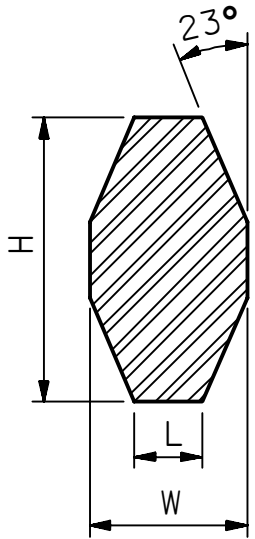
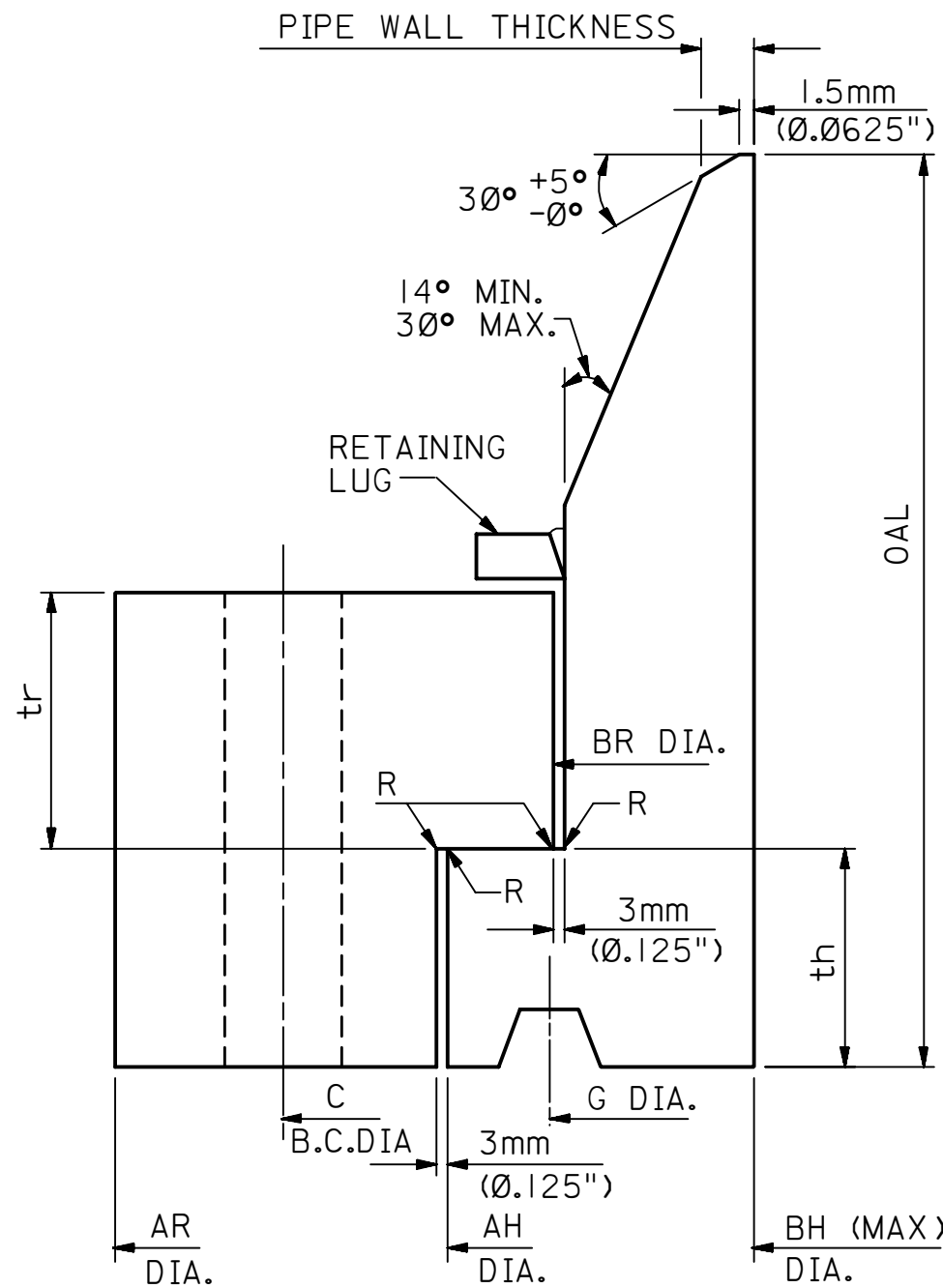
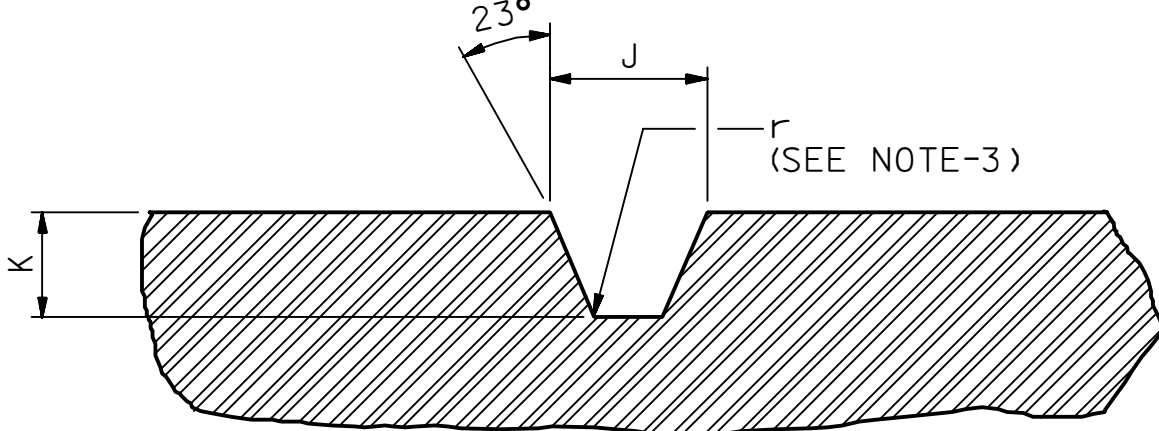


80	100	261900-AA	7	066
PLANT NO.	INDEX	DRAWING NUMBER	SHT. NO.	REV. NO.



RING DETAIL



GROOVE DETAIL

NOTES:

- MATERIALS:
WELDING ENDS SHALL BE AS FOLLOWS:
RATING A707 L3 CL3 A707 L5 CL3
CLASS 300 ALL SIZES -
CLASS 600 THRU 42 INCH 44 INCH & LGR
CLASS 900 THRU 28 INCH 30 INCH & LGR
CLASS 1500 THRU 16 INCH 18 INCH & LGR
SWIVEL RINGS SHALL BE ASTM A694 F52.
- REQUIRED BORE (EQUAL TO MATCHING PIPE I.D.)
TO BE SPECIFIED IN PURCHASE ORDER NOT TO EXCEED MAXIMUM BORE LISTED (BH)
- BORE TOLERANCE TO BE +0, -3.2mm (-0.125")
OTHER TOLERANCES TO CONFORM TO ANSI B16.5
FOR SIZES UP TO 24" AND CONFORM TO MSS-SP-44
FOR SIZES LARGER THAN 24". GASKET GROOVE
RADIUS 'r' TO BE 1.6mm (0.0625")
- DIMENSIONS FOR SIZES LARGER THAN 36 INCH ARE
EXTRAPOLATED FROM MSS-SP-44 AND DO
NOT CORRESPOND WITH MSS-SP-44-1981. GROOVE
AND RING DIMENSIONS ARE TAKEN FROM TAYLOR
FORGE.
