


E1# 151219

Certified by		GRANDE PRAIRIE ALBERTA CANADA	
W		Propipe Group	
HT	MAWP	345	KPA at 38 °C
RT-1	MAWP (EXT)		KPA at °C
	MDMT	-45	°C at 345 KPA
S/N	PP-97		
YEAR BUILT	2012		
C.R.N.	V8496-21	C.A.	3.2 MM
SHELL MAT	SA-516-70N	SHELL THK	25.4 MM
HEAD MAT	SA-516-70N	HEAD THK	25.4 MM
A 626743			



encana™

natural gas

V-615
1000 bbl HYDROCARBON LIQUID STORAGE VESSEL
Location: c-12-B / 93-P-9
P&ID and Vessel Drawing Package
Rev.14

Received
MAR 30 2012
SMCI-DC

SOLARIS MANAGEMENT CONSULTANTS INC.		
Project #	VDD #	PO #
EN10-01046		14
1	<input checked="" type="checkbox"/>	PROCEED & RESUBMIT CERTIFIED
2	<input type="checkbox"/>	PROCEED, CHANGE AS NOTED & RESUBMIT CERTIFIED
3	<input type="checkbox"/>	DO NOT PROCEED, CHANGE AS NOTED & RESUBMIT
I/O	<input type="checkbox"/>	DATA REQUIRED FOR INFORMATION ONLY
By:	<i>[Signature]</i>	Date: APRIL 2, 12
ACCEPTANCE OF THIS DOCUMENT BY SOLARIS DOES NOT RELIEVE THE VENDOR OF ANY RESPONSIBILITY UNDER THE TERMS AND CONDITIONS OF THE APPLICABLE CONTRACT OR PURCHASE ORDER		



PREPARED BY:

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www.propipegroup.com

PROPIPE PROJECT #: ENC-112-PI-00



V-615
 1000 bbl HYDROCARBON LIQUID STORAGE VESSEL
 Drawing Index

DRAWING NUMBER	REVISION NUMBER	DRAWING DESCRIPTION	ISSUED FOR	PROPIPE PROJECT NUMBER
ENC-112-PI-00	14	TITLE PAGE	COSTRUCTION	ENC-112
ENC-112-PI-01	14	P&ID DRAWING INDEX	COSTRUCTION	ENC-112
ENC-112-PI-02	12	P&ID DRAWING LAYOUT	COSTRUCTION	ENC-112
ENC-112-PI-03	13	P&ID LAYOUT LINE LIST & BOM	COSTRUCTION	ENC-112
PP-97-V-1	6	Vessel Drawing (Vessel Elevation)	COSTRUCTION	ENC-112
PP-97-V-2	5	Vessel Drawing (Vessel End View)	COSTRUCTION	ENC-112
PP-97-V-3	9	Vessel Drawing (Building Elevation)	COSTRUCTION	ENC-112
PP-97-V-4	8	Vessel Drawing (Piping End View)	COSTRUCTION	ENC-112
PP-97-V-5	8	Vessel Drawing (Piping Top View)	COSTRUCTION	ENC-112
PP-97-V-SDL	4	Vessel Drawing (Saddle Details)	COSTRUCTION	ENC-112
PP-97-V-VB & SC	3	Vessel Drawing (Vortex Breaker & Still Column Details)	COSTRUCTION	ENC-112
PP-97-V-ID	2	Vessel Drawing (Inlet Diverter Details)	COSTRUCTION	ENC-112
PP-97-V-P&L	4	Vessel Drawing (Platform & Ladder Details)	COSTRUCTION	ENC-112
PP-97-V-MWY	1	Vessel Drawing (Manway Details)	COSTRUCTION	ENC-112
PP-97-V-3D	4	Vessel Drawing (Perspective Views)	COSTRUCTION	ENC-112

DRAWING NUMBER	REVISION NUMBER	DRAWING DESCRIPTION	ISSUED FOR	PROPIPE PROJECT NUMBER

REV	REVISION DESCRIPTION	BY	DATE	CHD	APPD
0	ISSUED FOR REVIEW	AABJ	12/09/11	-	-
1	ISSUED FOR REVIEW	AABJ	20/09/11	-	-
2	CHANGE NOZZLE NUMBERS TO MATCH V-611 NOZZLE NUMBERS	AABJ	04/10/11	-	-
3	ISSUED FOR REVIEW	AABJ	21/10/11	-	-
4	ISSUED FOR REVIEW	AABJ	10/11/11	-	-
5	ISSUED FOR REVIEW	AABJ	07/12/11	-	-
6	ISSUED FOR REVIEW	AABJ	22/12/11	-	-

REV	REVISION DESCRIPTION	BY	DATE	CHD	APPD
7	ISSUED FOR REVIEW	MB	03/01/12	-	-
8	ISSUED FOR REVIEW	MB	16/01/12	-	-
9	ISSUED FOR REVIEW	MB	21/01/12	-	-
10	ISSUED FOR CONSTRUCTION	MB	25/01/12	-	-
11	ISSUED FOR CONSTRUCTION	MB	15/02/12	-	-
12	ISSUED FOR CONSTRUCTION	MB	06/03/12	-	-
13	ISSUED FOR CONSTRUCTION	MB	20/03/12	-	-

REV	REVISION DESCRIPTION	BY	DATE	CHD	APPD
14	ISSUED FOR CONSTRUCTION	MB	29/03/12	-	-



encana
natural gas
 SWAN COMPRESSOR STATION
 LSD: c-12-B/93-P-9
 1000 bbl HYDROCARBON LIQUID STORAGE VESSEL V-615

JOB# ENC-112	DRAWN AABJ	DATE 29/03/12	DRAWING NO. ENC-112-PI-01	REV. 14
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**TH-615
ENCLOSURE HEATER**

RUFFNECK ELECTRIC HEATER
FX5-600-360-150-W
51,200 btu/hr
(15 KW, 600 V, 3 PHASE, 60 HZ)

**V-615
1000 bbl HYDROCARBON LIQUID STORAGE VESSEL**

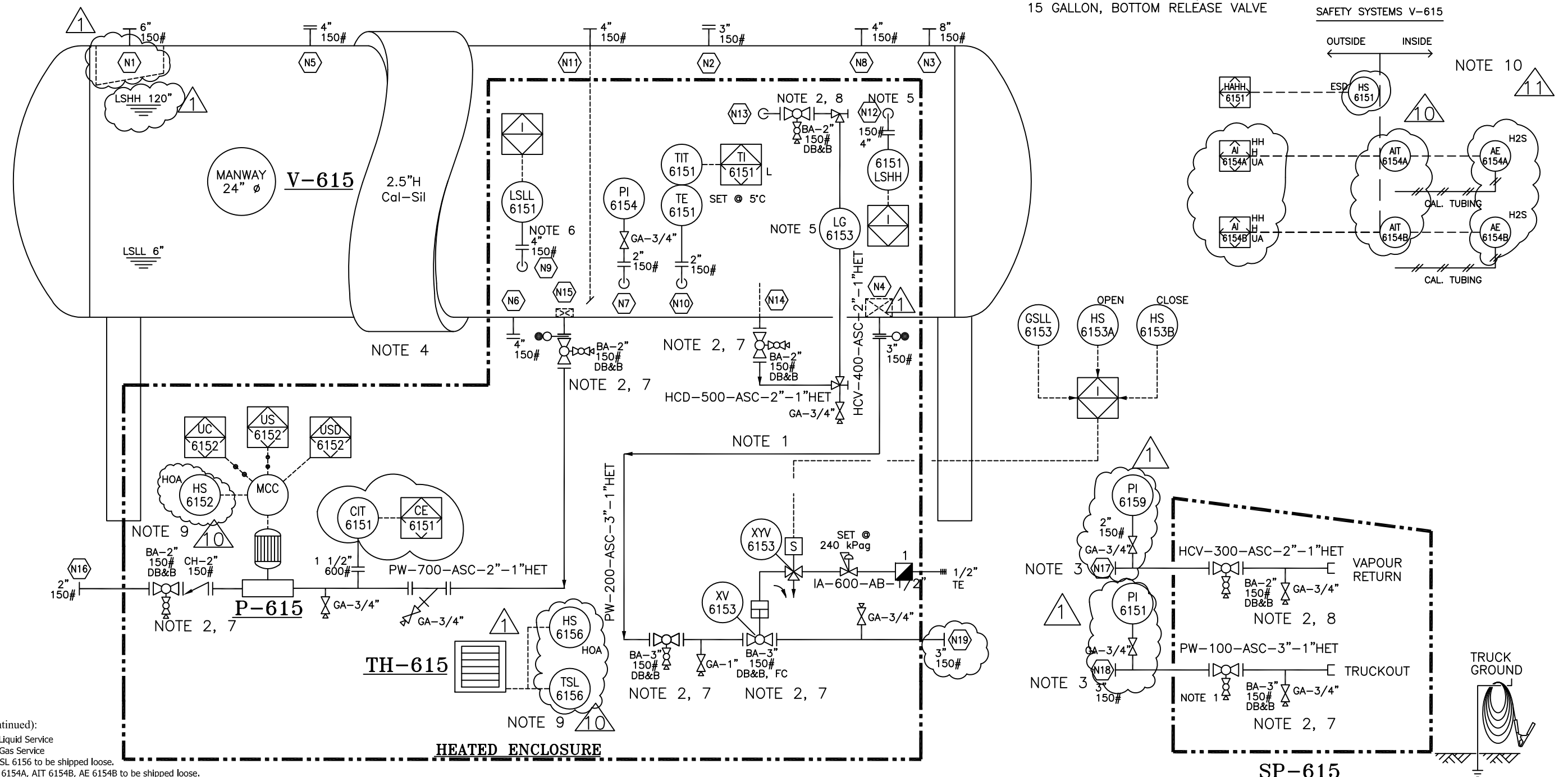
SIZE: 12.5' ID X 45' S/S
DESIGN: 50 PSIG @ -49°F/100°F/ 1/8" CA
SOUR SERVICE
CRN: -
INTERNALLY COATED WITH DEVOE 253

**P-615
RECYCLE WATER PUMP**

1 HP, 575 V, 3 PHASE
2" CENTRIFUGAL PUMP WITH RF FLANGE CONNECTIONS
EXPLOSION PROOF

**SP-615
LOAD LINE SPILLBOX**

(2" & 3") DUAL OUTLET
SIZE: 26" WIDE X 13.5" DEEP X 23.5" LONG
12 GAUGE HEAVY STEEL, 96 LBS
15 GALLON, BOTTOM RELEASE VALVE



- GENERAL NOTES (continued):
- 7. DBB Valve to be FP and Liquid Service
 - 8. DBB Valve to be FP and Gas Service
 - 9. HS 6152, HS6156, and TSL 6156 to be shipped loose.
 - 10. HS 6151, AIT 6154A, AE 6154A, AIT 6154B, AE 6154B to be shipped loose.

REV	REVISION DESCRIPTION	BY	DATE	CHD	APPD	REV	REVISION DESCRIPTION	BY	DATE	CHD	APPD
0	ISSUED FOR REVIEW	AABJ	12/09/11	-	-	7	ISSUED FOR REVIEW	AABJ	16/01/11	-	-
1	ISSUED FOR REVIEW	AABJ	20/09/11	-	-	8	ISSUED FOR REVIEW	MB	21/01/12	-	-
2	CHANGE NOZZLE NUMBERS TO MATCH V-611 NOZZLE NUMBERS	AABJ	04/10/11	-	-	9	ISSUED FOR CONSTRUCTION	MB	25/01/12	-	-
3	ISSUED FOR REVIEW	AABJ	21/10/11	-	-	10	ISSUED FOR CONSTRUCTION	MB	15/02/12	-	-
4	ISSUED FOR REVIEW	AABJ	10/11/11	-	-	11	ISSUED FOR CONSTRUCTION	MB	06/03/12	-	-
5	ISSUED FOR REVIEW	AABJ	07/12/11	-	-	12	ISSUED FOR CONSTRUCTION	MB	29/03/12	-	-
6	ISSUED FOR REVIEW	AABJ	22/12/11	-	-						

- GENERAL NOTES:
1. The mandate is to coat all truck-out and drain piping with Devoe 253
 2. Isolation valves shall be coated with IPC 3000 corrosion protective coating
 3. Both vapour return and truck-out connections shall be terminated outside of the spill box with 2" & 3" flange connections
 4. Cladding to be 0.024 smooth aluminum
 5. LSHH-6151 is located at 120" from bottom & should be covered by LG-6153
 6. LSL-6151 located at least 6" from bottom & length-wise in the latter 25% of vessel



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natural gas
SWAN COMPRESSOR STATION
LSD: c-12-B/93-P-9
1000 bbl HYDROCARBON LIQUID STORAGE VESSEL V-615

JOB# ENC-112	DRAWN AABJ	DATE 29/03/12	DRAWING NO. ENC-112-PI-02	REV. 12
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#	LINE DESIGNATION				DESCRIPTION			OPERATION		DESIGN CONDITIONS				TEST CONDITIONS			INSULATION		TRACING		ENC-112 LINE LIST		
	ITEM	LINE NO.	PIPING Class	SIZE (NPS)	FROM	TO	SERVICE	PRESS. (Kpa)	TEMP. (C)	PRESS. (Kpa)	TEMP. (C)	CORR. ALLOW. (mm)	ACTUAL THK/SCH (mm)	PRESS. (Kpa)	TEMP. (C)	MEDIUM	THK. (mm)	TYPE	TYPE	NO.	X-RAY %	P.W.H.T.	REFERENCE P&ID
1	PW	100	ASC	3"	SPILL BOX SKID EDGE (N18)	SPILL BOX TRUCKOUT	SOUR	-	-	1965	-45/260	3.2	SCH 40	2947.5	AMB	H2O	N/A	N/A	N/A	N/A	100%	YES	ENC-112-PI-02
2	PW	200	ASC	3"	VESSEL (N4)	VESSEL SKID EDGE (N19)	SOUR	-	-	1965	-45/260	3.2	SCH 40	2947.5	AMB	H2O	N/A	N/A	N/A	N/A	100%	YES	ENC-112-PI-02
3	HCV	300	ASC	2"	SPILL BOX SKID EDGE (N17)	SPILL BOX VAPOUR RETURN	SOUR	-	-	1965	-45/260	3.2	SCH 80	2947.5	AMB	H2O	N/A	N/A	N/A	N/A	100%	YES	ENC-112-PI-02
4	HCV	400	ASC	2"	VESSEL (N13)	THRU LEVEL GAUGE TO DRAIN	SOUR	-	-	1965	-45/260	3.2	SCH 80	2947.5	AMB	H2O	N/A	N/A	N/A	N/A	100%	YES	ENC-112-PI-02
5	HCD	500	ASC	2"	VESSEL (N14)	HCV-400-ASC-2"-1"HET	SOUR	-	-	1965	-45/260	3.2	SCH 80	2947.5	AMB	H2O	N/A	N/A	N/A	N/A	100%	YES	ENC-112-PI-02
6	IA	600	AB	1/2"	IA-600-AB-2"	CONTROL VALVE	SWEET	-	-	1965	-45/149	3.2	SCH 80	2947.5	AMB	H2O	N/A	N/A	N/A	N/A	N/A	N/A	ENC-112-PI-02
7	PW	700	ASC	2"	VESSEL (N15)	VESSEL SKID EDGE (N16)	SOUR	-	-	1965	-45/260	3.2	SCH 80	2947.5	AMB	H2O	N/A	N/A	N/A	N/A	N/A	N/A	ENC-112-PI-02

