

A

B

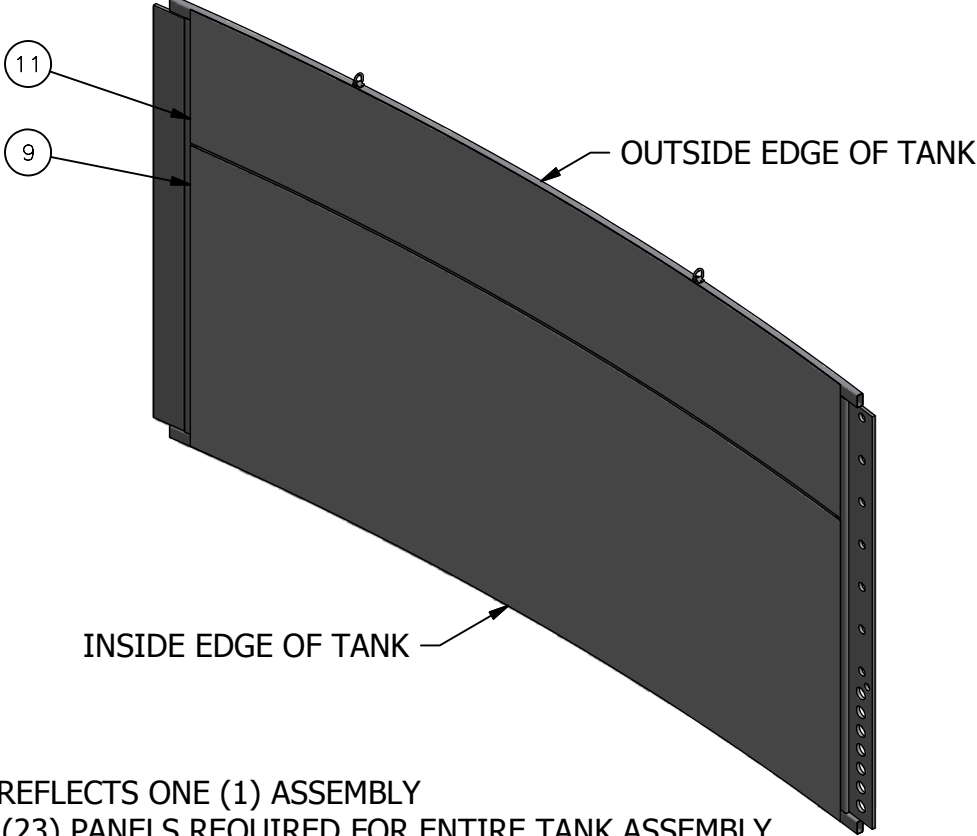
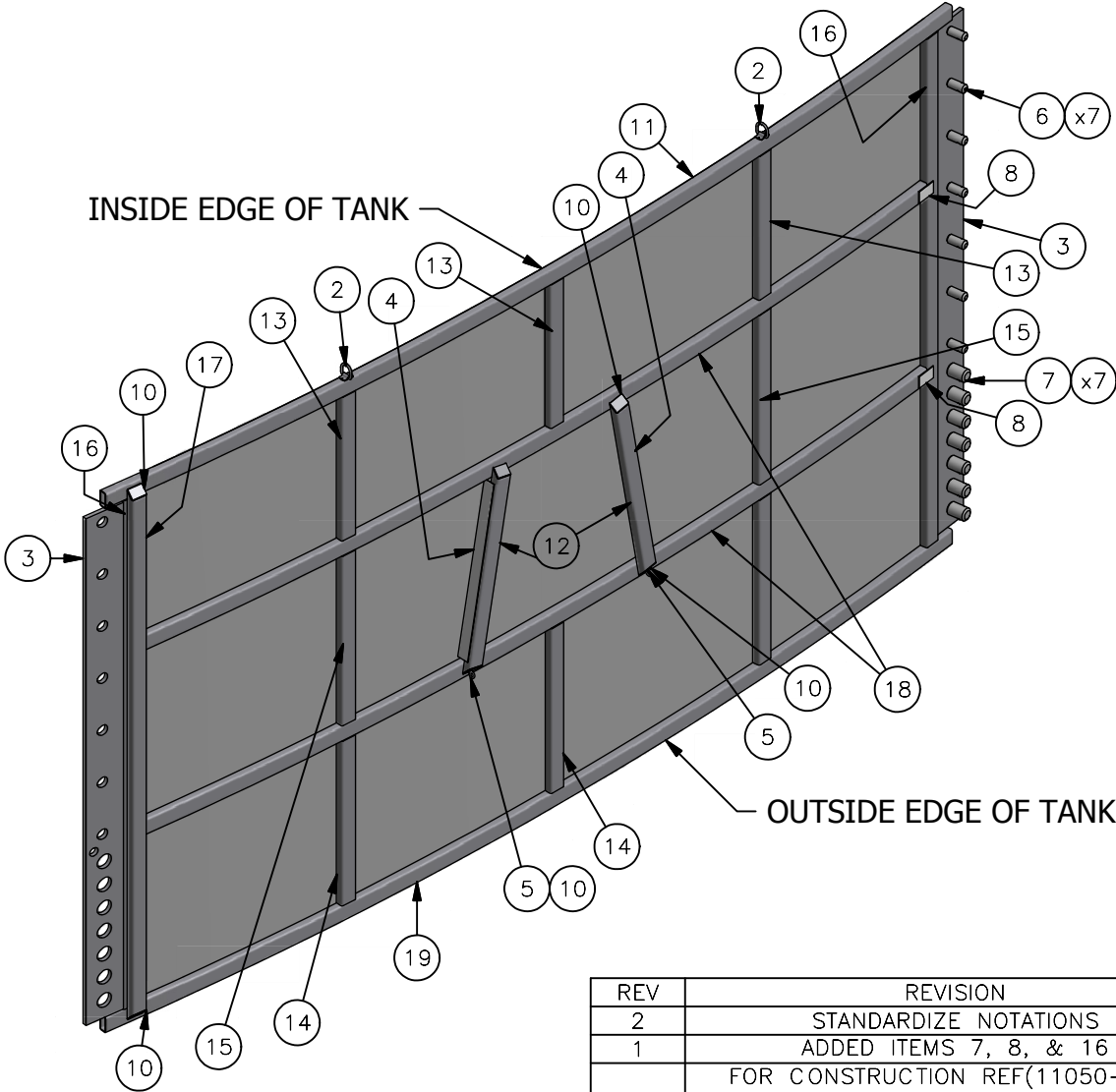
C

