



ITEM	QUANTITY	DESCRIPTION	REMARKS
1	1	VALVE, ROCKWELL FIG. 2144, ANST 900, S.W. ENDS	2" NOT SHOWN ON DRWG.
2	1	VALVE, BALL, ANST 900, 7/8" ENDS	6"
3	1	FLANGE, ANST 900, 1/2" W.F.	BORED TO 4.0261" I.D.
4	1	BLIND FLANGE, ANST 900, DRILLED TAP 1/4" R.P.T.	BORED TO 3.7611" I.D.
5	1	GASKET, 100% ASH, ANST 900, P.T. NO. 04281-900-010	6"
6	16	BOLT, STUB, ASTM-A197, 1-1/8" X 6-1/2"	6"
7	1	NUT, ASTM-A194, 1-1/8" X 6-1/2"	1-1/2"
8	1	NIPPLE, GR. B, SMLS, 2.375" O.D. X 0.2187" I.D. X 3/4"	1-1/2"
9	1	NIPPLE, GR. B, SMLS, 2.375" O.D. X 0.2187" I.D. X 3/4"	1-1/2"
10	1	NIPPLE, GR. B, SMLS, 2.375" O.D. X 0.2187" I.D. X 3/4"	1-1/2"
11	1	VALVE, ROCKWELL FIG. 2144, ANST 900, S.W. ENDS	2"
12	1	NIPPLE, GR. B, SMLS, 2.375" O.D. X 0.2187" I.D. X 3/4"	1-1/2"
13	1	PLUG, STEEL, 3000# OR BETTER	2"
14	1	BUSHING, STEEL, 3000# OR BETTER	2" X 1/2"
15	2	VALVE, AGO, NITE-GO, 3000# PRESS	1/2" X 1/2"
16	2	SOCK O'LEET, 3000# 1/2" X (CARRIER PIPE DIMENSIONS)	1/2" X 3/4"
17	2	NIPPLE, GR. B, SMLS, 2.375" O.D. X 0.2187" I.D. X 3/4"	1-1/2"
18	1	HOSE, HIGH PRESSURE, 3000# M.A.S.T. ENDS	1/2"
19	1	REINFORCING PAD, PIPE, 4" X (CARRIER PIPE DIMENSIONS)	G.S. #50
20	1	REINFORCING PAD, CAP, 2" X (CAP SIZE)	G.S. #50
21	1	PIPE, 10 SUST.	2"

MATERIAL SPECIFICATION CHART		DESIGN INFORMATION	
NOM. SIZE (IPS)	GRADE	MIN. WALL THICKNESS (IN)	MAX. ALLOWED STRESS (PSI)
1/2	GR. B	0.237	2,018
3/4	GR. B	0.280	2,120
1	GR. B	0.322	2,222
1 1/2	GR. B	0.365	2,325
2	GR. B	0.408	2,428
2 1/2	GR. B	0.451	2,531
3	GR. B	0.494	2,634
3 1/2	GR. B	0.537	2,737
4	GR. B	0.580	2,840
4 1/2	GR. B	0.623	2,943
5	GR. B	0.666	3,046
5 1/2	GR. B	0.709	3,149
6	GR. B	0.752	3,252
6 1/2	GR. B	0.795	3,355
7	GR. B	0.838	3,458
7 1/2	GR. B	0.881	3,561
8	GR. B	0.924	3,664
8 1/2	GR. B	0.967	3,767
9	GR. B	1.010	3,870
9 1/2	GR. B	1.053	3,973
10	GR. B	1.096	4,076
10 1/2	GR. B	1.139	4,179
11	GR. B	1.182	4,282
11 1/2	GR. B	1.225	4,385
12	GR. B	1.268	4,488
12 1/2	GR. B	1.311	4,591
13	GR. B	1.354	4,694
13 1/2	GR. B	1.397	4,797
14	GR. B	1.440	4,900
14 1/2	GR. B	1.483	5,003
15	GR. B	1.526	5,106
15 1/2	GR. B	1.569	5,209
