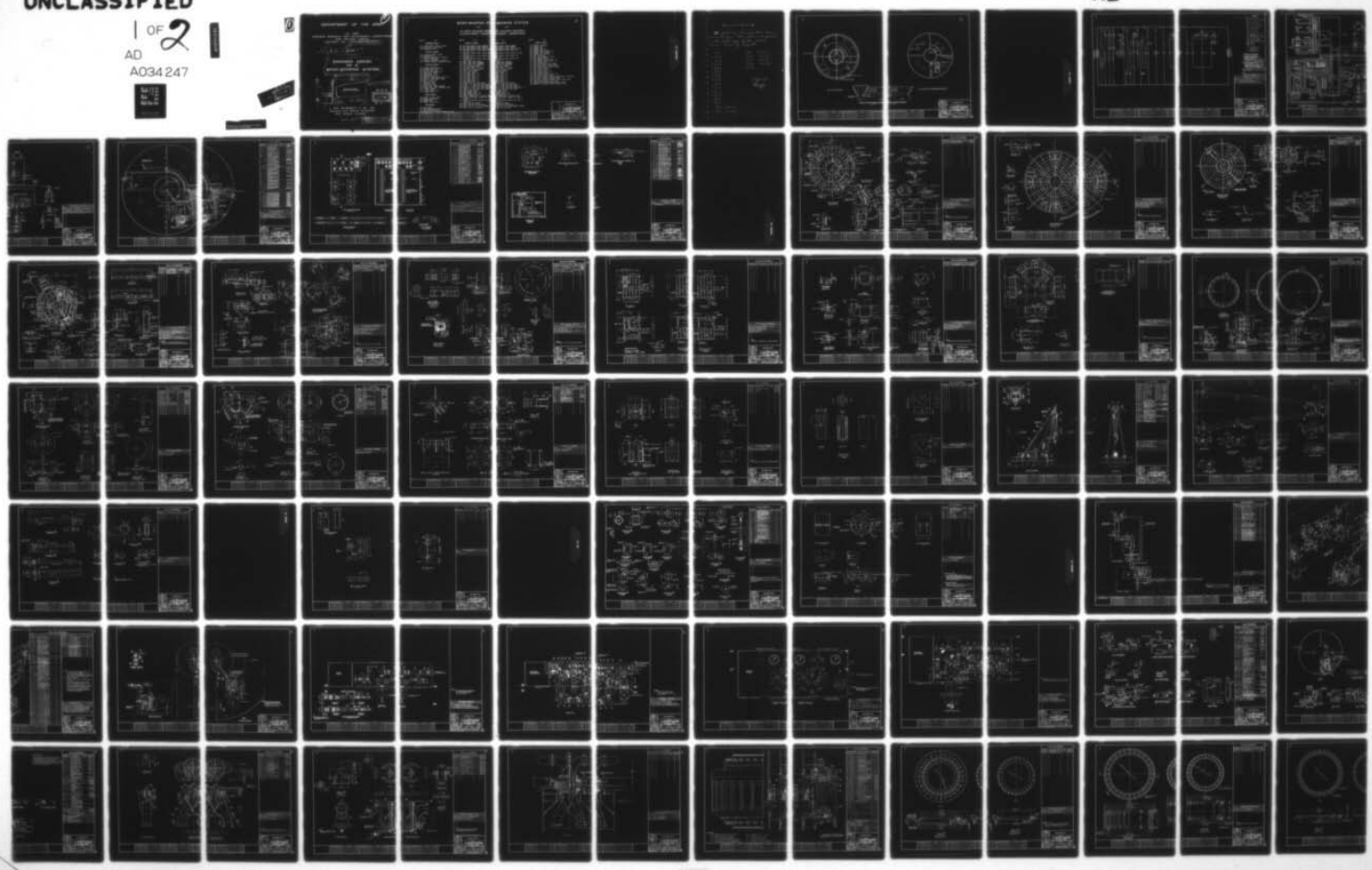
AD-A034 247 MCDERMOTT (J RAY) CO INC NEW ORLEANS LA F/G 13/10
ENGINEER DESIGN OF A MONO-MOORING SYSTEM. DRAWINGS.(U)
1966 DA-44-009-AMC-841(T)
NL

UNCLASSIFIED

1 OF 2
AD
A034 247



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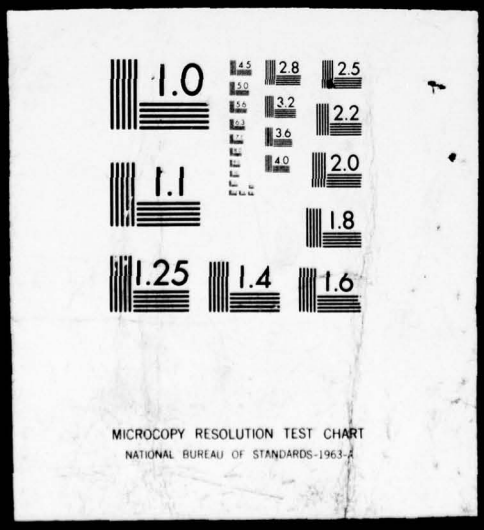

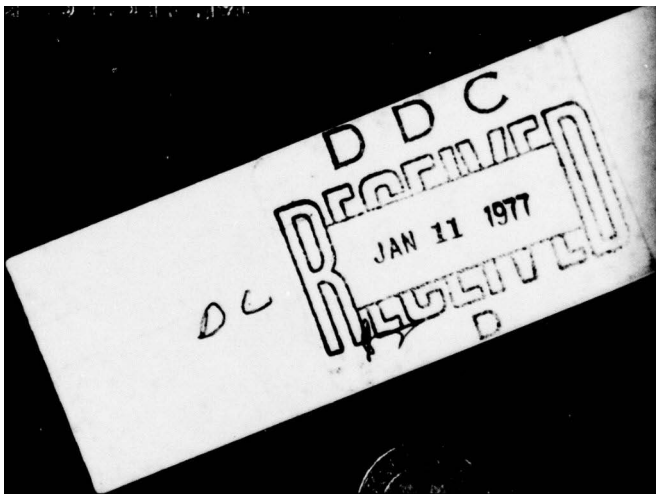
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DEPARTMENT OF THE ARMY

U.S. ARMY
ENGINEER RESEARCH AND DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA
CONTRACT NO. DA-44-ØØ9-AMC-841(T)

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(9) Rept. on PHASE 1.

(6)

ENGINEER DESIGN OF A MONO-MOORING SYSTEM,

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DRAWINGS.

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J. RAY McDERMOTT & CO., INC.
Engineers and General Contractors
New Orleans, Louisiana

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MONO-MOORING SY

FOR

U.S. ARMY ENGINEER RESE
& DEVELOPMENT LABORAT

SHEET NO.	TITLE
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DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

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-MOORING SYSTEM

FOR

MY ENGINEER RESEARCH
ELOPMENT LABORATORIES

2

SHEET NO.	TITLE
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	WINCH HYDRAULIC SYSTEM SCHEMATIC
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	SWIVEL DETAIL (SHT. 4)
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909	CHAIN TRANSFER FAIRLEAD
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927	SCHEMATIC SKID MOUNTED WINDLASS HYDRAULIC SYSTEM

REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MR.	BY	REVISIONS	DATE	APP.
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J. RAY Mc DERMOTT & CO., INC.
DATE
ENGINEERS APPROVAL

	BY	DATE
PROJECT	[illegible]	1-24
STRUCTURAL		
PROCESS		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
PUB. CHECK	[illegible]	1-24
PROP. CHECK		

MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH
& DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS CONTRACTORS
NEW ORLEANS, LA.

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FRANCHINA	NONE	12-30-65	USA-2571
FABRICATORS JOB NO.		J. RAY Mc DERMOTT JOB NO.	SHEET NO.
	S6017		1

DRAWING INDEX

1

000 - ARRANGEMENTS

Removed Drawings

The following drawings have been removed from this book and placed in the draft copy of the NCEL Moro - Mooring Report.

✓	001	830	Missing?
✓	826	832	Missing?
✓	002	833	Missing?
✓	825	834	Missing?
✓	840	✓	842
✓	871		
✓	870		
✓	858		
✓	827		
✓	919		
✓	912		
✓	907		
✓	900		
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	831	Missing?	

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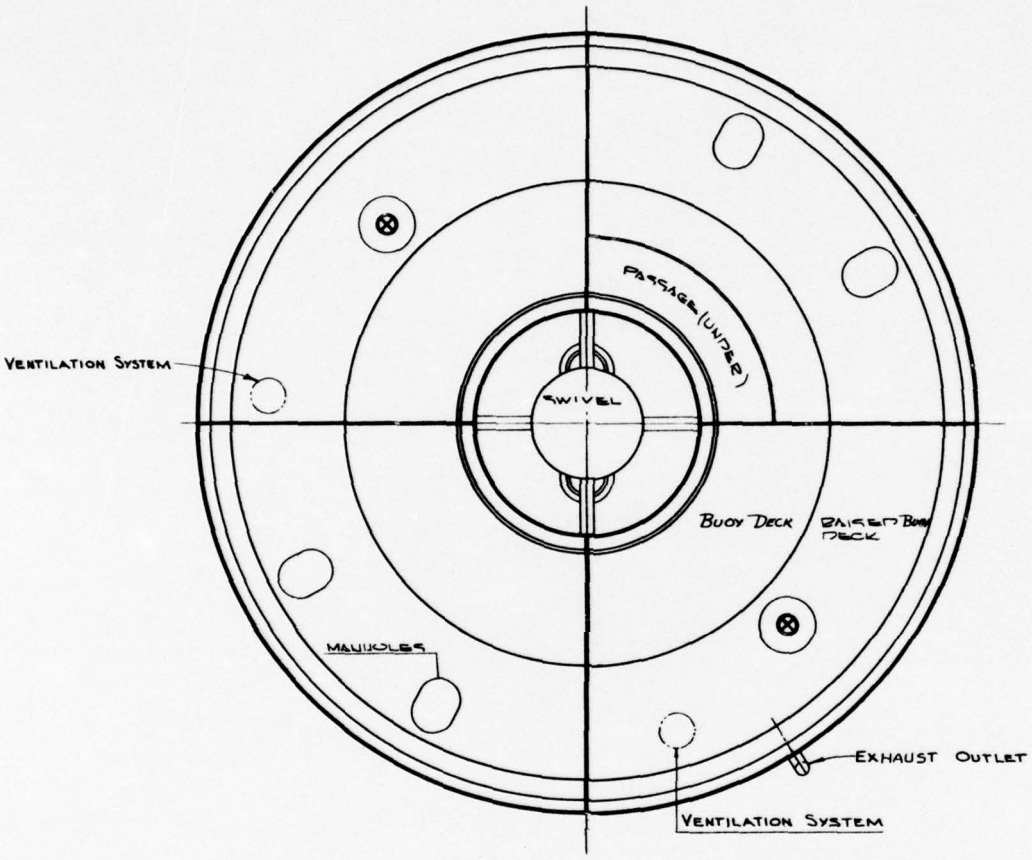
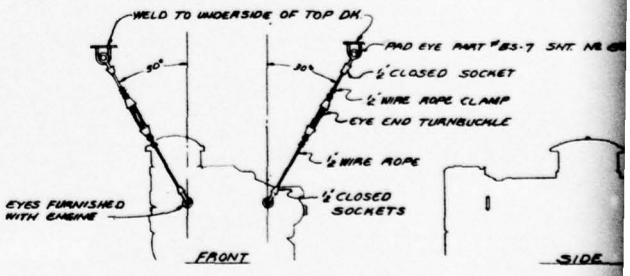


PLAN OF TOP OF BUOY



DIESEL ENGINE LAUNCHING SUPPO

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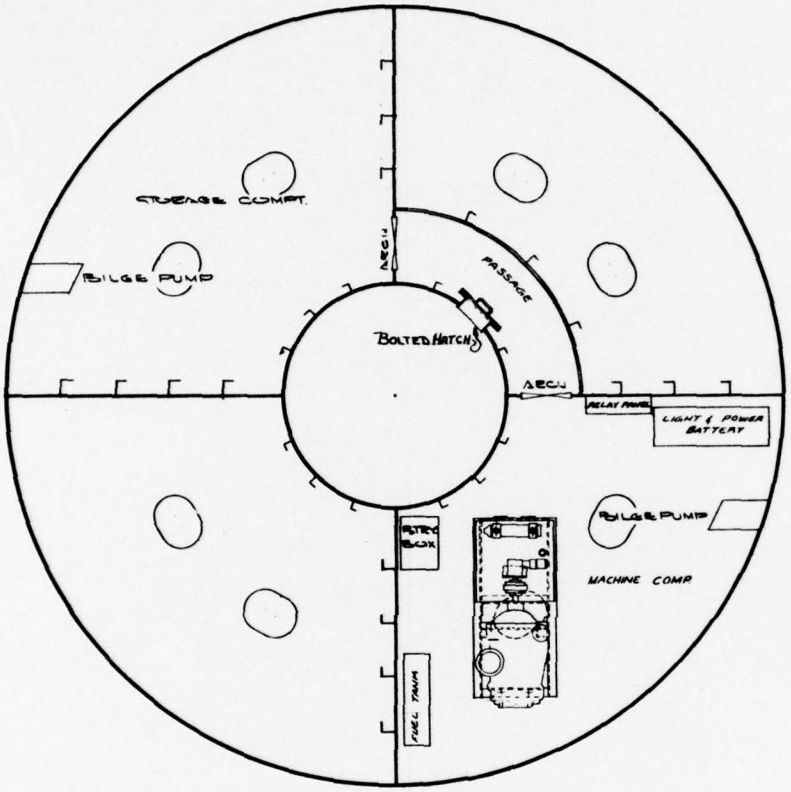
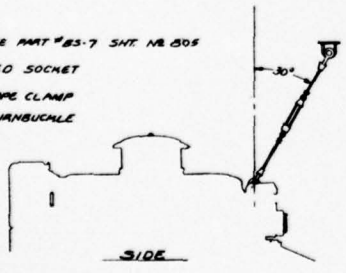


