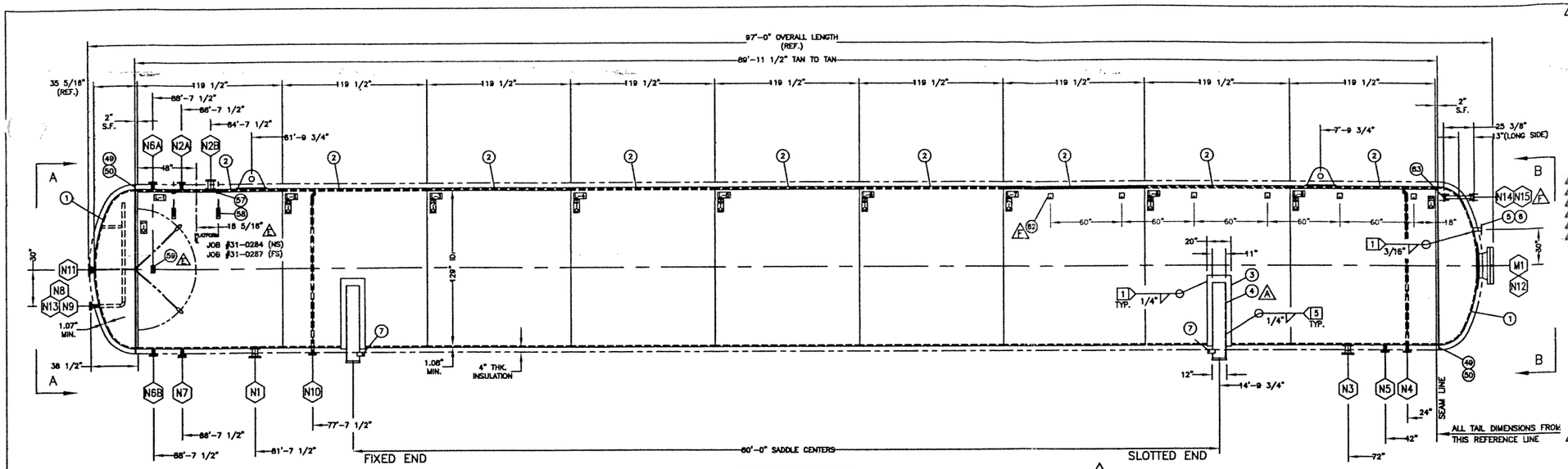
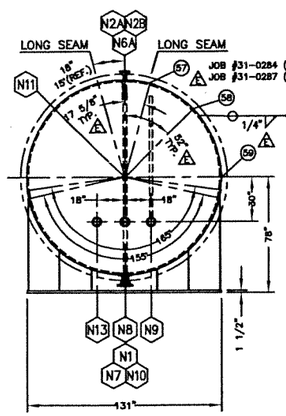
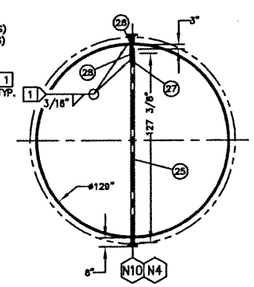


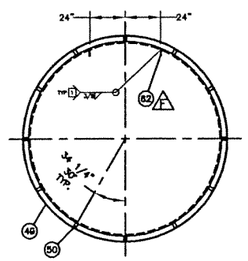
ELEVATION VIEW



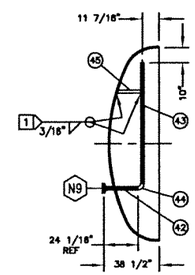
SECTION A-A



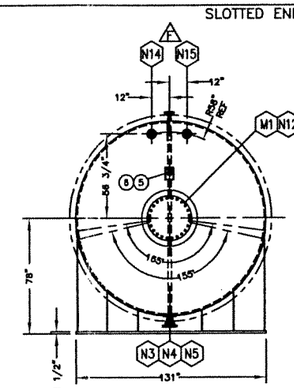
N4/N10 RISER DETAIL



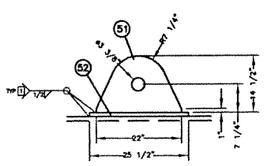
HEAD INSULATION RING AND COIL CLIP DETAIL



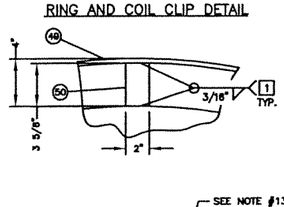
N9 RISER DETAIL



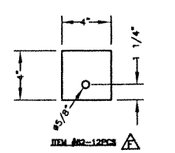
SADDLE DETAIL
ONE END FIXED – ONE END SLOTTED
SECTION B-B



LIFT LUG DETAIL



ITEM #62-12PCS



SEE NOTE #13

SHOP NOTES:

1. BOLT HOLES TO STRADDLE NATURAL C/L, EXCEPT AS NOTED.
2. FLANGE SURFACE TO BE PROTECTED FROM WELD SPATTER.
3. ALL INSIDE CONNECTIONS TO BE ROUNDED TO 1/8" R. MIN. PADS TO BE RADIUSED ON ALL CORNERS.
4. FOR VESSEL PADS, 1/4" DIA. WEEP HOLE REQ'D 3/4" FROM EDGE (TYPICAL).
5. AFTER FINAL HYDROTEST, VESSEL TO BE COMPLETELY DRAINED & DRIED PRIOR TO COVERING AND PROTECTING ALL OPENINGS.
6. VESSEL TO BE SHIPPED WITH SERVICE BLINDS, GASKETS AND BOLTING IN PLACE
7. NO EXPOSED OPENINGS ALLOWED WHILE IN SERVICE OR TRANSIT. ALL FLANGE FACES TO BE PROTECTED. CPLDS TO BE FITTED WITH STEEL PLUGS.
8. ALL NOZZLE PROJECTIONS, INTERNAL AND EXTERNAL SHALL BE MEASURED ALONG SHORTEST SIDE UNLESS OTHERWISE SPECIFIED.
9. PIPE LENGTHS IN B/M ARE OVERALL, CUT LENGTH TO SUIT NOZZLE ACCORDING TO NOZZLE CHART.
10. IMPACT TEST EXEMPTED AS PER UG-20(f).
11. USE WELDING PROCEDURE WP 509.2 S-170 FOR TACK WELDING.
12. SHELL PLATES TO BE TRIMMED SQUARE TO WITHIN ±1/32, REDUCE PLATE WIDTH IF NECESSARY.
13. ADD 1/2" TO ALL PAD DIAMETERS WHEN CUTTING.

SHIPPING NOTES:

1. FOR SHIPPING USE TWO CRANES. MAX SLING ANGLE 5 °.

ITEM	LOCATION	PART NO	QTY	UM	DESCRIPTION	
1	HEADS	67511	2	EA	HD 2:1SE 129ID X 1.07MN 2SF SA516-70N	.
2	SHELL	67510	9	EA	PL 1.08" X 120" X 410" SA516-70N	.
3	WEAR PAD	59053	52.6	F2	PL .375" SA516-70N	2 PCS 15' 9-3/8" x 20"
4	SADDLES	67513	1	EA	SADDLE 129ID SIDE WEB 155 DEG NO PAD	DWG 2002-0806C
5	DATA PLATE	81103	1	EA	PL DATA UNITS MET/IMP EXTENDED VERS	DWG 9104-2A
6	DATA PLATE	65229	1	EA	BRKT DATA PL (EXTENDED VERSION) EXTRA LONG	DWG 9905-09A
7	GROUND LUG	63343	2	EA	GROUND LUG DETAIL	DWG 9803-28A
8	M1	56180	1	EA	FLG 20 CL300 RFWN XH BORE SA 105	O
9	M1/N12 BLIND	56181	1	EA	FLG BLIND 20 CL300 RF SA105N	O
10	M1	56118	1	EA	GASKET FLEXITALIC 20" RF CL300 304-SS	O
11	M1	58182	24	EA	STUD 1-1/4 NC X 8-1/4 LG SA 193-B7	O
12	M1	67269	48	EA	NUT HEX 1-1/4" NC SA194-2H	.
13	M1 PIPE	51578	5.3	IN	PIPE 20" XH SMLS SA 106B	1 PCS 5-1/4" LG
14	M1 REPAD	65586A	10.6	F2	PL 1.00" SA516-70N	1 PCS 39" x 39"
15	N11	172553332	1	EA	ADAPT 8 BOLT WELD FLOAT GAUGE SA181	DWG 9802-35A
16	N2B	67589	1	EA	FLG 3 BORE 4.563" FFSO SA105	DWG 2002-1008A
17	N1, N3	59619	2	EA	FLG 4 CL300 RFWN SCH 180 SA105	O
18	N1, N3 PIPE	58210	1.0	FT	PIPE 4" SCH160 SMLS SA 106B	2 PCS 6" LG
19	N1, N3 REPAD	65586A	1.0	F2	PL 1.00" SA516-70N	2 PCS 8-1/2" x 8-1/2"
20	N1, N3	50400	2	EA	PROTECTOR FLG 4" 300# PLASTIC	.
21	N2A, N5, N7	54886	3	EA	FLG 2 CL300 RFWN XH BORE SA105N	.
22	N2A, N5,N7 PIPE	51552	1.1	FT	PIPE 2" XH SMLS SA 106B	3 PCS 4-1/2" LG
23	N2A, N5	50398	2	EA	PROTECTOR FLG 2" 300# MASONITE	.
24	N4, N10	54886	2	EA	FLG 2 CL300 RFWN XH BORE SA105N	.
25	N4, N10 RISER	51552	21.2	FT	PIPE 2" XH SMLS SA 106B	2 PCS 10' 7-3/8" LG
26	N4, N10 RISER	53803	2	EA	ELBOW WELD 90 LR 2 XH SA234 WPB	.
27	N4, N10 RISER	51554	0.7	FT	PIPE 2-1/2" STD SMLS SA 106B	2 PCS 4" LG
28	N4, N10 RISER	67146	0.7	F2	PL .250 SA 516-70N	2 PCS 24" x 2"
29	N4, N10	50398	2	EA	PROTECTOR FLG 2" 300# MASONITE	.
30	N7	54890	1	EA	FLG BLIND 2 CL300 RF SA 105	.
31	N6A, N6B	54886	2	EA	FLG 2 CL300 RFWN XH BORE SA105N	.
32	N6A, N6B PIPE	51552	0.8	FT	PIPE 2" XH SMLS SA 106B	2 PCS 4-1/2" LG
33	N6A, N6B	50398	2	EA	PROTECTOR FLG 2" 300# MASONITE	.
34	N8, N9, N13	54886	3	EA	FLG 2 CL300 RFWN XH BORE SA105N	DWG 2002-0808D
35	N8 PIPE	51552	0.5	FT	PIPE 2" XH SMLS SA 106B	1 PCS 8" LG
36	N9, N13 PIPE	51552	1.5	FT	PIPE 2" XH SMLS SA 106B	2 PCS 9" LG
37	N8, N9, N13	56427	3	EA	FLG BLIND 2 CL300 RF 3/4NPT SA 105	.
38	LADDER/PLATFORM	67595	1	EA	LADDER & PLATFORM DETAIL	DWG 2002-1101D
39	N7, N8, N9, N13	51719	32	EA	STUD 5/8NC X 3-1/2 LG SA 193-B7	1550361
40	N7, N8, N9, N13	51710	64	EA	NUT HEX 5/8" NC SA 194-2H	.
41	N7, N8, N9, N13	54687	4	EA	GASKET FLEXITALIC 2" RF CL300/600 304-SS	.
42	N9 PIPE	51552	1.8	FT	PIPE 2" XH SMLS SA 106B	1 PCS 21-1/4" LG
43	N9 RISER	51532	6.8	FT	PIPE 2" STD ERW SA 53B	1 PCS 81-1/2" LG
44	N9 RISER	51629	1	EA	ELBOW WELD 90 LR 2 STD SA234 WPB	.
45	N9 RISER	51411	1.4	FT	BAR FLAT 1/4" X 2" SA 36	1 PCS 16-1/2" LG
46	N2B	51564	0.7	FT	PIPE 4" XH SMLS SA 106B	1 PCS 8-7/8" LG
47	N2B	65586A	0.5	F2	PL 1.00" SA516-70N	1 PCS 8-1/2" x 8-1/2"
48	N2B	50399	1	EA	PROTECTOR FLG 3" 300# MASONITE	.
49	INSULATION	65963	72.7	FT	BAR RND 3/8" 44W	2 PCS 38' 4" LG
50	INSULATION	67146	1.2	F2	PL .250 SA 516-70N	24 PCS 3-5/8" x 2"
51	LIFTLUG	64817	4.4	F2	PL 2" SA 516-70N IMPACT -50F	2 PCS 22" x 14-1/2"
52	LIFTLUG	65586A	1.9	F2	PL 1.00" SA516-70N	2 PCS 25-1/2" x 5-1/4"
53	N2B	67573	1	EA	GASKET DURLON 9000 3" CL300 FULL FACE 1/8" THK X 4 1/2" ID X 8 1/4" OD	.
54	N2B	17110009	8	EA	STUD 3/4NC X 4 LG SA 193-B7	.
55	N2B	17110008	16	EA	NUT HEX 3/4" NC SA 194-2H	.
56	N11	17250003	1	EA	GASKET FLEXITALLIC 3.00"OD X 2.31" ID FLOAT GA	.
57	PLATFORM PAD	59208	0.4	F2	PL .375" SA 516-70	2 PCS 3" X 8"
58	PLATFORM PAD	59206	0.5	F2	PL .375" SA 516-70	2 PCS 3" X 12"
59	BRIDLE PAD	59206	0.2	F2	PL .375" SA 516-70	1 PCS 3" X 6"
60	N14, N15	56179	2	EA	FLG 2 CL300 RFWN SCH160 SA105N	.
61	N14, N15	55072	3.7	FT	PIPE 2" SCH160 SMLS SA 106B	2 PCS 22-3/8" LG
62	CLIP	62855	1.3	F2	PL .500 SA516-70N	12 PCS 4" x 4"
63	N14, N15	58001	2	EA	FLG 2 CL300 RFSO SA105N	.

