

FOR INFORMATION ONLY  
APR 09 1996

1. TUBING TO BE 316 SS 3/8" C/W CADMIUM PLATED SWAGelok FITTINGS	
2. PRESSURE SENSING LINES TO BE 1/2" TUBING	
<b>GENERAL NOTES</b>	
DATE: 96.03.12 4:48pm	FILE NAME: J:\JOBS95\95261\DWG\FLW261M0201

No.	REVISION	BY	DATE	CHKD	ENG
1	ISSUED FOR CONSTRUCTION	RC	MAR/96	TAL	TAL
2	GENERAL REVISIONS	CH	FEB/96	TAL	TAL
3	REISSUED FOR APPROVAL	MLM	FEB/96	TAL	TAL
4	ISSUED FOR APPROVAL	TS	JAN/96	MM	MM
5	ISSUED WITH BID	WC	DEC/95	MM	MM

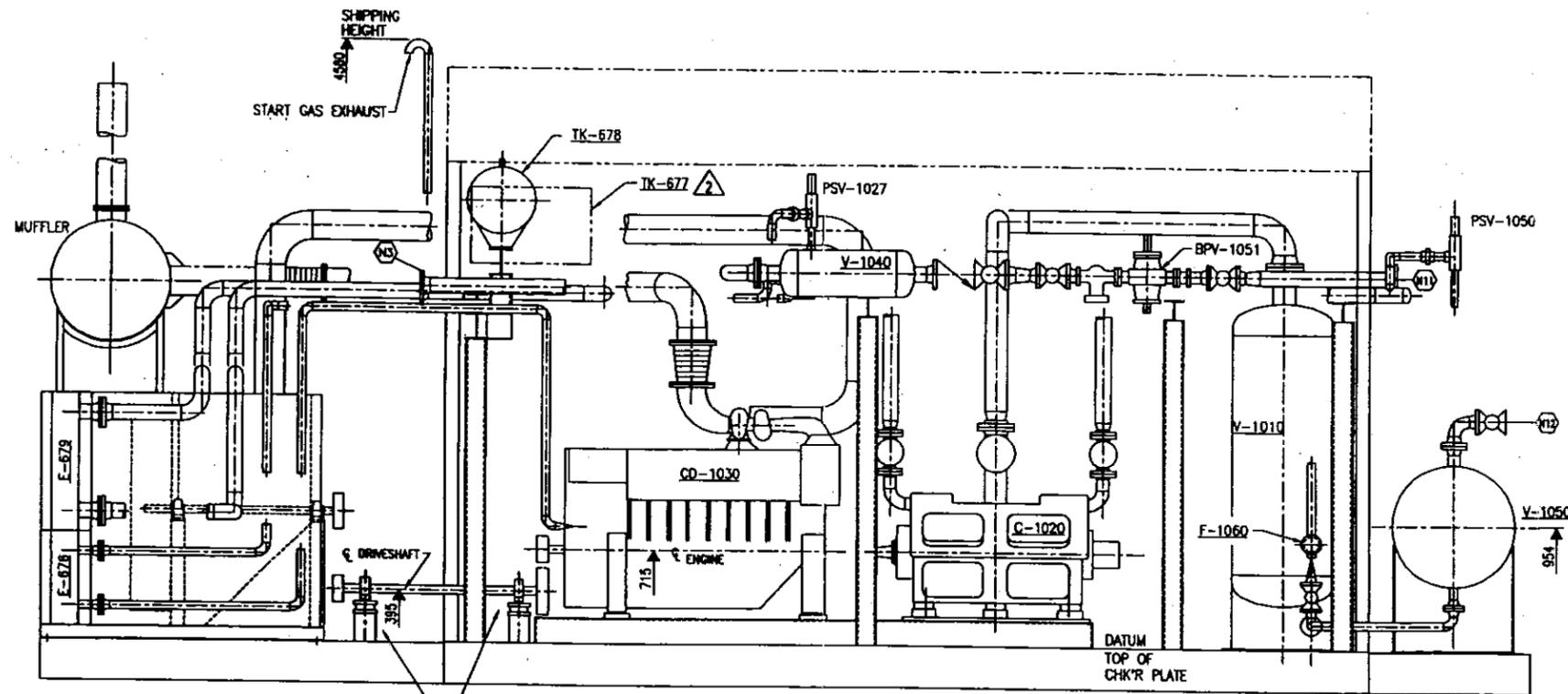
PREPARED BY:  
**PROPAK SYSTEMS LTD.**  
ENGINEERING DESIGN FABRICATION CONSTRUCTION  
ALBERTA  
CANADA  
DRAWN BY: WILSON C. CHECKED: [Signature] DATE: DEC 05/95 SCALE:



**ANDERSON OIL AND GAS INC.**  
PUSKASKAU LSD-3-26-74-1W6M  
REFRIGERATION PACKAGE  
MECHANICAL FLOWSHEET  
DWG. No.: D-MFS-95261-200 SHT. 1 OF 1 REV 1



THE DESIGN OF COOLERS AND CONDENSERS AND THE PROPERTY OF PROPAC SYSTEMS LTD. AND SHALL NOT BE REPRODUCED  
 TO OTHERS OR REPRODUCED IN ANY MANNER OR USED FOR ANY PURPOSE WHATSOEVER WITHOUT THE WRITTEN CONSENT OF PROPAC SYSTEMS LTD.



SEE SHIT 4 OF 4 FOR  
COOLER DRIVE  
ASSEMBLY DETAIL

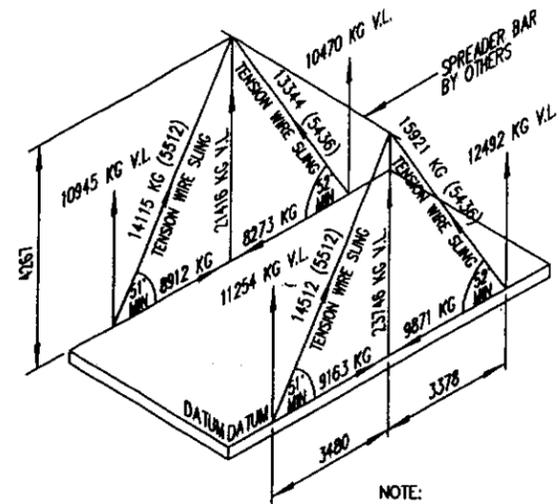
ELEVATION  
VIEWED FR. DATUM 'B'

**AS-BUILT**  
MAY 15 1996

3/jobs95/95261/asy/26125201

GENERAL NOTES		GENERAL NOTES		No.		REVISION		BY	DATE	CKD	ENG	PREPARED BY:	PROPAC SYSTEMS LTD. ENGINEERING DESIGN FABRICATION CONSTRUCTION AIRDRIE ALBERTA CANADA			ANDERSON OIL & GAS INC. PUSKWASKAU GAS PROJECT REFRIGERATION PACKAGE (COMPRESSOR) PIPING ASSEMBLY					
				2		AS BUILT		SI	MAY 13/96		T.L.	DRAWN		CHECKED		APPROVED	DATE	SCALE	DWG. No.:	D-ASY-95261-252	2 OF 4
				1		ISSUED FOR CONSTRUCTION		SI	MAR 25/96		T.L.	BY: S. LESUE				T.L.	MAR/96	1:25			
				A		ISSUED FOR APPROVAL		SI													

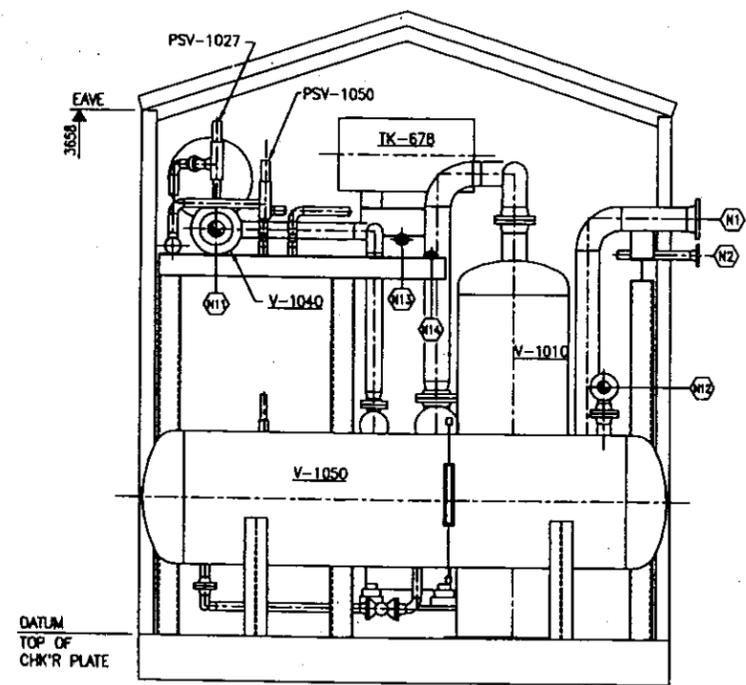
THE DESIGN IT COVERS ARE CONFIDENTIAL AND THE PROPERTY OF PROPAG SYSTEMS LTD. AND SHALL NOT BE REPRODUCED OR USED FOR ANY PURPOSE WHATSOEVER EXCEPT BY WRITTEN CONSENT OF PROPAG.



**SHIPPING WEIGHTS & DIMENSIONS:**  
 SHIPPING WEIGHT: 25075 KG  
 HEIGHT: 4580 mm  
 WIDTH: 4020 mm  
 LENGTH: 11278 mm

NOTE:  
 WEIGHTS SHOWN INCLUDE 50%  
 EXCESS FOR DYNAMIC LOADING

**LIFTING DIAGRAM**

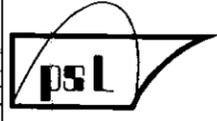


**END VIEW**

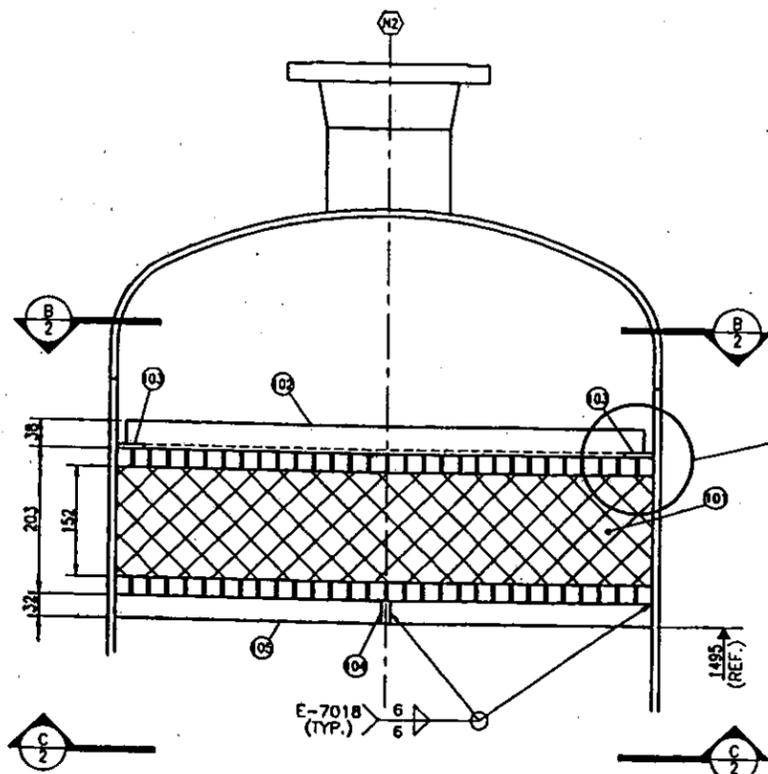
**AS-BUILT**

MAY 15 1996

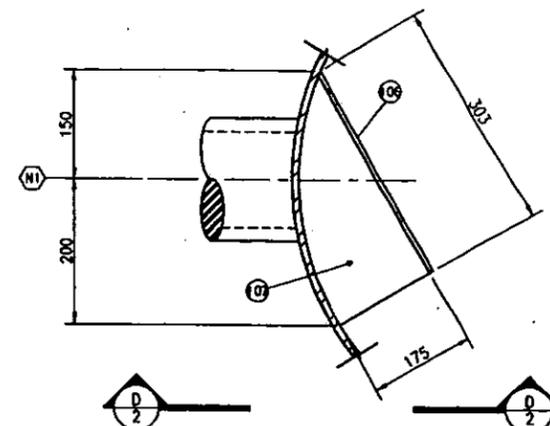
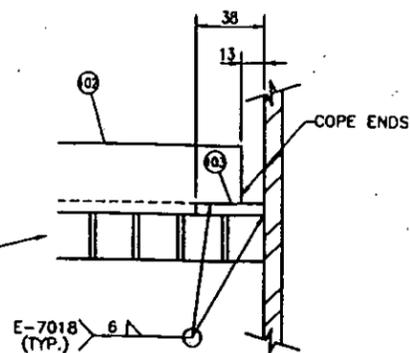
3/jobs95/95261/asy/26125201

GENERAL NOTES		GENERAL NOTES		No.		REVISION		BY	DATE	CKD	ENG	PREPARED BY:	PROPAG SYSTEMS LTD.			ANDERSON OIL & GAS INC.	
												ENGINEERING DESIGN FABRICATION CONSTRUCTION		PUSKASKAU GAS PROJECT			
				2		AS BUILT		SL	MAY 14/96		T.L.	ALBERTA		REFRIGERATION PACKAGE (COMPRESSOR)			
				1		ISSUED FOR CONSTRUCTION		SL	MAR 25/96		T.L.	CANADA		PIPING ASSEMBLY			
				A		ISSUED FOR APPROVAL		SL				BY: S. LESUE	CHECKED	APPROVED	DATE	SCALE	DWC. No.: D-ASY-95261-252
														T.L.	MAR/96	1:25	SHT 3 OF 4 REV 2

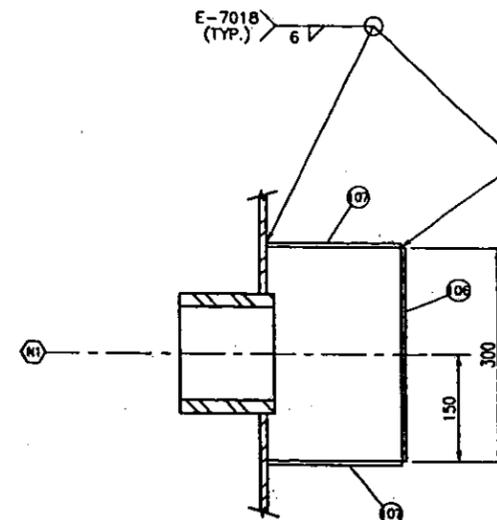




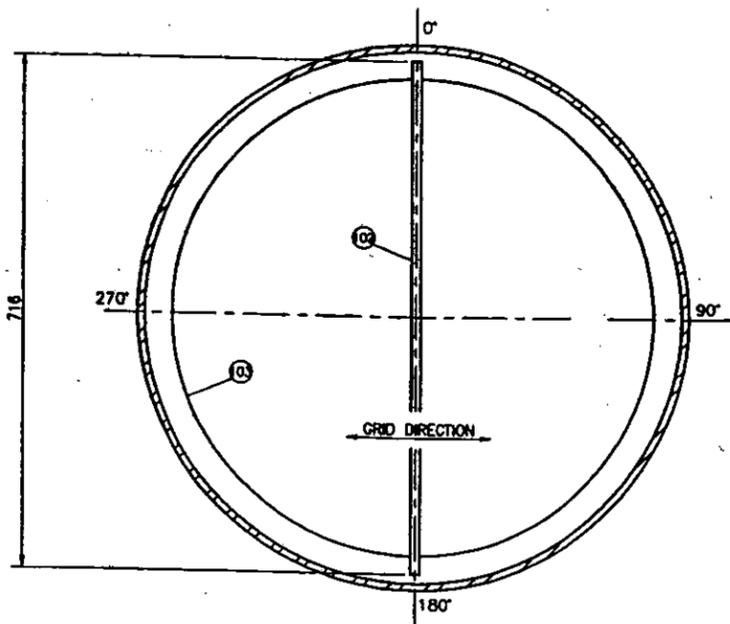
MISTEX SUPPORT DETAIL  
SCALE: 1:5



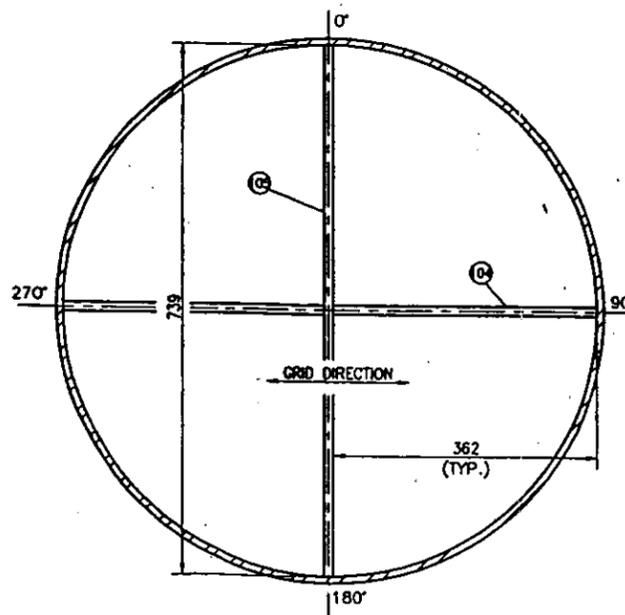
INLET DIVERTER DETAIL  
SCALE: 1:5



VIEW 'D-D'  
SCALE: 1:5



VIEW 'B-B'  
SCALE: 1:5



VIEW 'C-C'  
SCALE: 1:5

APPROVED FOR CONSTRUCTION  
BY: *[Signature]* DATE: March 5/96

FOR INFORMATION ONLY  
MAR 01 1996

BILL OF MATERIAL

ITEM	QUA	DESCRIPTION	
101	1	MISTEX: 152 THK. x 742 O/D x 195 kg/M <sup>2</sup> /w 25 x 3 THK. x 716 O/D C.S. GRIDS EA. SIDE (C.T.S.)	304SS
102	1	FLAT BAR: 13 THK. x 38 x 739 LG. C.T.S.	SA-36
103	1	PLATE: 6 THK. x 739 O/D X 666 I/D	SA-36
104	2	FLAT BAR: 13 THK. x 32 x 362 LG. C.T.S.	SA-36
105	1	FLAT BAR: 13 THK. x 32 x 739 LG. C.T.S.	SA-36
106	1	PLATE: 6 THK. x 300 x 303 LG. C.T.S.	SA-36
107	2	PLATE: 6 THK. x 175 x 303 LG. C.T.S.	SA-36

