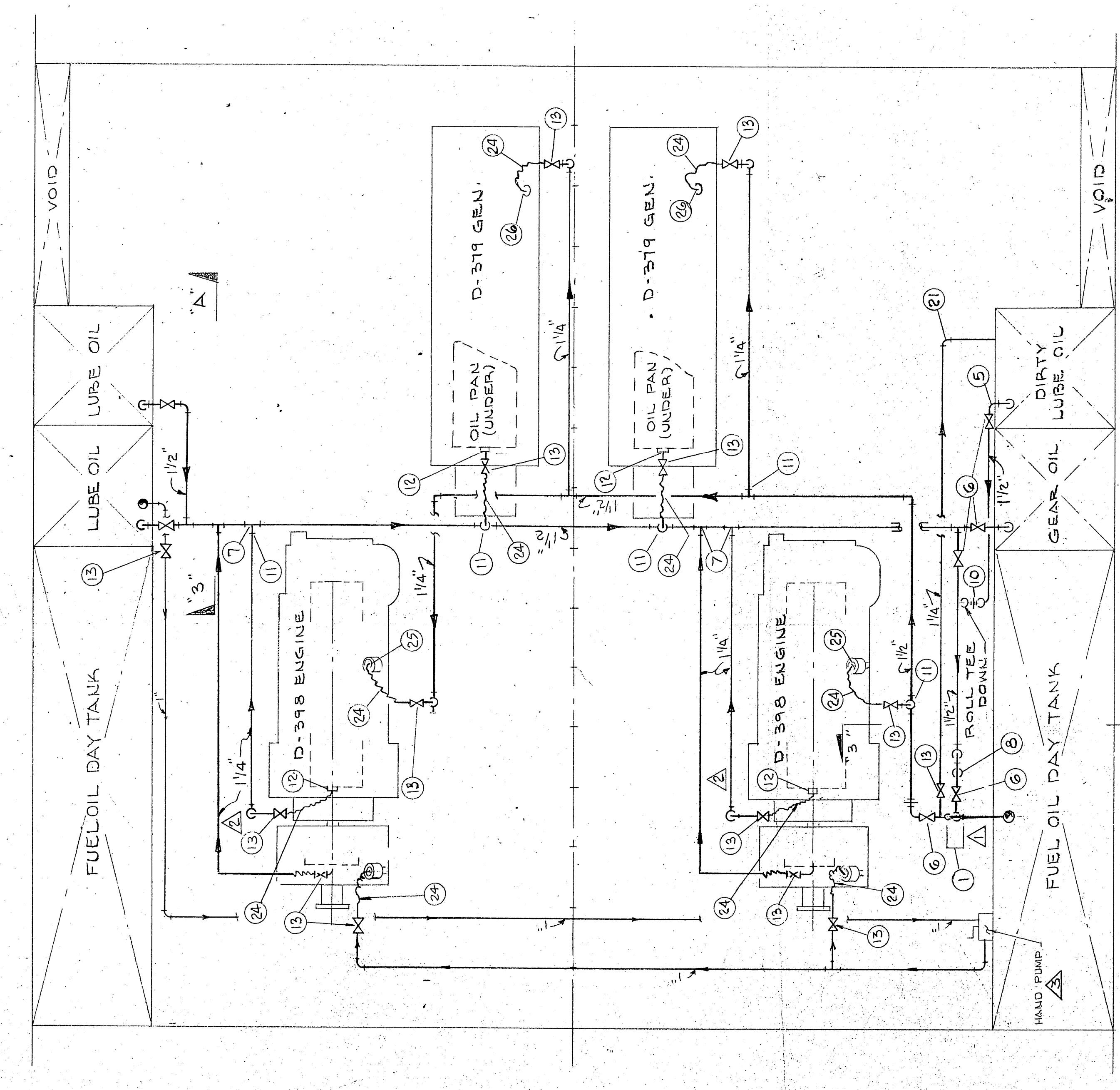