PAD EYE PART #83-7 SHT. NO. 805
½" CLOSED SOCKET
½" WIRE ROPE CLAMP
EYE END TURNBUCKLE
ROPE
CLOSED
SOCKETS



PLAN OF MACH. & STORAGE COMPARTMENTS

INE LAUNCHING SUPPORTS

NO SCALE

DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. 7109
APPROVED:
J. RAY Mc DERMOTT & CO., INC.
DATE: 1-28-66
ENGINEERS APPROVAL

	BY	DATE
PROJECT	GCL	1-28-66
STRUCTURES	J.C.A.	10-26-65
PIPING		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
FAB. CODES	GCL	1-28-66
PROD. CODES		

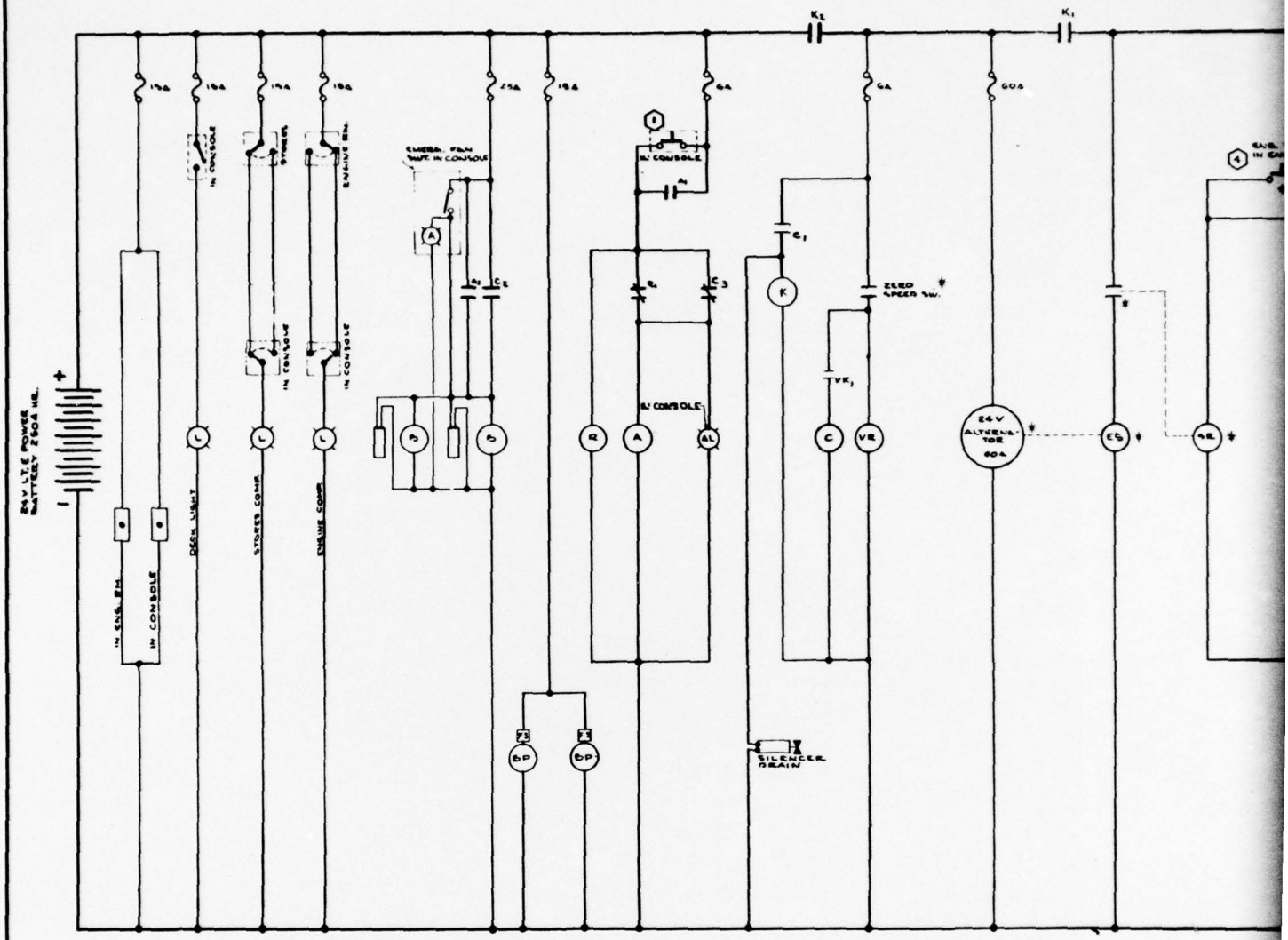
MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
BGRS	1/8"-1'-0"	9-22-65	USA 7971
FABRICATORS JOB NO.	56017	J. RAY Mc DERMOTT JOB NO.	SHEET NO. 003

ARRANGEMENT PLANS



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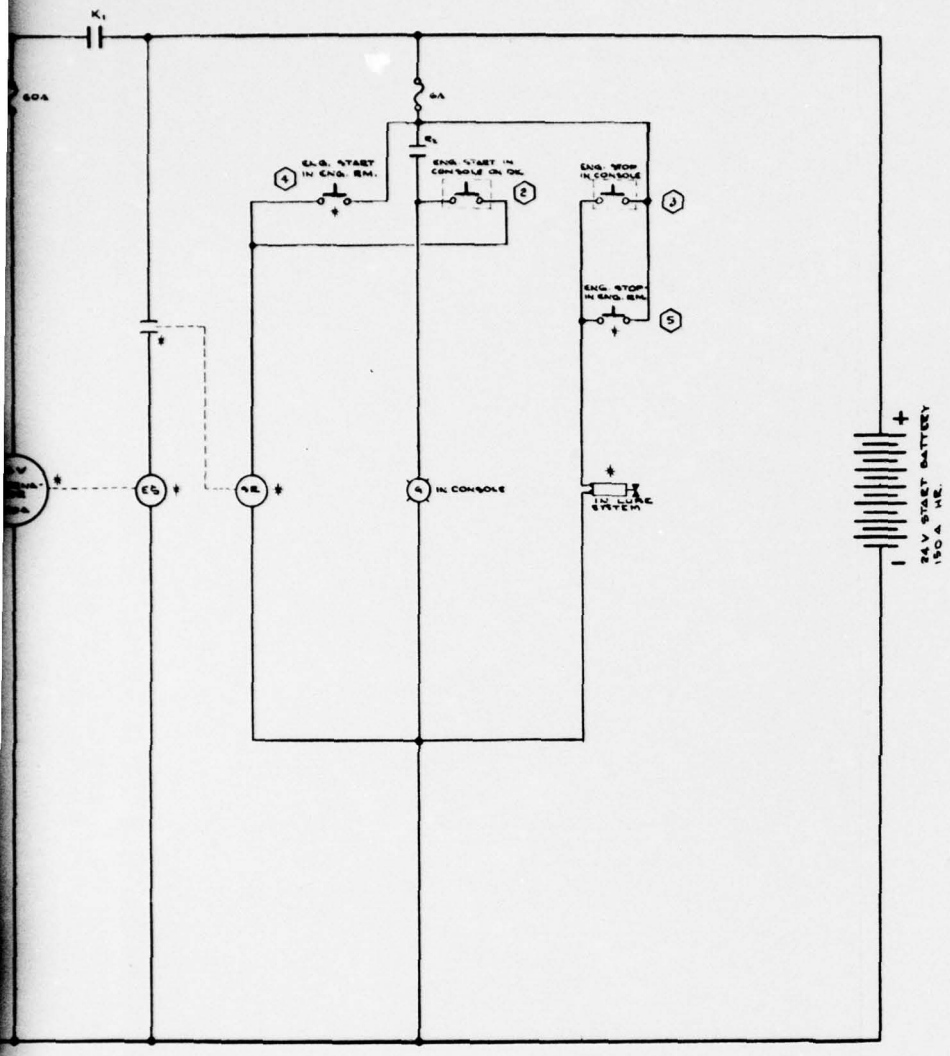


LEGEND

C A	COILS FOR 30 A. RELAY
B	24 V D.C. HEAVY DUTY MARINE BLOWER
ES	ENGINE STARTER MOTOR
T	COIL FOR TIME DELAY RELAY
SR	COIL FOR STARTER RELAY
K	COIL FOR 60 A. RELAY
VR	VOLTAGE RELAY COIL
G	GREEN - ENGINE CLEAR TO START
AL	RED - VENTILATION SYSTEM IN OPERATION LIGHT
L	100 W MARINE LIGHTING FIXTURE
	VENT OPENING SOLENOID
R	MARINE TYPE RECEPTACLE
A	EMERGENCY FAN SWITCH PILOT LIGHT
	SOLENOID
BP	BILGE PUMP
FS	FLOAT CONTROL SWITCH
‡	FURNISHED WITH ENGINE
÷	RELAY CONTACT N.O.
⅟	RELAY CONTACT N.C.

OPERATING PROCEDURE

1. PUSH MOMENTARY PUSH BUTTON (1)
   a. LIGHTING BATTERIES ENERGIZE COILS OF "B" AND "A", PUTS ALARM LIGHT "ON".
   b. CONTACTS "A" AND "a" CLOSE.
   c. FANS GO INTO OPERATION.
   d. AFTER 4 MIN. DELAY "B" CONTACT OPENS AND "Bb" CONTACT CLOSES.
   e. LIGHT "G" GOES "ON" INDICATING VENTILATION IS IN EFFECT, AND IT IS ALRIGHT TO START ENGINE.
2. PUSH MOMENTARY PUSH BUTTON (2) IN CONSOLE TO START ENGINE, BUT ONLY IF GREEN LIGHT IS "ON"
   a. COIL OF "SR" ENERGIZES, CLOSING "SR" CONTACT TO START MOTOR.
   b. AFTER ENGINE REACHES 600 R.P.M., N.O. ZERO-SPEED SWITCH CLOSES, ALLOWING "VR" COIL TO ENERGIZE WHEN 24 V. IS ATTAINED.
   c. WHEN GENERATOR OUTPUT REACHES 24 V "VR" CLOSES ITS CONTACT TO ENERGIZE COIL "K" & "C"
   d. K, AND K2 CONTACTS CLOSE, PLACING LOADS ON ALTERNATOR SERVICE AND BATTERIES ON CHARGE
3. PUSH STOP BUTTON (3) TO STOP ENGINE
4. PUSH BUTTONS (4) AND (5) AT ENGINE FOR EMERGENCY SITUATIONS ONLY

NOTE:
1. ALL RELAY COILS SHALL BE 24 VOLTS D.C.
2. RELAYS SHALL BE MOISTURE - FUNGUS - CORROSION TREATED. - FOR MARINE SERVICE

REFERENCE DRAWINGS

SHT. NO	TITLE
602	WIRING DIAGRAM
603	ELECTRICAL ARRANGEMENT OF MACHINE AND STORAGE COMPARTMENTS
604	ELECTRICAL ARRANGEMENT IN CONSOLE

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. 786
REGISTERED ENGINEER
CIVIL ENGINEERING

APPROVED: Griff C. Lee
J. RAY McDERMOTT & CO., INC.
DATE: 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	[illegible]	1-28-66
STRUCTURAL		
PROCESS		
MECHANICAL		
ELECTRICAL	[illegible]	10-28-65
INSTRUMENT		
PAR. CHECK	[illegible]	10-27-65
PROP. CHECK		

MONO-MOORING SYSTEM

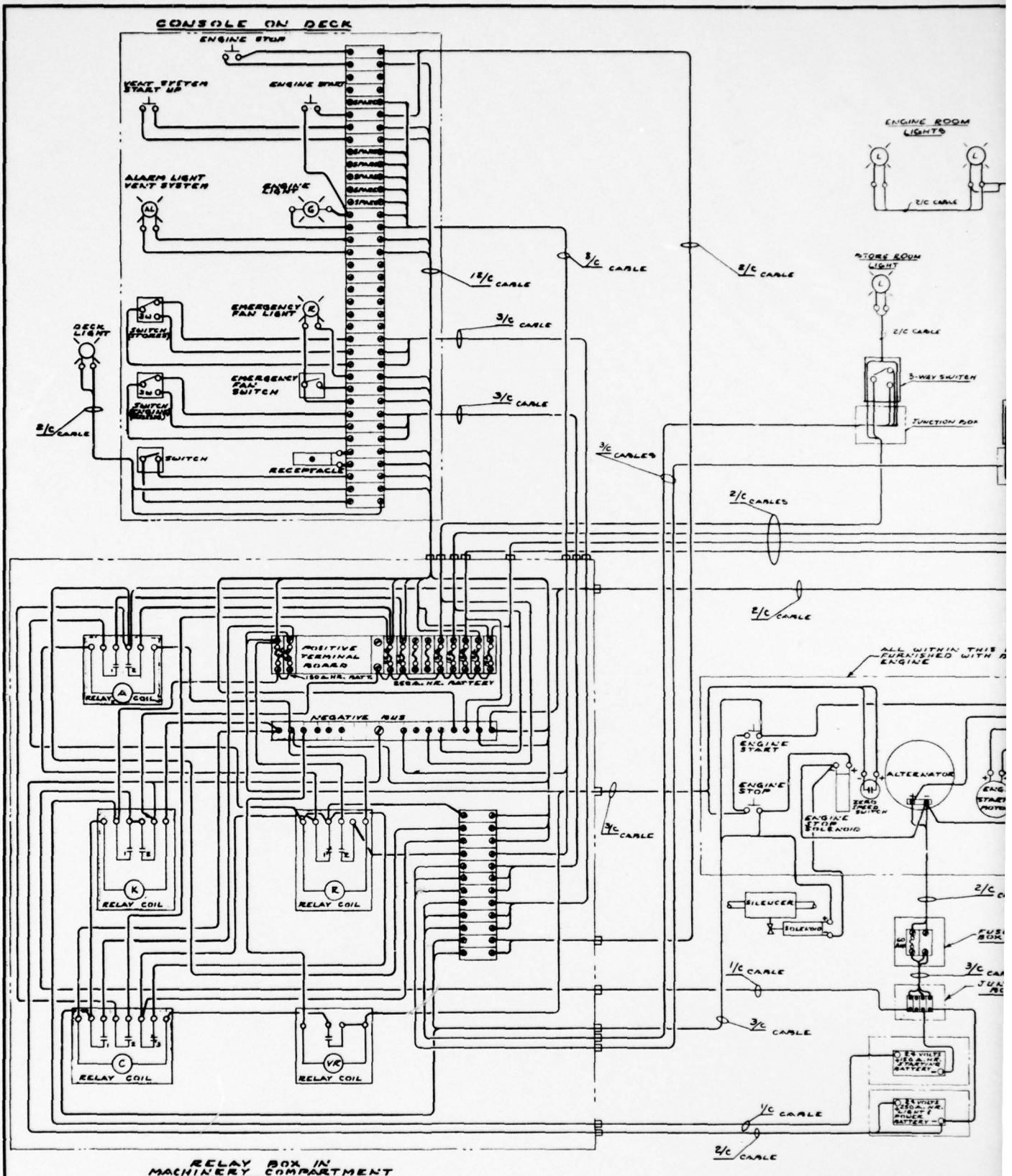
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY McDERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
S. COCO	NONE	8-27-65	494 297
FABRICATORS JOB NO.		J. RAY McDERMOTT JOB NO. 96017	SHEET NO. 601

ELECTRICAL SCHEMATIC DIAGRAM

REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.



