

FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS
(Alternative Form for Single Chamber, Completely Shop or Field Fabricated Vessels Only)
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

JOB 31-1272
A# 537310
OCT 7/05

1. Manufactured and certified by MaXfield Inc. Box 830 1026 Western Drive, Crossfield, Alberta TOM 0S0
(Name and address of manufacturer)
2. Manufactured for Encana Gas & Oil Partnership 1800-855-2 St. SW Calgary, AB T2P 2S5
(Name and address of purchaser)
3. Location of Installation 12-22-042-26-W4 AB- Ponoka Gas Plant
4. Type: HORIZONTAL 38842A P9043.23 2001-0308D Rev F N/A 2005
(Horiz. or vert tank) (Mfr's serial No.) (CRN) (Drawing No.) (Nat'l Bd No.) (Year built)
5. The chemical and physical properties of all parts meet the requirements of material specifications of the ASME BOILER AND PRESSURE VESSEL CODE. The design, construction, and workmanship conform to ASME Rules, Section VIII, Division 1 2004
To No Addenda Addenda (Date) Code Case Nos. Special Service per UG-120(d) N/A
6. Shell: SA516-70 0.8199" NIL 10' 9" 58' 0"
(Mat'l (Spec No., Grade)) (Nom Thk. (in.)) (Corr. Allow (in.)) (Diam I.D. (ft. & in.)) (Length (overall) (ft. & in.))
7. Seams: TYPE No. 1 FULL 100% N/A N/A TYPE No. 1 *Spot-70% 6
(Long (Welded, Dbl., Sngl., Lap, Butt)) (R.T. (Spot or Full)) (Eff. (%)) (H.T. Temp. (°F)) (Time (hr)) (Grain (Welded, Dbl., Sngl., Lap, Butt)) (R.T. (Spot, Eff (%)) or Full) (No. of Courses)
8. Heads: (a) Mat'l. SA516-70 (b) Mat'l. SA516-70
(Spec No., Grade) (Spec No., Grade)

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)	END	0.8147"	NIL					64.5"		Concave
(b)	END	0.8147"	NIL					64.5"		Concave

If removable, bolts used (describe other fastenings) N/A

9. MAWP 250 psi N/A psi at max. temp. 115 °F N/A °F
(Internal) (External) (Internal) (External)
Min. design metal temp. -20° °F at 250 psi. Hydro., pneu., or comb. test pressure 325 psi.

10. Nozzles, inspection and safety valve openings:

Purpose (Inlet, Outlet, Drain)	No.	Diam. or Size	Type	Mat'l.	Nom Thk.	Reinforcement Mat'l.	How Attached	Location
Liquid Out	1	4" NPT	CL150 RFWN	SA105N/SA106B	0.337"	SA516-70	UW16.1(d)	Shell
Liquid In/Vapour	1	3" NPT	CL150 RFWN	SA105N/SA106B	0.300"	SA516-70	UW16.1(d)	Shell
Purge/Liquid/Bridle	4	2" NPT	CL150 RFWN	SA105N/SA106B	0.218"	Inherent	UW16.1(d)	Shell
Continued on U4								

11. Supports: Skirt No Lugs 2 Legs 0 Other Saddles Attached Shell Welded
(Yes or No) (No.) (No.) (Describe)
12. Remarks: Manufacturer's Partial Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report: 8) 129" ID 2:1 SE Heads, WO14488 HD2 & HD3, Conrex Steel Ltd.
(Name of part, item number, Mfr's name and identifying stamp)
42,000 USWG 129" ID LPG Storage Vessel Manufacturer's Drawing MA2005-0619D Rev E
Capacity 5620 Cu. Ft (159 Cu. M) Impact Test: No, exempt per UG20(f)(1-5)
Vessel for Non-Corrosive Service Safety Relief by Others per UG-125

CERTIFICATE OF SHOP/FIELD COMPLIANCE

We certify that the statements made in this report are correct and that all details of design, material, construction, and workmanship of this vessel conform to the ASME Code for Pressure Vessels, Section VIII, Division 1, "U" Certificate of Authorization No. 13,551 expires July 24, 2008

Date OCT 07 2005 Co. name MaXfield Inc. Signed Dale Wrayley
(Manufacturer) (Inspector)

CERTIFICATE OF SHOP/FIELD INSPECTION

Vessel constructed by MaXfield Inc. at 1026 Western Drive, Crossfield, Alberta
I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of Alberta and employed by ABSA

have inspected the component described in this Manufacturer's Data Report on OCT 07 2005, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME Code, Section VIII, Division 1. By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date OCT 07 2005 Signed ABSA Commissions ALTA #58
(Authorized Inspector) (Nat'l Board (incl. endorsements), State, Prov. and No.)

AL 31410



CERTIFIED BY
Maxfield Inc.
www.maxfield.ca
CROSSFIELD, CANADA

MAWP 250 PSI AT 115 °F
(1724 kPa) AT 46 °C

MDMT -20 °F AT 250 PSI
-29 °C AT 1724 kPa

SER. NO. 38842A BUILT 2005

C.R.N. P9043.23

42 000 USWG 129" ID
VESSEL LPG VESSEL

I.D. 129 IN. (3277 mm)

LG. 64 FT 1 IN. (19533 mm)

SHL. .819 IN. (20.82 mm) SA 516-70

HDS. .814 IN. (20.70 mm) SA 516-70

C.A. N/L IN. (N/L mm)

VOL. 5620 CU FT (159 CU m)

RNG Pro-Tech Inc.

08-Mar-2001

INTERNAL PRESSURE DESIGN CALCULATIONS

10:54 AM

These calculations comply with the ASME Code, Section VIII, Division 1, 1998 Edition, 2000 Addenda

Customer: **RNG**Job: **CRN Registration**Project: **LPG STORAGE TANK, 129.0 in ID, 42000 USWG**File Name: **42M-129**

CRN: ,

File Date: **07-Mar-2001**Ref. Drawing: **2001-0308D REV 0****SHELL CALCULATIONS**

Material Specification: SA516-70
Joint Efficiency: 1.000
Outer Diameter: 130.640 in
New Inner Diameter: 129.000 in
Corroded Inner Diameter: 129.000 in
Fabrication Thickness: 0.8199 in
Corrosion Allowance: 0.0000 in
Corroded Thickness: 0.8199 in

OPERATING CONDITIONS

Design Pressure: 252.3 psi
Operating Temperature: 115.0 deg F
Ambient Temperature: 70.0 deg F
MDMT: -20.0 deg F
Allowable Operating Stress: 20,000 psi
Allowable Ambient Stress: 20,000 psi
Allowable MDMT Stress: 20,000 psi
As Per: UG-20(f)

Longitudinal Seam, Allowable Pressure

Pressure to Stress Ratio = $E \cdot t / (R + 0.6 \cdot t)$
New = 0.01262 = $1.000 \cdot 0.8199 / (64.500 + 0.6 \cdot 0.8199)$
Corroded = 0.01262 = $1.000 \cdot 0.8199 / (64.500 + 0.6 \cdot 0.8199)$

