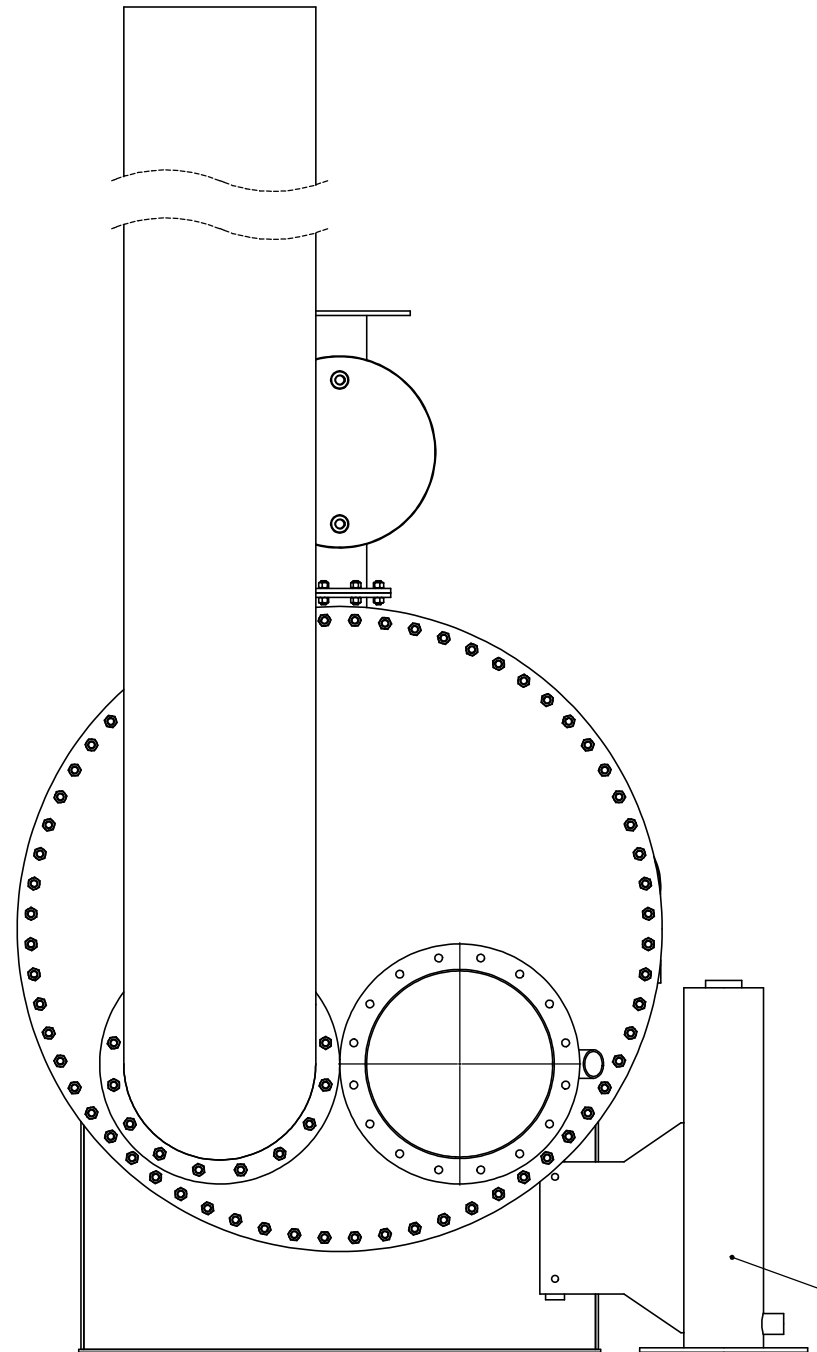
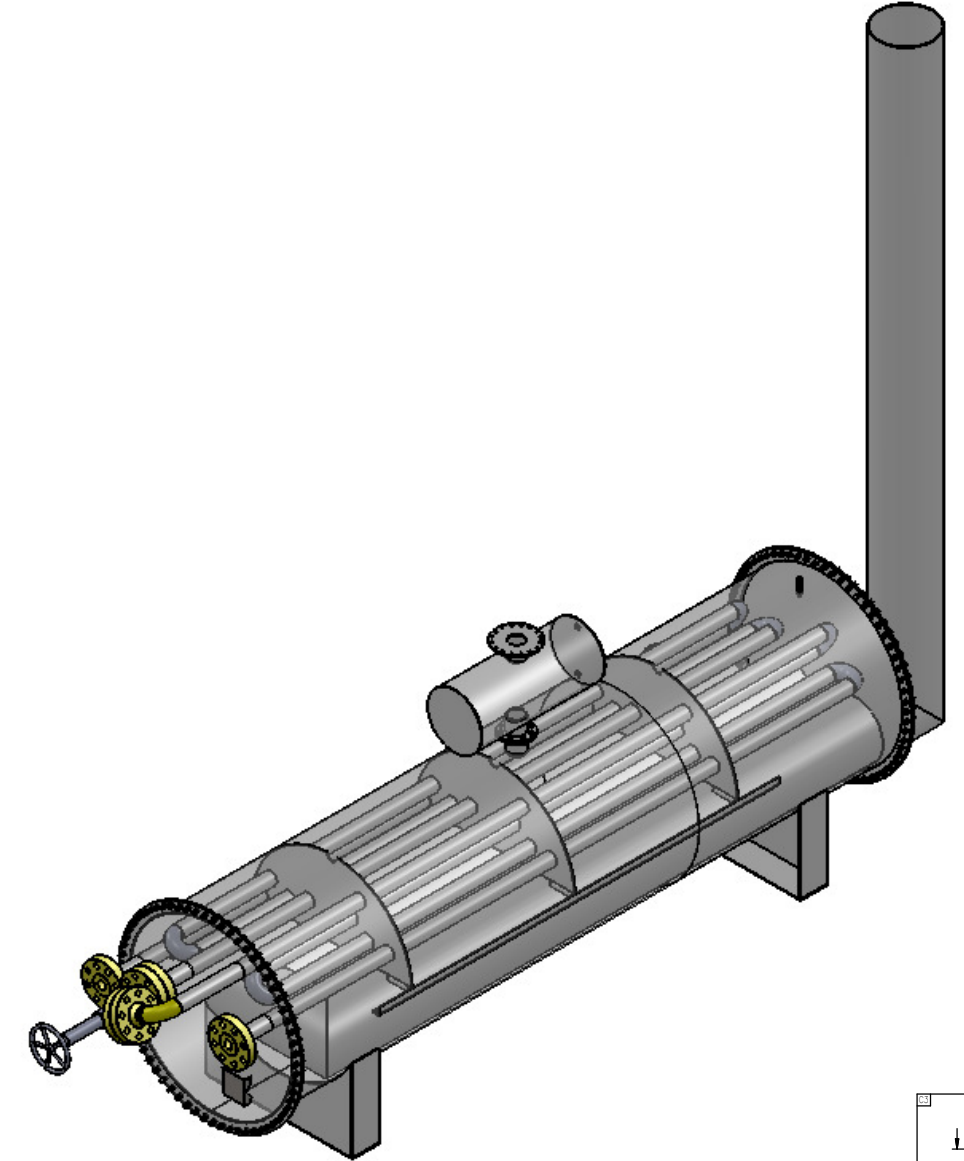


FRONT VIEW



REAR VIEW



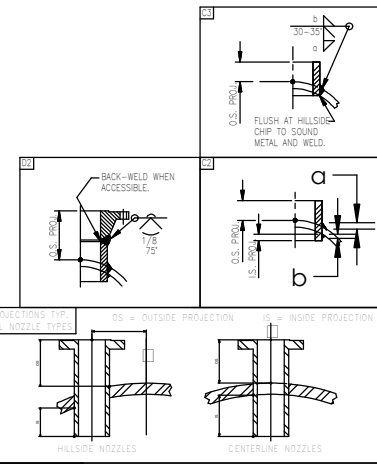
6.625" OD X 30" TALL GAS VOLUME POT (NON-CODE)

