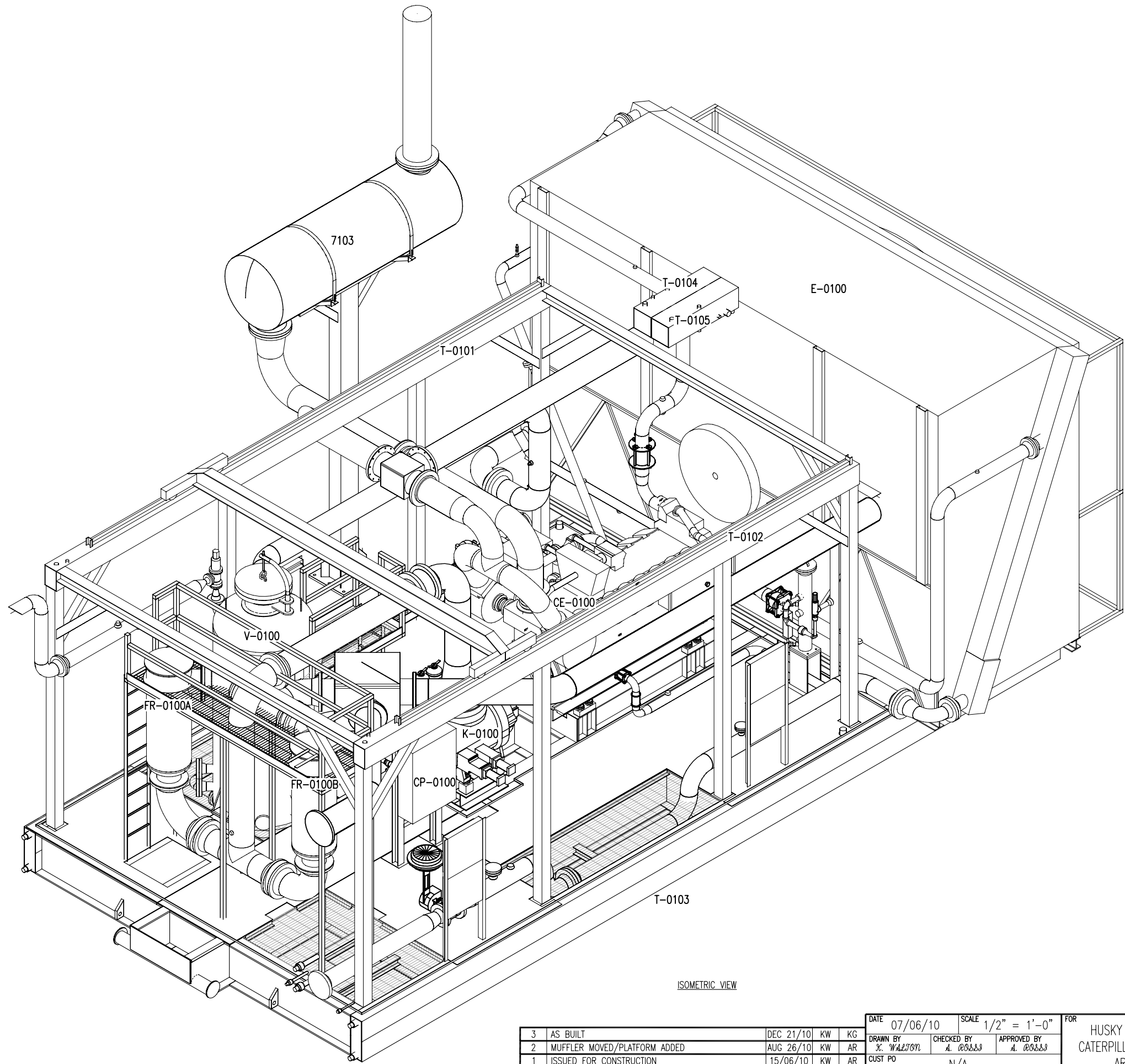


ELEVATION 'B-B'

**FINAL
AS BUILT**
NAME *K. WALTON* DATE DEC 21, 2010

					DATE	07/06/10		SCALE	1/2" = 1'-0"		FOR HUSKY OIL OPERATIONS CATERPILLAR G3516LE-AFRC ARIEL RG357M	ENERFLEX 10121 - BARLOW TRAIL N.E. CALGARY ALBERTA CANADA	TITLE GENERAL ARRANGEMENT ELEVATION B-B						
3	AS BUILT				DEC 21/10	KW	KG	DRAWN BY	CHECKED BY	APPROVED BY			CUST PO N/A						
2	MUFFLER MOVED/PLATFORM ADDED				AUG 26/10	KW	AR	K. WALTON	A. ROSS	A. ROSS									
1	ISSUED FOR CONSTRUCTION				15/06/10	KW	AR												
A	ISSUED FOR APPROVAL				11/06/10	KW	AR	STEP CODE N/A					DWG NO	12517-201		SHT	3	REV	3
REV	DESCRIPTION				DATE	BY	APR												