Based on: UG-27(c)(1) Eq(1)

Maximum Design Pressure = Allowable Stress x Pressure to Stress Ratio

Allowable Stress	Operating Condition		New	Corroded
	Pressure to Stress Ratio		0.01262	0.01262
	Operating	20,000	252.3	252.3 psi
	Ambient	20,000	252.3	252.3 psi
	MDMT	20,000	252.3	252.3 psi

Circumferential Seam, Allowable Pressure

Pressure to Stress Ratio = $2 \cdot E \cdot t / (R - 0.4 \cdot t)$
New = 0.02172 = $2 \cdot 0.850 \cdot 0.8199 / (64.500 - 0.4 \cdot 0.8199)$
Corroded = 0.02172 = $2 \cdot 0.850 \cdot 0.8199 / (64.500 - 0.4 \cdot 0.8199)$

Based on: UG-27(c)(2) Eq (2)

Maximum Design Pressure = Allowable Stress x Pressure to Stress Ratio

Allowable Stress	Operating Condition		New	Corroded
	Pressure to Stress Ratio		0.02172	0.02172
	Operating	20,000	434.4	434.4 psi
	Ambient	20,000	434.4	434.4 psi
	MDMT	20,000	434.4	434.4 psi

SE HEAD CALCULATIONS

Material Specification: SA516-70
Joint Efficiency: 1.000
Outer Diameter: 130.629 in
New Inner Diameter: 129.000 in
Corroded Inner Diameter: 129.000 in
Fabrication Thickness: 0.8147 in
Corrosion Allowance: 0.0000 in
Corroded Thickness: 0.8147 in

OPERATING CONDITIONS

Design Pressure: 252.3 psi
Operating Temperature: 115.0 deg F
Ambient Temperature: 70.0 deg F
MDMT: -20.0 deg F
Allowable Operating Stress: 20,000 psi
Allowable Ambient Stress: 20,000 psi
Allowable MDMT Stress: 20,000 psi
As Per: UG-20(f)

Pressure to Stress Ratio = $2 \cdot E \cdot t / (D + 0.2 \cdot t)$
New = 0.01262 = $2 \cdot 1.000 \cdot 0.8147 / (129.000 + 0.2 \cdot 0.8147)$
Corroded = 0.01262 = $2 \cdot 1.000 \cdot 0.8147 / (129.000 + 0.2 \cdot 0.8147)$

Based on: UG-32(d) Eq(1)

Maximum Design Pressure = Allowable Stress x Pressure to Stress Ratio

Allowable Stress	Operating Condition		New	Corroded
	Pressure to Stress Ratio		0.01262	0.01262
	Operating	20,000	252.3	252.3 psi
	Ambient	20,000	252.3	252.3 psi
	MDMT	20,000	252.3	252.3 psi

REMARKS: REGISTRATION DRAWING

1.83 lb/USWG

Approval: _____

Date: _____ Page 2 of 40

RNG Pro-Tech Inc.**VESSEL INFORMATION SUMMARY**

These calculations comply with the ASME Code, Section VIII, Division 1, 1998 Edition, 2000 Addenda

08-Mar-2001

10:54 AM

Customer: **RNG**Project: **LPG STORAGE TANK, 129.0 in ID, 42000 USWG**

CRN:

Ref. Drawing: **2001-0308D REV 0**Job: **CRN Registration**File Name: **42M-129**File Date: **07-Mar-2001**

02:51 PM

Operating Conditions

MAWP	250.0 psi	1,724 kPa		
	Shell	Head	Shell	Head
Static Head	2.3	2.3 psi	15.9	15.9 kPa
Design Pressure	252.3	252.3 psi	1,740	1,740 kPa
Operating Temperature	115 deg F	46.1 deg C		
Ambient Temperature	70 deg F	21.1 deg C		
MDMT Temperature	-20 deg F	-28.9 deg C		

Vessel Information

Head Style & Flange	SE	2.00 in	50.8 mm
Outer Diameter	130.640	130.629 in	3,318.3 mm
Corroded Diameter	129.000	129.000 in	3,276.6 mm
Inner Diameter	129.000	129.000 in	3,276.6 mm
Corrosion Allowance	0.0000	0.0000 in	0.00 mm
Fabrication Thickness	0.8199	0.8147 in	20.83 mm
Corroded Thickness	0.8199	0.8147 in	20.69 mm
Extreme Fiber Elongation	0.32%	2.74%	< 5%

Joint Design Information

	Radiography	Code	Efficiency	Description
Shell Longitudinal Seam:	full	UW-12(a)	1.00	Double Butt
Shell Circumferential Seam:	partial	UW-11(a)(5)(b)	0.85	Double Butt
Head Longitudinal Seam:	none	UW-12(d)	1.00	Seamless
Head Circumferential Seam:	partial	UW-11(a)(5)(b)	0.85	Double Butt
			1.00	Governing Head Efficiency

Material Properties

Material	SA516-70	SA516-70		
Impact Tested?	No	No		
Allowable Operating	20,000	20,000 psi	137.9	137.9 MPa
Allowable Ambient	20,000	20,000 psi	137.9	137.9 MPa
Allowable MDMT	20,000	20,000 psi	137.9	137.9 MPa
As Per:	UG-20(f)	UG-20(f)		
Actual New	19,999	20,000 psi	137.9	137.9 MPa
Actual Corroded	19,999	20,000 psi	137.9	137.9 MPa
Density	0.2830	0.2830 lb/in ³	7.836	7.836 g/cm ³

Maximum Design Pressure

New & Cold	252.3	252.3 psi	1,739.9	1,739.9 kPa
Hot & Corroded	252.3	252.3 psi	1,739.9	1,739.9 kPa
MDMT & Corroded	252.3	252.3 psi	1,739.9	1,739.9 kPa

Hydrotest - New & Cold

Maximum Allowable Stress	328.0	328.0 psi	2,261.9	2,261.8 kPa
Equivalent Stress	328.0	328.0 psi	2,261.8	2,261.8 kPa
Minimum Code	328.0	328.0 psi	2,261.8	2,261.8 kPa

Operating Summary

Product	LPG	lb/USWG	kg/l
Product Load	lb	kg	0.509
85.0%	151,506	68,853	
FULL	178,242	81,004	
Water Capacity	350,107	159,109	
	lb	kg	
Operating Weight	228,350	103,584	
Hydrotest Weight	426,951	193,672	

BTU/hr-ft²-F R_Factor
Insulation NA NAMinimum Relief Capacity 30,079 ft³/min
14.194 m³/sec**Ordering Information**

Shell Plate Size 0.8199 in x 116.50 in x 410.84 in
Material SA516-70 Impact Testing NOT Required!
Quantity Required 6.00

SE Head 129.000 in ID x 0.8147 in Min Thickness
c/w 2.00 in Straight Flange
Material SA516-70 Impact Testing NOT Required!