PART NUMBER	DESCRIPTION	MATERIAL	MEASURE	UNIT	QTY
24	N/A	6.625" OD X 30" GAS VOLUME POT	N/A	1	EACH
23	N/A	TOP SECTION FOR 42" OD X 15'-0" S/S LINE HEATER	N/A	1	EA
22	N/A	3" 5000# COIL SECTION/ASSEMBLY	N/A	N/A	N/A
21	N/A	1/4" FIRETUBE/ASSEMBLY	N/A	N/A	N/A
20	01700027	PIPE / SMLS, 1" STD, (0.133" NOM WALL)	SA-106-B	6.00	INCHES
19	02400001	ANGLE, 2" X 2" X 0.25"	SA-36	118.00	INCHES
18	06504001	STUD, 1/2" X 2" W/ 2 NUTS	SA-193-B7	N/A	EACH
17	06504007	STUD, 5/8" X 3" W/ 2 NUTS	SA-193-B7	N/A	EACH
16	02002004	ELBOW 90 / WELD / LR, 1" XH	SA-234-WPB	N/A	EACH
15	01913230	CPLG / LONG / THRD, 2" 3000# X 4.375" LG	SA-105	N/A	EACH
14	01913060	CPLG / FULL / THRD, 2" 3000# X 4" LG	SA-105	N/A	EACH
13	01913196	CPLG / LONG / THRD, 1" 3000# X 4.00" LG	SA-105	N/A	EACH
12	01913184	CPLG / LONG / THRD, 3/4" 3000# X 4" LG	SA-105	N/A	EACH
11	01913172	CPLG / LONG / THRD, 1/2" 3000# X 4" LG	SA-105	N/A	EACH
10	01700075	PIPE / SMLS, 4" STD, (0.237" NOM WALL)	SA-106-B	4.5	INCHES
9	01700028	PIPE / SMLS, 1" XH (0.179" NOM WALL)	SA-106-B	105.00	INCHES
8	01600004	PLATE, 0.375"	SA-36	20.1	SF
7	01600002	PLATE, 0.25"	SA-36	1.9	SF
6	01600002	PLATE, 0.25"	SA-36	1.3	SF
5	01600002	PLATE, 0.25"	SA-36	7.3	SF
4	01600004	PLATE, 0.375"	SA-36	0.5	SF
3	IDBRACKET	NAME PLATE STAND-OFF BRACKET (STANDARD)	SA-36	N/A	EACH
2	11219002	CYLINDER / ROLLED, 48" OD X 5'-0" X 0.25" THK	SA-516-70	120	INCHES
1	01200076	CYLINDER / ROLLED, 48" OD X 120" X 0.25" THK	SA-516-70	120	INCHES

MARK	QTY	SERVICE	CONNECTION TYPE	CONN./NECK/REPAD	O.S.	I.S.(MIN)	WELD DETAIL	MIN. WELD SIZE	REMARKS
N12	1	FILL/EXPANSION TANK	PIPE/SMLS, 4" STD (0.237" NOM WALL)	10	-	-	4"	-	C2 ~ 1/4" 1/4" ~
N11	1	SIGHT GLASS	CPLG/LONG/THRD, 1/2" 3000# X 4" LG	11	-	-	2-3/4"	-	C2 ~ 1/4" 1/4" ~
N10	1	SIGHT GLASS	CPLG/LONG/THRD, 1/2" 3000# X 4" LG	11	-	-	2-3/4"	-	C2 ~ 1/4" 1/4" ~
N9	1	SIGHT GLASS	CPLG/LONG/THRD, 1/2" 3000# X 4" LG	11	-	-	2-3/4"	-	C2 ~ 1/4" 1/4" ~
N8	1	TEMP CONTROL	CPLG/LONG/THRD, 1" 3000# X 4" LG	13	-	-	2-3/4"	-	C2 ~ 1/4" 1/4" ~
N7	1	TEMP GAUGE	CPLG/LONG/THRD, 3/4" 3000# X 4" LG	12	-	-	2-3/4"	-	C2 ~ 1/4" 1/4" ~
N6	1	FUEL LINE	CPLG/LONG/THRD, 1" 3000# X 4" LG	13	-	-	2-3/4"	-	C2 ~ 1/4" 1/4" ~
N5	1	DRAIN	CPLG/FULL/THRD, 2" 3000# X 3.375" LG	14	-	-	2-3/4"	-	C3 ~ 1/4" 1/4" ~
N4	1	FUEL LINE	CPLG/LONG/THRD, 1" 3000# X 4" LG	13	-	-	2-3/4"	-	C2 ~ 1/4" 1/4" ~
N3	1	L.L.C.	CPLG/LONG/THRD, 2" 3000# X 4.375" LG	15	-	-	2-3/4"	-	C2 ~ 1/4" 1/4" ~
N2	1	TEMP GAUGE	CPLG/LONG/THRD, 3/4" 3000# X 4" LG	12	-	-	2-3/4"	-	C2 ~ 1/4" 1/4" ~
N1	1	TEMP CONTROL	CPLG/LONG/THRD, 1" 3000# X 4" LG	13	-	-	2-3/4"	-	C2 ~ 1/4" 1/4" ~

SCHEDULE OF OPENINGS

WPS 111 MCAW-1



GENERAL NOTES

- FLANGES TO HAVE BOLT HOLES STRADDLING VESSEL TRUE CENTER LINES.
- ALL CONNECTIONS SHALL TO BE COVERED OR PLUGGED FOR SHIPPING.
- DRILL AND TAP 1/4" NPT, TELLTALE HOLE IN ALL REINFORCING PADS.
- INSIDE EDGE OF NOZZLES NECKS SHALL BE ROUNDED, THE RADIUS OF ROUNDNESS 1/8" MIN. OR ONE-HALF THE WALL THICKNESS OF THE NOZZLE WALL IS LESS THEN 1/4".
- SEE PAINT FORM FOR COATING REQUIREMENTS.
- SEE TABLE UW-33 FOR ALIGNMENT TOLERANCE.
- SEE TABLE UW-35 FOR FINISHED LONGITUDINAL AND CIRCUMFERENTIAL JOINT TOLERANCE.