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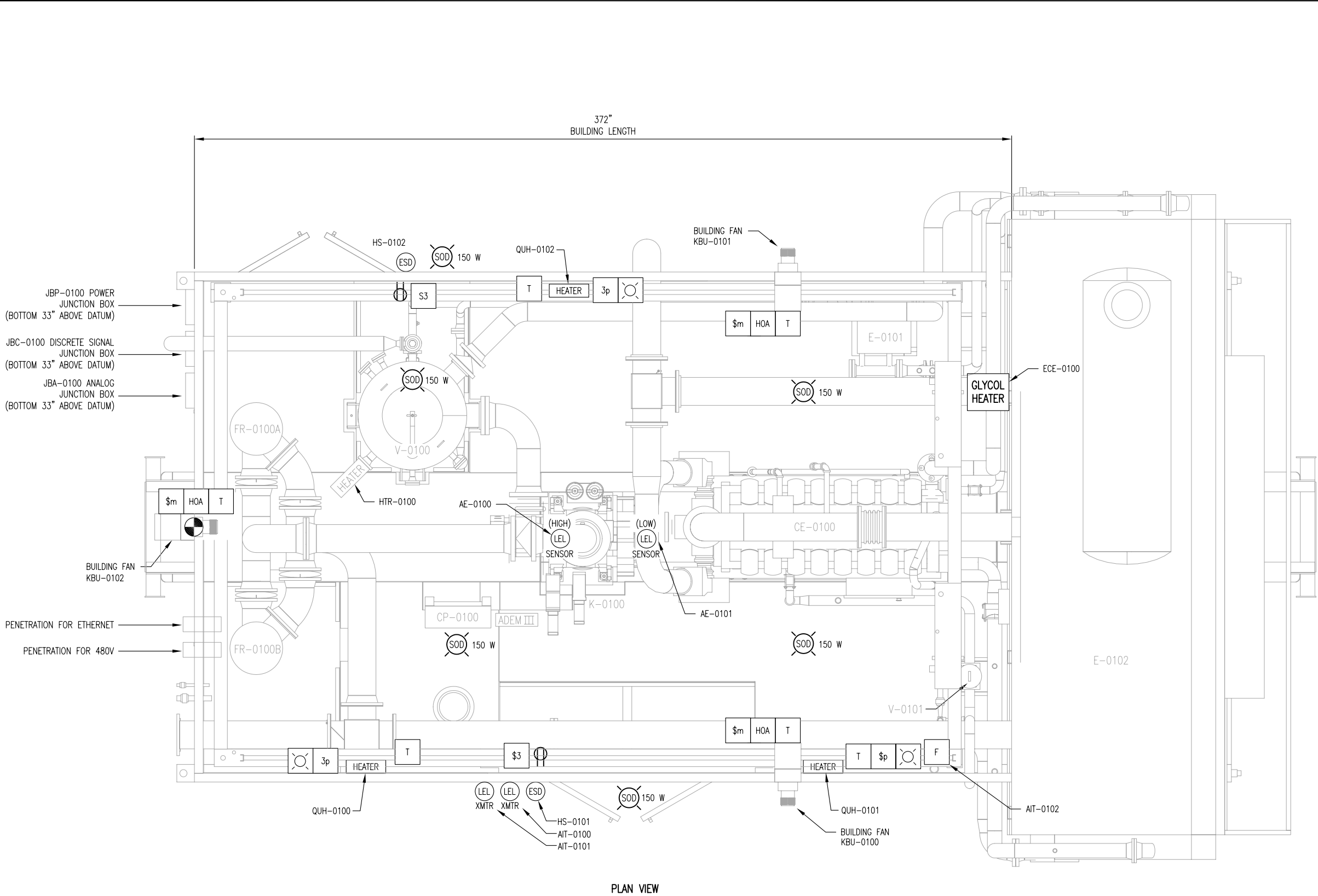
ISOMETRIC VIEW

**FINAL
AS BUILT**
NAME *K. WALTON* DATE DEC 21, 2010

PERMIT TO PRACTISE APEGGA PERMIT: No. P8651

					DATE 07/06/10		SCALE 1/2" = 1'-0"		FOR HUSKY OIL OPERATIONS CATERPILLAR G3516LE-AFRC ARIEL RG357M		ENERFLEX 10121 - BARLOW TRAIL N.E. CALGARY ALBERTA CANADA		TITLE GENERAL ARRANGEMENT ISOMETRIC VIEW						
3	AS BUILT			DEC 21/10	KW	KG	DRAWN BY K. WALTON									CHECKED BY A. ROSS		APPROVED BY A. ROSS	
2	MUFFLER MOVED/PLATFORM ADDED			AUG 26/10	KW	AR													
1	ISSUED FOR CONSTRUCTION			15/06/10	KW	AR	CUST PO N/A												
A	ISSUED FOR APPROVAL			11/06/10	KW	AR	STEP CODE N/A						DWG NO 12517-201		SHT 4	REV 3			
REV	DESCRIPTION				DATE	BY	APR												

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PLOT DATE: December 23, 2010



PLAN VIEW

NOTES:
1. DATUM IS FROM TOP OF SKID

ELECTRICAL LEGEND	
SYMBOL	DESCRIPTION
	LIGHT
	INCANDESCENT LIGHT
	H.P. SODIUM LIGHT
	BATTERY POWERED EMERGENCY LIGHT
	RECEPTACLE
	THERMOSTAT
	FIRE EYE
	FIRE PULL STATION
	COMBUSTIBLE LEL GAS ALARM BEACON
	TOXIC GAS H2S ALARM BEACON
	FIRE ALARM STROBE
	ALARM HORN
	CO SENSOR
	COMBUSTIBLE DETECTION
	H2S SENSOR
	HEATER
	TIMER SWITCH
	EMERGENCY SHUT DOWN BUTTON
	-

