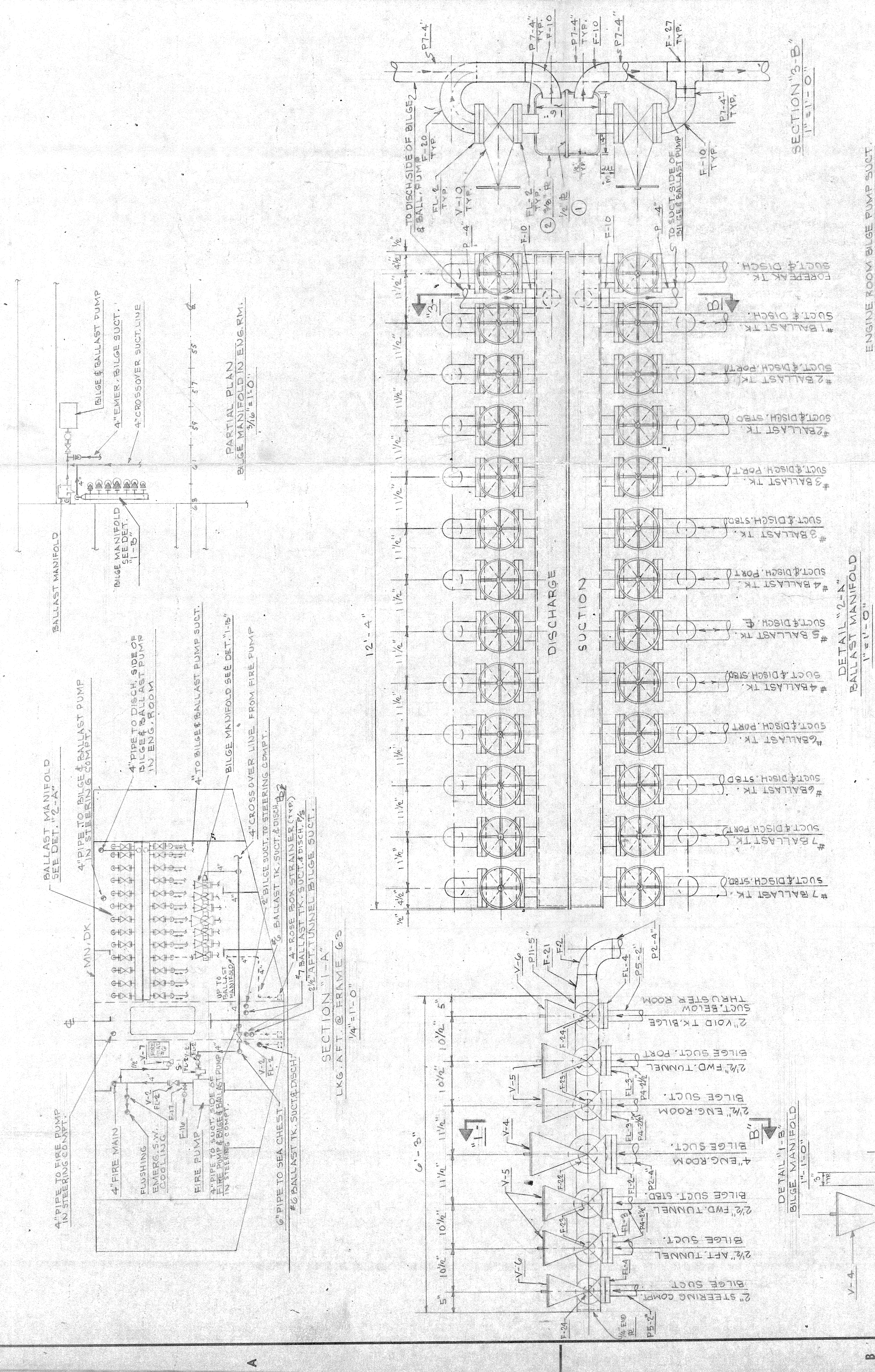


BILL OF MATERIAL

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PC.	QUN.	SIZE	DESCRIPTION	COST	ITEM	PO. NO.	VENDOR	DATE	RECD
F17	4	1/4"	GANGE COCK ASHORE SET #102	350					
F18	1	3/4"	90° REDUCING ELBOW L.R. BW.						
F19	1	4/2"	GALV. STL. SCH. 40 ASTM A234						
S-1	4	4"	CONC. RED. BW. GALV. STL.						
V-1	2	6"	SCHEIDT & BOWEN #105						
V-2	16	4"	MUESCO #105						
V-3	1	2"	GATE VALVE FLDG 150° BW.						
V-4	2	4"	MONEL TRIM 150° ASTM B-41						
V-5	4	2 1/2"	ANGLE VALVE FLDG 150° BW.						
V-6	2	2"	MONEL TRIM 150° ASTM B-41						
V-7	6	1 1/2"	ANGLE HOSE VALVE SORD BRZ.						
V-8	2	4"	SWING CHECK VALVE FLDG BRZ.						
V-9	2	2 1/2"	MONEL TRIM 150° ASTM B-41						
F-1	2	6"	GATE VALVE FLDG 150° BW.						
F-2	96	4"	MONEL TRIM 150° ASTM B-41						
F-3	14	2 1/2"	ANGLE VALVE FLDG 150° BW.						
F-4	6	2"	MONEL TRIM 150° ASTM B-41						
F-5	2	2 1/2"	ANGLE VALVE FLDG 150° BW.						
B-1	16	3/4"	BLIND FLDG 150° BW.						
B-2	832	5/8"	BLIND FLDG 150° BW.						
B-3	24	5/8"	BLIND FLDG 150° BW.						
F-6	1	4"	BLIND FLDG 150° BW.						