- BOLT HOLE DIAMETER EQUALS BOLT DIAMETER
PLUS 3.2mm (0.125")
- UNLESS OTHERWISE SPECIFIED, STUD BOLTS TO BE
IN ACCORDANCE WITH ASTM A193, GRADE B7. NUTS
TO BE IN ACCORDANCE WITH ASTM A194, GRADE 2
OR 2H. THREADS TO BE SERIES 8.
- A MINIMUM OF FOUR WELDED RETAINER LUGS
SHALL BE PROVIDED CENTERED BETWEEN BOLT
HOLES SO AS NOT TO INTERFERE WITH BOLT
TENSIONING DEVICES. RETAINING LUGS SHALL BE
ATTACHED BY MEANS OF A PURCHASER APPROVED
LOW HYDROGEN WELDING PROCEDURE.
- WELDING END PREPARATION FOR PIPE WALL
THICKNESS IN EXCESS OF 22mm (0.88") SHALL
BE PER ANSI B16.5.
- MARKINGS PER 02-SAMSS-011 (NPS IN INCHES)

CLASS 300 (MAXIMUM ALLOWABLE WORKING PRESSURE 5.11 MPa (740 PSI) FROM 0°C (32°F) TO 38°C (100°F)																																						
PIPE O.D.	AR		C		AH		G		BR		BH MAX.		OAL		th		tr		R		GROOVE				GASKET				STUD BOLTS				FLANGES APPROX. MASS					
	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	NO.	mm	In.	NO.	DIA. x LG. In. mm	DIA. x LG. In. mm	Kg.	Lbs.
8.625	381	15.00	330	13.00	302	11.88	270	10.625	274	10.78	194	7.625	134	5.28	28.7	1.13	29.3	1.15	13	0.50									R49			12	7/8	279	7/8	11.00		
10.75	445	17.50	387	15.25	356	14.00	324	12.75	328	12.90	248	9.75	143	5.63	32.5	1.28	32.4	1.28	13	0.50									R53			16	1	292	1	11.50		
12.75	521	20.50	451	17.75	413	16.25	381	15.00	385	15.15	298	11.75	151	5.94	36.2	1.43	35.5	1.40	13	0.50									R57			16	1 1/8	305	1 1/8	12.00		
14	584	23.00	514	20.25	457	18.00	419	16.50	423	16.65	330	13.00	160	6.30	40.0	1.57	38.6	1.52	13	0.50									R61			20	1 1/8	318	1 1/8	12.50		
16	648	25.50	572	22.50	508	20.00	470	18.50	474	18.65	381	15.00	168	6.61	43.7	1.72	41.7	1.64	13	0.50									R65			20	1 1/4	330	1 1/4			
18	711	28.00	629	24.75	575	22.62	533	21.00	537	21.15	432	17.00	177	6.97	47.4	1.87	44.8	1.76	13	0.50									R69			24	1 1/4	349	1 1/4	13.75		
20	775	30.50	686	27.00	635	25.00	584	23.00	588	23.15	483	19.00	185	7.28	51.1	2.01	47.8	1.88	13	0.50									R73			24	1 1/4	362	1 1/4	14.25		
22	838	33.00	743	29.25	686	27.00	635	25.00	639	25.15	533	21.00	193	7.60	54.9	2.16	50.9	2.00	13	0.50									R81			24	1 1/2	375	1 1/2	14.75		
24	914	36.00	813	32.00	749	29.50	692	27.25	696	27.40	584	23.00	202	7.95	58.6	2.31	54.0	2.13	13	0.50									R77			24	1 1/2	394	1 1/2	15.50		
26	970	38.25	876	34.50	800	31.50	749.30	29.50	714.38	28.125	648	25.50	203	7.99	58.7	2.311	54.5	2.145	13	0.50	19.84	0.781	12.7	0.500	12.32	0.485	16.21	0.938	R93	19.05	0.75	28	1 5/8	337	1 5/8	13.25	263	580