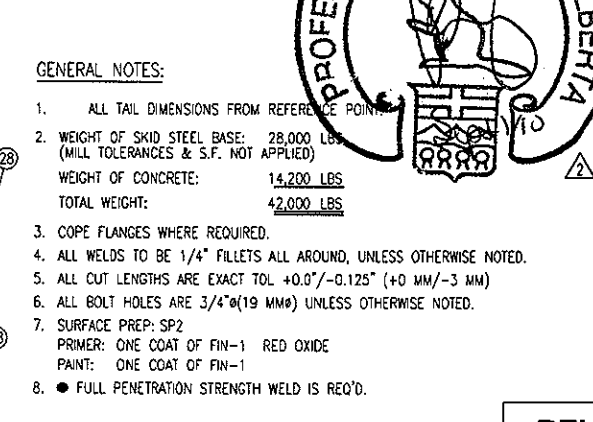
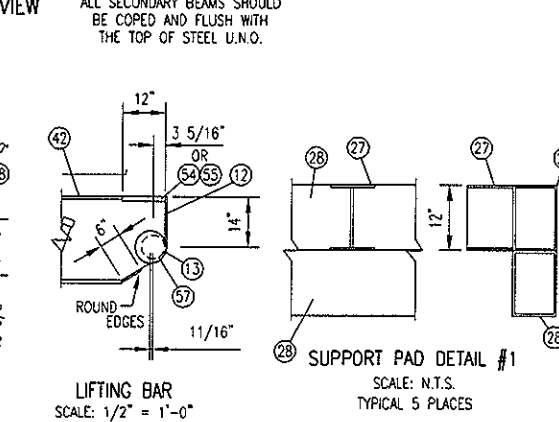
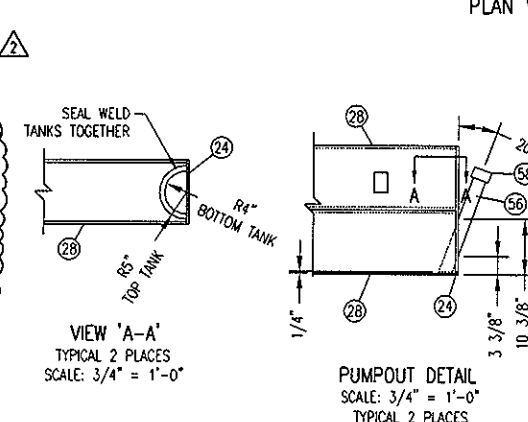
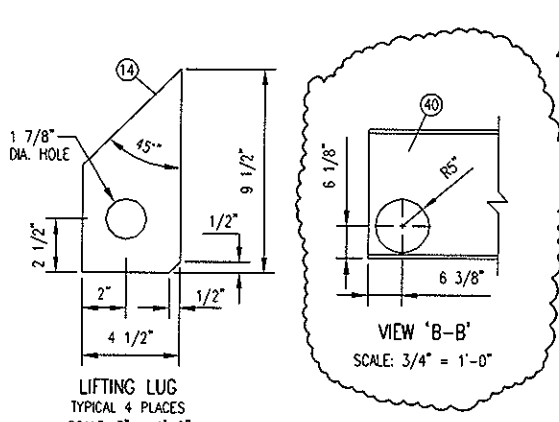
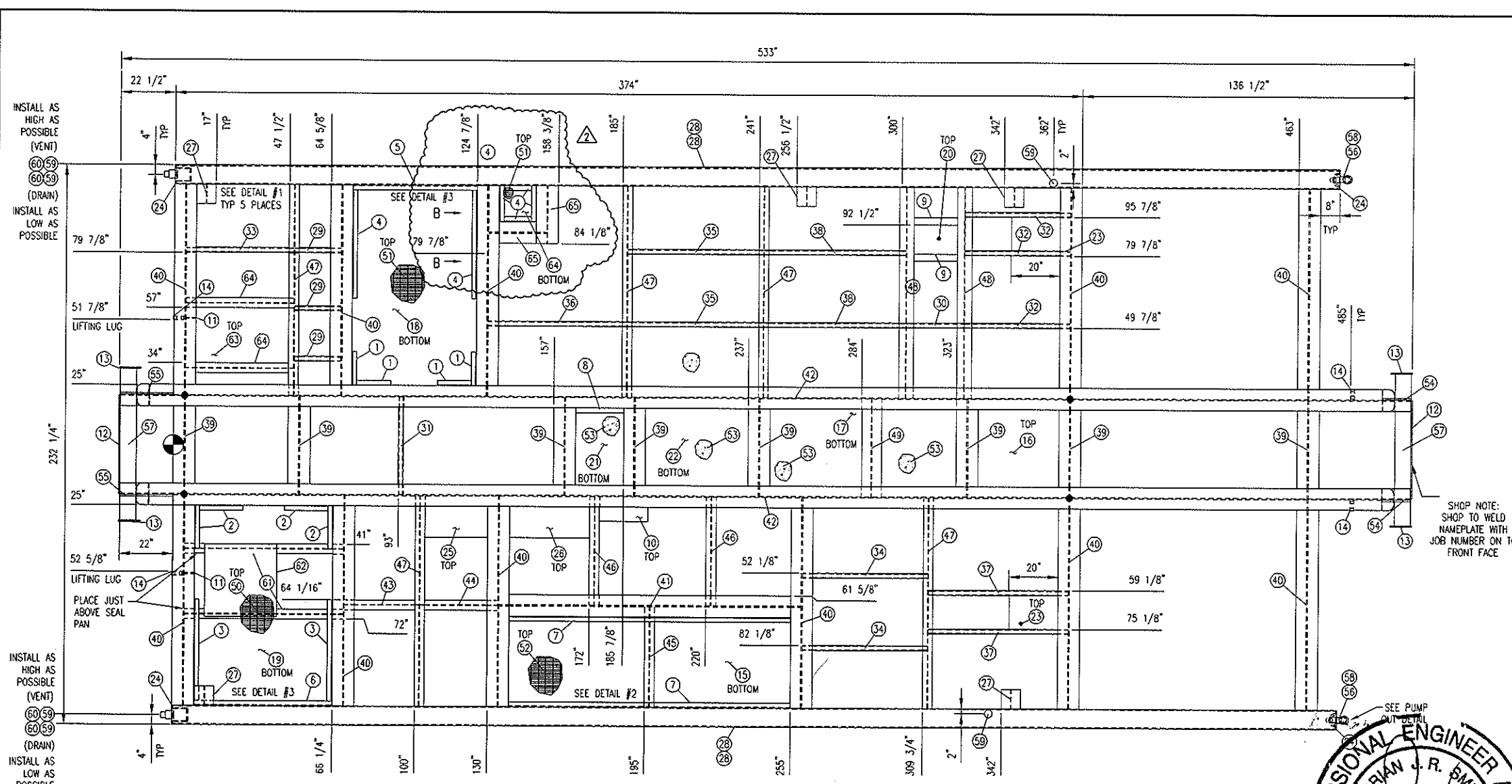
**FINAL
AS BUILT**
NAME K. WALSH DATE 12/21/10

PERMIT TO PRACTISE APEGGA PERMIT: No. P8651

						DATE 07/06/10		SCALE 1/2" = 1'-0"		FOR HUSKY OIL OPERATIONS CATERPILLAR G3516LE-AFRG ARIEL RG357M		ENERFLEX 10121 - BARLOW TRAIL N.E. CALGARY ALBERTA CANADA		TITLE <u>ELECTRICAL LAYOUT</u>							
2		AS BUILT		12/21/10		KW	KG	DRAWN BY K. WALSH										CHECKED BY A. ROSS		APPROVED BY A. ROSS	
1		ISSUED FOR CONSTRUCTION		OCT 29/10		KW	AR	CUST PO										N/A			
A		ISSUED FOR APPROVAL		11/06/10		KW	AR	STEP CODE										N/A			
REV		DESCRIPTION				DATE		BY	APR			DWG NO 12517-201		SHT 5		REV 2					