G-1	2	1/6"	BLIND FLDG 150° BW.						
G-2	96	1/6"	BLIND FLDG 150° BW.						
G-3	14	1/6"	BLIND FLDG 150° BW.						
G-4	6	1/6"	BLIND FLDG 150° BW.						
F-10	13	4"	BLIND FLDG 150° BW.						
1	1	1/2"	BLIND FLDG 150° BW.						
2	32	3/8"	BLIND FLDG 150° BW.						
3	2	1/2"	BLIND FLDG 150° BW.						
4	2	2 1/2"	BLIND FLDG 150° BW.						
V-10	26	4"	BLIND FLDG 150° BW.						
F-21	1	5"x4"	BLIND FLDG 150° BW.						
F-22	1	5"x4"	BLIND FLDG 150° BW.						
F-23	4	5"x2"	BLIND FLDG 150° BW.						
F-24	2	5"x2"	BLIND FLDG 150° BW.						
F-25	1	6"x4"	BLIND FLDG 150° BW.						
F-26	9	4"x4"	BLIND FLDG 150° BW.						
F-27	18	4"x4"	BLIND FLDG 150° BW.						
F-28	1	4"x4"	BLIND FLDG 150° BW.						
F-29	1	4"x4"	BLIND FLDG 150° BW.						
F-30	1	4"x4"	BLIND FLDG 150° BW.						
F-31	1	5"x5"	BLIND FLDG 150° BW.						
F-32	2	3"x3"	BLIND FLDG 150° BW.						



STEERING COMP. BRANCH SUCT.

PASSAGEWAY BRANCH SUCT.

ENGINE ROOM BILGE PUMP SUCT.

ENGINE ROOM BILGE PUMP SUCT.

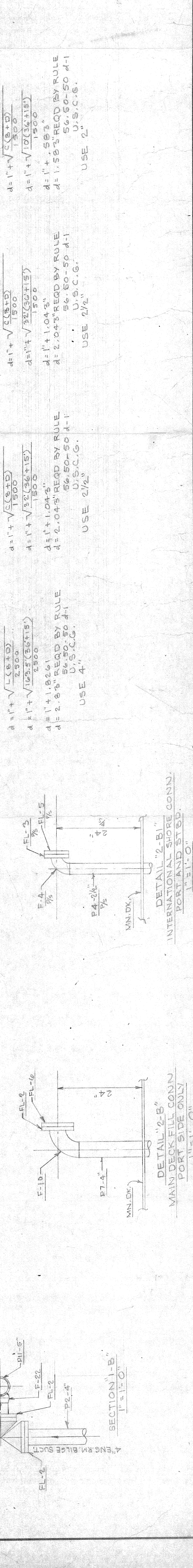
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ENGINE ROOM BILGE PUMP SUCT.