16	GR. B	1.612	5,312
16 1/2	GR. B	1.655	5,415
17	GR. B	1.698	5,518
17 1/2	GR. B	1.741	5,621
18	GR. B	1.784	5,724
18 1/2	GR. B	1.827	5,827
19	GR. B	1.870	5,930
19 1/2	GR. B	1.913	6,033
20	GR. B	1.956	6,136
20 1/2	GR. B	1.999	6,239
21	GR. B	2.042	6,342
21 1/2	GR. B	2.085	6,445
22	GR. B	2.128	6,548
22 1/2	GR. B	2.171	6,651
23	GR. B	2.214	6,754
23 1/2	GR. B	2.257	6,857
24	GR. B	2.300	6,960
24 1/2	GR. B	2.343	7,063
25	GR. B	2.386	7,166
25 1/2	GR. B	2.429	7,269
26	GR. B	2.472	7,372
26 1/2	GR. B	2.515	7,475
27	GR. B	2.558	7,578
27 1/2	GR. B	2.601	7,681
28	GR. B	2.644	7,784
28 1/2	GR. B	2.687	7,887
29	GR. B	2.730	7,990
29 1/2	GR. B	2.773	8,093
30	GR. B	2.816	8,196
30 1/2	GR. B	2.859	8,299
31	GR. B	2.902	8,402
31 1/2	GR. B	2.945	8,505
32	GR. B	2.988	8,608
32 1/2	GR. B	3.031	8,711
33	GR. B	3.074	8,814
33 1/2	GR. B	3.117	8,917
34	GR. B	3.160	9,020
34 1/2	GR. B	3.203	9,123
35	GR. B	3.246	9,226
35 1/2	GR. B	3.289	9,329
36	GR. B	3.332	9,432
36 1/2	GR. B	3.375	9,535
37	GR. B	3.418	9,638
37 1/2	GR. B	3.461	9,741
38	GR. B	3.504	9,844
38 1/2	GR. B	3.547	9,947
39	GR. B	3.590	10,050
39 1/2	GR. B	3.633	10,153
40	GR. B	3.676	10,256
40 1/2	GR. B	3.719	10,359
41	GR. B	3.762	10,462
41 1/2	GR. B	3.805	10,565
42	GR. B	3.848	10,668
42 1/2	GR. B	3.891	10,771
43	GR. B	3.934	10,874
43 1/2	GR. B	3.977	10,977
44	GR. B	4.020	11,080
44 1/2	GR. B	4.063	11,183
45	GR. B	4.106	11,286
45 1/2	GR. B	4.149	11,389
46	GR. B	4.192	11,492
46 1/2	GR. B	4.235	11,595
47	GR. B	4.278	11,698
47 1/2	GR. B	4.321	11,801
48	GR. B	4.364	11,904
48 1/2	GR. B	4.407	12,007
49	GR. B	4.450	12,110
49 1/2	GR. B	4.493	12,213
50	GR. B	4.536	12,316
50 1/2	GR. B	4.579	12,419
51	GR. B	4.622	12,522
51 1/2	GR. B	4.665	12,625
52	GR. B	4.708	12,728
52 1/2	GR. B	4.751	12,831
53	GR. B	4.794	12,934
53 1/2	GR. B	4.837	13,037
54	GR. B	4.880	13,140
54 1/2	GR. B	4.923	13,243
55	GR. B	4.966	13,346
55 1/2	GR. B	5.009	13,449
56	GR. B	5.052	13,552
56 1/2	GR. B	5.095	13,655
57	GR. B	5.138	13,758
57 1/2	GR. B	5.181	13,861
58	GR. B	5.224	13,964
58 1/2	GR. B	5.267	14,067
59	GR. B	5.310	14,170
59 1/2	GR. B	5.353	14,273