D

E

F

Parts List									
CK	ITEM	QTY	DESCRIPTION	WIDTH	LENGTH	MATERIAL	CLENGTH (in)	WEIGHT	
	1	14	BAR, ROUND, 5/8" (LOCK PIN)		6 1/2 in	A36	6.50		
	2	2	D-RING, 1/2" B38, WORKING LOAD 4080 lbs			A29/A29M -91 1045(C-1045), MODIFIED TO WELD DOWN		2	
	3	2	FBAR, 1"	10 in	131 1/2 in	A36	131.50	373	
	4	2	FBAR, 10GA	3 in	43 1/8 in	A36	86.25	99	
	5	2	PAD EYE, #2			CROSBY GROUP, S-264		0	
	6	7	PIN, 2" DIA		4 1/2 in	KUSTOM KONCEPTS, A1018	31.50	3	
	7	7	PIN, 3 " DIA		4 1/2 in	KUSTOM KONCEPTS, A1018	31.50	8	
	8	2	PLATE, 3/16"	3 in	5 in	A36	10.00	2	
	9	1	PLATE, 3/16"	96 in	240 in	A36	240.00	156	
	10	6	SHEET, 10GA	2 1/2 in	3 3/4 in	A36	22.50	3	
	11	1	SHEET, 10GA	42 1/2 in	240 in	A36	240.00	50	
	12	2	TUBE, 4" x 2" x 1/4" (MITER BOTH ENDS)		52 in	A500B CLEAN COAT	104.00	55	
	13	3	TUBE, 4" x 2" x 3/16"		37 1/4 in	A500B CLEAN COAT	74.50	43	
	14	3	TUBE, 4" x 2" x 3/16"		42 3/4 in	A500B CLEAN COAT	128.25	74	
	15	2	TUBE, 4" x 2" x 3/16"		44 in	A500B CLEAN COAT	88.00	50	
	16	2	TUBE, 4" x 2" x 3/16"		132 in	A500B CLEAN COAT	264.00	151	
	17	1	TUBE, 4" x 2" x 3/16" (MITER BOTH ENDS)		137 1/2 in	A500B CLEAN COAT	137.50	78	
	18	2	TUBE, 4" x 2" x 3/16", (ROLL TO 155'-6 7/8" I.D.)		236 3/8 in	A500B CLEAN COAT	472.75	271	
	19	2	TUBE, 4" x 2" x 3/16", (ROLL TO 155'-6 7/8" I.D.)		253 7/8 in	A500B CLEAN COAT	507.75	291	



