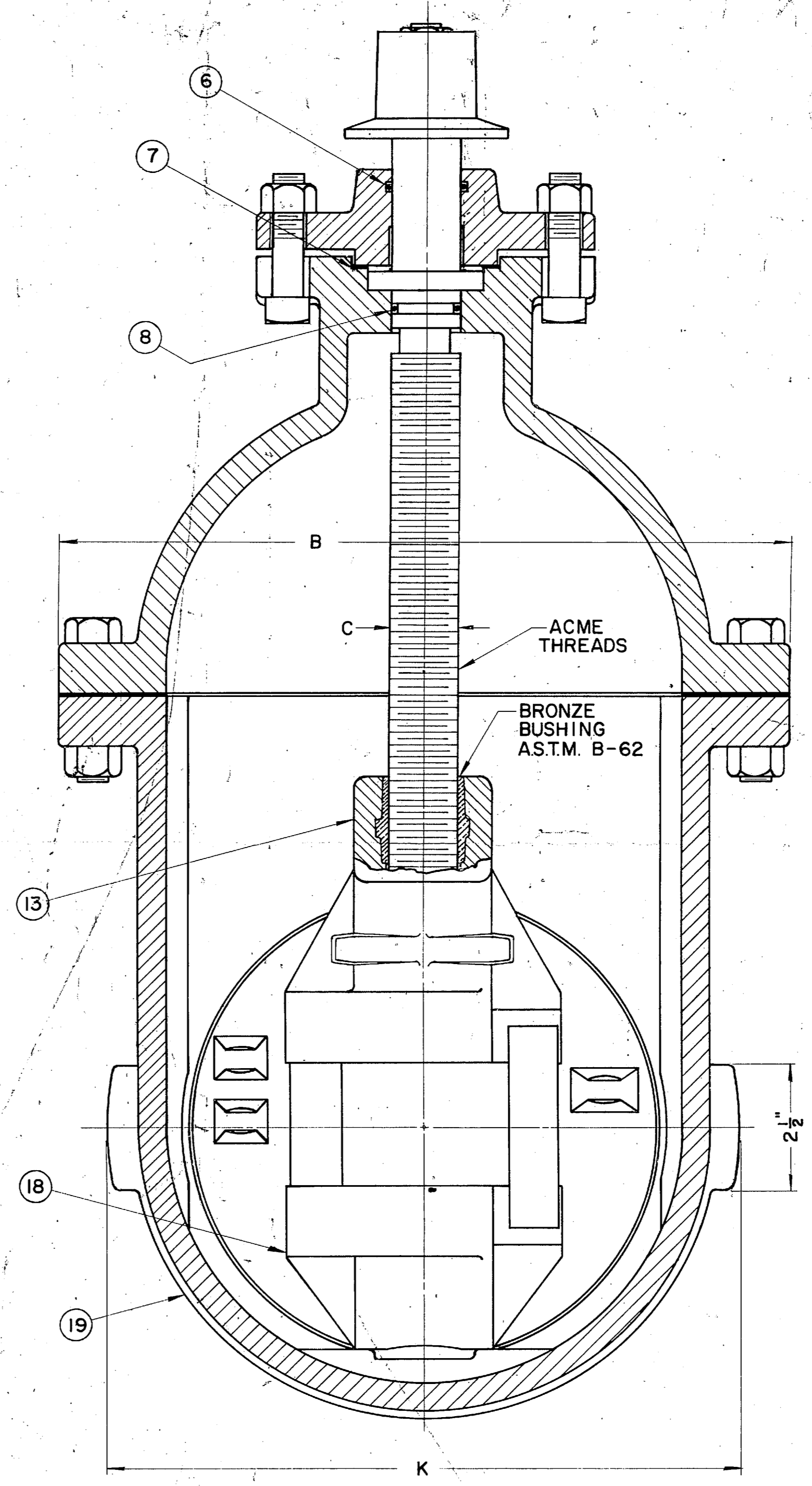
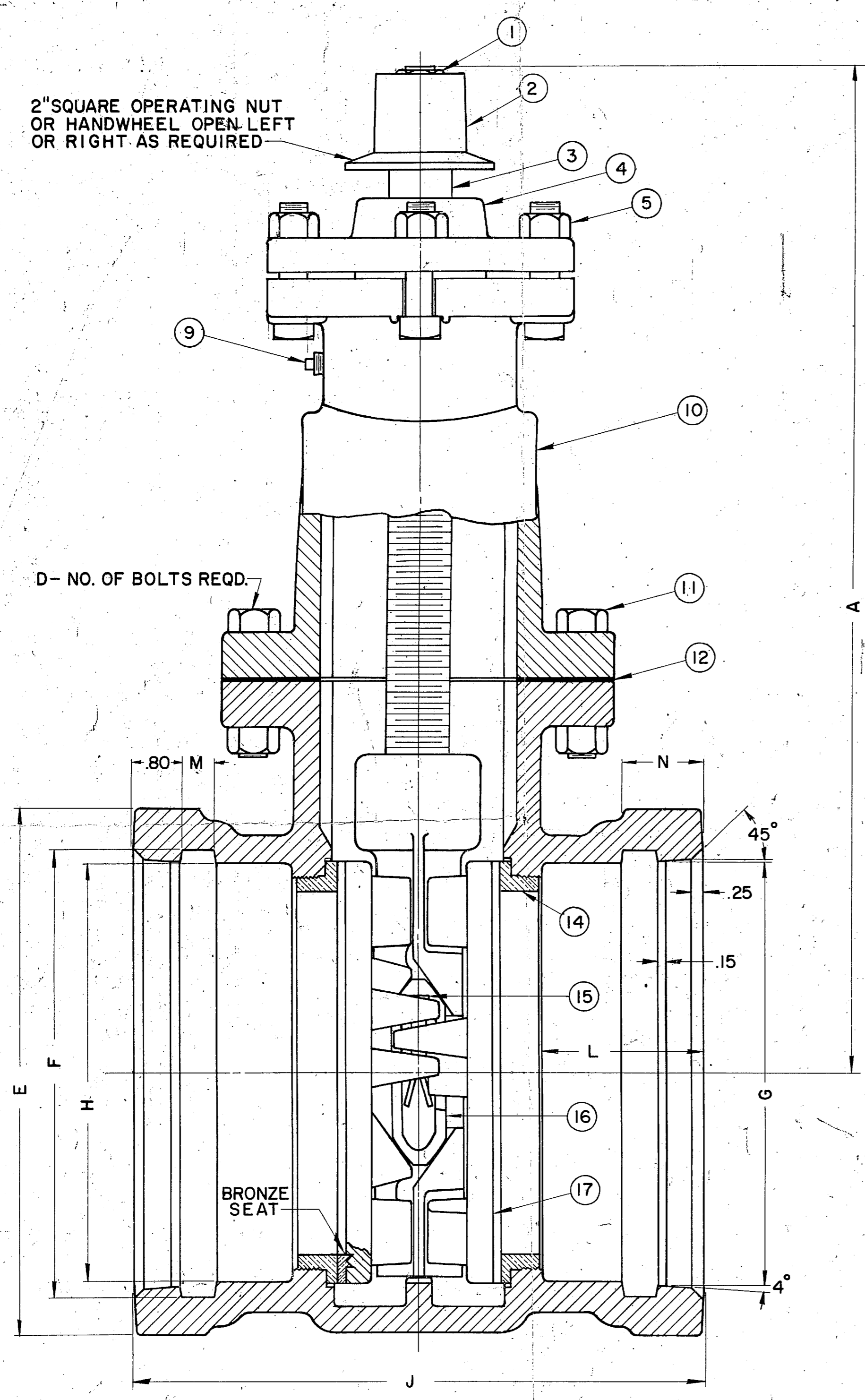
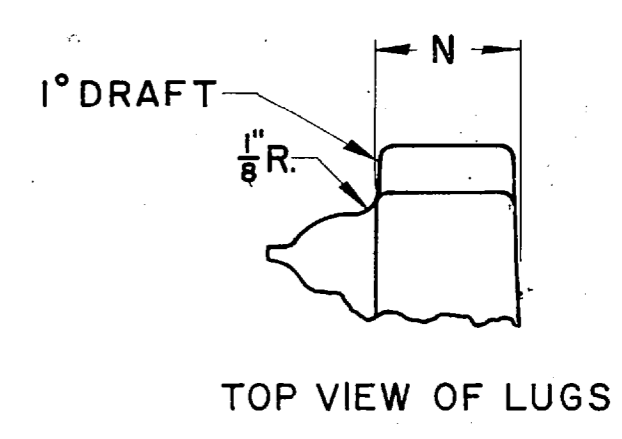


5771 4"-14" A-2380-24 MUELLER GATE VALVES - AWWA - NRS - ENDS FOR ASBESTOS CEMENT PIPE - "O" RING SEALS - 200W-400 TEST-4"-12" 150W-300 TEST-14"  
 4" 10" 12" & 14" - FOR CLASSES 150-200 ASBESTOS CEMENT PIPE  
 6" & 8" - FOR CLASSES 100-150-200 ASBESTOS CEMENT PIPE



PARTS LIST				
ITEM	DESCRIPTION	REQ'D	MATERIAL	ASTM
1	CAP NUT	1	STEEL	ASA B18.2 PLTD.
2	OPERATING NUT	1	CAST IRON	A126 CL. B
3	STEM	1	BRONZE	B138 ALLOY A 1/2 HARD
4	STUFFING BOX	1	CAST IRON	A126 CL. B
5	FLANGE BOLT	4	STEEL	ASA B18.2 PLTD.
6	"O" RING PACKING	1	RUBBER	BUNA N
7	GASKET	1	FIBER	
8	"O" RING PACKING	1	RUBBER	BUNA N
9	PIPE PLUG	1	IRON	
10	BONNET	1	CAST IRON	A126 CL. B
11	JOINT BOLT	D	STEEL	ASA B18.2 PLTD.
12	JOINT GASKET	1	COMPOSITION	
13	TOP WEDGE NUT	1	CAST IRON	A126 CL. B
14	SEAT RING	2	BRONZE	B 62
15	DISC PIN	2	BRONZE	B 21 ALLOY A 1/2 HARD
16	SIDE SPREADER	2	BRONZE	B 62
17	DISC	2	CAST IRON	A126 CL. B
18	BOTTOM WEDGE	1	CAST IRON	A126 CL. B
19	BODY	1	CAST IRON	A126 CL. B



VALVE SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N
4	15	8 7/8	1 5/8	8	7 1/8	5.53	5.10	4.91	11 5/8	8 1/8	3 1/2	.95	1 1/2
6	18 1/8	11 13/16	1 3/4	10	9 1/4	7.63	7.20	7.01	12	10 1/4	3 1/2	.95	1 1/2
8	22 1/8	14 5/8	1 3/8	12	11 3/8	9.83	9.40	9.21	12 1/2	12 5/8	3 1/2	.95	1 1/2
10	26 1/2	16 1/16	1 1/2	12	14 3/8	12.38	11.95	11.76	13 5/8	15 3/8	3 1/2	.95	1 1/2
12	29 7/8	19	1 5/8	14	16 3/4	14.64	14.21	14.02	14 5/8	17 3/4	4	.95	1 1/2
14	34 3/8	22 1/2	1 3/4	16	19 3/8	17.08	16.52	16.32	16 1/8	21 3/8	4 1/2	1.00	1 3/4

REPLACES DWG. NO. 5771 BY T.A.B. 2-6-61

DW BY M.E.M. 3-21-69 CH EN  
 CH J.L.C. 3-28-69 VPE  
 ENGR R.L.R. 4-1-69 PRD  
 DRFT B.S.T. 4-1-69  
 STOCK NO. MATERIAL AS NOTED PART NO.  
 TOLERANCES: LINEAR .005 ANGULAR .015  
 FINISH SCALE  
 REF. NO. PURCH. YES NO  
 MUELLER CO. 4"-14" MUELLER GATE VALVES WITH "O" RING SEALS  
 CHATTANOOGA, TENN. NRS-AWWA A2380-24 NUMBER 5771

Title to and ownership of this engineering data remains in Mueller Co. No use is to be made thereof except as specifically authorized by Mueller Co., which assumes no responsibility for any unauthorized use. Assent to these conditions is presumed by Mueller Co., if this engineering data is accepted.

JUN 20 1974



NOTHING SHOWN ON THIS DRAWING IS TO BE CONSTRUED AS INCREASING THE MATERIALS TO BE SUPPLIED BY THE COCHRANE DIVISION OVER THAT SPECIFIED IN THEIR CONTRACT.

DIMENSIONS LOCATING OPENINGS MAY VARY 3/8 ±

DO NOT CUT PIPE FOR MAKING CONNECTIONS TO THIS SYSTEM FROM DIMENSIONS GIVEN ON THIS DRAWING AS THEY MAY VARY SLIGHTLY.

NO PIPING OR EQUIPMENT TO BE FURNISHED BY COCHRANE DIVISION UNLESS OTHERWISE SPECIFIED ON DRAWING.

CUSTOMER TO CUT, THREAD AND FIT ALL PIPING.

DESIGN PRESSURE - EXCHANGE TANK - 100 P.S.I. - 125 P.S.I. (AS SPECIFIED)

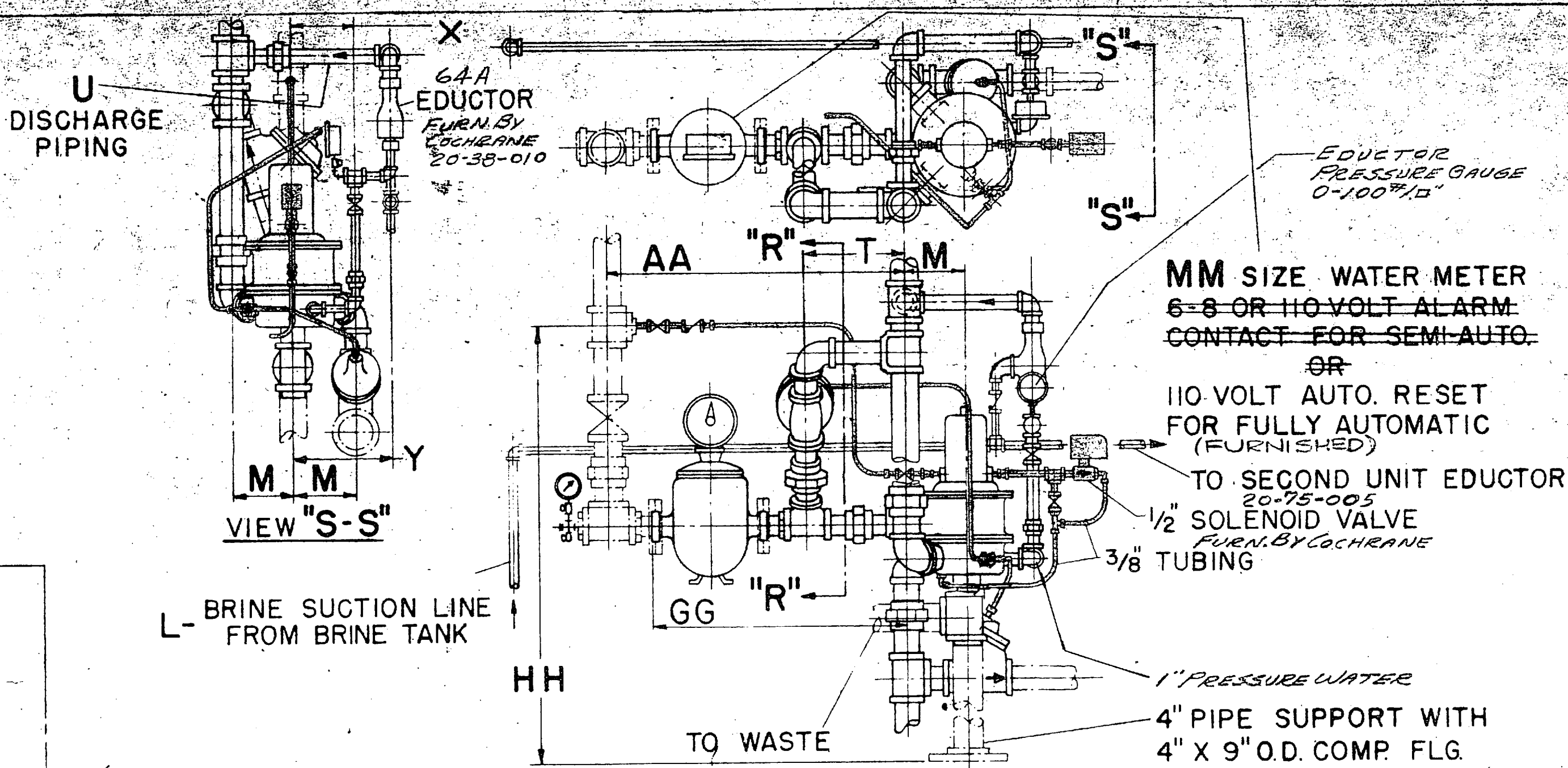
TEST PRESSURE - EXCHANGE TANK - 150 P.S.I. - 188 P.S.I.

ON SEMI-AUTOMATIC UNITS METER FURNISHED ONLY WHEN SPECIFIED.

NOTE: THIS ASSEMBLY NOT SUBJECT TO DESIGN CHANGE AS APPROVAL DRAWING.

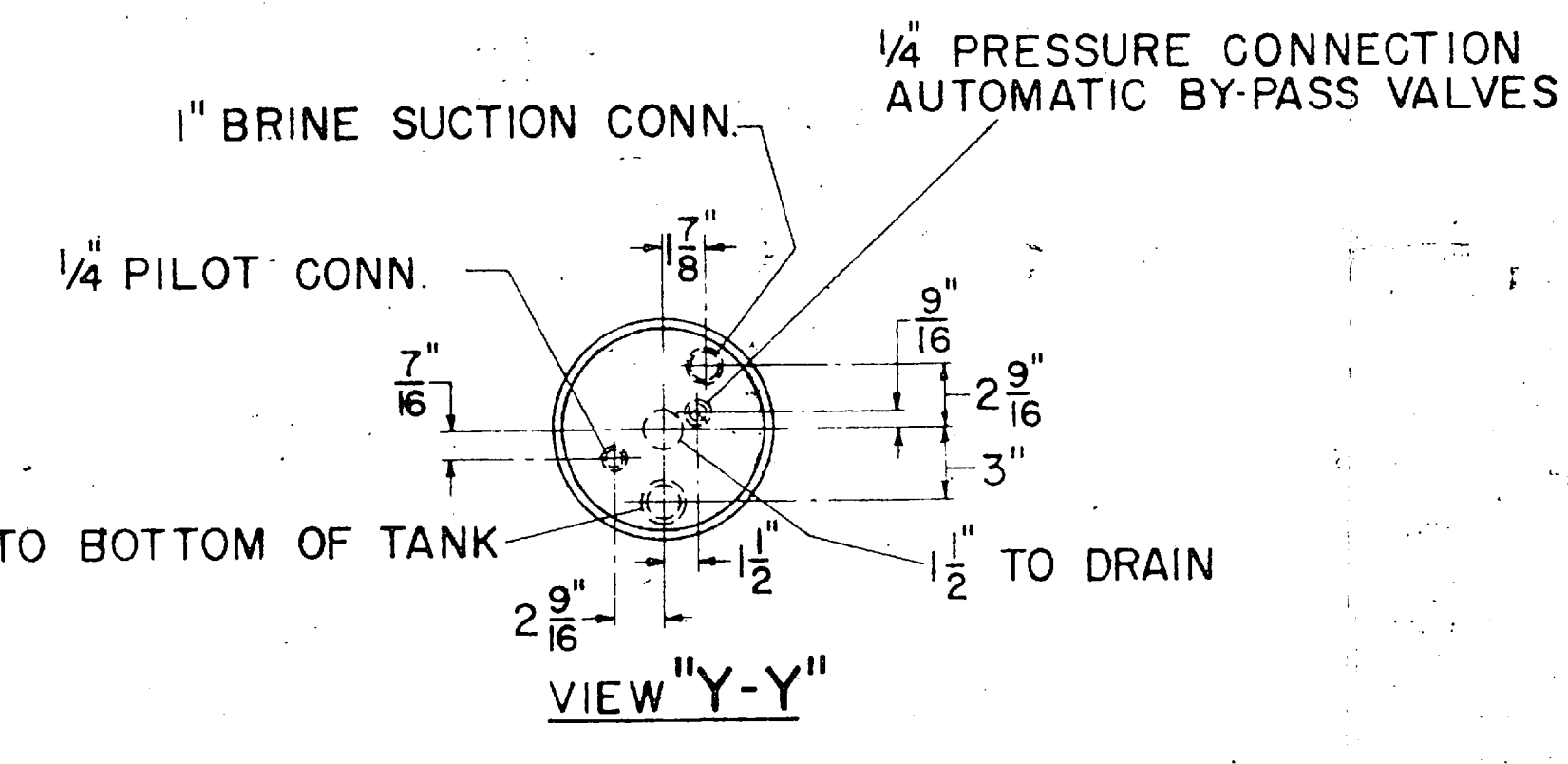
PROVIDE BRINE TANK FOR 5A. SOFTENER

20-75-011  
PP PIPE SIZE AUTOMATIC BY-PASS VALVE INSTALL WITH ARROW AS SHOWN  
FURN. BY COCHRANE  
VIEW "R-R"

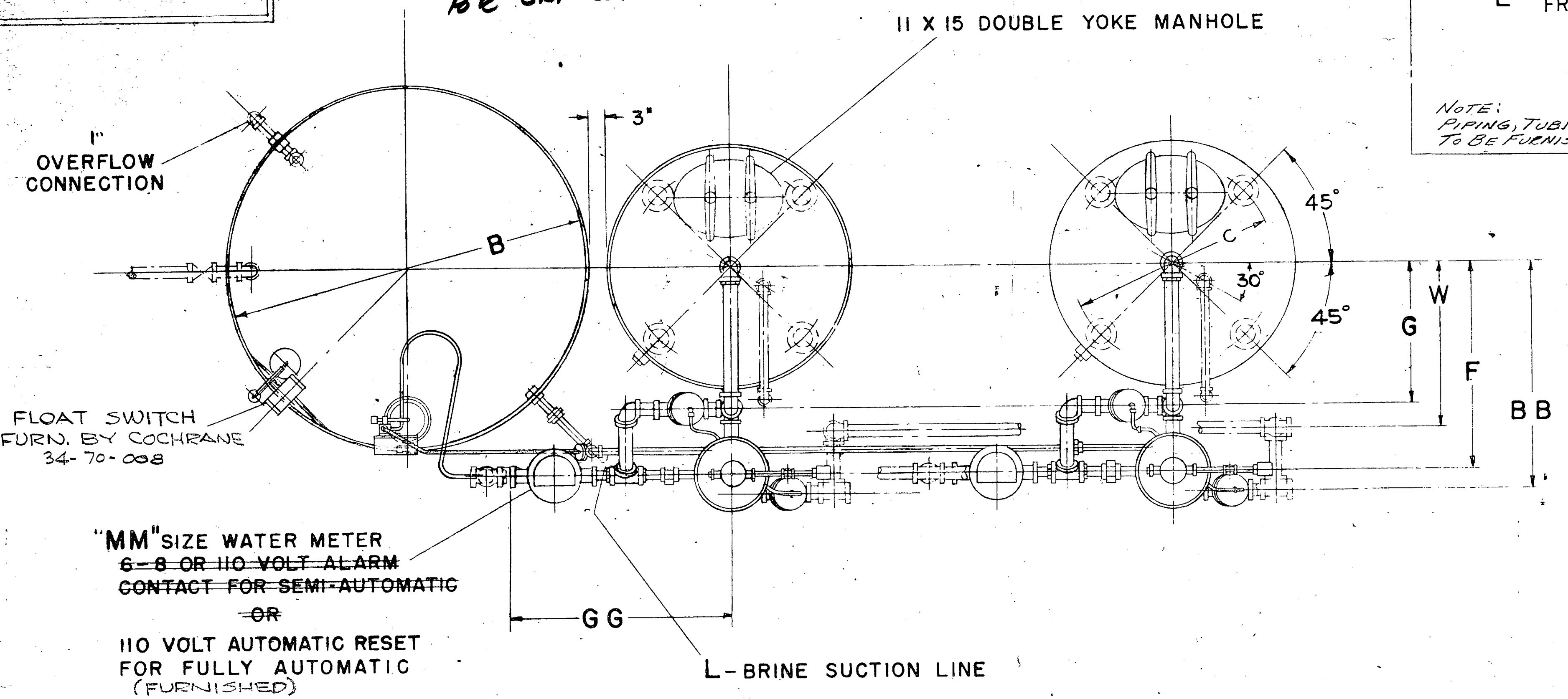


NOTE: PIPING, TUBING ETC. SHOWN SHAVED TO BE FURNISHED BY COCHRANE.