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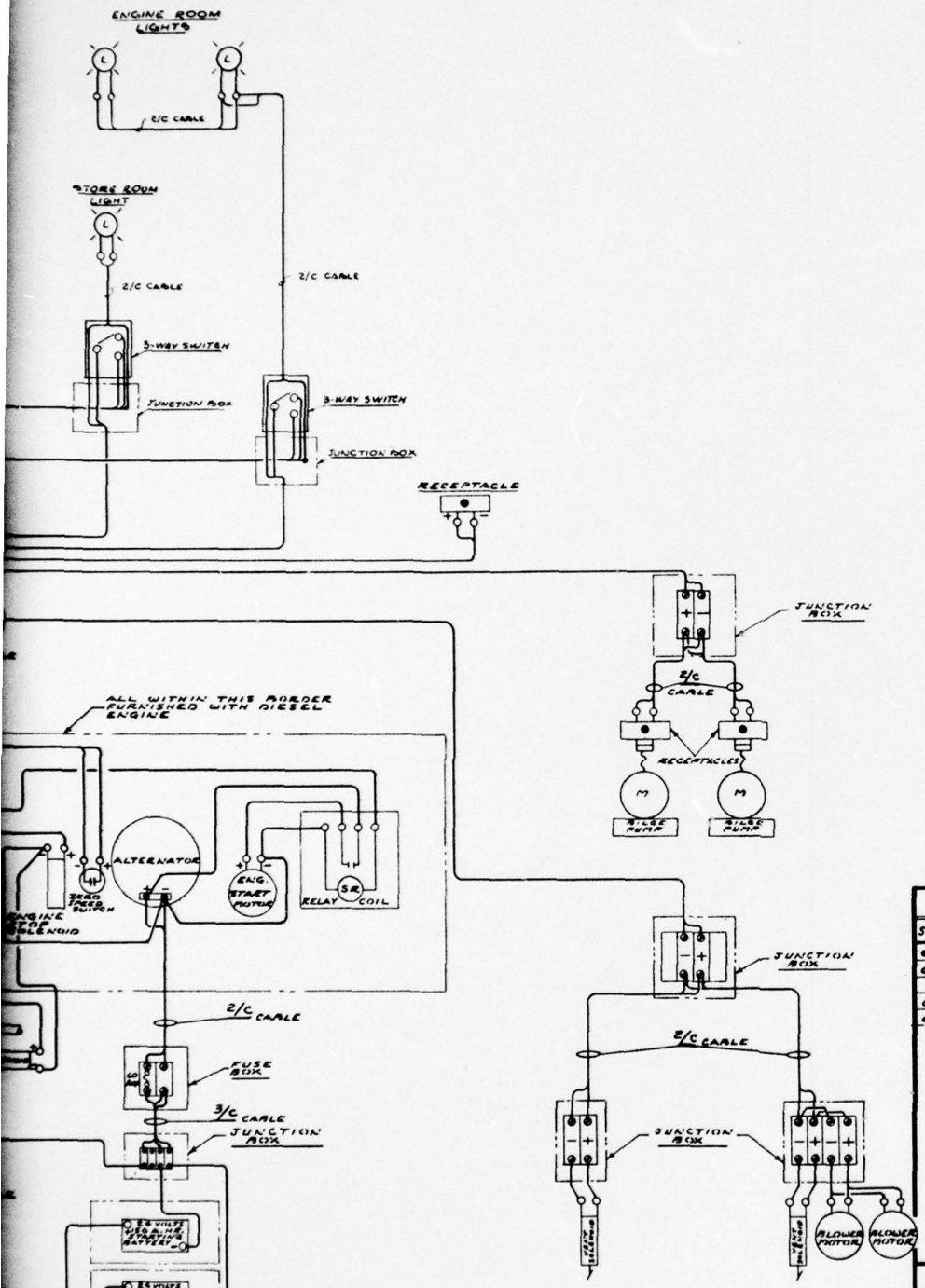


REFERENCE DRAWINGS	
SHT. NO.	TITLE
601	ELECTRICAL SCHEMATIC DIAGRAM
603	ELECTRICAL ARRANGEMENT OF MACH. & STORAGE COMPARTMENTS
604	ELECTRICAL ARRANGEMENT ON CONSOLE
605	SECTIONS, ELEVATIONS, & DETAILS

REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. 06
REGISTERED
ENGINEERING

APPROVED
J. RAY McDERMOTT & CO., INC.
DATE 1-27-66

ENGINEERS APPROVAL

		DATE
PROJECT		
STRUCTURAL		
PROCESS		
MECHANICAL		
ELECTRICAL		1-27-66
INSTRUMENT		
PIPE CODES		11-29
PROP. CODES		

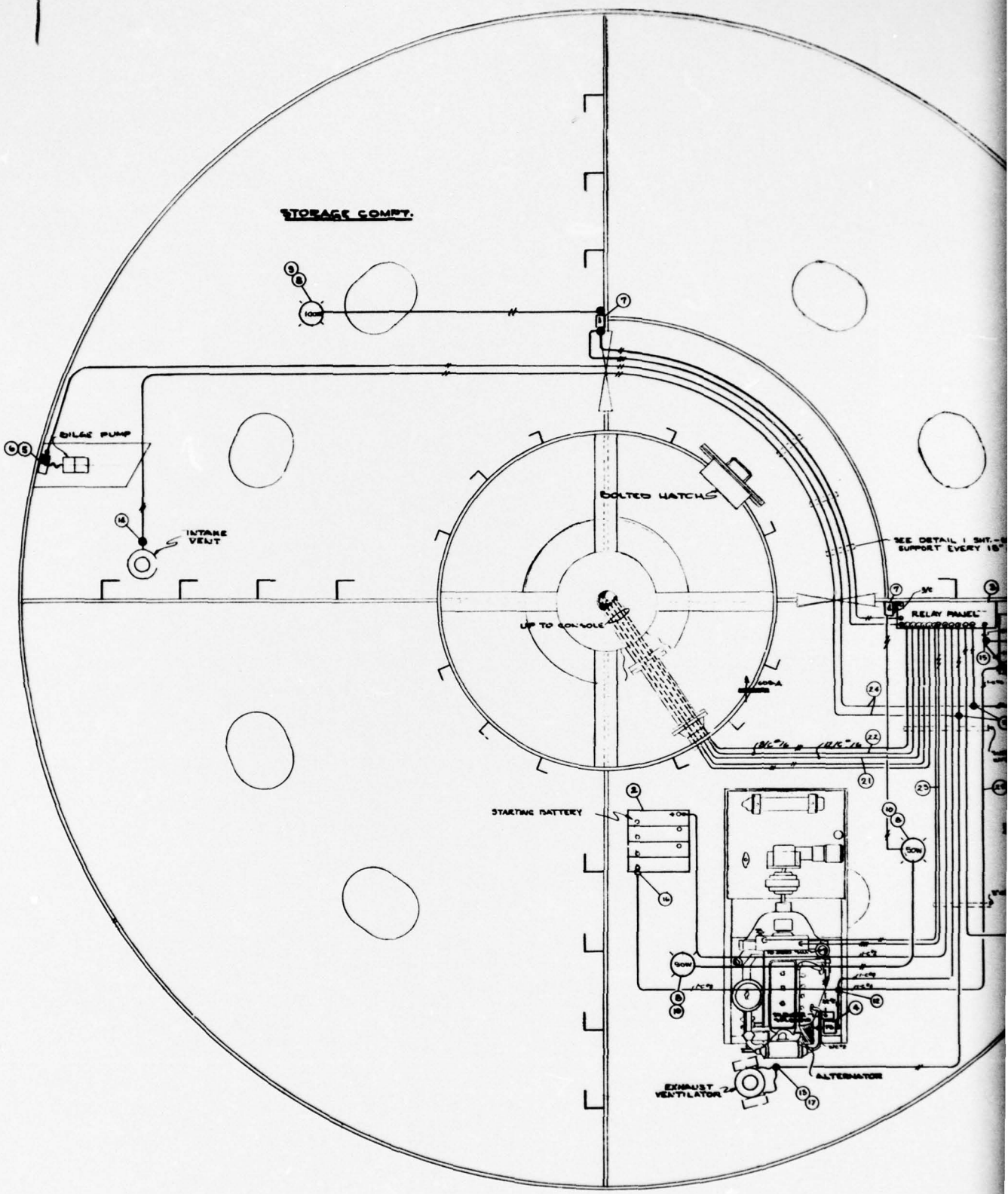
MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
G. BABIN	NONE	10-7-65	USA-2971
FABRICATORS JOB NO.		J. RAY McDERMOTT JOB NO. 66017	SHEET NO. 602

WIRING DIAGRAM



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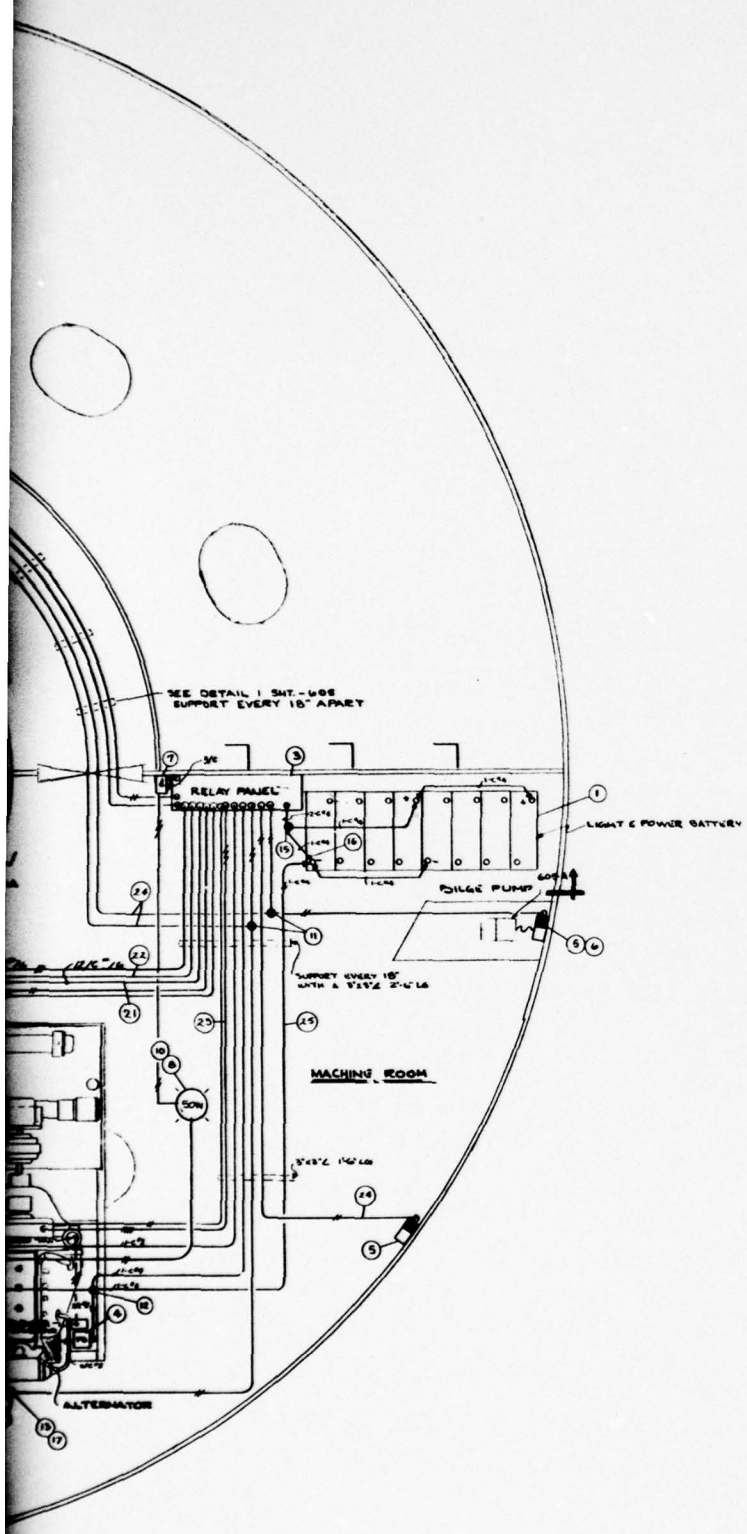