DATE: 96.02.20 3:54pm FILE NAME: J:\JOB595\95261\DWG\VSL\26120102

GENERAL NOTES

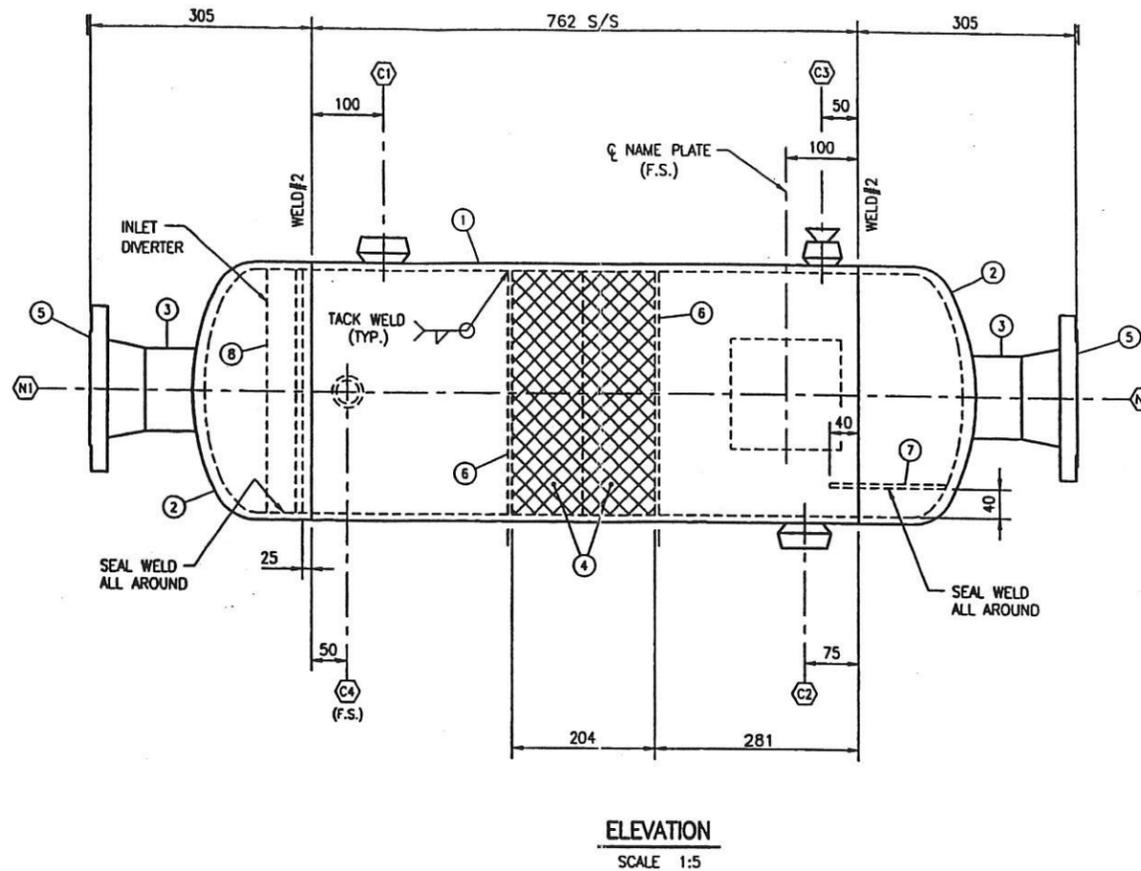
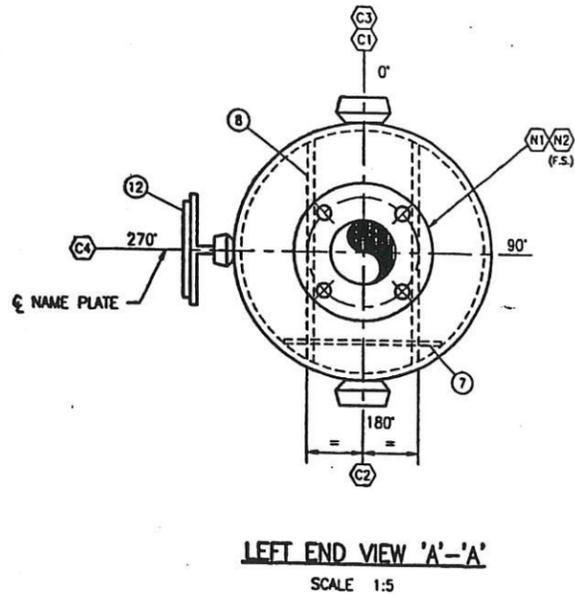
No.	REVISION	BY	DATE	CKD	ENG
1	ISSUED FOR CONSTRUCTION	OLS	96/02/20	L.M.	T.L.
A	ISSUED FOR APPROVAL	OLS	96/02/13		

PREPARED BY:  
**PROPAK SYSTEMS LTD.**  
ENGINEERING DESIGN FABRICATION CONSTRUCTION



ANDERSON OIL & GAS INC.  
PUSKAWKAU GAS PROJECT  
REFRIGERANT SUCTION SCRUBBER  
DETAILS  
DWG. No.: D-SCR-95261-201 SHT. 2 OF 2

THIS DRAWING IS UNCLASSIFIED EXCEPT BY WRITTEN CONSENT



NOZZLE SCHEDULE						
MK	SIZE	RATING	FACING	SCH	SERVICE	PROJ WELD
N1	114	150#	RFWN	STD	INLET	SPEC 10/14
N2	114	150#	RFWN	STD	OUTLET	SPEC 10/14
C1	48	3000#	TOL	-	PSV/INSP. OPENING	- 6
C2	21	3000#	TOL	-	OIL OUT	- 6
C3	48	3000#	TOL	-	VENT/ INSPECTION c/w PLUG	- 6
C4	27	3000#	TOL	-	TI	- 6

BILL OF MATERIAL		
ITEM	QUA	DESCRIPTION
1	1	SHELL: PIPE 356 O/D x 9.53 WT. x 762 LG. (SMLS) SA-106-B
2	2	HEAD: 356 O/D x 9.53 NOM. (7.94 MIN.) 2:1 S.E. w/ 51 S.F. SA-516-70
3	2	PIPE: 114 O/D x 6.02 WT x 108 LG (CTS) SA-106-B
4	2	MISTEX: 337 O/D x 102 THK. x 193 kg/m <sup>3</sup> SA-105
5	2	FLANGE: 114 - 150# RFWN w/ SCH. STD. BORE 304-SS
6	2	EXP. METAL: 334# x NO. 3 HEAVY SA-36
7	1	PLATE: 6 THK. x 150 x 225 LG. (CTS) SA-36
8	1	CHANNEL: C150x12 kg/m x 334 LG. (CTS) SA-36
9	2	TOL: 48 - 3000# ON A 356 O/D RUN (1) c/w PLUG SA-105
10	1	TOL: 21 - 3000# ON A 356 O/D RUN SA-105
11	1	TOL: 27 - 3000# ON A 356 O/D RUN SA-105
12	1	NAME PLATE c/w MOUNTING BRACKET SS/SA-36

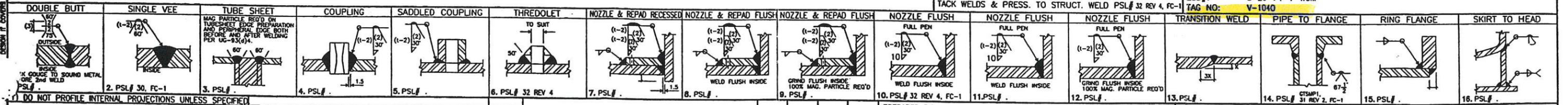
APPROVED  
FOR CONSTRUCTION  
BY: *[Signature]* DATE: *March 5/96*

**DRAWING NOTES:**  
CAPACITY: 0.089 m<sup>3</sup>  
WT. EMPTY: 125 kg.  
WT. FULL OF WATER: 214 kg.  
SURF. PREP: COMM. SANDBLAST SSSP-SP-6  
PRIMER: 2 S/C CARBOLINE 858 2-4 mils DFT  
PAINT: 2 S/C CARBOLINE 890 MARIN BLUE 4-6 mils DFT  
INSULATION: NONE  
IMPACT TEST: YES FOR USE AS FOLLOWS: AVERAGE (3) - MIN-FOR (1) - AT TEMP. - NO-PER UC20(1); UG22; W8888; F16-U6666; F16-U6666; W8888(3) OR F16

**PRODUCTION IMPACT TEST**  
REQUIRED: YES/NO  
SURFACE AREA OF TUBES: N/A  
MANUFACTURERS SPECS:  
1/ Service: PROPANE/CONDENSATE  
2/ Long & circ. welds type 1  
3/ QWP: WP-590.2(on file)  
4/ QCP: A-QPS-1050(on file)  
TACK WELDS & PRESS. TO STRUCT. WELD PSL# 32 REV 4, FC-1

SERIAL NO: 95261-'BB'  
YEAR BUILT: 1996  
CRN:  
CODE: ASME SECT. VIII DIV 1 - FEMO CLASS - YEAR: '95 ADDENDA: YEAR: N/A ADDENDA: N/A  
DESIGN PRESS: 1724 kPa  
DESIGN TEMP: 93 °C  
MIN<sup>m</sup> DESIGN METAL TEMP: -29 °C  
HYDROTEST PRESS: 2586 kPa  
HEAD MATERIAL: SA-516-70  
SHELL MATERIAL: SA-106-B (SMLS)  
RADIOGRAPHY: LONG L - *[unclear]* / SPOT *[unclear]* / N/A  
P.W.H.T.: YES/NO  
CORR. ALLOW: 1.6mm  
LSD#: 3-26-74-1-WGM  
TAG NO: V-1040

**FOR INFORMATION ONLY**  
MAR 01 1996



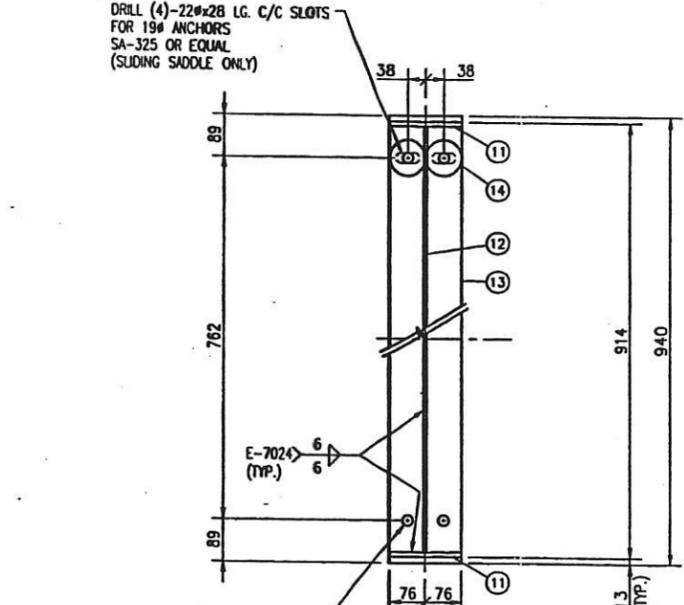
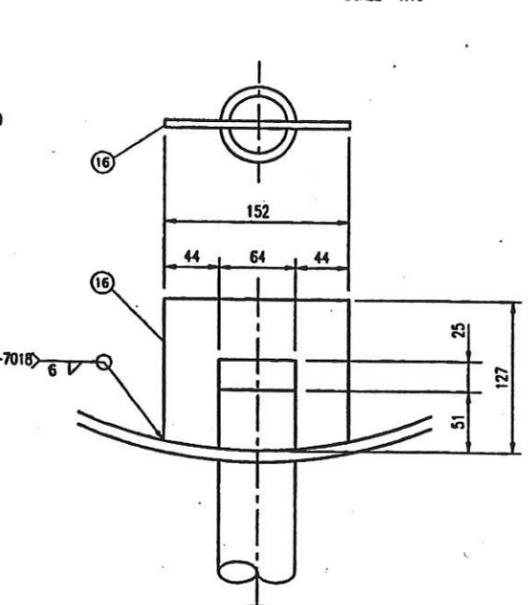
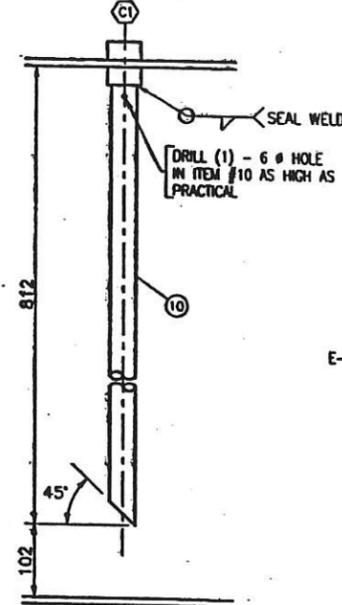
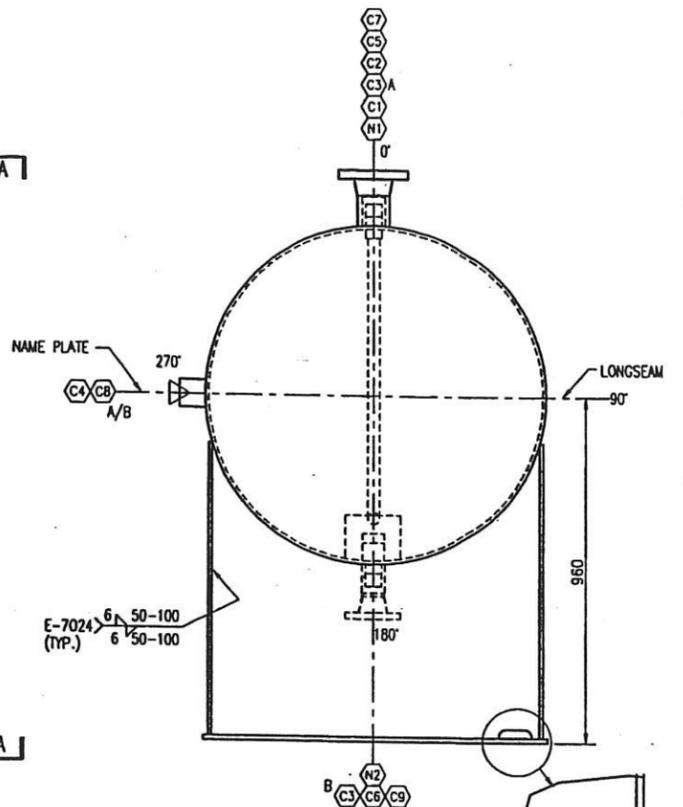
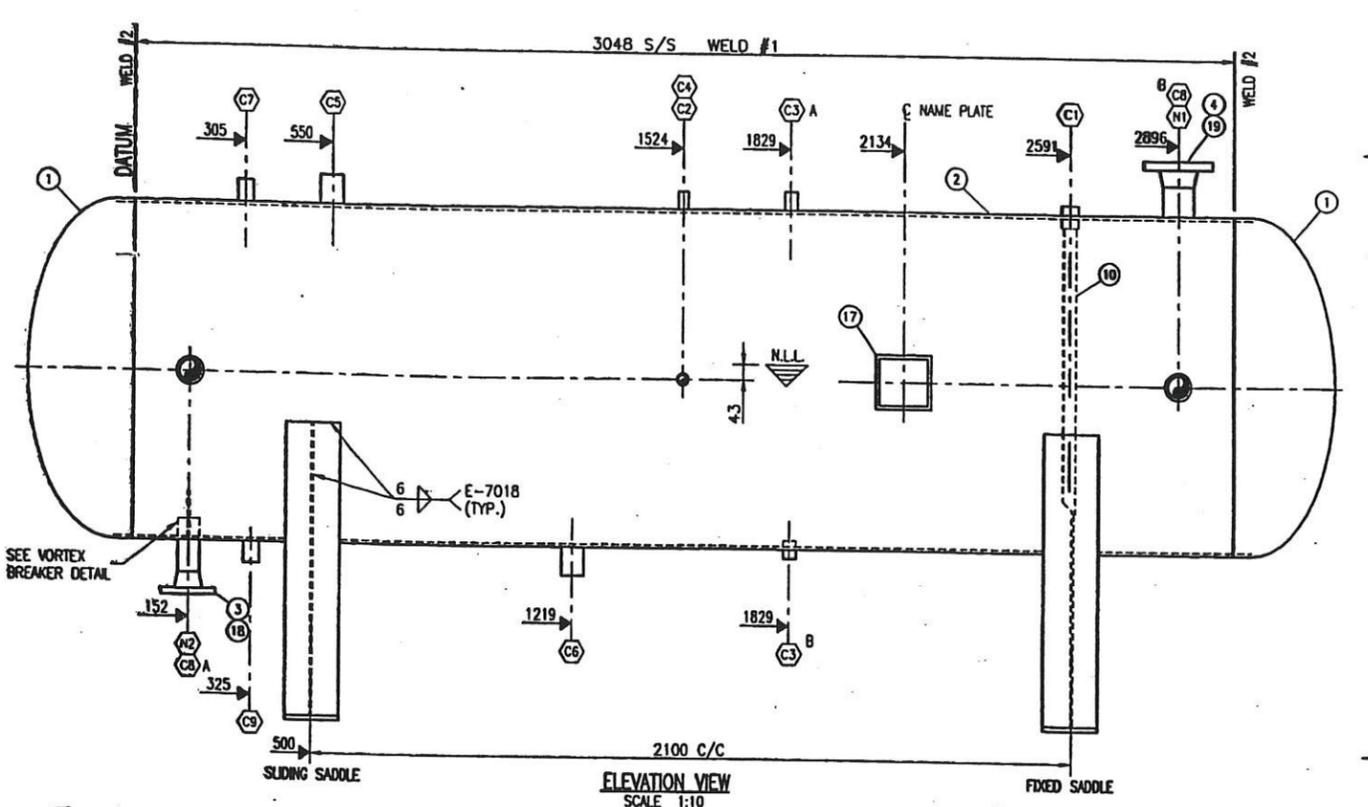
GENERAL NOTES		REVISION		PREPARED BY:		DRAWN		CHECKED		APPROVED		DATE		SCALE	
DO NOT PROFILE INTERNAL PROJECTIONS UNLESS SPECIFIED		1 ISSUED FOR CONSTRUCTION		AIRDRIE		OLS		L.M.		T.L.		96/02/20		AS NOTED	
DATE: 96.02.20 1:24pm FILE NAME: J:\JOBS95\95261\DWG\VSL\26120201		A ISSUED FOR APPROVAL		ALBERTA		BY: OLS		L.M.		T.L.		96/02/13		CANADA	

**PROPAC SYSTEMS LTD.**  
ENGINEERING DESIGN FABRICATION CONSTRUCTION



**ANDERSON OIL AND GAS INC.**  
PUSKASKAU GAS PROJECT  
DISCHARGE OIL SCRUBBER  
356 O/D X 762 S/S V-1040  
DWG. No.: D-SEP-95261-202

THIS DRAWING AND THE PROPERTY OF PROPAC SYSTEMS LTD. AND SHALL NOT BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN CONSENT OF PROPAC.