MODEL 54 & 60 ONLY

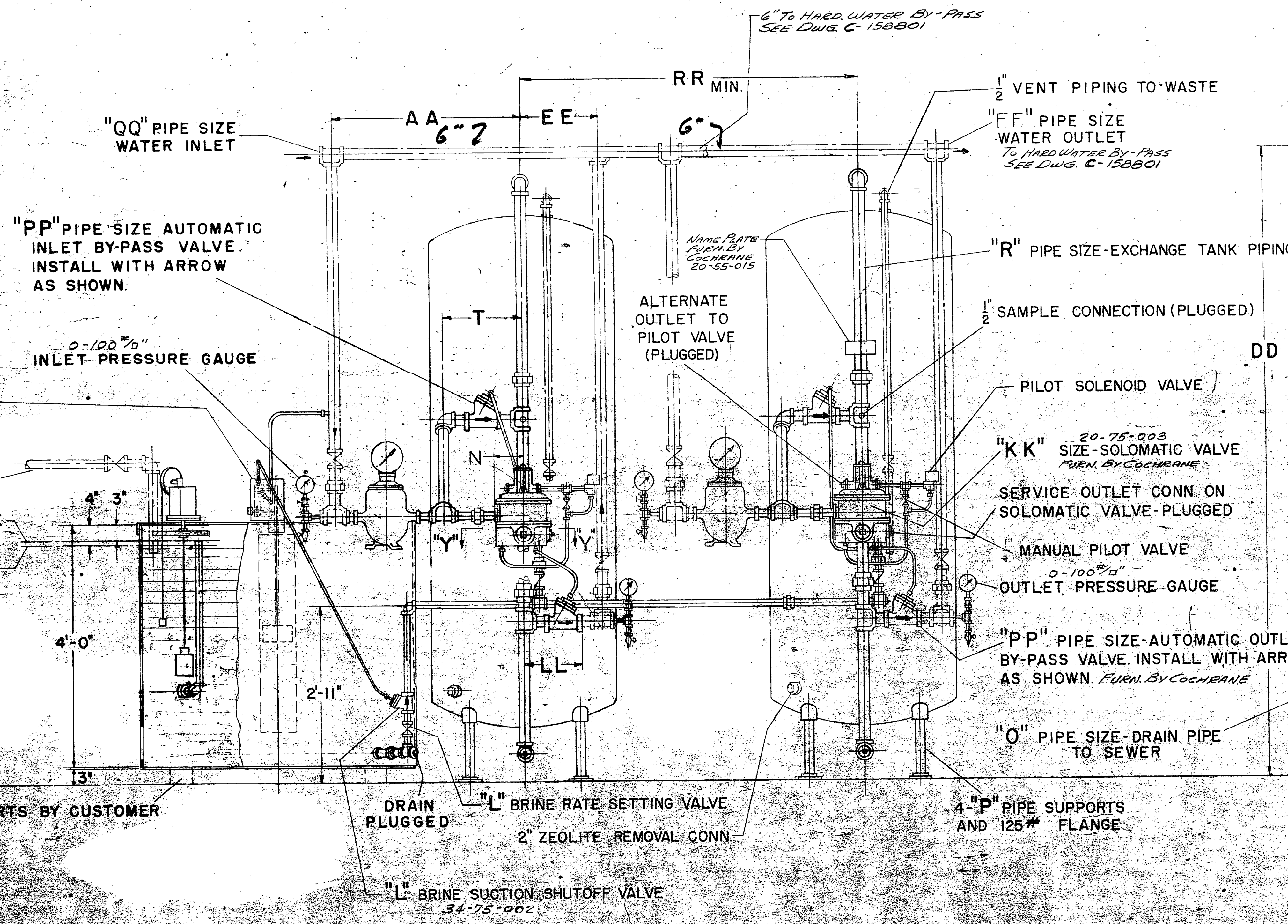


EXCHANGER DIMENSIONS					
MODEL	36	42	48	54	60
A	36"	42"	48"	54"	60"
B	2'-6"	3'-0"	3'-0"	3'-6"	4'-0"
D	10"	13"	14"	14"	15"
E	2 9/16"	2 9/16"	2 9/16"	—	—
F	2'-7"	2'-10"	3'-1"	3'-7"	3'-10"
G	21"	24"	2'-3"	—	—
H	8'-7 1/2"	8'-10 1/2"	9'-1 1/2"	9'-4 1/2"	9'-6 1/2"
J	2 9/16"	1 1/2"	1 1/2"	1 3/8"	1 3/8"
K	3"	3"	3"	—	—
L	1"	1"	1"	1 1/2" MAX.	1 1/2"
M	—	—	—	6 1/2"	6 5/8"
N	5 7/16"	5 7/16"	5 7/16"	6 5/8"	6 5/8"
O	1 1/2"	1 1/2"	1 1/2"	2"	2 1/2"
P	2"	2"	3"	3"	3"
Q	—	—	—	—	—
R	2"	2 1/2"	2 1/2"	3"	3"
S	—	—	—	—	—
T	15 1/2"	16"	19 1/4"	10 1/4"	10 1/4"
U	—	—	—	2" MAX.	1 1/2"
W	2'-0 1/2"	2'-3 1/2"	2'-6 1/2"	3'-0 1/2"	3'-3 1/2"
X	—	—	—	—	7"
Y	—	—	—	—	11"
Z	1 1/2"	1 1/2"	1 1/2"	1 3/8"	1 3/8"
AA	3'-1"	3'-2 1/2"	3'-2 1/2"	3'-1"	3'-1"
BB	2'-4"	3'-1"	3'-4"	—	—
CC	—	—	—	—	—
DD	3'-11 1/2"	9'-2 1/2"	9'-5 1/2"	9'-8 1/2"	9'-10 1/2"
EE	15 1/4"	16"	16"	19 1/4"	19 1/4"
FF	—	—	—	—	4"
GG	2'-9"	2'-9"	2'-9"	2'-7 3/8"	2'-7 3/8"
HH	—	—	—	6'-1"	6'-1"
KK	1 1/2"	1 1/2"	1 1/2"	2"	2 1/2"
LL	11 1/4"	11 3/4"	11 3/4"	14 1/8"	14 1/8"
MM	1 1/2" SCRD	1 1/2" SCRD	1 1/2" SCRD	1 1/2" SCRD	2" SCRD
NN	2 1/2"	3"	3"	4"	4"
PP	2"	2 1/2"	2 1/2"	3"	3"
QQ	2 1/2"	3"	3"	4"	4"
RR	5'-4"	5'-6"	5'-6"	5'-6"	7'-0"
OPERATING WT. (EACH)	6300#	8700#	11300#	15000#	18200#



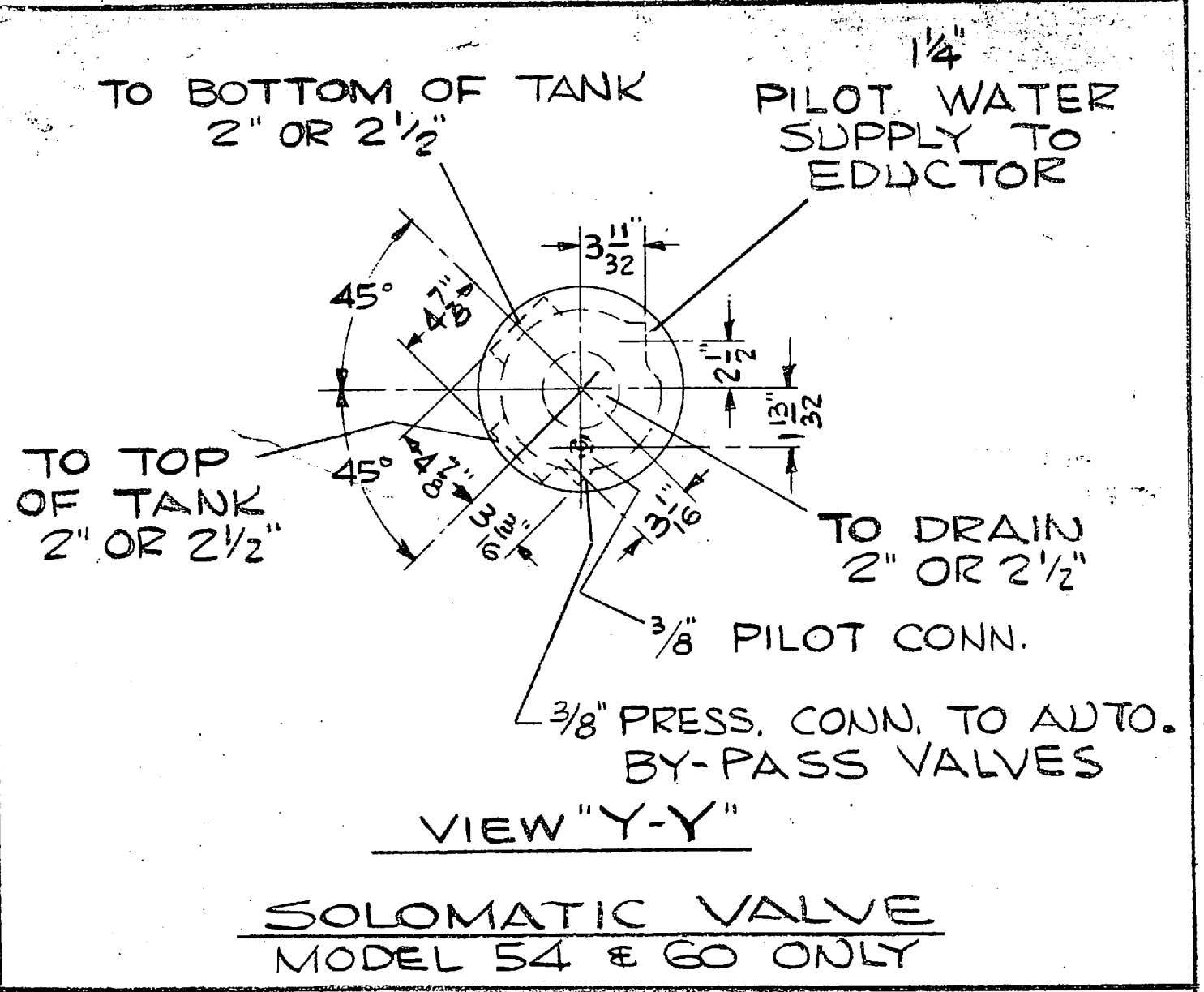
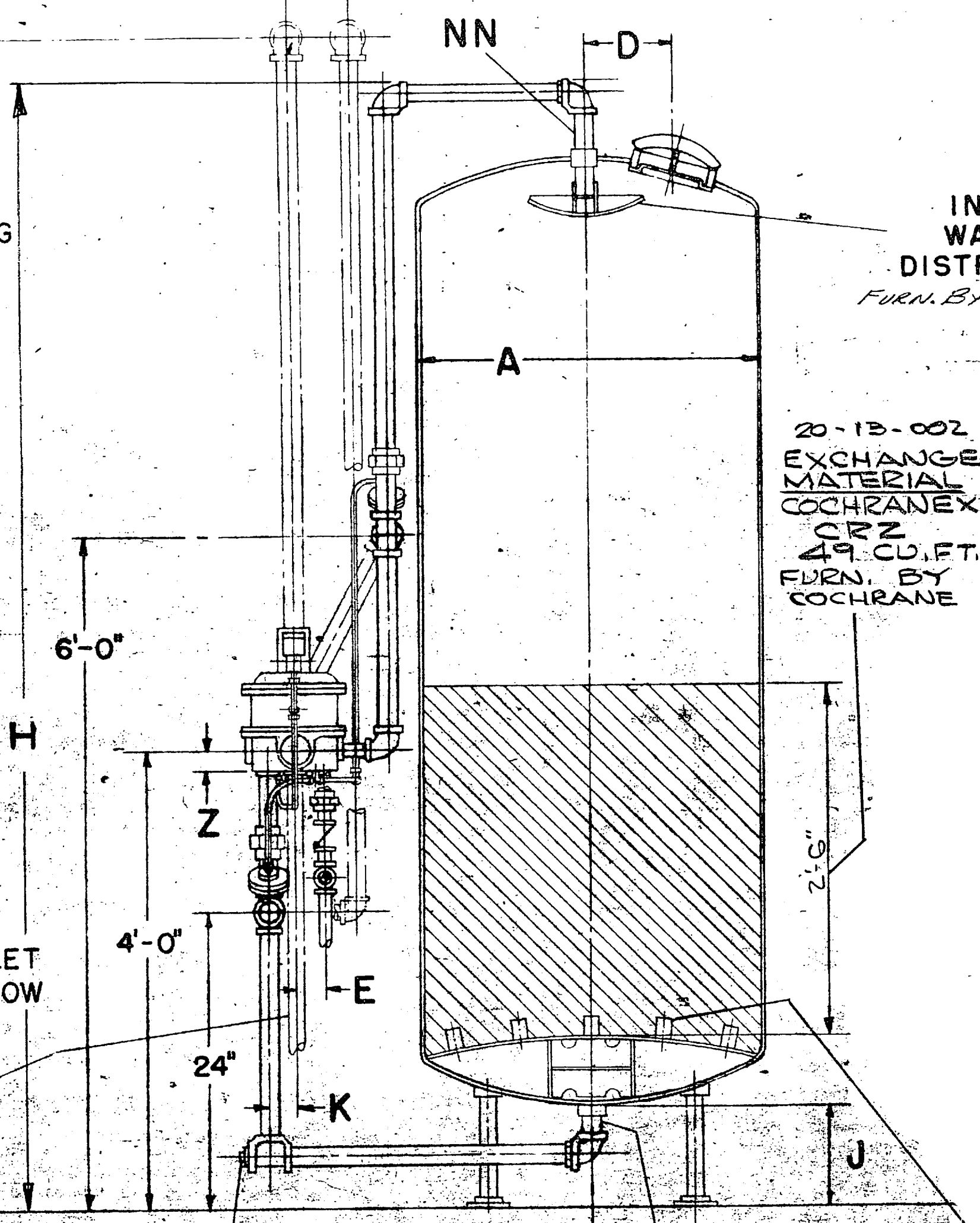
"MM" SIZE WATER METER 6-8 OR 110 VOLT ALARM CONTACT FOR SEMI-AUTOMATIC -OR- 110 VOLT AUTOMATIC RESET FOR FULLY AUTOMATIC (FURNISHED)

BRINE TANK DIMENSIONS						
	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"
OPERATING WEIGHT	1800#	2400#	3050#	3980#	4875#	5985#
B	5'-6"	6'-0"	6'-6"	7'-0"	—	—
OPERATING WEIGHT	7205#	8535#	9960#	11445#	—	—



BRINE TANK (FOR ALL MODELS) TANK AND INTERNALS FURN. BY COCHRANE

EXCHANGE TANKS (PIPING FOR MODELS 36-42 AND 48 ONLY) TANKS AND INTERNALS FURN. BY COCHRANE



SECTION 20/34 SUB SECTION ZEO-MATIC SOFTENER

DOUBLE UNIT MODEL 60 COCHRANE DIVISION

APPROVED AS NOTED

DATE: AUG 15 1969

158629

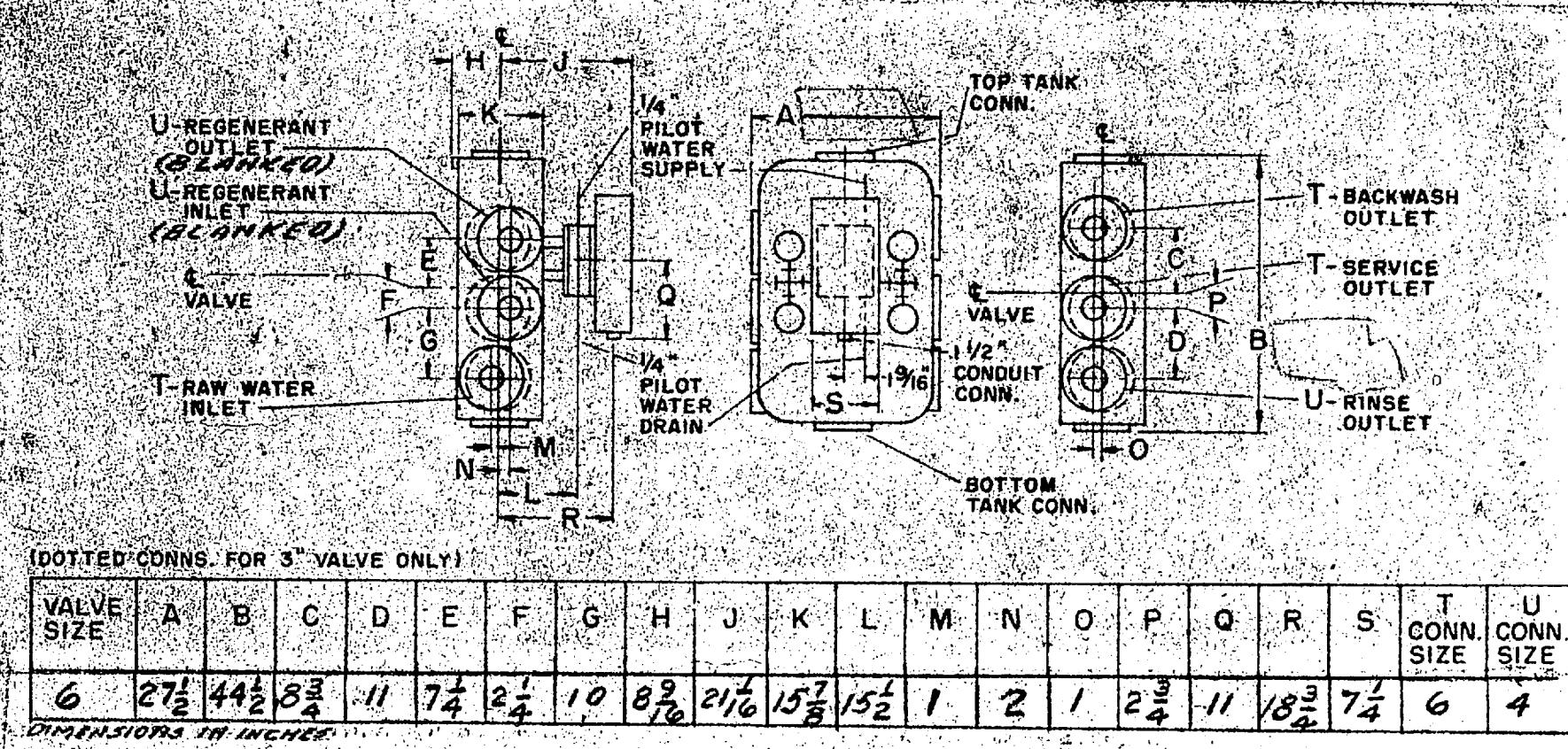
S.O. 1396 DATE JUL 24 1968  
THIS DRAWING IS FOR APPROVAL  
RETURN ONE PRINT IMMEDIATELY  
TO AVOID DELAY IN FABRICATION  
CERTIFIED CONSTRUCTION DRAWING  
FOR YOUR ORDER NO.  
DESTROY PREVIOUS COPIES  
THIS PRINT DUPLICATES PRINTS PREVIOUSLY  
FORWARDED YOU EXCEPT FOR CHANGES AS  
SPECIFIED IN REVISION BLOCK

SCALE: DRAWN: DATE: CHG. NO. FIRST USED ON: APPD. NO.





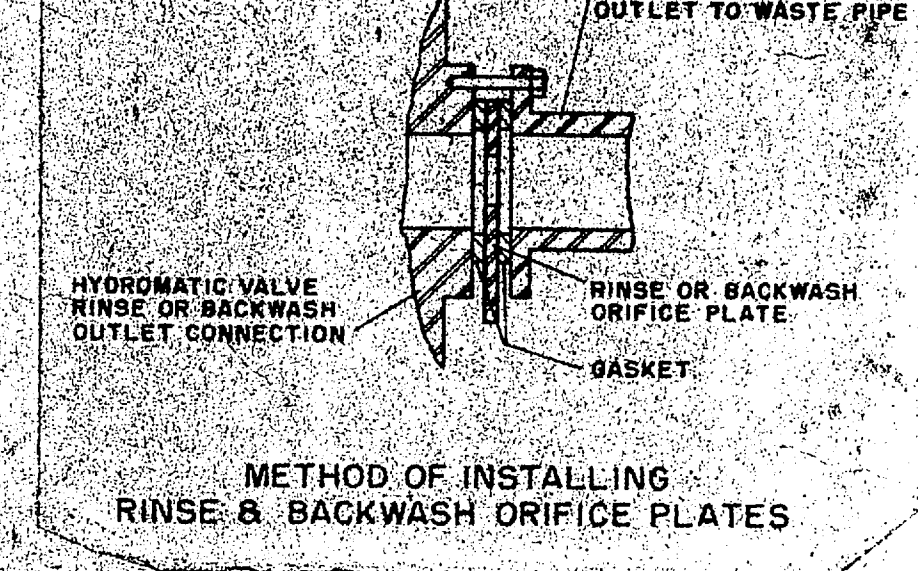




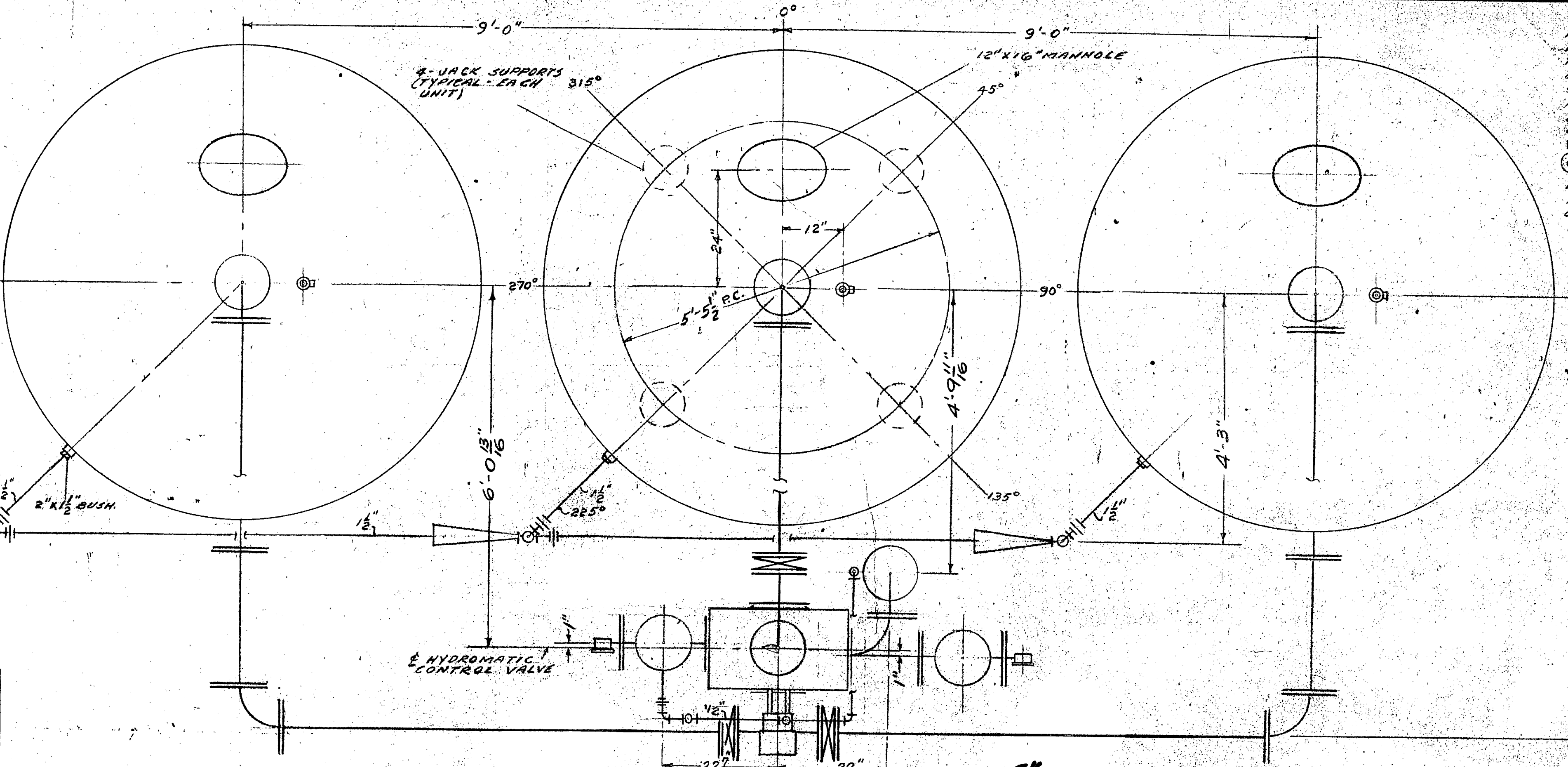
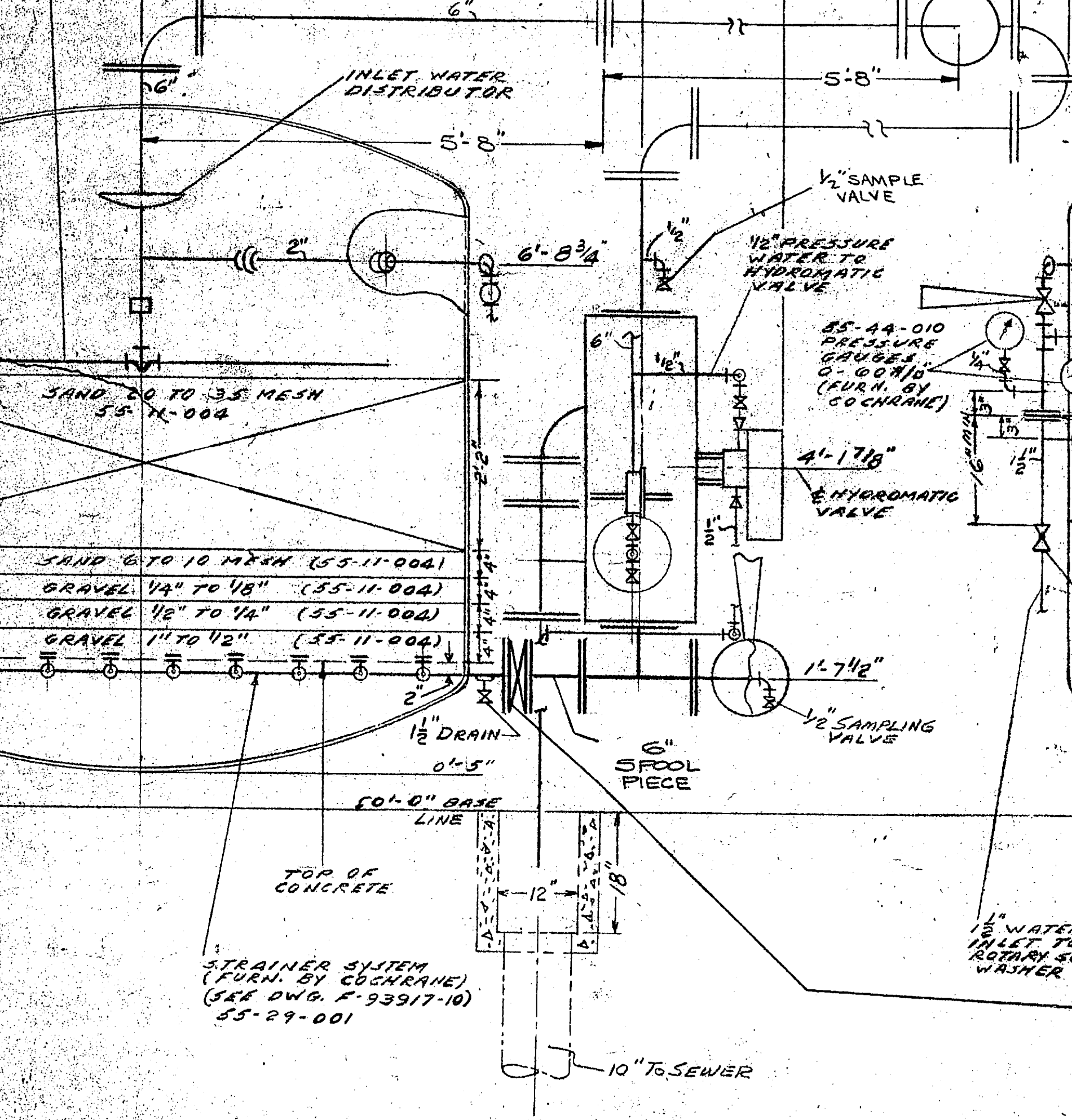
(DOTTED CONNS. FOR 3" VALVE ONLY)

VALVE SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T CONN. SIZE	U CONN. SIZE
6	2 1/2	4 1/2	8 3/4	11	7 1/4	2 1/4	10	8 3/8	2 1/8	15 1/2	15 1/2	1	2	1	2 3/4	11	18 3/4	7 1/4	6	4

HYDROMATIC VALVE (AUTOMATIC) AUXILIARY VIEW



ROTARY SURFACE WASHER (FURN. BY COCHRANE) SEE DWG. D-94700-12 55-23-003



NOTICE TO CUSTOMER  
 NOTHING SHOWN ON THIS DRAWING IS TO BE CONSIDERED AS INCREASING THE MATERIAL TO BE SUPPLIED BY COCHRANE DIV. OVER THAT SPECIFIED IN THEIR CONTRACT. NO EXTERNAL FIRING OR EQUIPMENT FURNISHED BY COCHRANE DIV. UNLESS OTHERWISE SPECIFIED ON DRAWING. © DENOTES CERTIFIED PRINTS WILL BE FURNISHED BY COCHRANE DIV. DESIGN PRESSURE 50 #/SQ. IN. NON-CODE TEST PRESSURE - 75 #/SQ. IN. OPERATING WEIGHT APPROX. 93,000 # COMPLETE ASSEMBLY.

