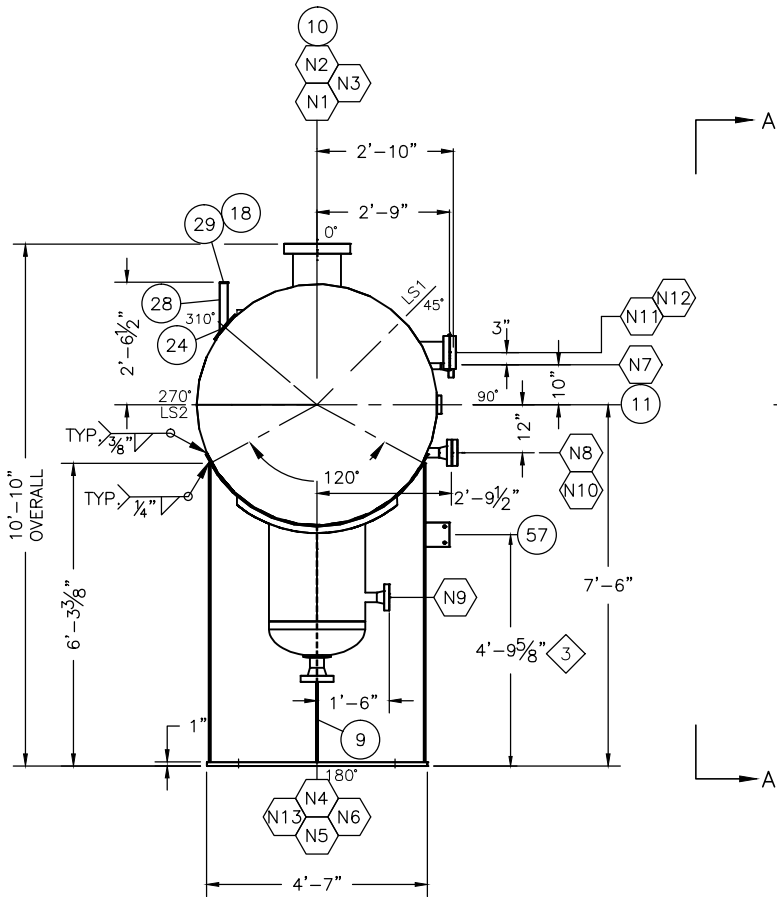
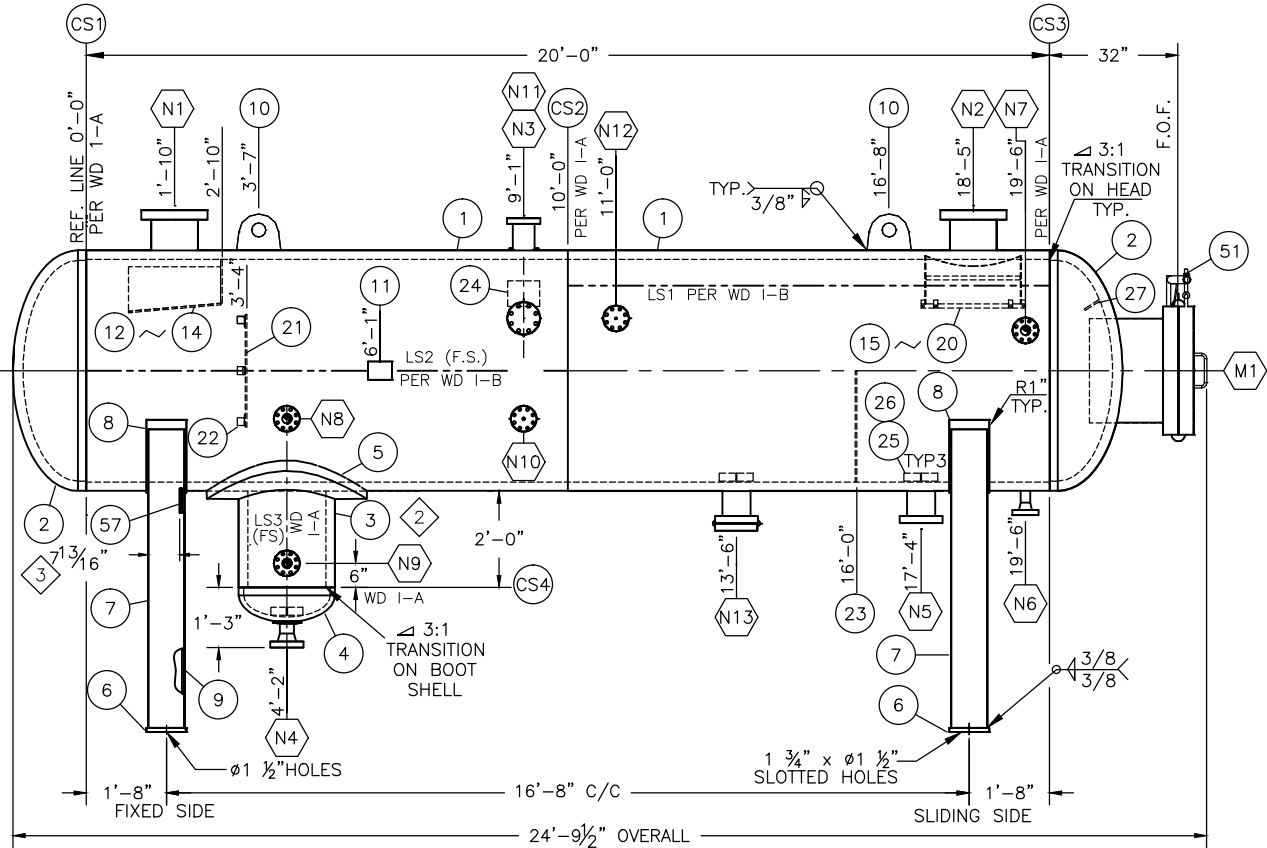