PC.	QUN.	SIZE	DESCRIPTION	COST	ITEM	PO. NO.	VENDOR	DATE	RECD
P1	3	6"	PIPE GALV. STL. SCH. 40 SWG.	350					
P2	390	4"							
P3	85	3"							
P4	180	2 1/2"							
P5	130	2"							
P6	60	1 1/2"							
P7	630	4"	PIPE GALV. STL. SCH. 40 SWG.						
P8	970	4"	PIPE GALV. STL. SCH. 40 SWG.						
P9	55	2"							
P10	15	1 1/2"							
P11	7	5"							
F1	2	6"	90° ELBOW L.R. BW. GALV. STL. SCH. 40 ASTM A234						
F2	12	4"							
F3	2	3"							
F4	17	2 1/2"							
F5	8	2"							
F6	8	1 1/2"							
F7	2	6"x4"	CONV. RED. BW. GALV. STL. SCH. 40 ASTM A234						
F8	1	4"x1/2"							
F9	1	3"x1/2"							
F10	65	4"	90° ELBOW L.R. BW. GALV. STL. SCH. 40 ASTM A234						
F11	5	2 1/2"							
F12	1	2"							
F13	1	1 1/2"	90° ELBOW L.R. BW. GALV. STL. SCH. 40 ASTM A234						
F14	4	1/4"	COUPLING 3/4" GALV. STL. ASTM A-47						
F15	4	1/4"	PIPE NIPPLE SORD GALV. STL. SCH. 40 ASTM A-120						
F16	4	1/4"	90° ELBOW L.R. BW. GALV. STL. SCH. 40 ASTM A234						
F17	1	2"	90° ELBOW L.R. BW. GALV. STL. SCH. 40 ASTM A234						
F18	1	1 1/2"	90° ELBOW L.R. BW. GALV. STL. SCH. 40 ASTM A234						
F19	1	1/4"	COUPLING 3/4" GALV. STL. ASTM A-47						
F20	13	4"	90° ELBOW L.R. BW. GALV. STL. SCH. 40 ASTM A234						
F21	1	5"x4"	90° ELBOW L.R. BW. GALV. STL. SCH. 40 ASTM A234						
F22	1	5"x4"	90° ELBOW L.R. BW. GALV. STL. SCH. 40 ASTM A234						
F23	12	4"	90° ELBOW L.R. BW. GALV. STL. SCH. 40 ASTM A234						
F24	2	2 1/2"							
F25	2	2"							
F26	3	4"	NEW ARCO DEAR DRAIN BW. GALV. STL. SCH. 40 ASTM A234						
F27	2	2 1/2"	NEW ARCO DEAR DRAIN BW. GALV. STL. SCH. 40 ASTM A234						
F28	3	4"	NEW ARCO DEAR DRAIN BW. GALV. STL. SCH. 40 ASTM A234						
F29	2	2 1/2"	NEW ARCO DEAR DRAIN BW. GALV. STL. SCH. 40 ASTM A234						
F30	2	2 1/2"	NEW ARCO DEAR DRAIN BW. GALV. STL. SCH. 40 ASTM A234						
F31	2	2 1/2"	NEW ARCO DEAR DRAIN BW. GALV. STL. SCH. 40 ASTM A234						
F32	2	2 1/2"	NEW ARCO DEAR DRAIN BW. GALV. STL. SCH. 40 ASTM A234						

U.S. NAVAL SHIP SYSTEMS COMMAND
WASHINGTON D.C. 20360
OCEANOGRAPHIC RESEARCH SHIP
AGOR (UTILITY) CLASS
HALTER MARINE SERVICES, INC.
P.O. BOX 22566 NEW ORLEANS, LA. 70129

SCALE: NOTED DATE: 12-1-72
DRAWN BY: BERTONCKI CKD BY: JONES
HALTER JOB NO. 2187
HULL NO. 375
NAVSHP NO. AGOR 21-508-506
REV. 1

STEERING COMP. BRANCH SUCT.
 $d = 1" + \sqrt{\frac{L(B+D)}{1500}}$
 $d = 1" + \sqrt{\frac{10(36+15)}{1500}}$
 $d = 1" + 2.583$
 $d = 1.583$ REQD BY RULE
56.50-50 d-1
U.S.C.G.
USE 2"

PASSAGEWAY BRANCH SUCT.
 $d = 1" + \sqrt{\frac{L(B+D)}{1500}}$
 $d = 1" + \sqrt{\frac{10(36+15)}{1500}}$
 $d = 1" + 1.042$
 $d = 2.042$ REQD BY RULE
56.50-50 d-1
U.S.C.G.
USE 2 1/2"

ENGINE ROOM BILGE PUMP SUCT.
 $d = 1" + \sqrt{\frac{L(B+D)}{1500}}$
 $d = 1" + \sqrt{\frac{10(36+15)}{1500}}$
 $d = 1" + 1.042$
 $d = 2.042$ REQD BY RULE
56.50-50 d-1
U.S.C.G.
USE 2 1/2"

ENGINE ROOM BILGE PUMP SUCT.
 $d = 1" + \sqrt{\frac{L(B+D)}{1500}}$
 $d = 1" + \sqrt{\frac{10(36+15)}{1500}}$
 $d = 1" + 1.042$
 $d = 2.042$ REQD BY RULE
56.50-50 d-1
U.S.C.G.
USE 4"

ENGINE ROOM BILGE PUMP SUCT.
 $d = 1" + \sqrt{\frac{L(B+D)}{1500}}$
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 $d = 1" + 1.042$
 $d = 2.042$ REQD BY RULE
56.50-50 d-1
U.S.C.G.
USE 4"

ENGINE ROOM BILGE PUMP SUCT.
 $d = 1" + \sqrt{\frac{L(B+D)}{1500}}$
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