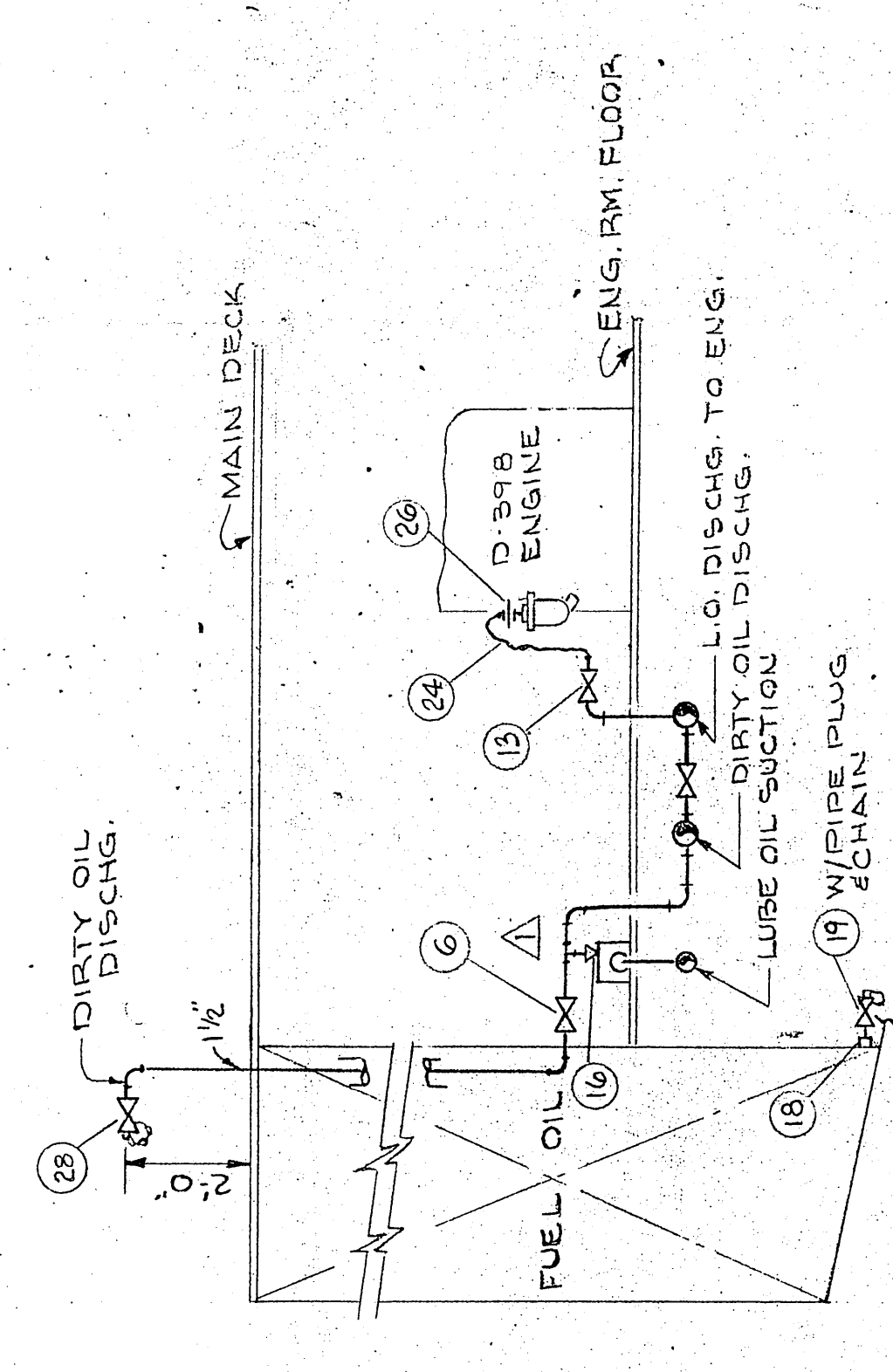