PROPRIETARY AND CONFIDENTIAL

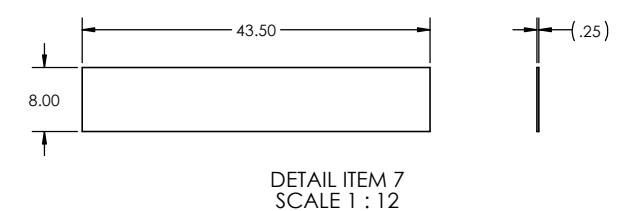
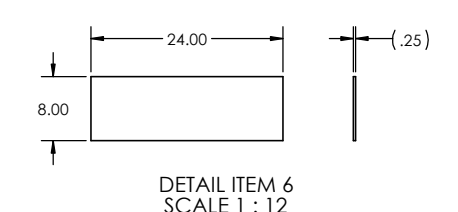
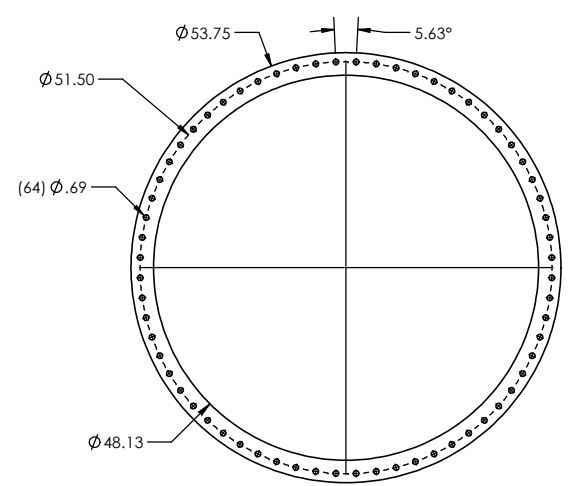
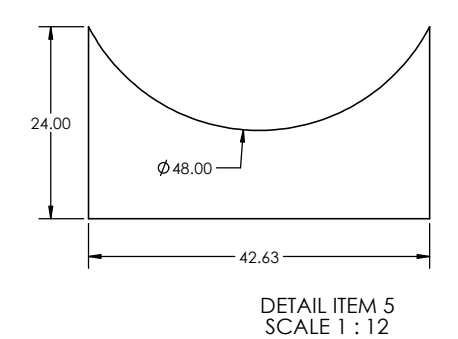
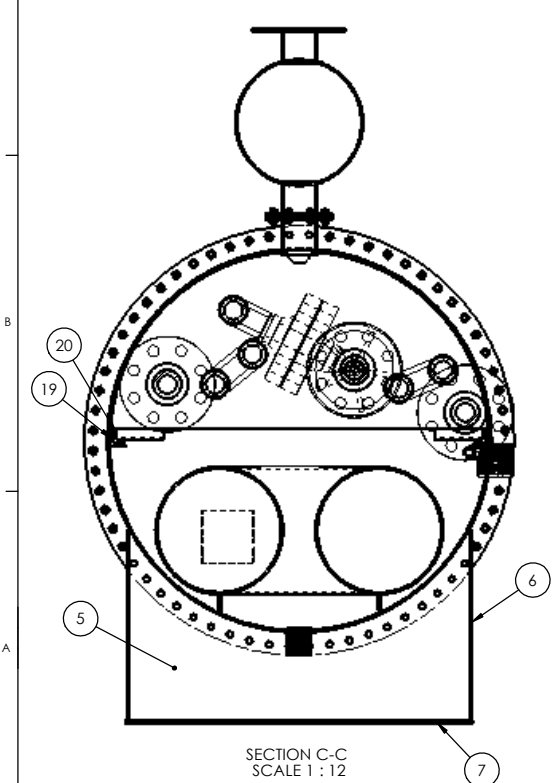
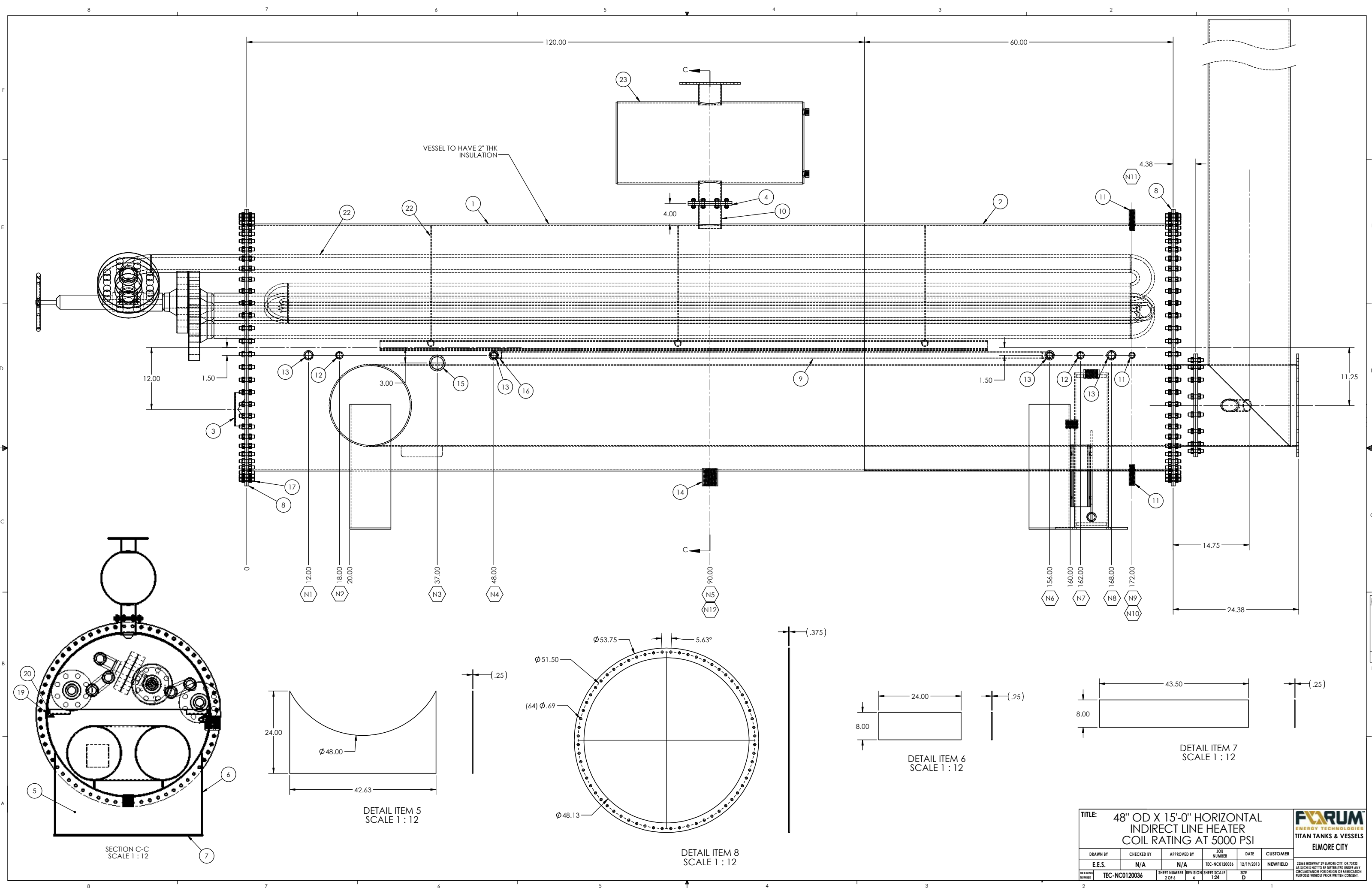
REV	DATE	REVISED BY	APPROVED BY	DESCRIPTION
BD	11/7/12	BJD	VB	MOVE CONNECTIONS FROM 90DEG TO 270DEG
CO	3/22/13	EES		REVISED COILS PER AS-BUILT
4	12/19/13	EES		CHANGED STACK HEIGHT TO 15'

TITLE: 48" OD X 15'-0" HORIZONTAL INDIRECT LINE HEATER COIL RATING AT 5000 PSI

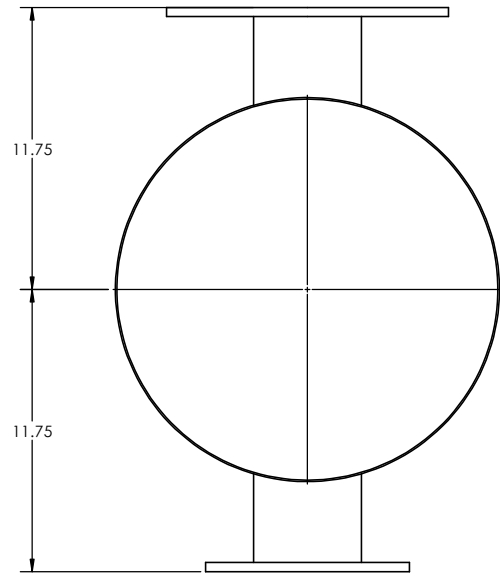
COMPANY: FXRUM ENERGY TECHNOLOGIES TITAN TANKS & VESSELS ELMORE CITY

DRAWN BY: E.E.S. **CHECKED BY:** N/A **APPROVED BY:** N/A **JOB NUMBER:** TEC-NC0120036 **DATE:** 12/19/2013 **CUSTOMER:** NEWFIELD

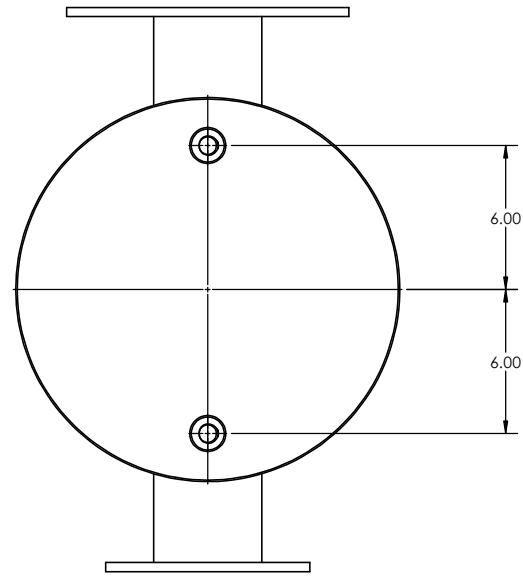
ADDRESS: 22648 HIGHWAY 29 ELMORE CITY, OK 74343 AS SUCH IS NOT TO BE DISTRIBUTED UNDER ANY CIRCUMSTANCES FOR DESIGN OR FABRICATION PURPOSES WITHOUT PRIOR WRITTEN CONSENT.