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PLOT DATE: July 15, 2010
P:\10000 Projects\12517 Husky 31940 CS316E Ariel RG357M\Drawings\12517-201-301.dwg



STEEL BILL OF MATERIAL				
MARK	QTY	DESCRIPTION	MATERIAL	LENGTH
1	4	ANGLE, 1-1/4" X 1-1/4", 1/4" THK	G40.2144W	14
2	4	ANGLE, 1-1/4" X 1-1/4", 1/4" THK	G40.2144W	18
3	2	ANGLE, 1-1/4" X 1-1/4", 1/4" THK	G40.2144W	42
4	2	ANGLE, 1-1/4" X 1-1/4", 1/4" THK	G40.2144W	45
5	1	ANGLE, 1-1/4" X 1-1/4", 1/4" THK	G40.2144W	51 1/4
6	1	ANGLE, 1-1/4" X 1-1/4", 1/4" THK	G40.2144W	57 1/4
7	2	ANGLE, 1-1/4" X 1-1/4", 1/4" THK	G40.2144W	116
8	1	FLAT BAR, 2" X 1/2" THK	G40.2144W	19 7/8
9	2	FLAT BAR, 3" X 1/2" THK	G40.2144W	18
10	1	FLAT BAR, 6" X 1/2" THK	G40.2144W	20
11	2	FLAT BAR, 4" X 1/2" THK	G40.2144W	22 1/2
12	2	PLATE, 1/2" X 41" X 14"	G40.2144W	41
13	4	PLATE, 1/2" X 9" DIA	G40.2144W	9
14	4	PLATE, 1-1/2" X 9 1/2" X 4 1/2"	G40.2144W	9 1/2
15	1	PLATE, 1/4" X 115 7/8" X 37 1/2"	G40.2144W	116
16	1	PLATE, 1/4" X 32 7/8" X 32"	G40.2144W	32 15/16
17	1	PLATE, 1/4" X 76 7/8" X 32"	G40.2144W	77
18	1	PLATE, 1/4" X 83" X 51 1/8"	G40.2144W	83 1/8
19	1	PLATE, 1/4" X 83" X 57 1/8"	G40.2144W	83 1/16
20	1	PLATE, 1/4" SMOOTH X 18 X 12	G40.2144W	18
21	1	PLATE, 1/4" SMOOTH X 32 X 19 7/8	G40.2144W	32
22	1	PLATE, 1/4" SMOOTH X 42 1/8 X 32	G40.2144W	42 1/8
23	2	PLATE, 3/8" X 20" X 14"	G40.2144W	20
24	4	PLATE, 3/8" X 23 1/4" X 7 1/4"	G40.2144W	23 1/4
25	1	PLATE, 3/8" X 25 7/8" X 13"	G40.2144W	25 15/16
26	1	PLATE, 3/8" X 32 7/8" X 13"	G40.2144W	33
27	5	WIDE FLANGE, 12" X 40#	G40.2150W	8
28	4	TUBING, 12" X 3/8" THK	G40.21350W	480
29	3	TUBING, 2" X 2", 1/4" THK	G40.21350W	19 1/4
30	1	TUBING, 2" X 2", 1/4" THK	G40.21350W	23 3/4
31	1	TUBING, 2" X 2", 1/4" THK	G40.21350W	40 9/16
32	3	TUBING, 2" X 2", 1/4" THK	G40.21350W	43 1/8
33	1	TUBING, 2" X 2", 1/4" THK	G40.21350W	44 5/8
34	2	TUBING, 2" X 2", 1/4" THK	G40.21350W	51 7/8
35	2	TUBING, 2" X 2", 1/4" THK	G40.21350W	55 3/4
36	1	TUBING, 2" X 2", 1/4" THK	G40.21350W	57 1/4
37	2	TUBING, 2" X 2", 1/4" THK	G40.21350W	57 5/16
38	2	TUBING, 2" X 2", 1/4" THK	G40.21350W	58 11/16
39	8	WIDE FLANGE, 24" X 84#	G40.2150W	40 9/16
40	11	WIDE FLANGE, 24" X 84#	G40.2150W	87 3/8
41	1	WIDE FLANGE, 24" X 84#	G40.2150W	124 1/2
42	2	WIDE FLANGE, 24" X 84#	G40.2150W	532
43	1	WIDE FLANGE, 4" X 13#	G40.2150W	30 7/8
44	1	WIDE FLANGE, 4" X 13#	G40.2150W	32 1/8
45	1	WIDE FLANGE, 4" X 13#	G40.2150W	41 13/16
46	2	WIDE FLANGE, 4" X 13#	G40.2150W	45 1/8
47	5	WIDE FLANGE, 4" X 13#	G40.2150W	87 3/8
48	2	WIDE FLANGE, 6" X 15#	G40.2150W	87 3/8
49	1	WIDE FLANGE, 8" X 31#	G40.2150W	40 9/16
50	SHOP	GRATING, 1" X 3/16"	SA-36 (C.T.S.)	
51	SHOP	GRATING, 1" X 3/16"	SA-36 (C.T.S.)	
52	SHOP	GRATING, 1" X 3/16"	SA-36 (C.T.S.)	
53	SHOP	CONCRETE: 109 FT3		
61	2	WIDE FLANGE, 4" X 13#	G40.2150W	65 3/4
62	1	PLATE, 1/4" SMOOTH X 30 X 30	G40.2144W	30
63	1	PLATE, 1/4" SMOOTH X 38 7/16 X 22 15/16	G40.2144W	38 7/16
64	2	WIDE FLANGE, 4" X 13#	G40.2150W	44 5/8
64	1	PLATE, 1/4" SMOOTH X 15 1/2 X 15	G40.2144W	15 1/2
65	2	WIDE FLANGE, 24" X 84#	G40.2150W	24