28	1035	40.75	940	37.00	851	33.50	800.10	31.50	765.18	30.125	699	27.50	204	8.03	58.8	2.315	55.0	2.165	13	0.50	19.84	0.781	12.7	0.500	12.32	0.485	16.21	0.938	R94	19.05	0.75	28	1 5/8	349	1 5/8	13.75	314	692
30	1090	43.00	997	39.25	908	35.75	857.25	33.75	817.40	32.181	749	29.486	212	8.35	58.9	2.319	55.5	2.185	13	0.50	19.84	0.781	12.7	0.500	12.32	0.485	16.21	0.938	R95	19.05	0.75	28	1 3/4	375	1 3/4	14.75	365	795
32	1150	45.25	1054	41.50	965	38.00	914.40	36.00	871.65	34.317	799	31.452	216	8.50	59.0	2.323	56.0	2.205	13	0.50	23.01	0.906	14.3	0.563	14.81	0.583	26.97	1.062	R96	22.22	0.875	28	1 7/8	394	1 7/8	15.50	406	896
34	1205	47.50	1105	43.50	1016	40.00	965.20	38.00	925.91	36.453	849	33.418	222	8.74	59.1	2.327	56.0	2.205	13	0.50	23.01	0.906	14.3	0.563	14.81	0.583	26.97	1.062	R97	22.22	0.875	28	1 7/8	400	1 7/8	15.75	452	996
36	1270	50.00	1168	46.00	1073	42.25	1022.35	40.25	980.16	38.589	899	35.384	230	9.05	59.2	2.331	59.0	2.323	13	0.50	23.01	0.906	14.3	0.563	14.81	0.583	26.97	1.062	R98	22.22	0.875	32	2	419	2	16.50	510	1124
38	1327	52.25	1220	48.00	1099	43.25	1028.70	40.50	1034.42	40.725	949	37.35	238	9.37	59.3	2.335	59.2	2.331	13	0.50	19.84	0.781	12.7	0.500	12.32	0.485	23.83	0.938	-	19.05	0.75	32	2	419	2	16.50	553	1219
40	1384	54.50	1276	50.25	1172	46.156	1066.80	42.00	1088.87	42.869	999	39.314	249	9.80	59.4	2.339	59.3	2.335	13	0.50	19.84	0.781	12.7	0.500	12.32	0.485	23.83	0.938	-	19.05	0.75	36	2	425	2	16.75	607	1338
42	1448	57.00	1340	52.75	1228	48.34	1117.60	44.00	1143.13	45.005	1049	41.28	261	10.27	59.5	2.343	62.2	2.448	13	0.50	19.84	0.781	12.7	0.500	12.32	0.485	23.83	0.938	-	19.05	0.75	36	2	432	2	17.00	696	1534
44	1505	59.25	1397	55.00	1285	50.60	1193.80	47.00	1197.38	47.141	1098	43.246	271	10.67	59.6	2.346	65.0	2.560	13	0.50	19.84	0.781	12.7	0.500	12.32	0.485	23.83	0.938	-	19.05	0.75	36	2	445	2	17.50	781	1722
46	1562	61.50	1454	57.25	1340	52.76	1231.90	48.50	1251.64	49.277	1148	45.212	281	11.06	59.7	2.350	66.3	2.609	13	0.50	19.84	0.781	12.7	0.500	12.32	0.485	23.83	0.938	-	19.05	0.75	40	2	457	2	18.00	853	1881
48	1651	65.00	1543	60.75	1396	54.945	1282.70	50.50	1305.89	51.413	1198	47.178	293	11.54	59.8	2.354	73.4	2.890	13	0.50	19.84	0.781	12.7	0.500	12.32	0.485	23.83	0.938	-	19.05	0.75	40	2	476	2	18.75	1054	2323

CLASS 600 (MAXIMUM ALLOWABLE WORKING PRESSURE 10.21 MPa (1480 PSI) FROM 0°C (32°F) TO 38°C (100°F)																																						
PIPE O.D.	AR		C		AH		G		BR		BH MAX.		OAL		th		tr		R		GROOVE				GASKET				STUD BOLTS				FLANGES APPROX. MASS					
	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	NO.	mm	In.	NO.	DIA. x LG. In. mm	DIA. x LG. In. mm	Kg.	Lbs.		