BILL OF MATERIAL

FIND SYM.	FIND NO.	QTY.	NOMENCLATURE	SPEC	CAT. NO.
	1	6	VO SERIES BATTERY 6V. COMPLETE WITH ALL INTERCONNECTION		GULTON VO 150
	2	4	VO SERIES BATTERY 6V COMPLETE WITH ALL INTERCONNECTION		GULTON VO-106
	3	1	NEMA-6 PANEL ENCLOSURE SINGLE DOOR		HOFFMAN A-36N30B
FB	4	1	WATERPROOF MARINE FUSE BOX FOR 60A. COMPLETE W/BLADE-DRILL & TAP(4) HOLES FOR 1½" I.P.S.		RUSSELL & STOLL 1250
	5	3	WATERPROOF MARINE TYPE RECEPTACLE ANGLE TYPE SINGLE GANG TWO DRILL & TAP ONE HOLE FOR ¾" I.P.S.		RUSSELL & STOLL 17169
	6	2	TWO WIRE. THREE POLE PLUG FOR ITEM "5"		RUSSELL & STOLL 3720B
	7	2	WATERTIGHT MARINE TYPE SWITCH SINGLE GANG THREE WAY DRILL & TAP (3) HOLES FOR ½ I.P.S.		RUSSELL & STOLL 1696
	8	3	WATERPROOF MARINE LIGHT FIXT. 7 SCREW GLOBE FOR DECK MOUNTING 100 W. 24 V.D.C. DRILL & TAP (6) HOLES FOR ½ I.P.S		RUSSELL & STOLL 5065 M.C.
	9	1	100 W LAMP 24 V D.C. MED. BASE		
	10	2	50 W LAMP 24 V. DC. MED. BASE		
◆	11	4	WATERPROOF MARINE CONNECTION BOX COMPLETE TROUGH BOX & CONNECTION BLOCK. DRILL & TAP 6 HOLES FOR ¾" I.P.S.		RUSSELL & STOLL 1266 M.C.
◆	12	1	WATERPROOF MARINE CONNECTION BOX COMPLETE TROUGH BOX & CONNECTION BLOCK - DRILL & TAP FOR THE FOLLOWING I.P.S. SIZES (1) ½" ON TOP (1) ¾" ON RIGHT SIDE (1) 1" ON BOTTOM (1) 1¼" ON LEFT SIDE		RUSSELL & STOLL 1265 M.C.
◆	13	1	WATERPROOF MARINE CONNECTION BOX ROUND BOX WITH CONNECTION BLOCK. DRILL & TAP (4) HOLES ON EACH SIDE FOR ¾" I.P.S.		RUSSELL & STOLL 1269 M.C.
◆	14	1	WATERPROOF MARINE CONNECTION BOX ROUND BOX W/CONNECTION BLOCK - DRILL & TAP (2) HOLES ON OPPOSITE SIDE OF EACH OTHER) FOR ¾" I.P.S.		RUSSELL & STOLL 1265 M.C.
◆	15	1	WATERPROOF MARINE CONNECTION BOX - ROUND BOX W/CONN. BLOCK - DRILL & TAP (3) HOLES FOR 1½" I.P.S.		RUSSELL & STOLL 1268 M.C.
	16	9	TERMINAL LUG: SQUARE FLANGE ONE HOLE 45° ANGLE TONGUE CONDUIT RANGE FROM "6 TO" 1		PENN-UNION 21723
	17	2	CGB CONNECTOR MALE THREAD ¾"		CONDUIT APPLIANCE CGB 296
	18				
	19				
	20	10'	4/CONDUCTOR CABLE TYPE AIEE-45 PVIB #12 AWG .660 O.D.		GAUBERT PVIB-6
	21	100'	12/CONDUCTOR CABLE, TYPE AIEE-45 ICSB #16 AWG. (1.024 O.D.)		GAUBERT ICSB-12
	22	100'	8/CONDUCTOR CABLE TYPE AIEE 45 ICSB #16 AWG. (864) O.D.		GAUBERT ICSB-8
	23	200'	3/CONDUCTOR CABLE TYPE AIEE-45 TVIB #12 AWG. (778) O.D.		GAUBERT TVIB-6
	24	250'	2/CONDUCTOR CABLE TYPE AIEE-45 DVIB #12 AWG. (738) O.D.		GAUBERT DVIB-6
	25	100'	SINGLE CONDUCTOR CABLE TYPE AIEE-45 SVIB #8 AWG. (721) O.D.		GAUBERT SVIB-61
	26	100'	2/CONDUCTOR CABLE TYPE AIEE-45 DVIB #14 AWG. (604) O.D.		GAUBERT DVIB-61
	27	100'	SINGLE CONDUCTOR CABLE TYPE AIEE-45 SVIB #2 AWG. (468) O.D.		GAUBERT SVIB-66
	28	50'	2/CONDUCTOR CABLE TYPE AIEE 45 - DVIB #2 AWG. (1.191) O.D.		GAUBERT DVIB-66
	29	100'	3/CONDUCTOR CABLE TYPE AIEE-45 TVIB #2 AWG (1.267) O.D.		GAUBERT TVIB-86

REFERENCE DRAWINGS

SHT. NO.	TITLE
601	ELECTRICAL SCHEMATIC DIAGRAM
602	WIRING DIAGRAM
604	ELECTRICAL ARRANGEMENT IN CONSOLE
605	ELECTRICAL - DETAILS, ELEVATIONS, SECTIONS

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7015
REGISTERED ENGINEER
CIVIL & ELECTRICAL

APPROVED: [signature]
J. RAY McDERMOTT & CO., INC.
DATE: 1-28-66
ENGINEERS APPROVAL

	BY	DATE
PROJECT	[illegible]	1-28-66
STRUCTURAL		
PIPING		
MECHANICAL		
ELECTRICAL	[illegible]	1-28-66
INSTRUMENT		
PROJ. CHECK	[illegible]	10-27-65
PROJ. CHIEF		

MONO-MOORING SYSTEM

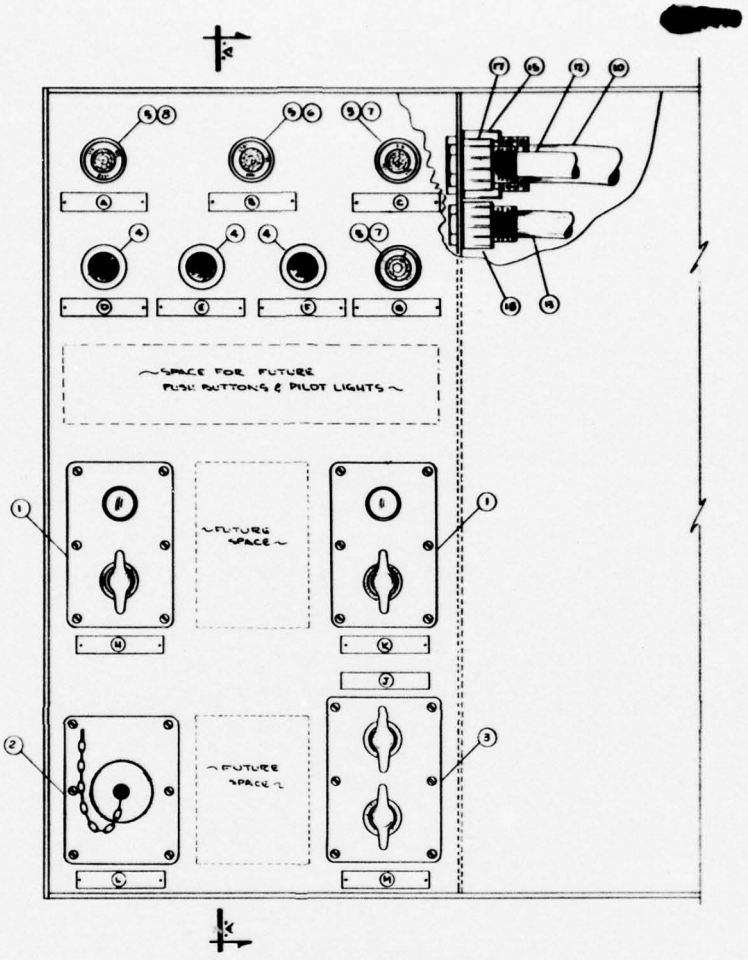
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY McDERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

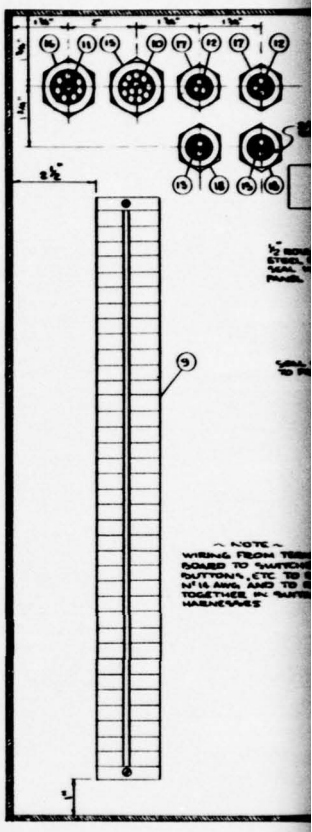
DESIGN BY	SCALE	DATE	PROJECT NO.
R. P.	¼" = 1'-0"	10-5-65	1194-2911
FABRICATION JOB NO.	—	J. RAY McDERMOTT JOB NO. 66017	SHEET NO. 605

ELECTRICAL ARRANGEMENT OF MACH. & STORAGE CONSOLE

REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MEC.	BY	REVISIONS	DATE	APP.



FRONT ELEVATION OF CONSOLE
SCALE: HALF SIZE



SECTION A-A
SCALE: HALF SIZE

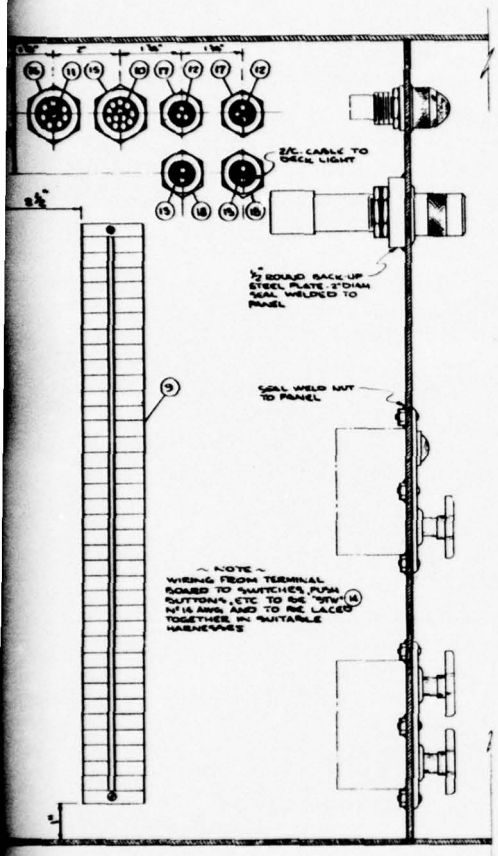
(A)	VENTILATING SYST. IN OPERATION	(B)	ENGINE CLEAR TO START	(C)	STORE ROOM LIGHTING "ON"
(D)	VENT SYST. START	(E)	ENGINE START	(F)	ENGINE STOP
(G)	ENGINE ROOM LIGHTING "ON"	(H)	DECK LIGHT SW.	(K)	EMERGENCY FAN SWITCH
(J)	STORE ROOM LIGHT SWITCH	(L)	RECEPTACLE	(M)	ENGINE ROOM LIGHT SWITCH

LIST OF NAMEPLATES
SCALE: FULL SIZE

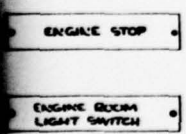
DESIGN	STRUCT.	PIPING	ELEC.	MR.	BY	REVISIONS	DATE	APP.

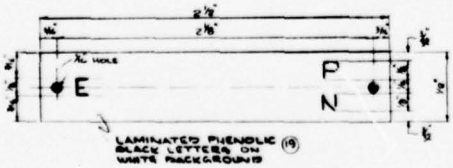
BILL OF MATERIAL

FIND SYM.	FIND NO	QTY.	NOMENCLATURE	SPEC.	CAT. NO.
	1	2	WATERPROOF MARINE COMBINATION SWITCH & 24 V. PILOT LIGHT WITH OUT GUARD ASSEMBLY TO BE COMPLETE WITH 6 SCREWS BUT WITHOUT BOX		RUSSELL & STOLL 1144
	2	1	WATERPROOF MARINE RECEPTACLE SINGLE GANG-TWO WIRE TO BE COMPLETE WITH 6 SCREWS BUT WITHOUT BOX		RUSSELL & STOLL 479 LP
	3	1	WATERPROOF MARINE SWITCH TWO GANG-THREE WAY-10 AMP. COMPLETE WITH 6 SCREWS BUT WITHOUT BOX		RUSSELL & STOLL 634
	4	3	EMP SERIES BARREL ASSEMBLIES SINGLE PUSH BUTTON MOMENTARY CONTACT		CROUSE HINDS EMP 019
	5	4	WATERTIGHT INDICATOR LIGHT PANEL MOUNT FOR 1" CLEARANCE HOLE-24V. D.C. LAMP.		DIALCO 105-3101-1331
	6	1	24 V. D.C. GREEN LENS FOR ABOVE ITEM		DIALCO
	7	2	24 V. D.C. AMBER LENS FOR ITEM 5		DIALCO
	8	1	24 V. D.C. RED LENS FOR ITEM 5		DIALCO
	9	1	SECTIONAL TERMINAL BOARD 36 POINTS TYPE A-1		G.E. CE-151 A 136
	10	X	12/CONDUCTOR CABLE TYPE AIEE-95 ICSR #16 AWG. (1.024) O.D.		GAUBERT ICSR-12
	11	X	8/CONDUCTOR CABLE TYPE AIEE-95 ICSR #16 AWG. (.885) O.D.		GAUBERT ICSR-8
	12	X	3/CONDUCTOR CABLE TYPE AIEE 95-TVIB #12 AWG. (.779) O.D.		TVIB-G GAUBERT
	13	X	2/CONDUCTOR CABLE TYPE AIEE-95-DVIB #12 AWG. (.738) O.D.		GAUBERT DVIB-G
	14	25'	SINGLE CONDUCTOR INTERIOR WIRE TYPE "STU" NO 14 AWG.		GAUBERT
	15	1	MALE TERMINAL TUBE 1" I.P.S.		M-100 GAUBERT
	16	1	MALE TERMINAL TUBE 1" I.P.S.		M-100S GAUBERT
	17	2	MALE TERMINAL TUBE 3/4" I.P.S.		M-038 GAUBERT
	18	2	MALE TERMINAL TUBE 3/4" I.P.S.		GAUBERT M-068
	19	150"	LAMINATED PHENOLIC		