NOTES:
-THIS DRAWING REFLECTS ONE (1) ASSEMBLY
-TWENTY THREE (23) PANELS REQUIRED FOR ENTIRE TANK ASSEMBLY

REV	REVISION	DATE	BY
2	STANDARDIZE NOTATIONS	1/17/2012	JDV
1	ADDED ITEMS 7, 8, & 16	12/09/11	DSG
0	FOR CONSTRUCTION REF(11050-901) CHANGED HEIGHT AND LOCATION OF PINS REF(11078-40-901)	9/1/2011	CJD

FabTech

A NALCO COMPANY

4500 33 Mile Road
Casper, WY 82601

(307) 472-9740

Unless otherwise stated SHARP EDGES BROKEN
Tolerance for non-toleranced
dimensions:

Approval

Originated From

Drafter/Designer
JDV

Date
5/31/2011

Total Mass
N/A

Job Group
T - TANKS

Customer #/Location
WELL WATER SOLUTIONS

Project/Job #
STANDARDS

Scale

Sheet
1 of 5

DRAWING NUMBER
WR-40-901

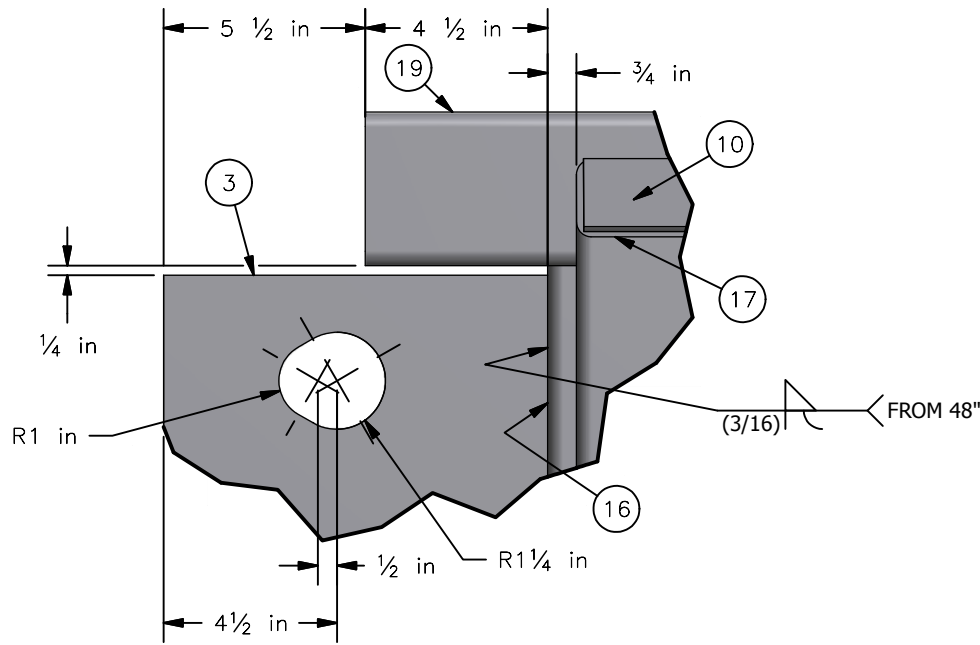
Rev
2

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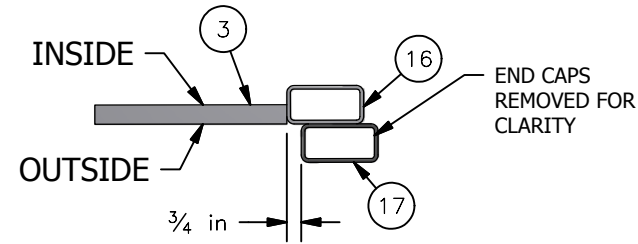
WELL WATER SOLUTIONS TANK PANEL
40,000 BBL



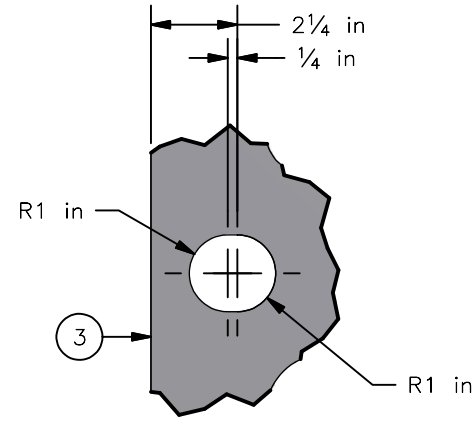
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	Approval	Drafter/Designer JDV	Job Group T - TANKS			
	Originated From	Date 5/31/2011	Customer #/Location WELL WATER SOLUTIONS			
TITLE WELL WATER SOLUTIONS TANK PANEL 40,000 BBL			Project/Job # STANDARDS			
			Scale	Sheet 2 of 5	DRAWING NUMBER WR-40-901	Rev 2