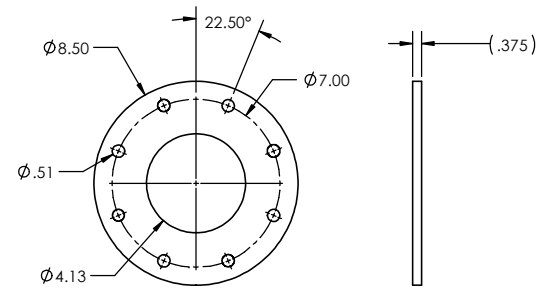
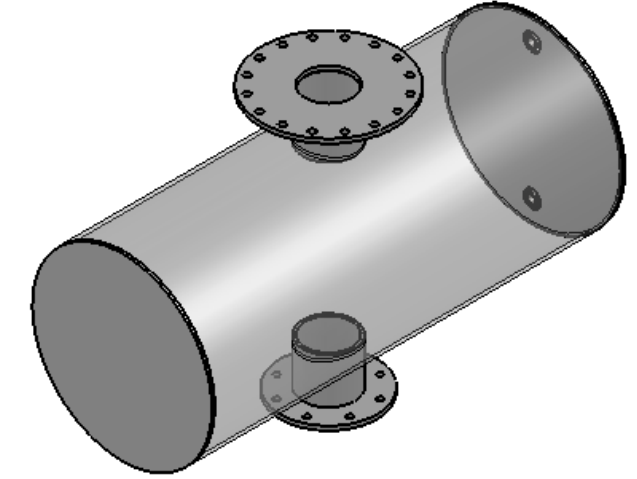
TITLE: 48" OD X 15'-0" HORIZONTAL INDIRECT LINE HEATER COIL RATING AT 5000 PSI						 TITAN TANKS & VESSELS ELMORE CITY
DRAWN BY E.E.S.	CHECKED BY N/A	APPROVED BY N/A	JOB NUMBER TEC-NC0120036	DATE 12/19/2013	CUSTOMER NEWFIELD	
DRAWING NUMBER TEC-NC0120036	SHEET NUMBER 2 OF 6	REVISION 4	SHEET SCALE 1:24	SIZE D	22648 HIGHWAY 29 ELMORE CITY, OK 73432 AS SUCH IS NOT TO BE DISTRIBUTED UNDER ANY CIRCUMSTANCES FOR DESIGN OR FABRICATION PURPOSES WITHOUT PRIOR WRITTEN CONSENT.	
2568 HIGHWAY 29 ELMORE CITY, OK 73432 AS SUCH IS NOT TO BE DISTRIBUTED UNDER ANY CIRCUMSTANCES FOR DESIGN OR FABRICATION PURPOSES WITHOUT PRIOR WRITTEN CONSENT.						