SECTION "A-A"
SCALE: HALF SIZE





TYPICAL DIMENSIONS OF NAMEPLATE
SCALE: DOUBLE SIZE

REFERENCE DRAWINGS

SHT. NO	TITLE
601	ELECTRICAL SCHEMATIC DIAGRAM
602	WIRING DIAGRAM
603	ELECTRICAL ARRANGEMENT OF MACH. & STOREAGE COMPARTMENTS
605	SECTIONS, ELEVATIONS & DETAILS
893	HYDRAULIC & ELECTRICAL CONTROL BOX LAYOUT & DETAILS

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. 7195
REGD. 5/10
REGISTERED ENGINEER
CIVIL ENGINEERING

APPROVED

J. RAY McDERMOTT & CO., INC.
DATE 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	JCE	1-28-66
STRUCTURAL		
PROCESS		
MECHANICAL		
ELECTRICAL	[illegible]	1-28-66
INSTRUMENT		
TAB CHECK	[illegible]	10-27-66
PROOF CHECK		

MONO-MOORING SYSTEM

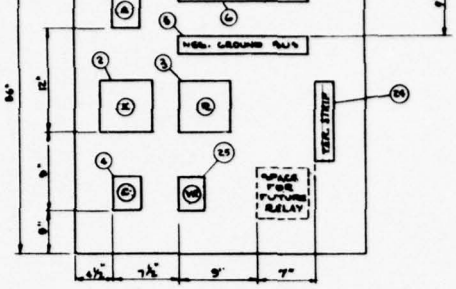
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY McDERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

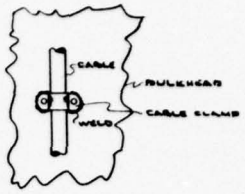
DRAWN BY	SCALE	DATE	PROJECT NO.
S. COCO	AS SHOWN	10-5-66	USA-2971
FABRICATORS JOB NO.		J. RAY McDERMOTT JOB NO. 56017	SHEET NO. 604

ELECTRICAL ARRANGEMENT IN CONSOLE

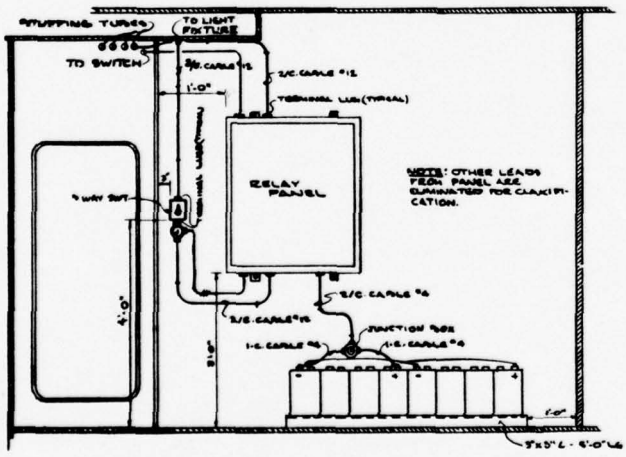
NO	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP



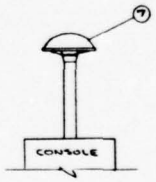
ARRANGEMENT OF RELAYS INSIDE PANEL
SCALE: 1½" = 1'-0"



~TYPICAL SINGLE CABLE CLAMP DETAIL~
N.T.S

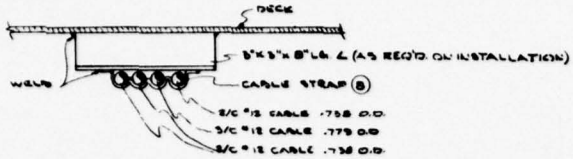


SECTION 603-A
UNIT 603
SCALE: 3/4" = 1'-0"



DECK LIGHT ELEV
SCALE: 3/4" = 1'-0"

	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING



~ TYPICAL FOUR CABLE SUPPORT CLAMP ~

DETAIL 1
SHT 603
N.T.S.

~ CLAMP DETAIL ~

BULKHEAD
CABLE CLAMP

7

LIGHT ELEV
: 28'-11"-0"

BILL OF MATERIAL

FIELD SYM.	FIND NO	QTY	NOMENCLATURE	SPEC	CAT. NO.
	1	1	RELAY BASE FOR 24V. COIL 30A 2 N.O.		ALLEN BRADLEY 700 BAS 12
	2	1	RELAY 24 V DC 60A 2P 2 N.O.		ALLEN BRADLEY 700 AAC 12
	3	1	TIME DELAY RELAY 120 SEC DELAY 24V. 1 N.O. 1 N.C. CONTACT		A.W. HARRISON 2SP 2CL-1PDP-120S
	4	1	RELAY 24 V DC 30A 2 N.O. 1 N.C CONTACTS		ALLEN BRADLEY 700-BOS-22
	5	1	COPPER GROUND BAR WITH 12 BOX TYPE TERMINALS		
	6	1	TERMINAL BOARD 12 POINTS W/FUSE CLIPS		G.E. CR 9180-12
	7	1	VAPORTIGHT TYPE VPM RECESSTAL LIGHT FIXTURE 220 V. D.C. 1½" HUBS		CROUSE HINDS VPM 6209
	8	8	CABLE STRAP - STEEL DIMENSION AS SHOWN		OCEANIC
	9	150	TWO-HOLE BULKHEAD TYPE STRAP FOR CABLE SIZE .738 O.D.		OCEANIC 66618
	10	60	TWO HOLE BULKHEAD TYPE STRAP CABLE SIZE .799 O.D.		OCEANIC 66625
	11	25	TWO HOLE BULKHEAD TYPE STRAP FOR CABLE SIZE 1.008 & 1.024 O.D.		OCEANIC 66705
	12	15	TWO HOLE BULKHEAD TYPE STRAP FOR CABLE SIZE .1158		OCEANIC 65703
	13	50	TWO HOLE BULKHEAD TYPE STRAP FOR CABLE SIZE 1.138 OD		OCEANIC 66685
	14	10	TWO HOLE STRAP FOR CABLE SIZE 1.191 O.D.		
	15	50	TWO HOLE STRAP FOR CABLE SIZE 1.267 O.D.		
	16	3	TERMINAL TUBE ⅜" I.P.S.		GUARDET M-668
	17	80	TERMINAL TUBE ½" I.P.S.		GUARDET M-668
	18	20	TERMINAL TUBE 1" I.P.S.		GUARDET M-668
	19	25	TERMINAL TUBE 1" I.P.S.		GUARDET M-668
	20	10	TERMINAL TUBE 1½" I.P.S.		GUARDET M-668
	21	10	TERMINAL TUBE 1½" I.P.S.		GUARDET M-668
	22	10	STUFFING TUBE FOR ⅜" I.P.S		GUARDET S-038A
	23	5	STUFFING TUBE FOR ½" I.P.S		GUARDET S-038A
	24	1	12 POINT TERMINAL STRIP		
	25	1	VOLTAGE SENSOR RELAY 24V (DSB 1 N.O. SWITCH ONLY)		A.W. HARRISON DE 35105

REFERENCE DRAWINGS

SHT. NO.	TITLE
603	ELECTRICAL ARRANGEMENT OF MACH. & STORAGE COMPARTMENTS

REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7124
REGISTERED
IN
CIVIL ENGINEERING

APPROVED: [signature]
J. RAY McDERMOTT & CO., INC.
DATE 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	[illegible]	1-25-66
STRUCTURAL		
PROCESS		
MECHANICAL		
ELECTRICAL	[illegible]	1-28-66
INSTRUMENT		
FOR CHIEF	[illegible]	10-21-66
PROP. CHIEF		

MONO-MOORING SYSTEM

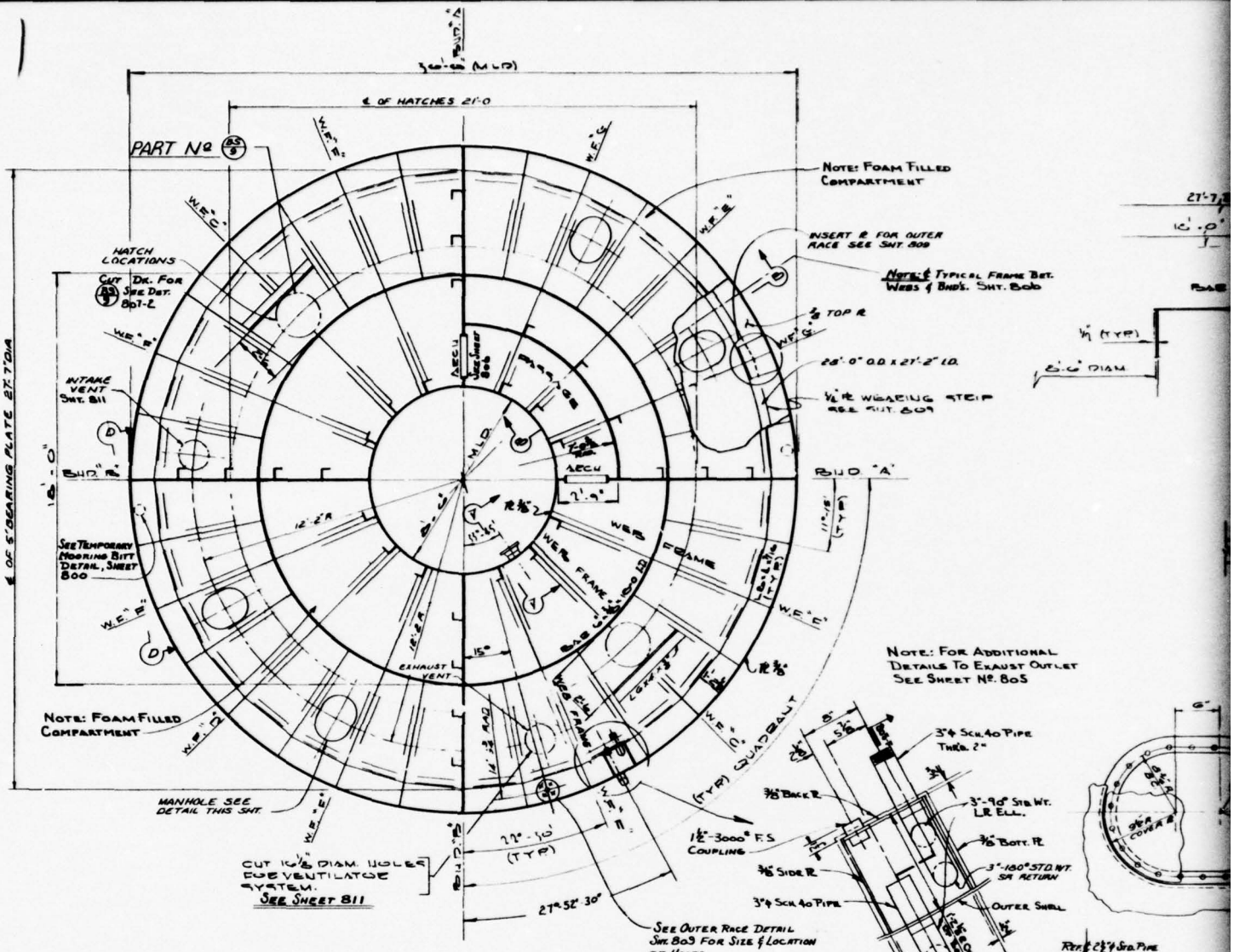
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY McDERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
A. COLO	AS SHOWN	10-19-65	USA-337
FABRICATORS JOB NO.		J. RAY McDERMOTT JOB NO. 56017	SHEET NO. 603

ELECTRICAL - SECTIONS, ELEVATIONS & DETAILS

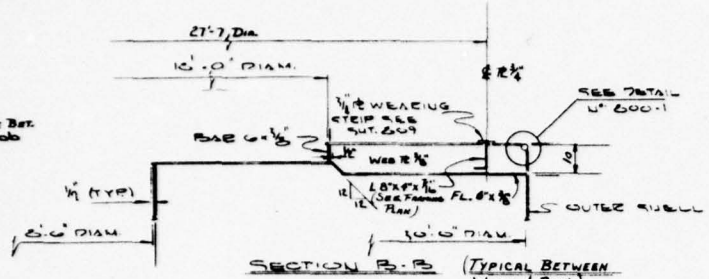
800 - STRUCTURAL



DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.

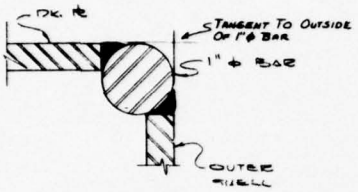
BILL OF MATERIAL

FIND NO	DWG NO	QTY	NOMENCLATURE	SPEC	MAT'L.
BS 9	800	2	21" DIA. QUICK ACTING SCUPPLES INCHBANE MAIN CO. DWG. NO. M1680		STEEL
BS 10	800	264	¼-13 x 1" FH MACHINE SCREW		S.S.



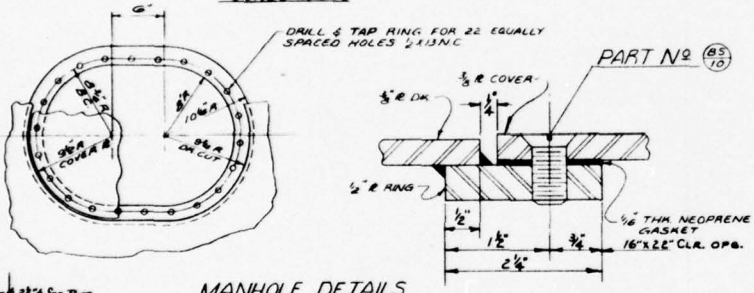
SECTION B-B (TYPICAL BETWEEN WEBS & BHDS.)