NOZZLE SCHEDULE						
MK	SIZE	RATING	FACING	SCH	SERVICE	PROJ WELD
N1	89	150#	RFWN	XH	INLET	150 10/14
N2	60	150#	RFWN	160	OUTLET	150 10/14
C1	48	3000#	CPLG		HOT GAS BYPASS	- 4
C2	27	3000#	CPLG		P.I.	- 5
C3	27	3000#	CPLG		L.G.	- 5/4
C4	27	3000#	CPLG		T.I.	- 5
C5	48	3000#	CPLG		P.S.V.	- 5
C6	48	3000#	CPLG		DRAIN	- 5
C7	33	3000#	CPLG		VENT	- 5
C8	60	3000#	CPLG		INSPECTION OPENINGS w/PLUG	- 5
C9	48	3000#	CPLG		FILL	- 5

BILL OF MATERIAL			DESCRIPTION	QUANTITY	SA
1	2	HEAD:	914 I/D x 12.7 NOM. (11.11 MIN.) 2:1 SE w/ 51 S.F. SA-516-70		
2	1	SHELL PLATE:	9.53 THK. x 3048 LG (ROLL TO 914 I/D)		SA-516-70
3	1	FLANGE:	60 - 150# RFWN SCH160 BORE		SA-105
4	1	FLANGE:	89 - 150# RFWN SCH XH BORE		SA-105
5	2	CPLG:	60 - 3000# NPT w/PLUGS		SA-105
6	4	CPLG:	48 - 3000# NPT		SA-105
7	1	CPLG:	33 - 3000# NPT		SA-105
8	4	CPLG:	27 - 3000# NPT		SA-105
9					
10	1	PIPE:	48 OD x 5.08 WT x 820 LG SMLS T.O.E. (C.T.S)		SA-106-B
11	4	FLAT BAR:	10 THK. x 152 x 812 LG		SA-36
12	2	FLAT BAR:	6 THK. x 895 x 812 LG (C.T.S.)		SA-36
13	2	FLAT BAR:	13 THK. x 152 x 940 LG		SA-36
14	4	WASHER:	13 THK. x 76 O/D x 22 I/D		SA-36
15					
16	1	FLAT BAR:	6 THK. x 152 x 127 LG (C.T.S.)		SA-36
17	1	NAME PLATE:	c/w MOUNTING BRACKET		304SS/SA-36
18	1	PIPE:	60 O/D x 8.71 WT x 160 LG. SMLS (C.T.S)		SA-106-B
19	1	PIPE:	89 OD x 7.62 WT x 118 LG SMLS		SA-106-B

APPROVED FOR CONSTRUCTION  
 BY: *[Signature]* DATE: *March 1996*

**DRAWING NOTES:**  
 CAPACITY: 2.27 m3  
 WT. EMPTY: 1070 kg  
 WT. FULL OF WATER: 3340 kg  
 SURF. PREP: COMM. SANDBLAST SSPC-SP6  
 PRIMER: LATER  
 PAINT: LATER  
 INSULATION: NONE  
 IMPACT TEST: YES - PER UG64 AS FOLLOWS - AVERAGE (3) - MIN. FOR (1) - AT TEMP. - NO - PER UG20 (1) UG22 UG66 - RC-UG66 FC-UG66 - UG66 (c) SR-FAG -

**PRODUCTION IMPACT TEST REQUIRED:** YES (NO)  
 SURFACE AREA OF TUBES: .  
 MANUFACTURERS SPECS:  
 1/ Service: PROPANE  
 2/ Long & circ. welds type 1  
 3/ QWP: WP-590.2(on file)  
 4/ OCP: A-QPS-1050(on file)  
 TACK WELDS & PRESS. TO STRUCT. WELD PSL# 32 REV 4/FC-1

SERIAL NO: 95261 'BC'  
 YEAR BUILT: 1996  
 CRN:  
 CODE: ASME SECT. VIII DIV I  
 YEAR: '95 ADDENDA:  
 DESIGN PRESS: 1724 kPa  
 DESIGN TEMP: 93 °C  
 MIN<sup>m</sup> DESIGN METAL TEMP: -29 °C  
 HYDROTEST PRESS: 2586 kPa  
 HEAD MATERIAL: SA-516-70  
 SHELL MATERIAL: SA-516-70  
 RADIOGRAPHY: LOW-LEVEL FULL-UMW (c) SPOT UMW (d) HIL-UMW (e) CR- FULL-UMW (c) SPOT UMW (d) HIL-UMW (e) SPOT UMW (c) - (f) - (g) -

F.W.H.T.: YES (NO)  
 CORR. ALLOW: MIN. TEMP. . TIME: . 1.59 mm

LSD#: 3-26-74-1-WGM  
 TAG NO: V-1050

FOR INFORMATION ONLY  
 MAR 01 1996

DOUBLE BUTT	SINGLE VEE	TUBE SHEET	COUPLING	SADDLED COUPLING	THREDOLET	NOZZLE & REPAID RECESSED	NOZZLE & REPAID FLUSH	NOZZLE & REPAID FLUSH	NOZZLE RECESSED	NOZZLE FLUSH	NOZZLE FLUSH	TRANSITION WELD	PIPE TO FLANGE	RING FLANGE	SKIRT TO HEAD
1. PSL# 30 / FC-1	2. PSL# 30 / FC-1	3. PSL# .	4. PSL# 32 REV 4	5. PSL# 32 REV 4	6. PSL# .	7. PSL# .	8. PSL# .	9. PSL# .	10. PSL# 32 REV 4 / FC-1	11. PSL# .	12. PSL# .	13. PSL# .	14. PSL# 31 REV 2 / FC-1	15. PSL# .	16. PSL# .

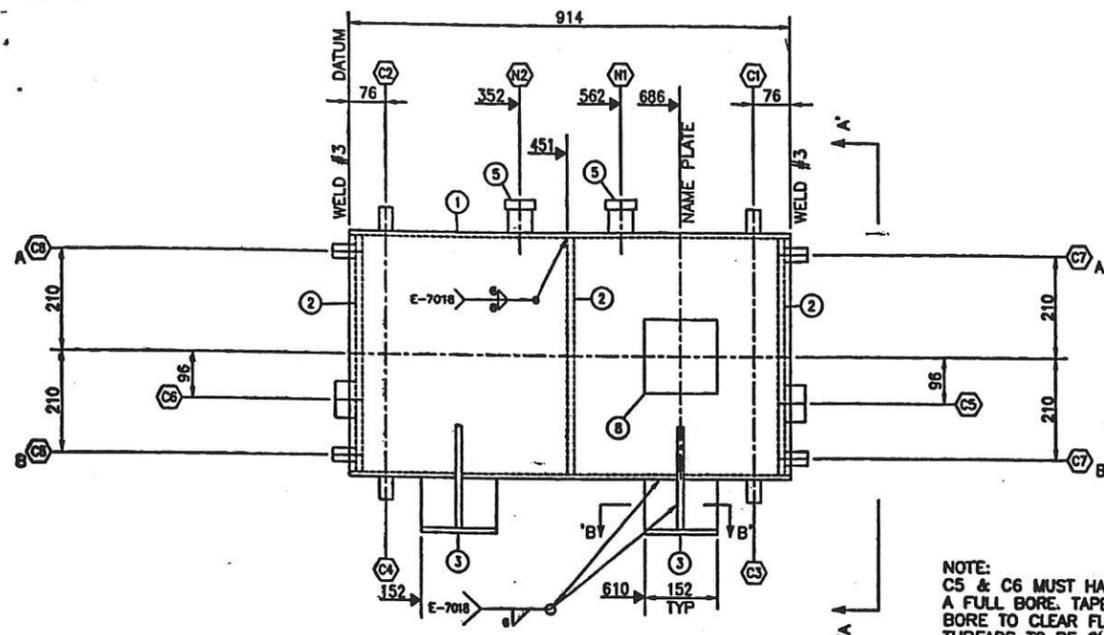
GENERAL NOTES: 2 C9 (FILL NOZZLE) WAS 33  
 1 ISSUED FOR CONSTRUCTION  
 A ISSUED FOR APPROVAL

DATE: 96.02.22 9:07am FILE NAME: J:\JOBS95\95261\DWG\VSL\26120301

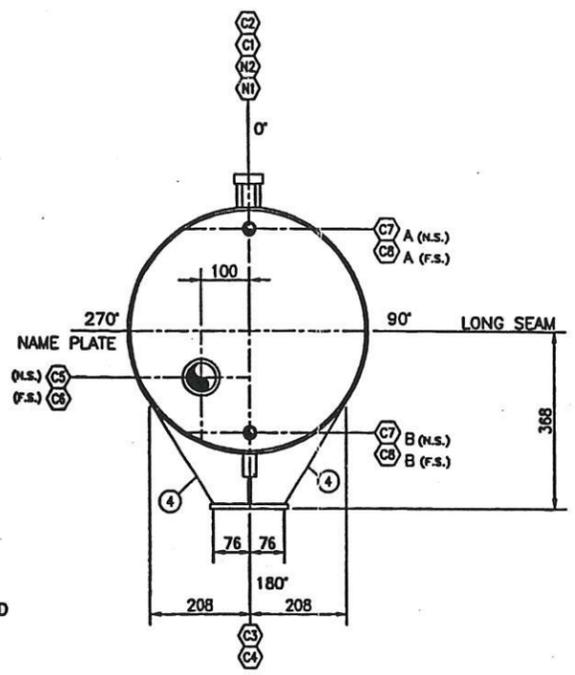
PREPARED BY: **PROPAC SYSTEMS LTD.**  
 ENGINEERING DESIGN FABRICATION CONSTRUCTION

ANDERSON OIL AND GAS INC.  
 PUSKASKAU GAS PROJECT  
 REFRIGERANT RECEIVER  
 914 I/D x 3048 S/S V-1050

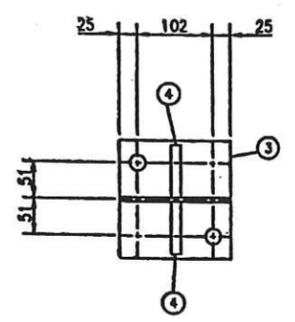
DWG. No.: D-REC -- 95261-203



ELEVATION  
SCALE 1:7.5



VIEW 'A-A'  
SCALE 1:7.5



VIEW 'B-B'  
SCALE 1:5

NOTE:  
C5 & C6 MUST HAVE  
A FULL BORE, TAPER  
BORE TO CLEAR FLOAT.  
THREADS TO BE CLEANED  
AFTER WELDING.

NOZZLE SCHEDULE						
MK	SIZE	RATING	FACING	SCH	SERVICE	PROJ
N1	TO SUIT	48kPa	-	-	JACKET WATER RAD. CAP	-
N2	TO SUIT	48kPa	-	-	AUX. WATER RAD. CAP	-
C1	27	3000#	CPLG.	-	JACKET WATER VAPOUR	5
C2	27	3000#	CPLG.	-	AUX. WATER VAPOUR	5
C3	21	3000#	CPLG.	-	JACKET WATER EXPANSION	5
C4	21	3000#	CPLG.	-	AUX. WATER EXPANSION	5
C5	60	3000#	1/2 CPLG.	-	LLSD-678	4
C6	60	3000#	1/2 CPLG.	-	LLSD-679	4
C7	27	3000#	CPLG.	-	LG-678	5
C8	27	3000#	CPLG.	-	LG-679	5

BILL OF MATERIAL		
ITEM	QUA	DESCRIPTION
1	1	SHELL PIPE: 508 O/D X 9.53 WT X 914 LG SMLS SA-106-B
2	3	PLATE: 13 THK x 486 O/D SA-36
3	2	W310@39KG/M x 152 Lg (CUT TO SUIT) SA-36
4	4	FLAT BAR: 13 THK x 203 x 212 Lg (CUT TO SUIT) SA-36
5	2	RADIATOR CAP & HOLDER (PURCHASED BY ENG.) SA-36
6	2	FULL CPLG: 21# 3000# NPT SA-105
7	2	HALF CPLG: 60# 3000# NPT SA-105
8	1	NAME PLATE C/W MOUNTING BRACKET S.S./SA-36
9	6	FULL CPLG: 27# 3000# NPT SA-105

APPROVED  
FOR CONSTRUCTION  
BY: *[Signature]* DATE: *March 5/96*

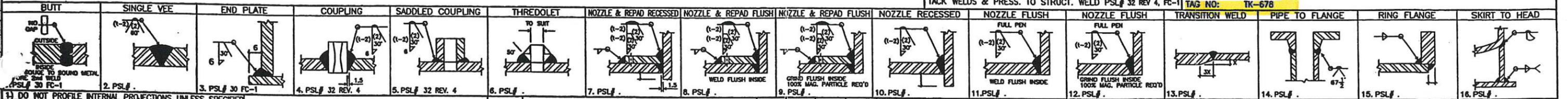
DRAWING NOTES:  
CAPACITY: 0.18 CU. M.  
WT. EMPTY: 160 KG  
WT. FULL OF WATER: 340 KG  
SURF. PREP: COMM. SANDBLAST SSPC-SP6  
PRIMER: 2 S/C CARBOZINC 11 2-3 mils FINAL DFT  
PAINT: 2 S/C CARBOUNE 4674 2-4 mils FINAL DFT COLOR ALUMINUM  
INSULATION: NONE

SERIAL NO: 95261 'BD'  
YEAR BUILT: 1996  
CRN:  
CODE: 'NON-CODE'  
DESIGN PRESS: 97 kPaG  
DESIGN TEMP: 149 °C  
MIN<sup>m</sup> DESIGN METAL TEMP: -29 °C  
HYDROTEST PRESS: 146 kPaG  
HEAD MATERIAL: SA-36  
SHELL MATERIAL: SA-106-B SMLS  
RADIOGRAPHY: LONG L N/A  
CIRC: N/A  
P.W.H.T.: NO  
CORR. ALLOW: 1.6mm

FOR INFORMATION ONLY  
MAR 07 1996

MANUFACTURERS SPECS:  
1/ Service: WATER  
2/ Long & circ. welds type 1  
3/ QWP: WP-590.2(on file)  
4/ QCP: A-QPS-1050(on file)  
TACK WELDS & PRESS. TO STRUCT. WELD PSL# 32 REV 4, FC-1

LSO#: 3-26-74-1-W6M  
TAG NO: TK-678



GENERAL NOTES		GENERAL NOTES		REVISION		PREPARED BY:		DRAWN		CHECKED		APPROVED		DATE		SCALE	
1) DO NOT PROFILE INTERNAL PROJECTIONS UNLESS SPECIFIED		ITEM#1 WAS A 6 mm THK PL (ROLLED TO 508 O/D); ITEM#2 WAS 493 O/D		No.		BY: QLS		CKD		ENG		AIRDRIE		ALBERTA		CANADA	
DATE: 96.02.28 12:56pm FILE NAME: J:\JOBS95\95261\DWG\VSL\26120401		ISSUED FOR CONSTRUCTION		1		DATE: 96/02/28		MM		TL		DATE: 96/02/14		AS NOTED			
		ISSUED FOR APPROVAL		A		DATE: 96/02/14		L.M.		T.L.		DATE: 96/02/14		AS NOTED			

PROPAC SYSTEMS LTD.  
ENGINEERING DESIGN FABRICATION CONSTRUCTION



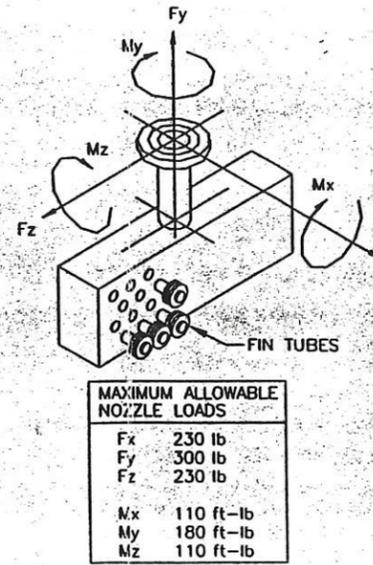
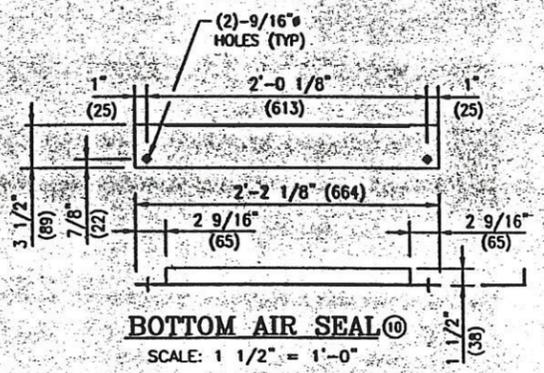
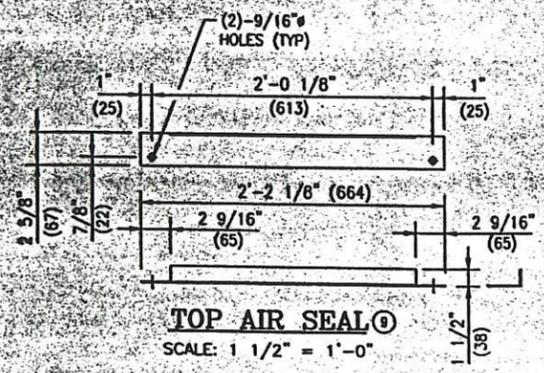
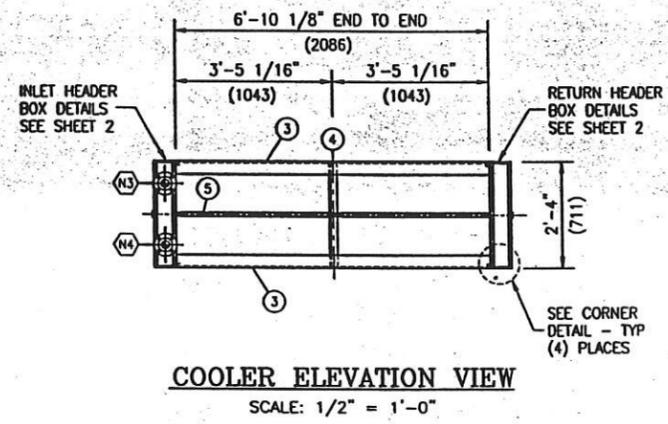
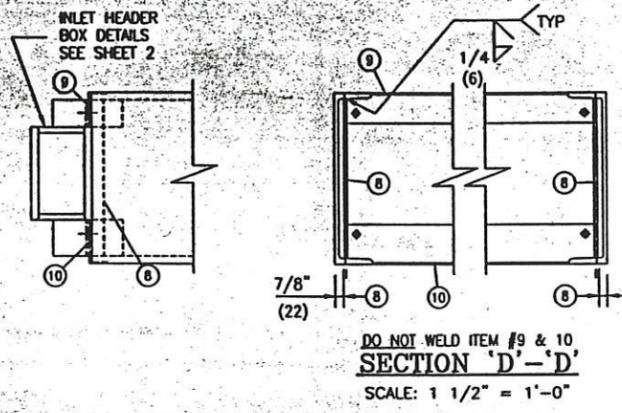
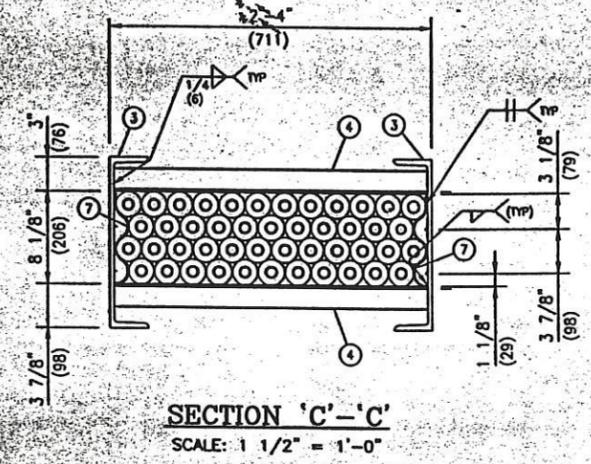
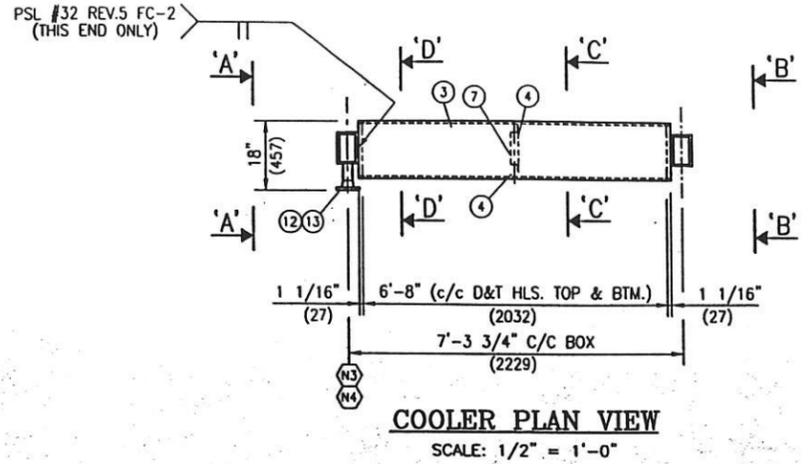
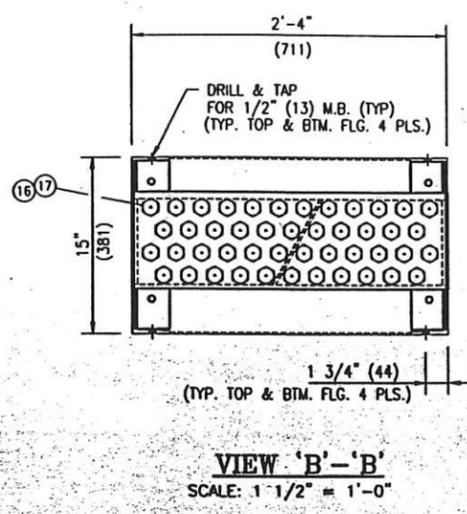
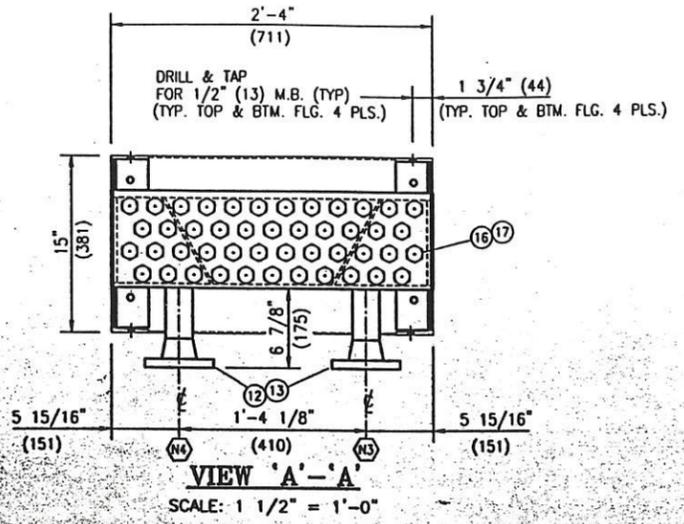
ANDERSON OIL & GAS INC.  
PUSKASKAU GAS PROJECT  
JACKET WATER SURGE TANK  
508 O/D X 914 LONG  
DWG. No.: D-TNK-95261-204 SHT. 1 OF 1 REV 2