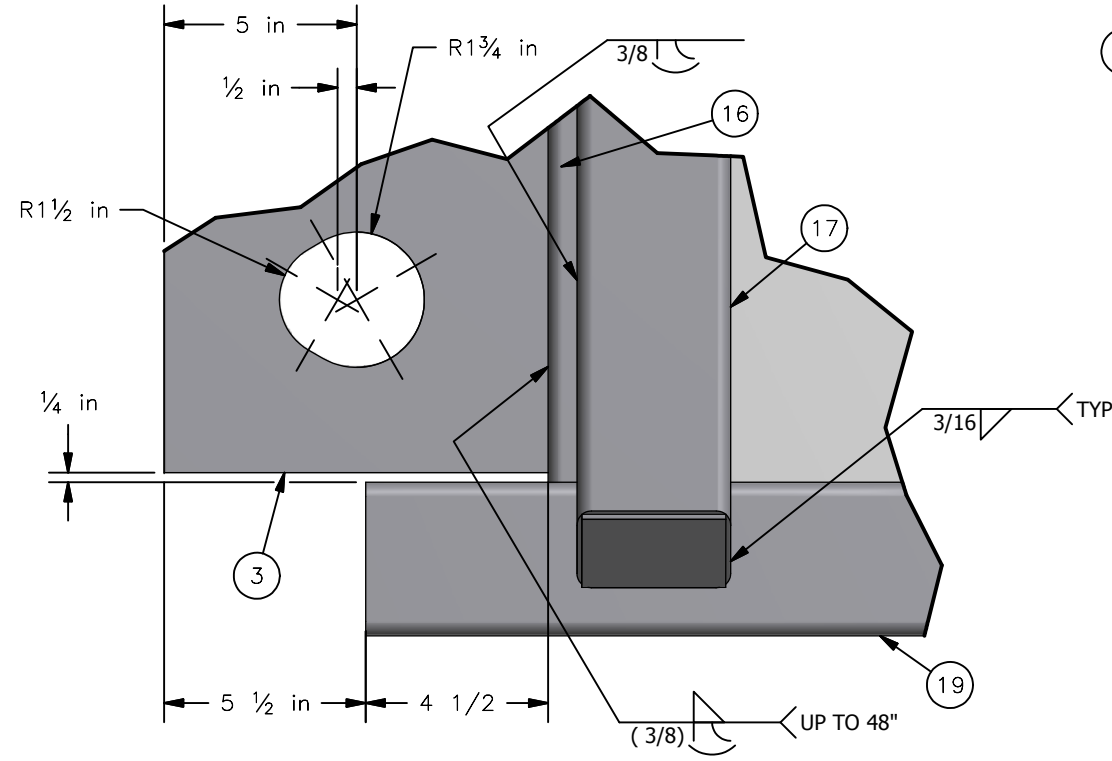
DETAIL E
(x7 TYP)



