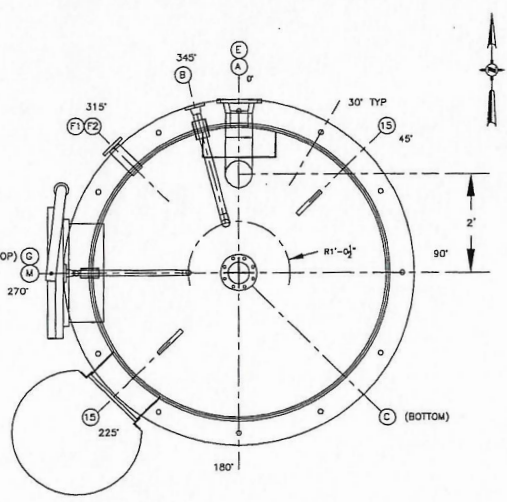


ELEVATION VIEW



PLAN VIEW

NB 879

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CERTIFIED BY
PRECISION PIPE & VESSEL, LLC
6535 NORTH WASHINGTON STREET
DENVER, COLORADO

W

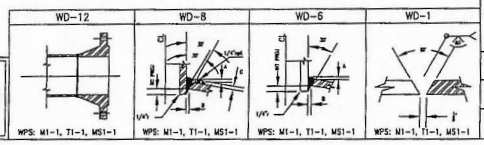
MAWP 2001 15E PSI AT 250/350 °F
MDMT 20 °F AT 2001 15E PSI
SERIAL NO. CV-0884
YEAR BUILT 2009

PART NO. 31-V-164
D-1495

- 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 LADDERS SHALL BE TRIAL FIT
 4. ALL WELD JOINTS AND 1" ON EITHER SIDE OF JOINT TO BE CLEANED PRIOR TO WELDING.
 5. NOTE 5 DELETED
 6. NATIONAL BOARD NUMBER WILL BE ASSIGNED WHEN ALL TESTING HAS BEEN COMPLETED.
 7. ALL WETTED MATERIALS NACE MR-0175 COMPLIANT.
 8. INSULATION RING INSTALLATION SPACING NOT TO EXCEED 8'-0"
 9. NOZZLE F1 AND F2 PLUGS LOCATED @ 30°, 5° ELEVATION AND 5'-6" ELEVATION RESPECTIVELY.

NOTICE

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SCHEDULE OF OPENINGS & WELD MAP

MARK	SIZE	QTY	RATING	TYPE	DESCRIPTION	OS PROJ	INT PROJ	NO	A	B	C
A	4"	1	150F	R/WNI	INLET	8"	1/2"	MAX	6/12	1/2"	1/2"
B	1 1/2"	1	150F	R/WNI	VAPOR OUTLET	6"	1/2"	MAX	6/12	1/2"	1/2"
C	4"	1	150F	R/WNI	LIQUID OUTLET	6"	1/2"	MAX	6/12	1/2"	1/2"
D					NOT USED						
E	6"	1	150F	R/WNI	PSV CONNECTION	6"	1/2"	MAX	6/12	1/2"	1/2"
F1	2"	1	150F	R/WNI	LEVEL BRIDLE	6"	1/2"	MAX	6/12	1/2"	1/2"
F2	2"	1	150F	R/WNI	LEVEL BRIDLE	6"	1/2"	MAX	6/12	1/2"	1/2"
G	1"	1	150F	R/WNI	STEAM OUT	6"	1/2"	MAX	6/12	3/8"	3/8"
H					NOT USED						
J					NOT USED						
M	24"	1	150F	R/WNI	HANWAY	10"	1/2"	MAX	6/12	1/4"	1/2"
AD					SEE SHEET 2 OF 2						
NO					SEE SHEET 2 OF 2						
VO					SEE SHEET 2 OF 2						