DESIGN DATA – ENGLISH (METRIC) UNITS

ASME SEC. VIII DIV 1, 2001 EDITION, NO ADDENDA			SYMBOL UW12 (c) & (d)
DESIGN INT: 325psi(224kPa) EXT: N/Apsi(N/AkPa)			DIAMETER 129.00" ID(3277mm)
MAWP INT: 325psi(224kPa) EXT: N/Apsi(N/AkPa)			LENGTH O/A 98'-6"(29413mm)
DESIGN TEMP. – INT & EXT: 115°F(46°C)& N/A°F(N/A°C)			CAPACITY: 8490ft^3(240m^3)
MDMT: △4 -20°F ● 325psi (-28.9°C● 224kPa)			SURFACE AREA: 3348ft^2(311m^2)
XRAY SHELL LONG: FULL UW-11(A) CIRC: SPOT UW-11(A)(5)B			HEAD TYPE: 2:1 ELLIPSOIDAL
XRAY HEAD LONG: N/A CIRC: SPOT UW-11(A)(5)B			HEAD MATERIAL: SA516-70N
JOINT EFF. – HEAD: 1.00 SHELL: 1.00			HEAD THICKNESS: 1.0700"MIN(27.18mm)
STRESS RELIEVED: NO			HEAD CORROSION ALLOWANCE: NIL"(NILmm)
HYDRO TEST NEW & COLD: 423psi(2917kPa)			SHELL MATERIAL: SA516-70N
LIMITED BY: DP			SHELL THICKNESS: 1.0800" (27.43mm)
EST. SHIPPING WEIGHT: 159700lb(72400kg)			SHELL CORROSION ALLOWANCE: NIL"(NILmm)
EST. HYDRO TEST WEIGHT: 715700lb(324700kg)			STUDS: SA193-B7
			NUTS: SA194-2H
SANDBLAST: SSPC-SP6			MW GASKETS: GASKET FLEXITALIC RF CL300 304-SS GASKET DURLON 9000 CL300 △3
PRIMER: DEVRAN 201			FLANGES: SA-105N PIPE: SA106B
PAINT: UNINSULATED SUFACES – URETHANE WHITE 2 COMP 369			SUPPORT MTL: SA516-70
INSULATION: 4" URETH BRD INSUL – 0.020" CLAD'G			REINFORCING MTL: SA516-70N
CRN R 0870.2			REG DRAWING 2002-0801D

CERTIFIED BY MaXfield Inc. CROSSFIELD, CANADA
RT 2 W
MAWP 325 PSI AT 115 °F / 2241 kPa(g) AT 46 °C
MDMT -20 °F AT 325 PSI / -28.9 °C AT 2241 (kPa)
SER. NO. BUILT 2002
C.R.N.
VESSEL 63,000 USWG CO2 STORAGE VESSEL
I.D. 129 IN. 3277 mm
I.G. 98 FT. 5 IN. 29413 mm
SHL. 1.08 IN 27.43 mm SA 516-70N
HDS. 1.07 IN. 27.18 mm SA 516-70N
C.A. NIL IN NIL mm
VOL. 8490 CU.FT. 240 CU.m

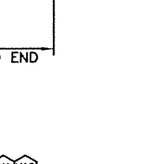
WELD PROCEDURES

1. WP 509.2-S-170 (S.M.A.W.)
2. WP 509.2-S-170 (S.A.W.)
3. WP 509.2-S-170 (S.A.W. (S.M.A.W.))
4. WP 509.2-S-140 (G.M.A.W. (S.M.A.W.))
5. WP 509.2-S-169 (F.C.A.W.)