NOZZLE SCHEDULE														
MARK	QTY	SIZE	SCH.	RATING & FACING	SERVICE	PROJECTION		REPAD SIZE		WELD SIZE			WD#	ITEM
						INSIDE(h)	OUTSIDE	SIZE	THK.	A	B	C		
N1	1	8"	HB	CL600 RFHB	INLET	SET FLUSH	10"	—	—	3/8"	—	—	II	30
N2	1	8"	HB	CL600 RFHB	GAS OUTLET	SET FLUSH	10"	—	—	3/8"	—	—	II	30
N3	1	3"	HB	CL600 RFHB	PSV	1/2"	8"	—	—	3/8"	3/8"	—	III	31
N4	1	3"	160	CL600 RFWN	WATER OUTLET	GND FLUSH	AS SHOWN	7"	1/2"	3/8"	—	3/8"	IV/VIII	32,33,34
N5	1	4"	HB	CL600 RFHB	CONDENSATE OUT	SET FLUSH	8"	—	—	3/8"	—	—	II	35
N6	1	2"	160	CL600 RFWN	BRIDDL 1	SET FLUSH	6"	—	—	3/8"	—	—	II/VIII	36,37
N7	1	2"	160	CL600 RFWN	BRIDDL 1	SET FLUSH	AS SHOWN	—	—	3/8"	—	—	II/VIII	36,38
N8	1	2"	160	CL600 RFWN	BRIDDL 2	SET FLUSH	AS SHOWN	—	—	3/8"	—	—	II/VIII	36,38
N9	1	2"	160	CL600 RFWN	BRIDDL 2	SET FLUSH	6"	2	—	3/8"	—	—	II/VIII	36,39
N10	1	2"	160	CL600 RFWN	TI	SET FLUSH	AS SHOWN	—	—	3/8"	—	—	II/VIII	36,38,40,41,42
N11	1	3"	HB	CL600 RFHB	HLSD	1/2"	AS SHOWN	—	—	3/8"	3/8"	—	III	31,53,54,55
N12	1	2"	160	CL600 RFWN	PI	SET FLUSH	AS SHOWN	—	—	3/8"	—	—	II/VIII	36,38,41,42,43
N13	1	4"	HB	CL600 RFHB	SPARE	SET FLUSH	8"	—	—	3/8"	—	—	II	35,44,45,46
BOOT	1	24"	2 1/4"	PLATE	WATER BOOT	GND FLUSH	24"	40"	2"	3/8"	—	1 1/4"	IV	3,4,5
M1	1	20"	HB	CL600 RFHB	MANWAY	4"	AS SHOWN	—	—	1/2"	1/2"	—	III	47~51