Vessel Summary

LENGTH		
Seam-Seam	Tan-Tan	Overall
696.0	700.0	765.3 in
17,678	17,780	19,439 mm
58.00	58.33	63.78 ft
58' - 0.0	58' - 4.0	63' - 9.3 ft-in
VOLUME		
85.0%	FULL	
35,733	42,038 USWG	
4,777	5,620 ft ³	
135,243	159,109 LITER	
135.24	159.11 m ³	
WEIGHT		
	lb.	kg
Shell	65,864	29,877
Head	9,473	4,297
2.0%	1,507	683
Extra	0	0
TOTAL	76,844	34,858
Surface Area	2,252.0 ft ²	209.20 m ²

Remarks REGISTRATION DRAWING

1.83 lb/USWG

CodeCalc (TM) - Design and Analysis of Vessels and Exchangers. VER 4.5
Zick Analysis of Horizontal Pressure Vessels on Two Saddle Supports

NOTES

Customer: RNG	Job: CRN Registration
Project: LPG STORAGE TANK, 129.0 in ID, 42000 USWG	Vessel File Name: 42M-129
CRN: ,	File Date: 07-Mar-2001
Ref. Drawing: 2001-0308D REV 0	03:54 PM
Design Pressure, psi	FILE NAME : 42M-26
Design Temperature, Deg F	P 252.3
Corrosion Allowance, in.	TEMP 115.0
	CA 0.0
Shell Material	MAT1 sa516-70 (1)
Allowable Stress if material is not in tables:	ALTSTR1 20,000
Yield Stress if material is not in tables:	YLDSTR1 38,000
Head Material	MAT2 sa516-70
Allowable Stress if material is not in tables:	ALTSTR2 20,000
Density of Metal if other than 0.283 lb./in ³	DENS (2)
Density of Stored Liquid, lb/ft ³	DENSLIQ 31.8 (3)
Extra Weight, i.e. Insulation, Platforms, lb	EXTRA 1,000 (4)
Shell Diameter, in.	D 129.00 (5)
Shell & Head Diameter Basis (enter ID or OD)	BASIS ID
Shell Length, Tangent to Tangent, in.	L 700.0
Shell Thickness, in.	TS 0.8199
Shell Joint Efficiency	ES 1.0
Head Type (ELLI, TORI, or HEMI)	SE TYPE ELLI (6)
Head Thickness, in.	TH 0.8147
Head Joint Efficiency	EH 1.0
Aspect ratio (D/2h) for Elliptical Heads	AR 2.0
Knuckle ratio (L/r) for Torispherical Heads	LR
Crown radius for Torispherical heads	CR
Saddle to Saddle Spacing	312
Distance from Saddle to Vessel Tangent, in.	A 194.0 (7)
Saddle width, in.	B 11.00
Saddle bearing angle, deg	THETA 120.0 (8)
Wear Pad thickness, in.	TW 0.3750 (9)
Wear Pad Extension above Horn of Saddle, in.	EXTP 2.00
Wear Pad width, in.	WIDP 13.00
Stiffening Ring Location (ID,OD, or NONE)	RING None (10)
Material for Stiffening Ring	MAT3 Sa516-70
Allowable stress if material is not in tables:	ALTSTR3 20000
Stem of Tee Stiffener: Height, Thickness, in.	2.00 0.5000 (11)
Cross of Tee Stiffener: Width, Thickness, in.	0.00 0.0000
- OR - Moment of Inertia of Stiffening Ring, in ⁴	
- AND - Cross Section Area of Stiffening Ring, in ⁴	
- AND - Depth of Stiffening Ring, in.	

Shell Allowable Stress used in calculation	SAS 20,000 (12)
Shell Compressive Yield used in calculation	SCS 38,000
Head Allowable Stress used in calculation	HAS 20,000
Ring Allowable Stress used in calculation	RAS 20,000
Shell Thickness, Required vs. Actual, in.	Required Actual
Head Thickness, Required vs. Actual, in.	0.8199 0.8199 (13)
Shell M.A.W.P., Required vs. Actual, psi	0.8147 0.8147
Head M.A.W.P., Required vs. Actual, psi	252.3 252.3
	252.3 252.3
Volume of Vessel, cu ft.	5,619.7 (14)
Weight of Vessel, Empty, lbs	76,772

CodeCalc (TM) - Design and Analysis of Vessels and Exchangers. VER 4.5
Zick Analysis of Horizontal Pressure Vessels on Two Saddle Supports

		NOTES
Weight of Vessel, Full, lbs	255,301	
	Actual	Allowable
Longitudinal stress at top of saddles, psi	16,553	20,000 (15)
Longitudinal stress at bottom of saddles, psi	3,194	20,000
Longitudinal stress at top of midspan, psi	10,195	20,000 (16)
Longitudinal stress at bottom of midspan, psi	9,552	20,000
Tangential shear in shell, psi	1,080	16,000 (17)
Tangential shear in head, psi	0	16,000
Circumferential stress at horn of saddle, psi	-16,838	-30,000 (18)
Additional stress in head as stiffener, psi	0	5,000 (19)
Ring Compressive stress in shell, psi	-5,297	-19,000 (20)
Stiffener circumferential stress at shell, psi	No Stiff ening Ring	(21)
Stiffener circumferential stress at tip, psi	No Stiff ening Ring	

FORMULAS AND SUBSTITUTIONS FOR ZICK ANALYSIS RESULTS:

Longitudinal Stress due to Internal Pressure = $P \cdot ((D/2 + CA) - 0.4 \cdot (TS - CA)) / (2 \cdot (TS - CA))$ = $+252.3 \cdot ((129.000/2 + 0.000) - 0.4 \cdot (0.820 - 0.000)) / (2 \cdot (0.820 - 0.000))$	SLP =	9874
Longitudinal bending (+-) at Saddle = $3 \cdot Q \cdot (L/12) \cdot K.1 / (@PI \cdot R \cdot R \cdot (TS - CA))$ = $3 \cdot 127651 \cdot (700.00/12) \cdot 3.20427 / (@PI \cdot 64.50 \cdot 64.50 \cdot (0.820 - 0.000))$	SLS =	6680
Longitudinal Bending (+-) at Midspan = $3 \cdot Q \cdot (L/12) \cdot K.2 / (@PI \cdot R \cdot R \cdot (TS - CA))$ = $3 \cdot 127651 \cdot (700.00/12) \cdot -0.15445 / (@PI \cdot 64.50 \cdot 64.50 \cdot (0.820 - 0.000))$	SLM =	-322
Tangential Shear in Shell near Saddle = $Q \cdot K.4 \cdot ((L - H - 2 \cdot A) / (L + H)) \cdot (R \cdot TS)$ = $127651 \cdot 1.171 \cdot ((700.00 - 32.3 - 2 \cdot 194.00) / (700.00 + 32.3)) \cdot (64.50 \cdot 0.820)$	STANS =	1080
Tangential Shear in Head used as Stiffener = Head is not used as Stiffener = 0	STANH =	0
Circumferential Stress at Horn of Saddle = $-Q / (4 \cdot TEM \cdot (B + 1.56 \cdot @SQRT(R \cdot TEM))) - 3 \cdot Q \cdot K.7 / (2 \cdot TEB2)$ = $-127651 / (4 \cdot 0.820 \cdot (11.00 + 1.56 \cdot @SQRT(64.50 \cdot 0.820))) - 3 \cdot 127651 \cdot 0.053 / (2 \cdot 0.672)$	SCIRC =	-16838
Additional tension in Head used as Stiffener = Head is not used as Stiffener = 0	STENH =	0
Circumferential Compression at bottom of shell = $(Q \cdot K.9 / (TEM9 \cdot (B + 1.56 \cdot @SQRT(R \cdot TEM9))))$ = $(127651 \cdot 0.760 / (0.820 \cdot (11.00 + 1.56 \cdot @SQRT(64.50 \cdot 0.820))))$	SRING =	-5297
Circumferential Stress in Shell at Stiffener = There is no Stiffener = 0	STIFFS =	NA
Circumferential Stress in Stiffener at tip = There is no Stiffener = 0	STIFFR =	NA



