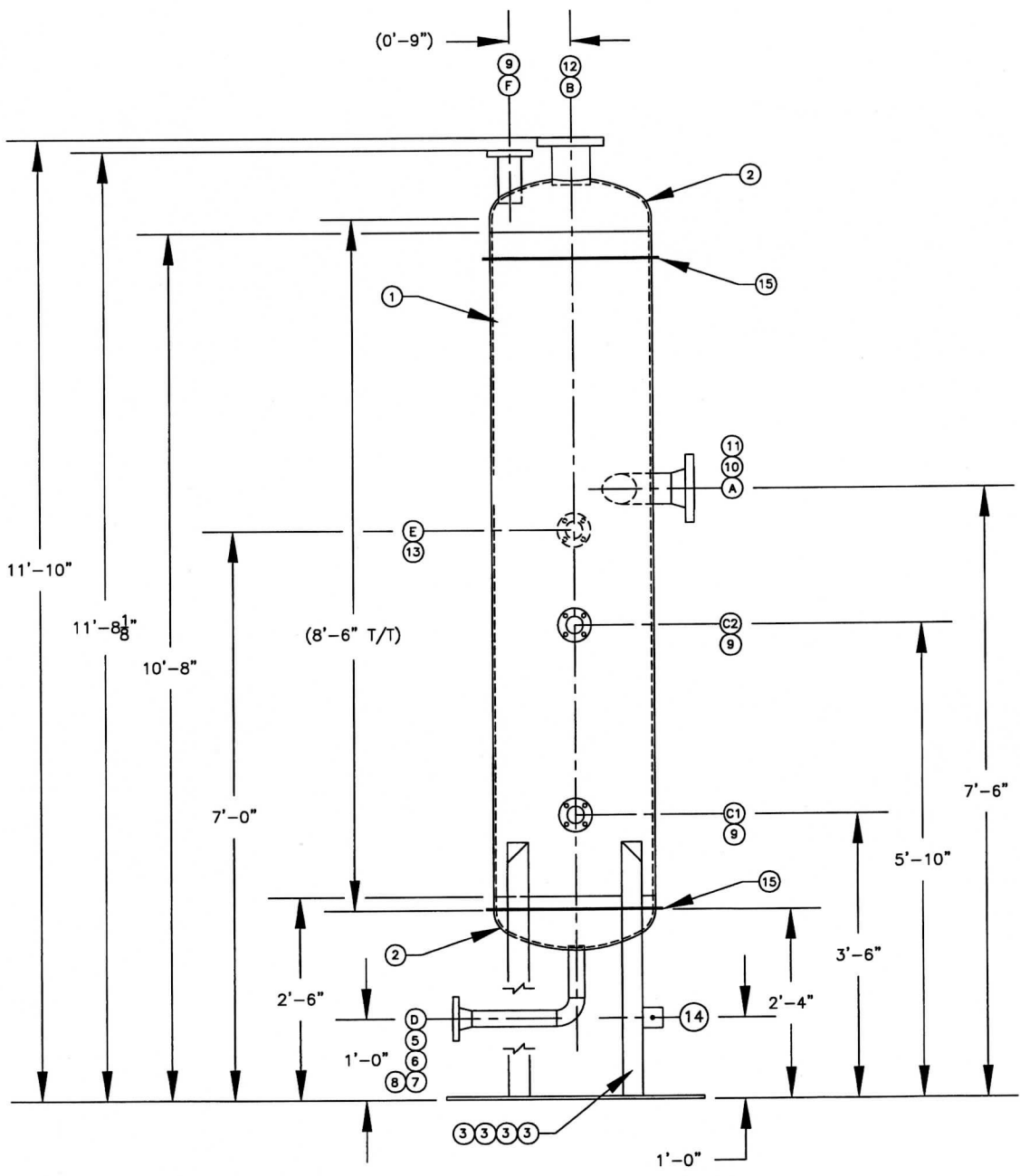
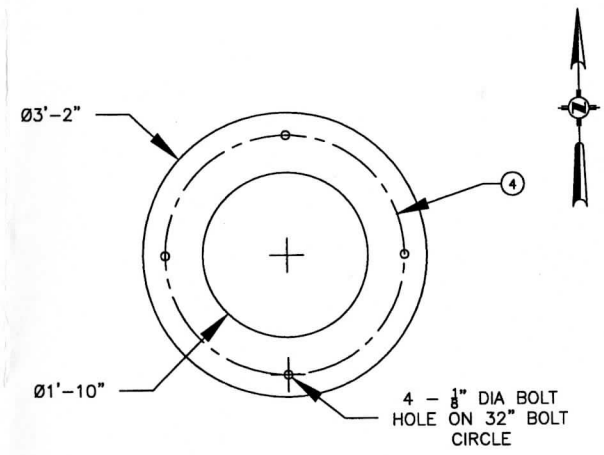
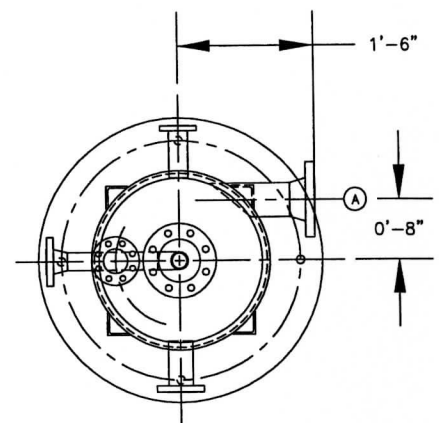
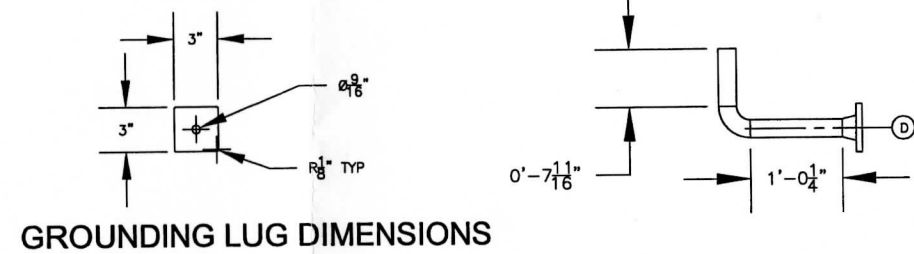