- NOTES:
- IMPACT TESTING: YES ; 60" OD SHELLS, 60" OD HEADS, BOOT SHELL, BOOT REPADS SHALL BE IMPACT TESTED TO 15 FT-LB PER UG-84 FOR -20°F MDMT PLUS PRODUCTION IMPACT TESTS.
 - NO: FOR REMAINING COMPONENTS EXEMPT PER UCS-66(a), UCS-66(b)(1)(c), ASME SECT II-A AND FIG. UCS-66 NOTE c.
 - UT 60" OD SHELLS, 60" OD HEADS, BOOT SHELL, BOOT REPAD PER SA-435 AT 6" GRID.
 - 60" OD HEAD TRANSITION 3:1 TO MATCH 60"OD SHELL 2 1/4" THK(TYPICAL).
 - ONE END OF 24" OD SHELL TRANSITION 3:1 TO MATCH 24"OD HEAD 1 1/4" THK.
 - 60" OD SHELL LONG SEAM DOUBLE V - 22.5' 2/3 t (OUTERSIDE), 22.5' 1/3 t (INNERSIDE) AND BOTH END CIRC SEAMS - SINGLE V 22.5'
 - 24" OD BOOT SHELL LONG SEAM SINGLE V - 22.5' AND ONE END CIRC SEAM - SINGLE V 22.5' TRANSITION 3:1 TO 1 1/4" THK, OTHER SIDE CIRC SEAM SHALL BE PLANE END (NO TRANSITION, NO V GROOVE).
 - RADIOGRAPHY: FULL AS PER UW-11(a) AND 100% OF ALL NOZZLES.
 - EXTERNAL LOADINGS PER UG-22(a), (b) AND (d).
 - ALL ATTACHMENTS WITH NO WELD SYMBOLS SHALL BE ATTACHED WITH A MINIMUM 1/4" FILLET WELD USING WELD PROCEDURE MQI-2.
 - LONG SEAMS PER WD I-B AND CIRC SEAMS PER WD I-A.
 - EXTERIORS OR INTERIOR CORNERS OR EDGES SHALL BE CHAMFERED TO MIN. 1/8" OR ROUNDED TO A MIN. 1/8" RADIUS UNLESS OTHERWISE INDICATED.
 - ALL REPADS TO HAVE 1/4" NPT DRILLED WEEP HOLES SET TO THE LOWEST ELEVATION.
 - FABRICATION TOLERANCES SHALL BE IN ACCORDANCE WITH MAR-QUINN INDUSTRIES LTD. STANDARD VESSEL TOLERANCE QCP 10-4, ±1/8" or 1/2 DEGREE.
 - HYDROTEST VESSEL WITH PIPING TO 2160 PSIG.
 - INTERNAL PREPARATION FOR FUTURE INTERNAL COATING.



END VIEW A-A
SCALE: 1/4" = 1'-0"
(FIXED SIDE SADDLE NOT SHOWN)



ELEVATION VIEW
SCALE: 1/4" = 1'-0"

WELD PROCEDURE SPECIFICATION:

MINIMUM PREHEAT TEMPERATURE:
A) 1/8" TO 1 1/8" THK PREHEAT TO 50°F
B) 1 1/4" THK & OVER PREHEAT TO 200°F

MQI-4 CVN REV 1: GMA-SMA-P1-P1-HT-LT
MQI-6 CVN REV 1: SAW-P1-P1-HT-LT
MQI-13 : SMA-SMA-P1-P1-HT-LT


I-A	I-B	II	III	IV	VIII
WP# MQI-6 REV 2 WP# MQI-4 REV 2	WP# MQI-6 REV 2 WP# MQI-4 REV 2	WP# MQI-4 REV 2	WP# MQI-4 REV 2	WP# MQI-4 REV 2	WP# MQI-4 REV 2

WHEN DISCREPANCY OR DOUBT EXIST, PLEASE VERIFY AND CONFIRM.

REV.	DESCRIPTION	DATE
4	REVISED ITEM 56	11.27.15
3	REVISED QTY. OF ITEM 18 & 56	11.25.15
2	REVISED N9 PROJECTION, BOOT LS WELD DETAIL	09.23.15
1	REVISED BOM ITEMS 15 & 16	09.14.15
0	ISSUED FOR CONSTRUCTION	09.03.15