MaXfield Inc.

COATING INSPECTION REPORT

Testex Tape

PASTE HERE

Date Of Startup: Oct 14 05
Job Description: Enclosure
Serial Number: 311272
Job Foreman: _____

SURFACE PREPARATION

Near White: _____ Comm: ✓ White: _____
SSPC-SP10 _____ SSPC-SP6 _____ SSPC-SP5 _____
Abrasive Material: Sil Grade: 4-7 Sieve: _____
Compressor Size: 900 Condition: Good
No. of Sand Pots: 5 Nozzle Size: 7 Nozzle Press. _____
Traps (Oil, Moisture): Good
Surface pressure: _____ How Profile Measured: _____
Metal temp.: 60 Air Temp: 60 R.H.: 18% Dew Point: _____
Surface Accepted for Coating Date: Oct 14 05 MILS
Time: 4:00 PM Magnetic Base Reading: _____
Comments: _____

Date: Oct 14 05

COATING APPLICATION

Product: Devco Thinner: None
Specified Thickness: MS No. of Coats Specified: _____
1st COAT: Devco Date of Application: Oct 15 05
Part A Batch No. 349 DTM
Part B Batch No. _____
Type of Thinner: T9 % Thinner Used: 5%
Metal Temp: 70 Air Temp: 73 RH: 22 Dew Point: _____
Date of Inspection: _____ Time: _____
Color: White Appearance: _____
D.F.T: 4-6 (Ave. MILS) Low: 4 MILS High: 6 MILS
Comments: _____

Date: Oct 15 05

2nd Coat: _____ Date of Application: _____
Part A Batch No.: _____
Part B Batch No.: _____
Type of Thinner: _____ % Thinner Used: _____
Metal Temp: _____ Air Temp: _____ R.H. _____ Dew Point _____
Date Of Inspection: _____ Time: _____
Color: _____ Appearance: _____
D.F.T.: _____ (Ave. MILS) Low: _____ MILS High: _____ MILS
Comments: _____

Date: _____

3rd Coat (IF REQUIRED) _____ Date of Application: _____
Part A Batch No.: _____
Part B Batch No.: _____
Type of Thinner: _____ % Thinner Used: _____
Metal Temp: _____ Air Temp: _____ R.H. _____ Dew Point _____
Date Of Inspection: _____ Time: _____
Color: _____ Appearance: _____
D.F.T.: _____ (Ave. MILS) Low: _____ MILS High: _____ MILS
Comments: _____

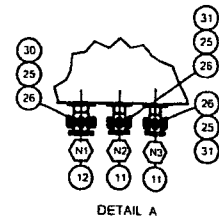
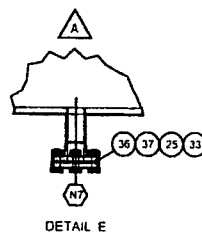
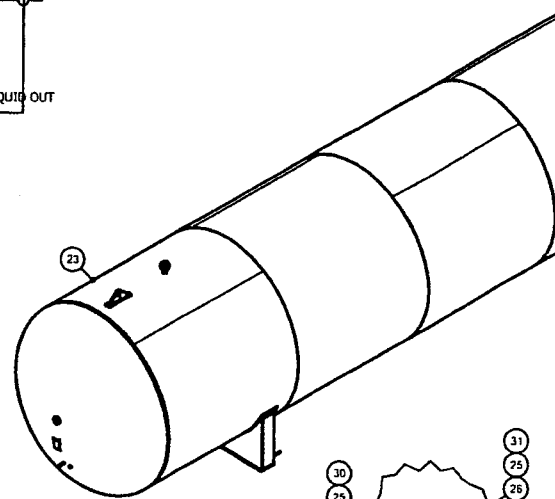
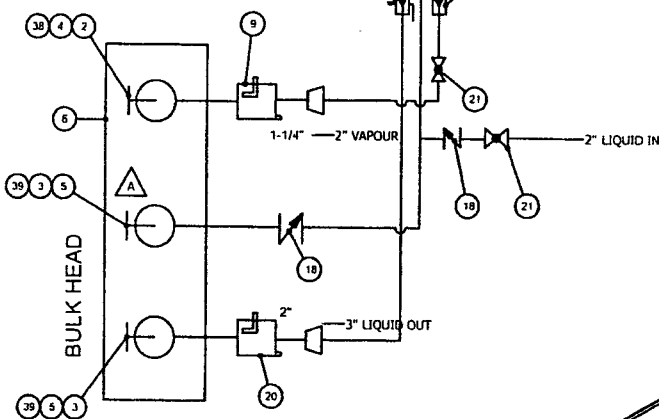
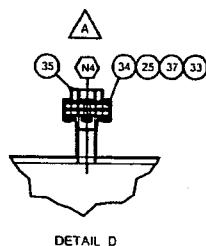
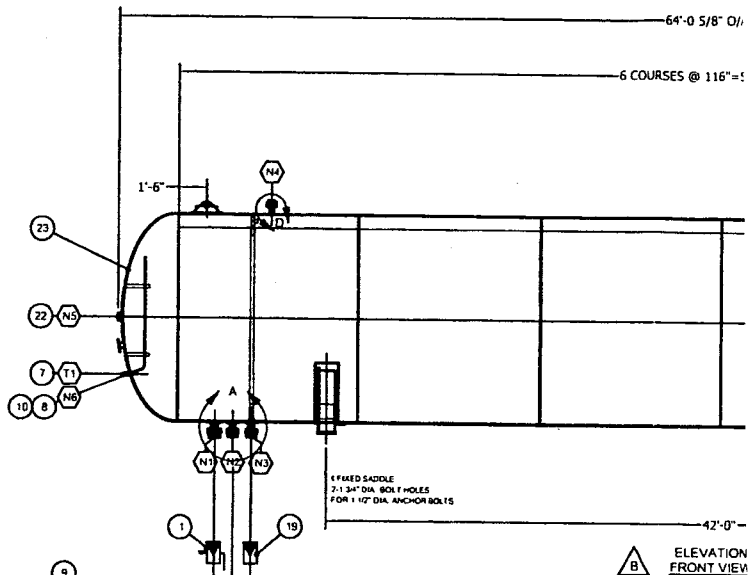
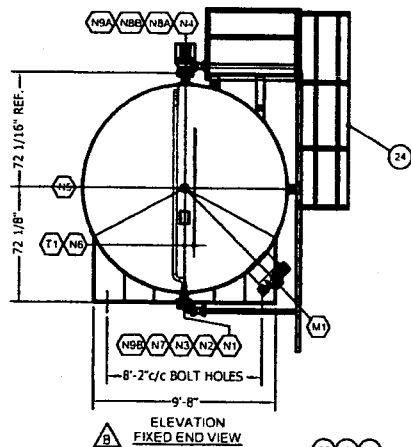
Date: _____