ENC-112 HYDROCARBON LIQUID STORAGE VESSEL BOM

ITEM #	TAG #	QTY	DESCRIPTION
1	LG-6153	1	Penberthy 3TM8 Level Gauge w/ 330J Site Glass Valves
2	XV-6153	1	1pc GROVE# 9K-4C03F01F00A 3" 150# RF FP Sour Low Temp. Trunnion Ball Valve c/w Bettis # CBB725SR80-11 Pneumatic Spring Return Actuator - Mounted/ Tested - 80 P.S.I. Supply - Fail Closed, c/w Pressure Regulator Fisher 67CER with Integral Pressure Gauge.
3	LSHH-6151	1	SOR Electric Level Switch Model 1510C-G4C-C-L1-ES-CSNC, 4" RF 150# connection, CSA, 316 SS body, 316 SS float
4	LSLL-6151	1	SOR Electric Level Switch Model 1510C-G4C-C-L1-ES-CSNC, 4" RF 150# connection, CSA, 316 SS body, 316 SS float
5	XYV-6153	1	ASCO 3-way solenoid valve Model EF8314G301-24 SST, Explosion proof Normally closed 24 VDC, 100 psig max supply pressure
6	PI-6151/6154/6159	3	Type 233.53 silicone filled Case Bourdon Tube Pressure Gauges, c/w min 4" diameter face & SS case, WIKA
7	GA-3/4"	9	3/4"-800 Class, SWX THD, A 350 LF2, TR12, OS&Y, BB, NACE Gate Valve
8	GA-1"	1	1"-800 Class, SW X THD, A 350 LF2, TR12, OS&Y, BB, NACE Gate Valve
9	CH-2"	1	2" 150 RF, A 352 LCC, swing check, TR10, BC, NACE Spec
10	TH-615	1	Roughneck heaters quoted FX5-600-360-150-W (15KW, 600V, 3 phase, 60 HZ), Produces 51,200 btu/hr
11	BA-2"	5	2" Grove gas service double-block and bleed isolation valve, 3/8" drain valve, FULL PORT, (including SPILLBOX [Camlock connection on the Truck-out line])
12	BA-3"	3	3" Grove liquid service double-block and bleed isolation valve, 3/8" drain valve, FULL PORT, (including SPILLBOX [Camlock connection on the Vapour Return line])
13	TE-6151	1	Rosemount 68 series (Model Number 0068R21C30Z0F62E6), c/w explosion proof connection head, 2" RF150# tapered, NACE thermowell
14	TIT-6151	1	Rosemount 644 for control and monitoring applications. All should include local displays. (Model Number 644HAK6N6F6M5)
15	P-615	1	2" Centrifugal pump with RF Flange connections (1HP, 575 V, 3 Phase). Explosion proof (CLASS 1 ZONE 1), CSA. Recommended: Meyers or Dean
16	HS-6152/6156	2	Local HOA Selector switch, Cooper Crouse Hinds, DSD925 w/ gang (EDS271), class 1 div 2, Group B, C, D Local H-O-A Selector switch, DSD925 w/ gang (ESD271) (HS-6152 for P-615; HS-6156 for TH-615)
17	CIT-6151	1	1.5" RF ANSI 600 CAPACITANCE PROBE, 6190 RED EYE MULTIPHASE WATER-CUT METER
18	HS-6151	1	ESD Push Button, Crouse Hinds Model DSD9185769 c/w NC-CH2-0A-Cover
19	AE/AIT-6154A/B	2	H2S Gas Detectors, Electromechanical H2S sensor Assy 100ppm - Aluminum c/w sensor electronics & housing for use with NET SAFETY Millennium II Controller, M21-A-JB-MPP-A-CCS-1 c/w ST322A-100-ASSY
20	TSL-6156	1	Remote Thermostat, XTB Explosion-Proof Thermostat, Remote sensing bulb with 57" capillary length, XTB04881 (Single Pole, Single Throw) (for TH-615)
21	SP-615	1	Dura Life Load Line Spillbox, (2" and 3") Dual Outlet, 26" Wide x 13.5" Deep x 23.5" Long, 12 Gauge Heavy Steel, 96lbs, 15 Gallon, Bottom Release Valve

GENERAL PIPING NOTES:

- All piping shall be constructed in accordance with the latest edition of B31.3 pressure piping code.
- a) All sour piping shall include 3.2mm CA and be constuded as follows
 - ASC spec 1/2" shall be sch 160
 - ASC spec 3/4" thru 2" shall be sch 80
 - ASC spec 3" thru 10" shall be sch 40
 - All sour service piping shall be subject to 100% radiography & PWHT. All fillet welds to be 100% MPI'd.
- b) Sour service material;
 - Pipe 1/2" thru 12" shall be SA-333-6
 - Flanges 1/2" thru 12" shall be SA-350-LF2
 - Saddle & other attachment material SA516-70N
 - Studs shall be SA-193-B7M
 - Nuts shall be SA-194-2HM
 - Gaskets shall be 316SS Flexatalic
 - Socket weld fittings 1/2" shall be Class 6000 SA-350 LF2 CL-1
 - Socket weld fittings 3/4" to 1-1/2" shall be Class 3000 SA-350 LF2 CL-1
 - Tubing shall be 0.035" wall smls ASTM A 269 TP 316 SS (1/2" OD maximum)

All materials shall be rated for -40°C service
 All materials shall comply to NACE MR01-75/ ISO 15156 latest certified
 All instrumentation shall be identified with a stainless steel tag

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1	ISSUED FOR REVIEW	AABJ	20/09/11	-	-	8	ISSUED FOR REVIEW	MB	21/01/12	-	-
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5	ISSUED FOR REVIEW	AABJ	07/12/11	-	-	12	ISSUED FOR CONSTRUCTION	MB	20/03/12	-	-
6	ISSUED FOR REVIEW	AABJ	22/12/11	-	-	13	ISSUED FOR CONSTRUCTION	MB	29/03/12	-	-

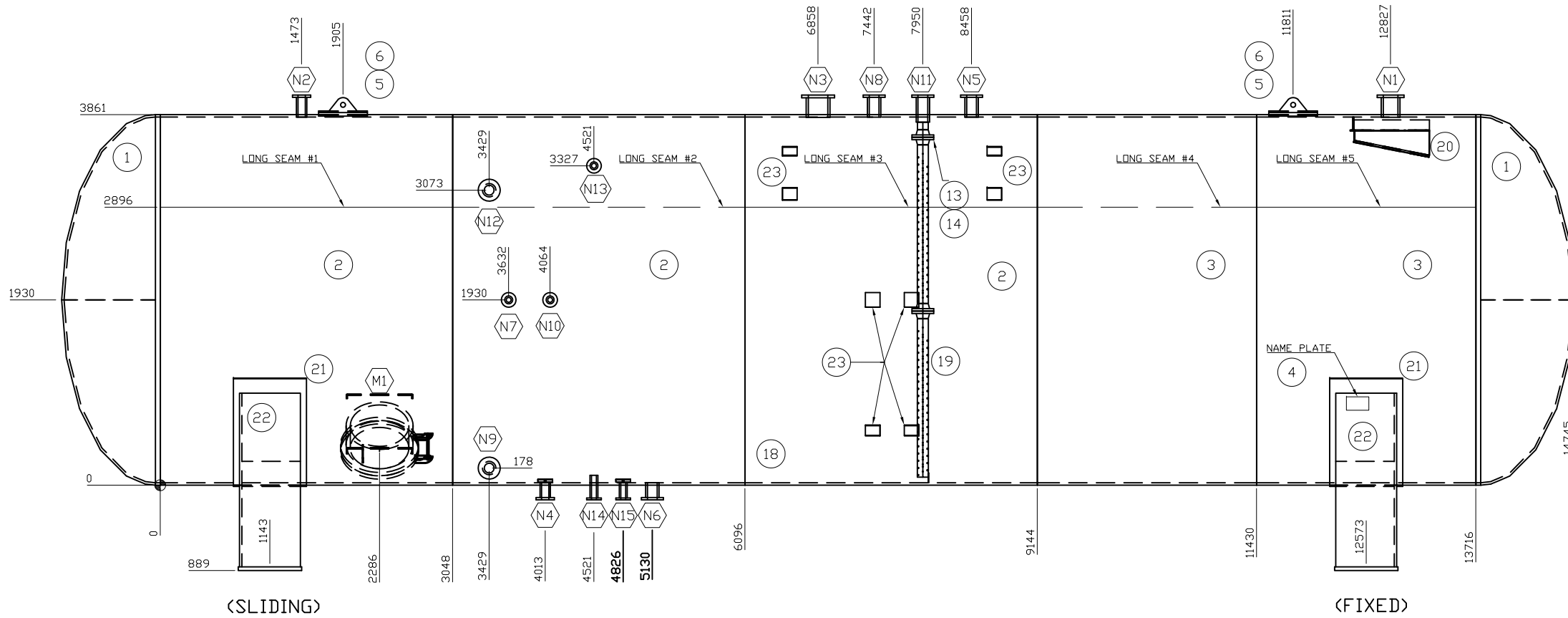
GENERAL NOTES



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natural gas
 SWAN COMPRESSOR STATION
 LSD: c-12-B/93-P-9
 1000bbi HYDROCARBON LIQUID STORAGE VESSEL V-615

JOB#	DRAWN	DATE	DRAWING NO.	REV.
ENC-112	AABJ	29/03/12	ENC-112-PI-03	13

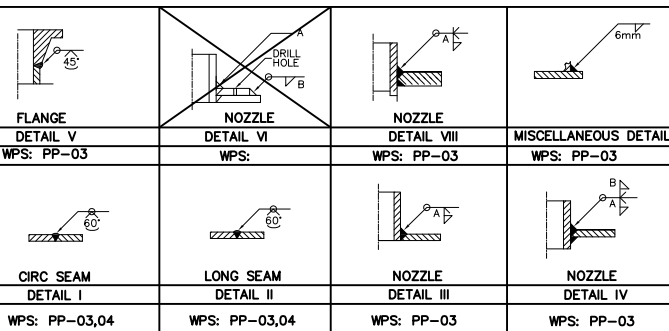
VESSEL ELEVATION VIEW



PP-97 VESSEL Bill of Material				
TITLE	ITEM	DESCRIPTION	MATERIAL	QTY
VESSEL	1	VESSEL HEAD: 2:1 SE HEAD: 150"(3810mm) ID X 1" (25.4mm) THK, 0.9375" (23.8mm) MTA, 50mm SF	SA-516-70N	2
	2	VESSEL PLATE (SHELL): 150"(3810mm) ID X 1" (25.4mm) NOM THK. X 120" (3048mm) LONG	SA-516-70N	3
	3	VESSEL PLATE (SHELL): 150"(3810mm) ID X 1" (25.4mm) NOM THK. X 90" (2286mm) LONG	SA-516-70N	2
	4	NAMEPLATE BRACKET: NAMEPLATE	SA-36/SS	1
	5	LIFTING LUG: 12.5" (317.5mm) WD X 6" (152.4mm) HG X 1.5" (31.8mm) THK	SA-516-70N	2
	6	LIFTING LUG REPAD: 20" (508mm) WD X 20" (508mm) LG X 1.5" (31.8mm) THK	SA-516-70N	2
FLANGES	7	FLANGE: 2" CL150 RF LWN (N7,N10,N14,N15) L=7" (180mm) THK: 0.53" (13.462mm) (N13) L=18" (457mm)	SA-350-LF2	4
	8	FLANGE: 3" CL150 RF LWN (N2,N4) L=9" (228 mm) THK: 0.625" (15.875 mm)	SA-350-LF2	2
	9	FLANGE: 4" CL150 ANSIRF LWN (N5,N6,N8,N9,N11,N12) THK: 0.75" (19mm)	SA-350-LF2	6
	10	FLANGE: 6" CL150 ANSIRF LWN (N1) L=9" (228 mm) THK: 0.875" (22.22 mm)	SA-350-LF2	1
	11	FLANGE: 8" CL150 ANSIRF LWN (N3) L=9" (228 mm) THK: 0.875" (22.22 mm)	SA-350-LF2	1
	12	FLANGE: 24" CL150 RF HB (M1) L=14" (356 mm) THK: 1.75" (44.45 mm)	SA-350-LF2	1
	13	FLANGE: 4" CL150 RF WN SCH.40 (N11)	SA-350-LF2	1
PIPE & ELBOW	14	PIPE: 4" SCH. 40 SMLS (N11) L=3" (75 mm)	SA-333-6	1
MANWAY EQUIPMENT	15	BLIND FLANGE: 24" CL150 ANSIRF (M1)	SA-350-LF2	1
	16	STUDS, NUTS: 1-1/4" DIAMETER X 6-3/4" LONG (M1)	SA-193-B7M	1
	17	GASKET: 24" CL150 ANSIRF WOUND X 1/8" THK (M1) (DWG: PP-97-V-MWV)	316-SS	1
INSIDE EQUIPMENT	18	REMOVABLE VORTEX BREAKER (DWG: PP-97-V-RV&SC)	SA-516-70N	1
	19	STILL COLUMN (DWG: PP-97-V-RV&SC)	-	1
SADDLE	20	INLET DIVERTER (DWG: PP-97-V-ID)	SA-516-70N	2
	21	SADDLE WEAR PLATE: 30" (76.3) W X 174" (4420) L X 0.5" (12.7) THK.	SA-516-70N	2
ATTACHMENT PAD	22	SADDLES: SADDLE DETAILS (DWG: PP-97-V-SDL)	SA-36	2
	23	ATTACHMENT PAD FOR LADDER, PLATFORM & BULDING	SA-516-70N	2

GENERAL NOTES:

- ALL INTERNAL SHARP EDGES TO BE ROUNDED OFF
- ALL VESSEL INTERNALS TO BE REMOVABLE THROUGH MANWAY.
- ALL BOLTS TO STRADDLE NATURAL VESSEL CENTERLINES.