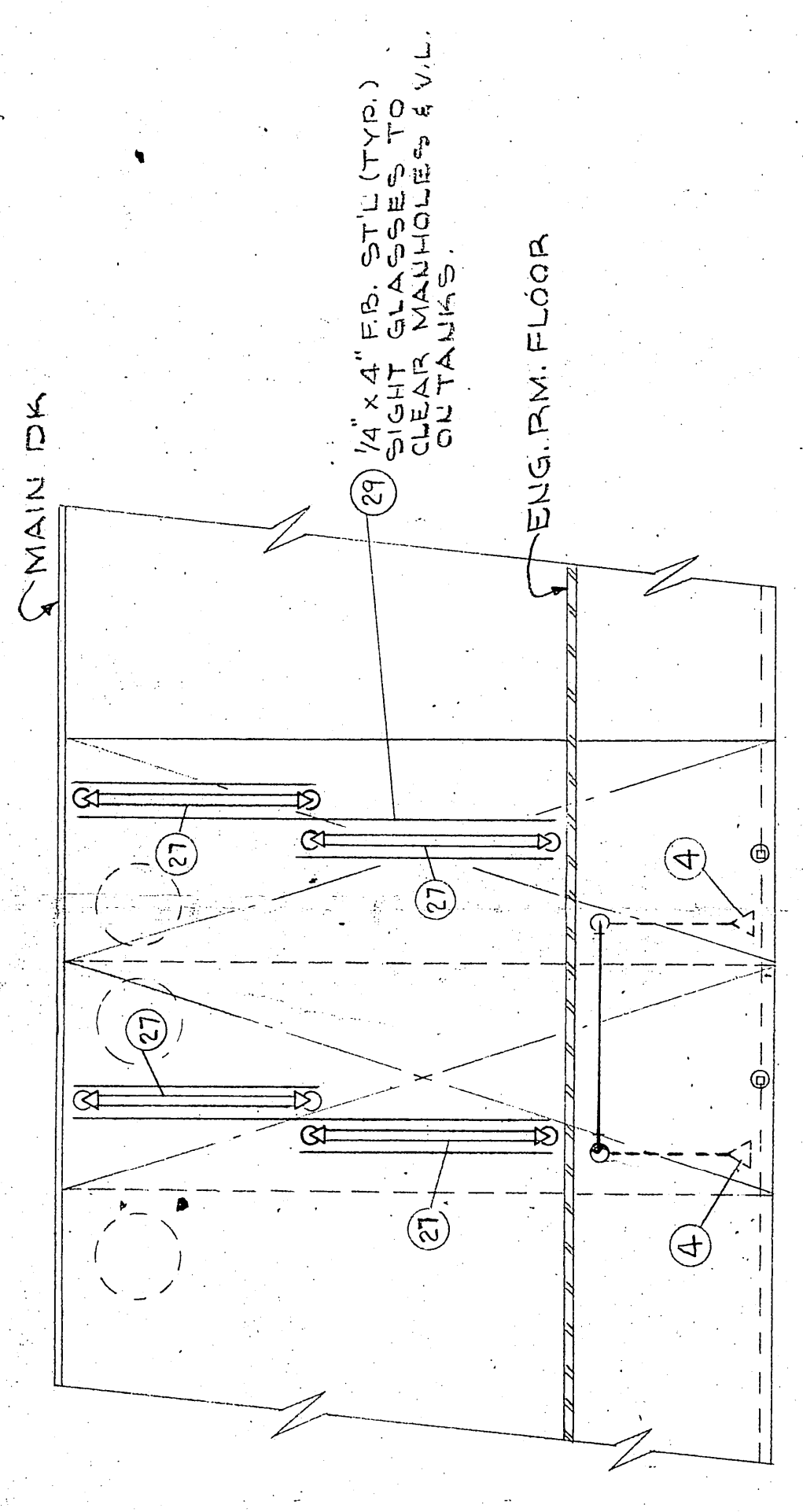