**AIR-COOLED HEAT EXCHANGER SPECIFICATION SHEET**

224,000 x 1.1 = 246,400 Btu/hr

1	Company:	Anderson Oil and Gas Inc.		
2	Location:	Puskwaskau Gas Project		
3	Service of Unit:	TAW Cooler	Our Reference:	
4	Item No.:	E-676	Your Reference:	
5	Date:	November 13, 1995	Rev No.:	0
			Job No.:	
6	Size & Type	96/ 32	Type	Forced draft
			Number of Bays	1
7	Surface/Unit-Finned Tube	1892 ft <sup>2</sup>	Bare Tube	88 ft <sup>2</sup>
8	Heat Exchanged	218000 Btu/h	MTD, Eff.	32 F
9	Transfer Rate-Finned	3.5 Bare Service	76.3 Clean	114.5 Btu/(ft <sup>2</sup> *h*F)
10	PERFORMANCE DATA - TUBE SIDE			
11	Fluid Circulated	50/50 EG/H <sub>2</sub> O TAW		In/Out
12	Total Fluid Entering	23316 lb/h	Density, Liq	lb/ft <sup>3</sup> 64.8/ 64.9
13		In/Out	Density, Vap	/
14	Temperature F	141/ 130	Specific Heat, Liq	0.849/ 0.851
15	Liquid lb/h	23316/	Vap	Btu/(lb*F) /
16	Vapor lb/h	/	Therm Cond, Liq	0.24/ 0.23
17	Noncond lb/h	/	Vap	Btu/(ft <sup>2</sup> *h*F) /
18	Steam lb/h	/	Freeze Point	F
19	Water lb/h	/	Bubble Point	Dew Point
20	Molecular Wt, Vap	/	Latent Heat	Btu/lb
21	Molecular Wt, NC	/	Inlet Pressure	20 psia
22	Viscosity, Liq	cp 1.1/ 1.6	Pres Drop, Allow/Calc	5/ 0.79
23	Viscosity, Vap	/	Fouling Resist.	0.001 ft <sup>2</sup> *h*F/Btu
24	PERFORMANCE DATA - AIR SIDE			
25	Air Quantity, Total	36345 lb/h	Altitude	2500 2020 ft
26	Air Quantity/Fan	1 0	ft <sup>3</sup> /min	Temperature In 90 F
27	Static Pressure	0.45 in H <sub>2</sub> O	Temperature Out	115 F
28	Face Vel. 9.8 ft/s	Bundle Vel. 4898.24 lb/h/ft <sup>2</sup>	Design Ambient	-40 F
29	DESIGN - MATERIALS - CONSTRUCTION			
30	Design Pressure 50 psig	Test Pressure 75	Design Temperature	250 F
31	TUBE BUNDLE		HEADER	
32	Size 96	Type Plug	Material SA-179	
33	Number/Bay 1	Material	Seamless	
34	Tube Rows 4	Passes 4	OD 1.0	Min Tks 0.083 in
35	Arrangement	Plug Mat.	No./Bun 48	Lng 7 ft
36	Bundles 1 Par 1 Ser	Gasket Mat.	Pitch 2.26/ 1.9572	Stgrd
37	Bays 1 Par 1 Ser	Corr Allow 0.0625 in	FIN	
38	Bundle Frame Welded Stl	Inlet Nozzle (1) 2 in	Type L-Type tension	
39	MISCELLANEOUS	Outlet Nozzle (1) 2 in	Material Aluminum	
40	Struct. Mount. Grade	Special Nozzles	OD 2.25	Tks 0.016 in
41	Surf Prep.	Rating/Facing 150 RF	No. 10/in	Des Temp F
42	Louvers Manual	TI PI	Code- ASME VIII, DIV 1	
43	Vibration Switches	Chem Cleaning	Stamp- Yes	Specs TEMA C
44	MECHANICAL EQUIPMENT			
45	Fan, Mfr. & Model	Driver, Type	Speed Reducer, Type	
46	No./Bay RPM	Mfr.	Mfr. & Model	
47	Dia. Blades	No./Bay hp/Dr	No./Bay	
48	Pitch Angle	RPM	Rating hp	
49	Blade Hub	Enclosure	Ratio	
50	hp/Fan Min Amb	V/Phase/Hz / /	Support	
51	Control Action on Air Failure-	none	Louvers	none
52	Degree Control of Outlet Process Temperature		F	
53	Recirculation none		Steam Coil	No
54	Plot Area ft <sup>2</sup>	Drawing No.	Wt.-Bundle	Shpng lb
55	Notes:			
56	COMMON FRAME, FANS, LOUVERS, BUGSCREEN AND HAILGUARD WITH EJW COOLER			
57				
58				
59				

THIS DRAWING AND THE PROPERTY OF PROPAG SYSTEMS LTD. AND SHALL NOT BE REPRODUCED OR USED FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OF PROPAG.



**MAXIMUM ALLOWABLE NOZZLE LOADS**

Fx	230 lb
Fy	300 lb
Fz	230 lb
Mx	110 ft-lb
My	180 ft-lb
Mz	110 ft-lb

**DRAWING NOTES:**

- CAPACITY: 2.15 cu ft (0.060 cu M)
- WT. EMPTY: 1290 lbs (585 kg)
- WT. FULL OF WATER: 1420 lbs (645 kg)
- SURF. PREP: COMM. SANDBLAST SSPC-SP6
- PRIMER: 1 S/C CARBOLINE 890 (2-4 mils DFT)
- PAINT: 1 S/C CARBOLINE 890 (4-6 mils DFT) COLOR: C-705 GREY
- INSULATION: NONE
- IMPACT TEST: NONE

**PRODUCTION IMPACT TEST REQUIRED:** YES [NO] 84 sq ft BARE / 1675 sq ft FINNED

**MANUFACTURERS SPECS:** 1/ Service: HYDROCARBONS 1759 sq ft TOTAL

2/ Long & circ. welds type 1  
3/ QWP: WP-590.2(on file)  
4/ QCP: A-QPS-1050(on file)

TACK WELDS & PRESS. TO STRUCT. WELD PSL# 32 REV 5, FC-2

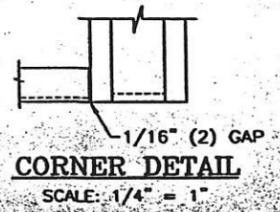
NOZZLE SCHEDULE						
MK	SIZE	RATING	FACING	SCH	SERVICE	
N3	2" NPS (60)	150#	RFWN	160	AUX. WATER OUTLET	PROJ 6 7/8" WELD 11/14"
N4	2" NPS (60)	150#	RFWN	160	AUX. WATER INLET	6 7/8" 11/14"

ITEM QUA		DESCRIPTION	
3	2	SIDE CHANNELS: C 15 x 33.9 lbs/ft x 6'-10 1/8" (2086) LG.	G40.21-44W (G40.21W-300W)
4	2	TOP & BOT. SUPP: L 2 (51) x 2 (51) x 1/4" (6) x 2'-3 1/4" (692) LG.	SA-36
5	46	TUBES: 1 (25) # x 14 BWG x 7'-0" (2134) LG.	SA-179
c/w L-TENSION ALUMINUM FINN 0.016" THK x 0.625" HIGH, 10 FINS/INCH			
c/w ALUMINUM WRAPS AT SUPPORTS			
7	2	FLAT BAR: 0.125 (3) THK. x 2 (51) x 15 3/4" (400) LG. (SHOP FORM)	SA-36
8	4	FLAT BAR: 0.25 (6.35) THK. x 1 (25) x 13 9/16" (344) LG.	SA-36
9	2	TOP AIR SEAL: PLATE 0.125 (3) THK x 3 7/8" (98) x 2'-2 1/8" (664) LG.	SA-36
BEND & C.T.S. (SEE DETAIL)			
10	2	BOT. AIR SEAL: PLATE 0.125 (3) THK x 4 3/4" (121) x 2'-2 1/8" (664) LG.	SA-36
BEND & C.T.S. (SEE DETAIL)			
12	2	FLANGE: 2" NPS (60) - 150# RFWN SCH. 160	SA-105
13	2	PIPE: 2" NPS (60) x 0.343 (8.71) W.T. x 4 1/2" (114) LG (CTS)	SMLS SA-106-B
16	92	GASKET: 1 3/8" (35) O/D x 1 3/16" (30.16) I/D x 1/16" (1.59) THK.	C-1010/20
17	92	HEX PLUG: 1 1/8" (29) # - 12 UNF x 3/4" (19) LG.	SA-105

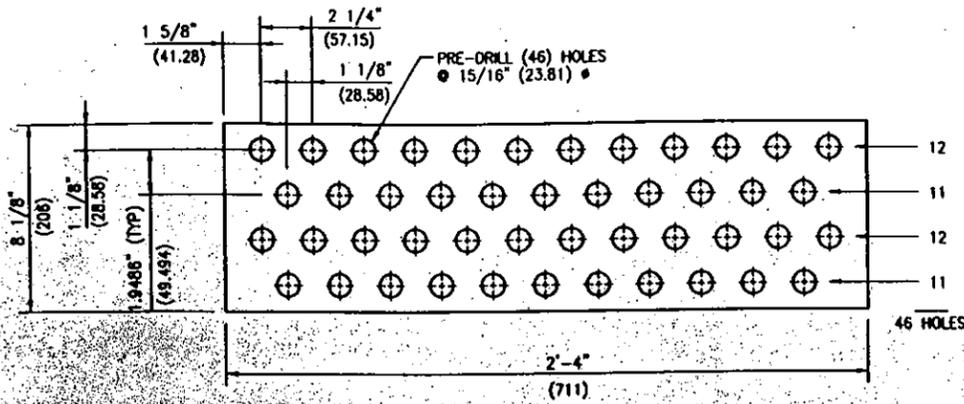
MAR 19 1996

ISSUED FOR APPROVAL



DOUBLE BUTT	SINGLE VEE	TUBE SHEET	COUPLING	SADDLED COUPLING	THREDOLET	NOZZLE & REPAID RECESSED	NOZZLE & REPAID FLUSH	NOZZLE & REPAID FLUSH	NOZZLE RECESSED	NOZZLE ABUTTED	NOZZLE FLUSH	TRANSITION WELD	PIPE TO FLANGE	RING FLANGE	SKIRT TO HEAD
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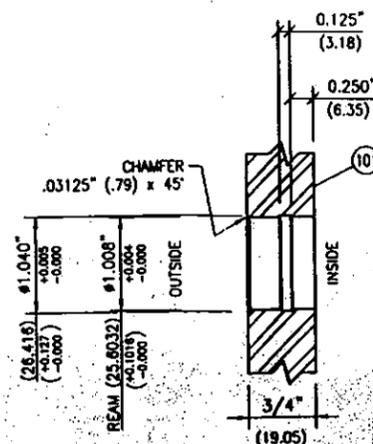
GENERAL NOTES		GENERAL NOTES		A ISSUED FOR APPROVAL		D.C. 19 MAR T.E. T.W.		PREPARED BY: PROPAG SYSTEMS LTD. ENGINEERING DESIGN FABRICATION CONSTRUCTION		ANDERSON OIL & GAS INC.		20 MMSCFD REFRIGERANT PLANT TAW COOLER -E-676		DWG. No.: D-BDL-95261-431 SHT. 1 OF 2	
DATE: 96.03.19 9:35am FILE NAME: J:\JOBS95\95261\DWG\COOLERS\VERTICAL\26143101		A		No.		BY: L.WATKINS DATE: 11 MAR '96		CHECKED: T. EWING APPROVED: T. WU		SCALE: AS NOTED					



**TUBESHEET/PLUGSHEET LAYOUT**

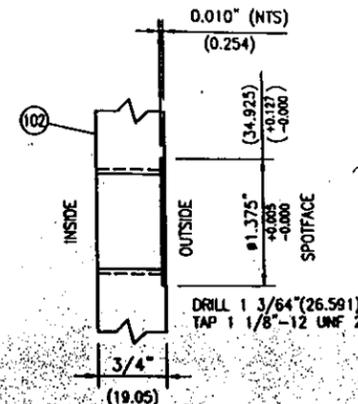
SCALE: 1/4" = 1"

- (101) (2)-TUBESHEETS REQUIRED
- (102) (2)-PLUGSHEETS REQUIRED



**TUBESHEET HOLES**

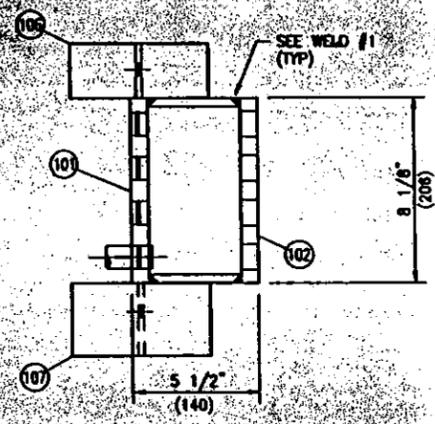
SCALE: 1" = 1"



**PLUGSHEET HOLES**

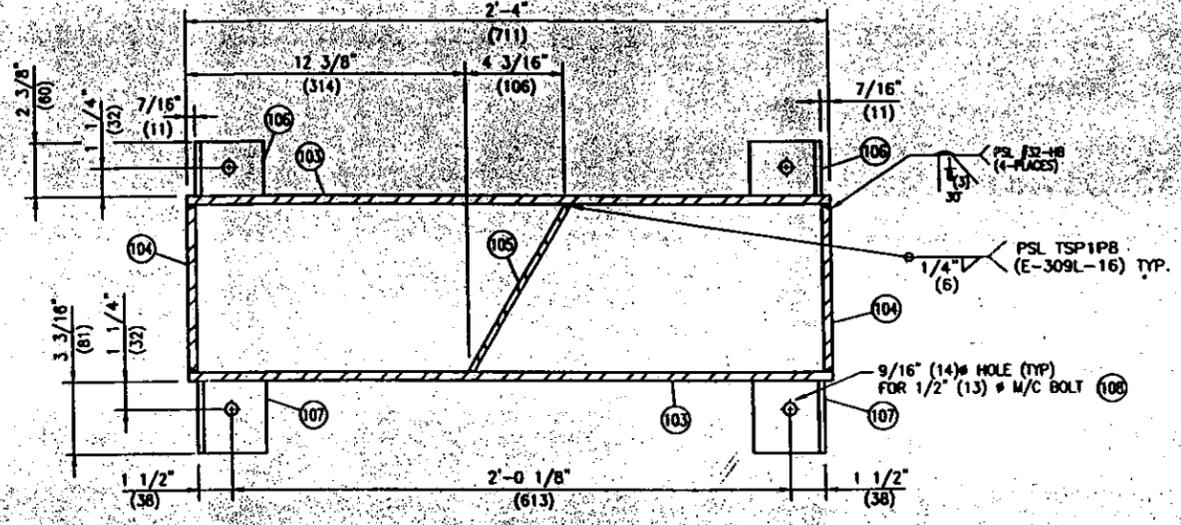
SCALE: 1" = 1"

BILL OF MATERIAL		
ITEM	QUA	DESCRIPTION
101	2	H.B. TUBESHEET-PLATE: 3/4" (19.05) THK. x 8 1/8" (206) x 2'-4" (711) LG. SA-516-70N
102	2	PLUGSHEET-PLATE: 3/4" (19.05) THK. x 8 1/8" (206) x 2'-4" (711) LG. SA-516-70N
103	4	PLATE: 3/8" (9.5) THK. x 3 3/4" (95) x 2'-4" (711) LG. SA-516-70N
104	4	PLATE: 3/8" (9.5) THK. x 3 3/4" (95) x 7 1/8" (181) LG. SA-516-70N
105	3	PLATE: 1/4" (6) THK. x 4" (102) x 8 3/8" (213) LG. SA-240-334
106	4	WT 3 x 10 lbs/l x 2 3/8" (60) LG. C40.21-4W (C40.21W-30W)
107	4	WT 3 x 10 lbs/l x 3 3/16" (61) LG. C40.21-4W (C40.21W-30W)
108	8	M/C BOLTS: 1/2" (13) # UNF x 1 1/4" (32) LG. SA-325



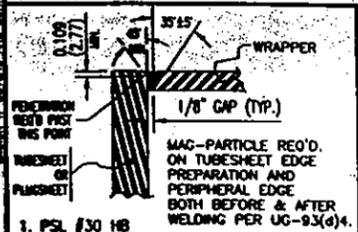
**RETURN HEADER BOX DETAIL**

SCALE: 1/4" = 1"



**INLET HEADER BOX DETAIL**

SCALE: 1/4" = 1"  
(SEE DIM ON RETURN HEADER)  
(FOR ITEM #106 & 107)