TITLE	SIZE	TYPE	NOZZLE			PROJECTION		WELD DETAIL	FILLET WELD SIZE		REQUIRED	
			SCH	RATING	SERVICE	OUTSIDE	INSIDE		A	B	IMPACT TEST	NORMALIZED
N1	6"	LWN	0.88" WT	CL150	INLET	8" (203mm)	0"	III	0.375" (10mm)	-	YES	YES
N2	3"	LWN	0.62" WT	CL150	SPARE	8" (203mm)	0"	III	0.375" (10mm)	-	YES	YES
N3	8"	LWN	0.88" WT	CL150	PSV	8" (203mm)	0"	III	0.375" (10mm)	-	YES	YES
N4	3"	LWN	0.62" WT	CL150	DRAIN	6" (152mm)	0"	III	0.375" (10mm)	-	YES	YES
N5	4"	LWN	0.75" WT	CL150	SPARE	8" (203mm)	0"	III	0.375" (10mm)	-	YES	YES
N6	4"	LWN	0.75" WT	CL150	DRAIN	6" (152mm)	0"	III	0.375" (10mm)	-	YES	YES
N7	2"	LWN	0.625" WT	CL150	PI	6" (152mm)	0"	III	0.375" (10mm)	-	YES	YES
N8	4"	LWN	0.75" WT	CL150	LPF	8" (203mm)	0"	III	0.375" (10mm)	-	YES	YES
N9	4"	HB	1.31" WT	CL150	LSSL	16" (406mm)	0"	III	0.375" (10mm)	-	YES	YES
N10	2"	LWN	0.625" WT	CL150	TE	6" (152mm)	0"	III	0.375" (10mm)	-	YES	YES
N11	4"	LWN	0.75" WT	CL150	LIT	8" (203mm)	2" (51mm)	VIII	0.375" (10mm)	-	YES	YES
N12	4"	LWN	0.75" WT	CL150	LSHH	10" (254mm)	0"	III	0.375" (10mm)	-	YES	YES
N13	2"	LWN	0.625" WT	CL150	LG TOP	18" (457mm)	0"	III	0.375" (10mm)	-	YES	YES
N14	2"	LWN	0.625" WT	CL150	LG BOTTOM	6" (152mm)	3" (76mm)	III	0.375" (10mm)	-	YES	YES
N15	2"	LWN	0.625" WT	CL150	DRAIN	6" (152mm)	0"	III	0.375" (10mm)	-	YES	YES
M1	24"	HB	1.125" WT	CL150	MANWAY	10" (254mm)	0.75" (19mm)	IV	0.375" (10mm)	0.55" (14mm)	YES	YES

VESSEL DESIGN DATA		
No#	ITEM	SPEC
1	DESIGN CODE:	ASME CODE SEC. VIII DIV I, 2010
2	DESIGN PRESSURE:	50 PSIG @ 100°F (345 kPa @ 38°C)
3	MIN. DESIGN METAL TEMP. (MDMT):	-49°F @ 50 PSIG (-45°C @ 345 kPa)
4	MAX. ALLOWABLE WORK PRESSURE	50 PSIG @ -49/100°F (345 kPa @ -45/38°C)
5	VESSEL HYDROTEST:	448 kPa (65 PSIG)
6	VESSEL VOLUME:	6095.67 ft ³ (172.61 m ³)
7	VESSEL WEIGHT:	95846 lb (43322 kg)
8	CORROSION ALLOWANCE:	1/8" (3.2mm)
9	HEAD THICKNESS:	1" (25.4mm) NOM, 0.9375" (23.8 mm) MIN
10	SHELL THICKNESS:	1" (25.4mm) NOM
11	SHELL JOINT EFFICIENCY:	ONE (1)
12	NDT:	FULL UW-11a(RT-1)
13	PWHT:	YES, ONE HOUR @ 1150°F +/-25°F (621°C +/-14°C)
14	CHARPY IMPACT REQUIRED:	REQUIRED
15	SURFACE PREP (EXT):	ALL EQUIPMENT SHALL BE SUBJECT TO SSPC-SP#6 COMMERCIAL BLAST, FOLLOWED BY ONE (1) SHOP COAT PRIMER.
16	SURFACE PREP (INT):	INTERNAL COATING WITH DEVCO 253 AS PER MANUFACTURERS SPECS
17	INSULATION:	VESSEL TO BE INSULATED WITH 2-1/2" CAL-SIL ACCORDANCE WITH ENCANACAL-X-1 FOR HOT
18	UNITS REQUIRED:	ONE (1)
19	CRN #:	

REV	REVISION DESCRIPTION	BY	DATE	CHD	APPD
0	ISSUED FOR REVIEW	AABJ	30/09/11	-	-
1	TOTALLY REVISED	MB	21/10/11	-	-
2	ISSUED FOR APPROVAL	MB	25/10/11	-	-
3	ISSUED FOR APPROVAL	AABJ	10/11/11	-	-
4	ISSUED FOR APPROVAL	AABJ	07/12/11	-	-
5	ISSUED FOR CONSTRUCTION	MB	25/01/12	-	-
6	ISSUED FOR CONSTRUCTION	MB	20/03/12	-	-

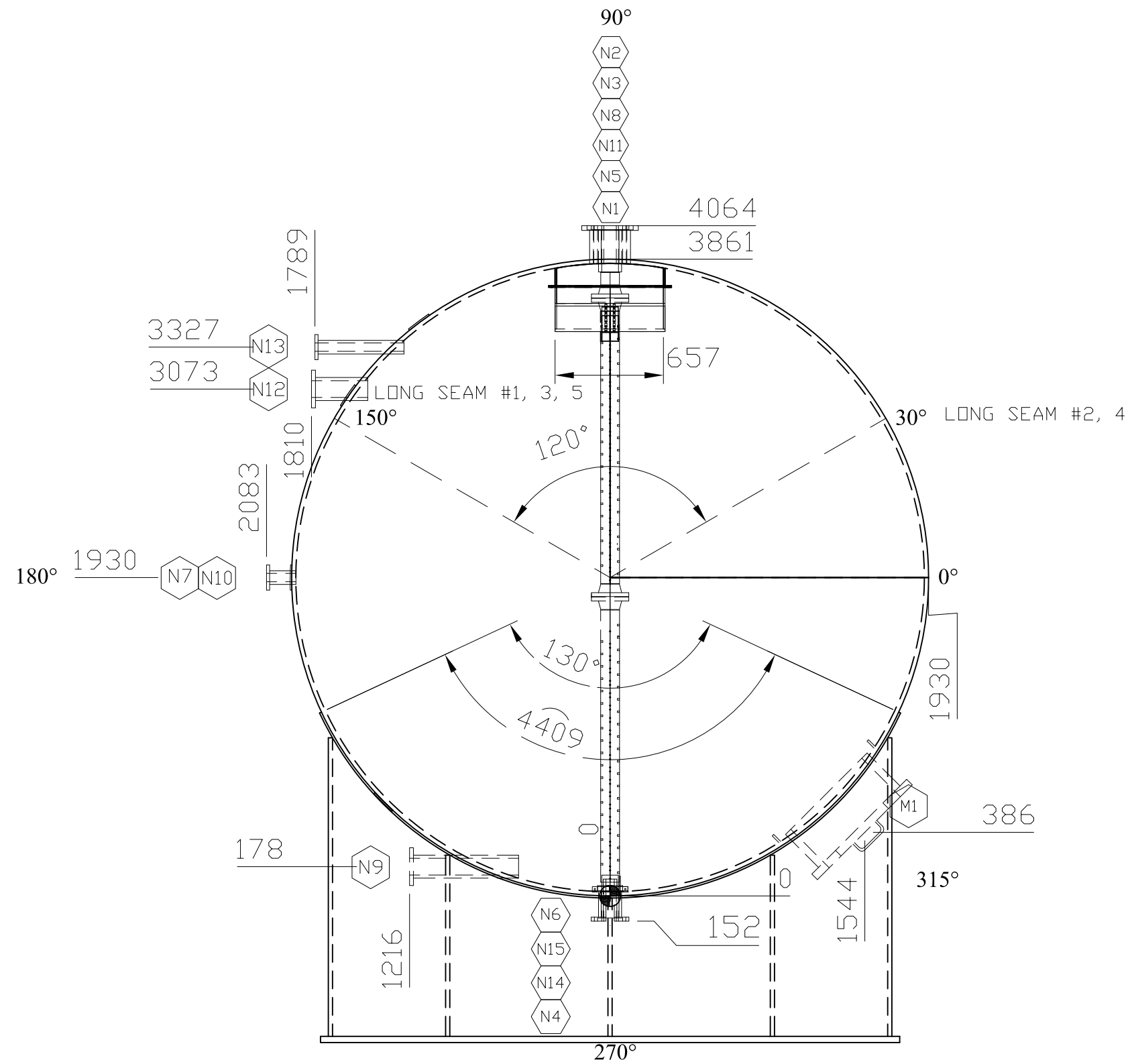
REV	REVISION DESCRIPTION	BY	DATE	CHD	APPD

Propipe GROUP Ltd.

ENCANA CORPORATION
SWAN COMPRESSOR STATION
LSDI c-12-B/93-P-9
1000bbl HYDROCARBON LIQUID
STORAGE VESSEL (V-615)

PROPIPE VESSEL #:	JOB#	DRAWN	DATE	DRAWING NO.	REV.
PP-97	ENC-112	AABJ	20/03/12	PP-97-V-1	6

VESSEL END VIEW



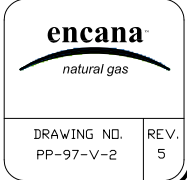
REV	REVISION DESCRIPTION	BY	DATE	CHD	APPD
0	ISSUED FOR REVIEW	AABJ	30/09/11	-	-
1	TOTALLY REVISED	MB	21/10/11	-	-
2	ISSUED FOR APPROVAL	MB	25/10/11	-	-
3	ISSUED FOR APPROVAL	AABJ	10/11/11	-	-
4	ISSUED FOR APPROVAL	AABJ	07/12/11	-	-
5	ISSUED FOR CONSTRUCTION	MB	25/01/12	-	-

REV	REVISION DESCRIPTION	BY	DATE	CHD	APPD

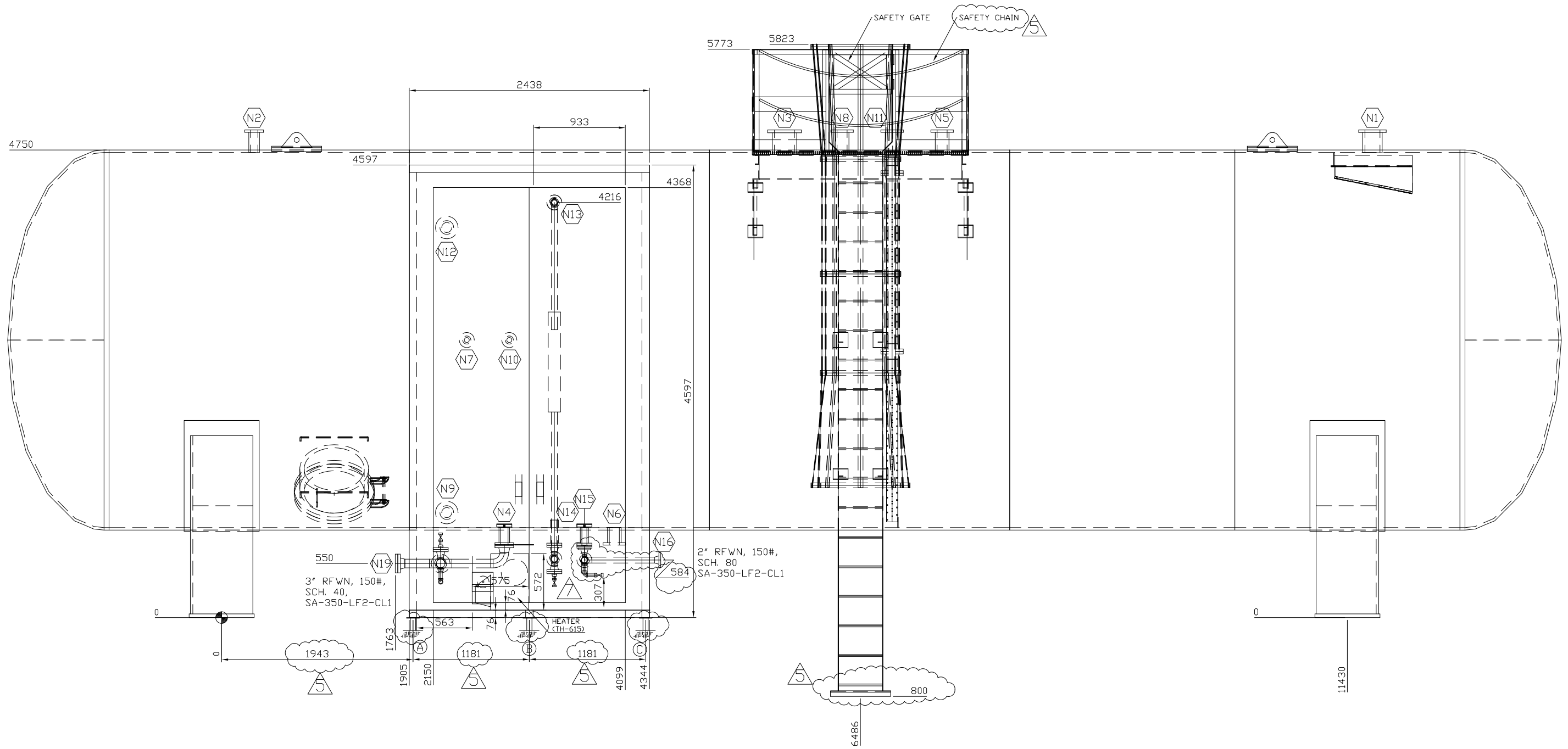


ENCANA CORPORATION
 SWAN COMPRESSOR STATION
 LSD: c-12-B/93-P-9
 1000 bbl HYDROCARBON LIQUID STORAGE VESSEL (V-615)

PROPIPE VESSEL #:	JOB#	DRAWN	DATE
PP-97	ENC-112	AABJ	25/01/12



BUILDING ELEVATION



(A)(B)(C) HEATED ENCLOSURE SUPPORTS LOCATION, APPROXIMATE LOAD OF HEATED ENCLOSURE: 1000 lb+ 168 lb CATADYNE HEATER

THIS DRAWING IS ONLY TO SHOW THE ELEVATION VIEW OF THE PIPING INSIDE HEATED ENCLOSURE, THE HEATED ENCLOSURE DIMENSIONS

AND THE POSITION OF THE LADDER AND PLATFORM (FOR DETAILS SEE PP-97-V-P&L).