1/2" CHAPMAN CYLINDER OPERATED GATE VALVE (FURN. BY COCHRANE) 55-75-005  
 3 ORIFICE PLATE FOR 3 BARTON #227 INDICATORS (FURN. BY COCHRANE) 55-99-008 ORIFICE FLANGES BY CUSTOMER

8" WATER INLET LINE 55-75-009 6" HYDROMATIC CONTROL VALVE (FURN. BY COCHRANE) (SEE AUXILIARY VIEW)

1 1/2" 55-75-007 1 1/2" 55-75-007 11" 55-75-007 LONGER MODEL "T" FURN. BY COCHRANE  
 55-30 BACKWASH ORIFICE & OUTLET PRESS. GAUGE (SEE INSTALLATION DETAIL) FURN. BY COCHRANE

8" 6" FILTERED WATER OUTLET TO HARD WATER BY-PASS SEE DWG. C-158801

55-44-010 PRESSURE GAUGE 0-60 #/SQ. IN. (FURN. BY COCHRANE)  
 1-17/16" 6" HYDROMATIC VALVE

ORIFICE A (FURN. BY COCHRANE) 55-30-012  
 7'-6" DIA.

55-44-010 OUTLET PRESS. GAUGE 0-60 #/SQ. IN. (FURN. BY COCHRANE)

6" CRANE MONARCH BUTTERFLY VALVE CYLINDER OPERATED (FURN. BY COCHRANE) 55-75-006

RINSE ORIFICE B (SEE INSTALLATION DETAIL) FURN. BY COCHRANE 55-30

ATLANTIC DIVISION  
 NAVAL FACILITIES ENGINEERING COMMAND  
 NORFOLK, VIRGINIA 23511

APPROVED: "AS NOTED"  
 SUBJECT TO THE REQUIREMENTS OF  
 COMNAVFORV 88313 88313/67  
 APP. 11-11-68  
 INSTRUCTIONS FOR THE USE OF THIS DRAWING FOR SEA SERVICE  
 PREPARED BY THE NAVAL FACILITIES ENGINEERING COMMAND  
 COORDINATION OF 1. ETC. AS REQUIRED.  
 H. N. ALLEN  
 RADM, CEC, USN  
 DATE AUG 15 1968 COMLANVAFACENCOM

S.O. 1396-68 DATE JUL 21 1968  
 THIS DRAWING IS FOR APPROVAL  
 RETURN ONE PRINT IMMEDIATELY  
 TO AVOID DELAY IN FABRICATION  
 CERTIFIED CONSTRUCTION DRAWING  
 FOR YOUR ORDER NO.  
 F. J. Haussperg  
 DESTROY PREVIOUS COPIES  
 THIS PRINT DUPLICATES PRINTS PREVIOUSLY  
 FORWARDED YOU EXCEPT FOR CHANGES AS  
 SPECIFIED IN REVISION BLOCK

ASSEMBLY  
 T.U. 7-6" PRESSURE FILTER

COCHRANE DIVISION  
 CRANE CO. ENGINEERS  
 PHILADELPHIA 32 PENNSYLVANIA

DESIGNERS AND MANUFACTURERS OF  
 HOT PROCESS SOFTENERS-DEAERATING HEATERS-DEALKALIZERS  
 ZEOLITE SOFTENERS-STEAM SPECIALTIES-DEALKALIZERS  
 FILTERS-CONDENSATE DRAINAGE CONTROL UNITS-REACTORS  
 CONTINUOUS BLOWDOWN SYSTEMS

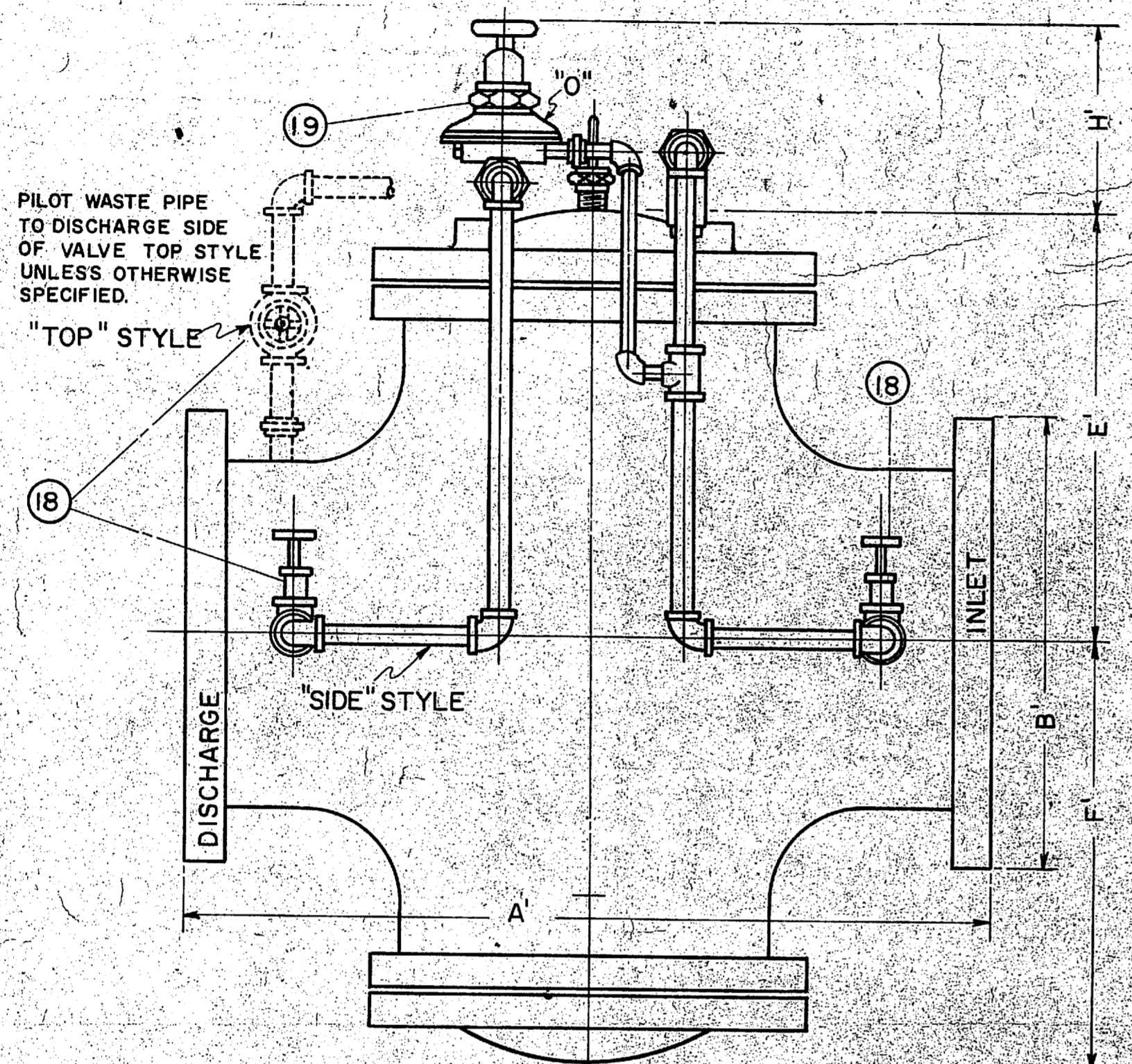
SCALE	DATE	CHKD.	DATE	APPD.	DATE	REVISION	ENG. APP.
1/8" = 1'-0"	7-23-68		1396-68		11-11-68		

SIZE NUMBER CHG. LTR.  
 F 158550

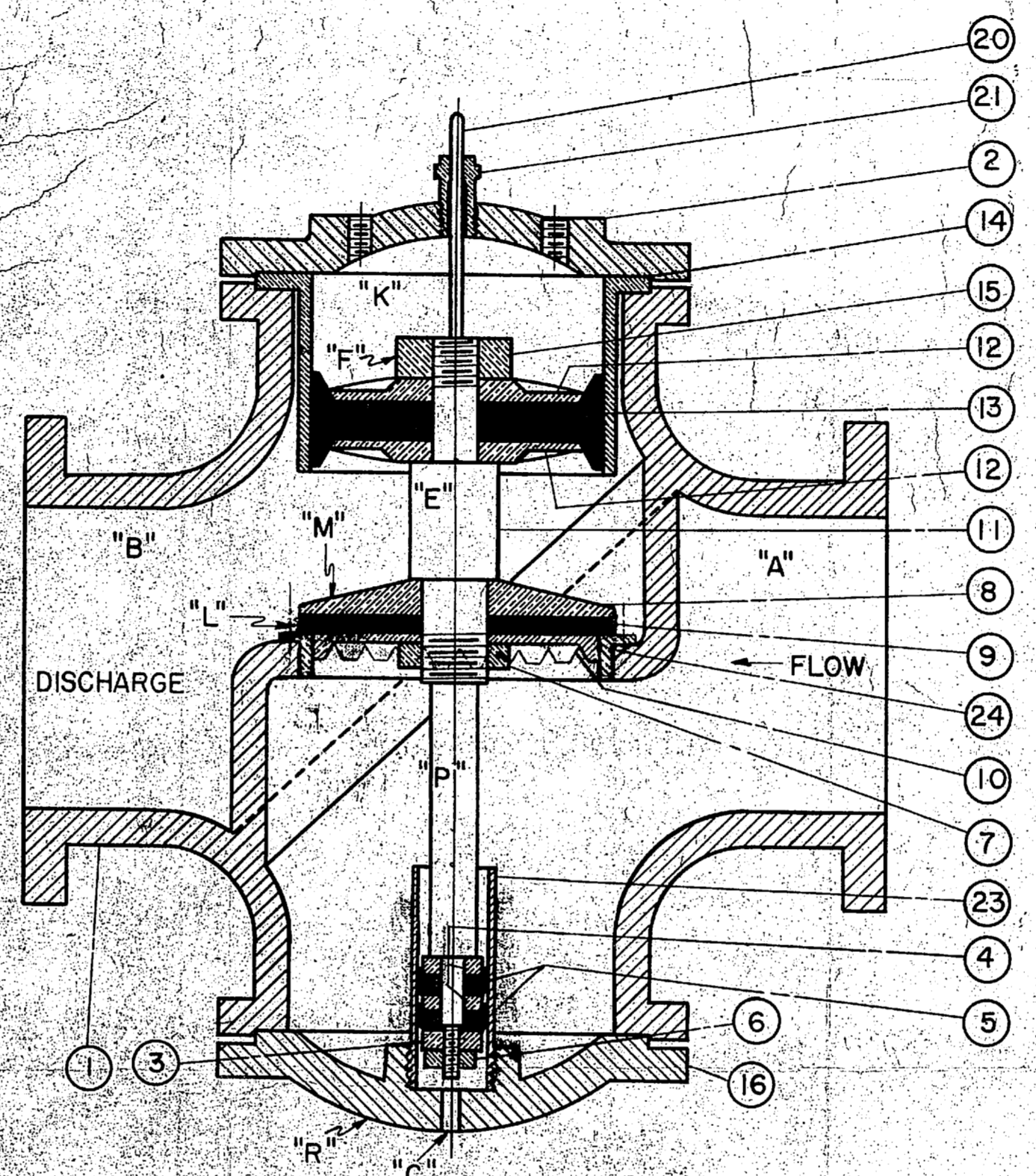




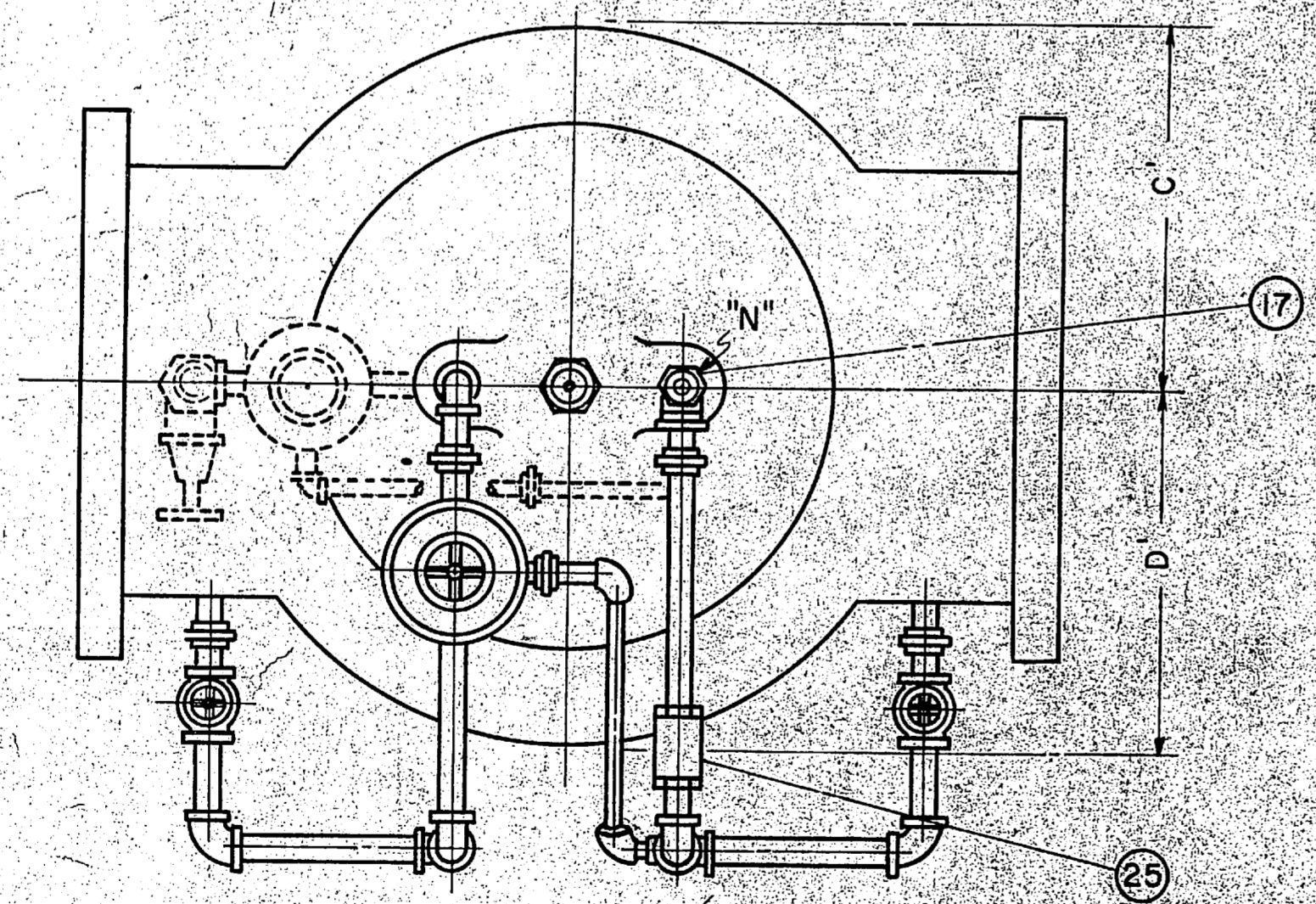




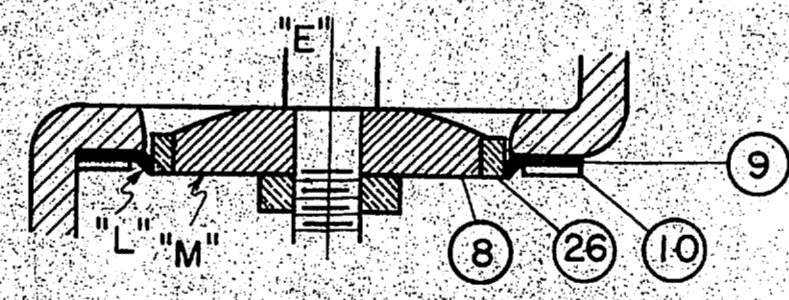
SIDE ELEVATION



LONGITUDINAL SECTION



PLAN



SLIDING SEAT

\* NOTE - FROM 1948 SIZES 8" TO 12" HAVE ONE PIECE BRONZE SLIDING SEAT DISC IN PLACE OF PARTS 8 & 26

PARTS LIST

PART NO.	NAME OF PART	QTY.
1	VALVE SHELL	1
2	TOP CAP	1
3	BOTTOM STEM GUIDE NUT	1
4	BOTTOM CUP FOLLOWER	2
5	BOTTOM PISTON CUP LEATHER	2
6	BOTTOM STEM LOCK NUT	1
7	NUT	1
8	SEAT DISC	1
9	SEAT LEATHER	1
10	SEAT LEATHER SUPPORT	1
11	STEM	1
12	PLATE	2
13	MAIN CUP LEATHER	2
14	MAIN BUSHING	1
15	TOP NUT	1
16	BOTTOM CAP	1
17	NEEDLE VALVE	1
18	GATE VALVE	2
19	PILOT VALVE	1
20	INDICATOR ROD	1
21	INDICATOR STUFFING BOX	1
22	CAP CYLINDER	1
23	SEAT RING	1
24	SEAT RING	1
25	STRAINER	1
26	DISC RING	1

125 # FLANGES

SIZE	WT.	DIMENSIONS IN INCHES ±					
		A'	B'	C'	D'	E'	F'
8"	660	23 7/8	13 1/2	9	9	12 1/2	12 1/2
10"	810	24 7/8	16	10 3/8	10 3/8	14 1/4	14 1/4
12"	1280	30	19	11 1/2	11 5/8	17 1/4	17 1/4
14"	2000	34	21	14	14	19 1/4	19 1/4
16"	2300	37 7/8	23 1/2	15	15	21	21
18"	3200	42 3/8	25	17 1/2	17 1/2	23 1/2	23 1/2
20"	3500	42 3/8	27 1/2	18 3/8	18 3/8	23 1/2	23 1/2
24"	5000	48 1/2	32	20	20	25 3/4	25 3/4
30"	11000	63 3/4	38 3/4	26	26	36	36

250 # FLANGES

SIZE	WT.	DIMENSIONS IN INCHES ±					
		A'	B'	C'	D'	E'	F'
8"	700	24 7/8	15	9 1/4	9 1/4	13	13
10"	900	26 1/4	17 1/2	10 3/8	10 5/8	14 3/4	14 3/4
12"	1380	31 1/2	20 1/2	11 3/4	11 3/4	17 3/4	17 3/4
14"	2350	35 1/2	23	14 1/8	14 1/8	20 1/2	20 1/2
16"	2550	39 1/4	25 1/2	15 1/2	15 1/2	22	22
18"	3500	43 1/4	28	18	18	24	24
20"	3800	43 3/8	30 1/2	18 1/8	18 1/8	24 1/2	24 1/2
24"	5490	50 1/2	36	20 3/4	20 3/4	26 1/2	26 1/2

ROSS VALVE MANUFACTURING CO.  
TROY, NEW YORK  
TITLE MODEL 50 RWR--RELIEF AND BACK PRESSURE REGULATING VALVE---SIZES 8" TO 30"  
SCALE NONE DATE 8-7-36  
MADE BY BS DRAWING NO 3605  
REVISED 1961



1108371



ATLANTIC DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
NORFOLK, VIRGINIA 23511

**APPROVED:**  
SUBJECT TO THE REQUIREMENTS OF  
CONTRACT NEY 88313 88313/67  
APPROVAL OF MATERIALS AND EQUIPMENT  
INDICATES COMPLIANCE WITH SPECIFICATION  
REQUIREMENTS AND THE CONTRACTOR  
SHALL BE RESPONSIBLE FOR PROVIDING  
PROPER PHYSICAL DIMENSIONS & WEIGHTS,  
COORDINATION OF TRADES, ETC. AS REQUIRED.

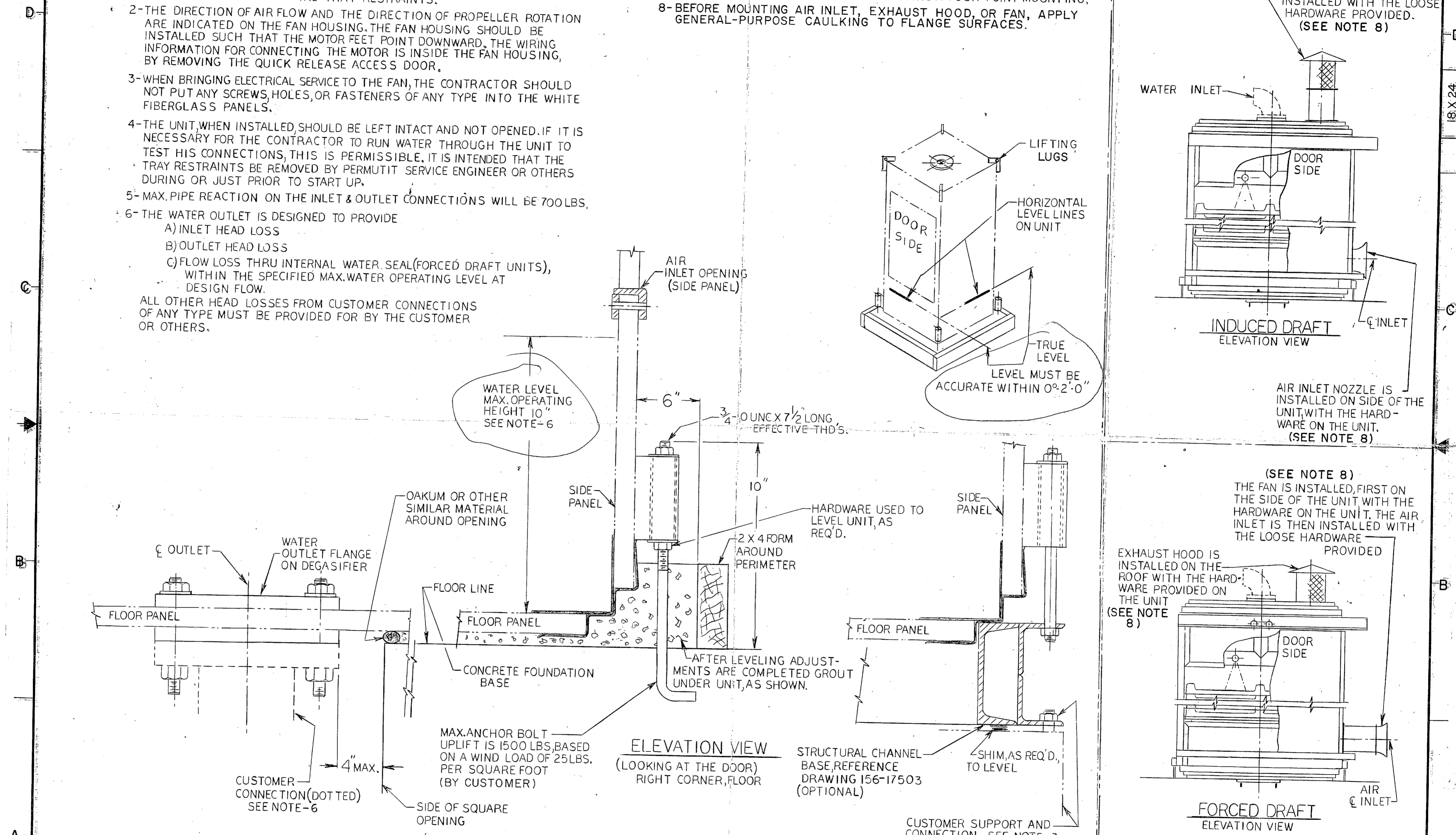
H. N. WALLIN  
RADM, CEC, USN *SN*  
DATE AUG 26 1968 COMLANAVFACENGCOM



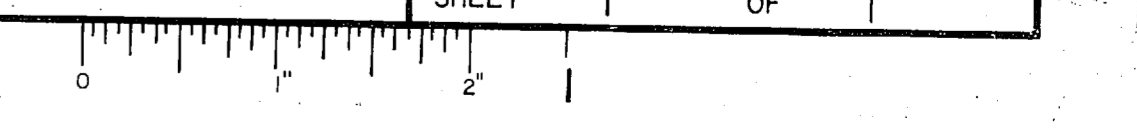
129-25357

**NOTES:**

- 1- THIS UNIT IS COMPLETELY ASSEMBLED, THE TRAYS BEING FACTORY INSTALLED & RESTRAINED. THE UNIT IS TO BE INSTALLED PER THIS DRAWING WITHOUT REMOVING THE DOOR OR THE TRAY RESTRAINTS.
- 2- THE DIRECTION OF AIR FLOW AND THE DIRECTION OF PROPELLER ROTATION ARE INDICATED ON THE FAN HOUSING. THE FAN HOUSING SHOULD BE INSTALLED SUCH THAT THE MOTOR FEET POINT DOWNWARD. THE WIRING INFORMATION FOR CONNECTING THE MOTOR IS INSIDE THE FAN HOUSING, BY REMOVING THE QUICK RELEASE ACCESS DOOR.
- 3- WHEN BRINGING ELECTRICAL SERVICE TO THE FAN, THE CONTRACTOR SHOULD NOT PUT ANY SCREWS, HOLES, OR FASTENERS OF ANY TYPE INTO THE WHITE FIBERGLASS PANELS.
- 4- THE UNIT, WHEN INSTALLED, SHOULD BE LEFT INTACT AND NOT OPENED. IF IT IS NECESSARY FOR THE CONTRACTOR TO RUN WATER THROUGH THE UNIT TO TEST HIS CONNECTIONS, THIS IS PERMISSIBLE. IT IS INTENDED THAT THE TRAY RESTRAINTS BE REMOVED BY PERMIT SERVICE ENGINEER OR OTHERS DURING OR JUST PRIOR TO START UP.
- 5- MAX. PIPE REACTION ON THE INLET & OUTLET CONNECTIONS WILL BE 700 LBS.
- 6- THE WATER OUTLET IS DESIGNED TO PROVIDE
  - A) INLET HEAD LOSS
  - B) OUTLET HEAD LOSS
  - C) FLOW LOSS THRU INTERNAL WATER SEAL (FORCED DRAFT UNITS), WITHIN THE SPECIFIED MAX. WATER OPERATING LEVEL AT DESIGN FLOW.
 ALL OTHER HEAD LOSSES FROM CUSTOMER CONNECTIONS OF ANY TYPE MUST BE PROVIDED FOR BY THE CUSTOMER OR OTHERS.
- 7- STRUCTURAL CHANNEL BASE (OPTIONAL) IS DESIGNED TO SUPPORT THE DEGASIFIER WHEN THE CUSTOMER IS USING A FOUR POINT MOUNTING.
- 8- BEFORE MOUNTING AIR INLET, EXHAUST HOOD, OR FAN, APPLY GENERAL-PURPOSE CAULKING TO FLANGE SURFACES.