8.625	419	16.50	349	13.75	292	11.50	269.88	10.625	241.30	9.50	206	8.125	122	4.81	27.6	1.088	34.5	1.357	6	0.25	11.91	0.469	7.92	0.312	7.75	0.305	15.88	0.625	R49	11.11	0.438	12	1 1/8	235	1 1/8	9.25	48	105
10.75	510	20.00	432	17.00	356	14.00	323.85	12.75	301.63	11.875	260	10.25	148	5.81	33.2	1.306	41.1	1.616	6	0.25	11.91	0.469	7.92	0.312	7.75	0.305	15.88	0.625	R43	11.11	0.438	16	1 1/4	267	1 1/4	10.50	81	178
12.75	560	22.00	489	19.25	413	16.25	381.00	15.00	358.78	14.125	311	12.26	154	6.06	36.3	1.430	44.2	1.740	6	0.25	11.91	0.469	7.92	0.312	7.75	0.305	15.88	0.625	R57	11.11	0.438	20	1 1/4	280	1 1/4	11.00	98	217
14	605	23.75	527	20.75	454	17.875	419.10	16.50	396.88	15.625	343	13.50	164	6.44	38.8	1.528	45.9	1.807	6	0.25	11.91	0.469	7.92	0.312	7.75	0.305	15.88	0.625	R61	11.11	0.438	20	1 3/8	292	1 3/8	11.50	118	261
16	685	27.00	603	23.75	508	20.00	469.90	18.50	451.33	17.769	392	15.452	186	7.31	42.2	1.661	52.6	2.069	6	0.25	11.91	0.469	7.92	0.312	7.75	0.305	15.88	0.625	R65	11.11	0.438	20	1 1/2	324	1 1/2	12.75	172	380
18	740	29.25	654	25.75	578	22.75	533.40	21.00	515.14	20.281	449	17.692	191	7.50	47.8	1.880	52.9	2.081	6	0.25	11.91	0.469	7.92	0.312	7.75	0.305	15.88	0.625	R69	11.11	0.438	20	1 5/8	343	1 5/8	13.50	202	446
20	815	32.00	724	28.50	632	24.875	584.20	23.00	563.45	22.183	491	19.314	219	8.62	51.4	2.024	59.6	2.347	6	0.25	13.49	0.531	9.53	0.375	8.66	0.341	17.48	0.688	R73	12.70	0.500	24	1 5/8	362	1 5/8	14.25	270	596
22	870	34.25	778	30.62	683	26.875	635.00	25.00	615.62	24.237	540	21.246	238	9.38	54.7	2.155	63.0	2.480	6	0.25	15.09	0.594	11.13	0.438	9.58	0.377	19.05	0.750	R81	14.29	0.5625	24	1 3/4	387	1 3/4	15.25	320	706
24	940	37.00	838	33.00	749	29.50	692.15	27.25	675.41	26.591	589	23.178	246	9.69	59.2	2.330	65.3	2.572	6	0.25	16.66	0.656	11.13	0.438	10.49	0.413	20.62	0.812	R77	15.88	0.625	24	1 7/8	413	1 7/8	16.25	391	863
26	1015	40.00	914	36.00	829	32.65	749.30	29.50	731.39	28.795	638	25.11	273	10.75	69.1	2.720	70.7	2.785	13	0.50	19.84	0.781	12.70	0.500	12.32	0.485	23.83	0.938	-	19.05	0.750	28	1 7/8	445	1 7/8	17.50	512	1129
28	1075	42.25	965	38.00	879	34.625	800.10	31.50	787.53	31.005	687	27.04	282	11.12	70.3	2.766	72.1	2.840	13	0.50	19.84	0.781	12.70	0.500	12.32	0.485	23.83	0.938	-	19.05	0.750	28	2	470	2	18.50	570	1256