**ISSUED FOR APPROVAL**

**MAR 19 1996**

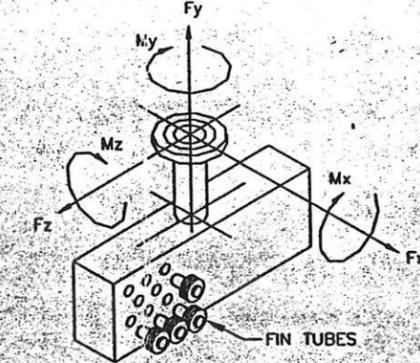
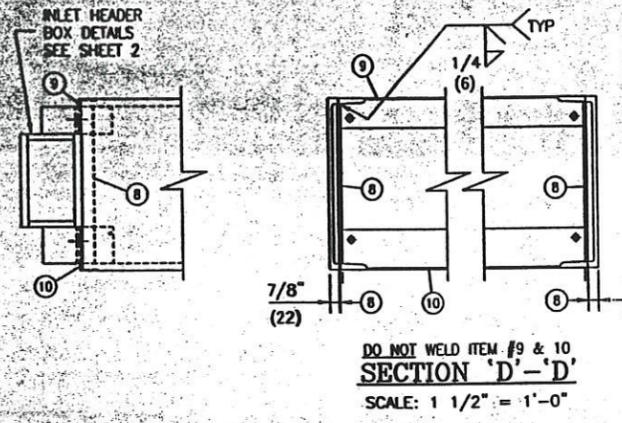
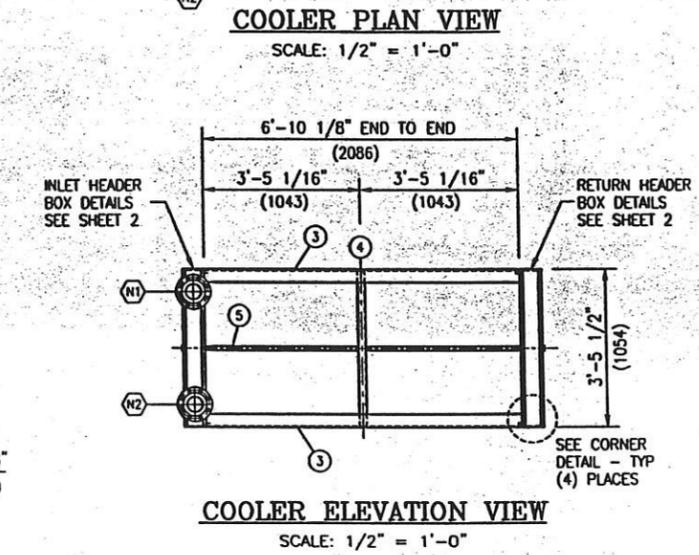
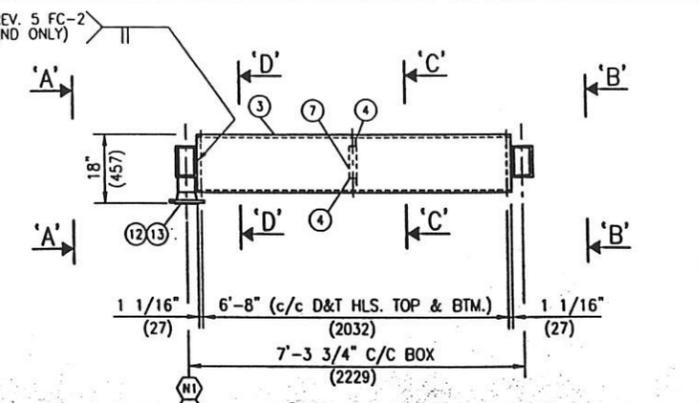
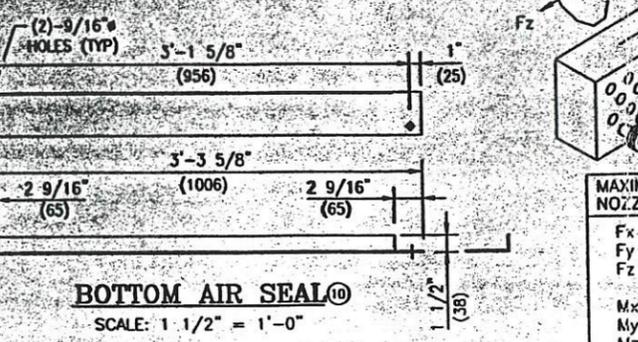
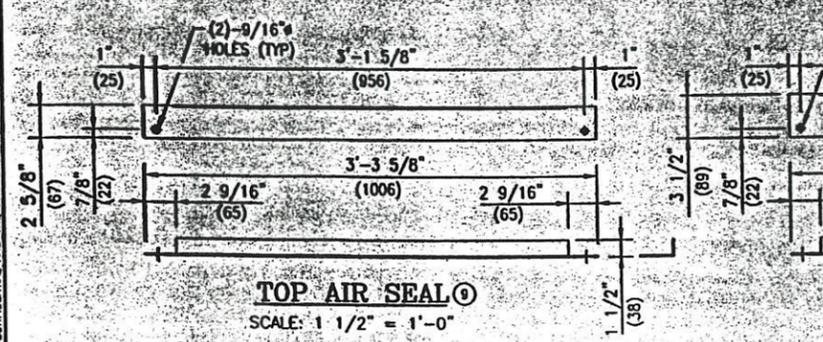
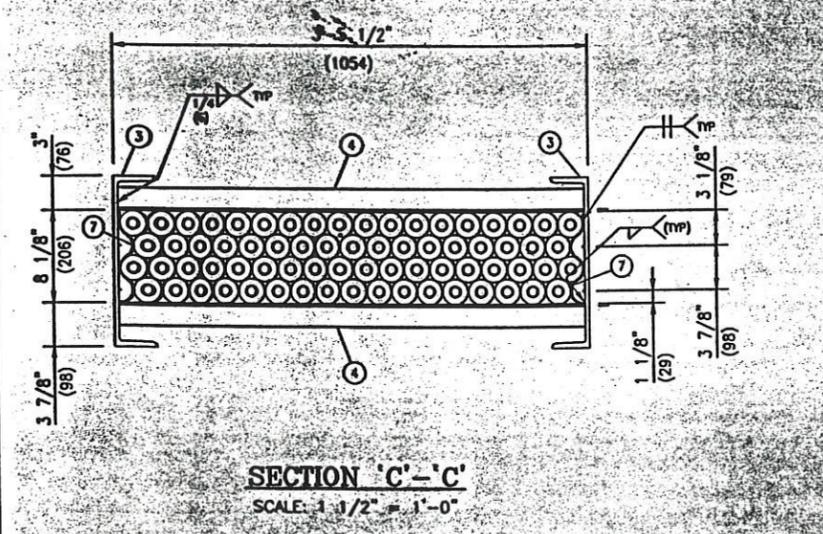
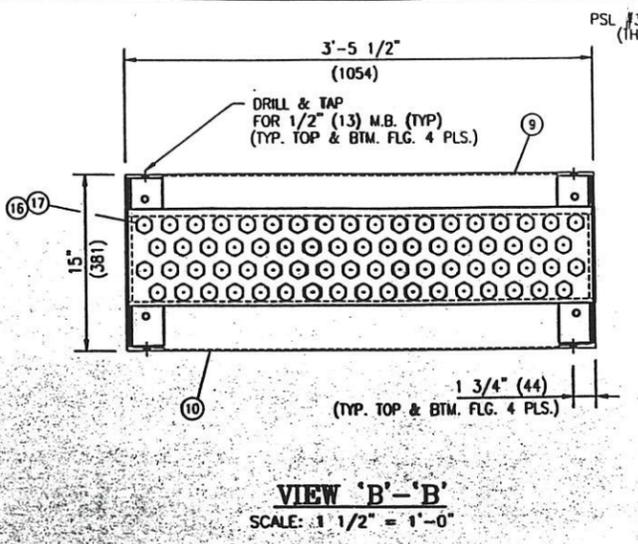
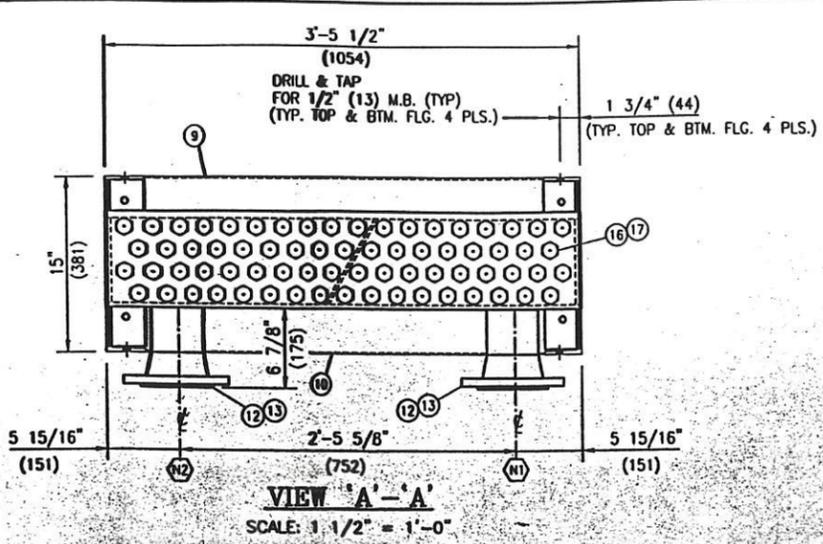
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<p>REVISION</p>		<p>REVISION</p>		<p>BY DATE CKD ENG</p>		<p>BY DATE CKD ENG</p>		<p>SCALE</p>		<p>SCALE</p>		<p>DWG. No.: D-BDL-95261-431 SHT. 2 OF 2 REV. A</p>	

**AIR-COOLED HEAT EXCHANGER SPECIFICATION SHEET**

1	Company:	Anderson Oil and Gas Inc.		
2	Location:	Puskaskau Gas Project		
3	Service of Unit:	EJW Cooler		
4	Item No.:	E-679	Our Reference:	
5	Date:	November 13, 1995	Rev No.:	0
			Your Reference:	
6	Size & Type	96/46	Type	Forced draft
7	Surface/Unit-Finned Tube	2839 ft <sup>2</sup>	Bare Tube	132 ft <sup>2</sup>
8	Heat Exchanged	625000 Btu/h	MTD, Eff.	62 F
9	Transfer Rate-Finned	3.6 Bare, Service	76.9 Clean	110.6 Btu/(ft <sup>2</sup> *h*F)
10	PERFORMANCE DATA - TUBE SIDE			
11	Fluid Circulated	50/50 EG/H <sub>2</sub> O EJW		
12	Total Fluid Entering	49017 lb/h	Density, Liq	lb/ft <sup>3</sup> 63.53/ 63.86
13		In/Out	Density, Vap	/
14	Temperature F	185/ 170	Specific Heat, Liq	0.851/ 0.849
15	Liquid lb/h	49017/	Vap	Btu/(lb*F) /
16	Vapor lb/h	/	Therm Cond, Liq	0.233/ 0.246
17	Noncond lb/h	/	Vap	Btu/(ft <sup>2</sup> *h*F) /
18	Steam lb/h	/	Freeze Point	F
19	Water lb/h	/	Bubble Point	Dew Point
20	Molecular Wt, Vap	/	Latent Heat	Btu/lb
21	Molecular Wt, NC	/	Inlet Pressure	20 psia
22	Viscosity, Liq	cp 0.846/ 0.951	Pres Drop, Allow/Calc	5/ 0.219
23	Viscosity, Vap	/	Fouling Resist.	0.001 ft <sup>2</sup> *h*F/Btu
24	PERFORMANCE DATA - AIR SIDE			
25	Air Quantity, Total	54271 lb/h	Altitude	2500 2020 ft
26	Air Quantity/Fan	0	ft <sup>3</sup> /min	Temperature In 90 F
27	Static Pressure	0.48	In H <sub>2</sub> O	Temperature Out 138 F
28	Face Vel. 9.8 ft/s	Bundle Vel. 4876.08 lb/h/ft <sup>2</sup>	Design Ambient	-40 F
29	DESIGN - MATERIALS - CONSTRUCTION			
30	Design Pressure	50 psig	Test Pressure	75 Design Temperature 250 F
31	TUBE BUNDLE		HEADER	
32	Size	96	Type Plug	Material SA-179
33	Number/Bay	1	Material	Seamless
34	Tube Rows	4	Passes 2	OD 1.0 Min Tks 0.083 in
35	Arrangement		Plug Mat.	No./Bun 72 Lng 7 ft
36	Bundles 1 Par 1 Ser		Gasket Mat.	Pitch 2.26/ 1.9572 Stgrd
37	Bays 1 Par 1 Ser		Corr Allow 0.0625 in	FIN
38	Bundle Frame Welded Stl		Inlet Nozzle (1) 4 in	Type L-type tension
39	MISCELLANEOUS		Outlet Nozzle (1) 4 in	Material Aluminum
40	Struct. Mount. Grade		Special Nozzles	OD 2.25 Tks. 0.016 in
41	Surf Prep.		Rating/Facing 150 RF	No. 10/in Des Temp F
42	Louvers	Manual	PI	Code- ASME VIII, DIV 1
43	Vibration Switches		Chem Cleaning	Stamp- Yes Specs TEMA C
44	MECHANICAL EQUIPMENT			
45	Fan, Mfr. & Model		Driver, Type	Speed Reducer, Type
46	No./Bay	RPM	Mfr.	Mfr. & Model
47	Dia.	Blades	No./Bay	hp/Dr
48	Pitch	Angle	RPM	Rating
49	Blade	Hub	Enclosure	Ratio
50	hp/Fan	Min Amb	V/Phase/Hz / /	Support
51	Control Action on Air Failure-	none		Louvers none
52	Degree Control of Outlet Process Temperature			F
53	Recirculation	none		Steam Coil No
54	Plot Area	ft <sup>2</sup> Drawing No.	Wt.-Bundle	Shpng lb
55	Notes:			
56	COMMON FRAME, FANS, LOUVERS, BUGSCREEN AND HAILGUARD WITH TAW COOLER			
57				
58				
59				

659,000 + 60 = 725,000 Btu/h

THE DESIGN IT COVERS ARE CONFIDENTIAL AND THE PROPERTY OF PROPAG SYSTEMS LTD. AND SHALL NOT BE DISCLOSED TO OTHERS OR REPRODUCED IN ANY MANNER OR USED FOR ANY PURPOSE WHATSOEVER WITHOUT THE WRITTEN CONSENT OF PROPAG.



**MAXIMUM ALLOWABLE NOZZLE LOADS**

F <sub>x</sub>	750 lb
F <sub>y</sub>	600 lb
F <sub>z</sub>	750 lb
M <sub>x</sub>	600 ft-lb
M <sub>y</sub>	900 ft-lb
M <sub>z</sub>	600 ft-lb

**DRAWING NOTES:**

CAPACITY: 3.25 cu ft (0.091 cu M)  
 WT. EMPTY: 2090 lbs (950 kg)  
 WT. FULL OF WATER: 2290 lbs (1040 kg)  
 SURF. PREP: COMM. SANDBLAST SSPC-SP6  
 PRIMER: 1 S/C CARBOLINE 890 (2-4 mils DFT)  
 PAINT: 1 S/C CARBOLINE 890 (4-6 mils DFT) COLOR: GREY  
 INSULATION: NONE FINAL THK. \_\_\_\_\_  
 IMPACT TEST: \_\_\_\_\_

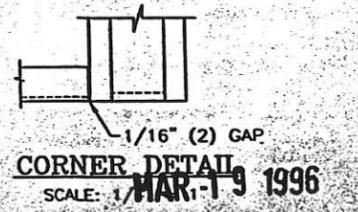
**PRODUCTION IMPACT TEST REQUIRED** YES  NO

SURFACE AREA OF TUBES: 128 sq ft BARE, 2549 sq ft FINNED  
 MANUFACTURERS SPECS: 2677 sq ft TOTAL

1/ Service: HYDROCARBONS  
 2/ Long & circ. welds type 1  
 3/ QWP: WP-590.2(on file)  
 4/ OCP: A-OPS-1050(on file)

TACK WELDS & PRESS. TO STRUCT. WELD PSL# 32 REV 5, FC-2

*MARGIN BLUE*



NOZZLE SCHEDULE									
MK	SIZE	RATING	FACING	SCH	SERVICE	PROJ	WELD		
N1	4" NPS (114)	150	RFWN	160	EJW OUTLET	6 7/8"	11/14		
N2	4" NPS (114)	150	RFWN	160	EJW INLET	6 7/8"	11/14		

ITEM QUA		DESCRIPTION		
3	2	SIDE CHANNELS: C 15 x 33.9 lbs/ft x 6'-10 1/8" (2086) LG.	C40.21-44W (C40.21W-300W)	
4	2	TOP & BOT. SUPT: L 2 (51) x 2 (51) x 1/4 (6) x 3'-4 3/4" (1035) LG.	SA-36	
5	70	TUBES: 1 (25) x 14 BWG x 7'-0" (2134) LG.	SA-179	
c/w L-TENSION ALUMINUM FINNS 0.016" THK. x 0.625" HIGH, 10 FINNS/INCH				
c/w ALUMINUM WRAPS AT SUPPORTS				
7	2	FLAT BAR: 0.125 (3) THK. x 2 (51) x 15-3/4 (400) LG. (SHOP FORM)	SA-36	
8	4	FLAT BAR: 0.25 (6.35) THK. x 1 (25) x 13 9/16 (344) LG.	SA-36	
9	2	TOP AIR SEAL: PLATE 0.125 (3) THK. x 3 7/8 (98) x 3'-3 5/8" (1006) LG.	SA-36	
BEND & C.T.S. (SEE DETAIL)				
10	2	BOT. AIR SEAL: PLATE 0.125 (3) THK. x 4 3/4 (121) x 3'-3 5/8" (1006) LG.	SA-36	
BEND & C.T.S. (SEE DETAIL)				
12	2	FLANGE: 4" NPS (114) - 150/ RFWN SCH. 160	SA-105	
13	2	PIPE: 4" NPS (114) x 0.531 (13.49) W.T. x 4 (102) LG (CTS)	SMLS SA-106-B	
P	16	140	GASKET: 1 3/8" (35) O/D x 1 3/16" (30.16) I/D x 1/16" (1.59) THK.	C1010/20
P	17	140	HEX PLUG: 1/8" (29) x 12 UNF x 3/4" (19) LG.	SA-105

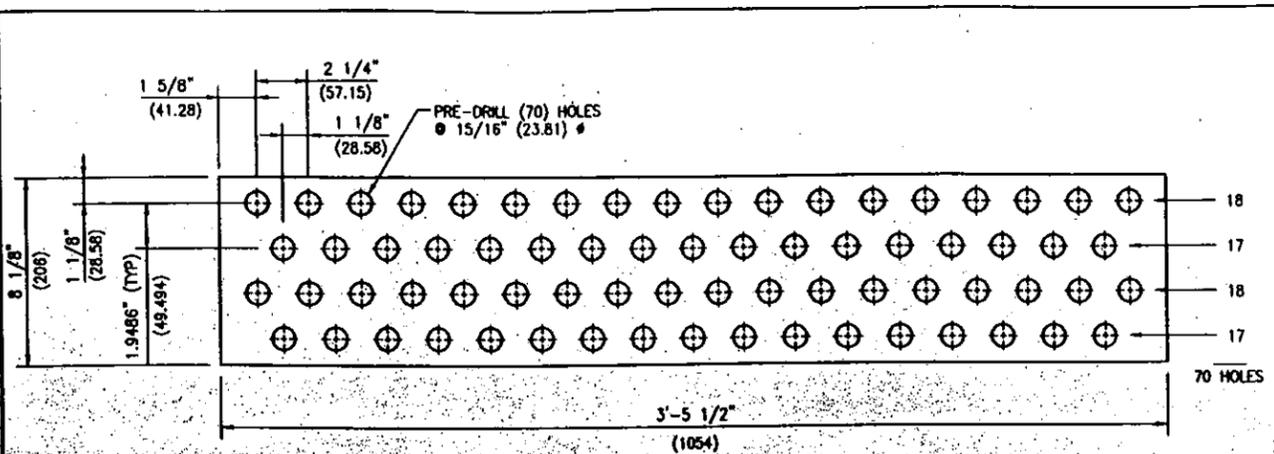
**ISSUED FOR APPROVAL**

YEAR NO.: 95261 '432'  
 YEAR BUILT: 1996  
 CRN:  
 CODE: ASME SECT. VIII DIV I  
 YEAR: '95 ADDENDA: \_\_\_\_\_ TEMA CLASS: C  
 DESIGN PRESS: 50 Psig (345 kPa)  
 DESIGN TEMP: 250 F (121 C)  
 MIN<sup>m</sup> DESIGN METAL TEMP: -20 F (-29 C)  
 HYDROTEST PRESS: 75 Psig (518 kPa)  
 HEAD MATERIAL: SA-516-70N  
 SHELL MATERIAL: SA-516-70N  
 RADIOGRAPHY: \_\_\_\_\_ N/A EXCEPT \_\_\_\_\_  
 P.W.H.T.: \_\_\_\_\_ FULL RADIOGRAPHY REQUIRED ON TOP WRAPPER OF INLET BOX HEADER.  
 TIME: N/A  
 .0625" (1.59)

LSD: 3-26-74-1-W6M  
 TAG NO: E-679

DOUBLE BUTT	SINGLE VEE	TUBE SHEET	COUPLING	SADDLED COUPLING	THRODLET	NOZZLE & REPAD RECESSED	NOZZLE & REPAD FLUSH	NOZZLE & REPAD FLUSH	NOZZLE RECESSED	NOZZLE ABUTTED	NOZZLE FLUSH	TRANSITION WELD	PIPE TO FLANGE	RING FLANGE	SKIRT TO HEAD
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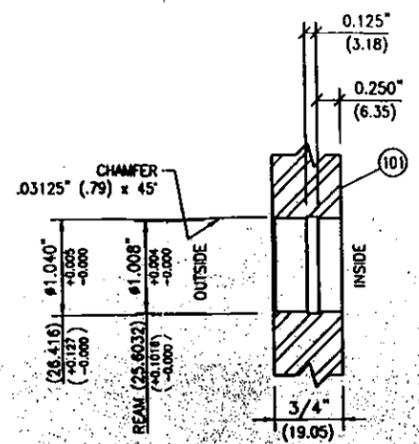
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**TUBESHEET/PLUGSHEET LAYOUT**

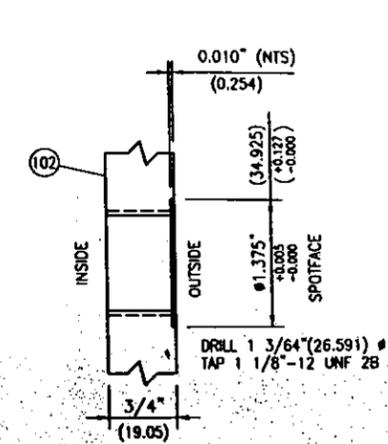
SCALE: 1/4" = 1"