Holiday Test: _____ Date of Test: _____
Type of Tester: _____
No. Of Holidays: _____ Repair Material: _____
Repairs Tested: _____ Repairs Accepted: _____
Type Of Cure Test: _____ Accepted: _____

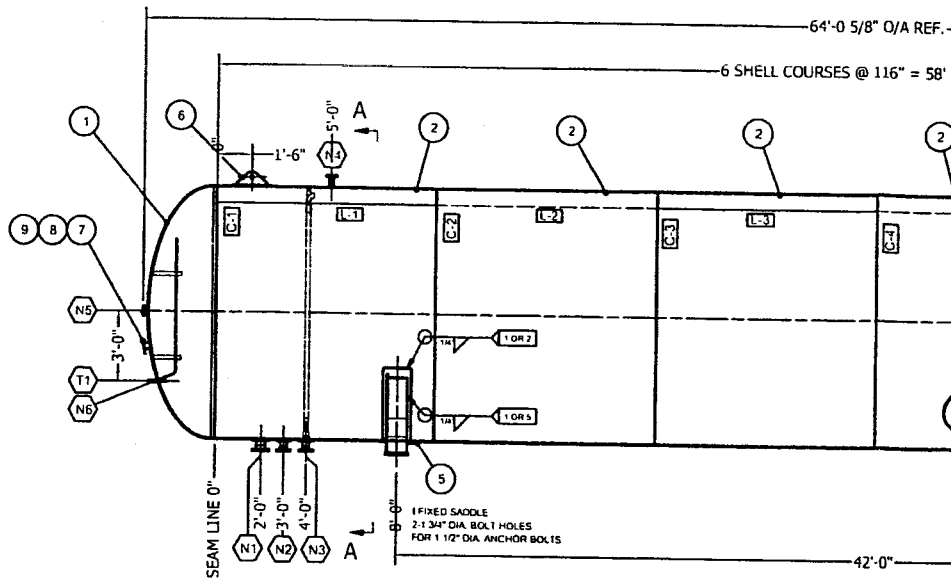
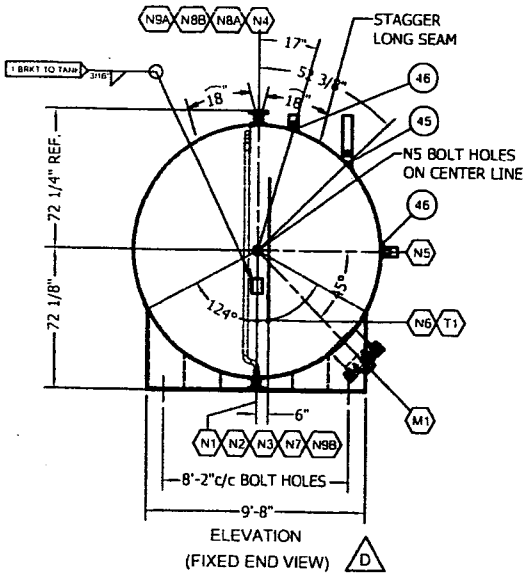
Release Date: Oct 16 05

Coating Applicator: [Signature] Print: Tim Craig

QC Check: (Inspector) [Signature]



NOZZLE MK #	SERVICE	No REQD	SIZE	RATING	TYPE	BORE	EXTER PROJ.
N1	LIQUID OUT	1	4"	150#	RFWN	XH	6"
N2	LIQUID IN	1	3"	150#	RFWN	XH	6"
N3	VAPOUR RISER	1	3"	150#	RFWN	XH	6"
N4	PURGE	1	2"	150#	RFWN	XH	6"
N5	FLOAT GAUGE	1			FLOAT GAUGE ADAPTOR		2-1/2"
N6	PRESSURE GAUGE AND 85% OUTAGE	1	3/4"x1/4"	3000#	RED CPLG		3/4"
N7	LIQUID SPARE C/W BLIND	1	2"	150#	RFWN	XH	6"
N8AB	PSV	2	1"	300#	RFWN	XH	6"
N9AB	BRIDLE	2	2"	150#	RFWN	XH	6"
T1	THERMOWELL	1	1/2"		DWG 722-19A		2 1/2"
M1	MANWAY - BLIND	1	18"	150#	RFWN	SCH 40	10"

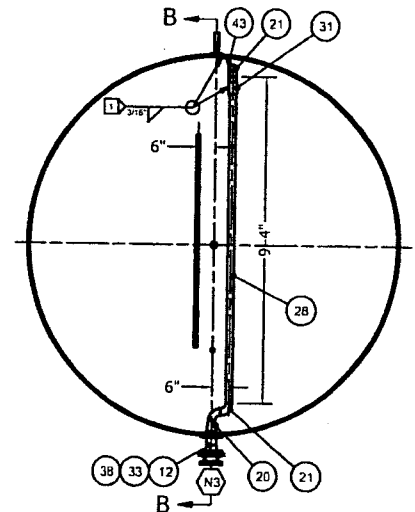


SHOP NOTES:

- 1) BOLT HOLES TO STRADDLE NATURAL CENTRE LINE, EXCEPT AS NOTED.
- 2) FLANGE GASKET SURFACES TO BE PROTECTED FROM WELD SPATTER.
- 3) ALL INSIDE CONNECTIONS TO BE ROUNDED TO 1/8\"/>

INSPECTION NOTES:

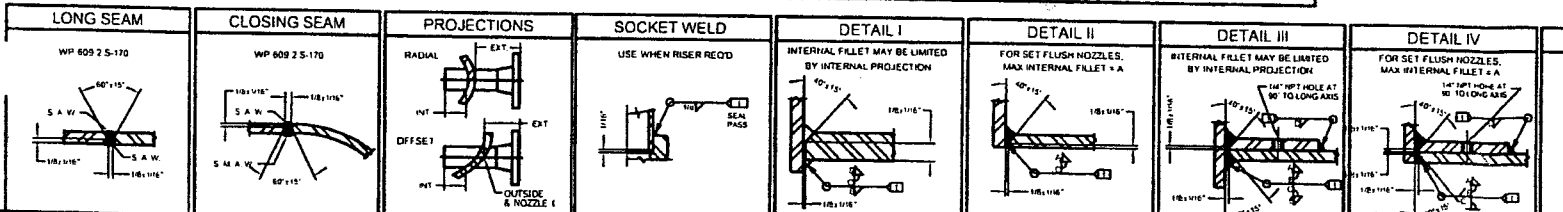
- 1) IMPACT TESTING EXEMPT AS PER UG20(f) (1) TO (5).
- 2) ALL SPLIT REPADS MUST HAVE 100% RT ON ALL BUTT WELDS.