BILL OF MATERIAL

QTY	SIZE	DESCRIPTION	CO. NO.	DATE	RECD
1	1"	DEMING PUMP FIG. # 4353 UNIT 132 236PM	354		
2	1 1/2"	PIPE BLK SMLS SCH. 40 ASTM A-53 GR. B			
3	1 1/4"	PIPE BLK SMLS SCH. 40 ASTM A-53 GR. B			
4	3/4"	CONNECTION 234 TUBE-TYPE			
5	1 1/2"	90° ELBOW LR. SCR'D M.I. 150# ASTM A-47			
6	1 1/2"	GATE VALVE 150# BRZ. SCR'D CRANE #431-UB			
7	1 1/2"	TEE, SCR'D M.I. 150# ASTM A-47			
8	1 1/2"	SPRAINER 125 C.I. SCR'D PIPE STEEL 24" TL-115			
9	1 1/2"	PIPE STEEL 24" TL-115 ASTM A-53 GR. B			
10	1 1/2"	UNION SCR'D M.I. 150# ASTM A-47			
11	1 1/2" x 1 1/4"	BUSHING HEX HEAD M.I.			
12	2 x 1 1/4"	BUSHING HEX HEAD M.I.			
13	1 1/4"	SCREW VALVE 150# BRZ. SCR'D CRANE #431-UB			
14	1 1/4"	PIPE NIPPLE X 3" LG. ASTM A-53 GR. B			
15	1 1/2"	COUPLING F.S. 3000			
16	1 1/2"	CONC. SWAGE SCH 80 TUBE			
17	2	45° ELBOW SCR'D M.I. 150# ASTM A-47			
18	4	1" FIPS COUPLING F.S.			
19	4	1" GATE VALVE 150# BRZ. SCR'D CRANE #431-UB			
20	4	1" PIPE NIPPLE X 3" LG. ASTM A-53 GR. B			
21	10	90° ELBOW LR. SCR'D 150# M.I. ASTM A-47			
22	4	1 1/2" x 1 1/4" BUSHING HEX HEAD			
23	1	TEE SCR'D 150# M.I. ASTM A-47			
24	12	1 1/4" AERQUIP HOSE #1503-20-36			
25	24	1 1/4" AERQUIP HOSE FITTING #412-420-20-205			
26	12	1 1/4" UNION 150# M.I. MALE THD. ONE END & FEMALE THD. OTHER			
27	8	1/2" SIGHT GLASS CONSUM. 150# M.I. 150# GR. B			
28	1	1 1/2" CRANE #431-UB GATE VALVE			
29	64	1/4" x 4" FLAT BAR, ST'L			



REVISIONS

NO.	DESCRIPTION	DATE	BY
4	FINAL AS BUILT	1/14/74	
3	REV. ADDED HAND PUMP & AS BUILT	11/20/73	
2	REV. CHG DIRTY OIL SUCT. TO AFT. OF ENGINE & AS BUILT	9/18/73	
1	REV. SECT. 3-B CHG OIL PIPE RUN FROM OUTSIDE TO INSIDE SEE P. 11	8/21/73	

APPROVALS

ABS: A 8/12/73

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USPMS

U.S. NAVAL SHIP SYSTEMS COMMAND
WASHINGTON D.C. 20360

OCEANOGRAPHIC RESEARCH SHIP
AGOR (UTILITY) CLASS

HALTER MARINE SERVICES, INC.
P.O. BOX 28286 NEW ORLEANS, LA. 70128

LUBE OIL PIPING

SCALE: AS SHOWN DATE 3-21-73 HALTER DWG. NO.

DRAWN BY: ETHEOROLD CK'D BY: LORRELS

HALTER 3/15/74 HALTER 2187-88

HULL NO. 315, 376 JOB NO. 2187-88

NAVSHPNS NO. AGOR 21-211-001

REV. 2

- GENERAL NOTES**
- ALL PIPING SHALL BE DIRECT AS POSSIBLE.
 - ALL SCR'D FITTINGS ARE TO BE 150# M.I. BLK. ASTM A-47.
 - ALL PIPING TO BE SCH. 40 BLK. SMLS ASTM A-53 GR. B.
 - VALVE HANDWHEELS SHALL HAVE BRASS OR BRONZE TAGS IDENTIFYING THE USE OF THAT VALVE.
 - ALL PIPE JOINTS SHALL BE ADEQUATELY PROTECTED AND
 - PIPE TO BE THOROUGHLY CLEANED AFTER INSTALLATION & BEFORE FUNCTION TEST.
 - SEE DWG. P-2 FOR LUBE OIL TANK VENTS, FILL & SOUNDING.
 - ALL PIPING AND VALVES SHALL BE MARKED SHOWING ITS SERVICE & PARTICULAR LIQUID.
 - ALL PIPING SHALL BE COLOR CODED IN ACCORDANCE WITH NATIONAL COLOR CODE & SHALL INDICATE DIRECTION OF FLOW.

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