REV	REVISION DESCRIPTION	BY	DATE	CHD	APPD
0	ISSUED FOR REVIEW	AABJ	30/09/11	-	-
1	TOTALLY REVISED	MB	19/10/11	-	-
2	ISSUED FOR APPROVAL	MB	25/10/11	-	-
3	ISSUED FOR APPROVAL	AABJ	10/11/11	-	-
4	ISSUED FOR APPROVAL	AABJ	07/12/11	-	-
5	ISSUED FOR APPROVAL	AABJ	22/12/11	-	-
6	ISSUED FOR APPROVAL	MB	03/01/12	-	-

REV	REVISION DESCRIPTION	BY	DATE	CHD	APPD
7	ISSUED FOR APPROVAL (PIPING MODIFIED)	AABJ	06/01/12	-	-
8	ISSUED FOR APPROVAL	MB	21/01/12	-	-
9	ISSUED FOR CONSTRUCTION	MB	25/01/12	-	-



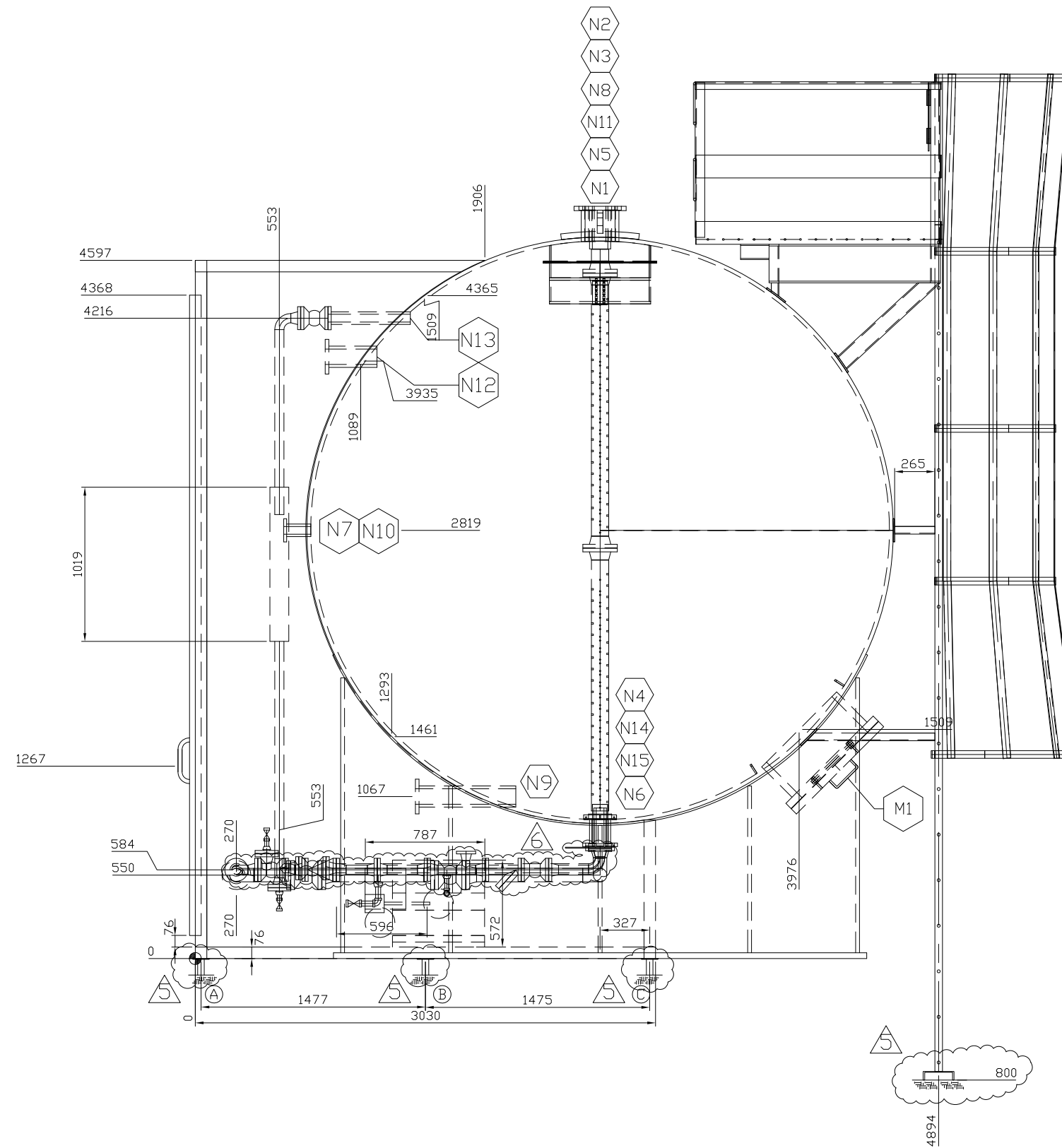
ENCANA CORPORATION
 SWAN COMPRESSOR STATION
 LSD: c-12-B/93-P-9
 1000 bbl HYDROCARBON LIQUID
 STORAGE VESSEL (V-615)

PROPIPE VESSEL #:	JOB#	DRAWN	DATE
PP-97	ENC-112	AABJ	25/01/12



DRAWING NO.	REV.
PP-97-V-3	9

PIPING END VIEW



THIS DRAWING IS ONLY TO SHOW THE SIDE VIEW OF PIPING INSIDE HEATED ENCLOSURE.

REV	REVISION DESCRIPTION	BY	DATE	CHD	APPD
0	ISSUED FOR REVIEW	AABJ	30/09/11	-	-
1	TOTALLY REVISED	MB	19/10/11	-	-
2	ISSUED FOR APPROVAL	MB	25/10/11	-	-
3	ISSUED FOR APPROVAL	AABJ	10/11/11	-	-
4	ISSUED FOR APPROVAL	AABJ	07/12/11	-	-
5	ISSUED FOR APPROVAL	AABJ	22/12/11	-	-
6	ISSUED FOR APPROVAL (PIPING MODIFIED)	AABJ	06/01/12	-	-

REV	REVISION DESCRIPTION	BY	DATE	CHD	APPD
7	ISSUED FOR APPROVAL	MB	21/01/12	-	-
8	ISSUED FOR CONSTRUCTION	MB	25/01/12	-	-



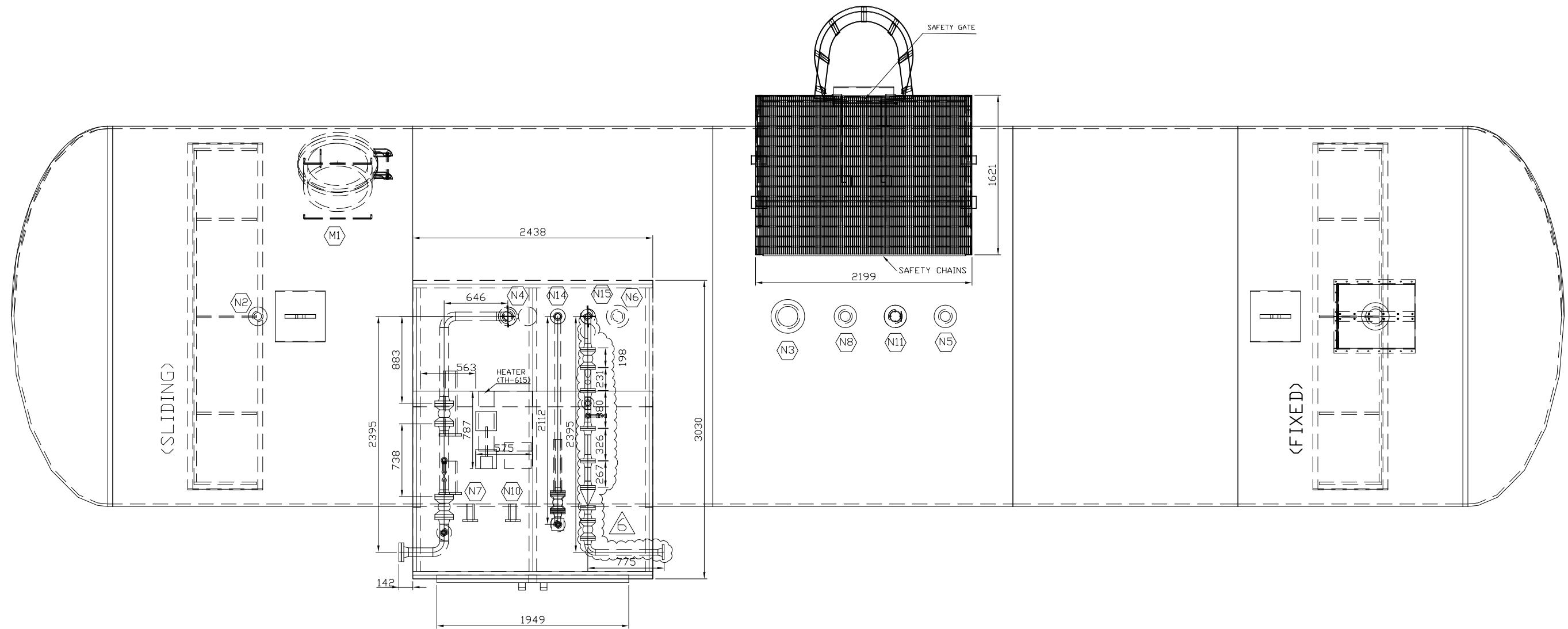
ENCANA CORPORATION
 SWAN COMPRESSOR STATION
 LSD: c-12-B/93-P-9
 1000 bbl HYDROCARBON LIQUID STORAGE VESSEL (V-615)

PROPIPE VESSEL #:	JOB#	DRAWN	DATE
PP-97	ENC-112	AABJ	25/01/12

encana
 natural gas

DRAWING NO.	REV.
PP-97-V-4	8

PIPING TOP VIEW



THIS DRAWING IS ONLY TO SHOW THE TOP VIEW OF PIPING INSIDE HEATED ENCLOSURE.

REV	REVISION DESCRIPTION	BY	DATE	CHD	APPD
0	ISSUED FOR REVIEW	AABJ	30/09/11	-	-
1	TOTALLY REVISED	MB	19/10/11	-	-
2	ISSUED FOR APPROVAL	MB	25/10/11	-	-
3	ISSUED FOR APPROVAL	AABJ	10/11/11	-	-
4	ISSUED FOR APPROVAL	AABJ	07/12/11	-	-
5	ISSUED FOR APPROVAL (PLATFORM SWITCHED TO OPPOSITE SIDE)	AABJ	22/12/11	-	-
6	ISSUED FOR APPROVAL (PIPING MODIFIED)	AABJ	06/01/12	-	-

REV	REVISION DESCRIPTION	BY	DATE	CHD	APPD
7	ISSUED FOR APPROVAL	MB	21/01/12	-	-
8	ISSUED FOR CONSTRUCTION	MB	25/01/12	-	-



ENCANA CORPORATION			
SWAN COMPRESSOR STATION			
LSD: c-12-B/93-P-9			
1000 bbl HYDROCARBON LIQUID STORAGE VESSEL (V-615)			
PROPIPE VESSEL #:	JOB#	DRAWN	DATE
PP-97	ENC-112	AABJ	25/01/12