BILL OF MATERIALS FOR 1991-15-A1-1

ITEM	QTY	DESCRIPTION	PRCH
1	2	SHELL, 60" OD x 10'-0" LG x 2 1/4" ROLLED PLATE, SA-516-70N	
2	1	HEAD, 60" OD x 2 1/2" NOM. (2.375 MIN.) THK. 2:1 SE HOT FORMED PLATE, C/W 2" SF, 3:1 TRANSITION TO 2 1/4" THK. SA-516-70N	
3	2	BOOT SHELL, 24" OD x 29" x 2 1/4" ROLLED PLATE TRIM AS NEEDED, 3:1 TRANSITION ONE END TO 1 1/4" THK. SA-516-70N	
4	1	BOOT HEAD, 24" OD x 1 1/4" NOM. (1.14 MIN.) THK. 2:1 SE HOT FORMED PLATE C/W 2" SF, SA-516-70N	
5	1	BOOT REPAD, 40" OD x 2" THK ROLLED TO 60" ID, SA-516-70N	
6	2	BASE PLATE, FB10 X 55" (W) x 1" THK. PLATE - DETAIL SEE SHT 2, 44W	
7	2	SADDLE, 54" (W) x 9" (L) x 74 3/8" H x 3/8" THK. FORMED CHANNEL PLATE, 44W	
8	2	WEAR PLATE, 10" (W) x 70" (L) x 3/8" THK. ROLLED TO 60" ID, SA-516-70N	
9	2	RIB, FB8 x 58 3/4" (H) x 3/8" THK.-DETAIL SEE SHT 2, 44W	
10	2	LIFTING LUG, 11" (W) x 9" (H) x 1" THK W/ 3 1/2" HOLE. PLATE, SEE DETAIL, SA-516-70N	
11	1	MARQUINN NAMEPLATE c/w BRACKET, 44W/304SS	
12	1	INLET DIVERTER, 20" x 23" x 3/8" THK. (BOTTOM PLATE), SA-36/44W	
13	2	SIDE PLATE, 9" H x 11" H x 23" W x 3/8" THK., SA-36/44W	
14	1	BACK PLATE, 11" W x 20" L x 3/8" THK. (SHOUL TO SUIT TO SHELL ID), SA-36/44W	
15	1	MISTPAD, 23 1/2" OD x 6" x 9#/ FT (TWO PIECES) c/w GRIDS, 316SS	
16	1	MISTPAD SUPPORT, 24 NPS SCH 10 ERW PIPE x 1'-0" LG, SA-53B	
17	3	TOP GRID SUPPORT, 1" - FB1 x 23 7/8" x 1/4" THK & 2 -FB1 x 18" x 1/4" thk, 44W	
18	18	MECHANICAL BOLTS, 1/2" x 2" c/w 1 NUT (SA-194-2HM) & 2 SS WASHERS , SA-193-B7M	
19	3	REMOVABLE GRID, 1" - FB1 x 26 1/2" x 1/4" THK & 2 -FB1 x 20 3/8" x 1/4" thk, C/W (2) 1/2" HOLES, ONE ON EACH END, 44W	
20	6	CLIPS, FB1 x 2" x 1/4" THK, C/W (1) 1/2" HOLE, 44W	
21	1	BAFFLE PLATE, 28" x 1/4" x 3/8" THK ROUNDED ON TWO END, SA-36/44W - SEE DETAIL,	
22	8	CLIPS, L2"x2"x1/4" ANGLE IRON x 2" LG, 44W	
23	1	WEIR PLATE, 3/8" THK., SA-36/44W, - SEE DETAIL	
24	1	POISON PAD, 8" x 8" x 3/8" THK. ROLLED TO 60" ID, SA-516-70N	
25	3	REMOVABLE VORTEX BREAKER, FB 2X1/4" X 8" 44W C/W ONE(1) 1/2" HOLE - SEE DETAIL	
26	6	REMOVABLE VORTEX BREAKER, FB 2X1/4" X 4" 44W C/W ONE(1) 1/2" HOLE - SEE DETAIL	
27	1	GRAB HANDLE, 1/2" ROUND BAR x 20" LG, FORMED U, 44W	
28	1	SQ. TUBING 2X2X1/4", 12"LG, 44W TBD	
29	1	FB 2X1/4", 7"LG c/w (2)1/2" HOLES, 44W	
30	2	FLANGE, 8NPS CL600 RFHB, 13"LG OAL. (N1,N2), SA-350-LF2-CL1	
31	2	FLANGE, 3NPS CL600 RFHB, 11"LG OAL. (N3,N11), SA-350-LF2-CL1	
32	1	FLANGE, 3NPS CL600 RFWN SCH 160 BORE (N4), SA-105N	
33	1	NOZZLE, 3NPS SCH 160 x 4 1/8" LG (N4), SA-106B	
34	1	REPAD, 7" OD x 1/2" THK DISHED TO 24" OD HEAD, (N4) SA-516-70N	
35	2	FLANGE, 4NPS CL600 RFHB, 10 1/2"LG (N5,N13), SA-350-LF2-CL1	
36	6	FLANGE, 2 NPS CL600 RFWN SCH 160 BORE (N6~N10, N12), SA-105N	
37	1	NOZZLE, 2 NPS SCH 160 x 5 1/16" LG (N6), SA-106B	
38	4	NOZZLE, 2 NPS SCH 160 x 5 1/2" LG (N7,N8,N10,N12), SA-106B	
39	1	NOZZLE, 2 NPS SCH 160 x 5 1/2" LG (N9), SA-106B	
40	1	FLANGE, 2NPS CL600 RFBL TAP w/ 3/4 NPT, (N10) SA-105N	
41	2	GASKET, 2" CL600, 1/8" THK. SPIRAL WOUND, (N10, N12) 316SS	
42	2	(8)STUDS, 1/2" x 4 1/4" LG c/w 2 NUTS (SA-194-2HM), (N10, N12) SA-193-B7M	
43	1	FLANGE, 2NPS CL600 RFBL TAP w/ 1/2 NPT, (N12) SA-105N	
44	1	BLIND FLANGE, 4NPS CL600 RFBL, (N13) SA-105N	
45	1	GASKET, 4" CL600 1/8" THK, SPIRAL WOUND, (N13) 316SS	
46	1	(8) STUDS, 1/2" x 5 3/4" LG c/w 2 NUTS, (N13) SA-194-2HM/SA-193-B7M	
47	1	MANWAY FLANGE, 20NPS CL600 RFHB, 22" LG OAL., (M1) SA-350-LF2-CL1	
48	1	BLIND FLANGE, 20NPS CL600 RFBL, (M1) SA-105N	
49	1	GASKET, 20" CL600 1/8" THK, SPIRAL WOUND, (M1) 316SS	
50	1	(24) STUDS, 1/2" x 11 1/4" LG c/w 2 NUTS, (M1) SA-194-2HM/SA-193-B7M	
51	1	DAVIT ASSEMBLY FOR 20NPS CL600 MANWAY-MAR-QUINN STANDARD	
52	4	MECHANICAL BOLTS, 1/2" x 4 1/2", GR8	
53	1	BLIND FLANGE, 3NPS CL600 RFBL, (N11) SA-105N	
54	1	GASKET, 3" CL600 1/8" THK, SPIRAL WOUND, (N11) 316SS	
55	1	(8) STUDS, 1/2" x 5" LG c/w 2 NUTS, (N11) SA-194-2HM/SA-193-B7M	
56	6	FB 2 1/4"x1/4" x 2" C/W ONE (1) 1/2" HOLE FOR VORTEX, 44W	
57	1	BRIDLE SUPPORT PLATE, FB/PL 6X6X1/2", 36/44W, C/W (2) 1/2" HOLES	