DESIGN DATA

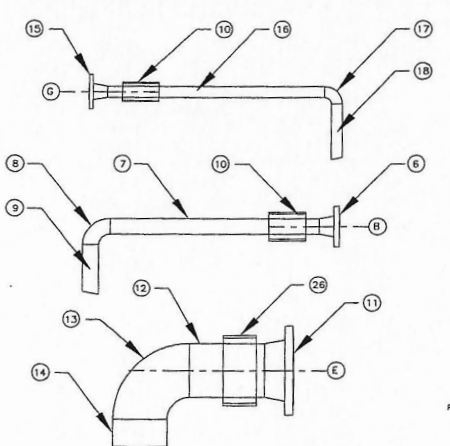
REGISTRATION	NATIONAL BOARD	YEAR BUILT	2009
CONSTRUCTION	ASME SEC VIII, DIV 1, 5141-434113	SERIAL NO.	CV-0884, 31-V-164
DESIGN PRESSURE	200 PSI @ 250 F	CAPACITY (VOL)	3075 GAL
DESIGN TEMP	250F/350F	SHIPPING WT (EMPTY)	15,500
EXTERNAL PRESSURE	FULL VACUUM @ 350F	WT. FULL OF WATER	23,700 LB
OPERATING PRESSURE	93 PSI	VESSEL SHELL MAT'L	SA-516 Gr 70
OPERATING TEMP	250F	TOP LEFT HEAD	SA-516 Gr 70
MIN. RES. METAL TEMP	20F	BOTTOM/RIGHT HEAD	SA-516 Gr 70
WELD CRITERIA	2506 RC, 100 MPH	NOZZLES	SEE BOM
SEISMIC CRITERIA	2006 RC, S05-0.181, S01-0.093	GASKETS	SS SPIRAL WOUND
HYDRO TEST PRESS	260	STUDS & NUTS	SA-193 B7, SA-194 2H
CORROSION ALLOW.	0.0625"	SURFACE PREP	SSPC-SP5
RADIOGRAPHY	NONE	PRIMER	5141-090000
POST WELD HEAT TREAT	NOT REQUIRED	FINISH PAINT	5141-090000
CORROSION ALLOW. FOR CLAS	NOT REQUIRED	INSULATION	2" BY OTHERS
MATERIAL HARDNESS	NOT REQUIRED	AUTHORIZED QUALITY CONTROL PROGRAM	

BILL OF MATERIAL

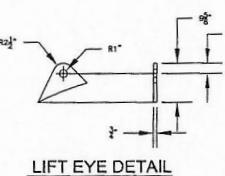
ITEM	QTY	PART	DESCRIPTION	MATERIAL	WT
18	2		1/2" x 1 1/2" FLAT INSULATION RING, 72" ID	A-36	
18	20		1 1/4" B7 STUD, 6 3/4" LONG WITH 2 H NUTS PER STUD (HANWAY)	SA-193/SA-194	
17	12		1" B7 STUD, 4" LONG WITH 2 H NUTS PER STUD	SA-193/SA-194	
16	1		24" HANWAY DWEL, SEE DRAWING D-1484 SHEET 2 OF 2	CARBON STEEL	
15	1		LIFT EYE	A-36	
14	1		ASME NAMEPLATE AND NAMEPLATE BRACKET	A-36/SS	
13	1		8" x 8" x 1/2" CONNECTION ANGLE (SEE SHEET 2 OF 2)	A-36	
12	1		BASE PLATE (SEE SHEET 2 OF 2)	A-36	
11	1		72" ID COVER, UPPER (SEE SHEET 2 OF 2)	A-36	
10	1		72" ID SHEET, LOWER (SEE SHEET 2 OF 2)	A-36	
9	1		72" OD x 8" THICK SS DEWEATER PAD, 9% DENSITY	304 SS	
8	1	C	1" 150F R/WNI FLANGE (Sch 160 BORE) W/ PIPE STUB, SEE PAGE 2 OF 2	SA-105/SA-106-B	10
7	1	B	1 1/2" 150F R/WNI FLANGE (Sch 160 BORE) W/ PIPE STUB, SEE PAGE 2 OF 2	SA-105/SA-106-B	10
6	2	F1,F2	2" 150F R/WNI FLANGE (Sch 80 BORE)	SA-105	12
5	1	E	6" 150F R/WNI FLANGE (Sch 80 BORE) WITH PIPE STUB, SEE DETAIL PAGE 2 OF 2	SA-105/SA-106-B	15
4	2	A,C	4" 150F R/WNI FLANGE (Sch 80 BORE) W/ 8" PIPE STUB	SA-105/SA-106-B	50
3	1	M	24" 150F R/WNI FLANGE (Sch 80 BORE) W/ 11 1/2" PIPE STUB, BLIND, AND GASKET	SA-105/SA-106-B	950
2	2		72" ID 8:1 ELLIPSOID. HEAD, 4.500" MINIMUM THICK, 2" SF	SA-516 Gr 70	1600
1	1		72" ID x 11'-3" SHELL, 5/16" NOM THICK, 6.0000" MIN	SA-516 Gr 70	7785