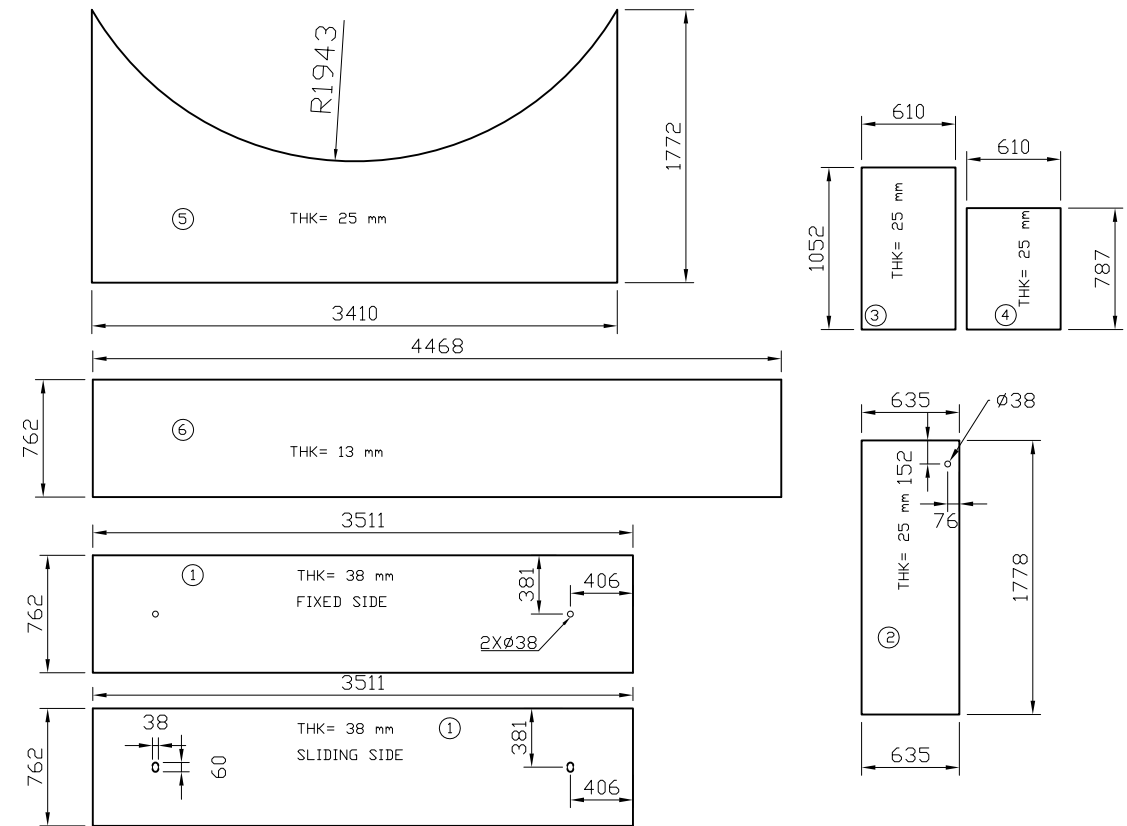
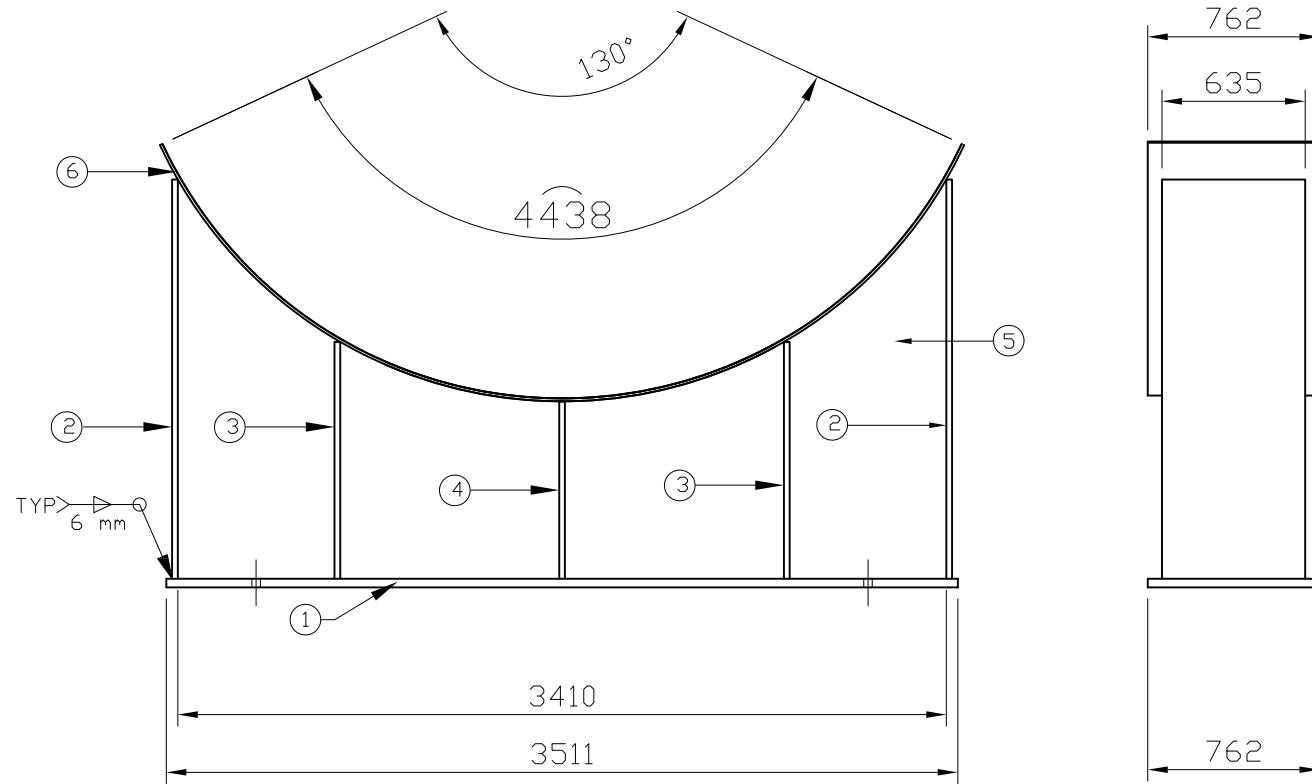
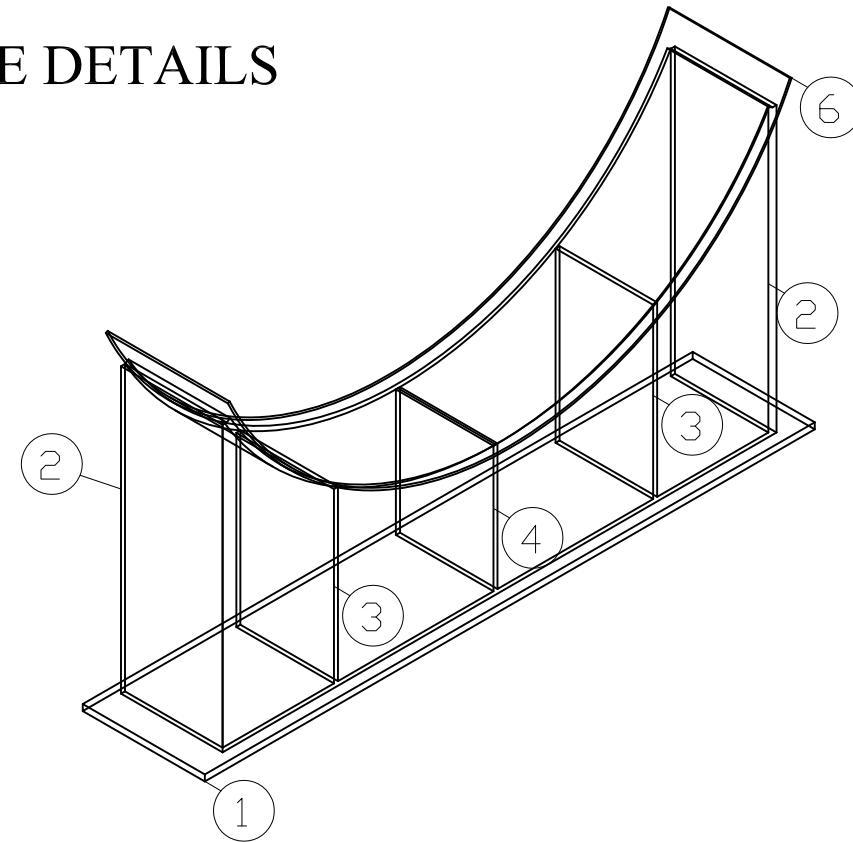


DRAWING NO.	REV.
PP-97-V-5	8

PP-96 Saddle Part List

TITLE	ITEM	DESCRIPTION	QTY	MATERIAL
PLATE	1	PL 3511X762X 38	2	SA-36
PLATE	2	PL 1778X635X 25	4	SA-36
PLATE	3	PL 1052X610X 25	4	SA-36
PLATE	4	PL 787X610X 25	2	SA-36
PLATE	5	PL 3410X1772X 25	2	SA-36
PLATE	6	PL 4407X762X13	2	SA-516 70

SADDLE DETAILS



REV	REVISION DESCRIPTION	BY	DATE	CHD	APPD
0	ISSUED FOR REVIEW	MB	21/10/11	-	-
1	ISSUED FOR APPROVAL	MB	25/10/11	-	-
2	ISSUED FOR APPROVAL	AABJ	10/11/11	-	-
3	ISSUED FOR CONSTRUCTION	MB	25/01/12	-	-
4	ISSUED FOR CONSTRUCTION	MB	20/03/12	-	-

REV	REVISION DESCRIPTION	BY	DATE	CHD	APPD



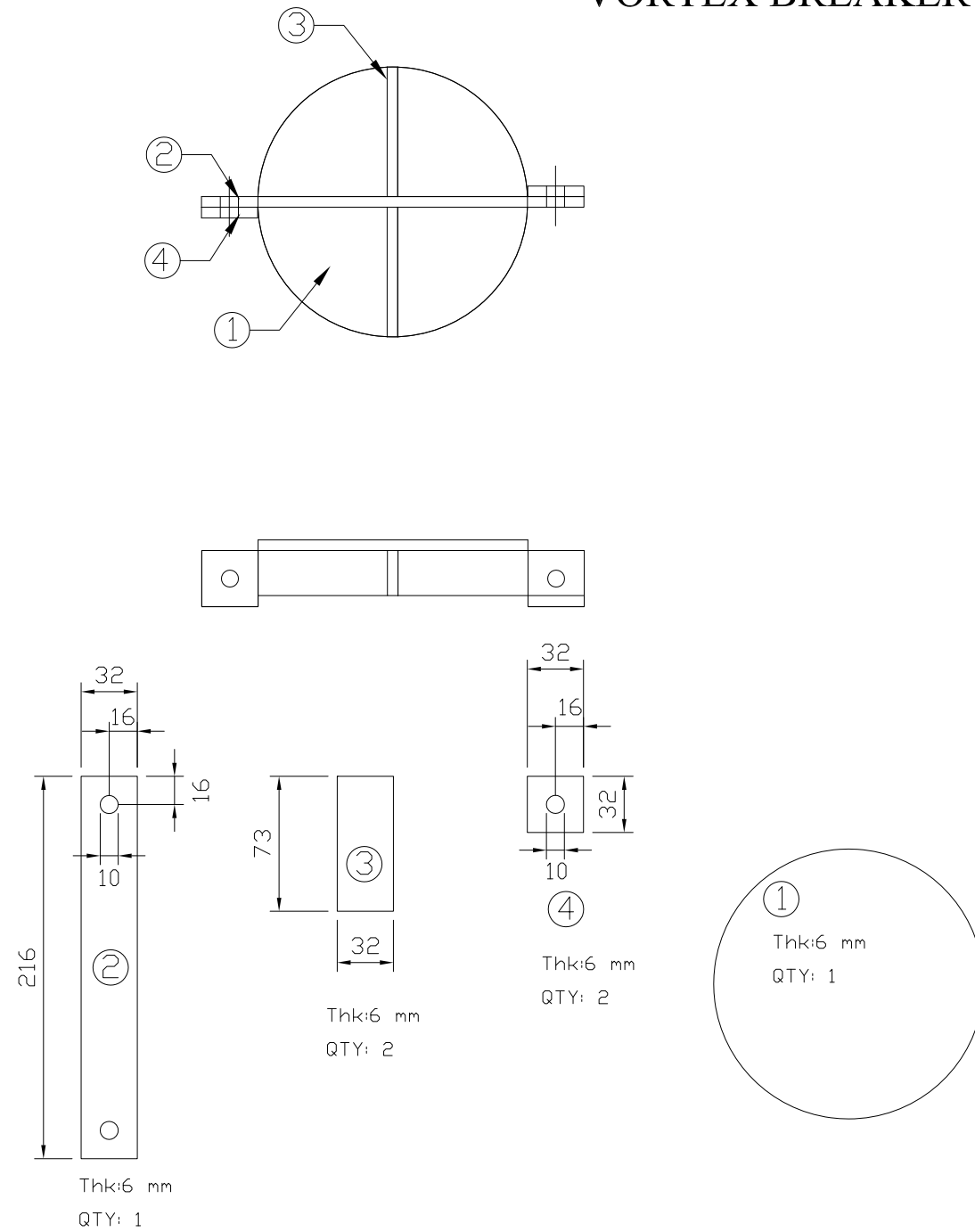
ENCANA CORPORATION
 SWAN COMPRESSOR STATION
 LSD: c-12-B/93-P-9
 SADDLE DETAIL (V-615)



PROPIPE VESSEL #:	JOB#	DRAWN	DATE
PP-97	ENC-112	AABJ	20/03/12

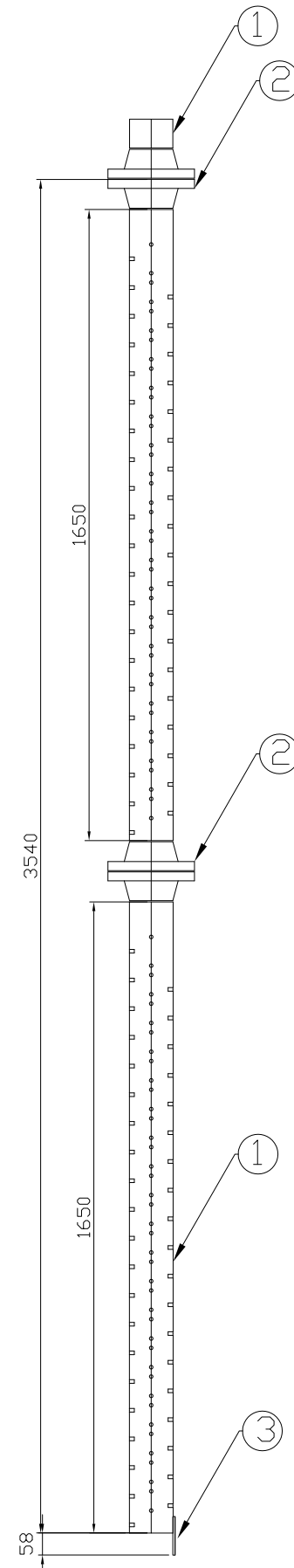
DRAWING NO.	REV.
PP-97-V-SDL	4

VORTEX BREAKER DETAILS



VORTEX BREAKER PART LIST			
ITEM NO	DESCRIPTION	MATERIAL	QTY
1	PLATE Dia:6" (152 mm)X 0.25" (6 mm)	SA-516-70N	1
2	PLATE: 8.5" (216 mm)X 1.25" (32 mm) x 0.25" (6 mm)	SA-516-70N	1
3	PLATE: 3" (76 mm)X 1.25" (32 mm) x 0.25" (6 mm)	SA-516-70N	2
4	PLATE: 1.25" (32 mm)X 1.25" (32 mm) x 0.25" (6 mm)	SA-516-70N	2