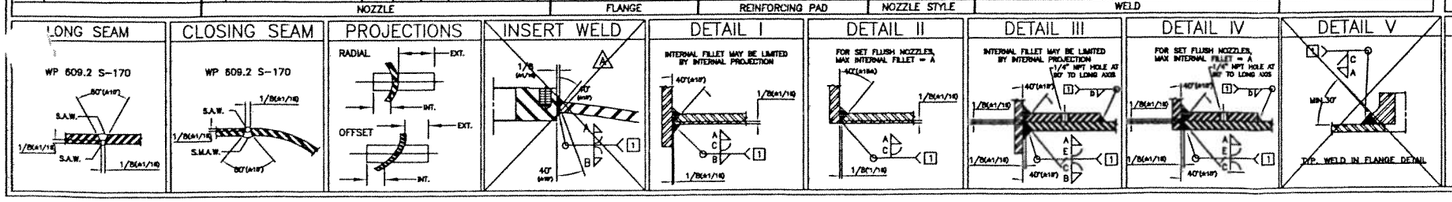
△4

DETAIL VIII

DETAIL VII



NOZZLE SCHEDULE Note: All dimension are in English units																																			
M1/N12	MANWAY C/W BLIND/ROTO GA	20	SCH 40	18.81	20.00	0	SA-106 B	N	N	20	WN	300	SA105	SA-516 70	1.0000	35.00	N	Y	0.594	10.00	0.00	IV , VII	0.375	–	FULL	0.563	FULL	–	–	ITEM #8,9,10,11,12,13,14
N1	LIQUID INLET	4	SCH 160	3.44	4.50	180	SA-106 B	N	N	4	WN	300	SA105	SA-516 70	1.0000	8.50	N	Y	0.531	8.00	0.00	IV , VI	0.375	–	FULL	0.563	FULL	–	–	ITEM #17,18,19,20
N2A	RELIEFF	2	SCH 80 (XH)	1.94	2.38	0	SA-106 B	N	N	2	WN	300	SA105	N/A	0.0000	0.00	–	–	0.218	6.00	0.00	II , VI	0.250	–	FULL	–	–	–	–	ITEM #21,22,23
N2B	RELIEF △4	4	SCH 80 (XH)	3.83	4.50	0	SA-106 B	N	N	3	SO	N/A	SA105	SA-516 70	1.0000	8.50	N	Y	0.337	8.00	0.00	IV , VII	0.375	–	FULL	0.563	FULL	0.337	0.337	ITEM #16,46,47,48
N3	LIQUID OUTLET	4	SCH 160	3.44	4.50	180	SA-106 B	N	N	4	WN	300	SA105	SA-516 70	1.0000	8.50	N	Y	0.531	8.00	0.00	IV , VI	0.375	–	FULL	0.563	FULL	–	–	ITEM #17,18,19,20
N4	VAPOUR RETURN C/W RISER	2	SCH 80 (XH)	1.94	2.38	180	SA-106 B	N	N	2	WN	300	SA105	N/A	0.0000	0.00	–	–	0.218	6.00	28.0	I , VI	0.250	0.250	FULL	–	–	–	–	ITEM #23,25,26,27,28,29
N5	PUMP BYPASS RETURN	2	SCH 80 (XH)	1.94	2.38	180	SA-106 B	N	N	2	WN	300	SA105	N/A	0.0000	0.00	–	–	0.218	6.00	0.00	II , VI	0.250	–	FULL	–	–	–	–	ITEM #21,22,23
N6A	BRIDLE	2	SCH 80 (XH)	1.94	2.38	0	SA-106 B	N	N	2	WN	300	SA105	N/A	0.0000	0.00	–	–	0.218	6.00	0.00	II , VI	0.250	–	FULL	–	–	–	–	ITEM #31,32,33
N6B	BRIDLE	2	SCH 80 (XH)	1.94	2.38	180	SA-106 B	N	N	2	WN	300	SA105	N/A	0.0000	0.00	–	–	0.218	6.00	0.00	II , VI	0.250	–	FULL	–	–	–	–	31,32,33
N7	DRAIN C/W BLIND	2	SCH 80 (XH)	1.94	2.38	180	SA-106 B	N	N	2	WN	300	SA105	N/A	0.0000	0.00	–	–	0.218	6.00	0.00	II , VI	0.250	–	FULL	–	–	–	–	ITEM #21,22,30,39,40,41
N8	TEMP INDICATOR C/W BLIND	2	SCH 80 (XH)	1.94	2.38	180	SA-106 B	N	N	2	WN	300	SA105	N/A	0.0000	0.00	–	–	0.218	SHOWN	0.00	II , VI	0.250	–	FULL	–	–	–	–	ITEM #34,35,37,39,40,41
N9	PRES INDICATOR C/W BLIND	2	SCH 80 (XH)	1.94	2.38	149	SA-106 B	N	N	2	WN	300	SA105	N/A	0.0000	0.00	–	–	0.218	SHOWN	15.5	III , VI	0.250	0.250	FULL	–	–	–	–	ITEM #34,37,39,40,41,42,43,44
N10	VAPOUR TO CO2 C/W RISER	2	SCH 80 (XH)	1.94	2.38	180	SA-106 B	N	N	2	WN	300	SA105	N/A	0.0000	0.00	–	–	0.218	6.00	28.0	I , VI	0.250	0.250	FULL	–	–	–	–	ITEM #24,25,26,27,28,29
N11	FLOAT GAUGE	2.5	2.3125 ID X 0.4688 WALL	2.31	3.25	0	SA-181 60	N	N	N/A	BR	N/A	N/A	N/A	0.0000	0.00	–	–	0.469	2.50	0.00	II	0.375	–	FULL	–	–	–	–	ITEM #15
N13	THERMOWELL C/W BLIND	2	SCH 80 (XH)	1.94	2.38	211	SA-106 B	N	N	2	WN	300	SA105	N/A	0.0000	0.00	–	–	0.218	SHOWN	0.00	II , VI	0.250	–	FULL	–	–	–	–	ITEM #34,36,37,39,40,41
N14,15	COIL △4	2	SCH 160	1.69	2.38	SHOWN	SA-106 B	N	N	2	WN	300	SA 105	N/A	0.0000	0.00	–	–	0.343	SHOWN	SHOWN	I , VI	0.375	0.375	FULL	–	–	0.343	–	ITEM #60,61,63
MARK	IDENTIFIER	SIZE	DESCRIPTION	ID	OD	ORIENT	NECK MAT'L	I T	N	SIZE	TYPE	CLASS	FLG MAT'L	MATERIAL	PAD THICK.	PAD DIA	I T	N	THICK	EXT. PROJ.	INT. PROJ.	DETAIL	A	B	C	D	E	F	G	REMARKS
		NOZZLE								FLANGE				REINFORCING PAD					NOZZLE STYLE			WELD							