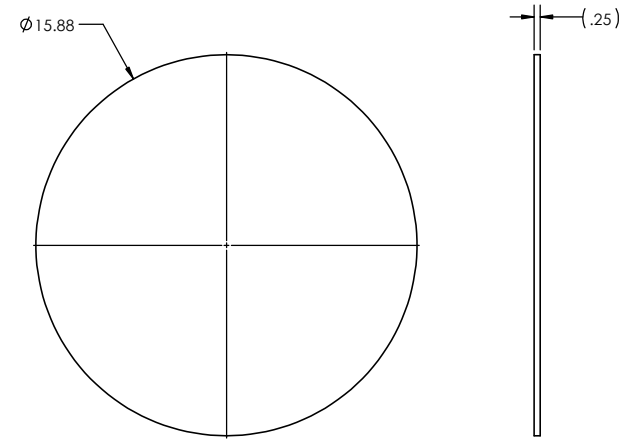
FRONT VIEW



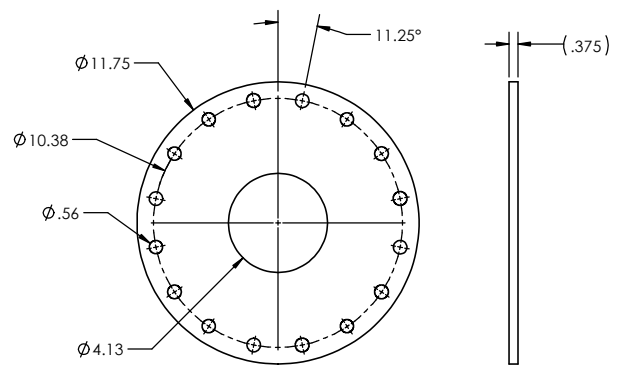
REAR VIEW



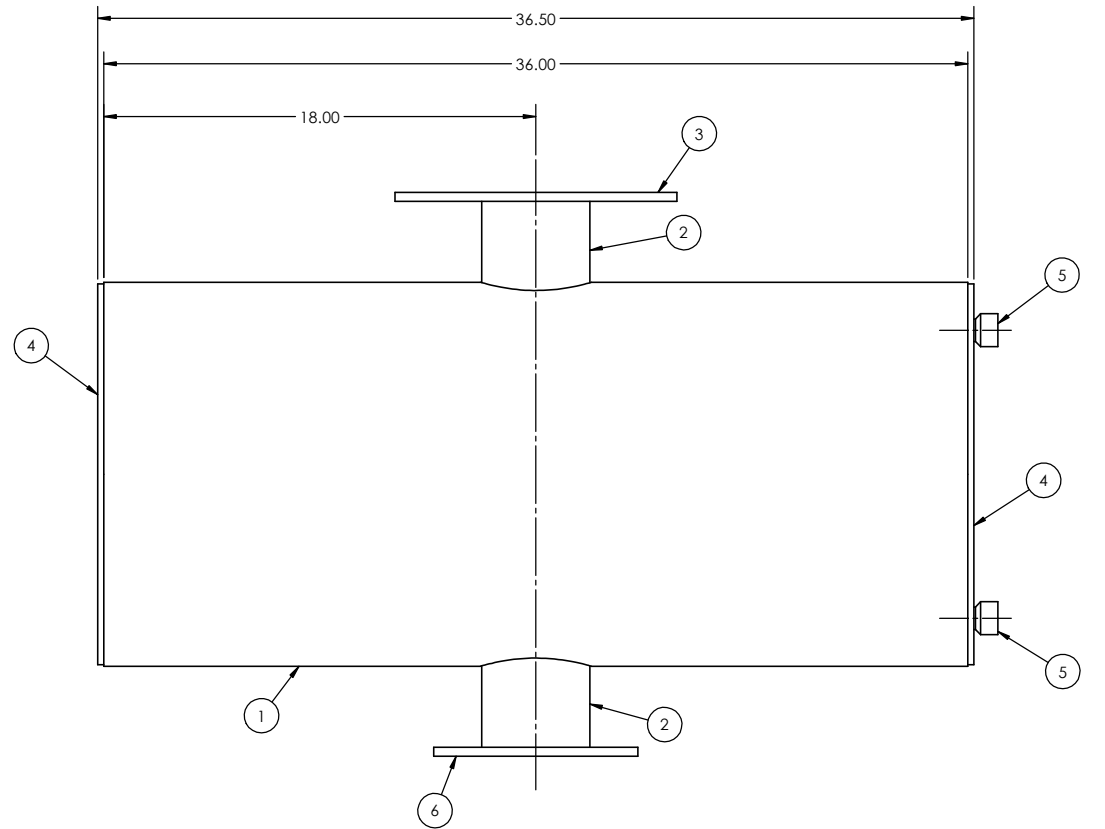
DETAIL ITEM 3
SCALE 1 : 4



DETAIL ITEM 4
SCALE 1 : 4

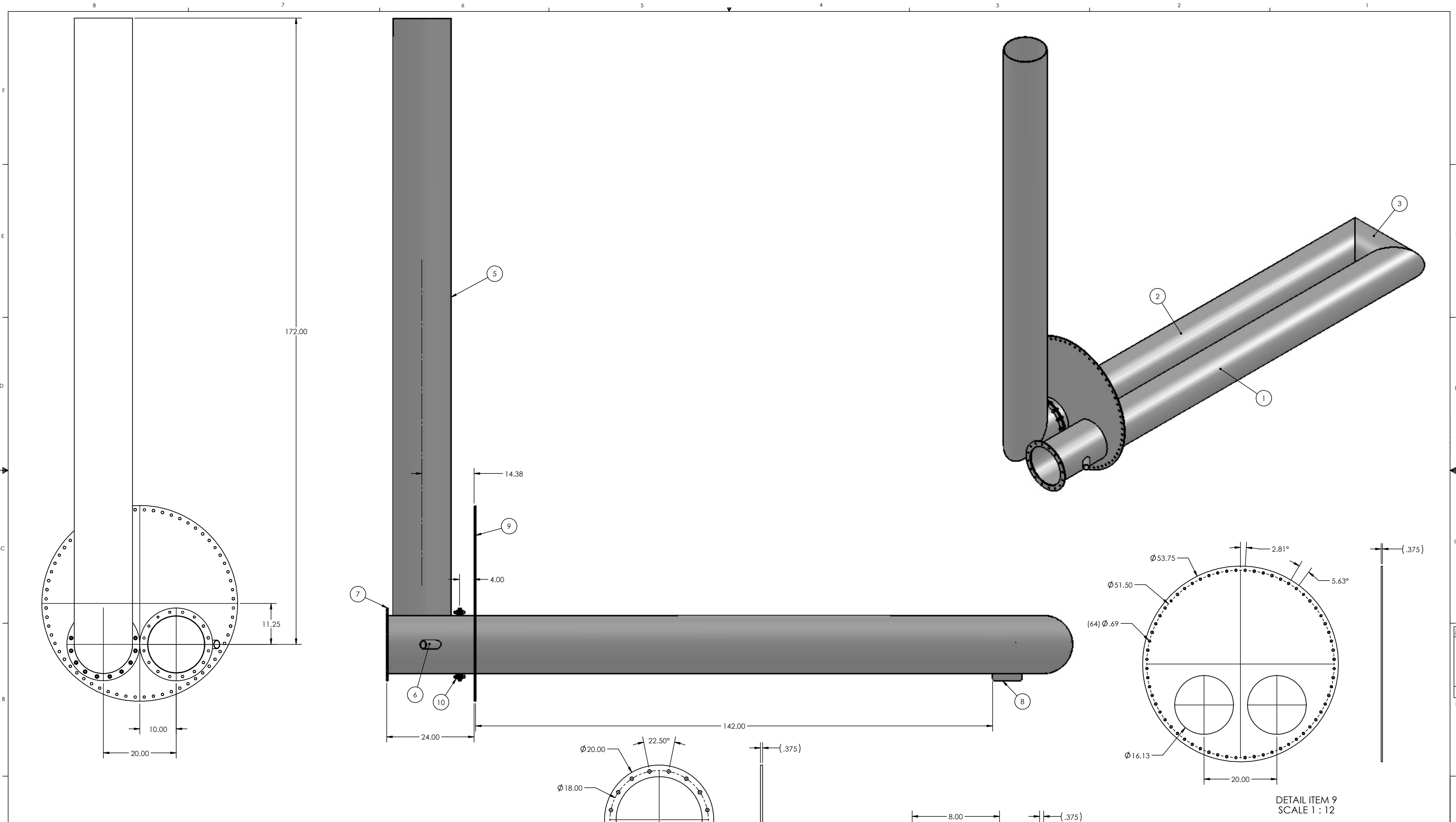


DETAIL ITEM 6
SCALE 1 : 4

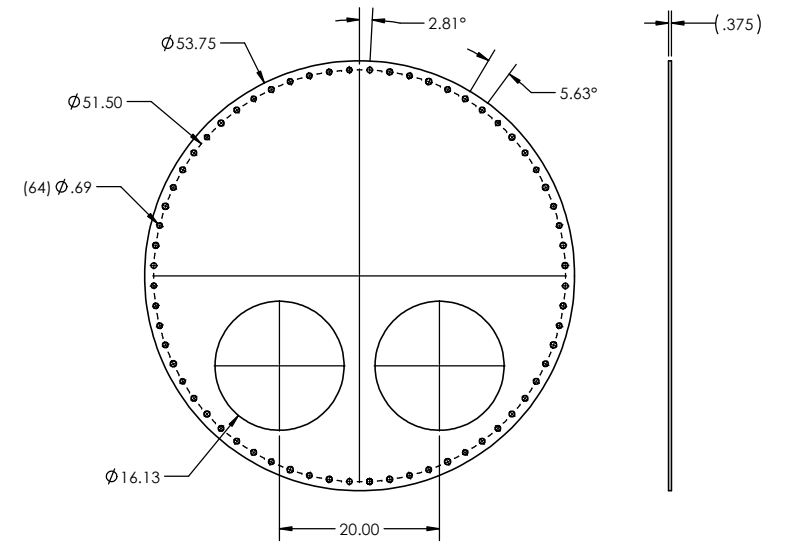
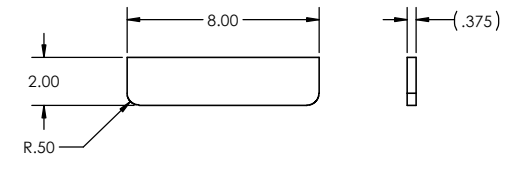
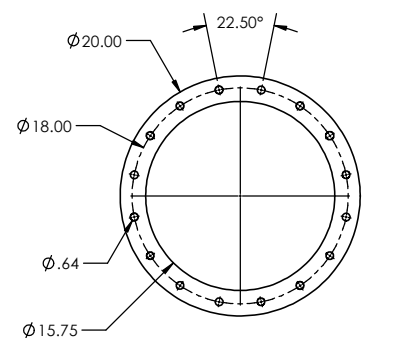


PART NUMBER	DESCRIPTION	MATERIAL	MEASURE	UNIT	QTY
6	01600004 PLATE, 0.375"	SA-36	0.5	SF	1
5	01919031 COUPLER/THRD, 1/2" 3000#	SA-105	N/A	EACH	2
4	01600002 PLATE, 0.25"	SA-36	1.8	SF	2
3	01600004 PLATE, 0.375"	SA-36	1.0	SF	1
2	01700075 PIPE / SMLS, 4" STD (0.237" NOM WALL)	SA-106-B	4	INCHES	2
1	01700210 PIPE / SMLS, 16" SCH10 (0.25" NOM WALL)	SA-106-B	36	INCHES	1

TITLE: 48" OD X 15'-0" HORIZONTAL INDIRECT LINE HEATER COIL RATING AT 5000 PSI					
DRAWN BY E.E.S.	CHECKED BY N/A	APPROVED BY N/A	JOB NUMBER TEC-NC0120036	DATE 12/19/2013	CUSTOMER NEWFIELD
SHEET NUMBER 3 OF 6	REVISION 4	SHEET SCALE 1:24	SIZE D	22548 HIGHWAY 29 ELMORE CITY, OK 73433 FORUM ENERGY TECHNOLOGIES TITAN TANKS & VESSELS ELMORE CITY <small>AS SUCH IS NOT TO BE DISTRIBUTED UNDER ANY CIRCUMSTANCES FOR DESIGN OR FABRICATION PURPOSES WITHOUT PRIOR WRITTEN CONSENT.</small>	