STILL COLUMN DETAILS



STILL COLUMN PART LIST			
ITEM	DESCRIPTION	MATERIAL	QTY
1	PIPE 4" SCH 40	SA106-Gr.B	L=3377 mm
2	FLANGE:4" WN/RF CL150 SCH40	SA105	4
3	PLATE:4" (100 mm)X2"(50 mm)X0.25" (6 mm)	SA516-Gr70	1

REV	REVISION DESCRIPTION	BY	DATE	CHD	APPD
0	ISSUED FOR REVIEW	MB	19/10/11	-	-
1	ISSUED FOR APPROVAL	MB	25/10/11	-	-
2	ISSUED FOR APPROVAL	AABJ	10/11/11	-	-
3	ISSUED FOR CONSTRUCTION	MB	25/01/12	-	-

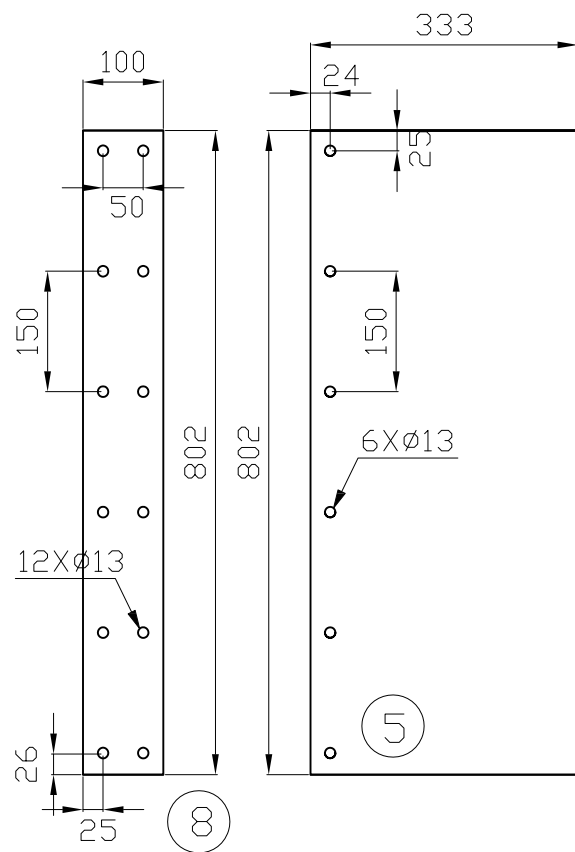
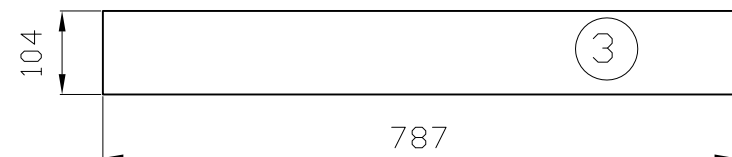
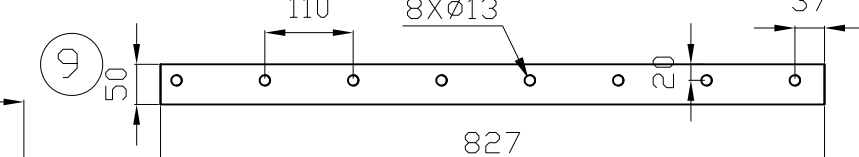
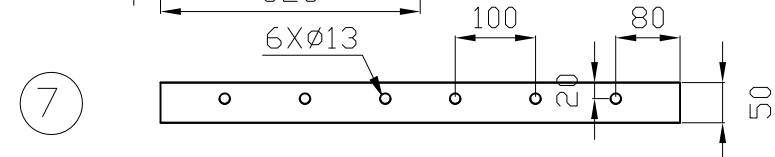
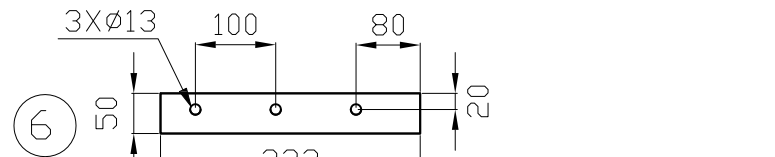
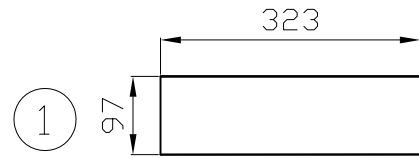
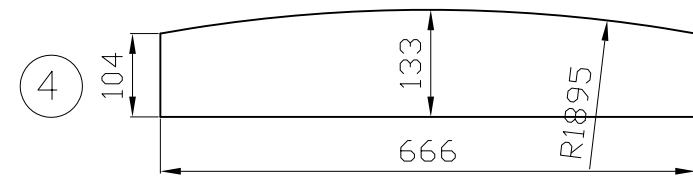
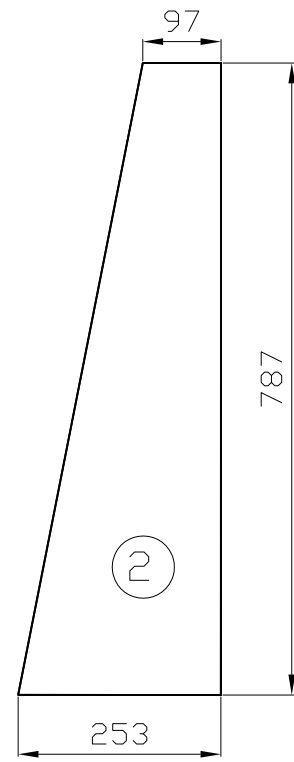
REV	REVISION DESCRIPTION	BY	DATE	CHD	APPD



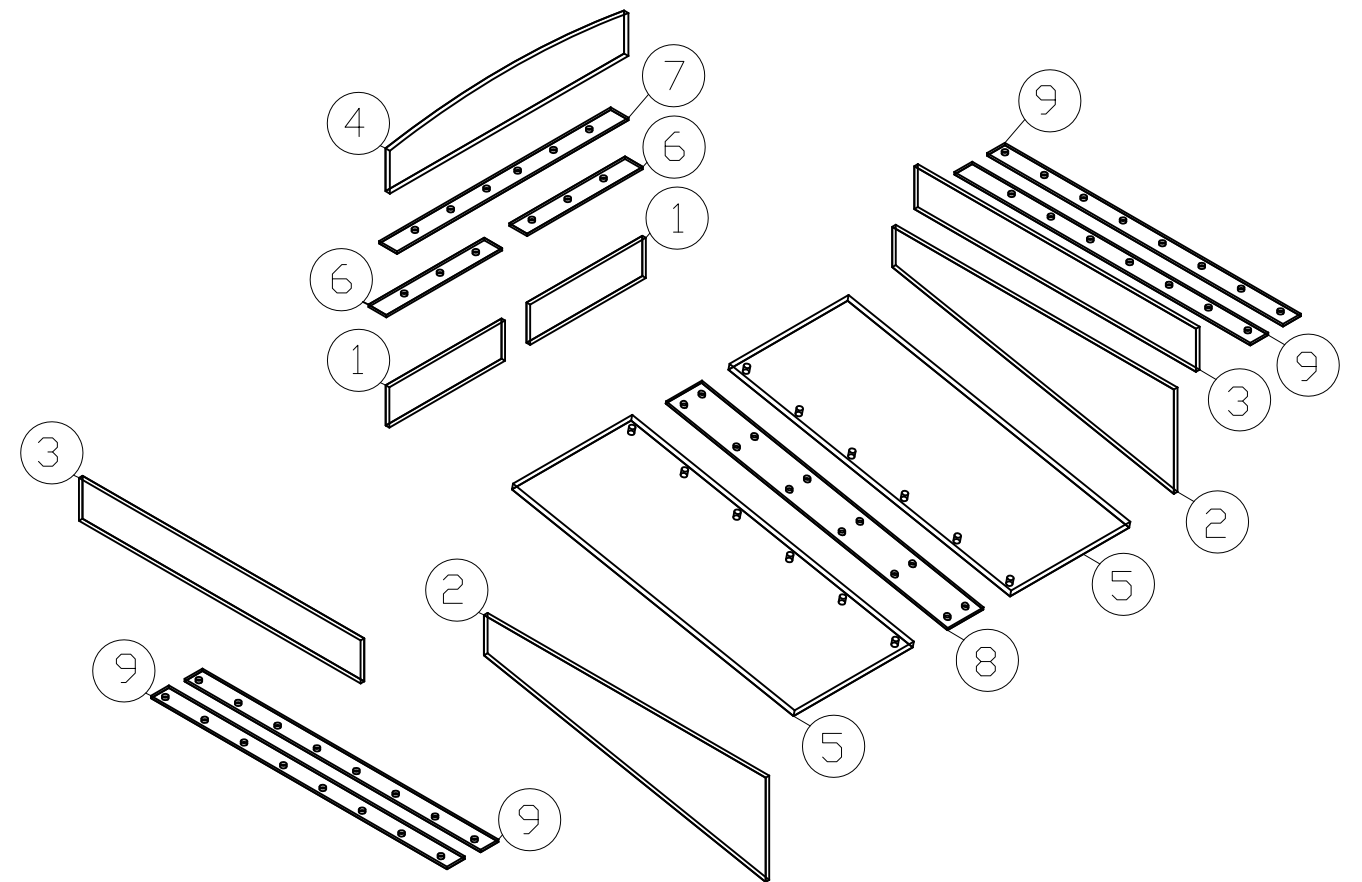
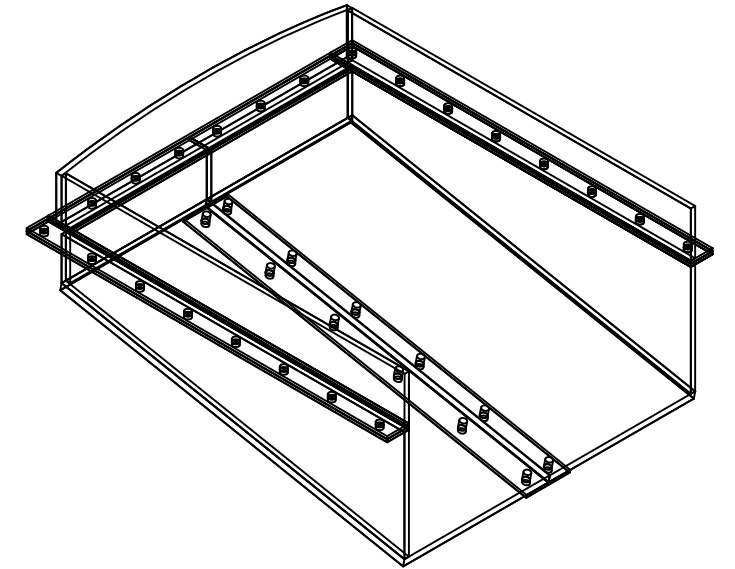
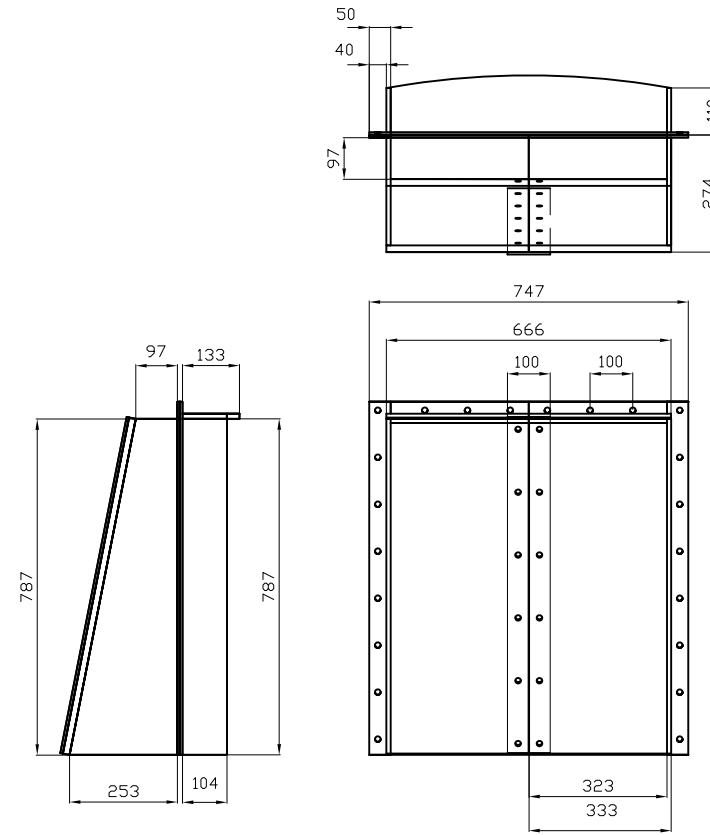
ENCANA CORPORATION			
SWAN COMPRESSOR STATION			
LSD: c-12-B/93-P-9			
VORTEX BREAKER & STILL COLUMN (V-615)			
PROPIPE VESSEL #:	JOB#	DRAWN	DATE
PP-97	ENC-112	AABJ	25/01/12

DRAWING NO.	REV.
PP-97-V-VB&SC	3

INLET DIVERTER DETAILS



BILL OF MATERIAL			
No	QTY	LONG ANNOTATION	LENGTH (mm)
1	2	PL-10 X 323 X 97	323
2	2	PL-10 X 787 X 253	787
3	2	PL-10 X 787 X 104	787
4	1	PL-12 X 666 X 133	666
5	2	PL-16 X 802 X 333	802
6	2	PL-6 X 323 X 50	323
7	1	PL-6 X 647 X 50	647
8	1	PL-6 X 802 X 100	802
9	4	PL-6 X 827 X 50	827



REV	REVISION DESCRIPTION	BY	DATE	CHD	APPD
0	ISSUED FOR REVIEW	MB	25/10/11	-	-
1	ISSUED FOR REVIEW	AABJ	10/11/11	-	-
2	ISSUED FOR CONSTRUCTION	MB	25/01/12	-	-