PIPING BILL OF MATERIAL				
MARK	QTY	DESCRIPTION	SIZE	LENGTH
54	1	PIPE, 1" S/80(XS) SMLS, SA-106-B (CUT IN HALF)		12
55	1	PIPE, 1" S/80(XS) SMLS, SA-106-B (CUT IN HALF)		22
56	2	PIPE, 2" S/40(STD) SMLS, SA-106-B		27 1/2
57	2	PIPE, 6" S/80(XS) SMLS, SA-106-B		63
58	2	CAP, 2" 3000# NPT, SA-105N		
59	6	COUPLING, 2" 3000# NPT, FULL, SA-105N		
60	4	PLUG, 2" 3000# NPT, HEX, SA-105N		

- GENERAL NOTES:
- ALL TAIL DIMENSIONS FROM REFERENCE POINT
 - WEIGHT OF SKID STEEL BASE: 28,000 LBS (MILL TOLERANCES & S.F. NOT APPLIED)
WEIGHT OF CONCRETE: 14,200 LBS
TOTAL WEIGHT: 42,000 LBS
 - COPE FLANGES WHERE REQUIRED.
 - ALL WELDS TO BE 1/4" FILLETS ALL AROUND, UNLESS OTHERWISE NOTED.
 - ALL CUT LENGTHS ARE EXACT TOL +0.0/-0.125" (+0 MM/-3 MM)
 - ALL BOLT HOLES ARE 3/4" (19 MM) UNLESS OTHERWISE NOTED.
 - SURFACE PREP: SP2
PRIMER: ONE COAT OF FIN-1 RED OXIDE
PAINT: ONE COAT OF FIN-1
 - FULL PENETRATION STRENGTH WELD IS REQ'D.

RELEASED FOR FABRICATION
NAME: J. WALTON DATE: 15/07/10

PERMIT TO PRACTISE APEGGA PERMIT: No. P8651

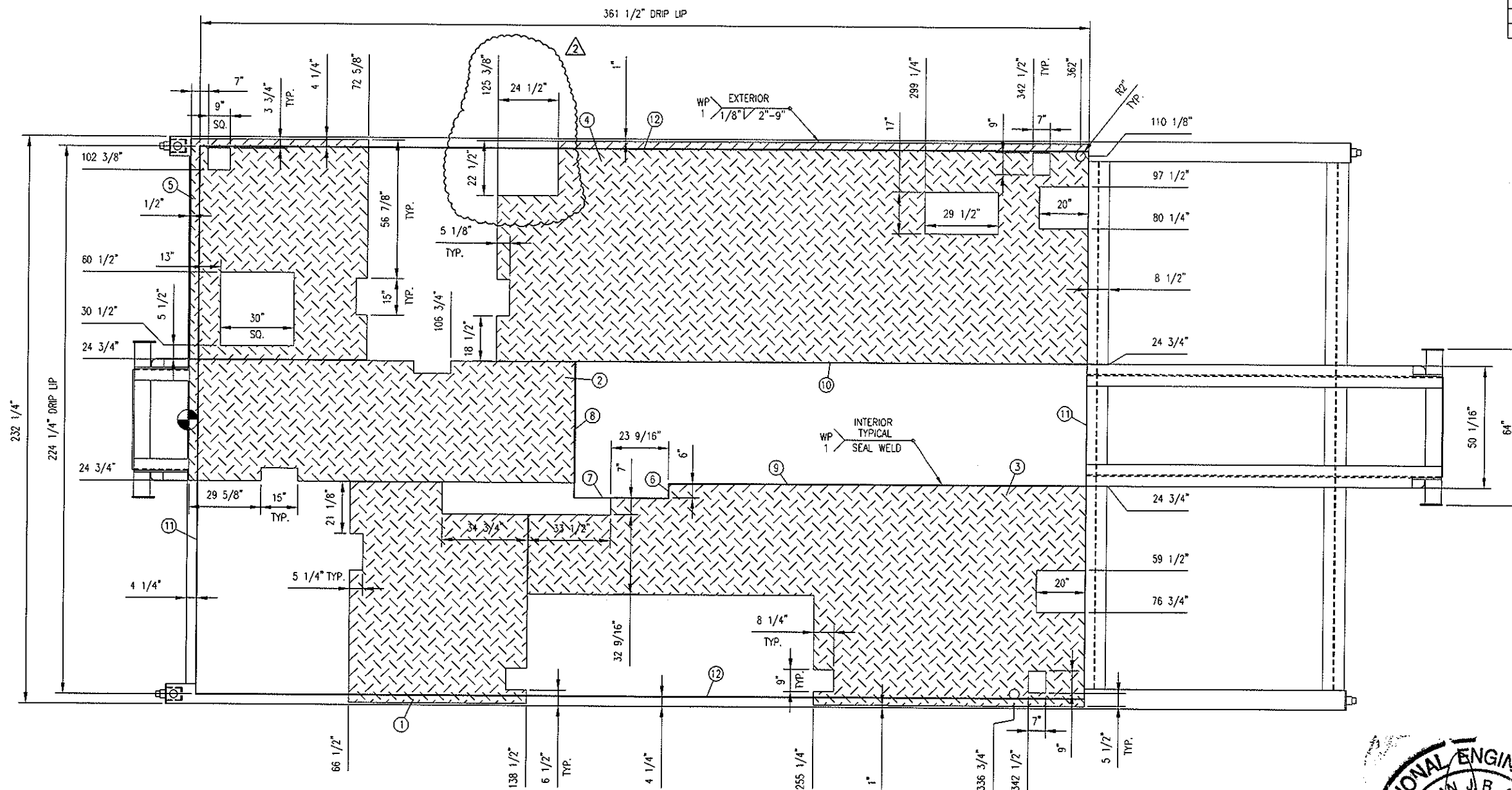
REV	DESCRIPTION	DATE	BY	APR
2	FULL DEPTH AREA ADDED	15/07/10	KW	AR
1	PUMPOUT REVISED AS SHOWN/BEAMS ADDED	08/07/10	KW	AR
0	ISSUED FOR CONSTRUCTION	05/07/10	KW	AR