SCALE ½" = 1'-0"

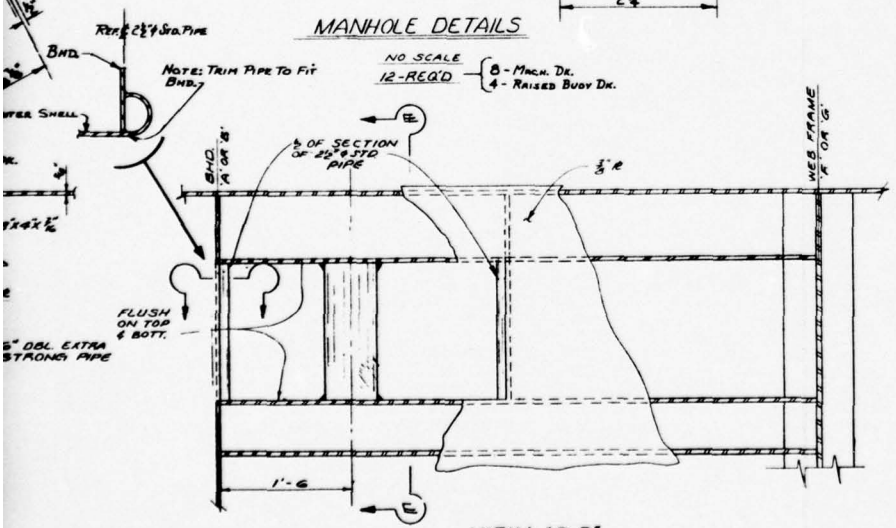


DETAIL Nº 800-1

SCALE: FULL



MANHOLE DETAILS



TEMPORARY MOORING BITT

2 REQ'D

VIEW "D-D"

1½" = 1'-0"

REFERENCE DRAWINGS

SHT U"	TITLE
801	ARRANGEMENT PLANS
809	INNER & OUTER FACE
806	BULKHEAD DETAILS SHT 1
807	BULKHEAD MISCELLANEOUS DETAILS SHT. 2
811	VENTILATION SYSTEM
805	MISC. DETAILS

NOTES:

ALL STEEL TO BE ASTM A7 EXCEPT AS NOTED.

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7108
REGISTERED
CIVIL ENGINEER

DATE: 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	JRS	4-28
STRUCTURAL	T.C.B.	5-20-66
PIPING		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
FAB. CHECK	RE	5-27-66
PROP. CHECK		

MONO-MOORING SYSTEM

FOR

U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES

FORT BELVOIR, VIRGINIA

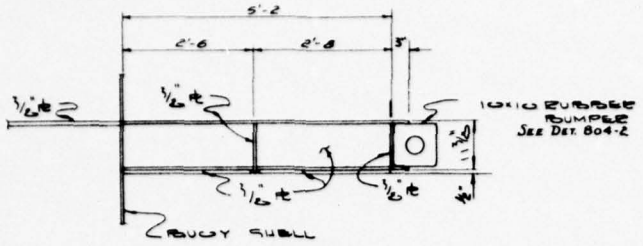
J. RAY Mc DERMOTT & CO., INC.

ENGINEERS — NEW ORLEANS, LA. — CONTRACTORS

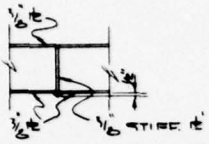
DRAWN BY	SCALE	DATE	PROJECT NO.
ROSS & TONY	VOTEN	9-1-65	USA 7971
FABRICATORS JOB NO.	56017	J. RAY Mc DERMOTT JOB NO.	DWG. NO. 800

TOP DECK FRAMING PLAN

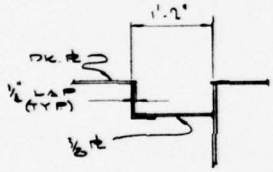
	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.



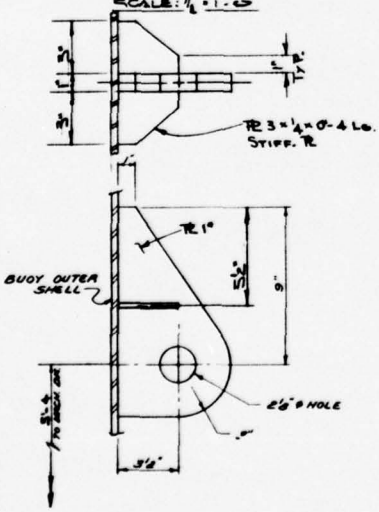
SECTION A-A
SCALE: 1/4"=1'-0"



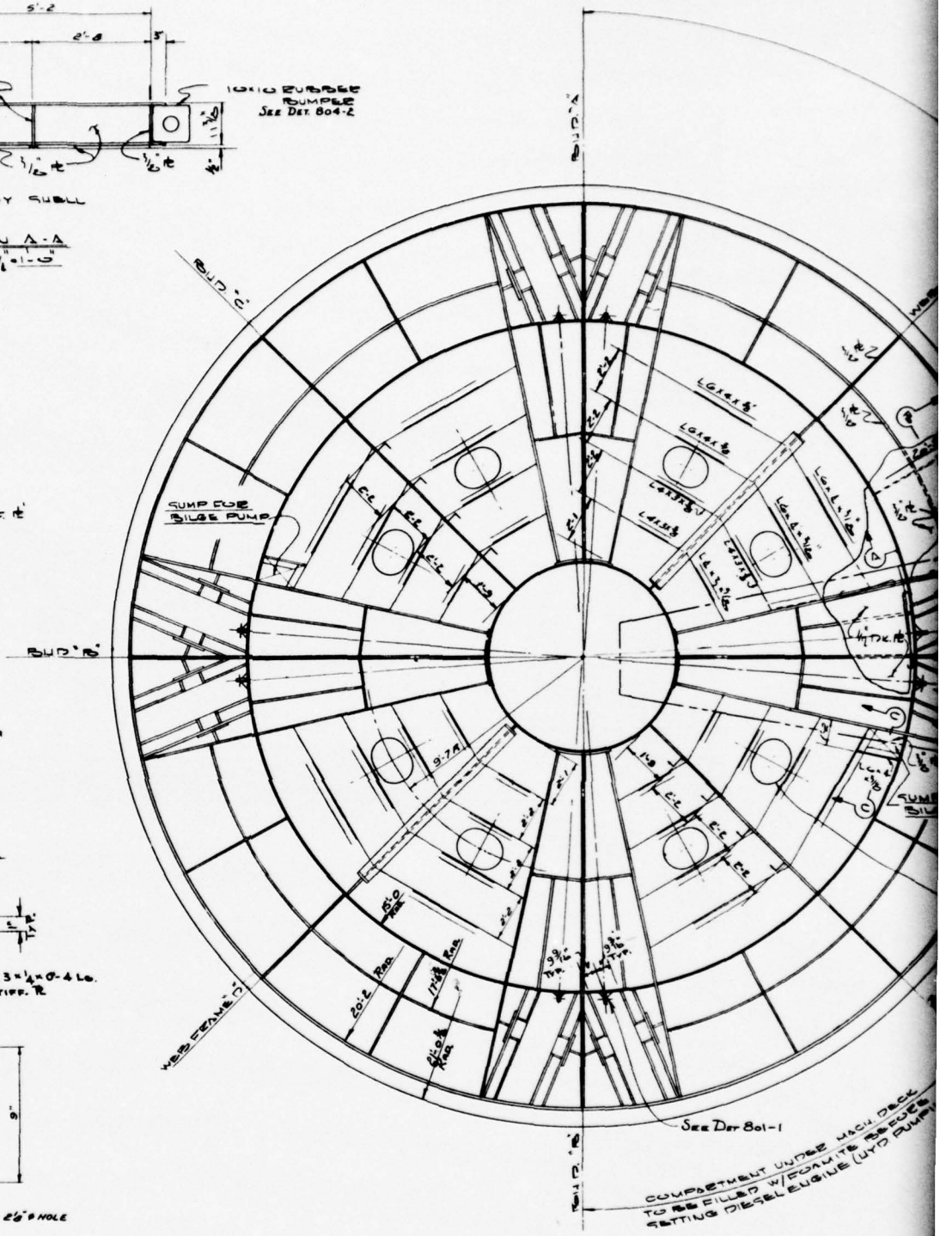
SECTION B-B
SCALE: 1/4"=1'-0"



SECTION C-C
SCALE: 1/4"=1'-0"

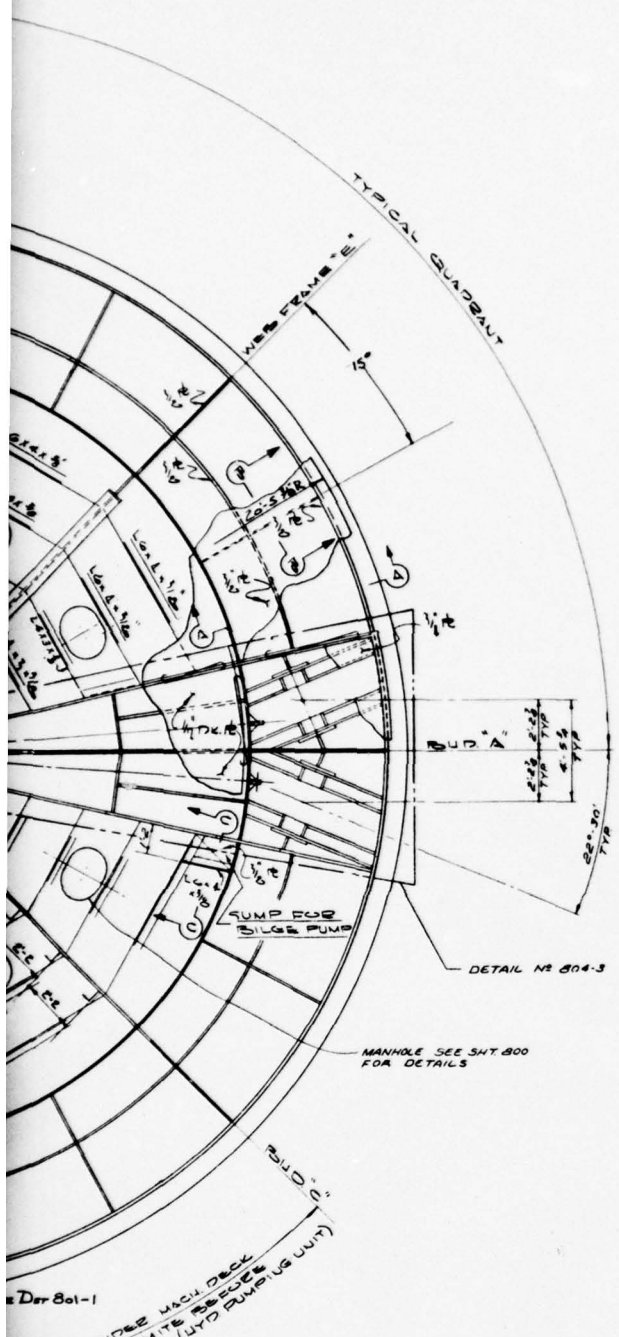


DETAIL "801-1"
S. REQ'D
2"=1'-0
(SEE SHEET 900)



MACHINERY DECK
FRAMING PLAN
SCALE: 1/8"=1'-0"

	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.



BILL OF MATERIAL

FIND Nº	DWG Nº	QTY	NOMENCLATURE	SPEC.	MAT'L

REFERENCE DRAWINGS

SHT. Nº	TITLE
001	OUTBOARD PROFILE - SECTION THRU BUOY
801	MISCELLANEOUS DETAILS
802	MISCELLANEOUS DETAILS
806	BULKHEAD DETAILS SHT. "1"
800	TOP DECK FRAMING PLAN
900	LAUNCHING ARRANGEMENT

NOTES:

ALL STEEL TO BE ASTM A7 EXCEPT AS NOTED

MARK	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7501
REGISTERED
PROFESSIONAL ENGINEER
CIVIL ENGINEERING

APPROVED: 9/14/66

DATE: 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	GLS	1-28-66
STRUCTURAL	J.C.A.	10-28-66
PROCESS		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
PUB. WORKS		
PROP. WORKS		

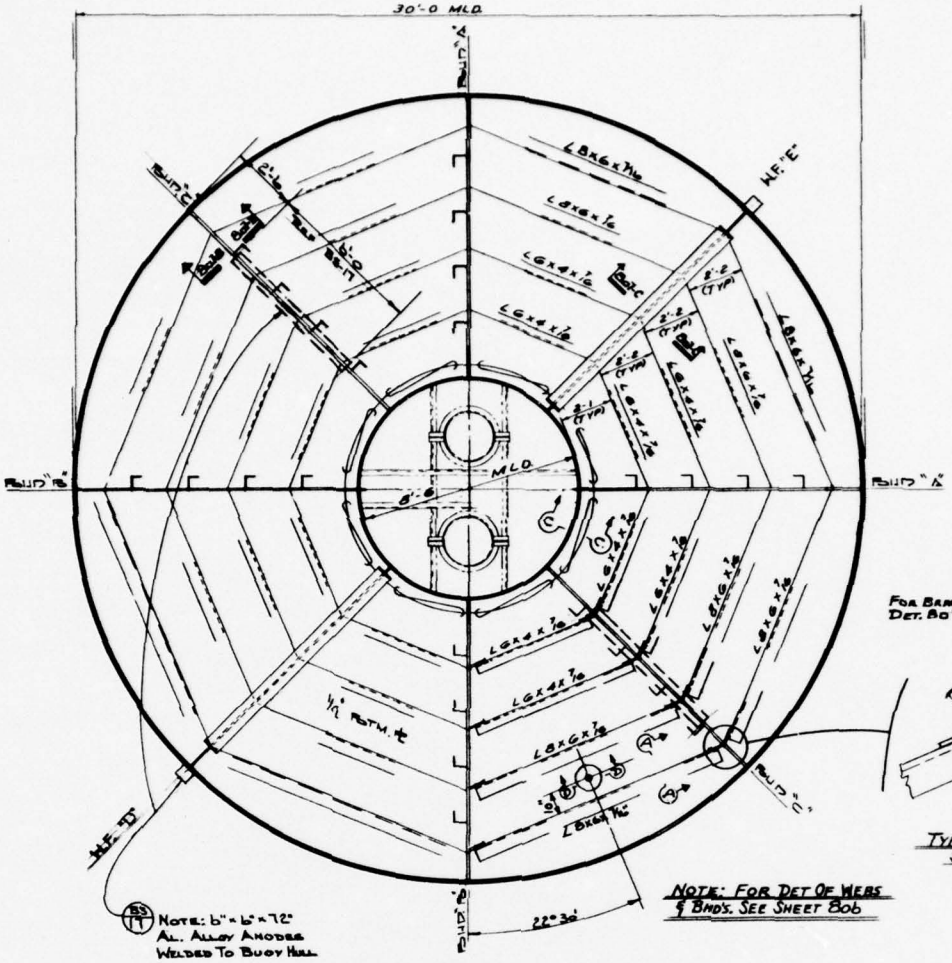
MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