REV NO.	DRWN	DATE	ENG	PLANT	QC	DESCRIPTION
F	PP	02.11.08				
E	JC	02.11.04	DB	WM	NK	ADDED NOZLES #14, 15 , CLIPS–ITEM #62 ADDED ITEM #38, LADDER/PLATFORM DETAIL. ADDED ITEM #57, 58 & 59. PLATFORM PADS.
D	PP	02.10.31	DB	WM	NK	BOM CHANGES PER ABSA
C	PP	02.10.16	DB	WM	NK	ADD LIFTLUGS, SHIPPING NOTES REVISED SADDLES NOZZLE N2B MDMT
B	JC	02.09.24	DB	WM	NK	REVISED B.O.M., NOZZLE SCHEDULE & DRAWING VIEWS AS PER CUSTOMER REQUEST 02.09.19.
A	JC	02.08.15	DB	WM	NK	REVISED WELD SPECIFICATIONS #5 & SADDLE TO WEAR PAD WELD SPEC. ADDED INSERT WELD DETAIL. REVISED NOZZLE M1. REVISED ITEMS #8, 9, 10, 11, 12, 13,14,17,18 & 32.
0	JC	02.08.07	DB	WM	NK	ORIGINATED FOR CUSTOMER REVIEW.

MaXfield Inc.

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63,000 USWG – 129" ID
CO2 STORAGE VESSEL

THIRD ANGLE PROJECTION

SEE DRAWING 2002-0707D FOR APPLICABLE TOLERANCES UNLESS OTHERWISE STATED

P/N – 16463061

JOB #31-0284

DRAWING No. 2002-0801D

REV F

SHEET 1 OF 1