DATE: 07/06/10 SCALE: 1/2" = 1'-0"
DRAWN BY: J. WALTON CHECKED BY: J. WALTON APPROVED BY: J. WALTON
CUST PO: N/A
STEP CODE: N/A

FOR: HUSKY OIL OPERATIONS
CATERPILLAR G3516LE-AFRC
ARIEL RG357M

TITLE: STRUCTURAL STEEL LAYOUT & DETAILS
DWG NO: 12517-301 SH: 1 REV: 2

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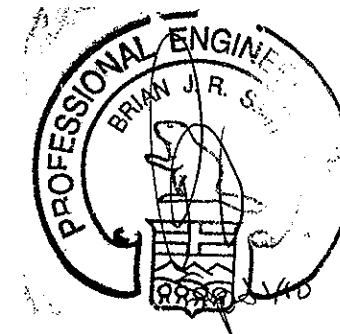


CHECKER PLATE AND DRIP LIP DETAIL

BILL OF MATERIAL				
MARK	QTY	DESCRIPTION	MATERIAL	LENGTH
1	1	PLATE 3/16" CHECKER X 90 1/8 X 72	SA-36	90 1/8"
2	1	PLATE 3/16" CHECKER X 157 1/4 X 49 1/2	SA-36	157 1/4"
3	1	PLATE 3/16" CHECKER X 226 3/4 X 90 3/8	SA-36	226 3/4"
4	1	PLATE 3/16" CHECKER X 240 1/8 X 90 3/8	SA-36	240 1/8"
5	1	PLATE 3/16" CHECKER X 90 1/8 X 72 1/8	SA-36	90 1/8"
6	1	FLAT BAR 1" X 1/4" THK	G40.2144W	6
7	1	FLAT BAR 1" X 1/4" THK	G40.2144W	38 3/16"
8	1	FLAT BAR 1" X 1/4" THK	G40.2144W	55 9/16"
9	1	FLAT BAR 1" X 1/4" THK	G40.2144W	169 7/16"
10	1	FLAT BAR 1" X 1/4" THK	G40.2144W	208
11	2	FLAT BAR 1" X 1/4" THK	G40.2144W	223 3/4"
12	2	FLAT BAR 1" X 1/4" THK	G40.2144W	361 1/2"

GENERAL NOTES:

1. ALL TAIL DIMENSIONS FROM REFERENCE POINT.
2. COPE FLANGES WHERE REQUIRED.
3. ALL WELDS TO BE 1/4" FILLETS ALL AROUND, UNLESS OTHERWISE NOTED.
4. ALL CUT LENGTHS ARE EXACT TOL +0.0"/-0.125" (+0 MM/-3 MM)
5. ALL BOLT HOLES ARE 3/4" (19 MM) UNLESS OTHERWISE NOTED.
6. SURFACE PREP: SSPC-SP2
ONE COAT OF FIN-1 RED OXIDE
ONE COAT OF FIN-1



RELEASED FOR
FABRICATION

NAME A. WALLS DATE 15/07/10

PERMIT TO
PRACTISE APEGGA PERMIT: No. P8651

DATE	07/06/10	SCALE	1/2" = 1'-0"	FOR	HUSKY OIL OPERATIONS CATERPILLAR G3516LE-AFRC ARIEL RG357M
DRAWN BY	X. WALLS	CHECKED BY	A. WALLS	APPROVED BY	A. WALLS
CUST PO	N/A	STEP CODE	N/A		
REV	DESCRIPTION	DATE	BY	APR	
2	CUTOUT ADDED	15/07/10	KW	AR	
1	CUTOUT ADDED	08/07/10	KW	AR	
0	ISSUED FOR CONSTRUCTION	05/07/10	KW	AR	

ENERFLEX

10121 - BARLOW TRAIL N.E.
CALGARY ALBERTA CANADA

TITLE
STRUCTURAL STEEL
CHECKER PLATE & DRIP LIP
DETAIL

DWG NO 12517-301

SHT 2

REV 2

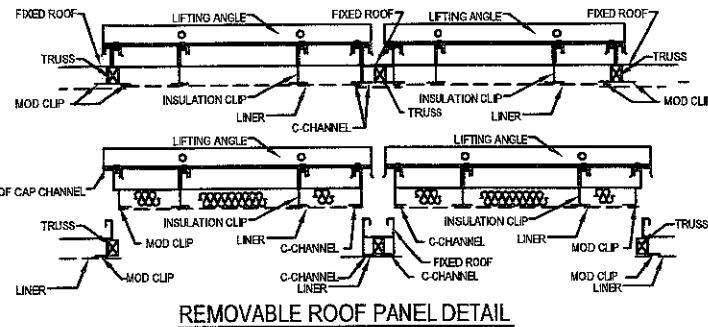
- EXTERIOR WALLS TO BE: 22GA TAN QC8315
- EXTERIOR ROOF TO BE: 22GA TAN QC8315
- EXTERIOR TRIM TO BE: 22GA METRO BROWN QC8228
- DOORS TO BE PAINTED: METRO BROWN QC8228
- INTERIOR LINER TO BE: 20GA 10% PERF. WHITE ALUM. OVER 3', 24GA WHITE ALUM. BELOW
- INSULATION IN WALLS: R-12 FIBERGLASS BATT
- INSULATION IN ROOF: R-20 FIBERGLASS BATT
- VAPOUR BARRIER TO BE: 6 MIL

APROX. TOTAL SHIPPING WEIGHT = 9600 Lbs. BUILDING ONLY

- 4 - 18" x 32" MANUALLY OPERABLE LOUVERS c/w BIRD SCREENS
- 3 - 16" VENTURI XP. WALL MOUNTED EXHAUST FAN 115/230v, 1ph, 60hz, 1/4hp (MIN 12 ACPH EACH) CLASS 1, DIV 1, GROUP C&D c/w BACKDRAFTDAMPER & WEATHER HOOD (TO BE INSTALLED)
- 2 - DOUBLE DOOR CANOPIES (SHIP LOOSE)
- 1 - 12" x 12" UTILITY HATCH
- CLIMASEAL FASTENERS THROUGHOUT
- P.ENG. STAMPED BUILDING DWGS. REQ'D.