<p><b>DO NOT SCALE THIS DRAWING USE DIMENSIONS ONLY</b></p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REV.</th> <th>BY</th> <th>DATE</th> <th>REVISIONS</th> </tr> </thead> <tbody> <tr> <td>-</td> <td>RH</td> <td>11-9-79</td> <td>ECN 3502-S</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	REV.	BY	DATE	REVISIONS	-	RH	11-9-79	ECN 3502-S													<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>DRAWN RHH</td> <td rowspan="2">INSTALLATION DRAWING FOR TRAY-TYPE DEGASIFIER</td> </tr> <tr> <td>CHECKED</td> </tr> <tr> <td>APPR'D</td> <td rowspan="3">DRAWING NO. 129-25357</td> </tr> <tr> <td>DATE 11-9-79</td> </tr> <tr> <td>SCALE NONE</td> </tr> </table>	DRAWN RHH	INSTALLATION DRAWING FOR TRAY-TYPE DEGASIFIER	CHECKED	APPR'D	DRAWING NO. 129-25357	DATE 11-9-79	SCALE NONE	<p><b>PERMUTIT®</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>DRAWING NO.</td> <td>REV.</td> </tr> <tr> <td>129-25357</td> <td>-</td> </tr> <tr> <td>SHEET</td> <td>OF</td> </tr> </table>	DRAWING NO.	REV.	129-25357	-	SHEET	OF
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SHEET	OF																																			















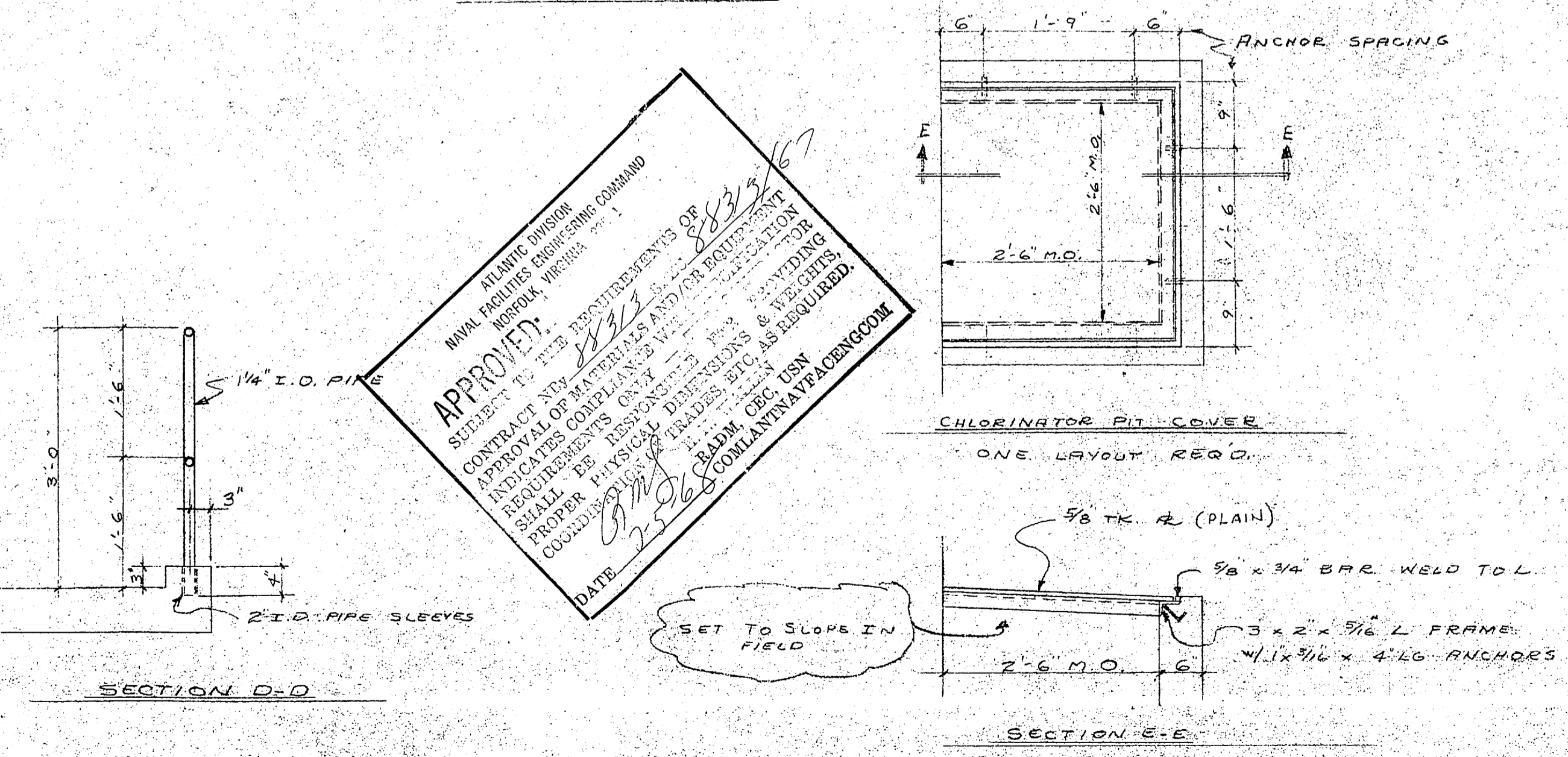
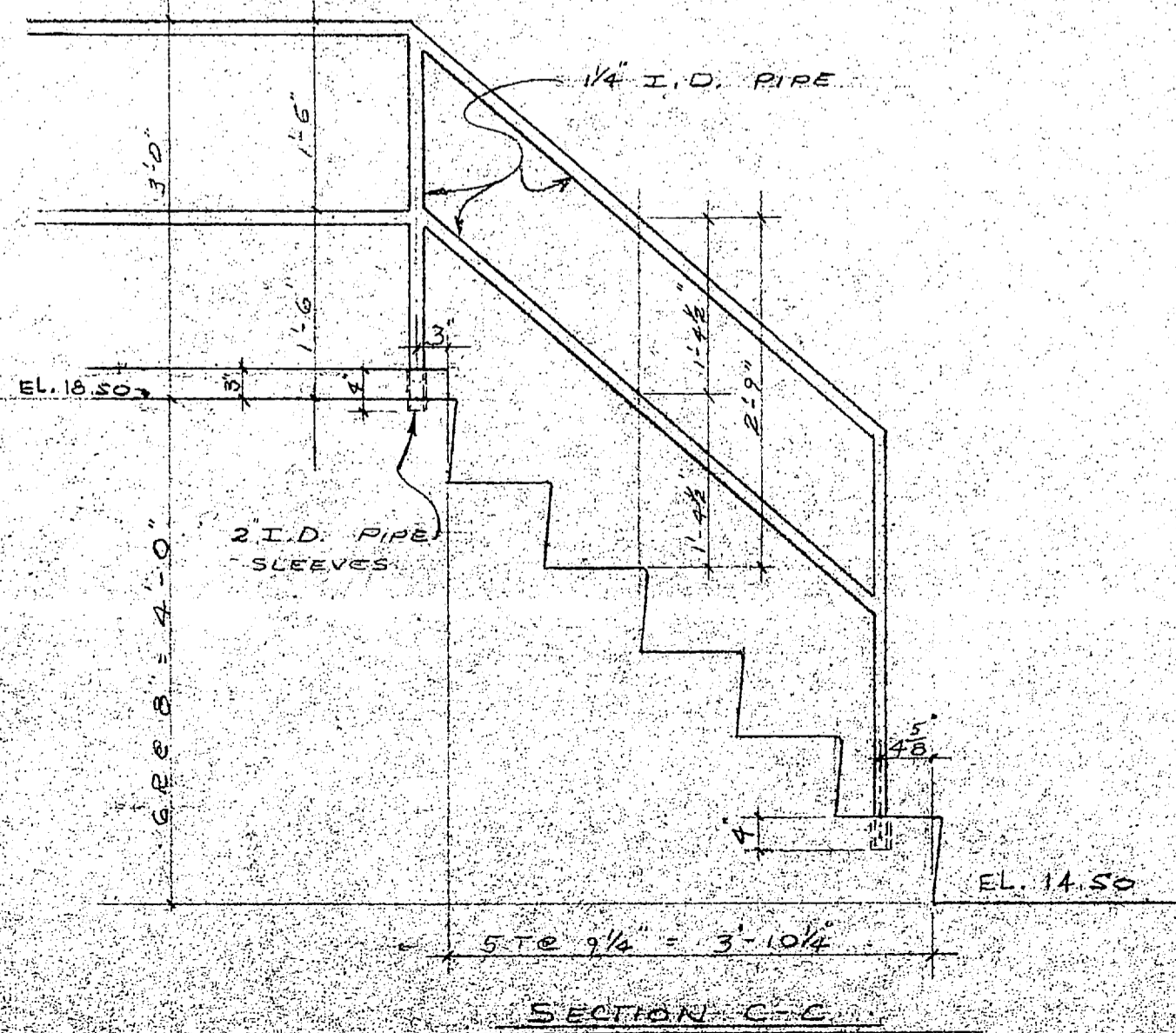
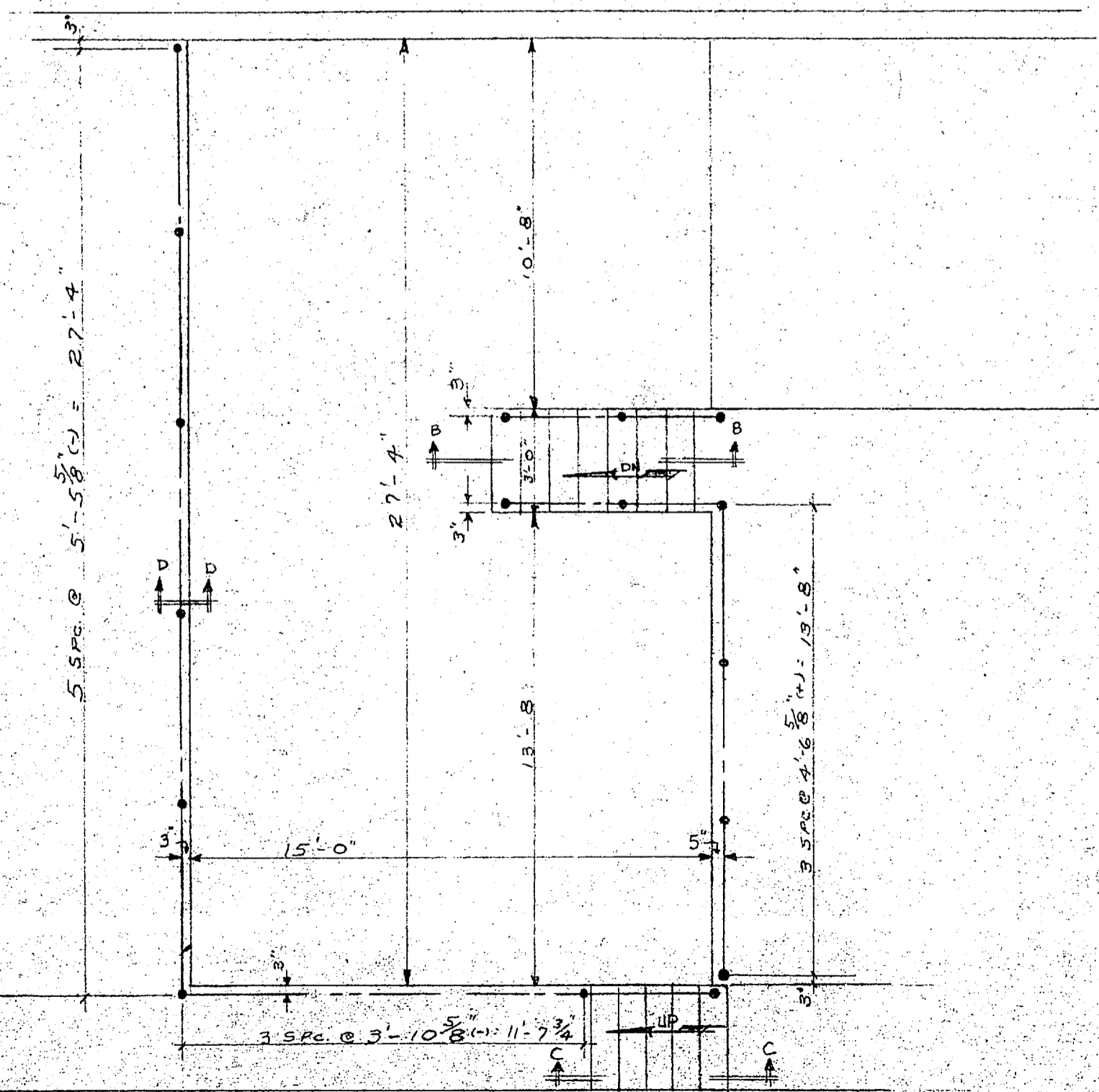
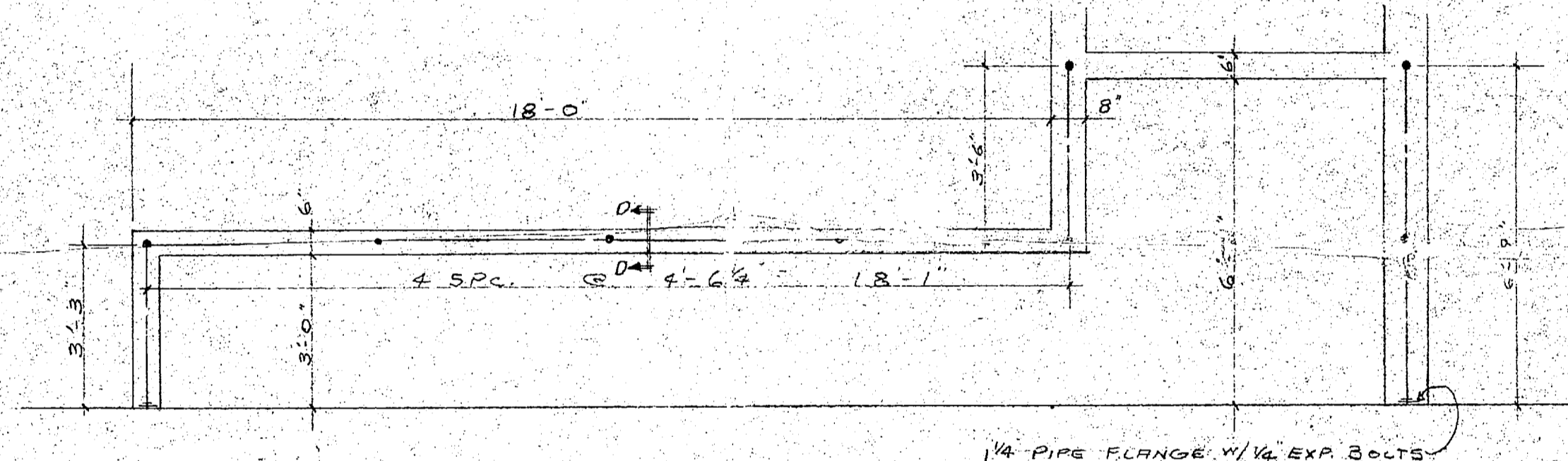
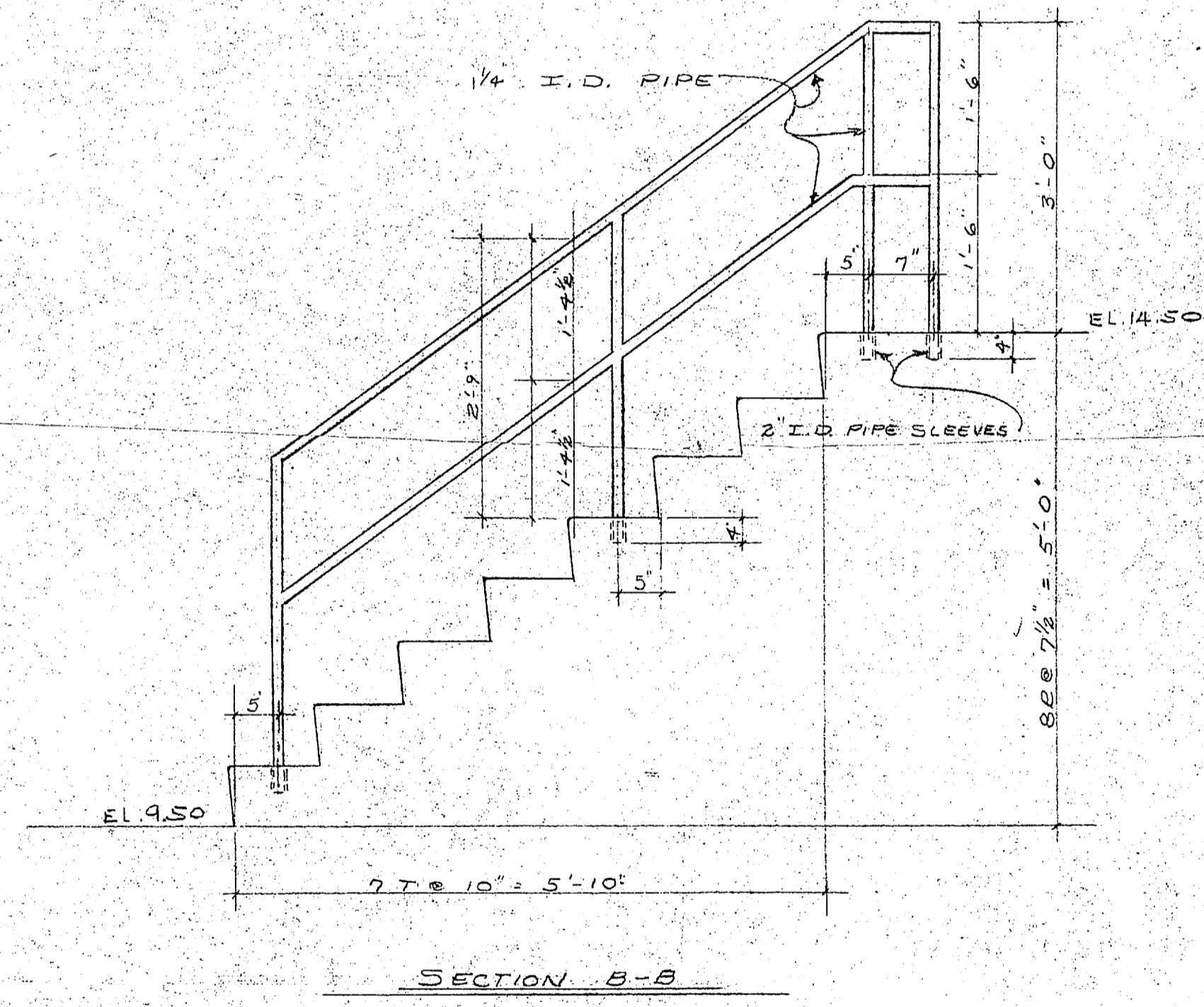
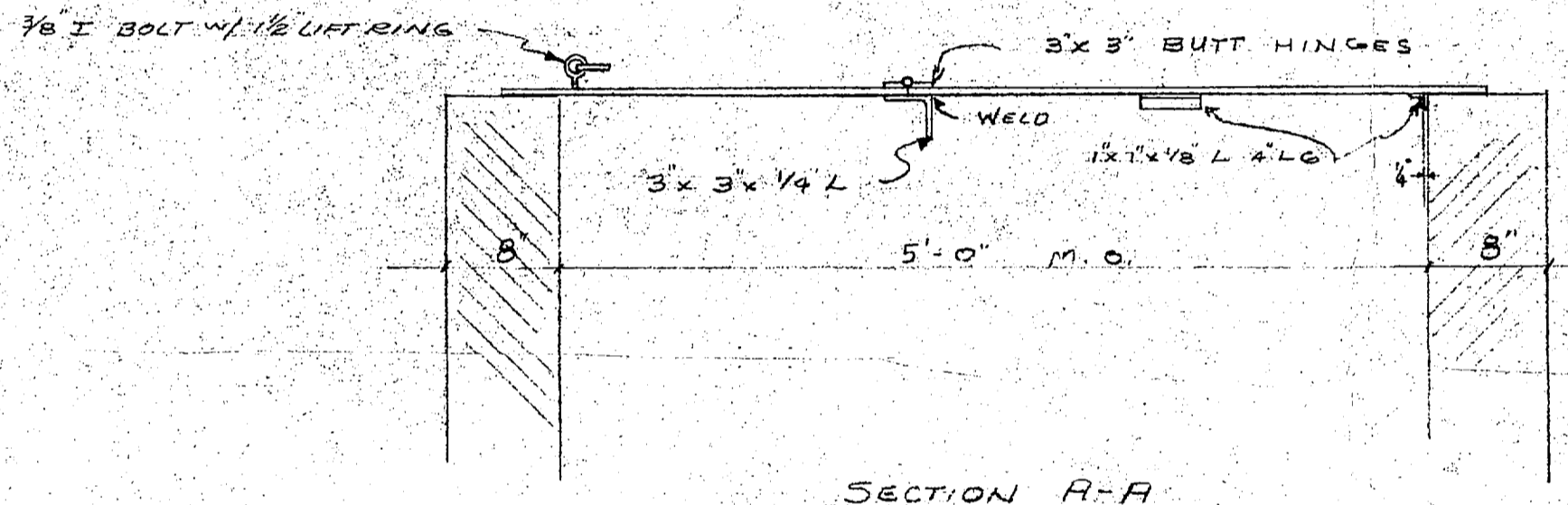
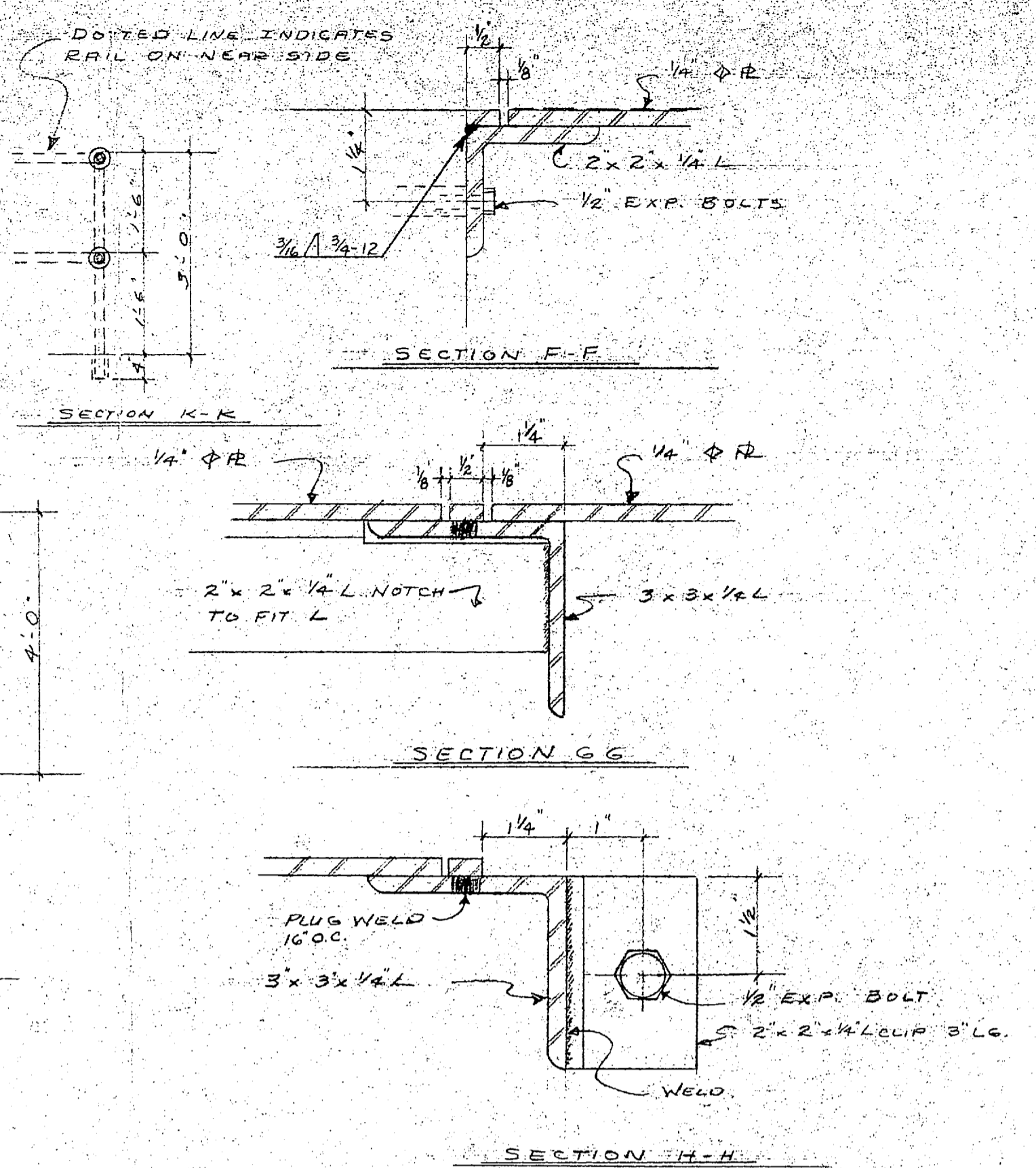
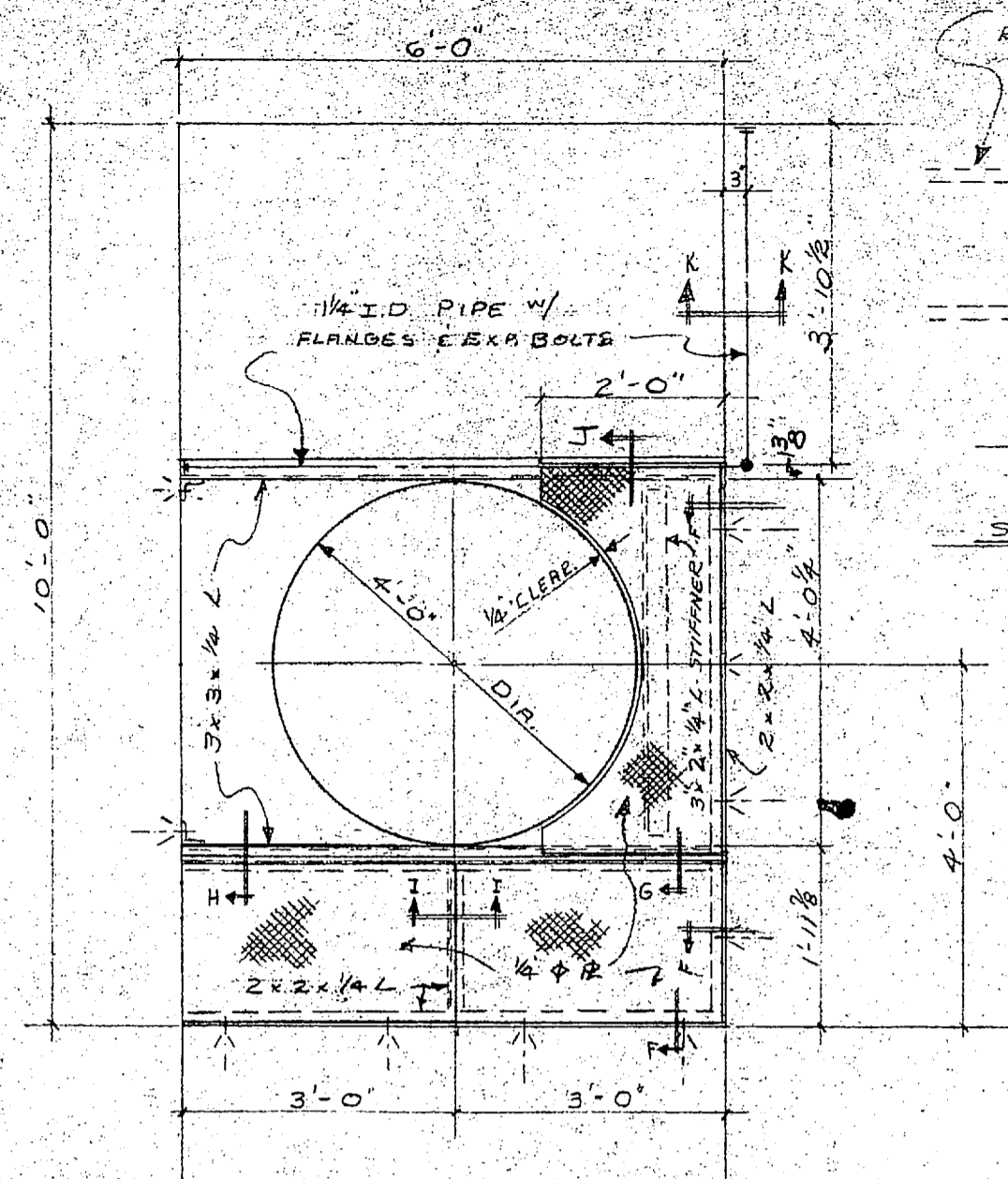
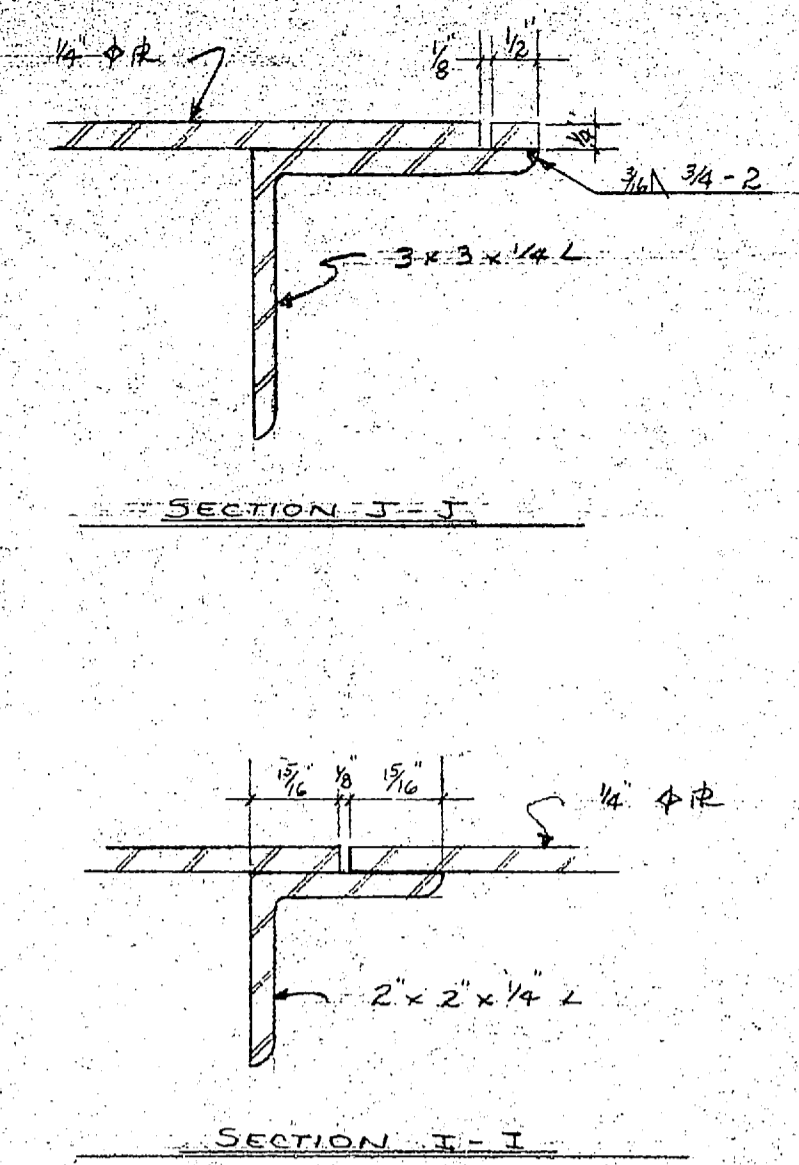
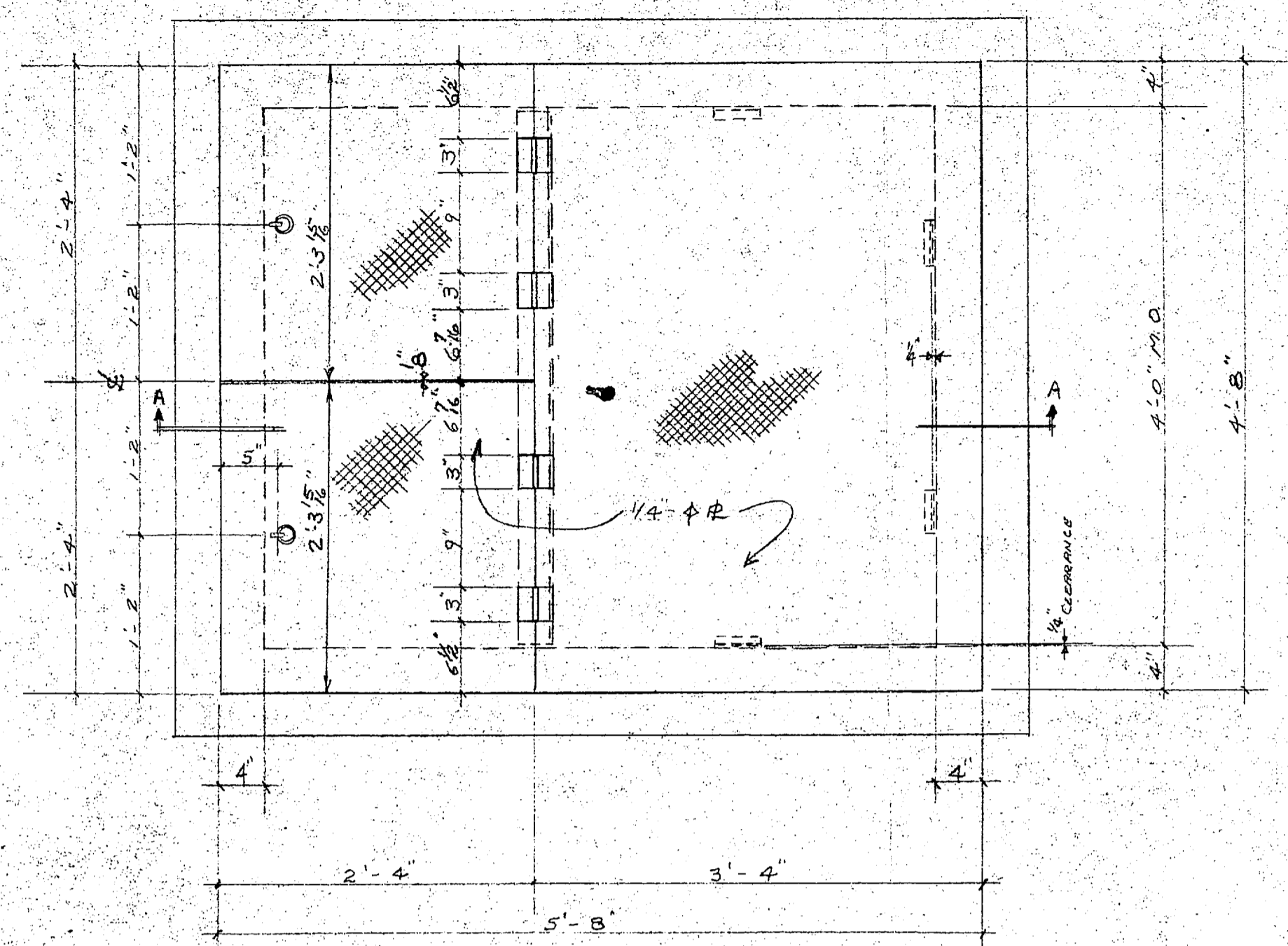