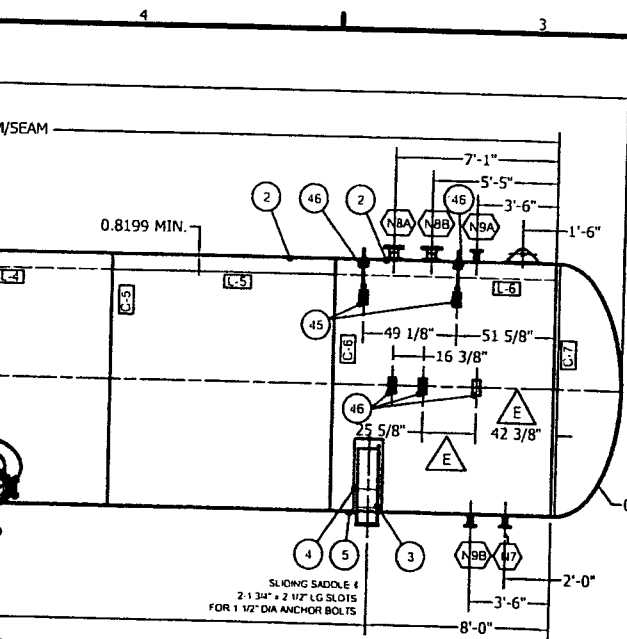


SECTION A-A

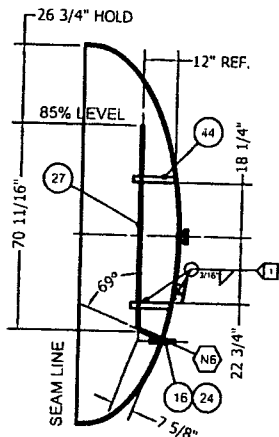
NOZZLE MK #	SERVICE	No RECD	SIZE	RATING	TYPE	BORE	EXTER. PROJ.	MINIMUM INTERNAL PROJECTION	REINFORCING PAD THICKNESS	PAD OD.	WELD DETAILS	WELD SIZES	REMARKS
N1	LIQUID OUT	1	4"	150#	RFWN	XH	6"	0"	0.875	8.25	IV, VI	3/8	ITEMS #13,34,39
N2	LIQUID IN	1	3"	150#	RFWN	XH	6"	0"	0.875	6.25	IV, VI	3/8	ITEMS #12,32,38
N3	VAPOUR w/ RISER	1	3"	150#	RFWN	XH	6"	7/8"	0.875	6.25	III, VI	3/8	ITEMS #12,20,21,28,31,33,38,43
N4	PURGE	1	2"	150#	RFWN	XH	6"	0"			II, VI	3/8	ITEMS #10,29
N5	FLOAT GAUGE	1			FLOAT GAUGE ADAPTOR		2-1/2"				II	3/8	ITEMS #22,37
N6	PRESSURE GAUGE AND 85% OUTAGE	1	3/4"x1/4"	3000#	RED. CPLG		3/4"	7/16"			I	1/4	ITEMS #16,24,27,44
N7	LIQUID (SPARE)	1	2"	150#	RFWN	XH	6"	0"			II, VI	3/8	ITEMS #10,29
N8A/B	PSV	2	4"	300#	RFWN	XH	6"	0"	0.875	8.25	IV, VI	3/8	ITEMS #14,35,39
N9A/B	BRIDLE	2	2"	150#	RFWN	XH	6"	0"			II, VI	3/8	ITEMS #11,30
T1	THERMOWELL	1	1/2"		DWG 722-19A		2 1/2"	5 1/4"			VIII		ITEMS #19
M1	MANWAY w/BLIND	1	18"	150#	RFWN	SCH 40	10"	1"	0.875	35	III, VI	3/8	ITEMS #15,17,18,26,36,40,41,42

RT 2	W	CROSS
MAWP	250	
MDMT	20°F	
	29°C	
SER. NO.	38442A	
C.M.N.	PPM1371	
VESSEL	42,000 USWG 12	
I.D.	120	IN
L.G.	64	FT 1 IN
SHL	0.8199	INT 2
MSB	0.8147	INT 2
C.A.	NL	IN
VOL	5620	CU FT