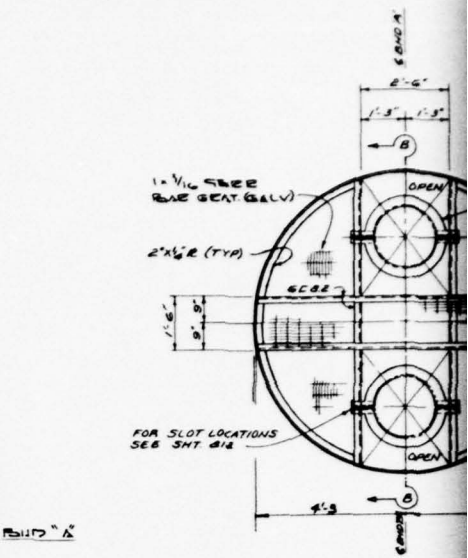
J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — NEW ORLEANS, LA. — CONTRACTORS

DESIGN BY	SCALE	DATE	PROJECT NO.
ROSS & TONY	NOTED	6-9-65	USA 2871
FABRICATION JOB NO. 56017	J. RAY Mc DERMOTT JOB NO.		SHEET NO. 901

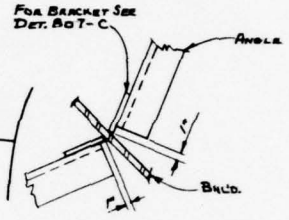
MACHINERY DECK FRAMING PLAN



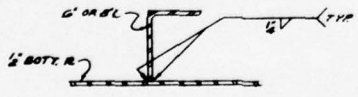
BOTTOM OF BUOY
FRAMING PLAN
SCALE: 3/8" = 1'-0



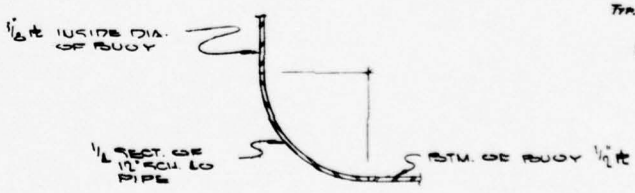
PLAN
HOSE HANDLING P
SCALE: 1/4" = 1'-0



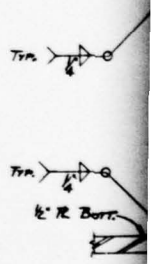
TYPICAL CONN.
SCALE 1 1/2" = 1'-0



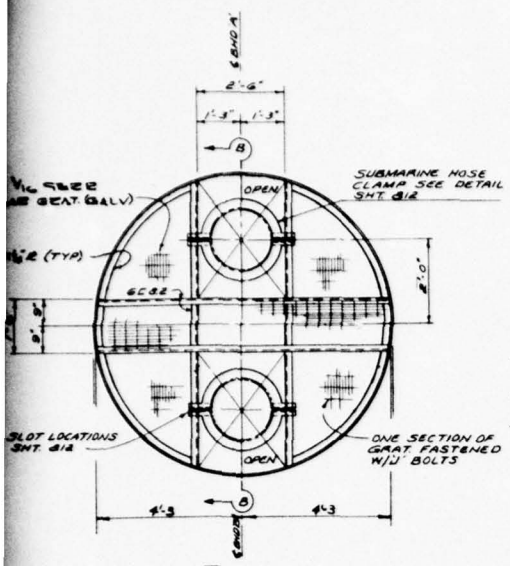
SECTION "A-A"
1/2" = 1'-0



SECTION C-C
SCALE: 3" = 1'-0



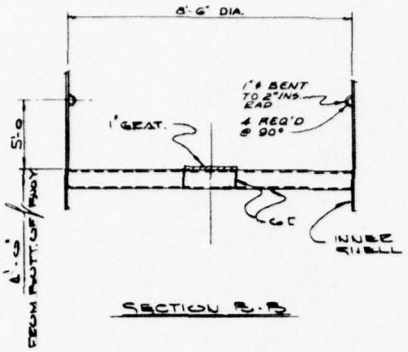
	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.



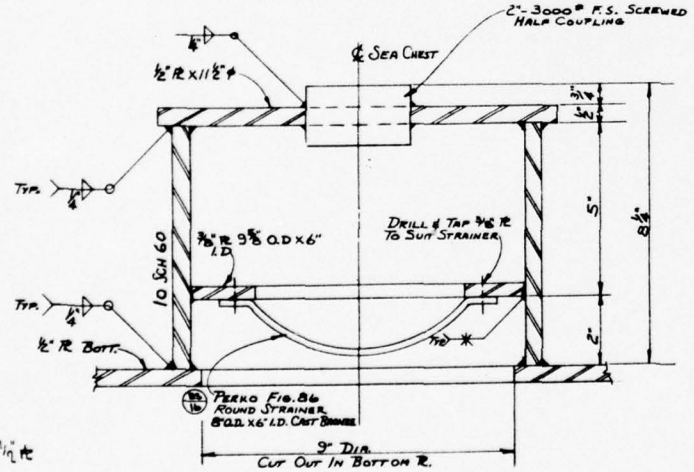
PLAN

HOSE HANDLING PLATFORM

SCALE: 1/4" = 1'-0"



SECTION B-B



SEA CHEST ~ (1) REQ'D.

HALF SIZE

SECTION D-D

BILL OF MATERIAL

FIND NO	DWG NO	QTY	NOMENCLATURE	SPEC.	MAT'L
BS-16	802	1	PERKO FIG. 86 ROUND STRAINER 8" O.D. X 6" I.D		CAST BRONZE
BS-17	802	4	AL. ALLOY ANODES		AL. ALLOY

REFERENCE DRAWINGS

DWG. NO.	TITLE
801	OUTBOARD PROFILE - SECT. THRU BUOY
806	BULKHEAD DETAILS "UT. 1"
819	MISCELLANEOUS DETAILS
807	BULKHEAD & MISC. DETAILS

NOTES:

ALL STEEL TO BE ASTM A7 EXCEPT AS NOTED

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7061
STATE OF LOUISIANA
CIVIL ENGINEER
APPROVED
J. RAY McDERMOTT & CO., INC.
DATE: 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	[illegible]	1/28
STRUCTURAL	F.C.B.	1-28-66
PIPING		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
PUB. WORKS		
PROP. WORKS		

MONO-MOORING SYSTEM

FOR

U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES

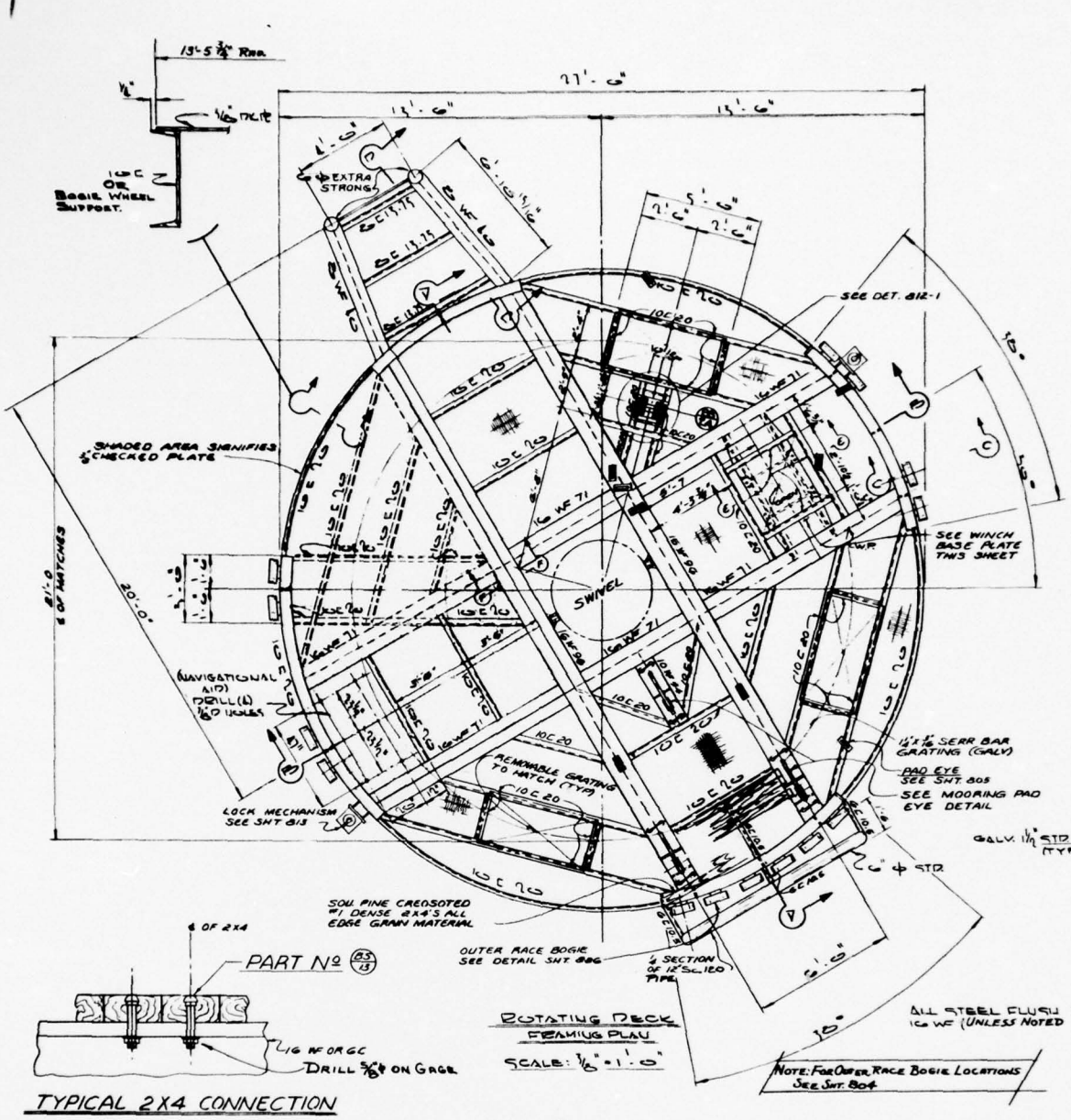
FORT BELVOIR, VIRGINIA

J. RAY McDERMOTT & CO., INC.
ENGINEERS CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
FRANCHINA	NOTED	6-9-65	USA-2971
PUBLICATIONS JOB NO.	66017	J. RAY McDERMOTT JOB NO.	SHEET NO. 802

BOTTOM FRAMING PLAN

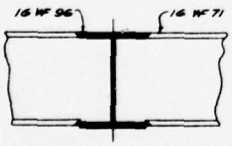
REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MR.	BY	REVISIONS	DATE	APP.



ROTATING DECK FRAMING PLAN

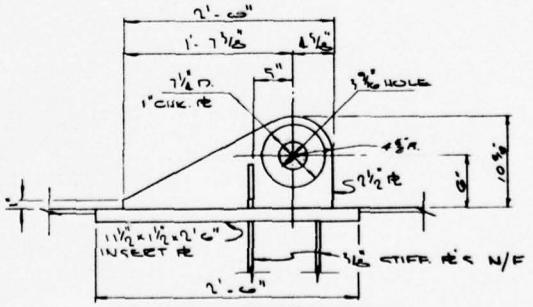
SCALE: 3/16" = 1'-0"

TYPICAL 2X4 CONNECTION



SECTION "F-F"

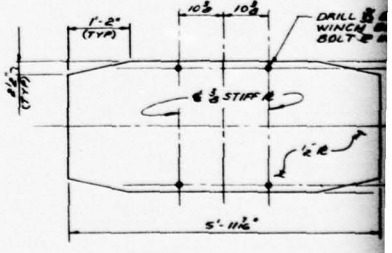
1" = 1'-0



MOORING PAD EYE DETAIL

1" RECD. 3

SCALE: 1 1/2" = 1'-0"

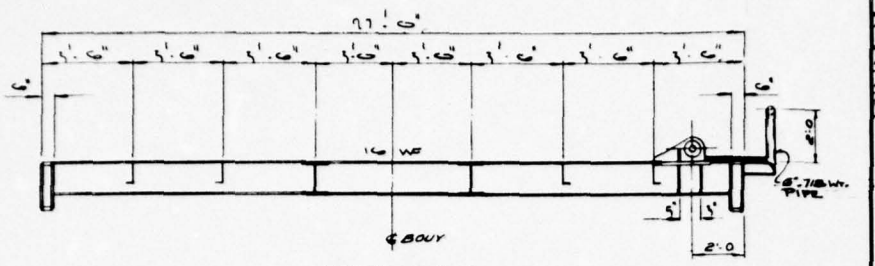


WINCH BASE PLATE

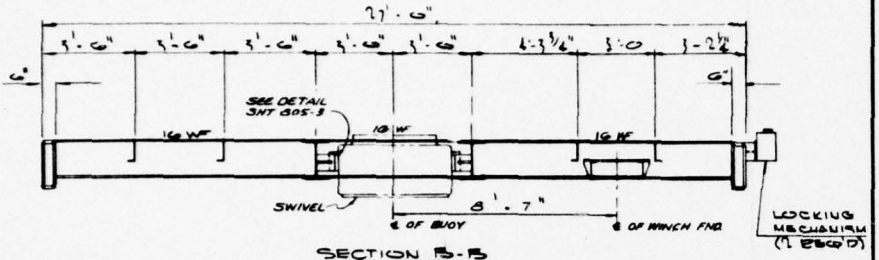
1-RECD

3/4" = 1'-0

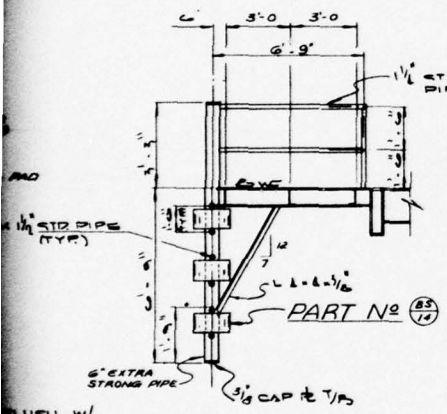
DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING