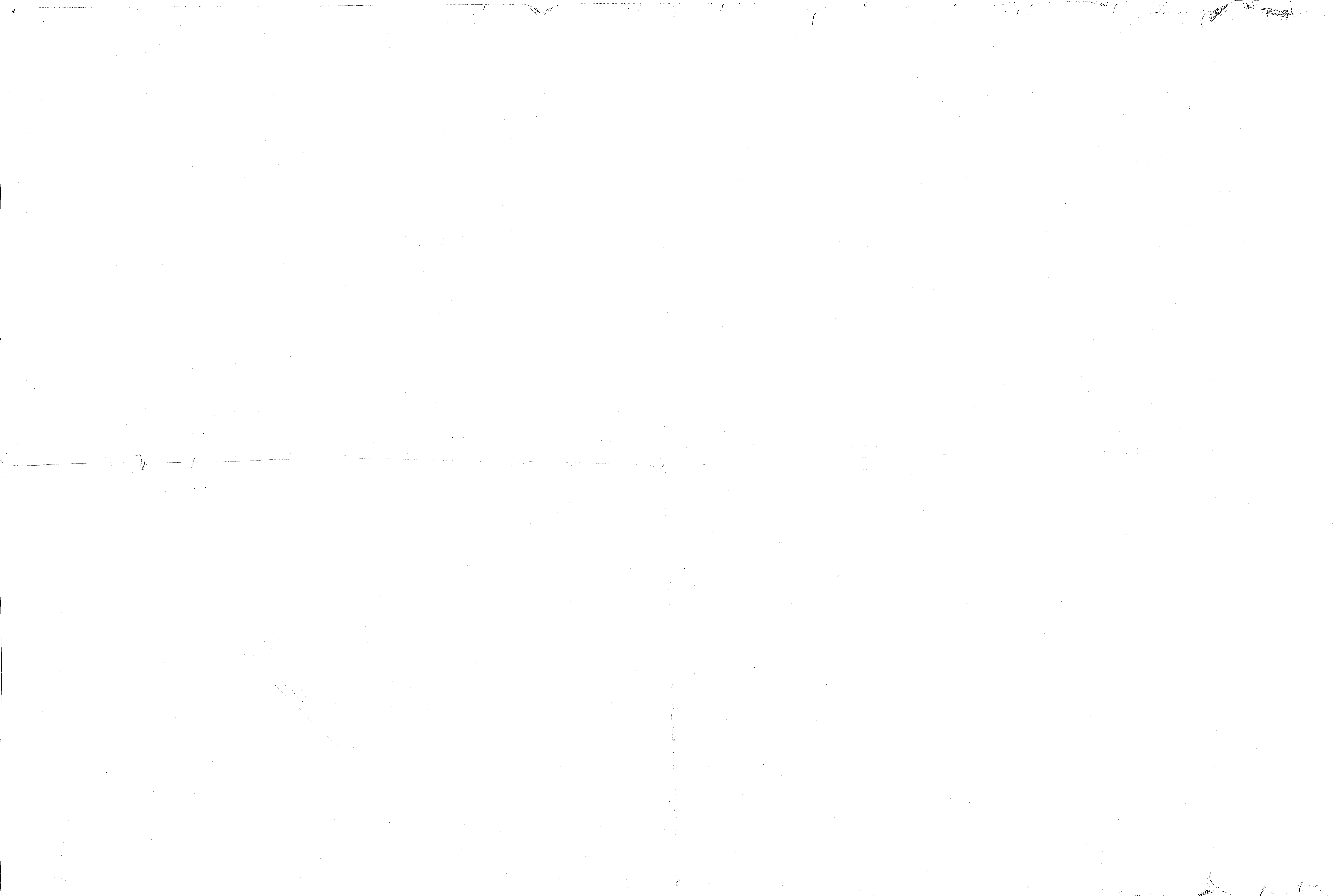
**APPROVED**  
 CIVIL ENGINEER  
 NORTOLAN ENGINEERING COMMAND  
 NORTOLAN, VIRGINIA  
 SUBJECT: THE REQUIREMENTS OF  
 CONTRACT NO. 2332  
 APPROVAL OF MATERIALS AND METHODS  
 INDICATES COMPLIANCE WITH THE SPECIFICATION  
 REQUIREMENTS ONLY  
 SMALLER PHYSICAL DIMENSIONS AND TIGHTER  
 TOLERANCES MAY BE NECESSARY FOR  
 PROPER PHYSICAL DIMENSIONS & TIGHTER  
 TOLERANCES. SEE DRAWING FOR  
 COMPLIANCE REQUIREMENTS.  
 DATE: 2/28/68  
 COMPLIANCE/FAUCIGNO

PAINT NOTE:  
 ALL STEEL EXCEPT H.I.D.G. SHALL BE  
 PRETREATED IN ACCORDANCE WITH  
 SPEC. MIL-P-15328

NO.	DATE	DESCRIPTION

<b>DEBBAM-HUGHES CORPORATION</b>		PROJECT: WATER TREATMENT PLANT	
ARCHITECTURAL METALS - P. O. BOX 9073 GREENSBORO, N. C.		CAMP LEJUNE, N. C.	
ERECTOR: BY OTHERS		CONTRACTOR: BROWN CONST. CO. CONCORD, N. C.	
PAINT: RED LEAD		ARCHITECT: BUREAU OF YARDS & DOCKS	
SPECIAL INSTRUCTIONS		MADE BY: [Signature] DATE: 6-7-68 JOB NO. SHEET NO.	
DETAILS OF		MISC. METALS 4173 1	



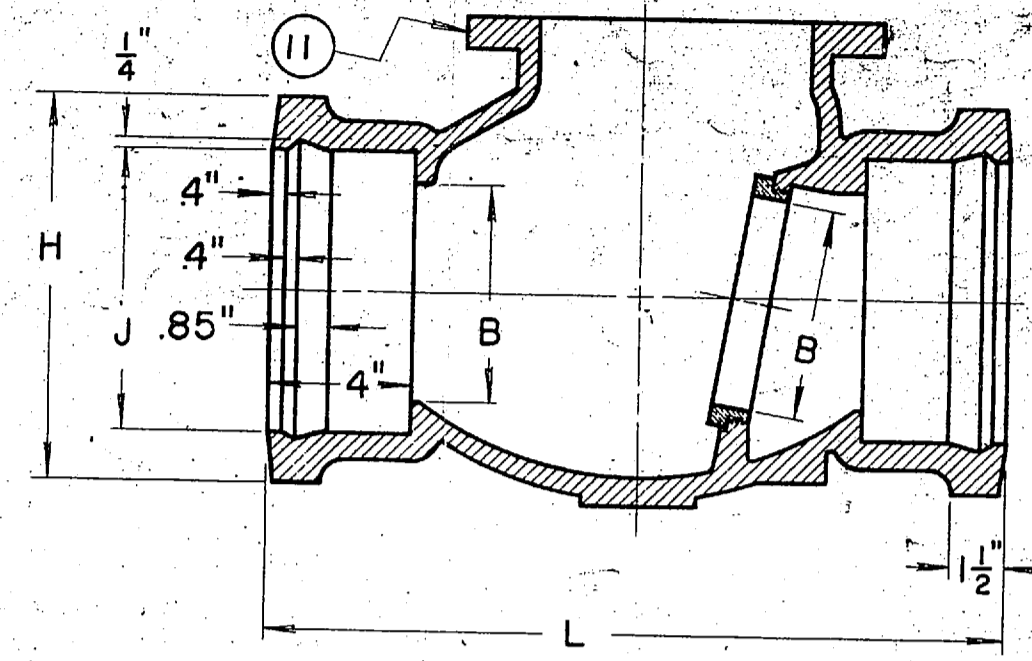
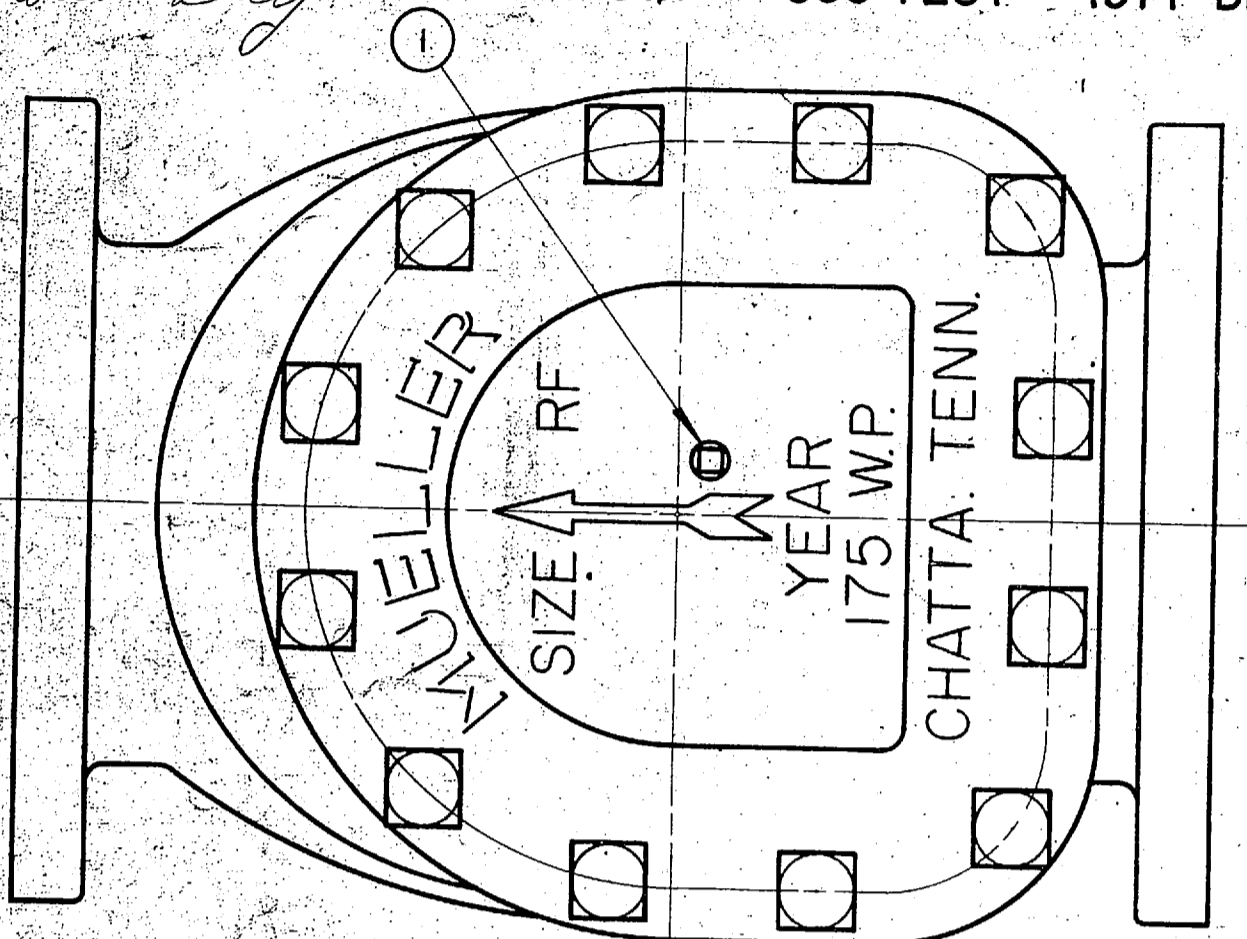