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

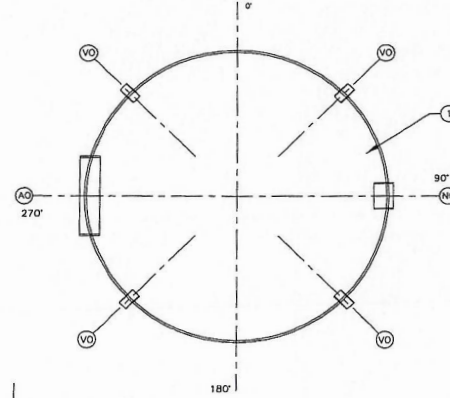
CUSTOMER	RANGE FUELS SOPERTON PLANT, LLC	JOB NO.	4356 SOP 10535
TITLE / PROJECT	HP FLASH DRUM, 31-V-164	PAGE NUMBER	1 OF 2
DRAWN BY	DRR	CHECKED BY	MH
APPROVED	DRR	DATE	5/7/09
SCALE	NTS	DRAWING NO.	D-1495
REV			



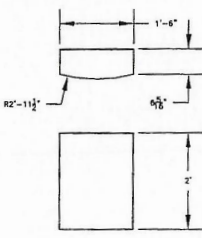
(25) VORTEX DETAIL



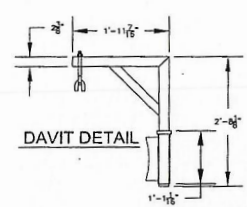
LIFT EYE DETAIL



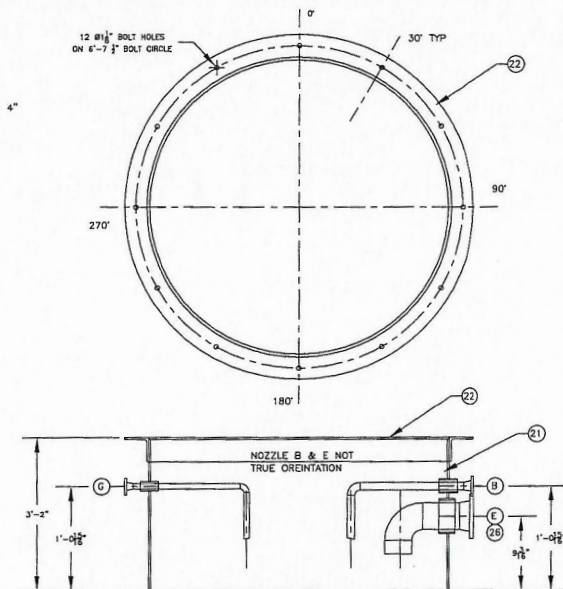
LOWER SKIRT DETAIL



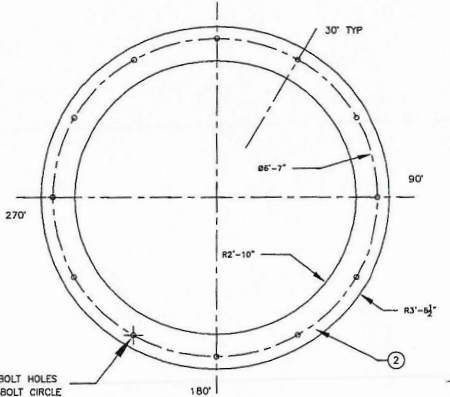
(24) INLET DIVERTER DETAIL



DAVIT DETAIL

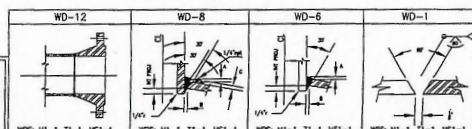


UPPER SKIRT DETAIL



BASE PLATE DETAIL

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SCHEDULE OF OPENINGS & WELD MAP

MARK	SIZE	QTY	RATING	TYPE	DESCRIPTION	OS PROJ	INT PROJ	NO	A	B	C
A											
B											
C											
D											
E											
F1											
F2											
G											
H											
J											
M											
AD	20"	1	S40	PIPE	SKIRT ACCESS	1"	A/R	6	3/8"	3/8"	-
NO	6"	1	S40	PIPE	NOZZLE OPENING	1"	A/R	6	3/8"	3/8"	-
VO	2"	4	S40	PIPE	VENT OPENING	1"	A/R	6	3/8"	3/8"	-

