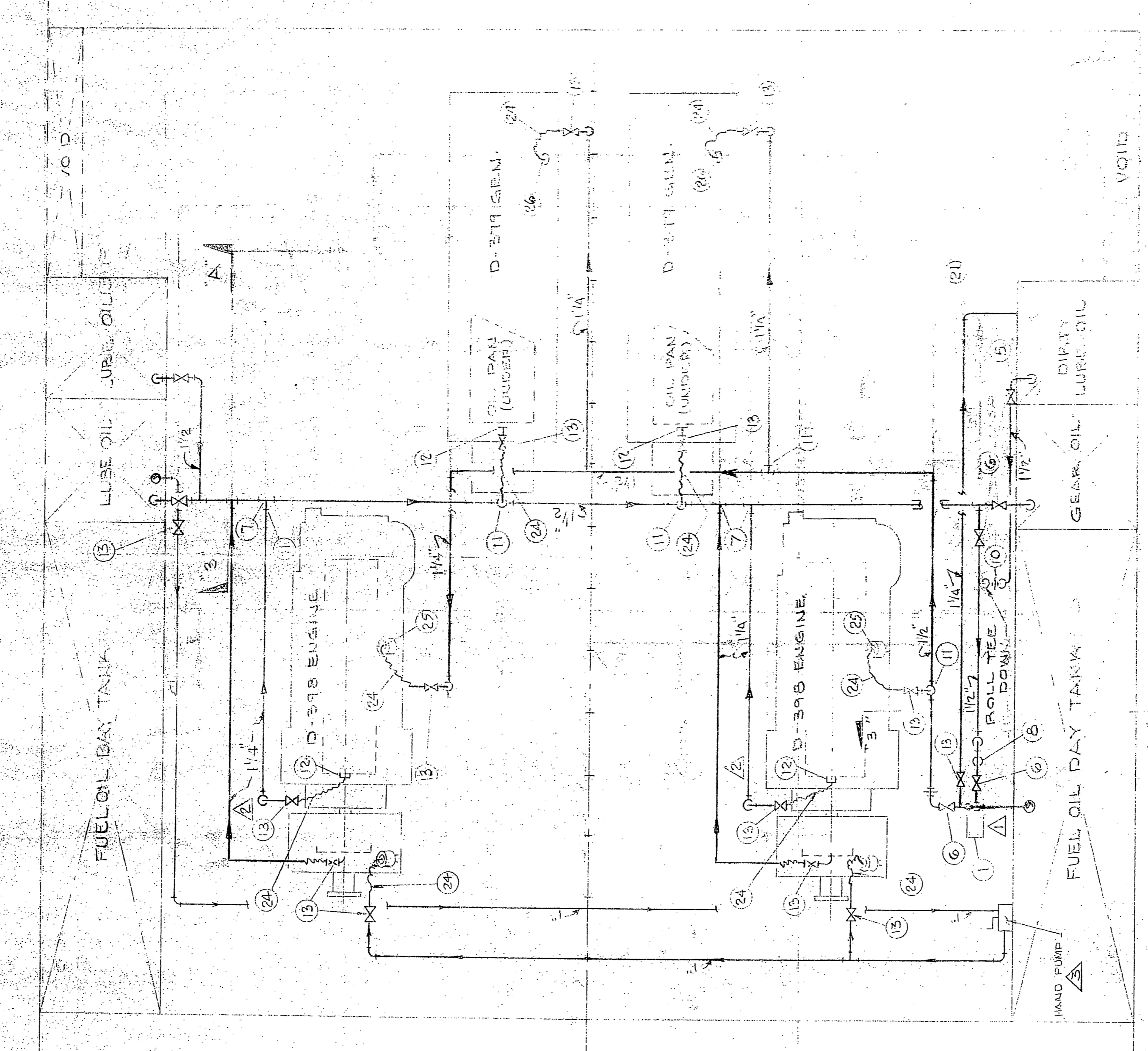
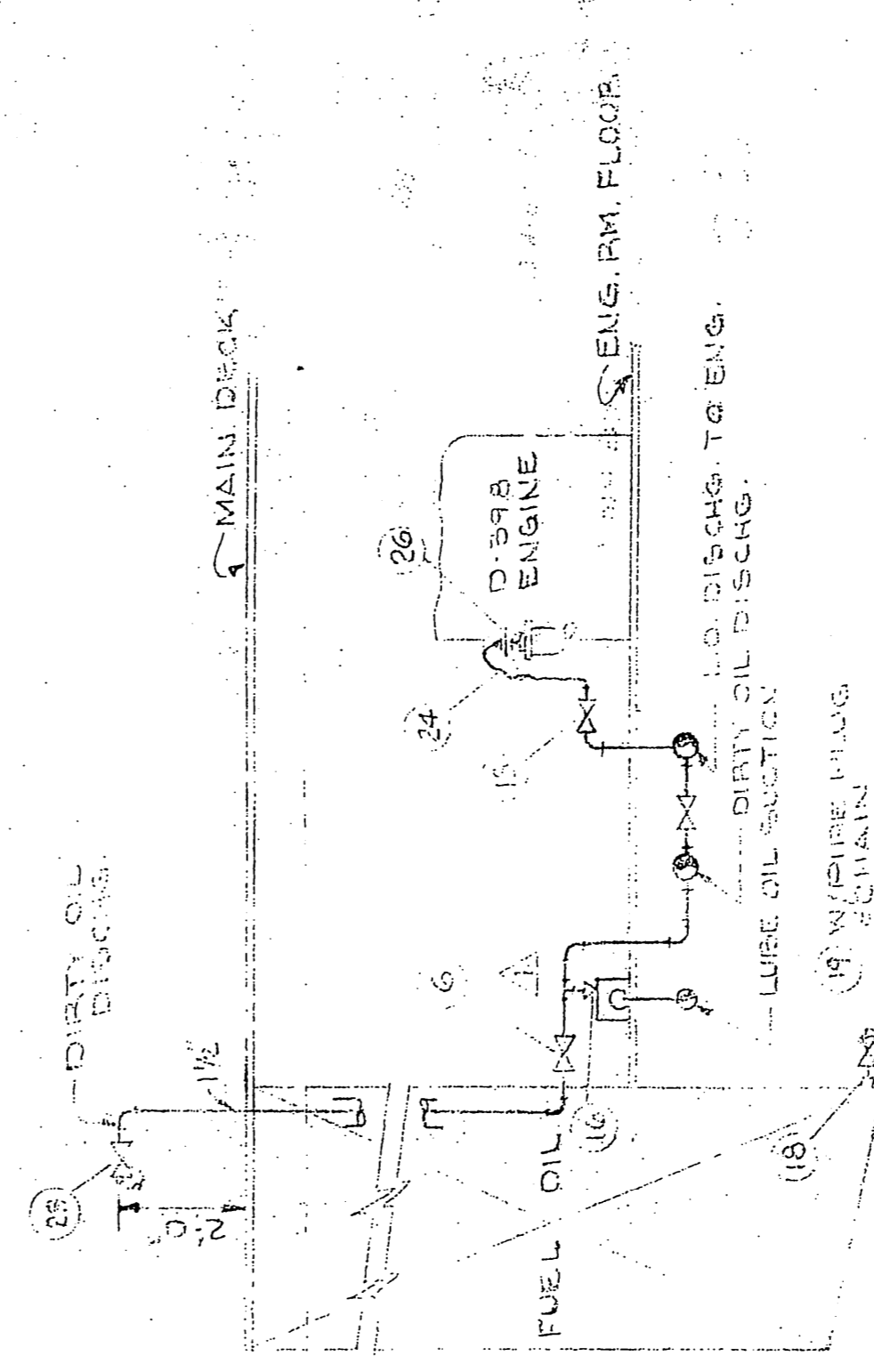