- (101) (2) - TUBESHEETS REQUIRED
- (102) (2) - PLUGSHEETS REQUIRED



**TUBESHEET HOLES**

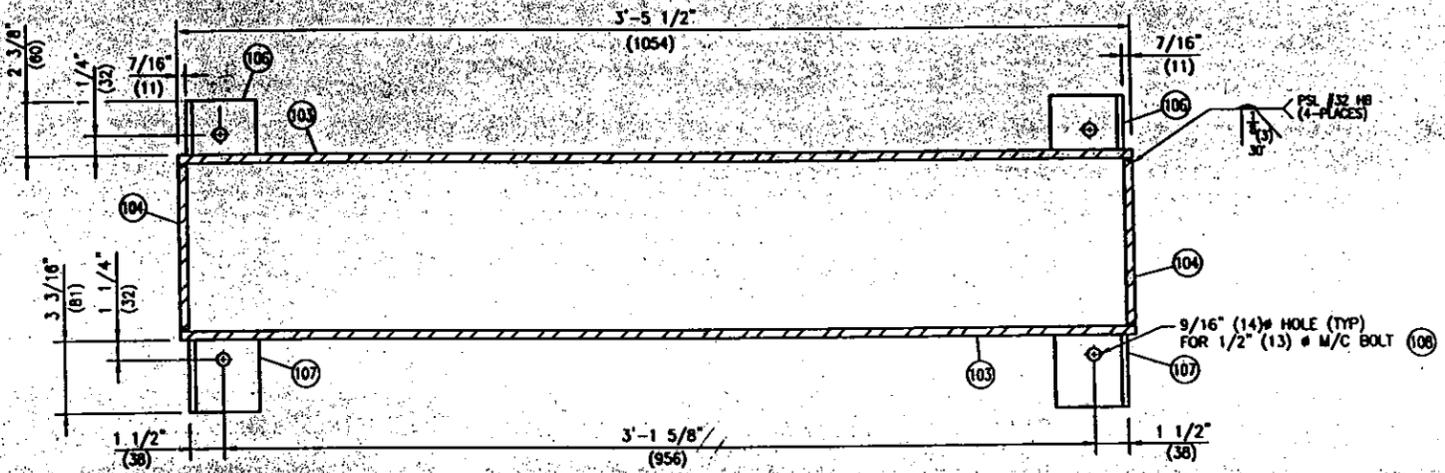
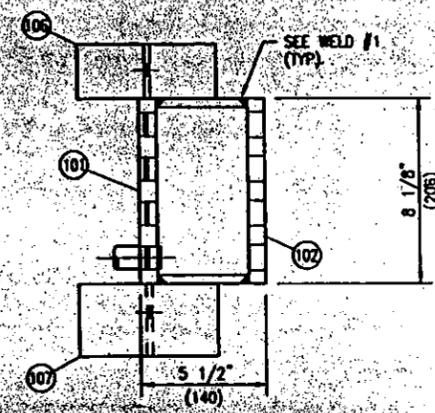
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**PLUGSHEET HOLES**

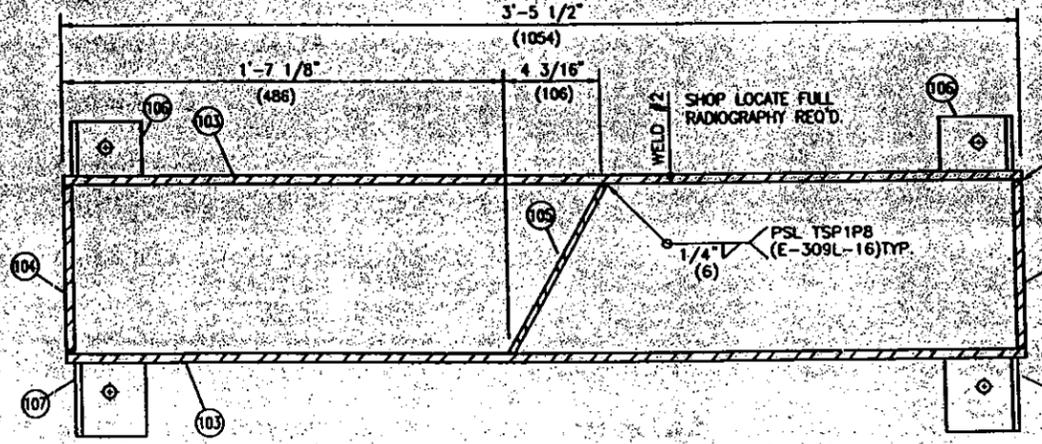
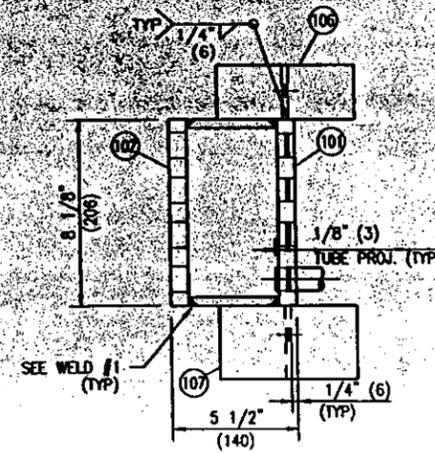
SCALE: 1" = 1"

BILL OF MATERIAL		
ITEM	QUA	DESCRIPTION
101	2	H.B. TUBESHEET-PLATE: 3/4" (19.05) THK. x 8 1/8" (206) x 3'-5 1/2" (1054) LG. SA-516-70N
102	2	PLUGSHEET-PLATE: 3/4" (19.05) THK. x 8 1/8" (206) x 3'-5 1/2" (1054) LG. SA-516-70N
103	4	PLATE: 3/8" (9.5) THK. x 3 3/4" (95) x 3'-5 1/2" (1054) LG. SA-516-70N
104	4	PLATE: 3/8" (9.5) THK. x 3 3/4" (95) x 7 1/8" (181) LG. SA-516-70N
105	1	PLATE: 1/4" (6) THK. x 4" (102) x 8 3/8" (213) LG. SA-240-304
106	4	WT 3 x 10 lbs/R x 2 3/8" (60) LG. C40.21-4# (C43.21#-300#)
107	4	WT 3 x 10 lbs/R x 3 3/16" (81) LG. C40.21-4# (C43.21#-300#)
108	8	M/C BOLTS: 1/2" (13) # UNF x 1 1/4" (32) LG. SA-325



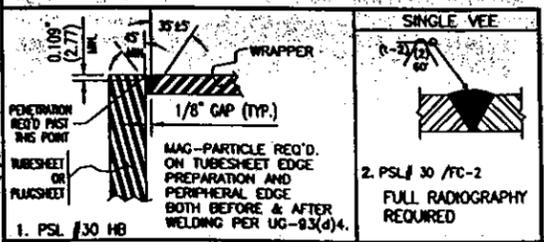
**RETURN HEADER BOX DETAIL**

SCALE: 1/4" = 1"



**INLET HEADER BOX DETAIL**

SCALE: 1/4" = 1"  
(SEE DIM ON RETURN HEADER)  
(FOR ITEM #106 & 107)



**GENERAL NOTES**

1. PSL #30 HB

MAG-PARTICLE REQ'D. ON TUBESHEET EDGE PREPARATION AND PERIPHERAL EDGE BOTH BEFORE & AFTER WELDING PER UG-93(d)4.

2. PSL #30 /FC-2 FULL RADIOGRAPHY REQUIRED

REVISION	DATE	BY	CHKD	ENG
A. ISSUED FOR APPROVAL				

DATE	BY	DATE	BY	DATE	BY	DATE	BY
19 MAR 96	T.E.						
13 MAR 96	L. WATKINS						



**ANDERSON OIL & GAS INC.**  
 30 MMSCF REFRIGERANT PLANT  
 TUBESHEET DETAILS  
 FOR E-679

DWG. No.: D-BDL-95261-432 SHT. 2 OF 2

**ISSUED FOR APPROVAL**

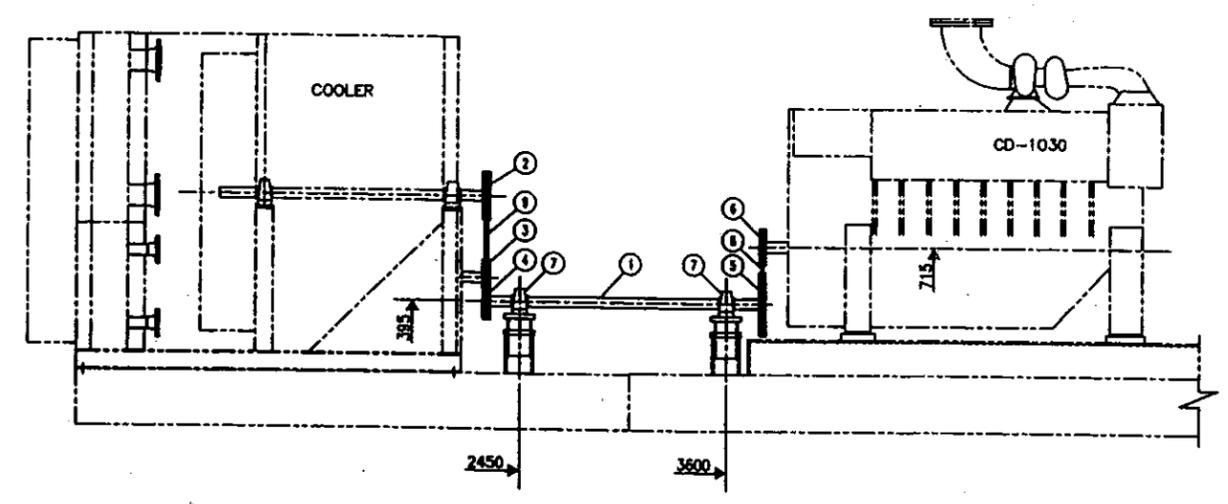
**MAR 19 1996**

20

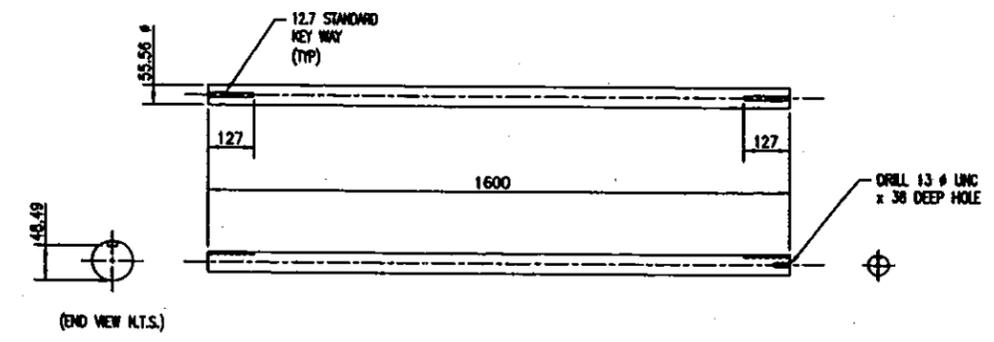
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BILL OF MATERIAL			
ITEM	QTY	DESCRIPTION	
P 1	1	ROUND BAR: 55.56 # x 1600 LG. (SEE DETAIL)	C1045-TR&P
* 2	1	SHEAVE: W-3-10.6-03 c/w OD-SK BUSHING 55.56 (2 3/16") #	GATES
* 3	1	SHEAVE: W-3-8-02 c/w OD-SK BUSHING 55.56 (2 3/16") #	GATES
* 4	1	SHEAVE: W-3-8-02 c/w OD-SK BUSHING 55.56 (2 3/16") #	GATES
* 5	1	SHEAVE: W-3-14-03 c/w OD-SK BUSHING 55.56 (2 3/16") #	GATES
* 6	1	SHEAVE: W-3-8-02 c/w OD-SK BUSHING 61.91 (2 7/16") #	GATES
* 7	2	BEARING: MP 2 3/16" SELF LUBE CAST IRON PULLEY BLOCK	RHP
* 8	3	V-BELTS: 3WX-600 (MATCHED SET)	GATES
* 9	3	V-BELTS: 3WX-1000 (MATCHED SET)	GATES

\* PURCHASED BY ENGINEER



**COOLER DRIVE SHAFT DETAIL**  
SCALE 1:20

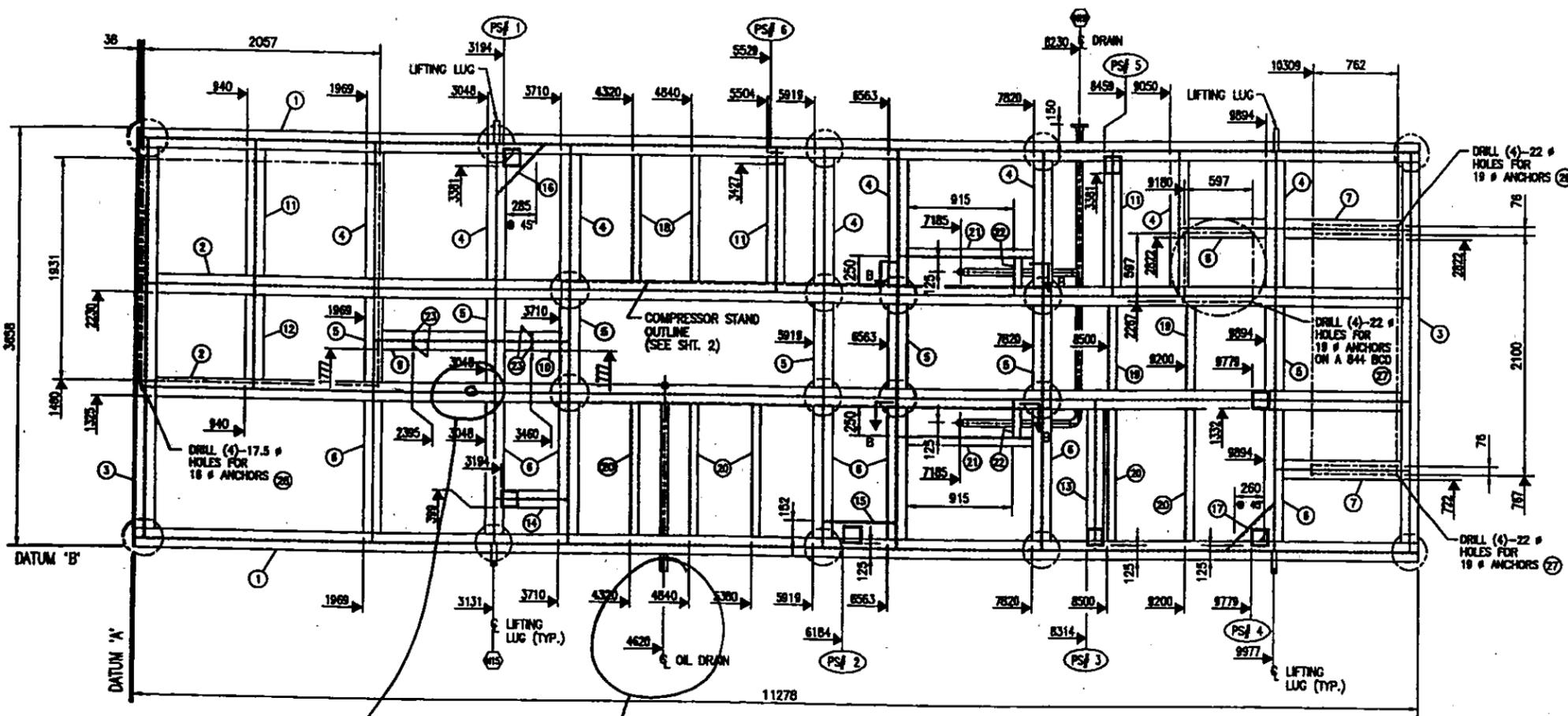


**SHAFT DETAIL ①**  
SCALE 1:10

**AS-BUILT**

MAY 1 5 1999

DATE: 96.05.14 1:48pm FILE NAME: J:\JOBS95\95261\DWG\ASY\26125204		GENERAL NOTES		GENERAL NOTES		PREPARED BY: <b>PROPAK SYSTEMS LTD.</b> ENGINEERING DESIGN FABRICATION CONSTRUCTION		ANDERSON OIL & GAS INC. PUSKASKAU GAS PROJECT REFRIGERANT PACKAGE (COMPRESSOR) COOLER DRIVE ASSEMBLY	
		2 AS BUILT		SI 04/11/96		DRAWN		DWO. No.: D-ASY-95261-252 SHT. 4 OF 4 REV 2	
		1 ISSUED FOR CONSTRUCTION		DP 06/03/96		CHECKED			
		A ISSUED FOR APPROVAL		DP 06/03/96		APPROVED			
		No.		BY DATE CKD ENG		DATE SCALE			
		REVISION		BY: D. PARBLE		96/03/22 AS NOTED			



- Confirm 4 point loading is adequate.  
 - What is Total Refrigeration Compressor Package Weight?

Oil Tank Vent to leave height of bldg. (outside bldg. line)

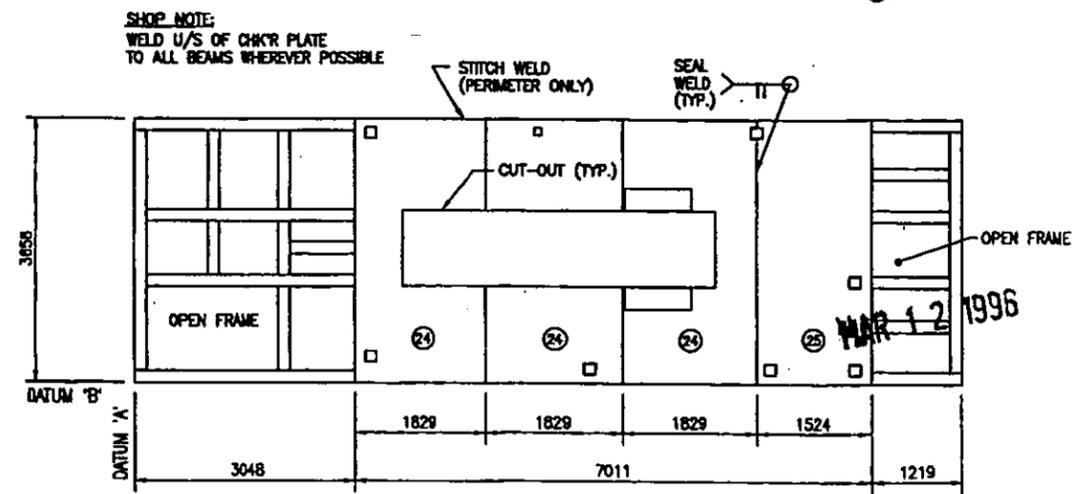
c/w Valve + Camlok

APPROVED AS NOTED  
 BY: *[Signature]* DATE: March 13/96

FOR INFORMATION ONLY

ITEM QTY	DESCRIPTION	LENGTH	MATERIAL
1	WF: 310 @ 39 KG/M	11278	C40.21M-300W
2	WF: 310 @ 39 KG/M	11108	C40.21M-300W
3	WF: 310 @ 39 KG/M	3486	C40.21M-300W
4	WF: 310 @ 39 KG/M	1256	C40.21M-300W
5	WF: 310 @ 39 KG/M	898	C40.21M-300W
6	WF: 310 @ 39 KG/M	1318	C40.21M-300W
7	WF: 310 @ 39 KG/M	1212	C40.21M-300W
8	WF: 310 @ 39 KG/M	837	C40.21M-300W
9	WF: 310 @ 39 KG/M	1072	C40.21M-300W
10	WF: 310 @ 39 KG/M	655	C40.21M-300W
11	WF: 150 @ 22 KG/M	1256	C40.21M-300W
12	WF: 150 @ 22 KG/M	898	C40.21M-300W
13	WF: 150 @ 22 KG/M	1318	C40.21M-300W
14	WF: 150 @ 22 KG/M	655	C40.21M-300W
15	ANGLE: 152 X 152 X 10 THK	637	C40.21M-300W
16	ANGLE: 152 X 152 X 10 THK	628	C40.21M-300W
17	ANGLE: 152 X 152 X 10 THK	592	C40.21M-300W
18	ANGLE: 76 X 76 X 6 THK	1098	C40.21M-300W
19	ANGLE: 76 X 76 X 6 THK	740	C40.21M-300W
20	ANGLE: 76 X 76 X 6 THK	1160	C40.21M-300W
21	ANGLE: 76 X 76 X 6 THK	1171	C40.21M-300W
22	ANGLE: 76 X 76 X 6 THK	328	C40.21M-300W
23	CHSKR PLATE: 10 THK X 76	288	SA-36
24	CHSKR PLATE: 6 THK X 1829	3658	SA-36

ITEM QTY	DESCRIPTION	LENGTH	MATERIAL
25	CHSKR PLATE: 6 THK X 1524	3658	SA-36
26	M/C BOLT: 19 # c/w (1)-NUT EA	51	SA-325
27	M/C BOLT: 19 # c/w (1)-NUT EA	84	SA-325
28	M/C BOLT: 16 # c/w (1)-NUT EA	44	SA-325



GENERAL NOTES (CONT'D)  
 10) DENOTES RECOMMENDED PILE LOCATIONS (18 TOTAL)

1) DIMENSIONS ARE IN METRIC  
 2) CUT LENGTHS ARE EXACT C/W TOL. +/- 0.75 mm  
 3) SHOP TO COPE ALL MEMBERS TO SHIP  
 4) REMOVE ALL SHARP EDGES AND BURRS  
 5) DRILL ALL HOLES TO DRILL FLAME CUT  
 6) E-7018 OR E-70-T SMA-AUTO ELECTRODES TO BE USED (W/LD)  
 7) ALL WELDS TO BE 6 mm FILLET CORN. (U.N.O.)