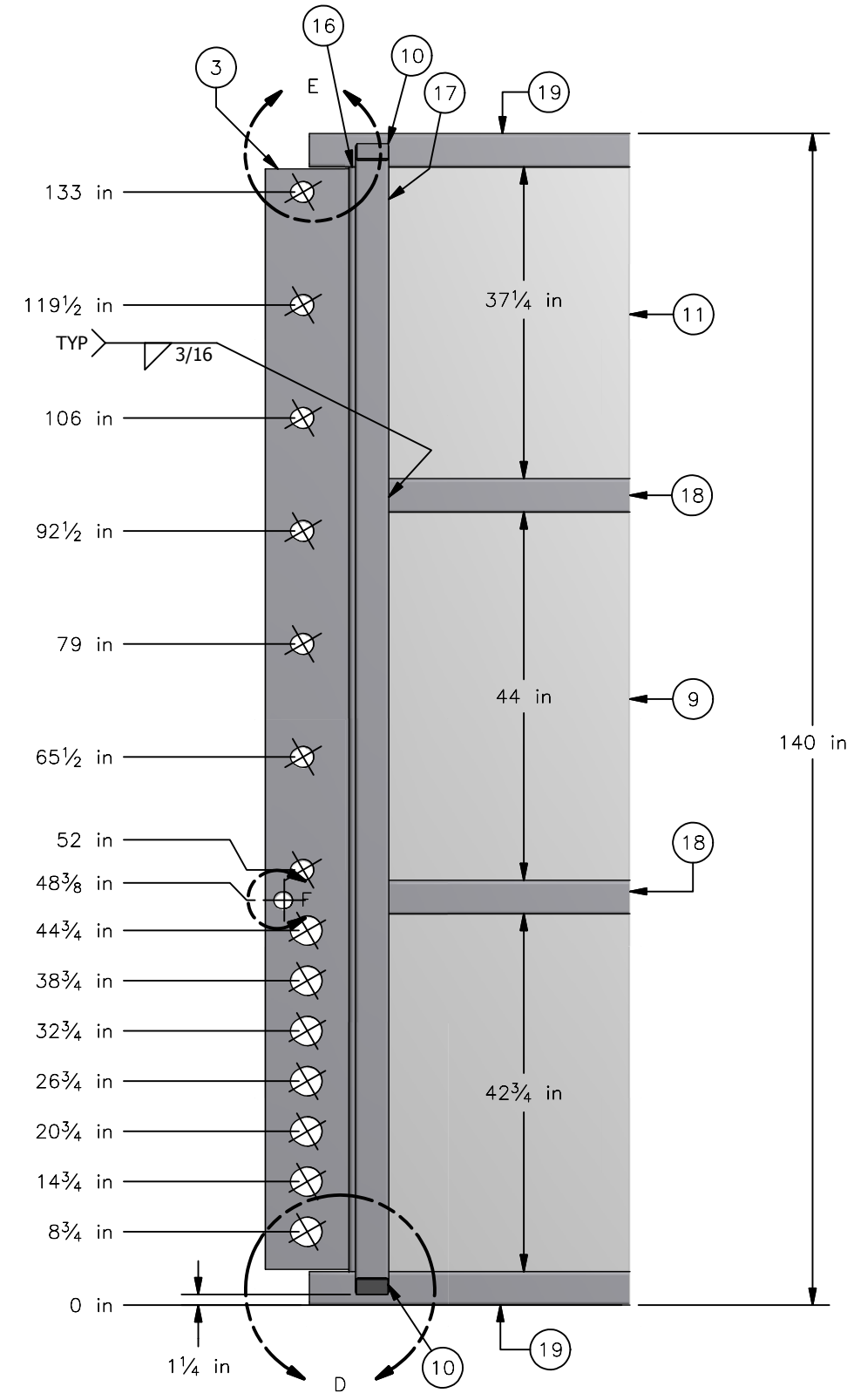
PIN-HOLE PLATE
DETAIL



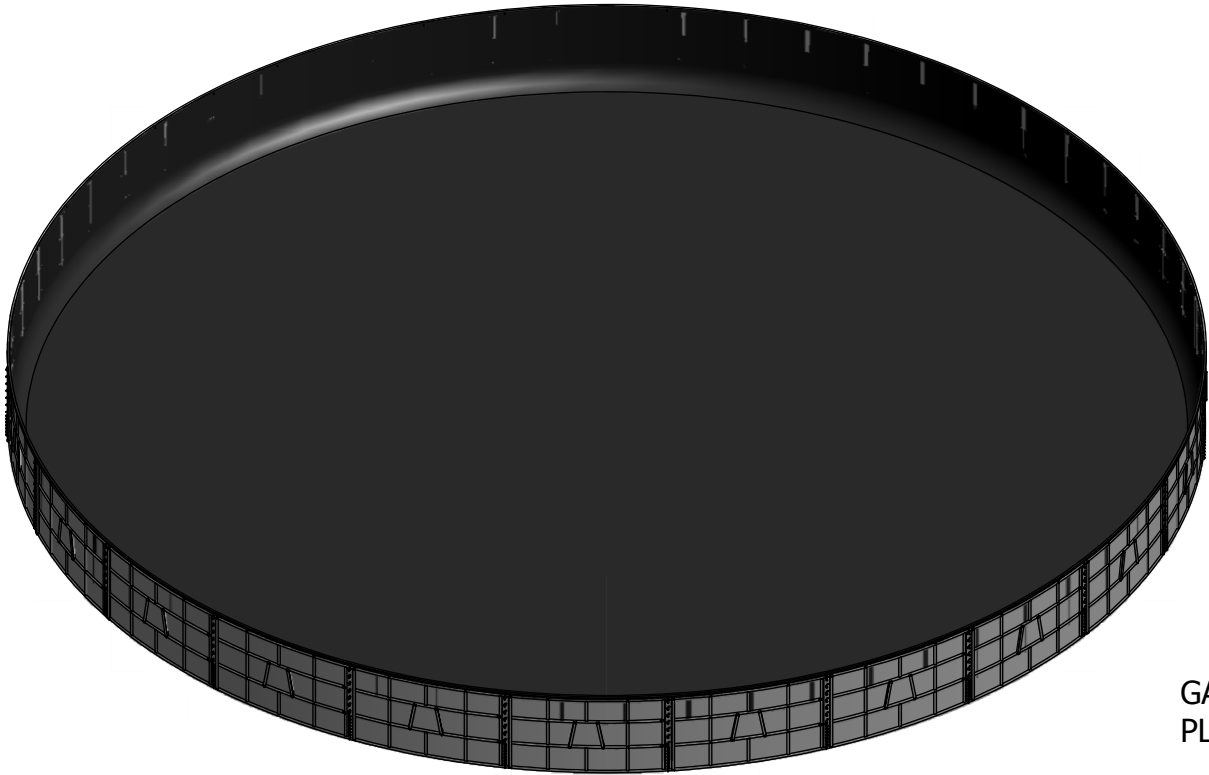
DETAIL F
(x1 TYP)