REV	REVISION DESCRIPTION	BY	DATE	CHD	APPD



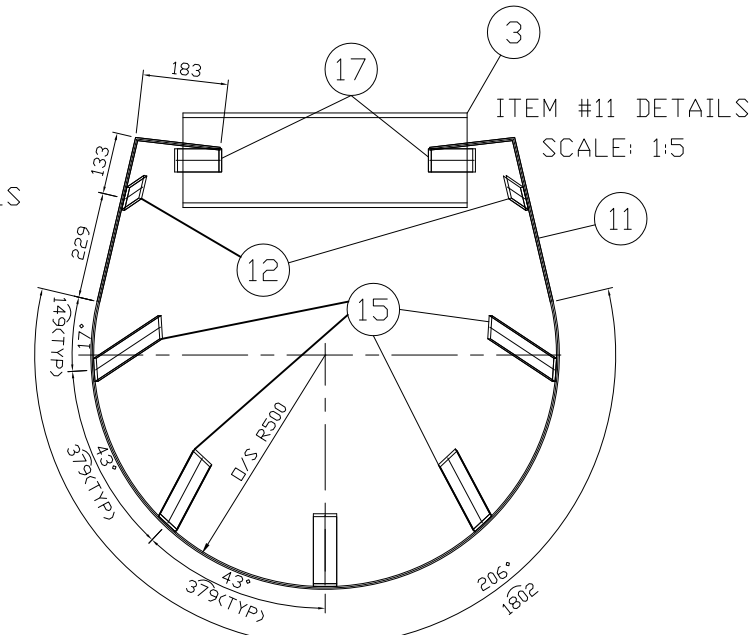
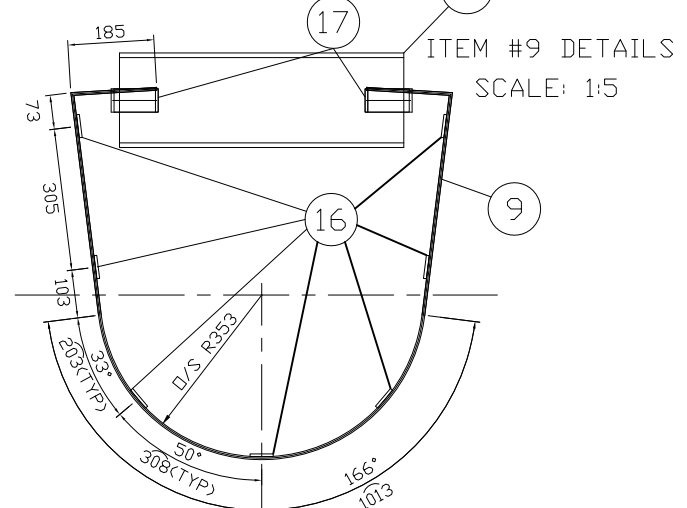
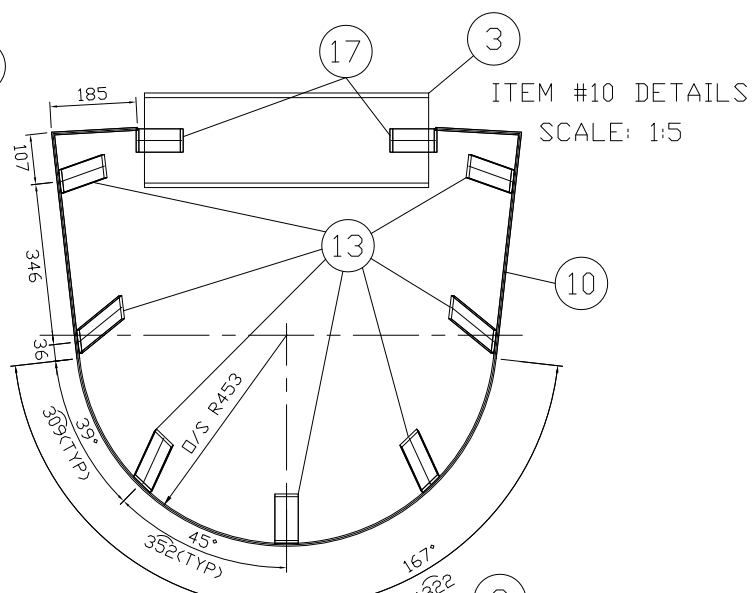
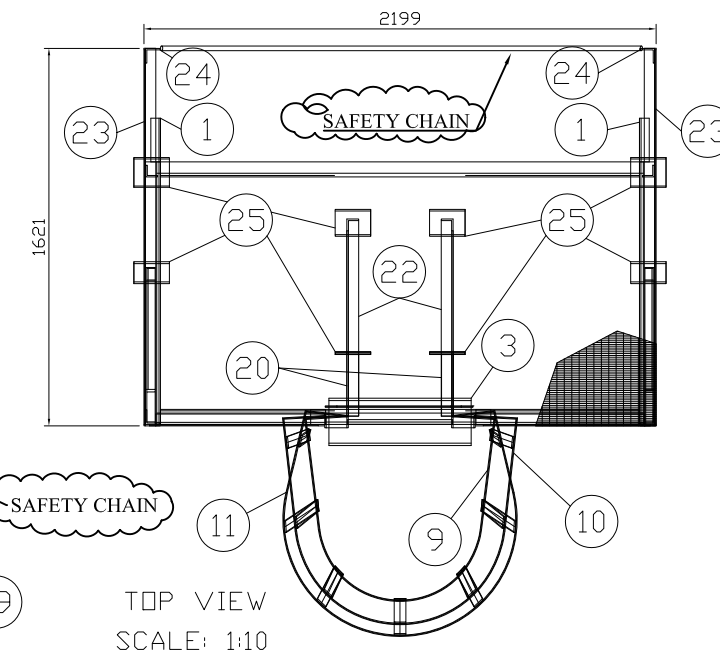
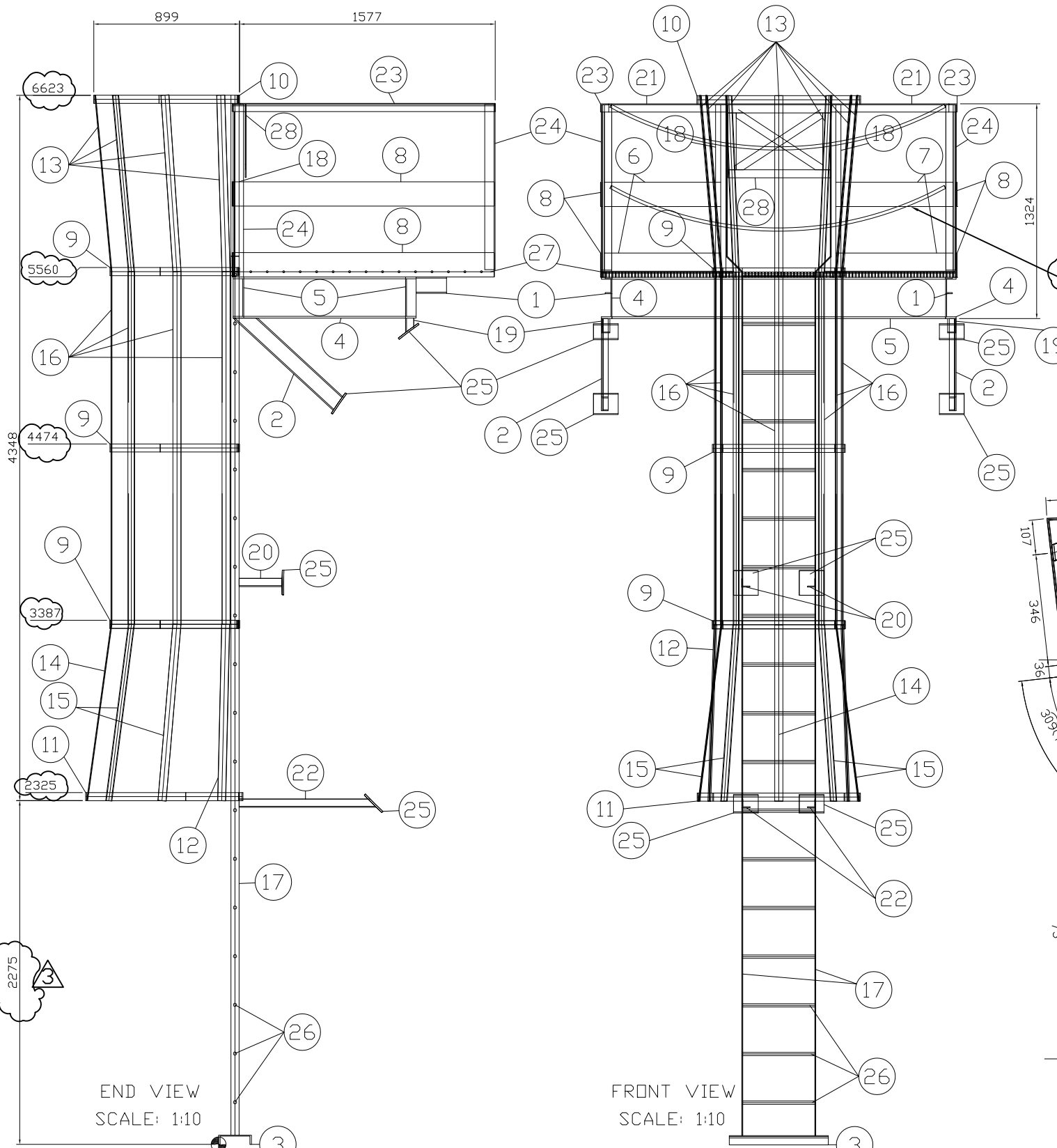
ENCANA CORPORATION
 SWAN COMPRESSOR STATION
 LSD: c-12-B/93-P-9
 INLET DIVERTER (V-615)

PROPIPE VESSEL #:	JOB#	DRAWN	DATE
PP-97	ENC-112	AABJ	25/01/12



DRAWING NO. PP-97-V-ID
 REV. 2

PLATFORM & LADDER DETAILS



BILL OF MATERIAL				
MARK	QTY	LONG ANNOTATION	LENGTH	WEIGHT
1	2	C100x9	188	3.43
2	2	C100x9	838	14.42
3	1	C200X17	610	10.44
4	2	C250X23	1128	51.35
5	2	C250X23	2057	93.68
6	2	FB150X6	717	10.14
7	2	FB150X6	724	10.22
8	4	FB150X6	1610	44.76
9	3	FB50x6	2329	17.70
10	1	FB50x6	2645	6.70
11	1	FB50x6	2879	7.29
12	2	FB50x6	1088	5.51
13	7	FB50x6	1093	19.37
14	1	FB50x6	1097	2.78
15	4	FB50x6	1100	11.12
16	7	FB50x6	2174	38.51
17	2	FB50x6	6606	33.64
18	2	HS64X64X6.4	1063	22.50
19	2	L51x51x6.4	88	0.71
20	2	L51x51x6.4	265	2.51
21	2	L51x51x6.4	726	6.89
22	2	L51x51x6.4	846	7.87
23	2	L51X51X6.4	1621	15.40
24	4	L64X64X6.4	1019	24.50
25	8	PL-10 X 152 X 152	152	18.10
26	18	RB20	450	18.14
27	1	SER. BAR GRATING 1 1/4" THK	2181 X 1603	168.99
28	1	SAFETY GATE		
TOTAL WEIGHT:			665.67	

BASED ON THE GRADE ELEVATION THE LENGTH OF LADDER WILL BE SET UP DOWNWARDS.

REV	REVISION DESCRIPTION	BY	DATE	CHD	APPD	REV	REVISION DESCRIPTION	BY	DATE	CHD	APPD
0	ISSUED FOR APPROVAL	MB	27/10/11	-	-						
1	ISSUED FOR APPROVAL	AABJ	10/11/11	-	-						
2	ISSUED FOR APPROVAL	AABJ	07/12/11	-	-						
3	ISSUED FOR APPROVAL	AABJ	22/12/11	-	-						
4	ISSUED FOR CONSTRUCTION	MB	25/01/12	-	-						