- DESIGN LOADS: SLAVE LAKE AREA
 ROOF SNOW = 1.620kPa
 1/50 SNOW = 1.9kPa
 1/50 WIND = 0.37kPa

- APX. OVERALL BLDG. DIMENSIONS:
- WIDTH = 247"
- HEIGHT = 235" PLUS SKID



REMOVABLE ROOF PANEL DETAIL

CAP ANGLE TOP OF RECIRC CHAMBER

BOTTOM CHANNEL FASTENED TO COOLER

COOLER OPENING
FULL WIDTH x 187 1/8"

— BOTTOM CHANNEL FASTENED TO COOLER

Warwick
INDUSTRIES LTD.

6999 84 ST SE,
Calgary, Alberta, T2C 4T6
Telephone (403) 720-9425,
Fax (403) 720-9426



Dwg Name	SHOP & FIELD PRINT			
Rev. No.	Description:	Date:	Drawn By:	Checked By:
0	PRELIMINARY DRAWING	10/6/2010	AD	AD
1	FOR APPROVAL	10/8/2010	AD	AD
2	FOR CONSTRUCTION	24/9/2010	AD	AD
3	-	-	-	-
4	-	-	-	-
CUSTOMER		ENERFLEX		
REFERENCE		12517		
CUSTOMER P.O.#		MP527486		
LOCATION		ENERFLEX 10121 BARLOW TRAIL N.E.		
DATE REQUIRED		SEPTEMBER 2010		
JOB NUMBER		W24850		
DRAWING #		W24850-01		

NOTE:
- ALL DIMENSIONS ARE IN INCHES AND DECIMAL INCHES.
- DO NOT SCALE DRAWINGS.
ALL DIMENSIONS TO WINDOWS AND DOORS ARE TO ROUGH OPENINGS.
CONFIRM LOCATION OF ANY LOUVERS AND OR FANS PRIOR TO INSTALLATION
CENTER BUILDING ON SKID
BUILDING INSTALLATION & ASSEMBLY SHALL BE AS PER WARWICK
INSTALLATION MANUAL, AND DETAILS. WHERE THERE ARE CONFLICTS
INFORMATION ON DRAWINGS SHALL BE TAKEN AS CORRECT

LEGEND	
DS = DOUBLE GLAZED	CC = CHECK CHAIN
WG = INDUSTRIAL WIRE GLASS	WS = WEATHERSTRIPPING
RH = RIGHT HAND SWING	DC = HYDRAULIC CLOSURE
LH = LEFT HAND SWING	SG = INTERIOR SLIDE GATE
PH = PANIC HARDWARE	GA = GAUGE
LS = LOCK CYLINDER	INS = INSULATED
R-12 = CORE INSULATION (R-12)	

NOTES:
BUILDING IS DESIGNED TO COMPLY WITH N.B.C. 2005 AS PER
THE WIND AND SNOW LOAD SPECIFIED ON THE DRAWING. OWNER
SHALL CONTACT WARWICK INDUSTRIES, IF ACTUAL BUILDING
LOCATION DIFFERS FROM THOSE SHOWN, IN ORDER TO VALIDATE
THE STABILITY OF THE DESIGN FOR THE INTENDED LOCATION.

- NOTES:
- EXTERIOR WALLS TO BE: 22GA TAN QC8315
 - EXTERIOR ROOF TO BE: 22GA TAN QC8315
 - EXTERIOR TRIM TO BE: 22GA METRO BROWN QC8228
 - DOORS TO BE PAINTED: METRO BROWN QC8228
 - INTERIOR LINER TO BE: 20GA 10% PERF. WHITE ALUM. OVER 3", 24GA WHITE ALUM. BELOW
 - INSULATION IN WALLS: R-12 FIBERGLASS BATT
 - INSULATION IN ROOF: R-20 FIBERGLASS BATT
 - VAPOUR BARRIER TO BE: 6 MIL

SURFACE AREA = 2284 SQR/FT.
APROX. TOTAL SHIPPING WEIGHT = 9600 Lbs. BUILDING ONLY

- 4 - 18" x 32" MANUALLY OPERABLE LOUVERS c/w BIRD SCREENS
- 3 - 16" VENTURI XP. WALL MOUNTED EXHAUST FAN 115/230v, 1ph, 60hz, 1/4hp (MIN 12 ACPH EACH) CLASS 1, DIV 1, GROUP C&D c/w BACKDRAFTDAMPER & WEATHER HOOD (TO BE INSTALLED)
- 2 - DOUBLE DOOR CANOPIES (SHIP LOOSE)
- 1 - 12" x 12" UTILITY HATCH
- CLIMASEAL FASTENERS THROUGHOUT
- P.ENG. STAMPED BUILDING DWGS. REQ'D.