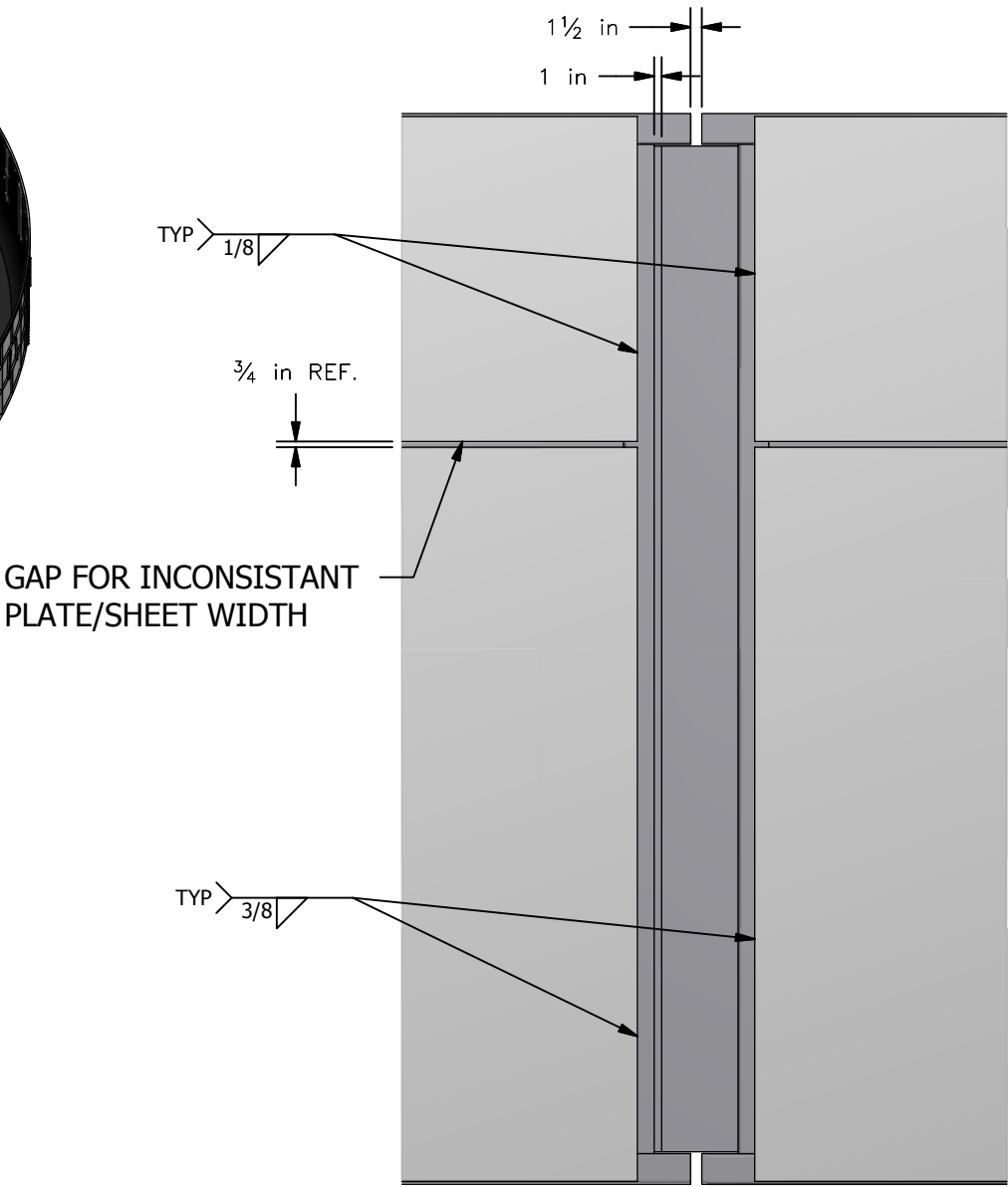
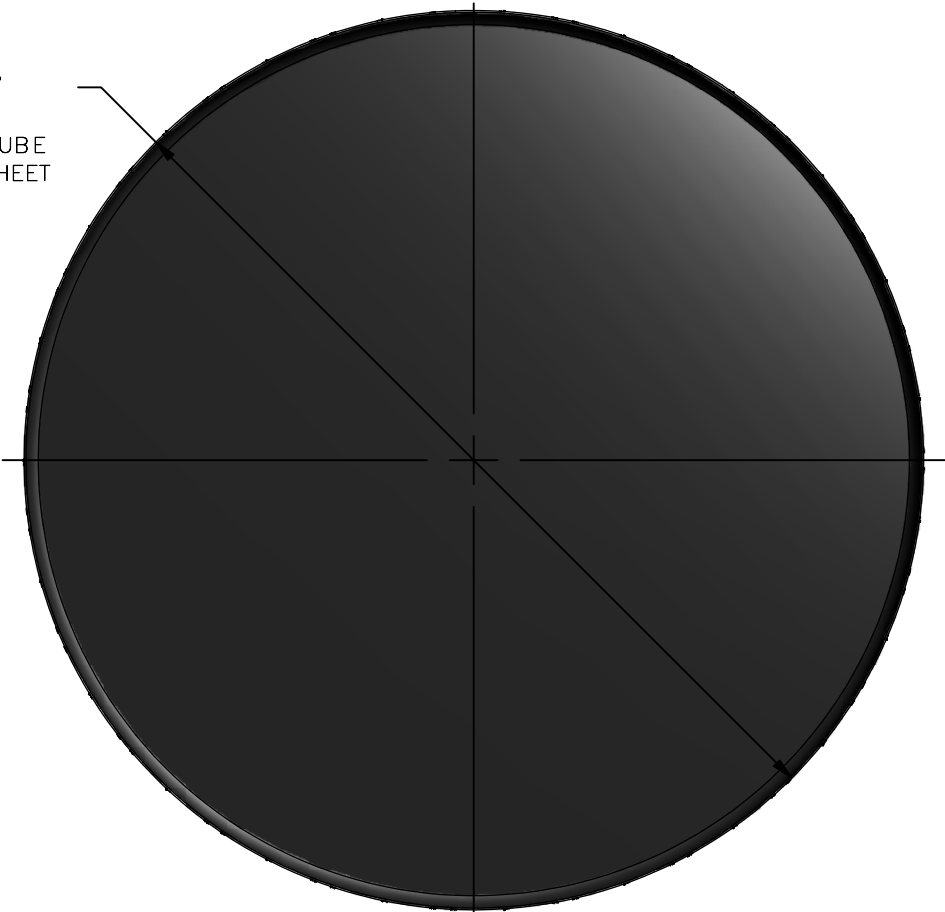
DETAIL D
(x7 TYP)