30	1130	44.50	1022	40.25	933	36.75	857.25	33.75	838.12	32.997	736	28.972	292	11.50	74.8	2.945	76.2	2.998	13	0.50	19.84	0.781	12.70	0.500	12.32	0.485	23.83	0.938	-	19.05	0.750	28	2	483	2	19.00	658	1450
32	1195	47.00	1080	42.50	987	38.875	914.40	36.00	889.64	35.025	785	30.90	310	12.19	80.3	2.373	82.2	3.235	13	0.50	23.01	0.906	12.70	0.562	14.81	0.583	26.97	1.062	-	22.22	0.875	28	2 1/4	502	2 1/4	19.75	691	1523
34	1245	49.00	1130	44.50	1038	40.875	965.20	38.00	938.76	36.959	834	32.834	325	12.81	84.1	3.31	83.2	3.275	13	0.50	23.01	0.906	12.70	0.562	14.81	0.583	26.97	1.062	-	22.22	0.875	28	2 1/4	533	2 1/4	21.00	844	1860
36	1315	51.75	1194	47.00	1092	43.00	1022.35	40.25	987.83	38.891	883	34.766	335	13.19	89.9	3.54	89.2	3.510	13	0.50	23.01	0.906	12.70	0.562	14.81	0.583	26.97	1.062	-	22.22	0.875	28	2 1/2	578	2 1/2	22.75	979	2158
38	1372	54.00	1251	49.25	1146	45.125	1028.70	40.50	1042.04	41.025	932	36.70	351	13.81	92.7	3.65	88.1	3.470	13	0.50	19.84	0.781	12.70	0.500	12.32	0.485	23.83	0.938	-	19.05	0.750	28	2 1/2	584	2 1/2	23.00	1080	2382
40	1422	56.00	1295	51.00	1194	47.00	1066.80	42.00	1083.44	42.655	981	38.63	360	14.19	100.8	3.97	90.8	3.575	13	0.50	19.84	0.781	12.70	0.500	12.32	0.485	23.83	0.938	-	19.05	0.750	28	2 3/4	622	2 3/4	24.50	1168	2576
42	1492	58.75	1365	53.75	1245	49.00	1117.60	44.00	1135.05	44.687	1030	40.562	376	14.81	106.2	4.18	97.2	3.826	13	0.50	19.84	0.781	12.70	0.500	12.32	0.485	23.83	0.938	-	19.05	0.750	28	2 3/4	641	2 3/4	25.25	1374	3029
44	1562	61.50	1422	56.00	1295	51.00	1193.80	47.00	1184.07	46.617	1079	42.492	386	15.19	112.3	4.42	103.5	4.075	13	0.50	19.84	0.781	12.70	0.500	12.32	0.485	23.83	0.938	-	19.05	0.750	28	3	686	3	27.00	1564	3448
46	1619	63.75	1480	58.25	1353	53.25	1231.90	48.50	1233.14	48.549	1128	44.424	402	15.81	126.0	4.96	106.5	4.191	13	0.50	19.84	0.781	12.70	0.500	12.32	0.485	23.83	0.938	-	19.05	0.750	28	3	711	3	28.00	1787	3939
48	1664	65.50	1537	60.50	1410	55.50	1282.70	50.50	1282.17	50.479	1177	46.354	411	16.19	136.3	5.366	110.1	4.335	13	0.50	19.84	0.781	12.70	0.500	12.32	0.485	23.83	0.938	-	19.05	0.750	28	3	724	3	28.50	1939	4274