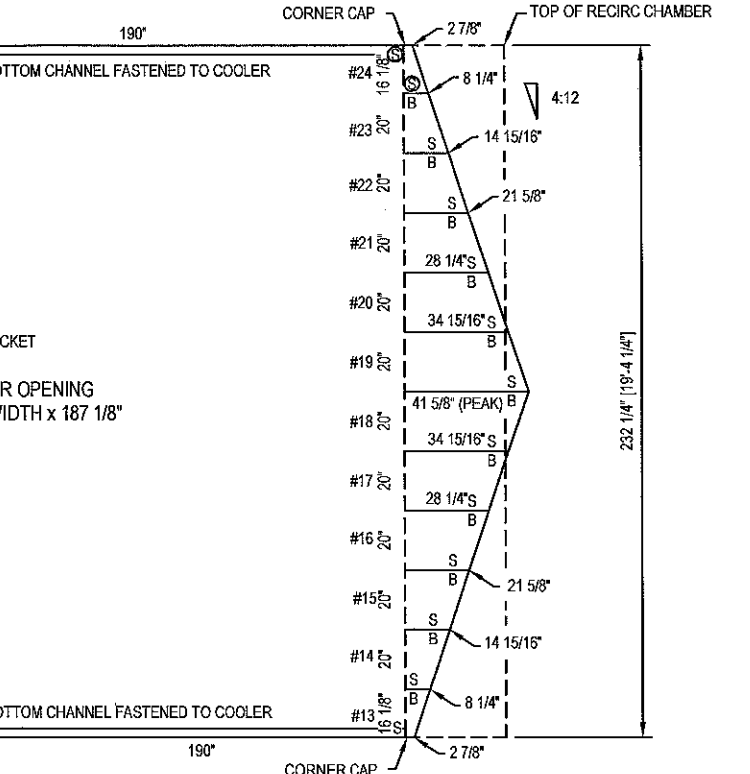
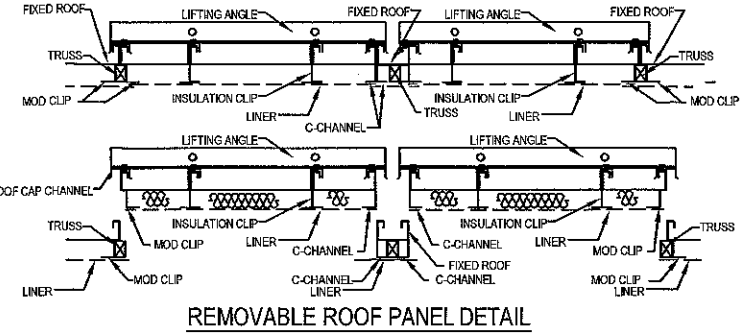
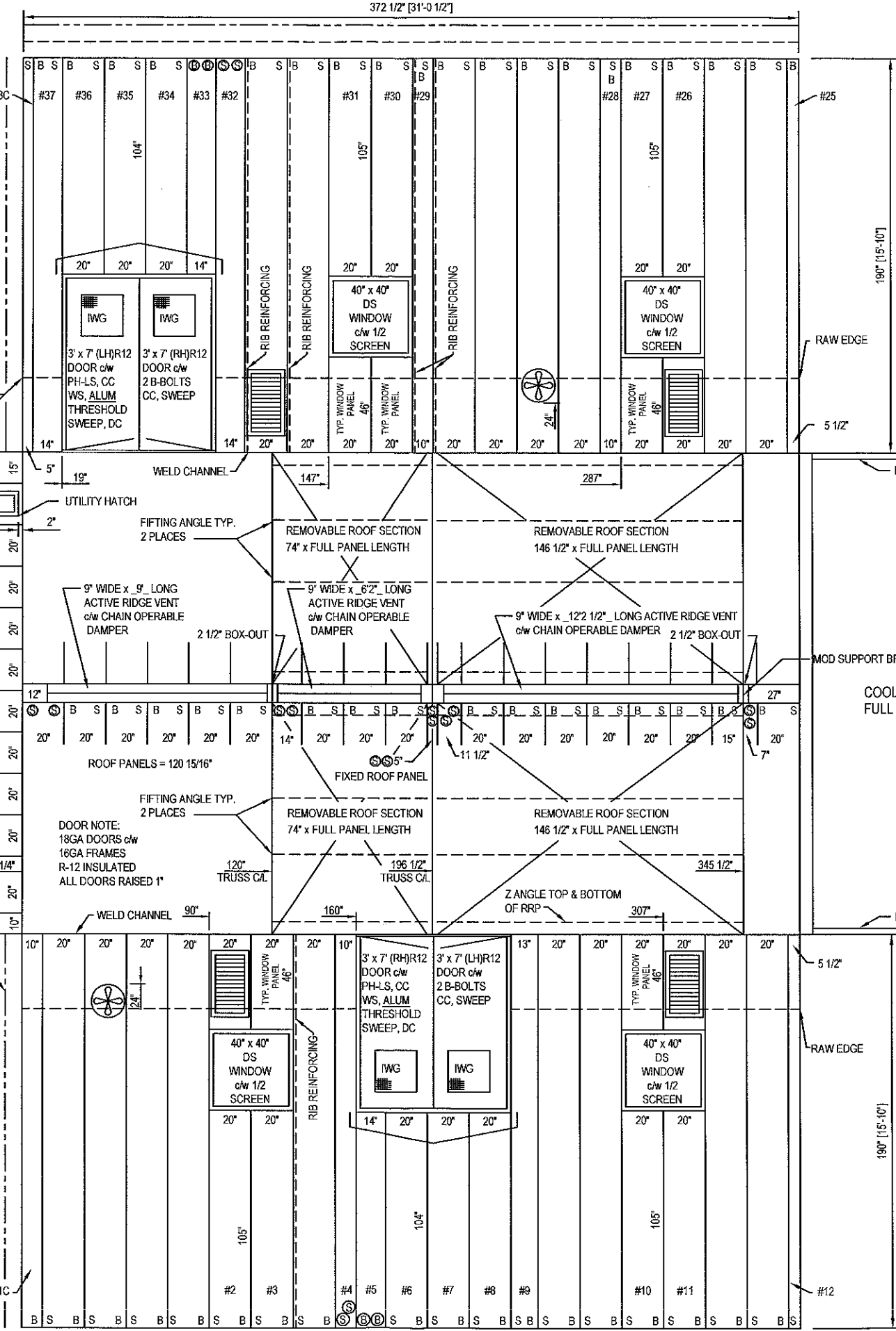
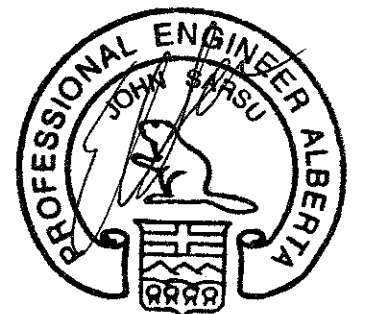
DESIGN LOADS: SLAVE LAKE AREA
ROOF SNOW = 1.620kPa
1/50 SNOW = 1.9kPa
1/50 WIND = 0.37kPa

APX. OVERALL BLDG. DIMENSIONS:
WIDTH = 247"
HEIGHT = 235" PLUS SKID

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4	-	-	-	-
CUSTOMER	ENERFLEX			
REFERENCE	12518			
CUSTOMER P.O.#	MP527486			
LOCATION	ENERFLEX 10121 BARLOW TRAIL N.E.			
DATE REQUIRED	SEPTEMBER 2010			
JOB NUMBER	W24851			
DRAWING #	W24851-01			

ICE RAKES TYP.
EAVESTROUGH TYP.