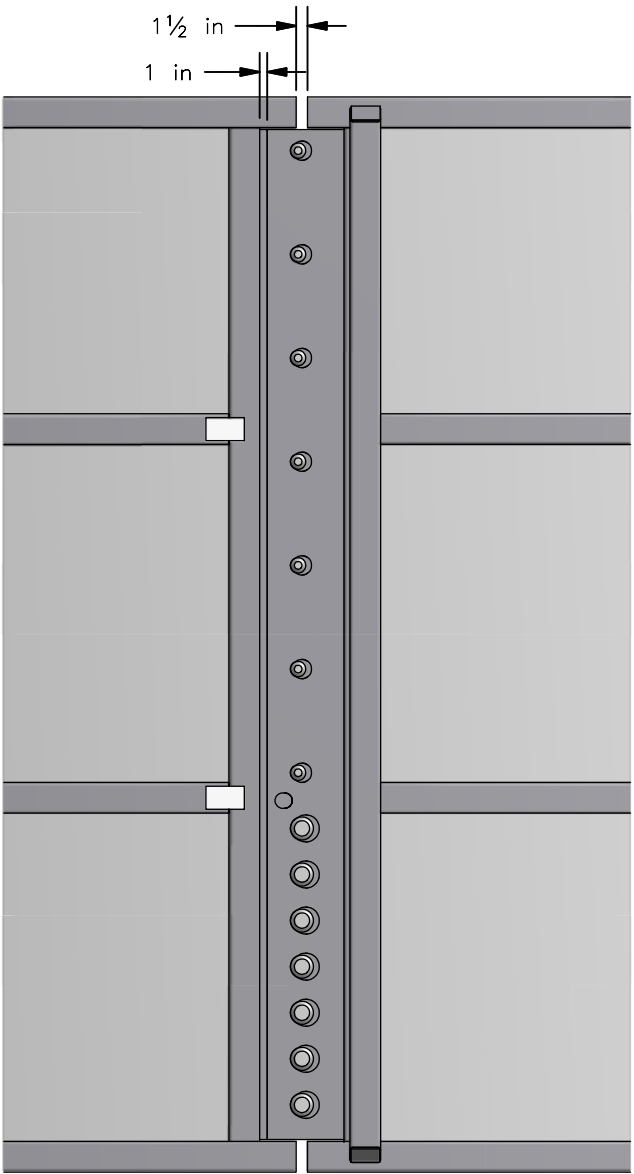
FabTech A NALCO COMPANY 4500 33 Mile Road Casper, WY 82601 (307) 472-9740	Unless otherwise stated SHARP EDGES BROKEN Tolerance for non-toleranced dimensions:		Total Mass N/A	This document contains Nalco FabTech proprietary & confidential information. It is loaned for limited purposes only and remains the property of Nalco FabTech. It may not be reproduced in whole or in part, or disclosed to third parties without the prior written consent of Nalco FabTech. The document is to be returned to Nalco FabTech upon request and in all events upon completion of the use for which it was loaned.
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	Originated From	Date 5/31/2011	Customer #/Location WELL WATER SOLUTIONS	
	TITLE WELL WATER SOLUTIONS TANK PANEL 40,000 BBL		Project/Job # STANDARDS	
		Scale	Sheet 3 of 5	Rev 2
		DRAWING NUMBER WR-40-901		