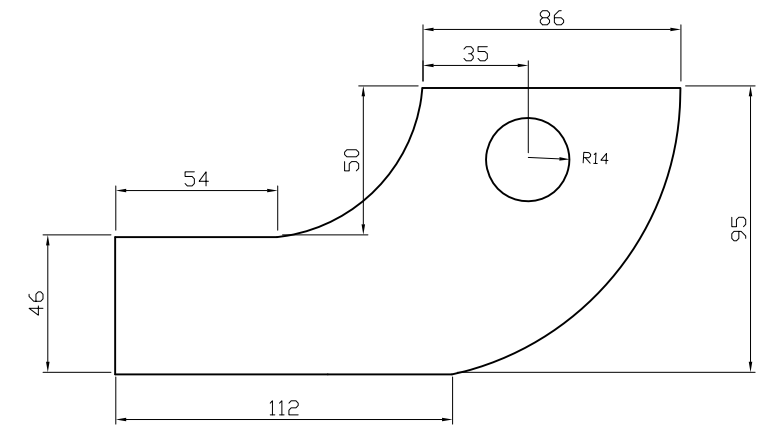
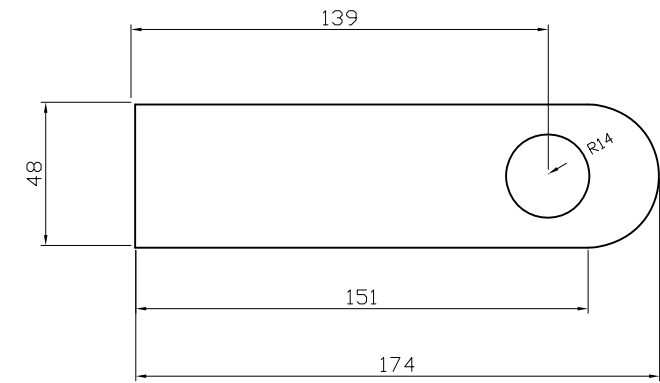
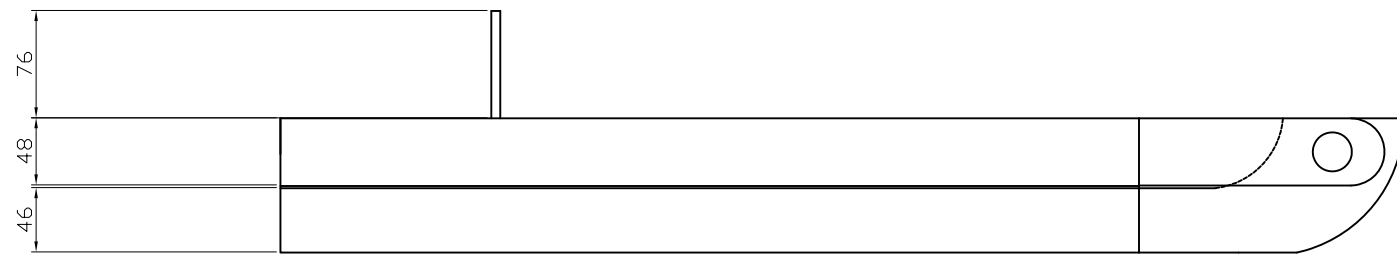
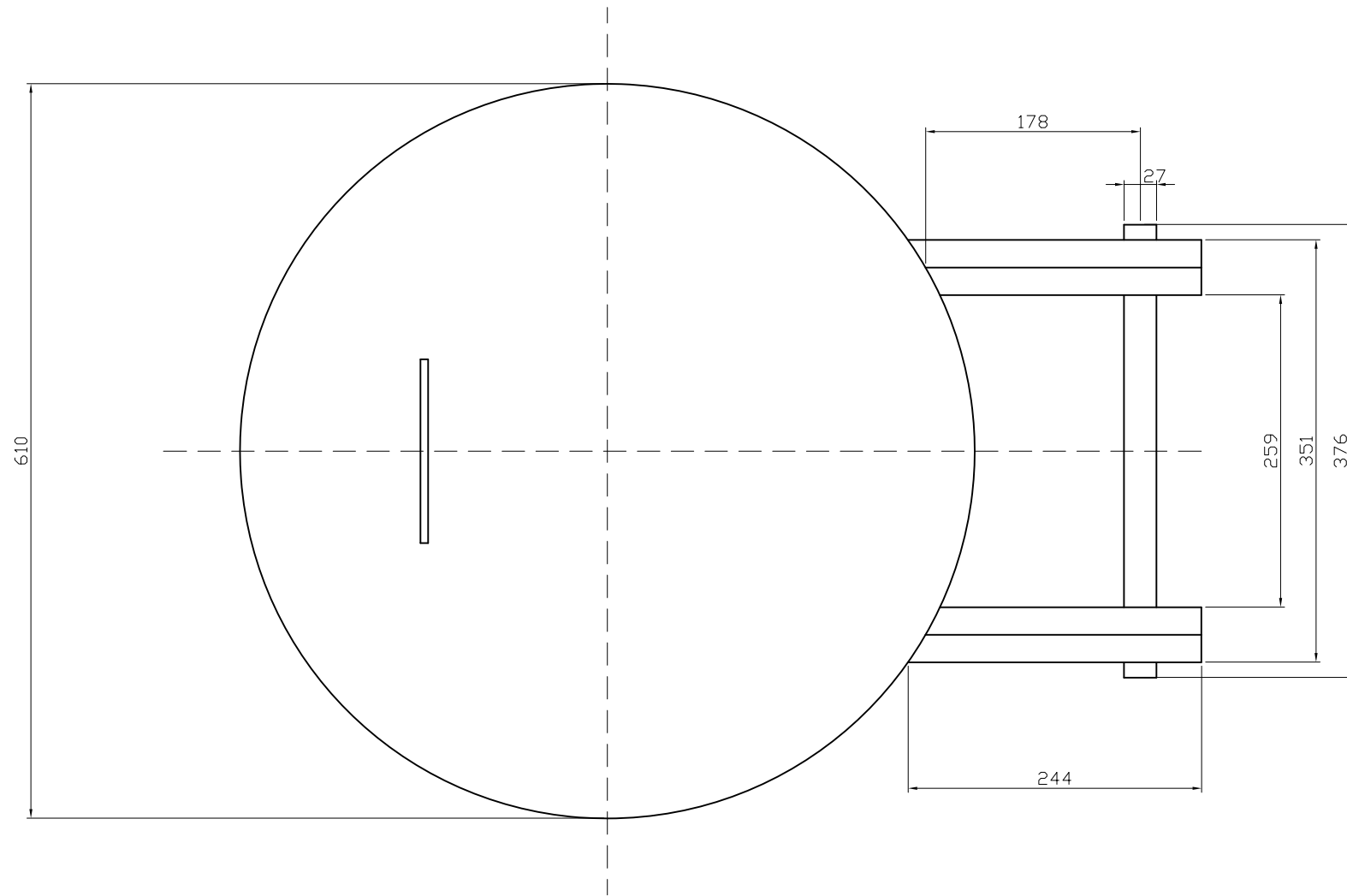


ENCANA CORPORATION
 SWAN COMPRESSOR STATION
 LSD: c-12-B/93-P-9

PLATFORM & LADDER DETAILS (V-615)

PROPIPE VESSEL #:	JOB#	DRAWN	DATE
PP-97	ENC-112	AABJ	25/01/12

DRAWING NO. PP-97-V-P&L
 REV. 4



**MANWAY HINGE
DETAILS**

REV	REVISION DESCRIPTION	BY	DATE	CHD	APPD
0	ISSUED FOR REVIEW	AABJ	10/11/11	-	-
1	ISSUED FOR CONSTRUCTION	MB	25/01/12	-	-

REV	REVISION DESCRIPTION	BY	DATE	CHD	APPD

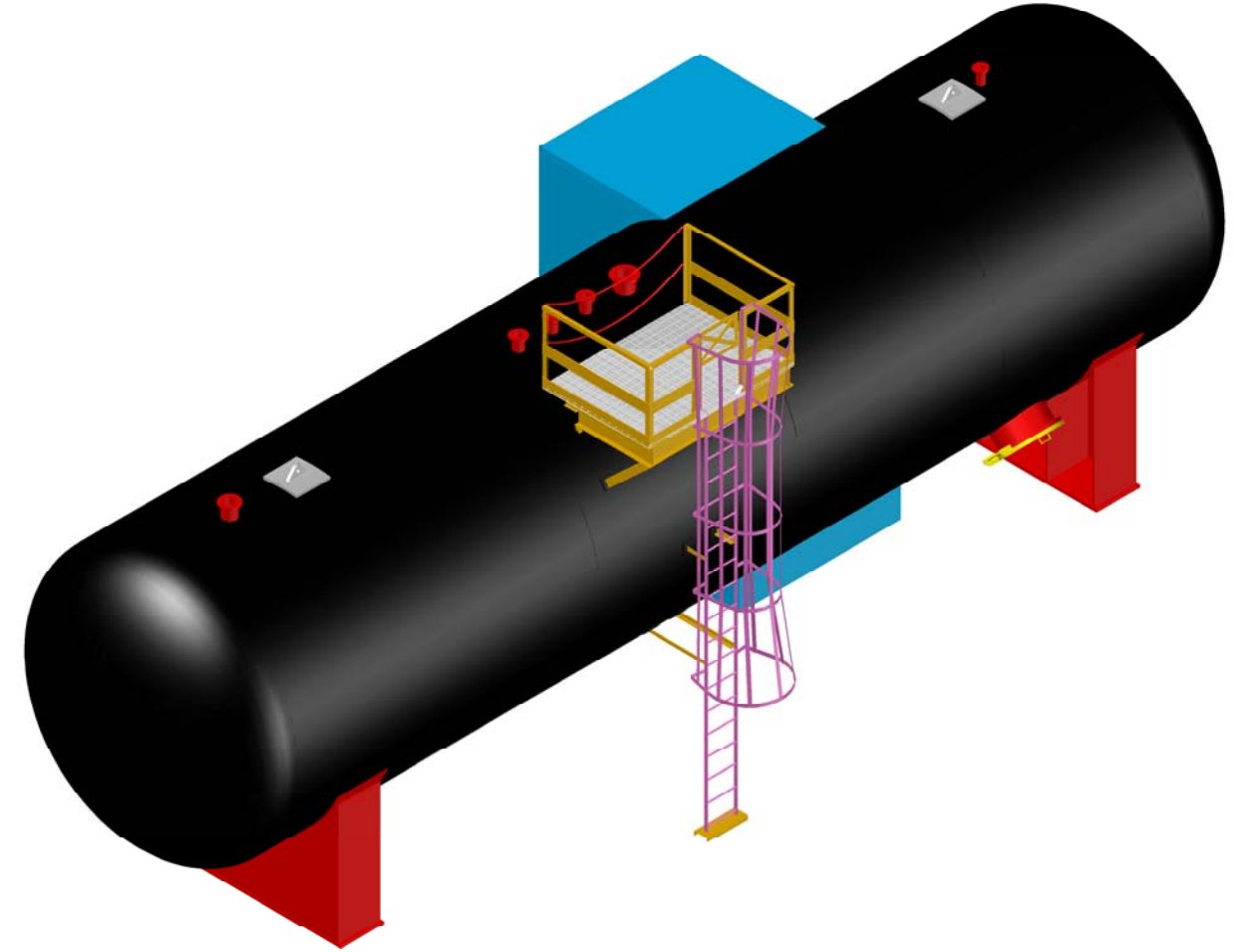
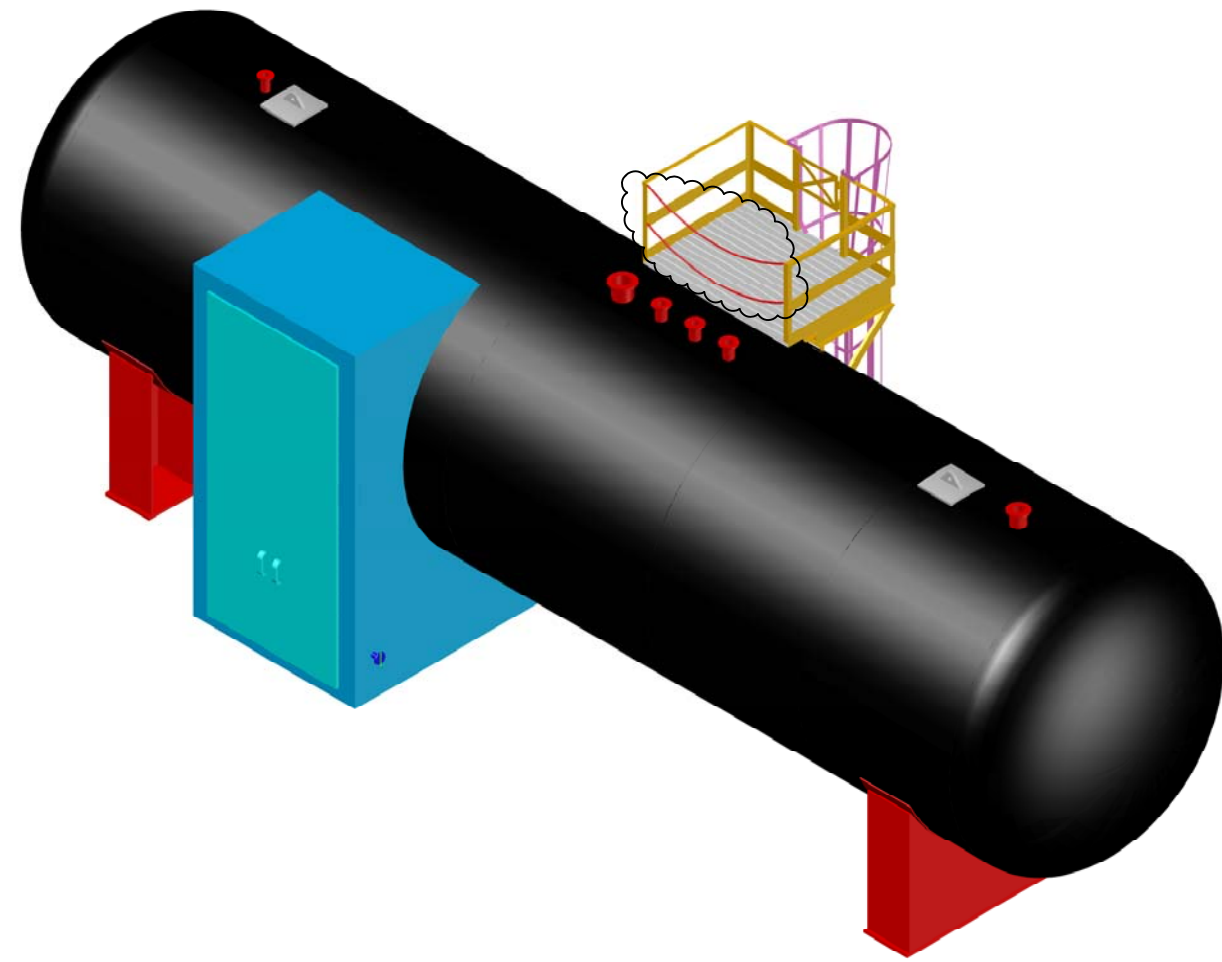


ENCANA CORPORATION			
SWAN COMPRESSOR STATION			
LSD: c-12-B/93-P-9			
MANWAY DETAILS (V-615)			
PROPIPE VESSEL #:	JOB#	DRAWN	DATE
PP-97	ENC-112	AABJ	25/01/12



DRAWING NO.	REV.
PP-97-V-MWY	1

PERSPECTIVE VIEWS



REV	REVISION DESCRIPTION	BY	DATE	CHD	APPD
0	ISSUED FOR REVIEW	MB	27/10/11	-	-
1	ISSUED FOR REVIEW	AABJ	10/11/11	-	-
2	ISSUED FOR REVIEW	AABJ	07/12/11	-	-
3	ISSUED FOR APPROVAL (PLATFORM SWITCHED TO OPPOSITE SIDE)	AABJ	22/12/11	-	-
4	ISSUED FOR CONSTRUCTION	MB	25/01/12	-	-

REV	REVISION DESCRIPTION	BY	DATE	CHD	APPD



ENCANA CORPORATION
 SWAN COMPRESSOR STATION
 LSD: c-12-B/93-P-9
 PERSPECTIVE VIEWS (V-615)

PROPIPE VESSEL #:	JOB#	DRAWN	DATE
PP-97	ENC-112	AABJ	25/01/12



DRAWING NO.	REV.
PP-97-V-3D	4