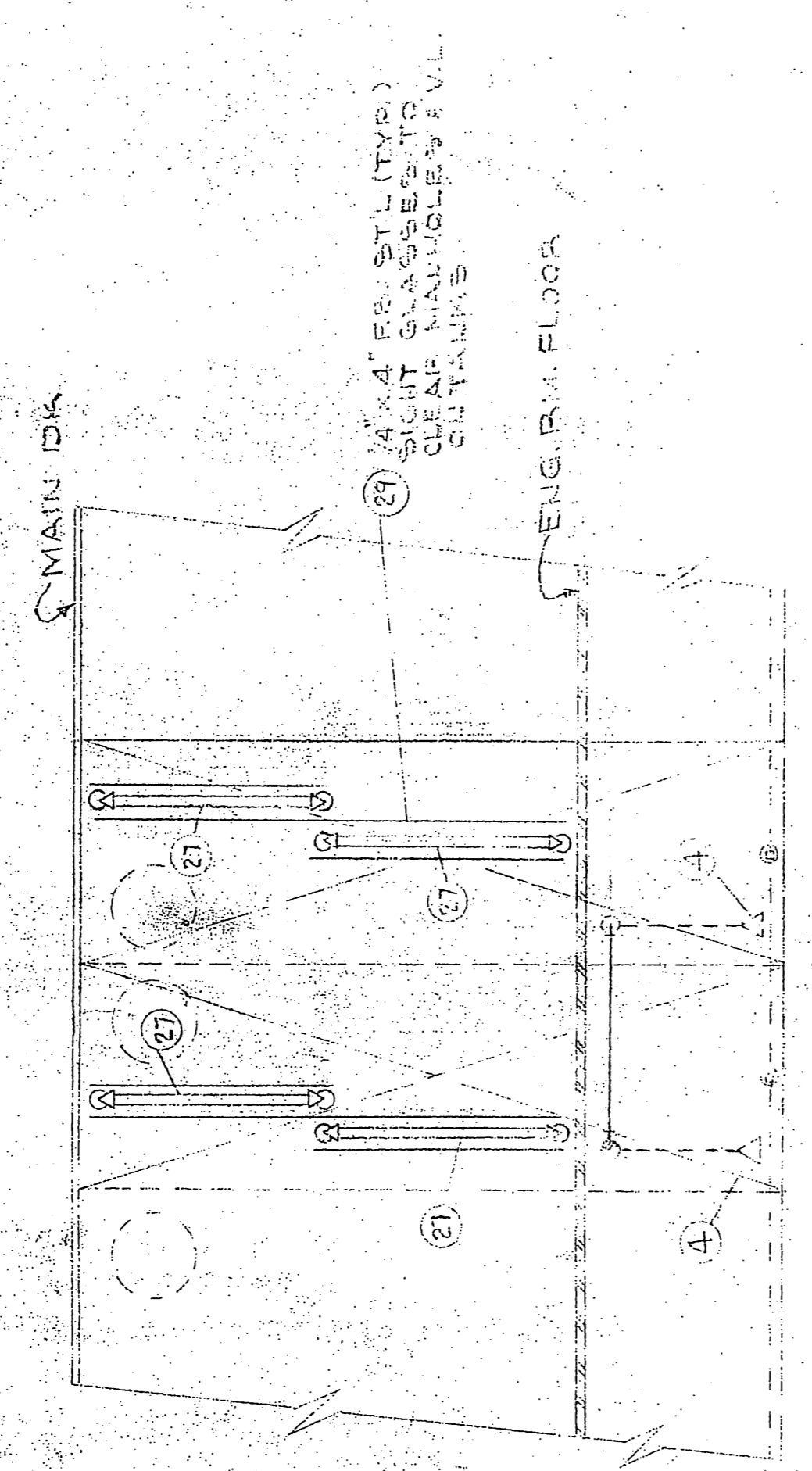