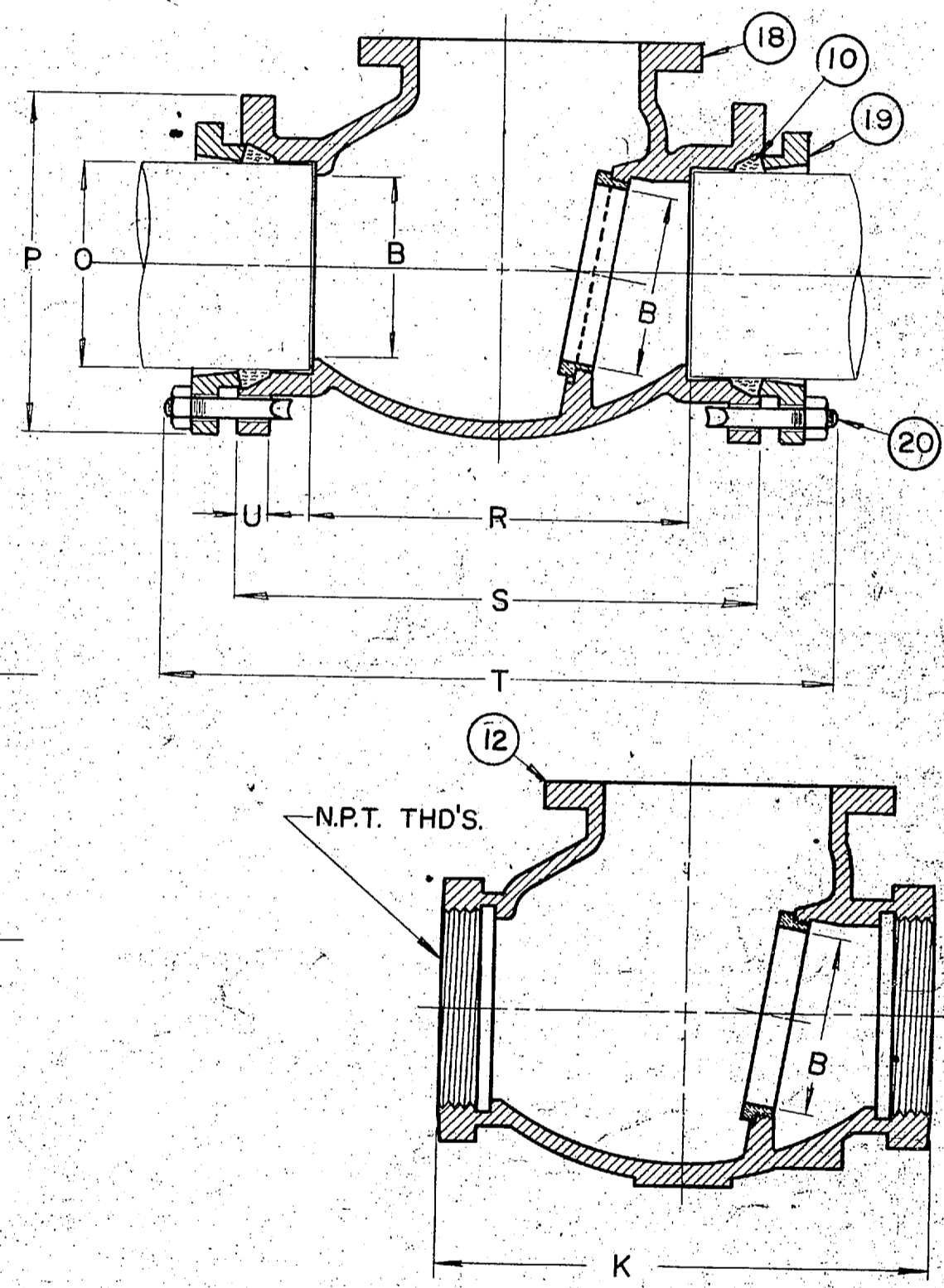
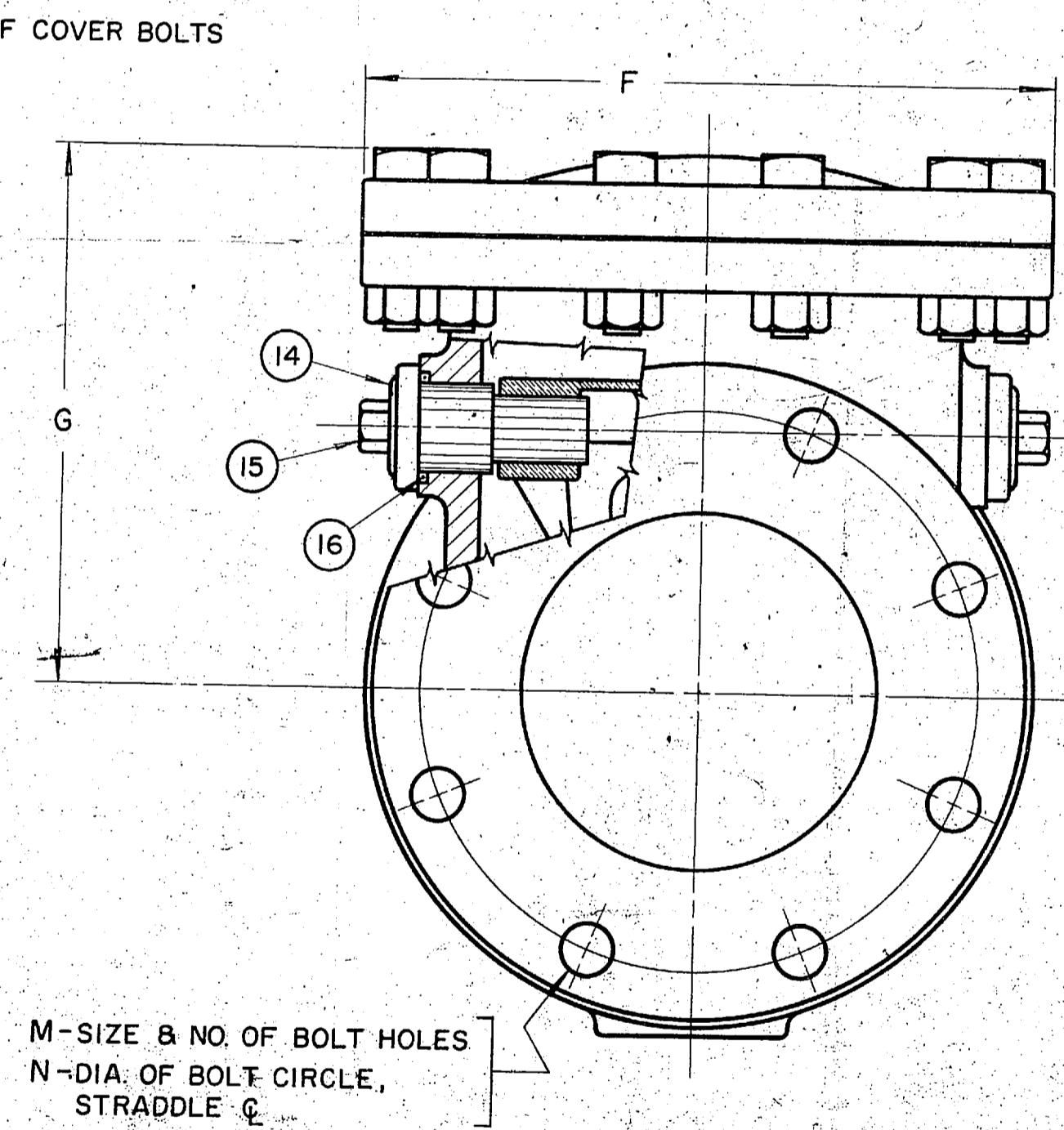
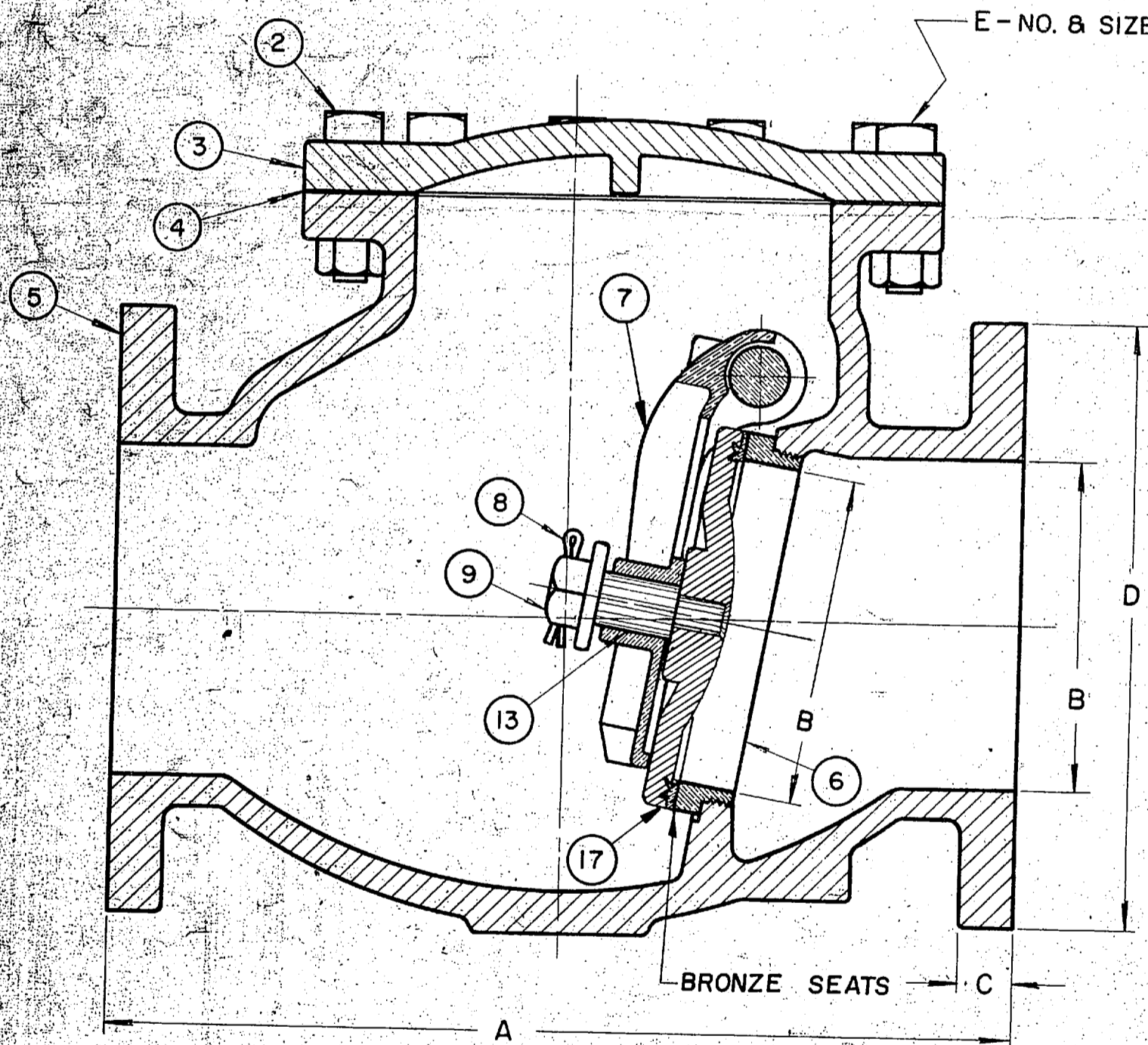
B-2458

4"-12" A-2600-6 CHECK VALVE - FLANGE ENDS — METAL SEAT — GRAVITY OPERATED  
 4"-12" A-2600-5 " " — HUB ENDS " " " " " "  
 4"-8" A-2600-8 " " — SCREW ENDS " " " " " "  
 4"-12" A-2600-20 " " — MECH JOINT ENDS " " " " " "  
 175WP — 350 TEST 1971 DESIGN

*New Wells  
 Courthouse Bay*



PARTS LIST				
ITEM	DESCRIPTION	REQ'D	MATERIAL	ASTM
1	TEST PLUG	1	STEEL	PLATED
2	COVER BOLT	E	STEEL	ASA B18.2 PLATED
3	COVER	1	CAST IRON	A126 CL. B
4	COVER GASKET	1	RUBBER	CLOTH INSERTED
5	BODY - FLANGE ENDS	1	CAST IRON	A126 CL. B
6	SEAT RING	1	BRONZE	B62
7	CLAPPER ARM	1	BRONZE	B62
8	COTTER PIN	1	BRASS	
9	STUD NUT	1	BRONZE	
10	GASKET	2	RUBBER	
11	BODY - HUB ENDS	1	CAST IRON	A126 CL. B
12	BODY - SCREW ENDS	1	CAST IRON	A126 CL. B
13	DISC STUD	1	BRONZE	B21 ALLOY A 1/2 HARD
14	HINGE PLUG & PIN	2	BRONZE	B62
15	CAP SCREW	4	STEEL	ASA B18.2 PLATED
16	O-RING SEAL	2	RUBBER	BUNA N
17	DISC W/BR. DISC RINGS	1	CAST IRON	A126 CL. B
18	BODY - MECH. JOINT ENDS	1	CAST IRON	A126 CL. B
19	PIPE GLAND	2	CAST IRON	A126 CL. B
20	BOLT & NUT	W	IRON	FED. WW-P-421A



VALVE SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	R	S	T	U	W
4	12 7/8	4	15/16	9	12 - 1/2	9	7 1/4	8.3	5.7	12 7/8	18	3/4 - 8	7 1/2	4.80	9 1/8	10	15	20	1	8
5	14 1/8	5	15/16	10	10 - 5/8	10 1/4	8 1/4	9.46	6.76	14 1/8	18 1/4	7/8 - 8	8 1/2							
6	16 1/2	6	1	11	12 - 5/8	11 1/16	9	10.6	7.8	16 1/2	20 1/2	7/8 - 8	9 1/2	6.80	11 5/16	12 1/2	17 1/2	22 3/8	1 1/16	12
8	19 1/2	8	1 1/8	13 1/2	14 - 5/8	14	10 1/2	13.0	10.0	19 1/2	22 3/4	7/8 - 8	11 3/4	9.05	13 5/8	15	20	25 3/8	1 3/16	12
10	21 1/2	10	1 3/16	16	14 - 3/4	17	12 3/4	15.3	12.1	25 1/2	1 - 12	14 1/4	11.10	15 13/16	17 3/4	22 3/8	28 3/8	1 3/16	16	
12	24 1/8	12	1 1/4	19	16 - 3/4	19 1/8	14 3/4	17.6	14.2	27 1/2	1 - 12	17	13.20	18 1/16	20 1/2	25 1/2	31	1 1/4	16	

REPLACES DWG. 6237 BY ELLIS 2-2-66 & DWG. 5934 BY GPL 2-12-69

DR BY: W.F.G. 8-28-69  
 CH: C.G.M. 1-27-70  
 ENGR: R.L.R. 1-27-70

SCALE: 3/8" = 1"

**MUELLER CO.**  
 CHATTANOOGA, TENN.

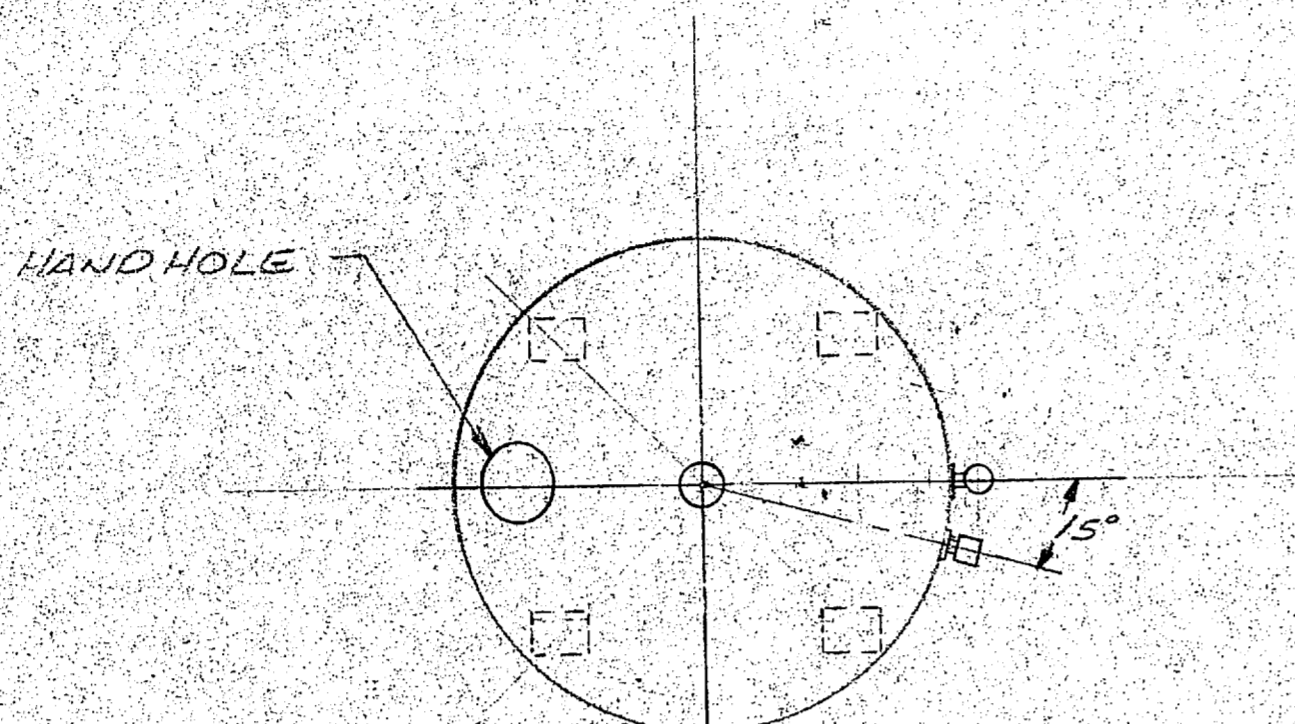
4"-12" A-2600-6 CHECK VALVE - FLANGE ENDS  
 METAL SEAT

NO. B-2458

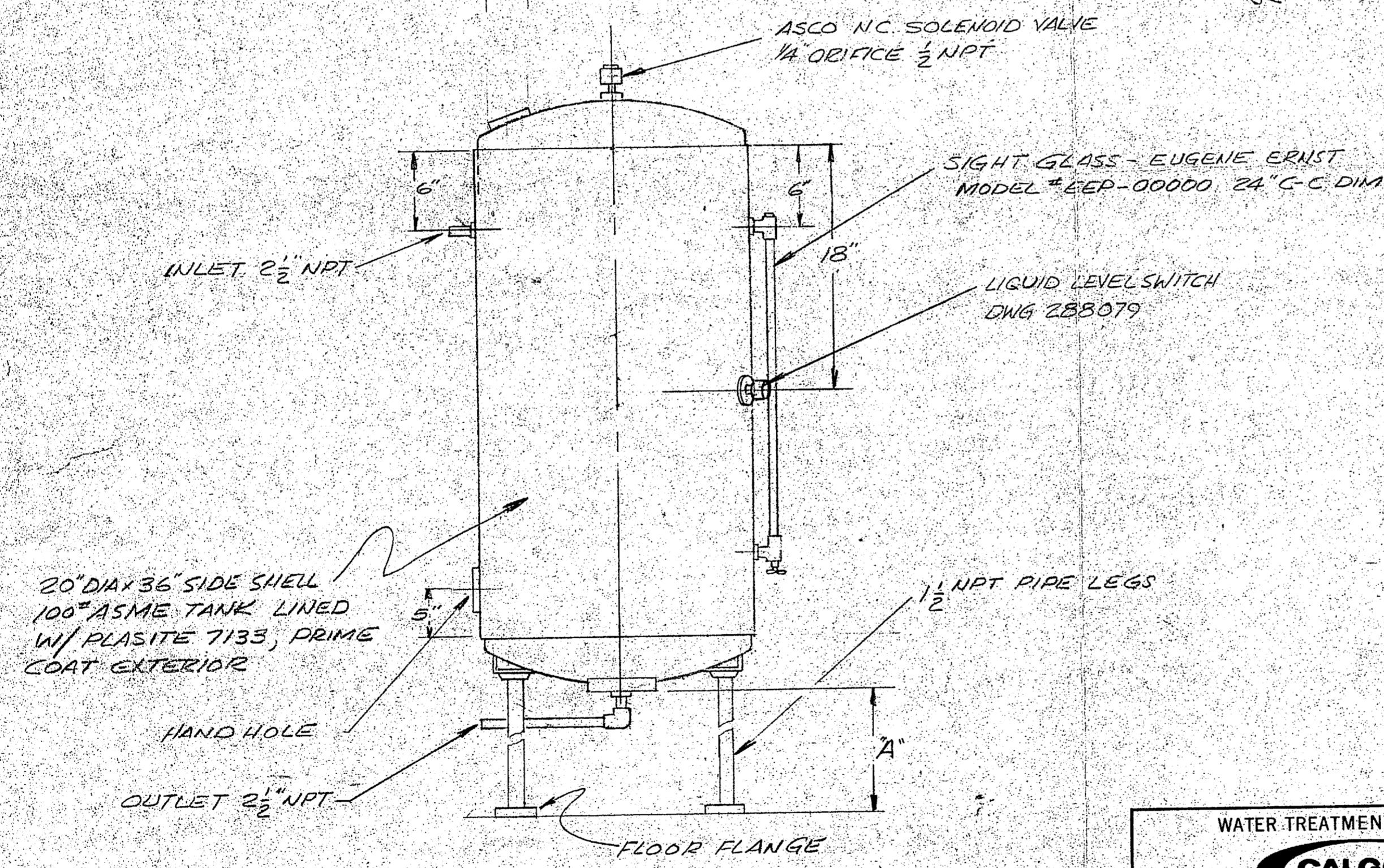
Title to and ownership of this engineering data remains in Mueller Co. No use is to be made thereof except as specifically authorized by Mueller Co., which assumes no responsibility for any unauthorized use. Assent to these conditions is presumed by Mueller Co., if this engineering data is accepted.

JUN 2 0 1974





BA-136



OT (8-66) ATLANTIC DIVISION  
 NAVAL FACILITIES ENGINEERING COMMAND  
 NORFOLK, VIRGINIA 23511

**APPROVED:**  
 SUBJECT TO THE REQUIREMENTS OF  
 CONTRACT **NC2A70-76-C-6049**  
 APPROVAL OF MATERIALS AND/OR EQUIPMENT  
 INDICATES COMPLIANCE WITH SPECIFICATION  
 REQUIREMENTS ONLY — THE CONTRACTOR  
 SHALL BE RESPONSIBLE FOR PROVIDING  
 PROPER PHYSICAL DIMENSIONS & WEIGHTS,  
 COORDINATION OF TRADES, ETC., AS REQUIRED.  
 A. W. WALTON, JR.  
 RADM, CEC, USN

Date **JUL 12 1976** COMLANNAVFACENGCOM

---

Henry von Oesen and Associates  
 Consulting Engineers  
 611 Princess Street  
 Wilmington, North Carolina

Checked by *[Signature]* Date **JUL 12 1976**

**APPROVED**  
 ELECO, INC.  
 BY CHG  
 DATE 6/30/76

"A" DIM. TO BE PROVIDED BY CONTRACTOR

BRUNING 40-534 27450

3							
2							
1							
NO.	DATE	BY	CHKD.	CHKD.	APPR.	REVISIONS	

**WATER TREATMENT EQUIPMENT**

**CALGON**  
CORPORATION

SUBSIDIARY OF MERCK & CO., INC.  
 P.O. BOX 1346      PITTSBURGH, PA. 15230

THIS DRAWING AND DESIGN IS THE PROPERTY OF CALGON CORPORATION AND IS NOT TO BE REPRODUCED IN WHOLE OR PART, NOR EMPLOYED FOR ANY PURPOSE OTHER THAN SPECIFICALLY PERMITTED IN WRITING BY CALGON CORPORATION (A SUBSIDIARY OF MERCK & CO., INC.). THIS DRAWING LOANED SUBJECT TO RETURN ON DEMAND.

ENGINEER			
TITLE	CAMP LEJEUNE WATER PLANT #BA-136 CAMP LEJEUNE, N.C. PRESSURE AERATOR		
DRAWN	CHECKED	CHECKED	APPROVED
<i>[Signature]</i>		<i>[Signature]</i>	<i>[Signature]</i>
PROJECT	DRAWING NO.	SCALE	REV.
	CX-777		

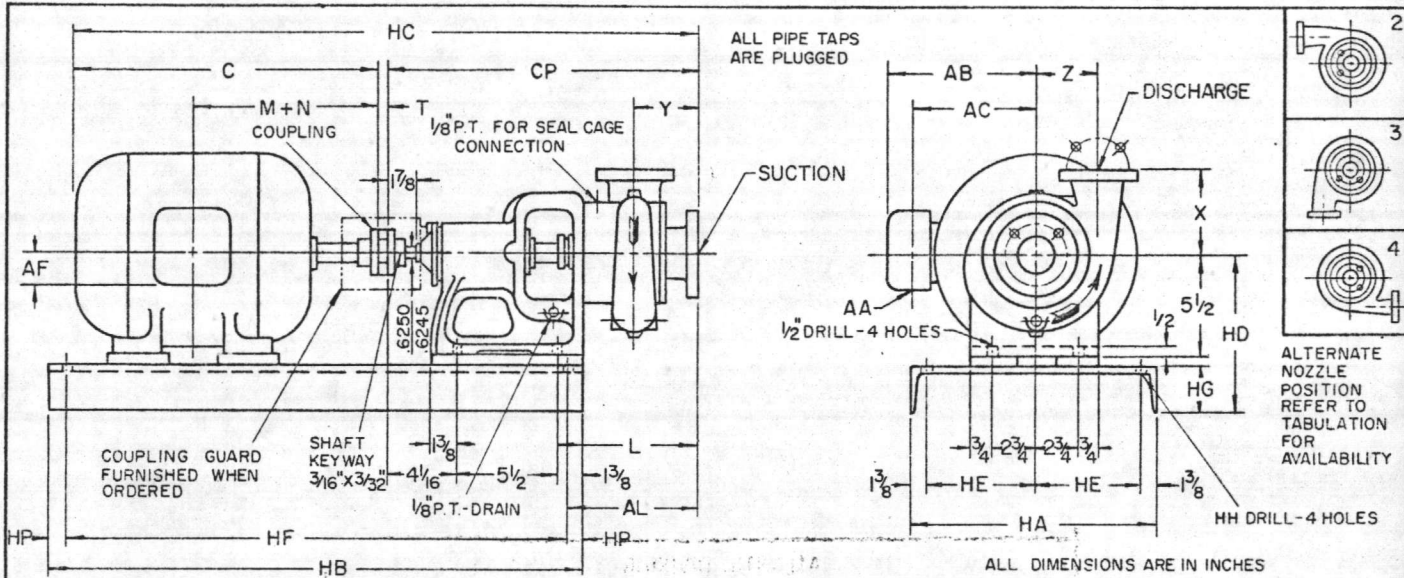
DIVISION OF  
RECORDS MANAGEMENT  
MAY 19 1968





TYPES CNG-CNGE  
GROUP I  
VOLUTE PUMPS

PAVT. 253-68-22-20068  
Proposal Number or District Office Number  
ITEM NO. 4 BRINE PUMP Date  
ORDER No. 877-1  
Customer Name and Reference

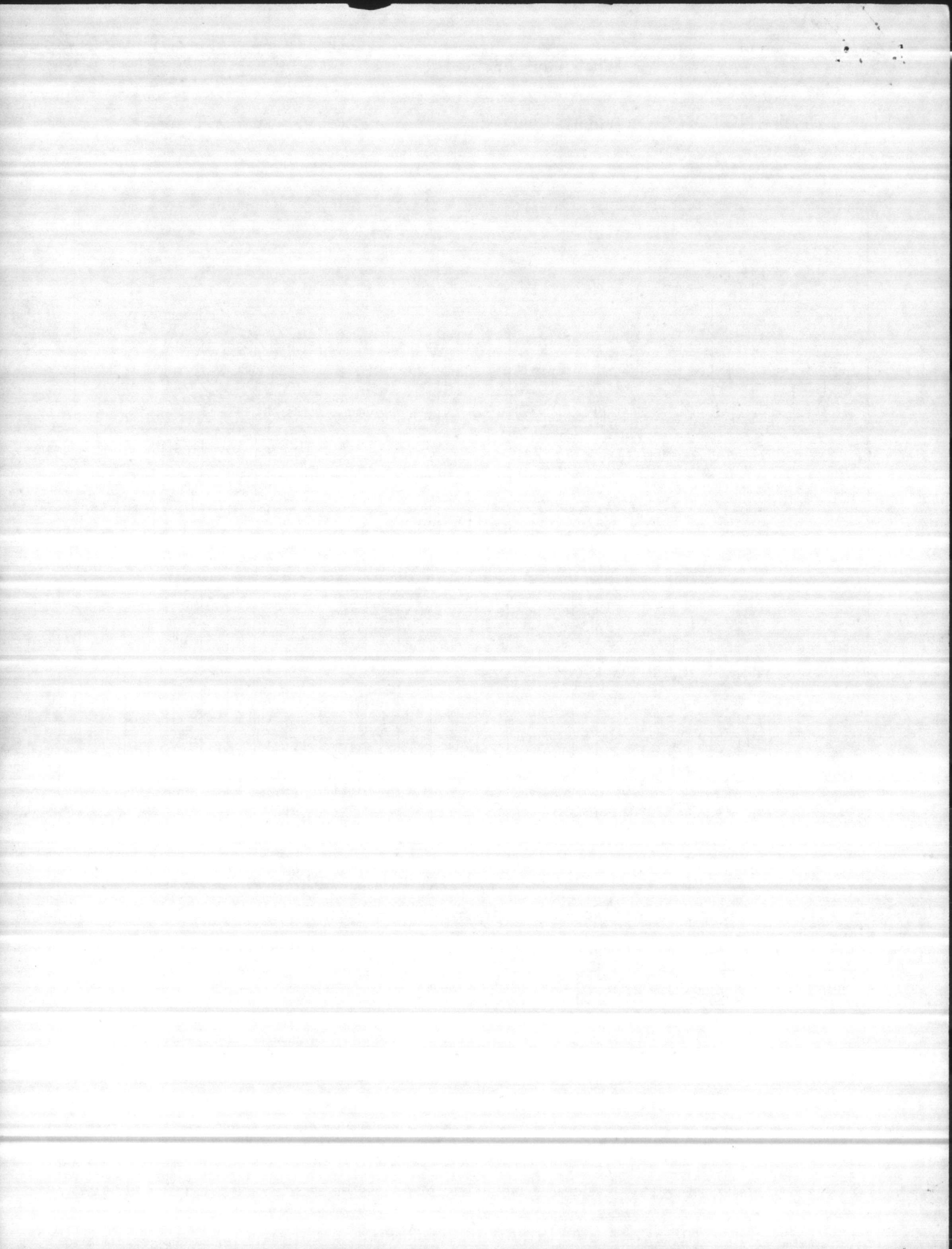


PUMP DIMENSIONS											BASE & MOTOR DIMENSIONS																	
PUMP SIZE	ISO# F.F.F.LG.		AL	CP	L	X	Y	Z	NOZ POS.	DRAIN POS.	NET WT.	OLD NEMA			NEW NEMA			HA	HB	HD	HE	HF	HG	HP	HH	APPR. WT. BASE	MOT	
	SUCT	DISCH										FRAME	M+N	CPLG	FRAME	M+N	CPLG											
3/4 CNGE-42	1	3/4	5 5/8	15 3/16	6 1/4	4 1/2	3	3	2-4		59	48	5 3/8	L-070														30
1 CNG -32	1/2	1	6 1/8	16 5/16	6 3/4	3 3/4	3 3/8	2 7/8	2-4		56	6 1/8	T=1/2															55
1 CNG -42	1/2	1	5 3/4	15 5/16	6 3/8	4 1/4	3 3/8	3 1/4	2-4		61	6 6	7 7/8	L-070														55
1 CNG -52	1/2	1	5 7/8	16 1/16	6 1/2	4 1/2	3 1/4	3 3/4	2-4		66	143	6 1/4	L-090	143T	6 1/2	L-090											30
1 CNG -64	1/2	1	5 1/2	15 1/16	6 1/8	5 1/4	2 7/8	4 1/4	2		72	145	6 3/4	T=1/2	145T	7	T=1/2											34
												182	7 1/4	L-095	182T	7 3/4	L-099											63
												184	7 3/4	T=1/2	184T	8 1/4	T=3/4											70
												213	9 1/4	L-099	213T	9 5/8	L-100		12	29	8 7/16	4 5/8	27 1/2	2 5/16	3/4	5/8	50	120
												215	10	L-100	215T	10 3/8	L-110											135
												254U	12 1/8	L-110	254T	12 3/8	L-150		15	32	9 5/8	6 1/8	30	3 3/8	1	3/4	90	180
												256U	13	T=7/8	256T	13 1/4	T=1		15	37	9 5/8	6 1/8	35	3 3/8	1	3/4	107	213

\* 3/4" DISCHARGE FLANGE HAS 1" STD. FLG. DIA. & DRILLING.