8) PAINT SPECS:  
 SURF. PREP: SPC-SP1  
 PRIME CO: S/C ENAMEL 800, 2-4 MILS DFT (FURN. THICKNESS)  
 FINISH CO: S/C ENAMEL 800, 4-6 MILS DFT (FURN. THICKNESS)  
 COLOR: RALD BLACK (2000)

9) TOTAL WEIGHT OF SHOP STEEL: 10200 KG (INCLUDING CONCRETE)

ISSUED FOR CONSTRUCTION  
 ISSUED FOR APPROVAL

PREPARED BY: **PROPAK SYSTEMS LTD.**  
 ENGINEERING DESIGN FABRICATION CONSTRUCTION

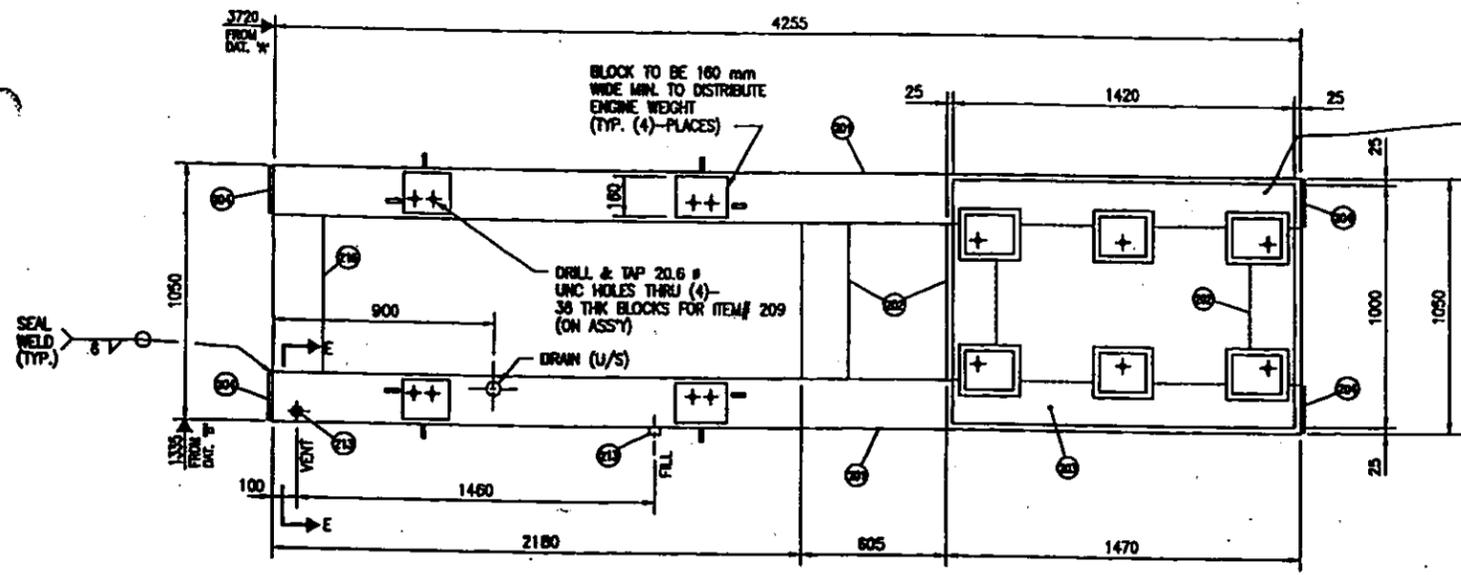
ANDRDE ALBERTA CANADA  
 DRAWN: S. LESLIE  
 CHECKED: D.C.  
 APPROVED: T.L.  
 DATE: FEB/96  
 SCALE: AS NOTED

**PSL**

ANDERSON OIL & GAS INC.  
 PUSKASKAU GAS PROJECT  
 REFRIGERATION PLANT (COMPRESSOR SKID)  
 SKID STEEL

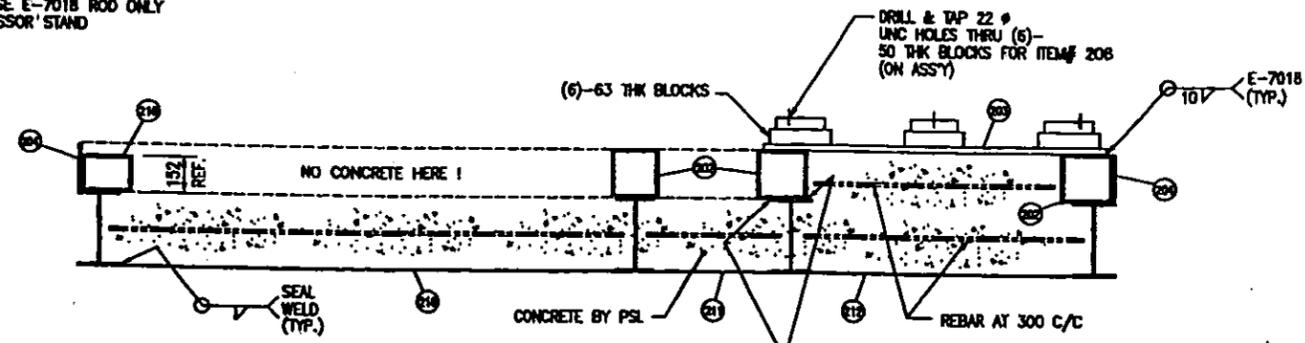
Dwg. No.: **D - SKD-95261-205** SHT 1 OF 3



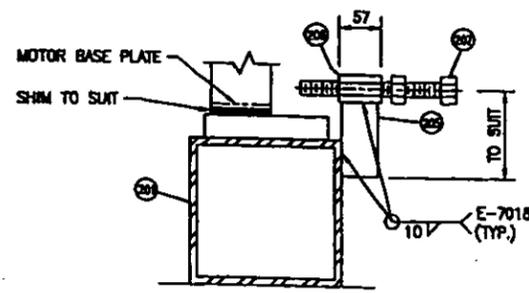


PLAN VIEW  
COMPRESSOR STAND  
1:15

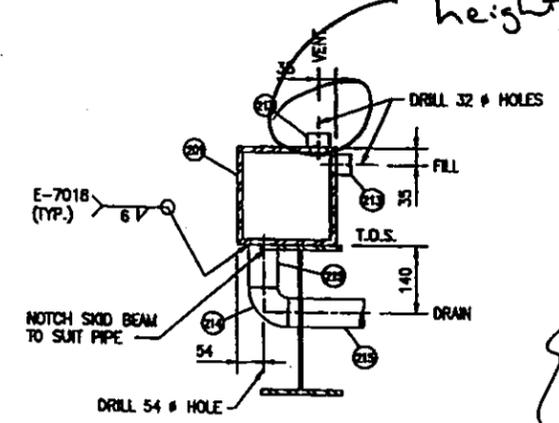
- SHOP NOTES:
- 1) JACK SCREWS, SHIMS, & HOLES FOR ENGINE & COMPRESSOR TO BE LOCATED, TAPPED, & WELDED IN PLACE ON ASSY
  - 2) SHOP TO USE E-7018 ROD ONLY ON COMPRESSOR STAND



ELEVATION VIEW  
COMPRESSOR STAND  
1:15

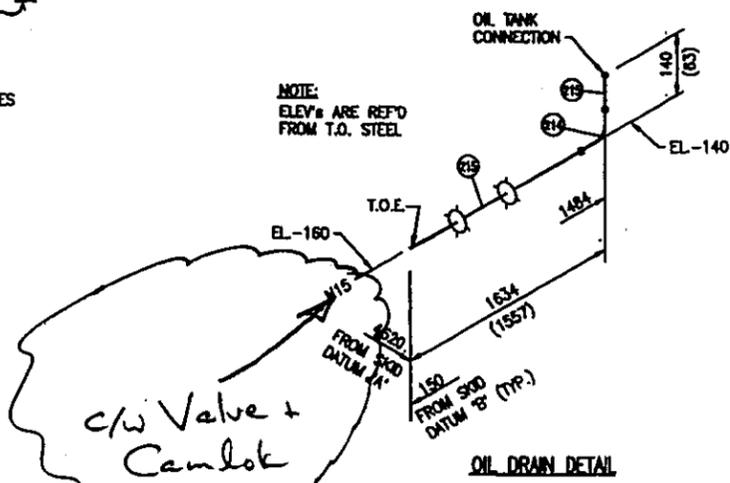


JACK SCREW DETAIL  
1:5



VIEW 'E-E'  
1:7.5

33# tank vent up outside wall of bldg. to eave height



OIL DRAIN DETAIL

IS THIS WHOLE STRUCTURE AVAILABLE FOR WASTE OIL STORAGE?

ITEM	QUA	DESCRIPTION	LENGTH	MATERIAL
201	2	HSS: 203 X 203 X 10 THK	4255	C40.21M-350W
202	3	HSS: 203 X 203 X 10 THK	644	C40.21M-350W
203	1	PLATE: 25 THK X 1000	1420	SA-36
204	4	PLATE: 13 THK X 191	191	SA-36
205	8	F/BAR: 13 THK X 51 (CTS)	150	SA-36
206	8	CPLG NUT: 19 # UNC HEX	57	C.S.
207	8	JACK SCREW: 19 # UNC c/w (1)-NUT EA.	254	C.S.
208	6	M/C BOLT: 22 # c/w (1)-WASHER EA.	76	SA-325
209	8	M/C BOLT: 21 # c/w (1)-WASHER EA.	57	SA-325
210	1	PLATE: 6 THK X 740	2044	SA-36
211	1	PLATE: 6 THK X 479	740	SA-36
212	1	PLATE: 6 THK X 740	1092	SA-36
213	2	HALF CPLG: 33-3000 NPT	-	SA-105
214	1	ELBOW: 60 O/D 80 LR BW SCH 40 SMLS	-	SA-214-WPB
215	1	PIPE: 60 O/D X 3.91 WT SMLS (CTS)	1800	SA-106-B
216	1	HSS: 152 X 203 X 10 THK	644	C40.21M-350W

APPROVED AS NOTED  
BY: *[Signature]* DATE: March 13/96.

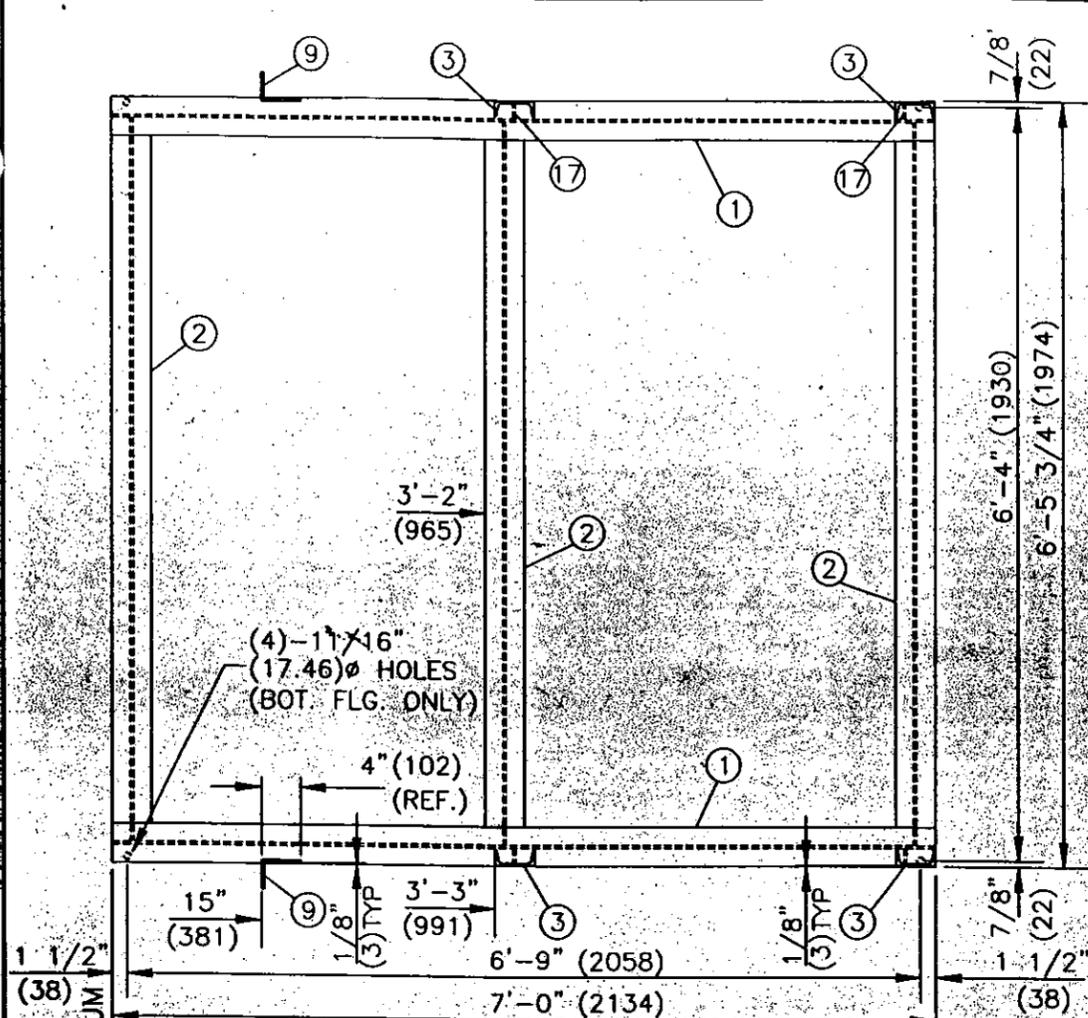
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MAR 12 1996

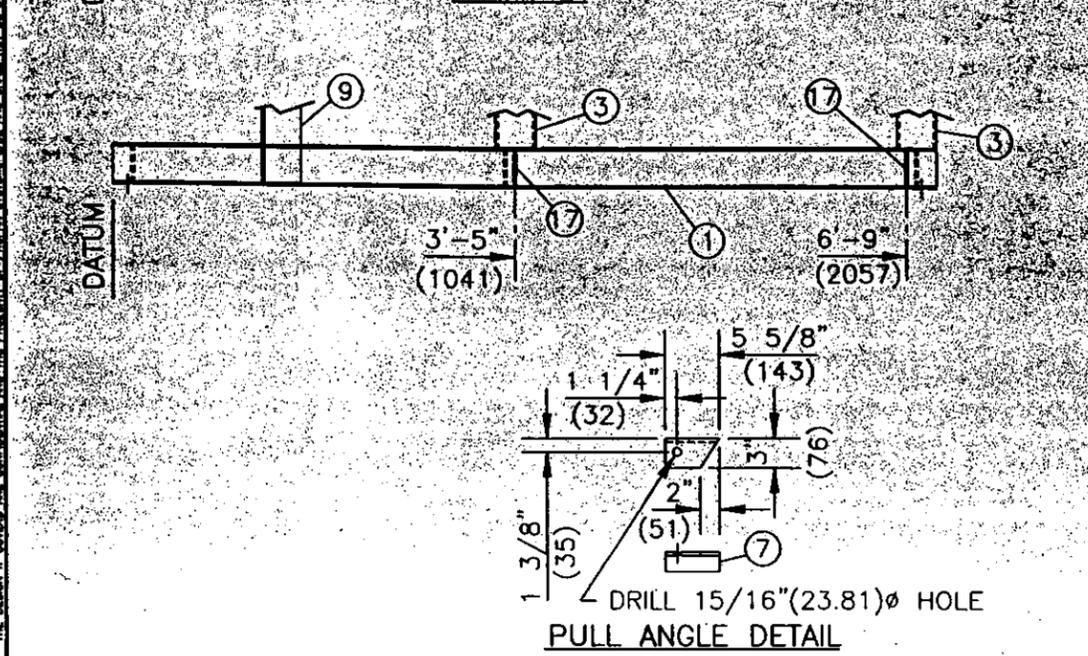
PREPARED BY: <b>PROPAC SYSTEMS LTD.</b> ENGINEERING DESIGN FABRICATION CONSTRUCTION					CANADA	
DRAWN BY: S. LESLIE					CHECKED BY: D.C.	APPROVED BY: T.L.
DATE: FEB/96					SCALE: AS NOTED	
ANDERSON OIL & GAS INC. PUSKASKAU GAS PROJECT REFRIGERATION PLANT (COMPRESSOR SKID) COMPRESSOR STAND DETAILS Dwg. No.: D-SKD-95261-205      SHT. 3 OF 3						