PART NUMBER	DESCRIPTION	MATERIAL	MEASURE	UNIT	QTY
10	06504007 STUD, 5/8" x 3" W/ 2 NUTS	SA-193-B7	N/A	EACH	16
9	01600004 PLATE, 0.375"	SA-36	20.1	SF	1
8	01600002 PLATE, 0.25"	SA-36	0.42	SF	2
7	01600004 PLATE, 0.375"	SA-36	2.8	SF	3
6	01700045 PIPE / SMLS, 2" STD [0.154" NOM WALL]	SA-106-B	6	INCHES	1
5	01700364 PIPE / ERW, 16" SCH10 [0.250" NOM WALL]	SA-53-B	180	INCHES	1
4	01700364 PIPE / ERW, 16" SCH10 [0.250" NOM WALL]	SA-53-B	18	INCHES	1
3	01700364 PIPE / ERW, 16" SCH10 [0.250" NOM WALL]	SA-53-B	36	INCHES	1
2	01700364 PIPE / ERW, 16" SCH10 [0.250" NOM WALL]	SA-53-B	168	INCHES	1
1	01700364 PIPE / ERW, 16" SCH10 [0.250" NOM WALL]	SA-53-B	188	INCHES	1

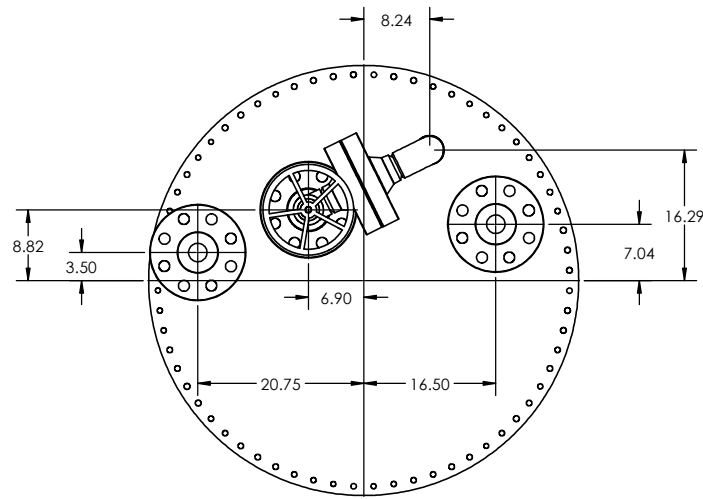


TITLE: 48" OD X 15'-0" HORIZONTAL INDIRECT LINE HEATER COIL RATING AT 5000 PSI

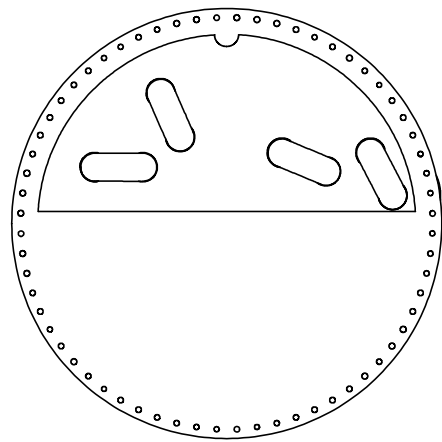
DRAWN BY	CHECKED BY	APPROVED BY	JOB NUMBER	DATE	CUSTOMER
E.E.S.	N/A	N/A	TEC-NC0120036	12/19/2013	NEWFIELD
DRAWING NUMBER	TEC-NC0120036	SHEET NUMBER	4 OF 6	REVISION	SHEET SCALE
				4	1:24
					SIZE
					D

FXRUM
ENERGY TECHNOLOGIES
TITAN TANKS & VESSELS
ELMORE CITY

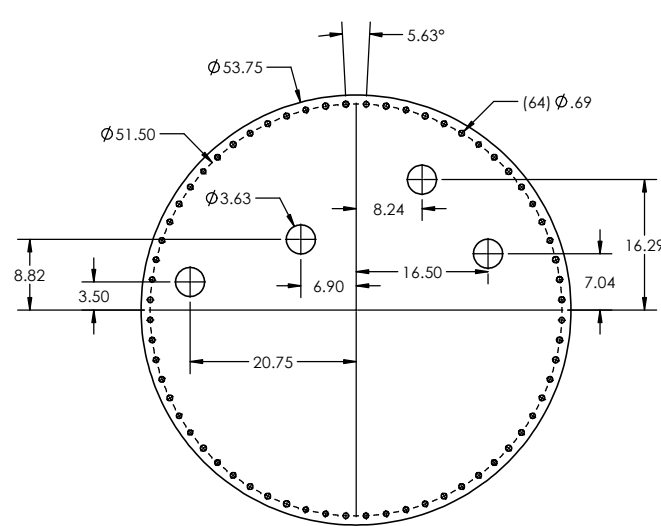
22648 HIGHWAY 29 ELMORE CITY, OK 73433
AS SUCH IS NOT TO BE DISTRIBUTED UNDER ANY CIRCUMSTANCES FOR DESIGN OR FABRICATION PURPOSES WITHOUT PRIOR WRITTEN CONSENT.