HC	C	AA	AB	AC	AF
26 7/8"	10 5/16"				

MOTOR DATA TYPE T FRAME M 56 H.P. 3/4  
R.P.M. 1750 PHASE 3 CYCLES 60 VOLTS 120  
CERTIFIED BY [Signature] DATE 5/14/68 OUR SHOP ORDER 4-397377  
THIS PRINT IS LOANED SUBJECT TO RETURN ON DEMAND AND UNDER CONDITION THAT IT IS NOT TO BE USED IN ANY WAY DETRIMENTAL TO OUR INTEREST. DO NOT SCALE, ADDITIONAL DIMENSIONS WILL BE FURNISHED ON REQUEST. THIS PRINT IS FOR PRELIMINARY USE UNLESS ABOVE SPACES ARE FILLED. DIMENSIONS ARE FROM DRAWINGS, CASTINGS MAY VARY SLIGHTLY. FOUNDATION BOLTS MUST NOT BE FIXED RIGIDLY UNTIL MACHINE IS IN PLACE.







# MILTON Roy COMPANY

1300 E. MERMAID LANE, CHESTNUT HILL  
MONTGOMERY CO., PHILA. 18, PA.



CERTIFIED PRINT

CUSTOMERS ORDER NO. AND DATE  
68-347

DATE WRITTEN  
5/28/68 jl

OUR JOB NO.  
87252(2)

SHIP TO  
Brown Construction Co.  
c/o Water Treatment Plant  
Courthouse Bay  
Camp Lejeune, North Carolina

SOLD TO  
Brown and Morrison  
1900 E. 7th Street  
Charlotte, North Carolina 28204

TERMS—NET 30 DAYS.  
F. O. B. F/A

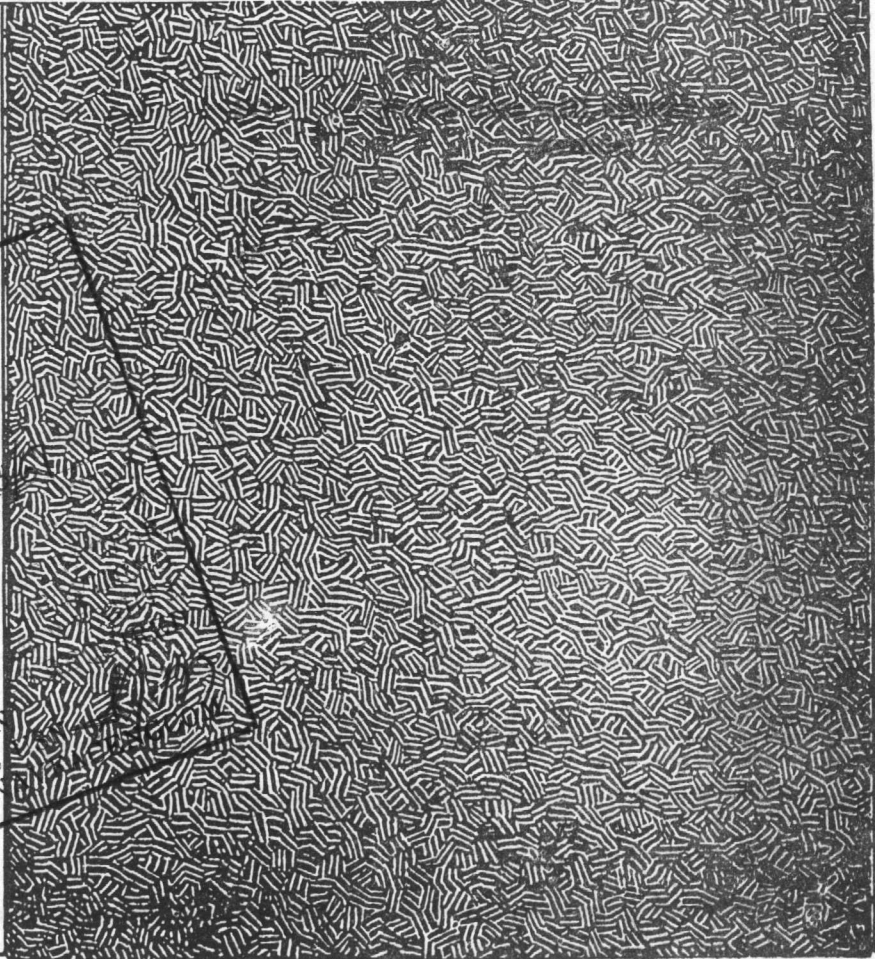
YOUR REPRESENTATIVE IS:  
815 - Brown and Morrison

MARK:  
Order 878-4 Lime Slurry System

VIA  
Motor Freight - Prepaid

WE WILL SHIP  
8 weeks after p/a

ITEM	QUANT.	Pg 2 of 2 DESCRIPTION
B	1	500 gallon hot rolled steel standard tank and lid
B-1	1	Cast iron gage glass ass'y. Certified Drawing: 8712
B-2	1	Freight



ATLANTIC DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
NORFOLK, VIRGINIA 23511

APPROVED:

SUBJECT: 88313

CONFIDENTIAL

PLEASE REFER ALL  
CORRESPONDENCE TO  
COORDINATION OF TRADES, ETC.  
H.N. WALLIN  
RADM, CEC,  
COMLANTN

JUL 25 1968

DATE

OF  
88313

WE HEREBY CERTIFY THAT THIS PRINT IS CORRECT ACCORDING TO DIMENSIONS FOR PUMP OR ACCESSORIES DESCRIBED ABOVE AND APPLYING HERETO AND AS IDENTIFIED BY PURCHASE ORDER NUMBER AND MILTON ROY PUMP SERIAL NUMBER INDICATED ABOVE. CORRESPONDENCE REFERRING TO THIS EQUIPMENT SHOULD INCLUDE ORDER NUMBER AND PUMP SERIAL NUMBER FOR PROMPT IDENTIFICATION AND REPLY.

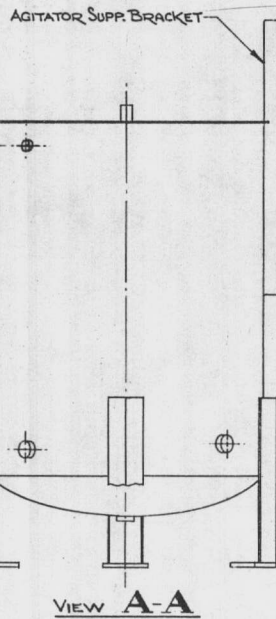
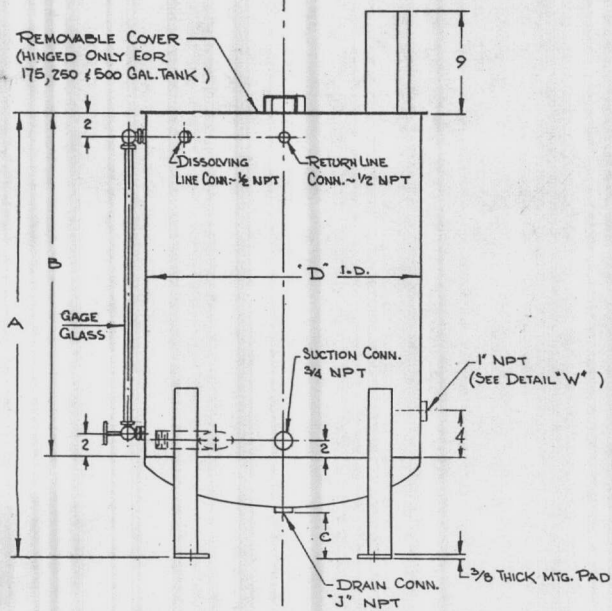
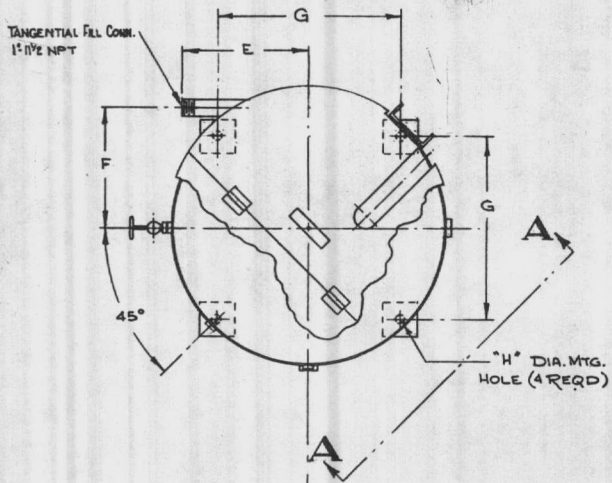
SINCERELY

*John P. Deyan*  
MILTON ROY COMPANY

1108371

ATLANTIC DIVISION  
U.S. DEPARTMENT OF JUSTICE  
APPROVED FOR  
JUL 2 1958

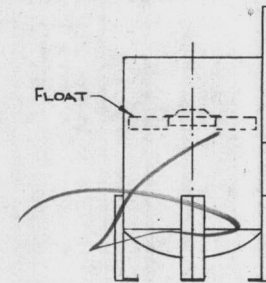
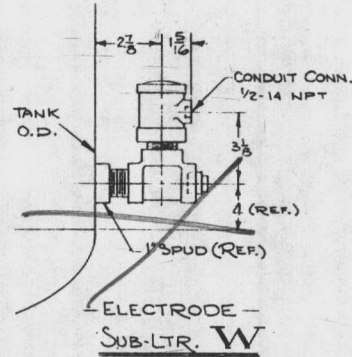




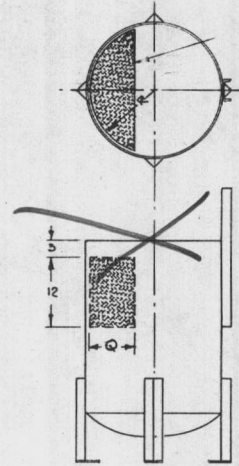
TANK ASSEMBLY 2712 (INCLUDES COVER)  
NOTE: FOR S.STL. TANK SEE DWG. 2713

CAPY. GAL.	A	B	C	D	E	F	G	H	J	SIDES THICK	BOTTOM THICK	COVER THICK
50	38 1/4	30	4	24	11	10 1/2	16	5/8	3/4	12 GA.	9 GA.	12 GA.
100	47 1/8	38	4	30	13	14 1/8	20	5/8	3/4	11 GA.	3/16	12 GA.
175	57 1/4	44	6	36	11 1/2	17	25	7/8	1	3/16	3/16	12 GA.
250	75 1/4	62	6	36	11 1/2	17	25	7/8	1	3/16	3/16	12 GA.
500	85	70	6	48	14	23	34	1	1	3/16	1/4	12 GA.

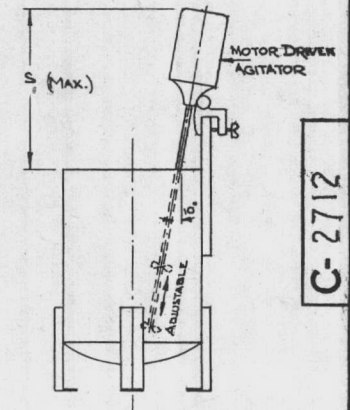
ACCESSORY GROUP (SUPPLIED AS SPECIFIED ON ORDER)



-FLOAT- (NOT TO BE USED WITH AGITATOR)  
SUB-LTR. X



-BASKET-  
SUB-LTR. Y

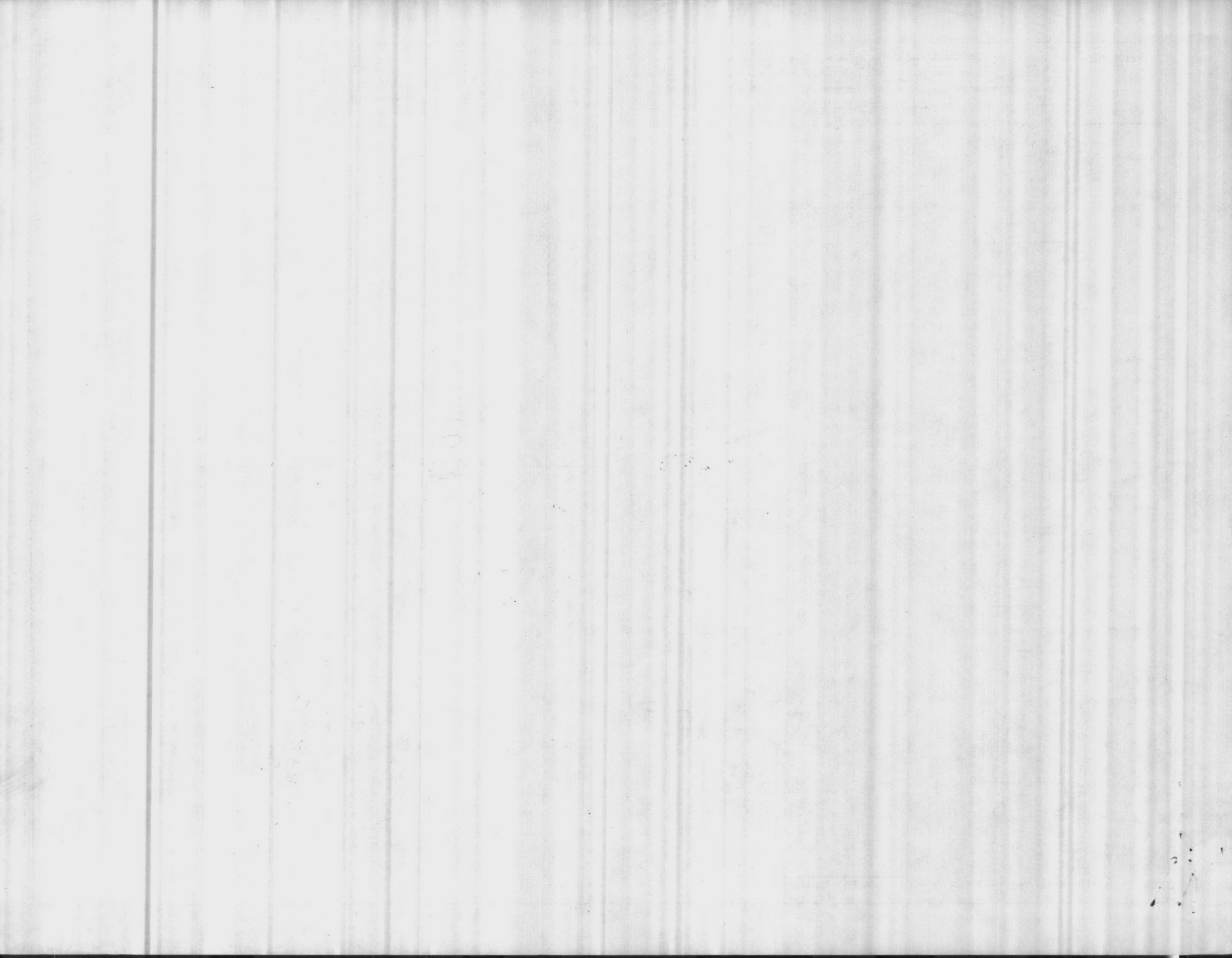


-AGITATOR-  
SUB-LTR. Z

CAPY GAL.	Q	R	S
50	8 1/2	11 3/4	28
100	10 1/2	14 3/4	28
175	12 3/8	17 3/4	28
250	12 3/8	17 3/4	28
500	16 3/8	23 3/4	32

C-2712

CHG. NO.	DATE	BY	CHANGE	DESCRIPTION	TANKS 247-197-1	MILTON ROY COMPANY 1300 E. MERMAID LANE PHILADELPHIA 18, PA.
					SUPERSEDES DWG. 1751 A THRU F <td>TITLE 50 TO 500 GAL. HRS. TANK </td>	TITLE 50 TO 500 GAL. HRS. TANK
A	5-17-60	JMB	RELOCATED LOW LEVEL ALARM & ABOVE PUMP SECTION	MATL. HRS		PATTERN CODE
				DWN. BY JGG	DATE 8-8-58	DWG. NO. C-2712
				APPROVED [Signature]	SCALE	







# MILTON ROY COMPANY

1300 EAST MERMAID LANE, PHILADELPHIA 18, PA.

CERTIFIED PRINT

CUSTOMERS ORDER NO. AND DATE  
68-347

DATE WRITTEN  
5/28/68 jl

PUMP SERIAL NO.  
87252(1)

SHIP TO  
Brown Construction Co.  
c/o Water Treatment Plant  
Courthouse Bay  
Camp Lejeune, North Carolina  
Brown and Morrison  
1900 E. 7th Street  
Charlotte, North Carolina 28204

IMPORTANT—WE HAVE ASSIGNED THE ABOVE NO. AS THE SERIAL NO. OF YOUR MILTON ROY PUMP. PLEASE REFER TO IT AT ALL TIMES. IT WILL HELP US SERVE YOU.

TERMS—NET 30 DAYS.  
F. O. B. F/A

SOLD TO  
Brown and Morrison

YOUR REPRESENTATIVE IS:  
016 - Brown and Morrison

MARK:  
Order 878-4 Lime Slurry System

VIA  
Motor Freight - Prepaid

WE WILL SHIP  
8 weeks after p/a

ITEM	QUANT.	Pg 1 of 2	DESCRIPTION
A	1		Model MR1-35-113 Simplex Milroyal Pump
			Model A
A1	1		Drive
A2	1		Freight

Pump #1

PART	NO.	RIGHT SIDE XXX	LEFT SIDE XXX
LIQUID END	21	Cast Iron	
LIQUID END CAPS	22		
OR COVER PLATE XXX	30	416 SS	
LIQUID END GASKET	25		
BALL SEATS	24	316 SS	
BALL VALVES	23	440 SS	
PLUNGER	12	Ceramic 7/8"	
GLAND	8	Cast Iron	
LANTERN RING	6	Steel	
PACKING	5	Neoprene Duck	
RECOMMENDED LUB.		Internal flush	

1-1/2 STROKE ADJUSTMENT BY Micrometer

Stock ELECTRIC CO.

1/3 H. P. 1 PHASE 60 CYCLE 115/230 VOLTS

ENCLOSURE Totally Enclosed

1725 R. P. M. A. C. D. C.

NEMA 56C flange mounted

Certified Drawing: 102-0015-0XX (Pump) and 102-0493-002 (column valve suppl)

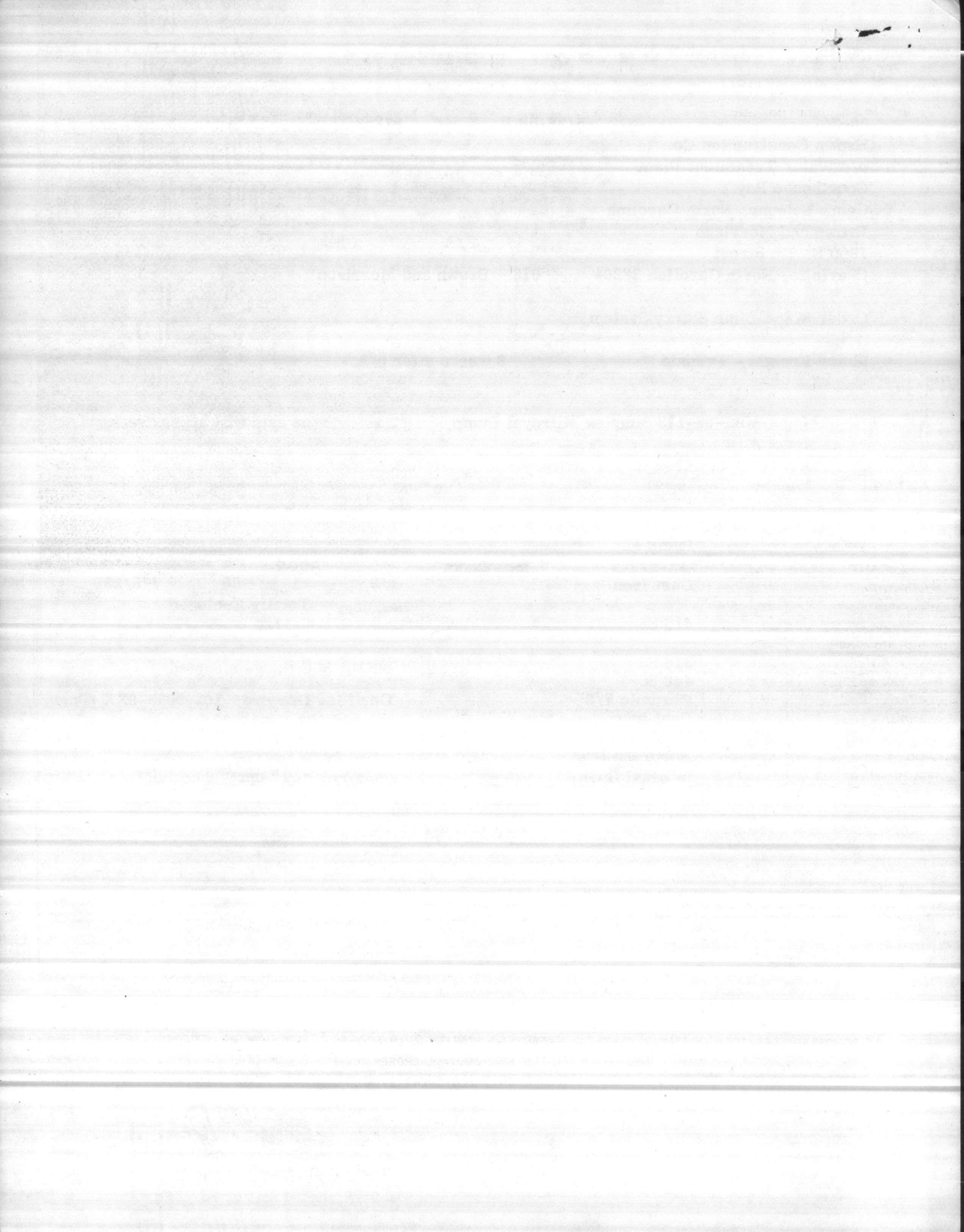
SUCTION CON. 1" npt " DISCHARGE CON. 1" npt "

	SOLUTION	DISCHARGE PRESSURE	SUCTION PRESSURE	TEMP.
RIGHT SIDE	Lime slurry	23	225 max.	Flooded
LEFT SIDE				Ambient

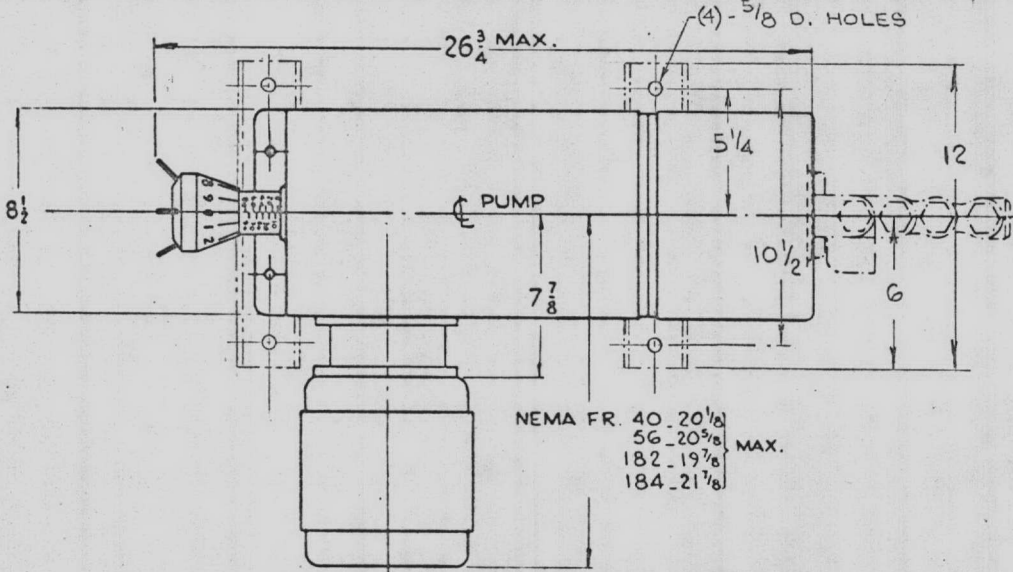
WE HEREBY CERTIFY THAT THIS PRINT IS CORRECT ACCORDING TO DIMENSIONS FOR PUMP OR ACCESSORIES DESCRIBED ABOVE AND APPLYING HERETO AND AS IDENTIFIED BY PURCHASE ORDER NUMBER AND MILTON ROY PUMP SERIAL NUMBER INDICATED ABOVE. CORRESPONDENCE REFERRING TO THIS EQUIPMENT SHOULD INCLUDE ORDER NUMBER AND PUMP SERIAL NUMBER FOR PROMPT IDENTIFICATION AND REPLY.