DESIGN DATA

REGISTRATION	NATIONAL BOARD	YEAR BUILT	2009
CONSTRUCTION	ASME SEC VIL, DIV 1, 5141-434113	SERIAL NO.	DV-0884, 31-1-164
DESIGN PRESSURE	SEE SHEET 1 OF 2	CAPACITY (VOL)	SEE SHEET 1 OF 2
DESIGN TEMP	SEE SHEET 1 OF 2	SHIPPING WT (EMPTY)	SEE SHEET 1 OF 2
EXTERNAL PRESSURE	SEE SHEET 1 OF 2	WT. FULL OF WATER	SEE SHEET 1 OF 2
OPERATING PRESSURE	SEE SHEET 1 OF 2	VESSEL SHELL MAT'L	SEE SHEET 1 OF 2
OPERATING TEMP	SEE SHEET 1 OF 2	TOP/LEFT HEAD	SEE SHEET 1 OF 2
MIN. DES. METAL TEMP	SEE SHEET 1 OF 2	BOTTOM/RIGHT HEAD	SEE SHEET 1 OF 2
WIND CRITERIA	SEE SHEET 1 OF 2	NOZZLES	SEE SHEET 1 OF 2
SEISMIC CRITERIA	SEE SHEET 1 OF 2	GASKETS	SEE SHEET 1 OF 2
HYDRO TEST PRESS	SEE SHEET 1 OF 2	STUDS & NUTS	SEE SHEET 1 OF 2
CORROSION ALLOW.	SEE SHEET 1 OF 2	SURFACE PREP	SEE SHEET 1 OF 2
RADIOGRAPHY	SEE SHEET 1 OF 2	PRIMER	SEE SHEET 1 OF 2
POST WELD HEAT TREAT	SEE SHEET 1 OF 2	FINISH PAINT	SEE SHEET 1 OF 2
CORROSION ALLOW. FOR CLAD	SEE SHEET 1 OF 2	INSULATION	SEE SHEET 1 OF 2
MATERIAL HARDNESS	SEE SHEET 1 OF 2	AUTHORIZED QUALITY CONTROL PROGRAM	

BILL OF MATERIAL

ITEM	QTY	PART	DESCRIPTION	MATERIAL	WT
26	1	-	8" Sch 40 PIPE x 4" LONG	SA-106-B	-
25	1	-	VORTEX BROWER, 3/8" THICK MATERIAL REQUIRED, SEE DETAIL	A-36	-
24	1	-	INLET DIVERTER, 3/8" THICK MATERIAL REQUIRED, SEE DETAIL	A-36	-
23	-	-	-	A-36	-
22	1	-	6" X 6" X 1/2" ROLLED ANGLE, 73" ID	A-36	-
21	1	-	72" Ø X 3'-1 7/8" UPPER SKIRT, 1/2" NOM THICK	A-36	-
20	1	-	ANGLED SEGMENTED SELF SUPPORTING DIVERTER PAD, 6" THICK, BY DESIGN	304 SS	-
19	2	-	3/8" X 2" PLAT W/ DIVERTER PAD SUPPORT, 72" Ø	A-36	-
18	1	C	1" Sch 160 PIPE, Ø=3 7/8" LONG	SA-106-B	-
17	1	C	1" Sch 160 LR WELD ELBOW	SA-105	-
16	1	C	1" Sch 160 PIPE, 2'-3 5/8" LONG	SA-106-B	-
15	1	C	1" 150# BRLWN FLANGE (Sch 160 BORE)	SA-105	-
14	1	E	6" Sch 80 PIPE, Ø=3 3/8" LONG	SA-106-B	-
13	1	E	6" Sch 80 SR WELD ELBOW	SA-105	-
12	1	E	6" Sch 80 PIPE, Ø=3" LONG	SA-106-B	-
11	1	E	6" 150# BRLWN FLANGE (Sch 80 BORE)	SA-105	-
10	2	-	3" Sch 40 PIPE X 4 1/2" LONG	SA-105	-
9	1	B	1 1/2" Sch 160 PIPE, Ø=8 3/16" LONG	SA-105	-
8	1	B	1 1/2" Sch 160 LR WELD ELBOW	SA-105	-
7	1	B	1 1/2" Sch 160 PIPE, 2'-1 5/16" LONG	SA-106-B	-
6	1	B	1 1/2" 150# BRLWN FLANGE (Sch 160 BORE)	SA-105	-
5	4	VO	2" Sch 40 PIPE, 1 1/2" LONG	SA-106-B	-
4	1	NO	6" Sch 40 PIPE X 4 1/2" LONG	SA-106-B	-
3	1	AD	20" Sch 40 PIPE X 4 1/2" LONG	SA-106-B	-
2	1	-	7'-1" Ø X 5'-8" Ø BASE PLATE, 3/4" THICK	A-36	-
1	1	-	72" Ø X 3'-1 5/8" LOWER SKIRT, 1/2" NOM THICK	A-36	-

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

CUSTOMER	RANGE FUELS SOPERTON PLANT, LLC	JOB NO.	4356 SOP 10535
TITLE / PROJECT	HP FLASH DRUM, 31-V-164	PAGE NUMBER	2 OF 2
DRAWN BY:	DRR	CHECKED BY:	MH
APPROVED:	DRR	DATE:	5/7/09
SCALE:	NTS	DRAWING NO.:	D-1495
REV:		BY:	APP'D
DATE:			