PLAN VIEW



ELEVATION VIEW



GROUNDING LUG DIMENSIONS

NB SEE NOTE 4

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6535 NORTH WASHINGTON STREET
DENVER, COLORADO

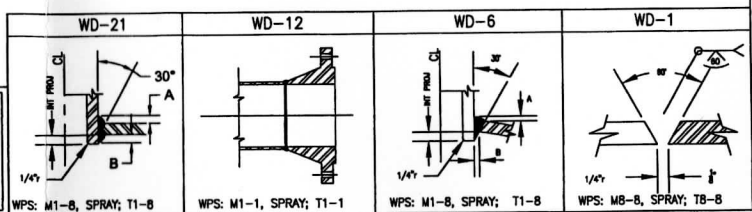
MAWP 150i 15E PSI AT 550 °F
MDMT 20 °F AT 150 PSI
SERIAL NO. CV-0893
YEAR BUILT 2009

PART NO. 41-V-630
D-1511

- NOTES:**
1. ALL BOLT HOLES TO STRADDLE NATURAL CENTERLINES OF VESSEL.
 2. ANTI-SIEZE TO BE APPLIED TO ALL BOLTING PRIOR TO TIGHTENING.
 3. ALL WELD JOINTS PLUS 1" ON EITHER SIDE TO BE CLEANED PRIOR TO WELDING.
 4. NATIONAL BOARD NUMBER WILL BE ASSIGNED WHEN ALL TESTING HAS BEEN COMPLETED.
 5. INSULATION RINGS TO BE SPACED 8'-0" APART.
 6. DIMENSIONS IN PARENTHESIS FOR REFERENCE ONLY.
 7. BACKUP BARS TO BE USED IN THE HEAD/SHELL SEAMS AND LEFT IN PLACE.

NOTICE

THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION AND IT SHALL NOT BE USED OR REPRODUCED OR ITS CONTENTS DISCLOSED IN WHOLE OR IN PART WITHOUT THE PRIOR WRITTEN CONSENT OF PRECISION PIPE & VESSEL, LLC 303-287-5001



SCHEDULE OF OPENINGS & WELD DETAILS													
MARK	SIZE	QTY	RATING	TYPE	DESCRIPTION	OS PROJ	WT PROJ	WD	A	B	C		
A	4"	1	150#	RFLWN	INLET	SEE DETAIL	1/2" MAX	6/12	3/8"	N/A			
B	4"	1	150#	RFLWN	OUTLET		6"	1/2" MAX	21	3/8"	3/8"		
C1	2"	1	150#	RFLWN	LOWER LLC TAP		6"	1/2" MAX	6	3/8"	N/A		
C2	2"	1	150#	RFLWN	UPPER LLC TAP		6"	1/2" MAX	6	3/8"	N/A		
D	2"	1	150#	RFLWN	DRAIN		7"	1/4" MAX	6/12	3/8"	3/16"		
E	1 1/2"	1	150#	RFLWN	TJ/TW CONNECTION		6"	1/2" MAX	6	3/8"	N/A		
F	2"	1	150#	RFLWN	PSV CONNECTION		6"	1/2" MAX	6	3/8"	3/8"		