SINCERELY,

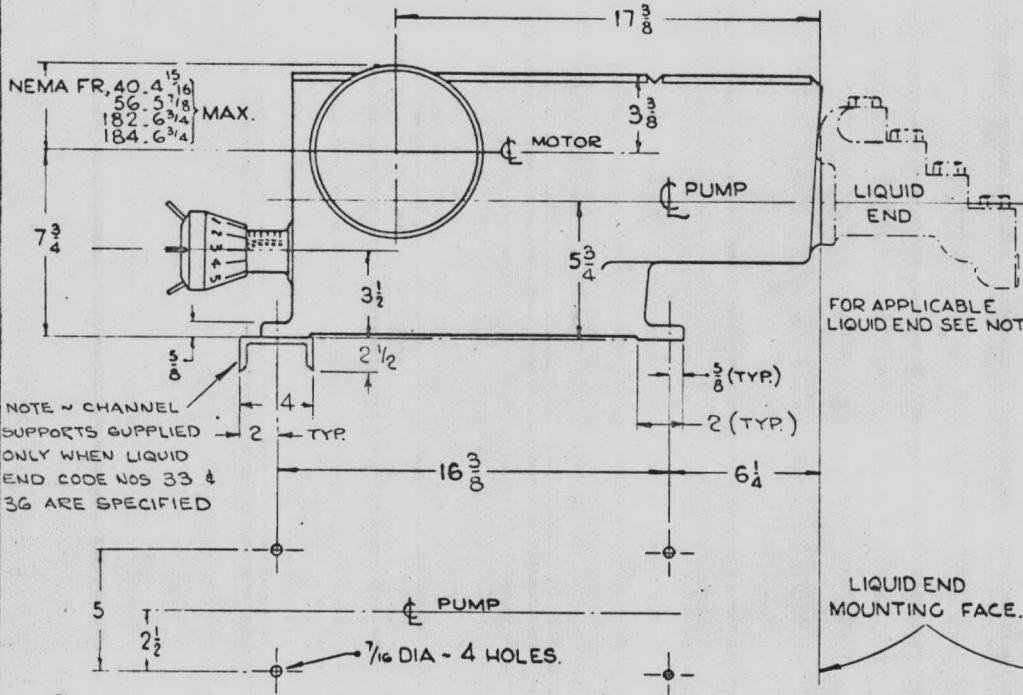
MILTON ROY COMPANY





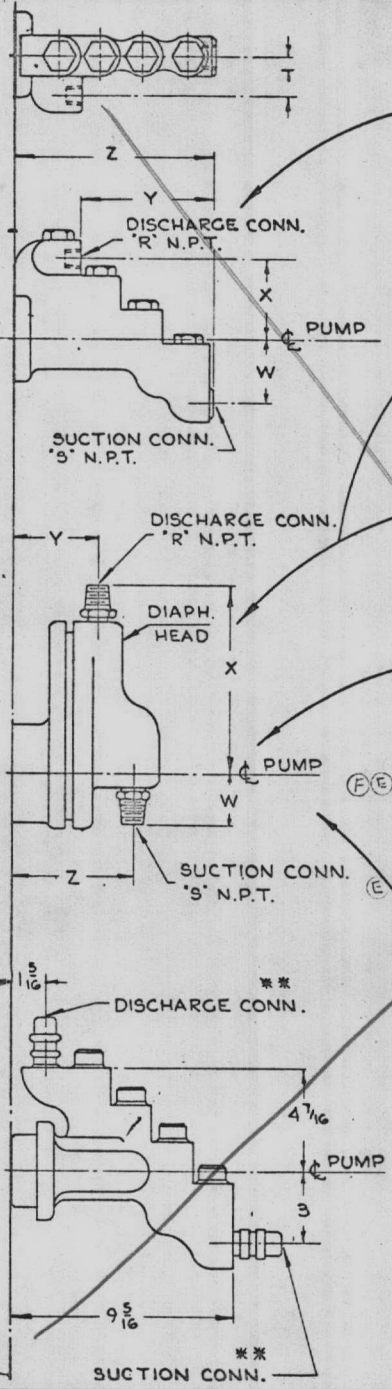


SEE SPECIFIC MOTOR PRINT FURNISHED SEPARATELY FOR PERTINENT DIMENSIONS.



MOUNTING HOLE PATTERN

F	5 14 68	J E M	'W' WAS 5 7/16 'X' WAS 6 15/16 (X=32) CART. CHG.
E	1-26-67	TR	DELETED XX#35, XX#32, 36 REV. FOR NEW DESIGN



STEP VALVE LIQUID END								
CODE NO. XX	PLGR DIA.	W	X	Y	Z	R	S	T
01	5/16, 7/16	2 1/8	2 3/8	4 11/16	6 3/4	1/4 - 18	1/4 - 18	1 1/4
02	5/8, 7/8	2 3/16	2 3/16	5 1/8	7 3/8	1/4 - 18	3/8 - 18	1 3/8
03	1 1/8	2 11/16	3 3/16	5 15/16	8 5/8	3/8 - 18	1/2 - 14	1 5/8
04	1 1/2, 1 3/4	2 11/16	3 3/16	5 15/16	8 5/8	1/2 - 14	3/4 - 14	1 5/8

DIAPHRAGM LIQUID END, LOW PRESSURE ~ STYLE NO. 1								
CODE NO. XX	PLGR. DIA.	W	X	Y	Z	R	S	
05	7/16, 5/8	2 1/8	4 7/8	2 3/4	4 1/4	1/2 - 14	1/2 - 14	METAL
06	7/8	3 3/8	5 5/16	3 11/16	4 15/16	3/4 - 14	3/4 - 14	DIAPH.
07	1 1/8, 1 1/2, 3/4	3 1/16	7 3/16	3 1/4	4 5/8	1" - 11 1/2	1" - 11 1/2	HEAD
13	7/16, 5/8	2 1/8	4 1/8	2 15/16	5 3/16	1/2 - 14	1/2 - 14	PLASTIC
14	7/8	3 3/8	5 5/16	3 3/16	5 1/8	3/4 - 14	3/4 - 14	DIAPH.
15	1 1/8, 1 1/2, 3/4	4 5/16	6 3/16	3 3/8	6 3/8	1" - 11 1/2	1" - 11 1/2	HEAD

DIAPHRAGM LIQUID END HIGH PRESSURE ~ STYLE NO. 1								
CODE NO. XX	PLGR. DIA.	W	X	Y	Z	R	S	
08	7/16, 5/8	2 1/8	5	2 1/8	4 13/16	1/2 - 14	1/2 - 14	METAL
09	7/8	3 11/16	5 1/2	3 1/8	5 7/16	3/4 - 14	3/4 - 14	DIAPH. HEAD

DIAPHRAGM LIQUID END LOW PRESSURE ~ STYLE NO. 2								
CODE NO. XX	PLGR. DIA.	W	X	Y	Z	R	S	
30	7/16, 5/8	4 7/16	5 3/16	3	3	1/2 - 14	1/2 - 14	METAL
31	7/8, 1 1/8	5 5/8	6 3/4	3 7/8	3 7/16	1" - 11 1/2	1" - 11 1/2	DIAPH. HEAD
32	1 1/2	6 3/8	7 7/8	3 5/8	3 5/8	1 1/2 - 11 1/2	1 1/2 - 11 1/2	HEAD
33	2 1/2	6 11/16	8 1/16	3 7/8	3 1/8	1 1/2 - 11 1/2	1 1/2 - 11 1/2	HEAD
34	7/16, 5/8	4 11/16	5 11/16	3 11/16	3 3/16	1/2 - 14	1/2 - 14	PLASTIC
35	7/8, 1 1/8	5 1/4	6 3/8	3 1/2	3 1/2	1" - 11 1/2	1" - 11 1/2	DIAPH.
36	1 1/2	6 5/16	8 7/16	3 7/8	3 7/8	1 1/2 - 11 1/2	1 1/2 - 11 1/2	HEAD

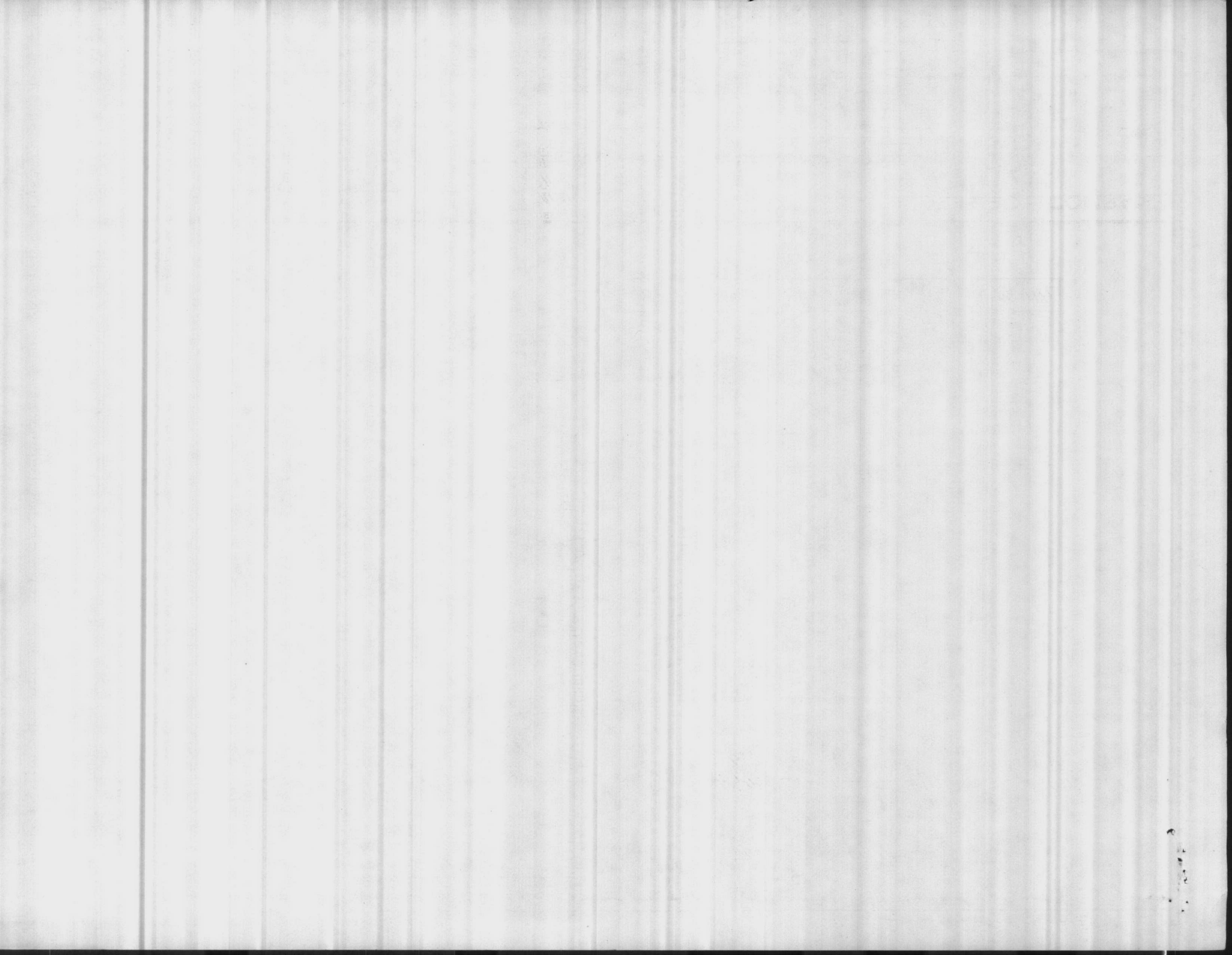
DIAPHRAGM LIQUID END HIGH PRESSURE ~ STYLE NO. 2								
CODE NO. XX	PLGR. DIA.	W	X	Y	Z	R	S	
37	7/16, 5/8	4 7/16	5 3/16	3	3	1/2 - 14	1/2 - 14	METAL

PLASTIC STEP VALVE LIQUID END			
CODE NO. XX	PLGR. DIA.	** SARAN HALF UNION CPLG. & FLARE NUT FOR :-	
10	7/16, 5/8	1/2 O/D SARAN TUBING	
11	7/8, 1 1/8	5/8 O/D SARAN TUBING	
12	1 1/2	5/8 O/D SARAN TUBING	

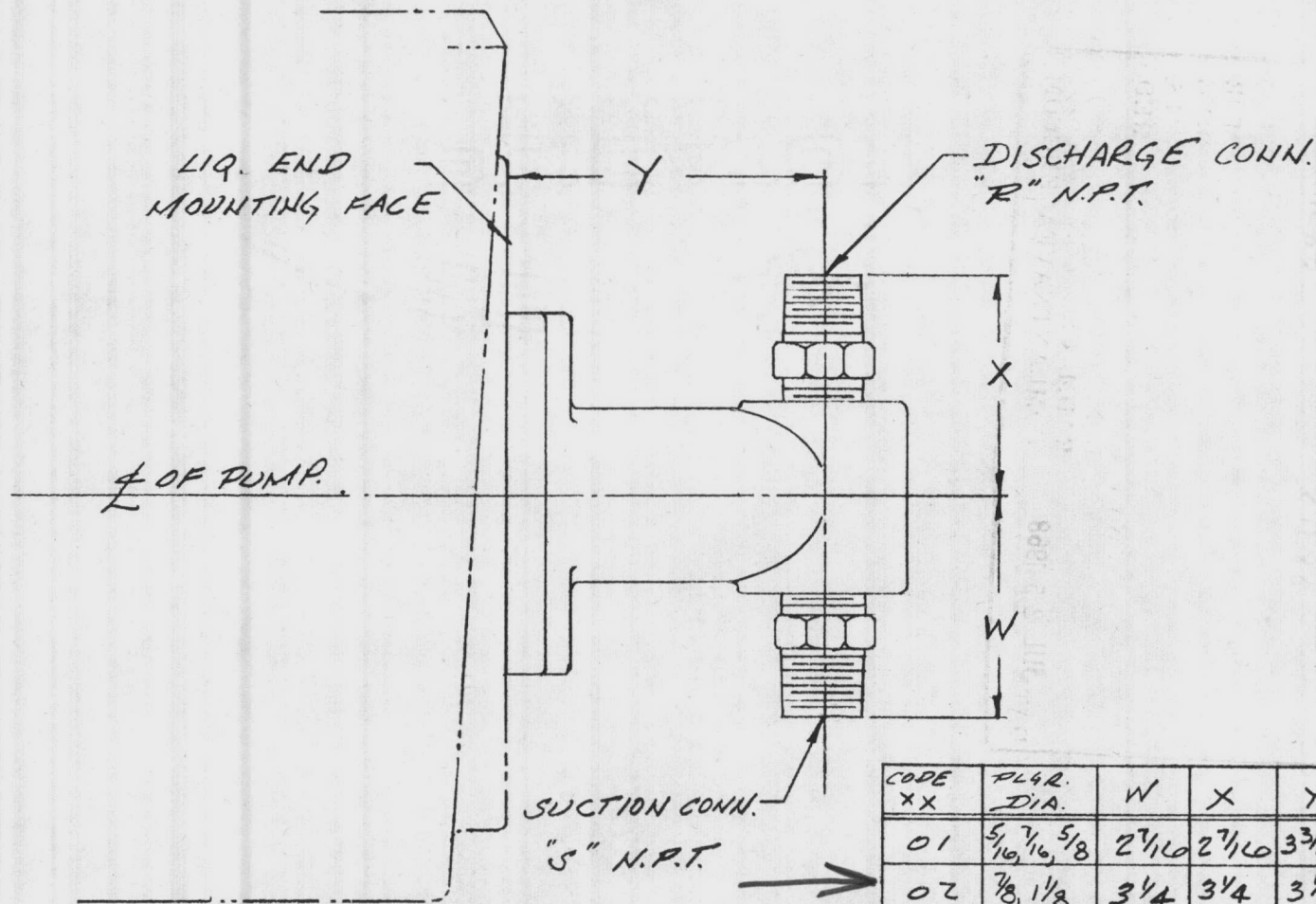
SEE DWG 102-0493-002  
 NOTE:- LAST TWO DIGITS OF CERTIFIED DWG. NO CALLED OUT ON DATA SHEET DENOTE APPLICABLE LIQUID END TYPE & SIZE.

D	7-26-66	J.E.M.	CODE 32 WAS 3/4 NPT	DESCRIPTION	MOD. A & B. NEMA SGC FLANGE MOUNTED MOTOR.	MILTON ROY COMPANY 1300 E. MERMAID LAKE PHILADELPHIA 19, PA.	
C	7-7-65	SM	CODES 31 & 35 WERE 3/4 NPT ECN 1608			TITLE MILROYAL PUMP MICROMETER TYPE STROKE ADJ.	
B	6-1-65	SM	ADDED STYLE # 2 DIAPH. LIE	SUPERSEDED DWG		PATTERN CODE	
A	6-16-61	S.G.M.	ADDED CODE NOS. 13, 14, 15	MATL		DWG NO	
CHG. NO.	DATE	BY	CHANGE	DWN BY	DATE	APPROVED	SCALE
				S.G.M.	3-10-61		

A-102-0015-0XX







CODE XX	PLGR. DIA.	W	X	Y	R	S
01	5/16, 7/16, 5/8	2 1/16	2 7/16	3 3/8	1/2-14	1/2-14
02	7/8, 1 1/8	3 1/4	3 1/4	3 1/2	1-11 1/2	1-11 1/2
03	1 1/2, 1 3/4	4 3/8	4 3/8	4	1 1/4-11 1/2	1 1/4-11 1/2

CHG.	DATE	BY	APPR.	REVISION	DESCRIPTION	MILTON ROY COMPANY PHILADELPHIA 18, PA. ST. PETERSBURG 33, FLA.
C	12-26-67	R.D.F.	<i>[Signature]</i>	XX=03. W & X DIMS WERE 3 3/4 CART. CHANGE	DESCRIPTION COLUMN VALVE LIQUID END MOUNTED ON MILROYAL MOD AORB 5/16-7/16-5/8-7/8, 1 1/8, 1 1/2, 1 3/4 PLGR. DIA. B/M (REF.) 335-0432-XXY TO 335-0434-XXY SUPERSEDES	TITLE COLUMN VALVE LIQUID END SUPPLEMENT
B	11-4-66	J.F.B.	<i>[Signature]</i>	SUCTION CONN "R" FOR 1 1/2, 1 3/4 PLGR. DIA. WAS LISTED AS 1 1/2-11 1/2 IN ERROR	MAT'L=YY	DWG. NO. A-102-0493-0XX
A	9-12-66	J.F.B.	<i>[Signature]</i>	LIQ. END FABRICATED FOR ADDITION OF 7/8, 1 1/8, 1 1/2, 1 3/4 PLGR.	DWN. J.P.B. APPR. <i>[Signature]</i> DATE 9-27-65 SCALE 6'-1'0" PATT. CODE	

ATLANTIC DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
NORFOLK, VIRGINIA 23511

**APPROVED:**

SUBJECT

88313

OF

88313/67

CONTRACTOR  
PROVIDING  
SMALL IR  
TRADES PHYSICAL P  
COORDINATION OF TRADES AS REQUIRED.

H. N. WALLIN  
RADM, CEC, USN

DATE JUL 25 1968

COMLANTNAVFACENGCOM



DS-P-27E  
11-15-65

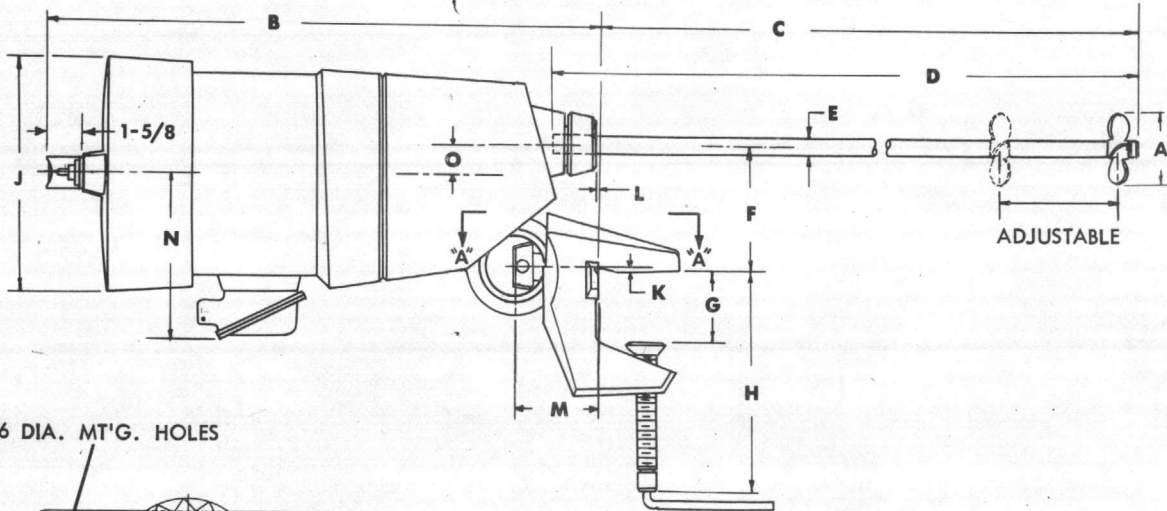
ALL MIXING EQUIPMENT DESIGN AND MIXING APPLICATION DATA SHOWN HEREIN, AND RELATED KNOW-HOW ARE CONFIDENTIAL AND THE PROPERTY OF MIXING EQUIPMENT COMPANY. NO USE OR DISCLOSURE THEREOF MAY BE MADE WITHOUT OUR WRITTEN PERMISSION.

MIXING EQUIPMENT CO. INC.  
ROCHESTER, NEW YORK

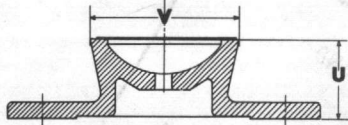
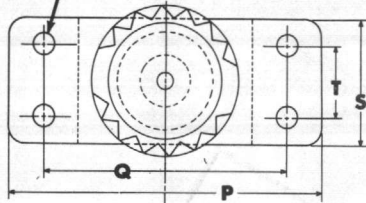
**LIGHTNIN**

PORTABLE MIXER  
MODEL ND  
(GEAR DRIVE)

ALL DIMENSIONS IN INCHES



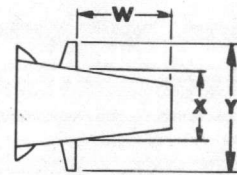
11/16 DIA. MT'G. HOLES



CUP PLATE

OPTIONAL FEATURE - REPLACES CLAMP

- ① ALSO AVAILABLE WITH ELECTRONIC VARIABLE SPEED DRIVE
- ② WEIGHT WILL VARY WITH MOTOR SPECIFICATIONS AND SHAFT AND PROPELLER SELECTION. WEIGHTS INCLUDE SHAFT AND DUAL PROPELLERS
- ③ CAN VARY PER ORDER
- ④ DIMENSIONS ARE MAXIMUM - WILL VARY WITH TYPE MOTOR



VIEW "A-A"  
(CLAMP ONLY)

MODEL	H.P.	MOTOR R.P.M.	PROP R.P.M.	APPROX. WT. LBS. ②	A		B	③ C	③ D	E	F	G	H	J	K	L	M	N	O	P	Q	S	T	U	V	W	X	Y	
					SINGLE	DUAL																							
ND-1B	1/8	1750	350	60	7.7	6.9	19 7/8																						
ND-1A	1/4 ①	1750	350	70	9.4	7.7	20 1/4	32	36	5/8	5	3	9	9	7/32	1/8	3 7/16	9 5/8	13/32	9	7	3 1/2	2	2 1/4	4 1/4	3 1/8	2 3/8	5 3/16	
ND-1	1/3 ①	1750	350	80	10.0	8.9	21 1/4																						
ND-2	1/2 ①	1750	350	100	10.5	9.4	22 3/4	43 1/8	48	3/4	5 1/2	3 3/4	11	9	5/32	3/8	4 3/16	9 5/8	19/32	10	8 1/2	3 5/8	2	2 7/16	4 11/16	3 1/2	2 7/8	5 3/4	
ND-2A	3/4 ①	1750	350	105	11.4	10.5																							
ND-3	1	1750	350	200	12.4	11.4	25 3/8																						
ND-4	1 1/2	1750	350	200	13.1	12.4		55 3/8	60	7/8	6 1/2	3 3/4	12	12	7/32		4 1/2	9	13/16	10	6 1/2	4	2 1/2	2 15/16	5 3/4	4 3/16	3 1/4	6 7/8	
ND-4A	2	1750	350	210	14.2	13.1	27 1/4																						
ND-4B	3	1750	350	230	15.1	14.2	28 5/8																						

ATLANTIC DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
NORFOLK, VIRGINIA 23511

APPROVED:

88313

CONTRACT

APPROVED

INDENTURE

RESPECTIVE

SHALL BE

PROPER

COORDINATION

DATE

JUL 25 1968

REQUIREMENTS OF  
88313/67  
CONTRACTOR  
PROVIDING  
AS REQUIRED.  
H. N. WALLIN  
RADM, CEC, USN  
COMLANAVFACENGCOM

*H.N. Wallin*



LIGHTNIN MIXER FOR  
WATER TREATMENT PLANT  
COURTHOUSE BAY  
CAMP LEJEUNE, NORTH CAROLINA  
BROWN CONSTRUCTION COMPANY  
THEIR ORDER # 878-4  
BROWN & MORRISON # 68-404

Description of: Lightnin Model ND-2A Portable Gear Drive Mixer with 3/4 horse-  
power totally enclosed motor for 208/3/60. Lower shaft with 3/4" diameter by  
70" long and equipped with one 10.5" diameter 304 stainless steel propeller. The  
propeller with stabilizing ring, complete with aluminum ball and socket tank clamp.

ATLANTIC DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
NORFOLK, VIRGINIA 23511

APPROVED: \_\_\_\_\_

SUBJECT: \_\_\_\_\_

88313

88313/67

DATE: JUL 25 1968

H. N. WALLIN  
RADM, CEC, USN

COORDINATION OF TRADES, WEIGHTS,  
AND MEASUREMENTS AS REQUIRED.

COMLANTNAVFACENGCOM

STANTON DIVISION  
STANTON DIVISION  
STANTON DIVISION  
APPROVED  
88-21367  
JUL 11 1988