SECTION B-B



SECTION B-B

IT	LOCATION	PART NO	QT	UM	DESCRIPTION	COMMENTS
1	HEAD	67502	2	EA	HD 2-15E 129in X 0.8147MIN 2SF SA516-70	
2	SHELL	67501	3	EA	PL 8199 X 117 X 412 SA516-70 NIL CIA	
3	SADDLE	56140	2	EA	SADDLE 129ID SIDE WEB NO PAD STD	DWG 9501-32C
4	REPAD	51387	30	F2	PL 375" SA 516-70	2 PCS 12 1" x 15"
5	STRAP	54136	2	EA	STRAP GROUND FOR PRESSURE VESSEL	DWG 8803-01A
6	LIFT LUG	65154	2	EA	LIFTING LUG - 35,000LBS CAPACITY	DWG9904-12A
7	DATA PL	58077	1	EA	PL DATA DUAL UNITS METRIC/IMP	DWG 8805-15A
8	DATA PL	55884	1	EA	BRKT DATA PL EXTN	DWG 8507-82A
10	N4, N7	53805	2	EA	FLG 2 CL150 RFWN XH BORE SA105N	
11	N9A/B	53805	2	EA	FLG 2 CL150 RFWN XH BORE SA105N	
12	N2,N3	18650007	2	EA	FLG 3 CL150 RFWN XH BORE SA105N	
13	N1	53808	1	EA	FLG 4 CL150 RFWN XH BORE SA105N	
14	N8	53809	1	EA	FLG 4 CL300 RFWN XH BORE SA105N	
15	M1	59094	1	EA	FLG 18 CL150 RFWN SCH40 SA105N	
16	N6	50849	1	EA	CPLG RED 3/4" FNPT X 1/4" SW 3000# (MOD)	DWG 8309-8A-1
17	M1	54060	1	EA	FLG BLIND 18 CL150 RF SA105N	
18	M1	67526	1	EA	GASKET DURLON 8500 18 CL150 1/16" THK X 21.00" OD X 18.00" ID	
19	T1	50826	1	EA	THERMOWELL 1/2" FNPT X 9" LG	DWG 722-19A
20	N3	54106	1	EA	REDUCER CONC 3 X 2 STD SA234 WPB	
21	N3	51629	3	EA	ELBOW WELD 90 LR 2 STD SA234 WPB	
22	N5	17255332	1	EA	ADAPT 8 BOLT WELD FLOAT GAUGE SA181-60	022-00500
23	N6	18630050	1	EA	PLUG HEX HEAD 3/4 NPT SA105	
26	M1 HING	65910	1	EA	HINGE MANWAY ANGLED 18" 150# 45 DEG	DWG 2000-0705C
27	N6	51524	6.6	FT	PIPE 1/4" XH SMLS SA106B	1 PCS 79" LG
28	N3	51551	3.4	FT	PIPE 2" STD SMLS SA106B	1 PCS 9'4" LG
29	N4,N7	51552	0.7	FT	PIPE 2" XH SMLS SA106B	2 PCS 4-1/8" LG
30	N9A/B	51552	0.8	FT	PIPE 2" XH SMLS SA106B	2 PCS 4-3/4" LG
31	N3	51554	0.3	FT	PIPE 2-1/2" STD SMLS SA106B	1 PCS 4" LG
32	N2	51560	0.3	FT	PIPE 3" XH SMLS SA106B	1 PCS 3-7/8" LG
33	N3	51560	0.4	FT	PIPE 3" XH SMLS SA106B	1 PCS 4-3/4" LG
34	N1	51564	0.3	FT	PIPE 4" XH SMLS SA106B	1 PCS 3-5/8" LG
35	N8	51564	0.3	FT	PIPE 4" XH SMLS SA106B	1 PCS 3-3/8" LG
36	M1	59095	7.0	IN	PIPE 18" SCH40 SMLS SA106B	1 PCS 7" LG
37	N2,N3 PAD	84691	0.8	F2	PL 6875" SA-516-70	2 PCS 7-1/2" x 7-1/2"
39	N1,N8 PAD	84691	1.0	F2	PL 6875" SA-516-70	2 PCS 8-1/2" x 8-1/2"
40	M1 PAD	59225	8.3	F2	PL 875" SA516-70	1 PCS 34-1/2" x 34-1/2"
41	M1	54061	18	EA	STUD 1-1/8NC X 6 LG 8 TPI SA 193-B7	
42	M1	54062	36	EA	NUT HEX 1-1/8" 8TPI SA 194-2H	
43	N3	51411	1.0	FT	BAR FLAT 1/4" X 2" 44W	1 PCS 12" LG
44	N6	51411	3.4	FT	BAR FLAT 1/4" X 2" 44W	2 PCS 14" LG
45	L&P PAD	59206	0.6	E2	PL 375" SA516-70	2 PCS 10" x 4"
46	BRIDLE PAD	51387	1.1	E2	PL 375" SA516-70	5 PCS 8" x 4"

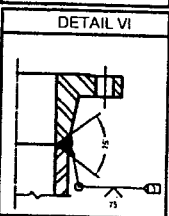
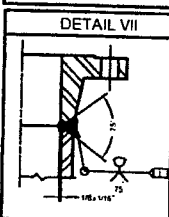
CERTIFIED
AS-BUILT PRINT

Per *[Signature]* Oct. 25, 2005

DESIGN DATA - ENGLISH (METRIC) UNITS

ASME SEC. VIII DIV. 1, 2004 EDITION, NO ADDENDA	SYMBOL: UW-12 (a) & (d)
DESIGN INT: 250 PSI (1724 KPA)	EXT: 115° F
MAWP INT: 250 PSI (1724 KPA)	EXT: 46° C
DESIGN TEMP - INT & EXT: 115° F (46° C)	
UNIT: -20° F AT 250 PSI -29° C AT 1724 KPA	
XRAY SHELL LONG: FULL CIRC. SPOT LW-118 (50)	
XRAY HEAD LONG: SML CIRC. SPOT LW-120 (120)	
JOINT EFF - HEAD CIRC: 0.7	SHELL CIRC: 0.7
JOINT EFF - HEAD LONG: 1.0	SHELL LONG: 1.0
STRESS RELIEVED	
HYDRO TEST NEW & COLD LIMITED BY: 325 PSI (2241 KPA) HEAD & SHELL	
EST SHIPPING WEIGHT: 78,300 LBS (35,500 KG)	
SANDBLAST: SSPC-SP10	
PRIMER: BAR-RUST 235 DFT 6-8 MILS (COLOR OFF WHITE)	
PAINT: (TOP COAT) DEV-RAN 229H DFT: 1-2 MILS (F INISH COLOR: WHITE)	
INSULATION: NONE	
CRN: P9543.23	
REG DRAWING: DD-REG_DRAWING	
DIAMETER: 129 IN (3277 MM)	
LENGTH DIA: 64'-5"	
CAPACITY: 5620 CU. FT. (159 CU. M)	
SURFACE AREA: 2252 FT ² (209.2 M ²)	
HEAD TYPE: 2.1 HEM-ELLIPTICAL	
HEAD MATERIAL: SA 516-70	
HEAD THICKNESS: 0.8147" MIN (20.76 MM)	
HEAD CORROSION ALLOWANCE: NONE	
SHELL MATERIAL: SA 516-70	
SHELL THICKNESS: 0.8199" MIN (20.82 MM)	
SHELL CORROSION ALLOWANCE: NONE	
STUDS: SA 193-B7M	
NUTS: SA 194-2H	
AW GASKETS: DURLON 8500 1/16"	
FLANGES: SA 105	
SUPPORT MTL: 44 W	
REINFORCING MTL: SA 516-70	

DETAIL VIII	WELD PROCEDURES
1	609.2-S-170 (S.M.A.W)
2	609.2-S-170 (S.A.W)
3	609.2-S-140 (G.M.A.W)
4	609.2-S-155 (S.M.A.W)
5	609.2-S-169 (F.C.A.W)



REV	DRAWN	DATE	CHECKED	APPROVED	DESCRIPTION
G					
F	JWANG	10/11/2005	KD		REVISED DESIGN DATA AT PAINT & TITLE
E	JWANG	10/3/2005	KD		REVISED PAD POSITION
D	JWANG	9/26/2005	KD		ADDED VIEW NAMES
C	MW				CORR WELD SIZES
B	JWANG	3/6/2005	KD		DELETE ITEM #37 REPAD FOR FLOAT GAUGE
A	JWANG	26/7/2005	DR		DELETE ITEM #23 AND REVISED ITEM #18
O	JWANG	3/7/2005	DR		INITIAL RELEASE DRWG FROM 2004-67080 & 2005-61210

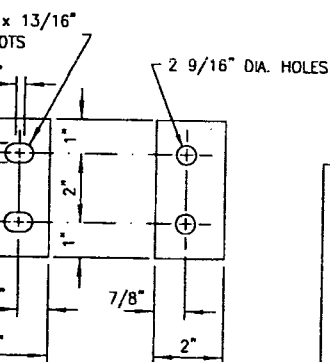


THIS DRAWING IS THE PROPERTY OF MAXFIELD INC. AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF MAXFIELD INC.