DESIGN DATA			
REGISTRATION	NATIONAL BOARD	YEAR BUILT	2009
CONSTRUCTION	ASME SEC VIII, DIV 1/5141-4113	SERIAL NO.	CV-0893
DESIGN PRESSURE	150 PSI	CAPACITY (VOL)	196 GAL
DESIGN TEMP	550° F	SHIPPING WT (EMPTY)	1070 LBS
EXTERNAL PRESSURE	15 psi	WT. FULL OF WATER	2694 LBS
OPERATING PRESSURE	100 psi	VESSEL SHELL MAT'L	SA-312, TP347
OPERATING TEMP	340° F	TOP/LEFT HEAD	SA-240, 304
MIN. DES. METAL TEMP	20° F	BOTTOM/ RIGHT HEAD	SA-240, 304
WIND CRITERIA	IBC 2006, 100 MPH	NOZZLES	SEE BOM
SEISMIC CRITERIA	IBC 2006, SDS=0.181; SD1=0.090	GASKETS	N/A
HYDRO TEST PRESS	195 PSI	STUDS & NUTS	193-B7 / 194-2H
CORROSION ALLOW.	NONE	SURFACE PREP 5141-090000	TBD
RADIOGRAPHY	NONE	PRIMER 5141-090000	TBD
POST WELD HEAT TREAT	NOT REQUIRED	FINISH PAINT 5141-090000	TBD
MATERIAL IMPACT TEST	NOT REQUIRED	INSULATION	1 1/2" BY OTHERS
MATERIAL HARDNESS	NOT REQUIRED	AUTHORIZED QUALITY CONTROL PROGRAM	

BILL OF MATERIAL			
32			
31			
30			
29			
28			
27			
26			
25			
24			
23			
22			
21			
20			
19			
18			
17	2	1/4" X 1" FLAT, BACKING BAR	304 SS
16	1	ASME NAMEPLATE BRACKET AND NAMEPLATE	SA-36/SS
15	2	1/4" X 1" FLAT, ROLLED THE HARDWAY TO 24 1/4" ID	SA-36 OR EQUIVALENT
14	1	1/4" X 3" X 3" PLATE, GROUNDING LUG	SA-36 OR EQUIVALENT
13	1	E 1 1/2" 150# RFLWN FLANGE, 9" LONG	SA-105
12	1	B 4" 150# RFLWN FLANGE	SA-105
11	1	A 4" S40 PIPE, 0'-10 3/8" LONG	SA-106-B
10	1	A 4" 150# RFLWN FLANGE, S40 BORE	SA-105
9	3	C1,C2,F 2" 150# RFLWN FLANGE	SA-105
8	1	D 2" 150# RFLWN FLANGE, S40 BORE	SA-105
7	1	D 2" S40 LR 90° WELD ELBOW	SA-234 GR WPB
6	1	D 2" S40 PIPE, 1'-0 1/4" LONG	SA-106-B
5	1	D 2" S40 PIPE, 7 11/16" LONG	SA-106-B
4	1	3'-2" OD X 1'-10" ID BASE PLATE, 1/2" THICK	SA-36
3	4	3" X 3" X 1/4" ANGLE WITH 1/4" CAP, 3'-1 1/2" LONG	SA-36
2	2	24"-0" OD S20 PIPE CAP, 0.200" MIN, 2" STRAIGHT FLANGE	SA-240 Gr 304
1	1	24"-0" OD X 8'-2" LONG S20 PIPE, 0.2261" MIN. (1 COURSE)	SA-312 Gr TP 347

ITEM	QTY	PART	DESCRIPTION	MATERIAL	WT
D			RELEASED FOR FABRICATION; ADDED REFERENCE DIMENSION; ADDED NOTES 6, 7	DRR	MH 8/11/09
B			CHANGED DESIGN CONDITIONS; CHANGED NOZZLE E TO 1 1/2" RFLWN; CORRECTED THE BOM ADDED GROUNDING LUG; REVISED NOZZLE ORIENTATIONS; REVISED NAMEPLATE; ADDED INS. RINGS; CHANGED NOTE 5; CHANGED WPS NUMBERS	DRR	MH 7/28/09
A			ISSUED FOR REVIEW	DRR	MH 7/13/09
REV			DESCRIPTION	BY	APPD DATE

PRECISION PIPE & VESSEL, LLC
6535 N. WASHINGTON ST
DENVER, CO 80229

CERTIFIED

CUSTOMER RANGE FUELS SOPERTON PLANT, LLC	JOB NO: 4374 SOP 10991
TITLE / PROJECT: SOP 10991 STEAM BLOWDOWN DRUM, 41-V-630, CV-0893	PAGE NUMBER: 1 OF 1
DRAWN BY: DRR	CHECKED BY: MH
APPROVED DRR	DATE: 7/28/09
SCALE: NTS	DRAWING NO: D-1511
REV: B	