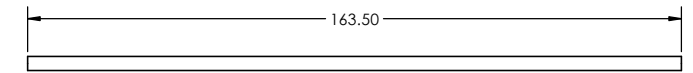
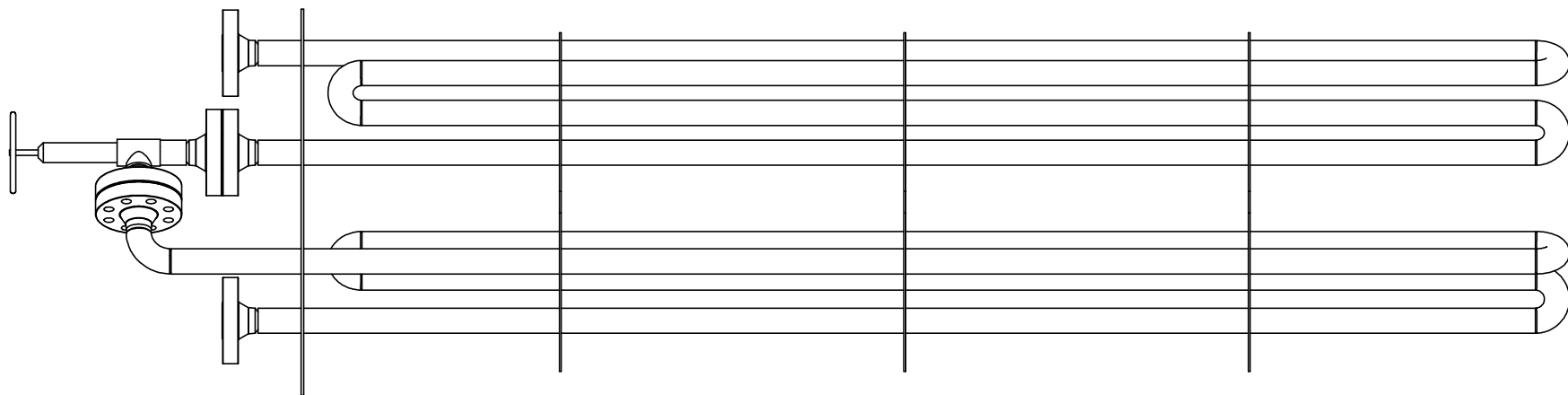
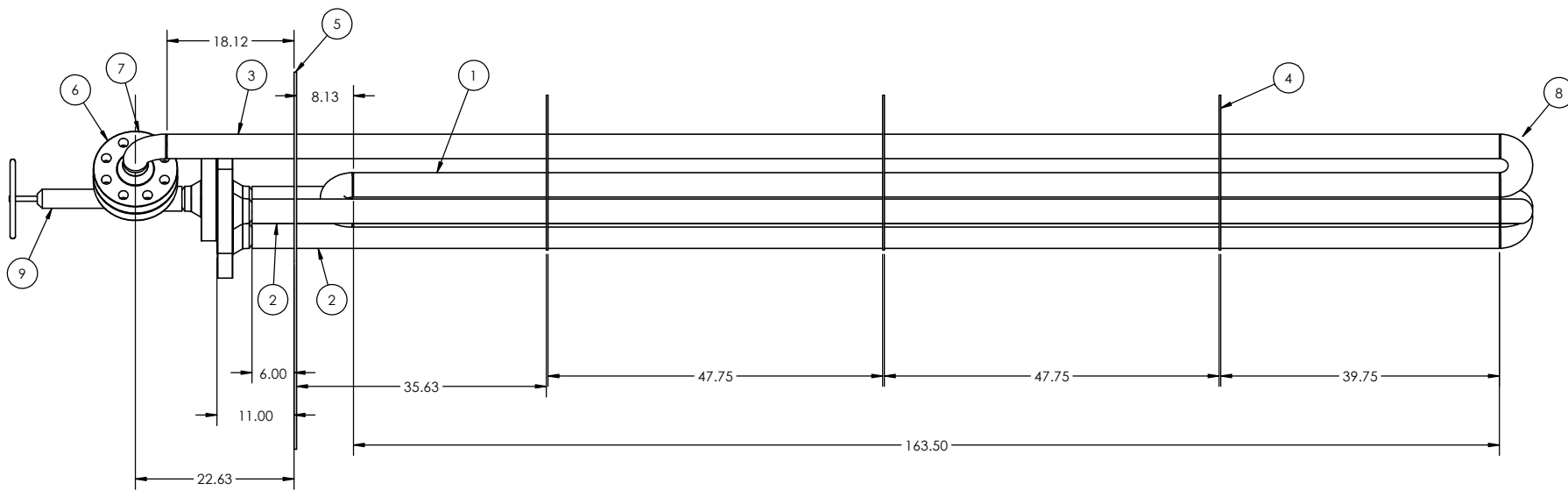
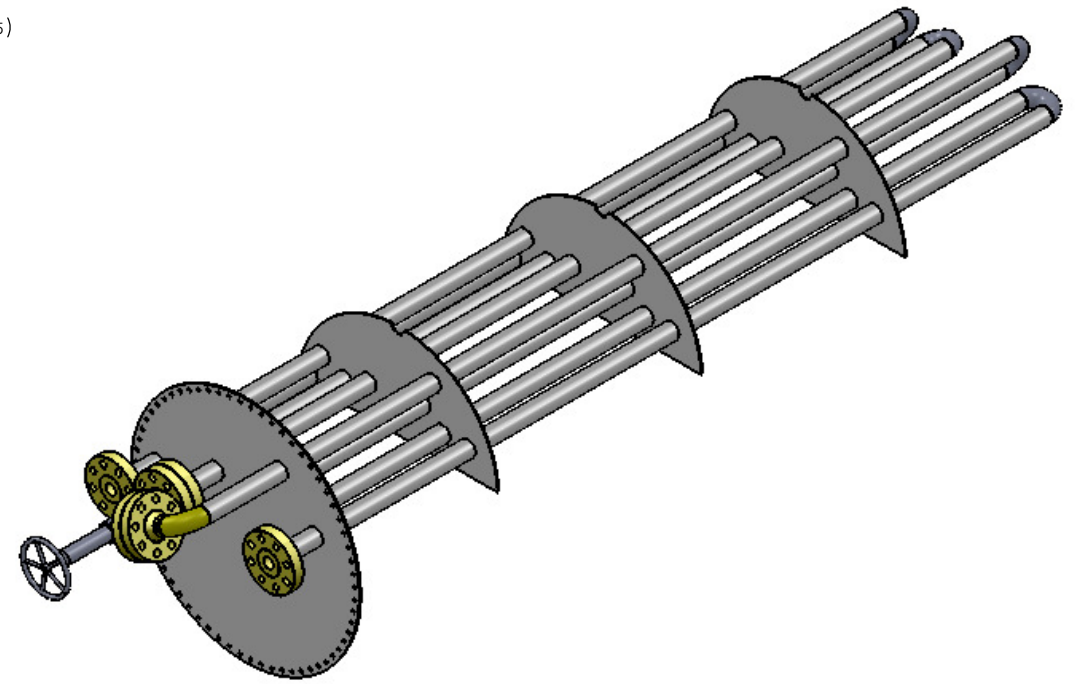
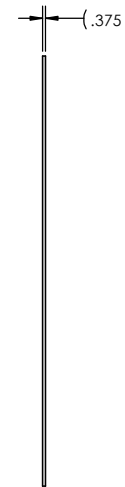
FRONT VIEW