BILL OF MATERIALS

QTY	SIZE	DESCRIPTION	QOS	ITEM NO	VENUM
1	1"	DEMING PUMP 1/2" X 3/4" X 3/4"	135	337	
1	1"	UNIT 132			
2	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
3	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
4	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
5	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
6	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
7	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
8	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
9	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
10	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
11	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
12	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
13	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
14	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
15	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
16	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
17	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
18	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
19	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
20	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
21	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
22	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
23	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
24	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
25	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
26	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
27	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
28	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
29	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
30	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
31	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
32	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
33	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
34	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
35	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
36	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
37	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
38	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
39	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
40	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
41	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
42	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
43	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
44	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
45	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
46	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
47	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
48	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
49	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
50	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
51	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
52	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
53	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
54	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
55	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
56	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
57	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
58	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
59	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
60	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
61	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
62	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
63	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
64	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
65	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
66	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
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68	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
69	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
70	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
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74	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
75	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
76	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
77	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
78	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
79	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
80	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
81	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
82	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
83	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
84	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
85	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
86	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
87	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
88	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
89	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
90	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
91	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
92	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
93	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
94	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
95	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
96	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
97	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
98	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
99	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			
100	1 1/2"	PIPE 1/2" X 1/2" X 1/2" X 1/2"			



- GENERAL NOTES -
1. ALL PIPING SHALL BE DIRECT AS POSSIBLE.
 2. ALL SCRD FITTINGS ARE TO BE 150# M.I. PL.
 3. ALL PIPING TO BE SCH. 40 BLACK M.I. S. ASTI.
 4. VALVES IDENTIFYING THE USE OF THAT TAGS SHALL BE ADEQUATELY PROTE.
 5. ALL PIPE SHALL BE ADEQUATELY PROTE.
 6. PIPE FITTINGS TO BE THOROUGHLY CLEANED AFTER.
 7. SEE PWS P-2 FOR POSITION OF OIL TANK VE.
 8. ALL PIPING AND VALVES SHALL BE MARKED.
 9. ALL PIPING SHALL BE MARKED WITH A DIRECTION.

NO.	DATE	DESCRIPTION	BY	CHKD.
1	1/14/54	ISSUED FOR CONSTRUCTION		
2	1/14/54	REVISION		
3	1/14/54	REVISION		
4	1/14/54	REVISION		

APPROVALS	DATE
U.S. NAVAL SHIP SYSTEMS COMMAND	
OCEANOGRAPHIC RESEARCH SHIP	
AGOR (UTILITY) CLASS	
HALTER MARINE SERVICES, INC.	00045
P.O. BOX 28286	NEW ORLEANS, LA. 70189

SCALE	AS SHOWN	DATE	3/1/54	HALTER	NO.
DRAWN BY	ETHEOR	CHKD BY	AGOR	NO.	
HALTER	NO.	DATE	3/1/54	NO.	
REV.					