Ø155' 6 7/8"
(INTERIOR)
TO INSIDE OF TUBE
BEFORE PLATE/SHEET
ATTACHED



SEAM DETAIL
(INSIDE-OUT)



SEAM DETAIL
(OUTSIDE-IN)

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Casper, WY 82601

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Unless otherwise stated SHARP EDGES BROKEN Tolerance for non-toleranced dimensions:	
Approval	Drafter/Designer JDV
Originated From	Date 5/31/2011

Total Mass N/A
Job Group T - TANKS
Customer #/Location WELL WATER SOLUTIONS

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TITLE
WELL WATER SOLUTIONS TANK PANEL
40,000 BBL

Project/Job # STANDARDS			
Scale	Sheet 5 of 5	DRAWING NUMBER WR-40-901	Rev 2

PILLAR STRUCTURAL ENGINEERING

March 28, 2013

Well Water Solutions and Rental, Inc.
2130 W. 40th
Casper, WY 82604
Attn: Sean Lovelace

Re: Portable Frac Tank Certification – Pinned Seams

Dear Mr. Lovelace:

Per your request our office has performed a structural analysis of the portable frac tanks as well as the associated accessories. This analysis was performed to determine that the tanks meet the required strength criteria under operating conditions according to the AISC Manual of Steel Construction.

The tanks range in diameter from 81 to 156 feet and are 11 feet, 8 inches in height and are designed to store water. They are constructed of individual steel reinforced panels that are connected together with a patent pending steel pin system.

The tanks are constructed of the following materials:

- Tank Panels – ASTM A36, 36 ksi Steel Plate
- Horizontal & Vertical Framing – ASTM A500, Grade B, 46 ksi Structural Steel Tubing
- Connecting Pins - ASTM A36, 36 ksi Steel Round Bar

Our office has determined that the portable frac tanks, as described herein, are capable of supporting the operating load conditions in conformance with the AISC Manual of Steel Construction.

Calculations of this analysis can be provided upon request.

If you have any questions or require additional information please contact our office.

Sincerely,

J. Brendan Bummer, P.E.
Pillar Structural Engineering



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