VESSEL DESIGN DATA			
 U W RT1 HT		DESIGNED AND FABRICATED TO ASME CODE SECTION VIII DIV 1 - 2013 EDITION	
DESIGN PRESSURE:	1440 PSIG	EFFICIENCY:	1.0 PER UW-12d
DESIGN TEMPERATURE:	100°F	VOLUME:	366.7 CU. FT.
CORROSION ALLOWANCE:	1/8"	OVERALL LENGTH :	24'-9 1/2"
M.D.M.T.:	-20°F @ 1440 PSIG	WEIGHT (EMPTY) :	43,000 LBS.
HYDROSTATIC TEST:	SEE NOTE 14	WEIGHT (FULL) :	65,882 LBS.
RADIOGRAPHY:	FULL (SEE NOTE 7)	REFERENCE DWG.	389 REV A
P.W.H.T.:	YES, 135 MIN @ 1150°F	CRN NO.	U9226.2
ALL BOLT HOLES TO STRADDLE CENTERLINES UNLESS OTHERWISE NOTED			
PROJECT MANAGER		1991-15-A1-1	END USER
CHKD BY			CLIENT
DWN BY			MQ STOCK
DRAWING NO.			DISTRIBUTION
DATE			QTY.
1991-15-A1-1 SHT 1 OF 2			QC
			SHOP
			PROCUREMENT
			PROD. MANAGER
			PROV. / P. ENG
			CLIENT
			TOTAL
			5

3 PHASE SEPARATOR
60"OD X 20'-0" S/S, 1/8" CA
1440 PSI @ -20/100°F
(NORMAL-SOUR)

SCALE
AS SHOWN

DATE
Jan-30-2019

CLIENT
TOTAL