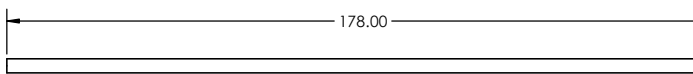
REAR VIEW



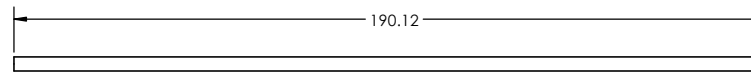
DETAIL ITEM 5
SCALE 1 : 12



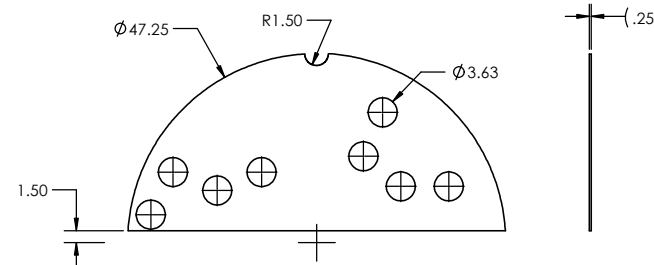
DETAIL ITEM NO. 1



DETAIL ITEM NO. 2



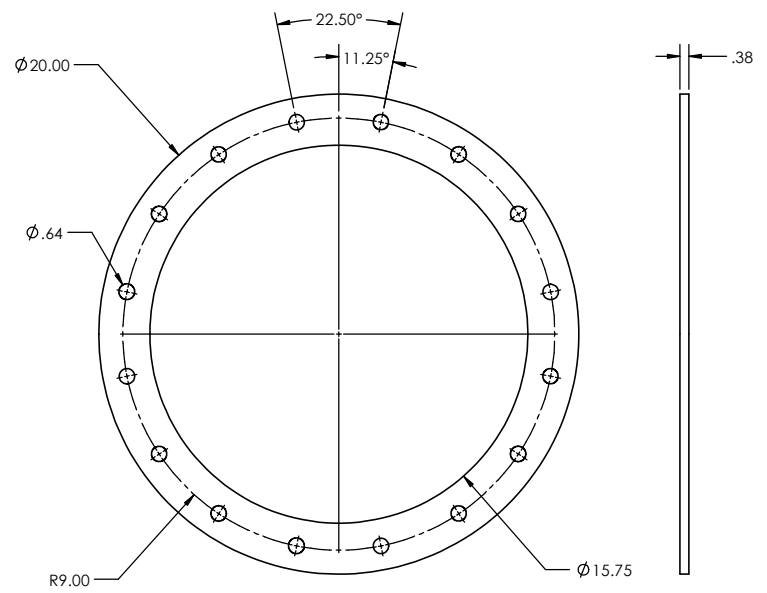
DETAIL ITEM NO. 3



DETAIL ITEM 4
SCALE 1 : 12

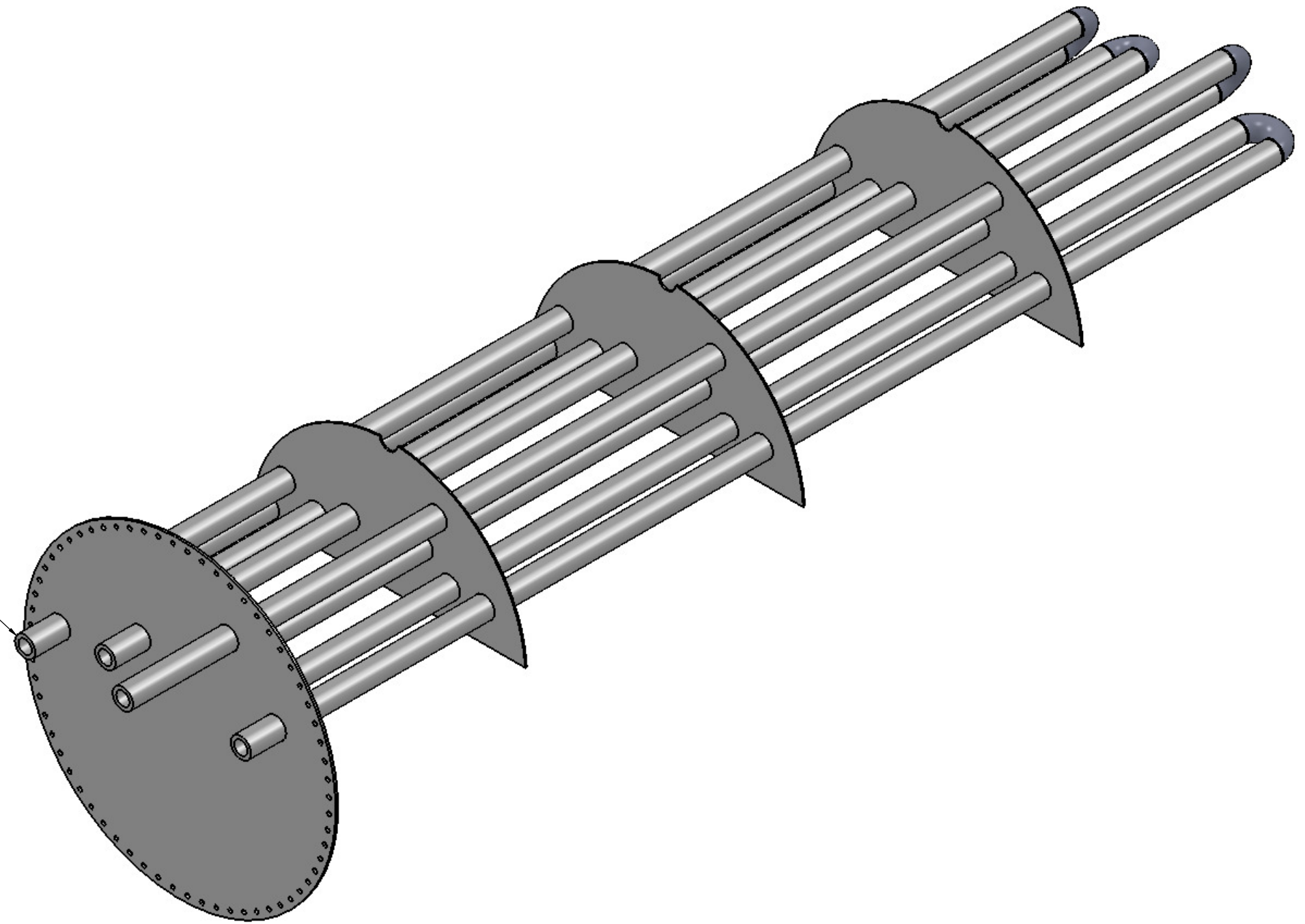
PART NUMBER	DESCRIPTION	MATERIAL	MEASURE	UNIT	QTY
9	CHOKE, 5000# ADJUSTABLE 3" FLANGED				1
8	RETURN / WELD / SR, 3" XXH	SA-234-WPB	N/A	EACH	6
7	ELBOW 90 / WELD / LR, 3" XXH	SA-234-WPB	N/A	EACH	1
6	FLANGE/API 6A/WN, 3 1/8" SM (4.94" OAL) BEVEL 3" XXH BORE	SA-105	N/A	EACH	6
5	PLATE, 0.375"	SA-36	20.1	SF	1
4	PLATE, 0.25"	SA-36	18	SF	3
3	PIPE / SMLS, 3" XXH (0.600" NOM WALL)	SA-106-B	190.13	INCHES	1
2	PIPE / SMLS, 3" XXH (0.600" NOM WALL)	SA-106-B	178.00	INCHES	3
1	PIPE / SMLS, 3" XXH (0.600" NOM WALL)	SA-106-B	163.50	INCHES	4

GENERAL SPECIFICATIONS				
VESSEL TO BE CONSTRUCTED IN STRICT ACCORDANCE WITH THE LATEST EDITION OF THE ASME PRESSURE VESSEL CODE, SECTION VIII DIVISION 1, FOR PRESSURE VESSELS AND IS TO BE SO STAMPED. INSPECTED BY NATIONAL BOARD COMMISSIONED INSPECTOR.		RADIOGRAPHY:	NONE	
NATIONAL BOARD NUMBER REQUIRED:		CATEGORY A WELDS (LONG SEAMS)	NONE	
OUTSIDE INSPECTION REQUIRED:		CATEGORY B WELDS (GIRTH SEAMS)	NONE	
DESIGN		NOZZLES >10" Ø OR >1.125" THK.	NONE	
MAXIMUM ALLOWABLE WORKING PRESSURE (PSIG)		NOZZLES <10" Ø OR <1.125" THK.	N/A	
MAXIMUM ALLOWABLE WORKING TEMPERATURE (°F)		JOINT EFFICIENCIES (%)		
5000		LONG SEAM	N/A	
130		SEAMLESS	85	
N/A		HEAD-SHELL	85	
N/A		ADDITIONAL NDE NOTES:		
MIN. DESIGN METAL TEMPERATURE PER UG-20 (°F) SEE CALCULATIONS				
CORROSION ALLOWANCE				
NO REMARKS: BASED ON 1.3 X DESIGN PRESSURE				
HYDROSTATIC TEST PRESSURE CHART REQUIRED:				
NO REMARKS: BASED ON 1.3 X DESIGN PRESSURE				
POST WELD HEAT TREATMENT TIME				
MILL TEST REPORTS REQUIRED				
SHIPPING WEIGHT (LBS):				
FULL OF WATER WEIGHT (LBS):				
GENERAL NOTES				
1. FLANGES TO HAVE BOLT HOLES STRADDLING VESSEL TRUE CENTER LINES.				
2. ALL CONNECTIONS SHALL TO BE COVERED OR PLUGGED FOR SHIPPING.				
3. DRILL AND TAP 1/4" NPT, TELLTALE HOLE IN ALL REINFORCING PADS.				
4. INSIDE EDGE OF NOZZLE NECKS SHALL BE ROUNDED, THE RADIUS OF ROUNDNESS 1/8" MIN. OR ONE-HALF THE WALL THICKNESS OF THE NOZZLE WALL IS LESS THEN 1/4".				
5. SEE PAINT FORM FOR COATING REQUIREMENTS.				
6. SEE TABLE UW-33 FOR ALIGNMENT TOLERANCE.				
7. SEE TABLE UW-35 FOR FINISHED LONGITUDINAL AND CIRCUMFERENTIAL JOINT TOLERANCE.				
REVISION HISTORY				
REV	DATE	REVISED BY	APPROVED BY	DESCRIPTION
BD	11/7/12	BJD	VB	MOVE CONNECTIONS FROM 90DEG TO 270DEG
CO	3/22/13	EES		REVISED COILS PER AS-BUILT
4	12/19/13	EE		CHANGED
TITLE:				48" OD X 15'-0" HORIZONTAL INDIRECT LINE HEATER COIL RATING AT 5000 PSI
DRAWN BY		CHECKED BY	APPROVED BY	JOB NUMBER
E.E.S.		N/A	N/A	TEC-NC0120036
DATE		CUSTOMER	NEWFIELD	
12/19/2013		2268 HIGHWAY 29 ELMORE CITY, OK 74332		AS SUCH IS NOT TO BE DISTRIBUTED UNDER ANY CIRCUMSTANCES FOR DESIGN OR FABRICATION PURPOSES WITHOUT PRIOR WRITTEN CONSENT.
SHEET NUMBER		REVISION	SHEET SCALE	SIZE
TEC-NC0120036		4	1:24	D



BURNER FLANGE DETAIL

CODE CALCULATIONS DO NOT
PROCEED BEYOND THIS POINT



TITLE: 48" OD X 15'-0" HORIZONTAL INDIRECT LINE HEATER COIL RATING AT 5000 PSI						 TITAN TANKS & VESSELS ELMORE CITY
DRAWN BY E.E.S.	CHECKED BY N/A	APPROVED BY N/A	JOB NUMBER TEC-NC0120036	DATE 12/19/2013	CUSTOMER NEWFIELD	
DRAWING NUMBER TEC-NC0120036	SHEET NUMBER 6 OF 6	REVISION 4	SHEET SCALE 1:24	SIZE D	22648 HIGHWAY 29 ELMORE CITY, OK 73433 AS SUCH IS NOT TO BE DISTRIBUTED UNDER ANY CIRCUMSTANCES FOR DESIGN OR FABRICATION PURPOSES WITHOUT PRIOR WRITTEN CONSENT.	

TEC-NC0120036
4
D