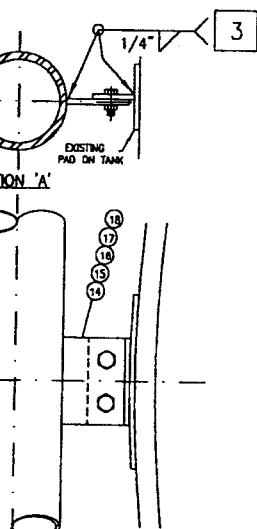
42,000 USWG 129" ID LPG STORAGE VESSEL
ENCANA OIL & GAS PARTNERSHIP
PONOKA GAS PLANT
LSD-12-22-042-26 W4M

THIRD ANGLE PROJECTION	SEE DRAWING 2002-67070 FOR APPLICABLE TOLERANCE UNLESS OTHERWISE STATED	JOB 31-1272
SCALE 1:30	PNV 89035	DRAWING NO 2005-06190
		REV F

C	JC	05.07.2
B	PP	02.08.1
A	JC	01.03.2
O	JC	01.03.2
REV NO.	DRWN	DATE



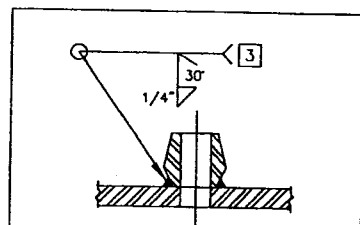
OF ITEMS #14 & #15



IFIED
PRINT

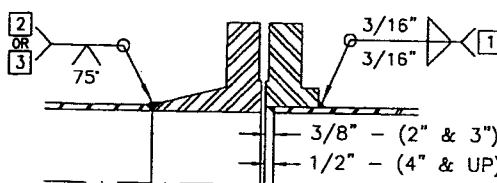
Oct. 25, 2005

SCHEDULE OF OPENINGS		
MRK	DESCRIPTION	
9-A	3/4" x 3000#	TOL -DRAIN
9-B	3/4" x 3000#	TOL -LEVEL CONN.
9-C	3/4" x 3000#	TOL -LEVEL CONN.
9-D	3/4" x 3000#	TOL -LEVEL CONN.
9-E	3/4" x 3000#	TOL -LEVEL CONN.
9-F	3/4" x 3000#	TOL -LEVEL CONN.
9-G	3/4" x 3000#	TOL -LEVEL CONN.
9-H	3/4" x 3000#	TOL -VENT
9-I	3/4" x 3000#	TOL -LT CONN.
10-A	2" x 3000#	TOL -LLSD
10-B	2" x 3000#	TOL -HLA
10-C	2" x 3000#	TOL -HLSD



WELD PROCEDURES

- 1 609.2-S-170 (SMAW)
- 2 609.2-S-140 (GMAW)
- 3 609.2-S-94-1 (SMAW)
- 4 609.2-S-161 (SMAW)



TYPICAL WELD DETAIL

NOTES:

1. BRIDLE TO BE TEST FITTED AND SHIPPED LOOSE.
2. ALL NUTS, STUDS, BOLTS, AND WASHERS TO BE PACKAGED AND SHIPPED LOOSE WITH BRIDLES.
3. ALL OPENINGS TO BE PLUGGED WITH STEEL PLUGS OR FLANGE PROTECTORS FOR SHIPPING.
4. FOR BRIDLE NOZZLE SPOOLING AND SUPPORT PAD, SEE VESSEL DRAWING.
5. FOR PAINTING INSTRUCTIONS, REFER TO JOB ORDER.
6. FOR FURTHER INFORMATION ON ALL ITEMS MARKED "REF" PLEASE REFER TO VESSEL DRAWING.

20					
19	VALVES	54282	2	EA	VALVE BALL 2" CL150# FLG REG BORE
18	BRIDLE CLIP	56639	2	EA	NUT HEX 1/2" NC SAE GR8 ZN PLT
17	BRIDLE CLIP	50587	2	EA	WASHER LOCK 1/2 ZN PL
16	BRIDLE CLIP	55846	2	EA	BOLT HEX 1/2" NC X 1-1/2" GR8 ZN PL
15	CLIP TANK	51425	0.2	FT	BAR FLAT 1/4" X 4" 44W
14	CLIP BRIDLE	51425	0.3	FT	BAR FLAT 1/4" X 4" 44W
13		50395	6	EA	PROTECTOR FLG 2" 150# MASONITE
12		18630090	3	EA	PLUG HEX HEAD 2 NPT SA105
11		18630050	9	EA	PLUG HEX HEAD 3/4 NPT SA105
10		62944	3	EA	THREDOLET 2 3000# 3.5-4 RUN SA105
9		55063	9	EA	THREDOLET 3/4 3000# X 2-2.5 RUN SA105
8		50634	6	EA	GASKET FLEXITALIC 2" RF CL150 304-SS
7		51710	48	EA	NUT HEX 5/8" NC SA 194-2H
6		51718	24	EA	STUD 5/8NC X 3-1/4 LG SA 193-B7
5		53805	6	EA	FLG 2 CL150 RFWN XH BORE SA105N
4		51552	8.8	FT	PIPE 2" XH SMLS SA106B (BBE)
3		53803	4	EA	ELBOW WELD 90 LR 2 XH SA234 WPB
2		54069	2	EA	REDUCER CONC 4 X 2 XH SA 234 WPB
1	BODY	51564	11.7	FT	PIPE 4" XH SMLS SA 106B (BBE)
ITEM	LOCATION	PART NO	QTY	UM	DISCRPTION



Maxfield Inc.

THIS DRAWING IS CONFIDENTIAL IN NATURE AND IS THE EXCLUSIVE PROPERTY OF Maxfield Inc., CROSSFIELD ALBERTA. IT MAY NOT BE REPRODUCED IN ANY WAY WITHOUT THE WRITTEN PERMISSION OF Maxfield Inc.

2" BRIDLE w/4" BODY FOR 129"
STORAGE VESSELS
(CL150 FLANGES)

THIRD ANGLE
PROJECTION



TOLERANCES UNLESS NOTED

DECIMAL	ANGULAR	FRACTION
X.X ±0.100	±0.5°	±1/16 IF < 10°-0"
X.XX ±0.010		±1/8 IF > 10°-0"
X.XXX ±0.005		

JOB:

DRAWING No.
2001-0325C
SHEET 1 OF 1

REV

C

CHECKED BY
APPROVED BY

DESCRIPTION

SCALE: NTS

P/N: - 66526