60	GR. B	5.396	14,376
60 1/2	GR. B	5.439	14,479
61	GR. B	5.482	14,582
61 1/2	GR. B	5.525	14,685
62	GR. B	5.568	14,788
62 1/2	GR. B	5.611	14,891
63	GR. B	5.654	14,994
63 1/2	GR. B	5.697	15,097
64	GR. B	5.740	15,200
64 1/2	GR. B	5.783	15,303
65	GR. B	5.826	15,406
65 1/2	GR. B	5.869	15,509
66	GR. B	5.912	15,612
66 1/2	GR. B	5.955	15,715
67	GR. B	5.998	15,818
67 1/2	GR. B	6.041	15,921
68	GR. B	6.084	16,024
68 1/2	GR. B	6.127	16,127
69	GR. B	6.170	16,230
69 1/2	GR. B	6.213	16,333
70	GR. B	6.256	16,436
70 1/2	GR. B	6.299	16,539
71	GR. B	6.342	16,642
71 1/2	GR. B	6.385	16,745
72	GR. B	6.428	16,848
72 1/2	GR. B	6.471	16,951
73	GR. B	6.514	17,054
73 1/2	GR. B	6.557	17,157
74	GR. B	6.600	17,260
74 1/2	GR. B	6.643	17,363
75	GR. B	6.686	17,466
75 1/2	GR. B	6.729	17,569
76	GR. B	6.772	17,672
76 1/2	GR. B	6.815	17,775
77	GR. B	6.858	17,878
77 1/2	GR. B	6.901	17,981
78	GR. B	6.944	18,084
78 1/2	GR. B	6.987	18,187
79	GR. B	7.030	18,290
79 1/2	GR. B	7.073	18,393
80	GR. B	7.116	18,496
80 1/2	GR. B	7.159	18,599
81	GR. B	7.202	18,702
81 1/2	GR. B	7.245	18,805
82	GR. B	7.288	18,908
82 1/2	GR. B	7.331	19,011
83	GR. B	7.374	19,114
83 1/2	GR. B	7.417	19,217
84	GR. B	7.460	19,320
84 1/2	GR. B	7.503	19,423
85	GR. B	7.546	19,526
85 1/2	GR. B	7.589	19,629
86	GR. B	7.632	19,732
86 1/2	GR. B	7.675	19,835
87	GR. B	7.718	19,938
87 1/2	GR. B	7.761	20,041
88	GR. B	7.804	20,144
88 1/2	GR. B	7.847	20,247
89	GR. B	7.890	20,350
89 1/2	GR. B	7.933	20,453
90	GR. B	7.976	20,556
90 1/2	GR. B	8.019	20,659
91	GR. B	8.062	20,762
91 1/2	GR. B	8.105	20,865
92	GR. B	8.148	20,968
92 1/2	GR. B	8.191	21,071
93	GR. B	8.234	21,174
93 1/2	GR. B	8.277	21,277
94	GR. B	8.320	21,380
94 1/2	GR. B	8.363	21,483
95	GR. B	8.406	21,586
95 1/2	GR. B	8.449	21,689
96	GR. B	8.492	21,792
96 1/2	GR. B	8.535	21,895
97	GR. B	8.578	21,998
97 1/2	GR. B	8.621	22,101
98	GR. B	8.664	22,204
98 1/2	GR. B	8.707	22,307
99	GR. B	8.750	22,410
99 1/2	GR. B	8.793	22,513
100	GR. B	8.836	22,616

- NOTES:**
- FOR TEST PRESSURES HIGHER THAN THOSE SHOWN IN THE TABLE, CONSULT GAS SYSTEM DESIGN DEPARTMENT.