GENERAL NOTES

NO.	REVISION	BY	DATE	CKD	ENG
1	ISSUED FOR CONSTRUCTION				
2	ISSUED FOR APPROVAL				

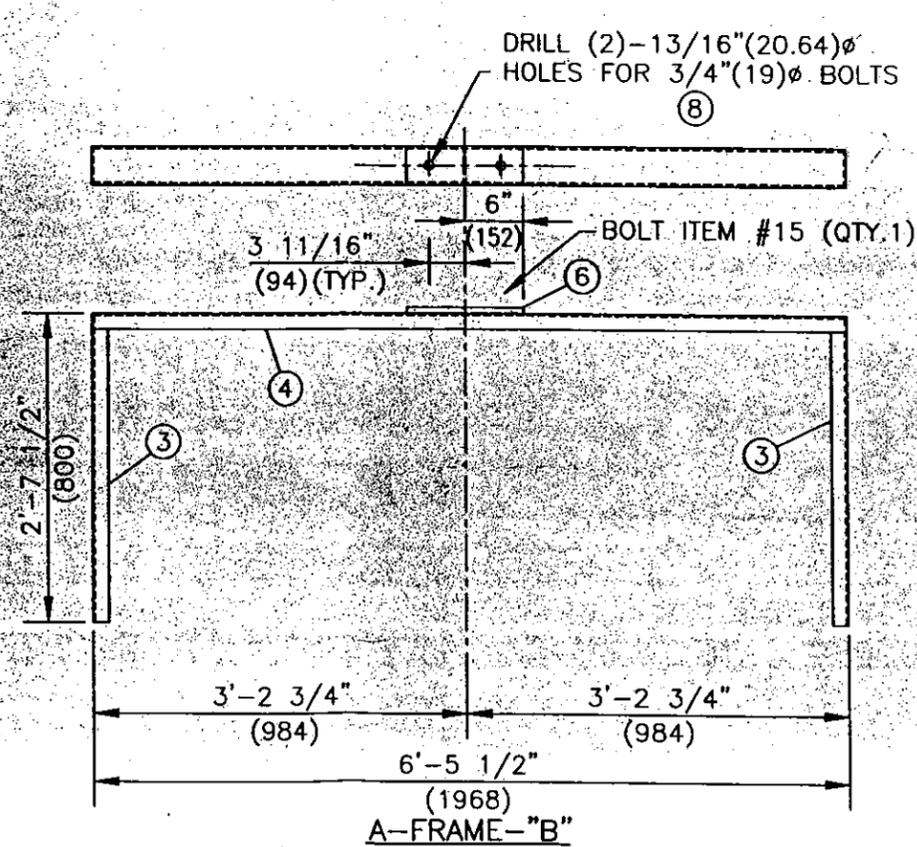
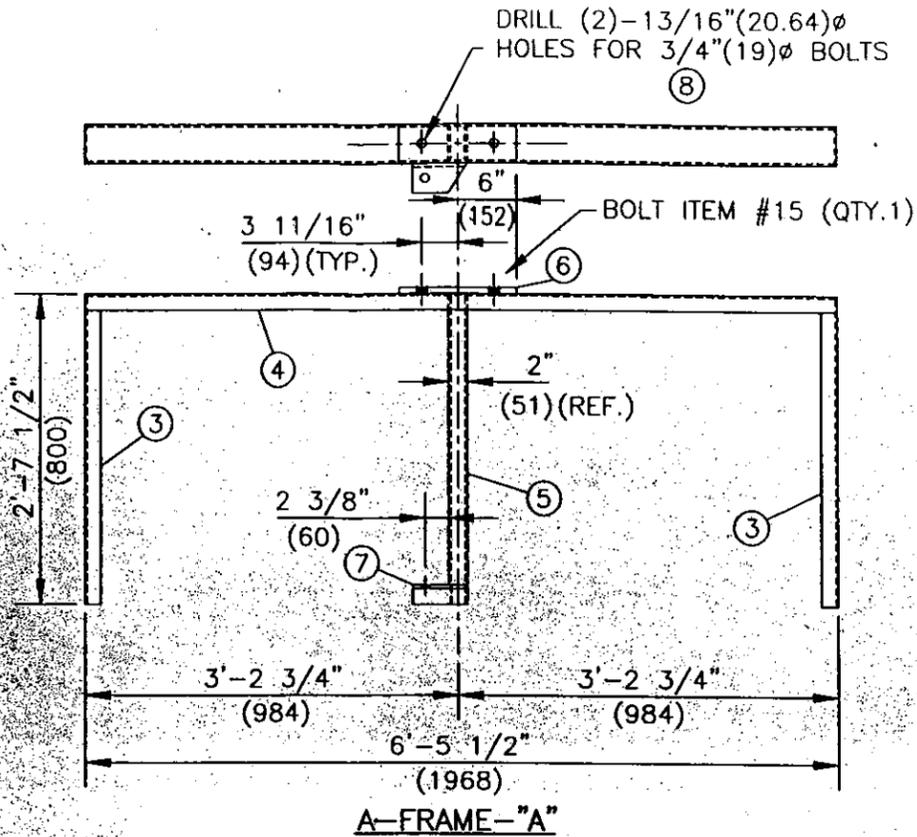


PLAN



A-FRAME-A

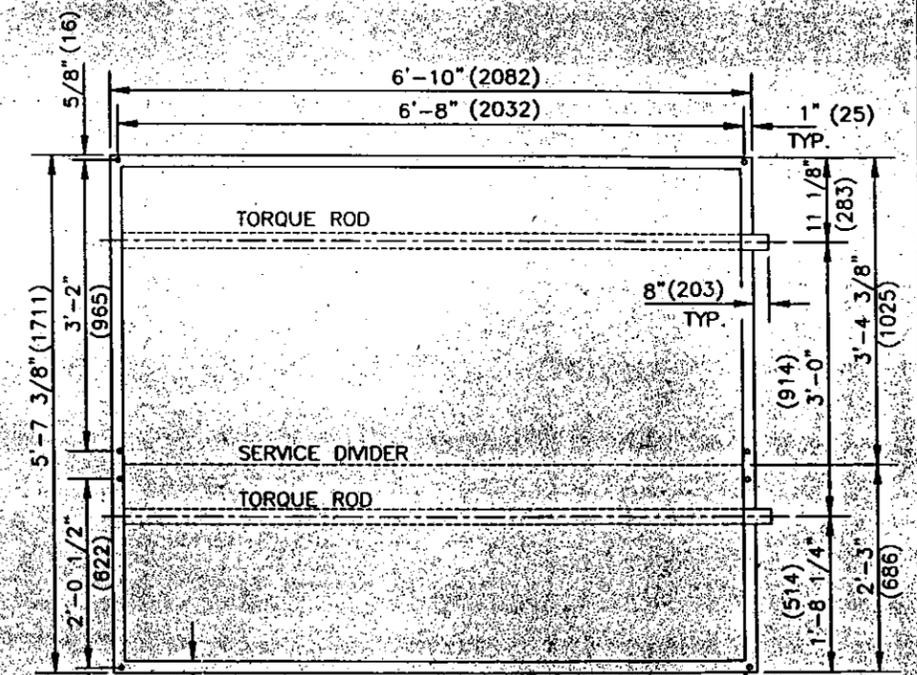
A-FRAME-B



PROVIDE FAN DATA

ITEM	QUA	DESCRIPTION	
1	2	W 100 X 19 KG/M X 2134 LG.	G40.21M-300W
2	3	W 100 X 19 KG/M X 1861 LG.	G40.21M-300W
3	4	CHANNEL: C 100 X 8 KG/M X 795 LG.	G40.21M-300W
4	2	CHANNEL: C 100 X 8 KG/M X 1968 LG.	G40.21M-300W
5	1	HSS: 51 X 102 X 6 THK. X 795 LG.	G40.21M-350W
6	2	FLAT BAR: 16 THK X 102 X 304 LG.	SA-36
7	1	ANGLE: 51 X 76 X 10 THK. X 143 LG. (C.T.S.)	G40.21M-300W
8	4	M/C BOLT: 19# X 89 LG. C/W (1) NUT & WASHER EACH	SA-325
9	2	ANGLE: 76 X 102 X 6 THK. X 1878 LG. (C.T.S.)	G40.21M-300W
10	4	PLATE: 13 THK X 102 X 203 LG. (C.T.S.)	SA-516-70
11	2	ANGLE: 51 X 76 X 6 THK. X 972 LG.	G40.21M-300W
12	1	ANGLE: 51 X 76 X 6 THK. X 1956 LG.	G40.21M-300W
13	8	HILT. PINS: 10# X 38 LG. C/W (1) WASHER & NUT EACH	C.S.
14	1	ROUND BAR: 2 3/16 (55.56) X 1499 LG.	C1045-TG&P
15	4	BEARING: MP 2 3/16 (55.56) SELF-LUBE CAST IRON PILLOW BLOCK	
16	1	FAN: 5'-0" (1524) MOORE CLASS 5000-SERIES 33-ENGINE DRIVE-LEFT HAND C/W (4)-BLADES, 9" (229) HUB O/D & "OD" BUSHING TYPE "E" 2 3/6 (55.56) BORE AND STANDARD KEYWAY	
17	4	FLAT BAR: 6 THK X 51 X 86 LG.	SA-36
18	1	FLAT EXPANDED MESH: 1092 X 1924 LG. X 1 1/2" -9F (10 GA)	SA-36

PURCHASED BY ENG'R



ISSUED FOR APPROVAL

- NOTES:
- 1) FURNISH (2) MANUAL OPERATORS
  - 2) BUILD AS PER 'API 661'
  - 3) FURNISH EXTERNAL BUGSCREEN W/ 10 1/2" (267) DEEP FRAMES.

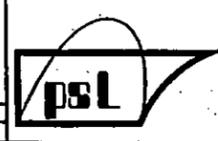
MAR 19 1996

DATE: 96.03.19 2:12pm FILE NAME: J:\JOBS95\95261\DWG\COOLERS\VERTICAL\26143301

GENERAL NOTES		PAINT SPECIFICATIONS:	
1. DIMENSIONS IN ( ) ARE IN MILLIMETERS	7. PAINT SPECIFICATIONS:		
2. CUT LENGTHS ARE EXACT C/W TOL (+0/-3)	SURFACE PREP: SSPC-SP6		
3. SHOP TO COPE ALL MEMBERS TO SUIT	PRIMER: 1 S/C CARBOLINE 890 (2-4 MILS DFT)		
4. REMOVE ALL SHARP EDGES AND BURRS.	FINISH: 1 S/C CARBOLINE 890 (4-6 MILS DFT)		
5. DRILL ALL HOLES. DO NOT FLAME CUT.	FINAL THK. COLOR: GREY (C-705)		
6. ALL WELDS TO BE 6 mm CONT. FILLET USING E-7024 OR E-701 ELECTRODES U.N.O.	8. ESTIMATED WEIGHT OF SKID STEEL: 2050 KGS.		

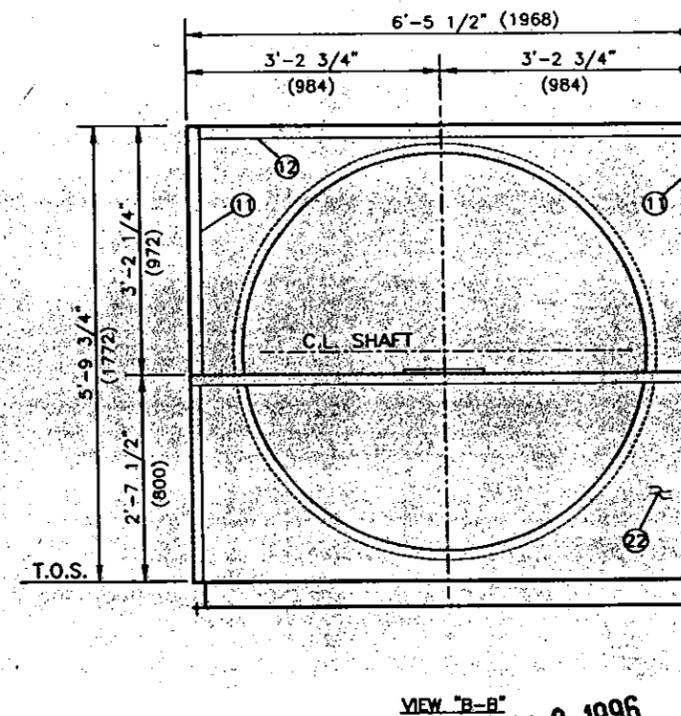
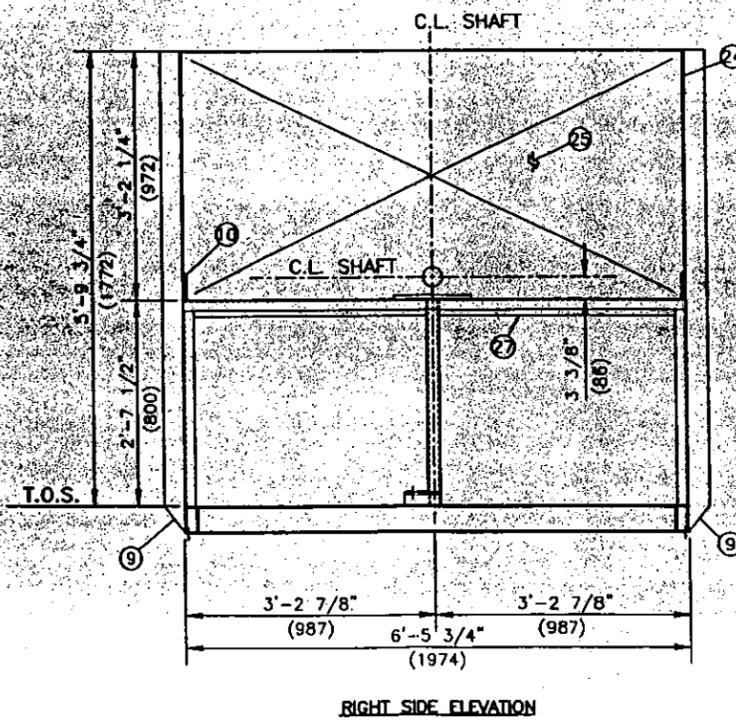
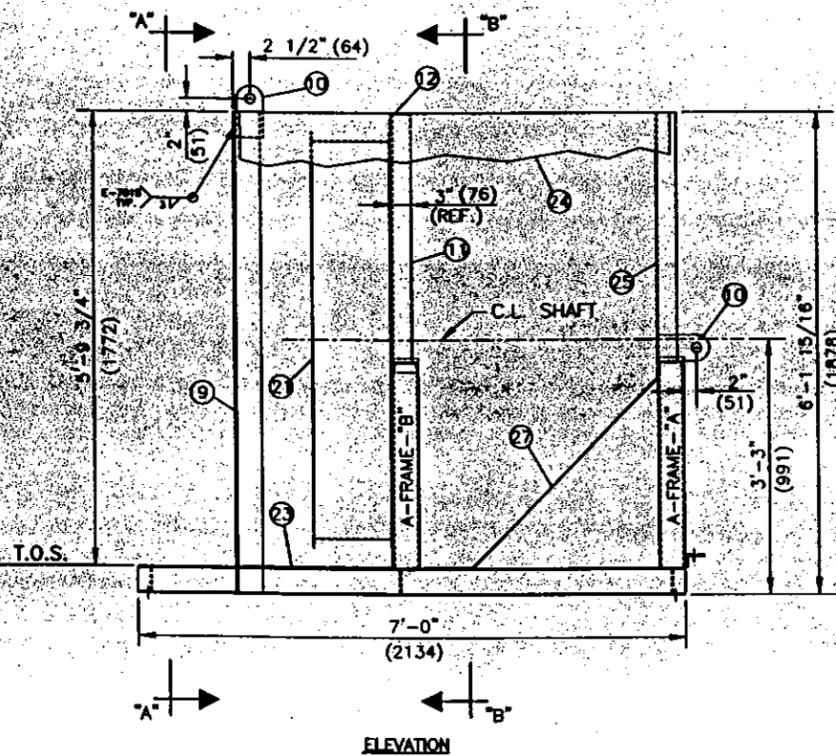
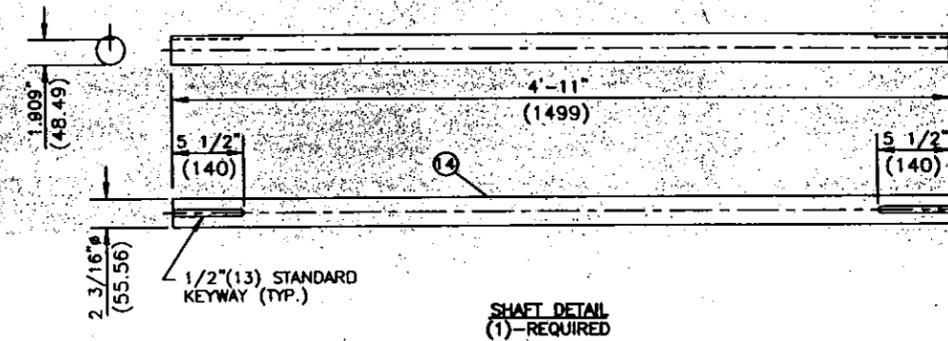
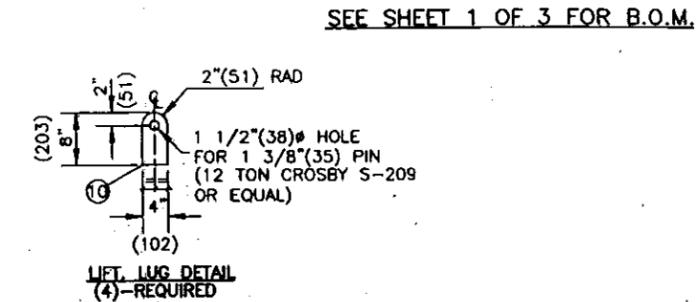
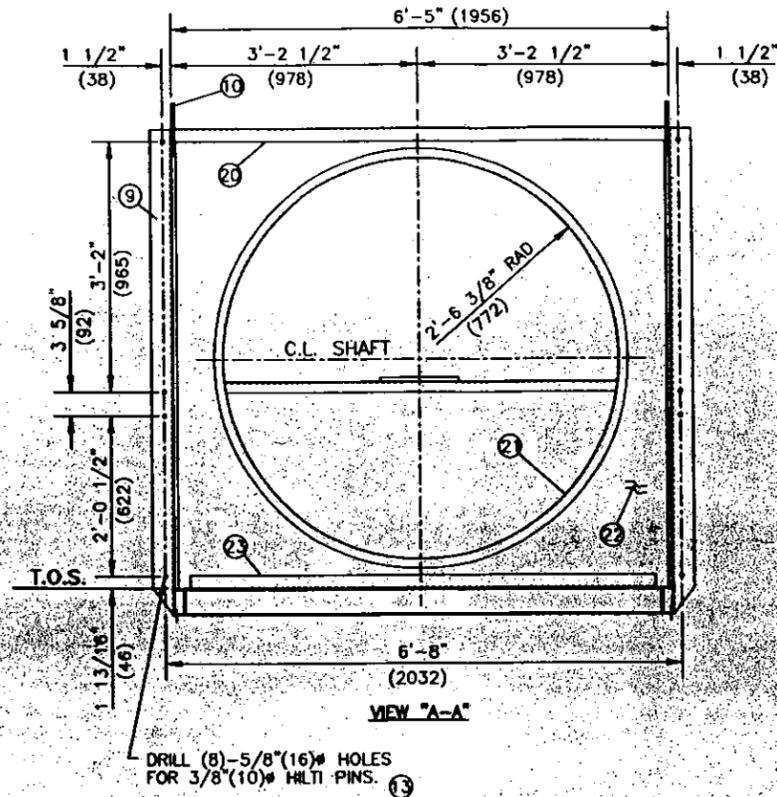
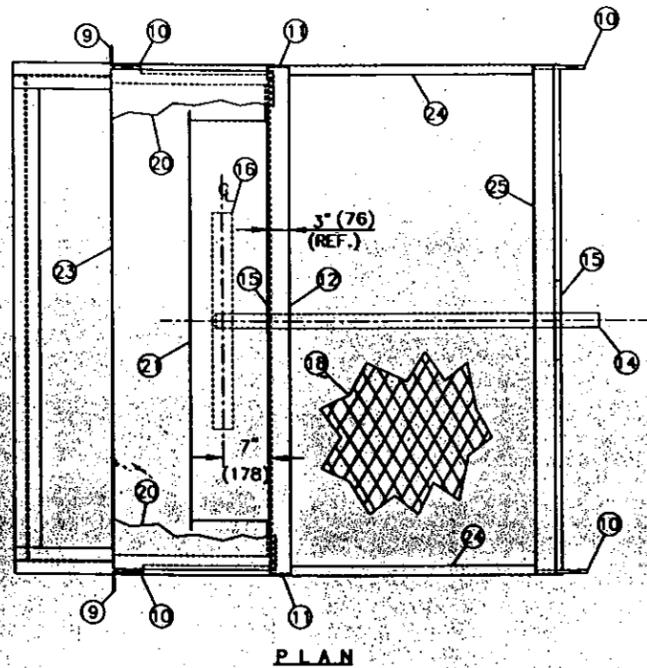
ISSUED FOR APPROVAL		REVISION	
No.			

PREPARED BY:		DRAWN		CHECKED		APPROVED		DATE		SCALE	
PROPAC SYSTEMS LTD.		M. BARROS		T. EWING		T. WU		14 MAR '96		AS NOTED	



ANDERSON OIL & GAS INC.	
AIR COOLER STRUCTURAL DETAILS BASE & A-FRAMES	
DWG. No.: D-FRM-95261-433	SHT. 1 OF 3 REV A

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.



**ISSUED FOR APPROVAL**

MAR 19 1996

DATE: 96.03.19 1:40pm FILE NAME: J:\JOBS95\95261\DWG\COOLERS\VERTICAL\26143302

GENERAL NOTES		GENERAL NOTES		A		ISSUED FOR APPROVAL		D.C. 96/03/19		T.F. T.W.		PREPARED BY: PROPAG SYSTEMS LTD. ENGINEERING DESIGN FABRICATION CONSTRUCTION		ANDERSON OIL & GAS INC. AIR COOLER STRUCTURAL DETAILS	
				No.		REVISION		BY: M. BARROS		CHECKED: T. EWING		APPROVED: T. WU		DATE: 15 MAR. 96	
								SCALE: AS NOTED		DRAWN: M. BARROS		CHECKED: T. EWING		APPROVED: T. WU	
														Dwg. No.: D-FRM-95261-433 SHT. 2 OF 3	