 - WELDING MUST BE IN ACCORDANCE WITH GAS STANDARD G-22. PARTICULAR ATTENTION SHOULD BE GIVEN TO THE FOLLOWING ITEMS:
 - USE THE LOW HYDROGEN WELDING PROCESS WHEN THE WALL THICKNESS OF THE TEST HEAD MATERIAL EXCEEDS 0.500"
 - WHEN THE TEST HEAD MATERIAL EXCEEDS 0.750" WALL THICKNESS THE TEST HEAD MUST BE STRESS RELIEVED
 - WHEN INSTALLING TEST HEAD ON A GAS MAIN WITH A DIFFERENT S.W.S., THE WELDING PROCEDURE QUALIFIED FOR THE HIGHER TENSILE PIPE MUST BE USED.
 - THE SAME PREHEATING PROCEDURES ARE TO BE USED BEFORE MOVING THE TEST HEAD AS WHEN USED BEFORE INSTALLING IT.
 - DO NOT LOCATE NIPPLES OR REINFORCING RINGS CLOSER THAN 6" TO ANY WELD OR TO EACH OTHER.
 - REINFORCING RINGS MUST BE CONSTRUCTED IN ACCORDANCE WITH GAS STANDARD G-50.
 - ALL FILLET WELDS MUST BE VISUALLY INSPECTED BY A QUALIFIED COMPANY INSPECTOR.
 - THE TEST HEAD MUST BE HYDROSTATICALLY TESTED TO SIX S.W.S. FOR 4 HOURS BEFORE BEING USED. VALVES & FLANGES 2" AND LARGER MUST NOT BE CONNECTED TO THE TEST HEAD DURING THIS HYDROSTATIC TEST. TEST HEAD NIPPLES & ITEMS 7 & 12 MUST HAVE ADDITIONAL LENGTH TO ALLOW FOR EXTRA HEAVY CAPS TO BE ATTACHED DURING THE TEST.
 - THE FOLLOWING INFORMATION MUST BE RETAINED IN THE GENERAL OFFICE, GENERAL CONSTRUCTION GAS DEPARTMENT OFFICE FOR THE LIFE OF EACH TEST HEAD:
 - ALL PURCHASING DOCUMENTS FOR ORIGINAL AND REPAIR MATERIALS
 - ALL STRENGTH TEST PRESSURE REPORTS FOR THE TEST HEAD, BOTH ORIGINAL AND RETESTS
 - ALL RADIOGRAPHIC INSPECTION REPORTS, BOTH ORIGINAL AND RETESTS
 - A VISUAL INSPECTION FOR DAMAGE MUST BE MADE OF EACH TEST HEAD PRIOR TO ITS USE AND ANY DAMAGE MUST BE REPAIRED. THE REPAIR OF SOME TYPES OF DAMAGE WILL REQUIRE A REQUALIFICATION HYDROSTATIC TEST OF THE TEST HEAD TO SIX S.W.S. THE DECISION TO HYDROSTATICALLY TEST MUST BE MADE BY THE TEST SUPERVISOR AND CLEARED THROUGH THE GENERAL OFFICE, GENERAL CONSTRUCTION GAS DEPARTMENT.
 - IF THE WALL THICKNESS OF THE PIPE TO BE TESTED IS NOT WITHIN 5% OF THE TEST HEAD PIPE WALL THICKNESS, REFER TO GAS STANDARD G-22 FOR PROPER INSTALLATION OF TRANSITION PIECES.
 - GAS SYSTEM DESIGN DEPARTMENT MUST BE CONSULTED FOR ANY DEVIATIONS FROM THIS DRAWING.
 - ALL PIPELINE TEST HEADS SHALL BE BUILT BY THE GENERAL CONSTRUCTION GAS DEPARTMENT.

THE PIPE USED TO FABRICATE TEST HEADS MUST MEET API 5L OR S.W.S. SPECIFICATIONS. THE CAPS USED TO FABRICATE TEST HEADS MUST HAVE THE SAME S.W.S. AND WALL THICKNESS AS THE PIPE USED.

IN GENERAL, TEST HEADS ARE DESIGNED TO OPERATE AT A MAXIMUM OF 0.6 S.W.S. HOWEVER, DUE TO TENSION STRESS LIMITATIONS