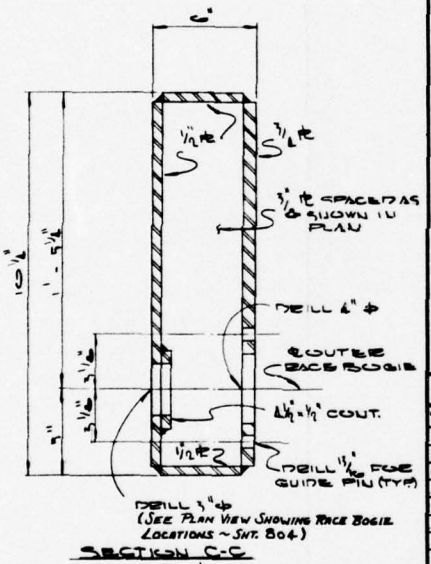
SECTION A-A
SCALE: 1/8" = 1'-0"



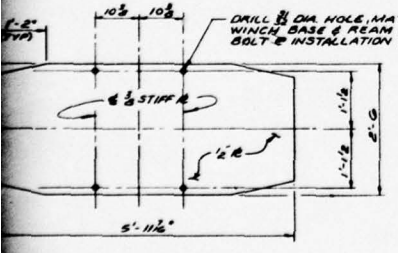
SECTION B-B
SCALE: 1/8" = 1'-0"



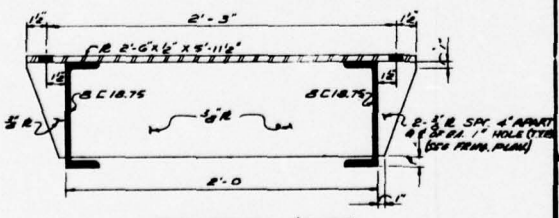
SECTION D-D
SCALE: 1/8" = 1'-0"



SECTION C-C
SCALE: 3/4" = 1'-0"



WINCH BASE PLATE
1-REQ'D
3/4" = 1'-0"



SECTION "E-E"
3/16" = 1"

BILL OF MATERIAL

FIND NO.	DWG NO.	QTY.	NOMENCLATURE	SPEC.	MAT'L
63-13	803	24	STY FOUNTAIN BOLT WITH 4 WASHER	ASTM 325	GALV. STL
63-14	803	8	1" O.D. x 3/8 TH. RUBBER IMPER		SYNTH. RUBBER
63-24	803	1	3 TON CAP. HAND WINCH		STEEL

2

REFERENCE DRAWINGS

DWT. Nº	TITLE
001	OUTBOARD PROFILE-SECT. TUBU BUOY
610	FLOW SYSTEM PIPING ARRANGEMENT
680	ASSEMBLY-INNER RACE BOGIE WHEELS
804	PLAN VIEW SHOWING RACE BOGIE LOCATIONS
805	MISCELLANEOUS DETAILS
812	MISC. DETAILS
813	ROTATING DECK LOCKING MECHANISM
815	"A" FRAME ASSY.
886	ASSY & DETAILS – OUTER RACE BOGIE WHEELS SHT. 1

NOTES:
1. 16 WF 71 & 16 WF 96 TO BE (A 242 STL).
2. ALL STEEL TO BE ASTM A36 EXCEPT AS NOTED.
3. ALL WELDS ON ROTATING DECK TO BE FULL STRENGTH.

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7101
REGISTERED ENGINEER
CIVIL
APPROVED
1-28-66
ENGINEER APPROVAL

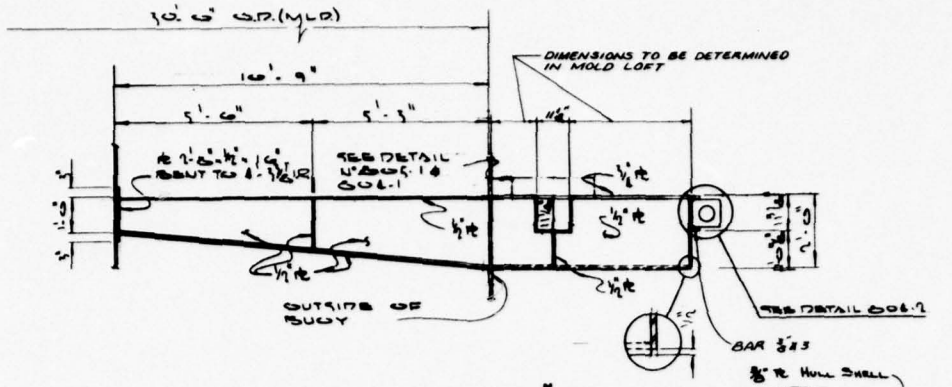
MONO-MOORING SYSTEM
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA
J. RAY Mc DERMOTT & CO., INC.
CONTRACTOR
NEW ORLEANS, LA.

DESIGNED BY	SCALE	DATE	DRAWING NO.
2099	NOTED	9-25-65	URA 2971
PUBLICATION AND NO.	66017		SHEET NO. 803

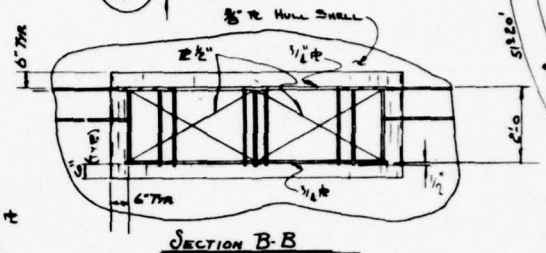
ROTATING DECK & FRAMING DETAILS

NO.	DATE	APP.	REVISIONS	DATE	APP.

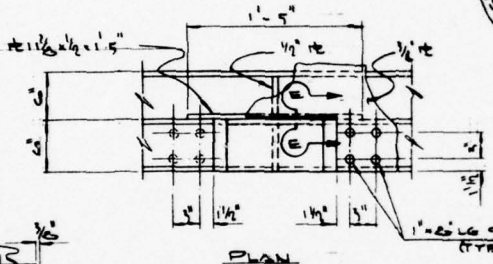
DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY



SECTION A-A
SCALE: 1/2" = 1'-0"

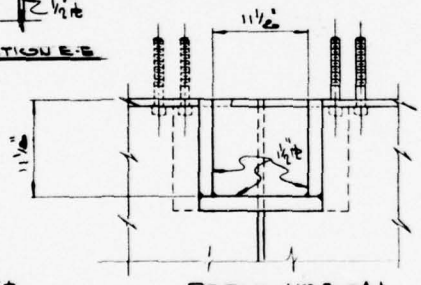


SECTION B-B
SCALE 1/2" = 1'-0"

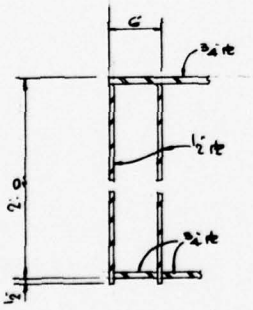


PLAN

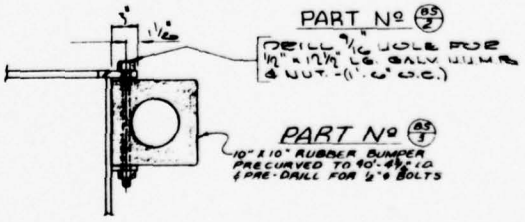
SECTION E-E



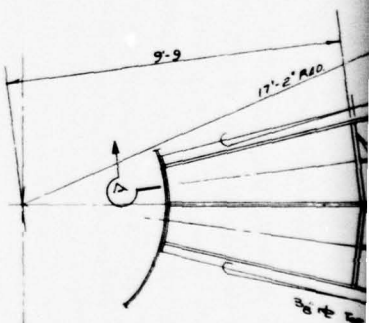
DETAIL N° BOL-1
SCALE: 1/2" = 1'-0"

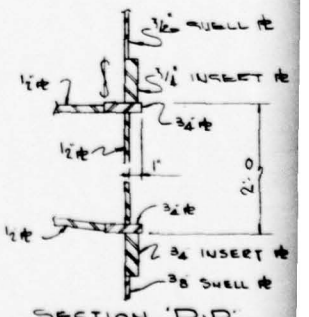


SECTION F-F



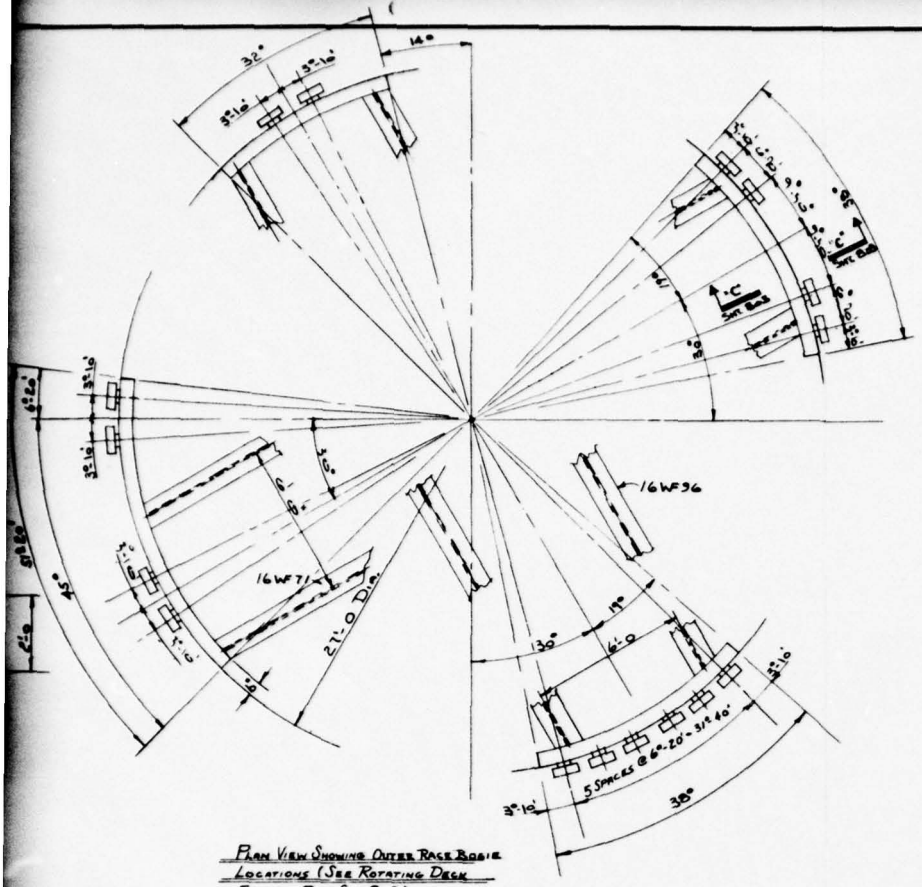
DETAIL N° BOL-2
SCALE: 1/2" = 1'-0"



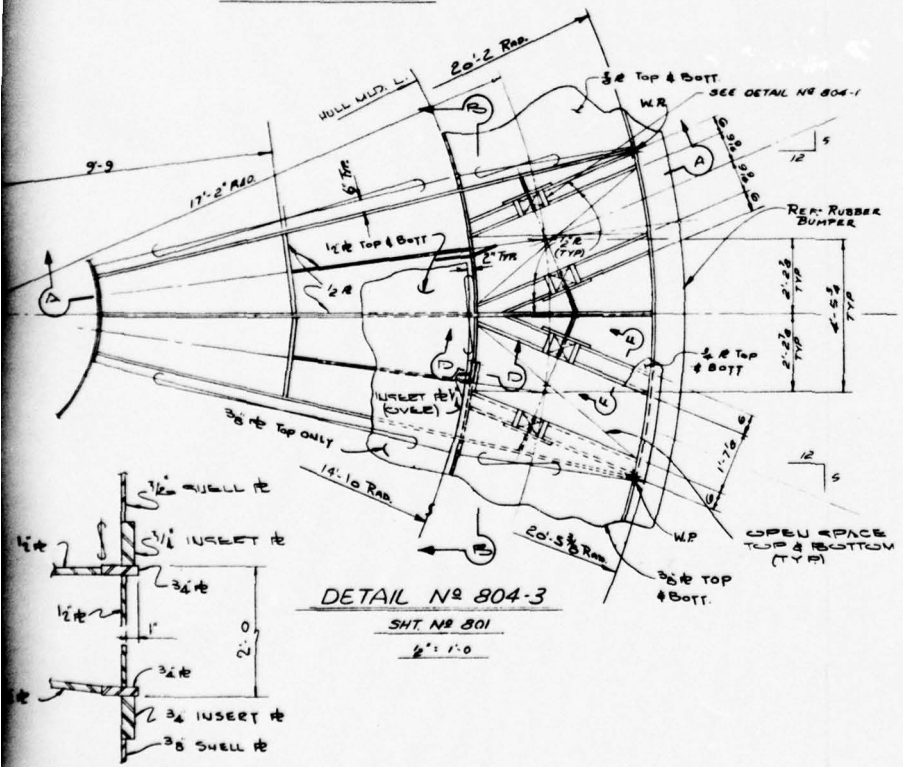


SECTION 'D-D'

DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING



PLAN VIEW SHOWING OUTER RACE BOGIE LOCATIONS (SEE ROTATING DECK FRAMING PLAN SHT. 803)



DETAIL Nº 804-3

SHT. Nº 801

1/2" = 1'-0

SECTION 'D-D'

BILL OF MATERIAL

FIND Nº	DWG Nº	QTY	NOMENCLATURE	SPEC.	MAT'L
BS-1	804	126	1" x 6 LG SQ HHB.	AISI 316	S.S.
BS-2	804	74	1" x 12" LG GALV. HHWB & NUT	ASTM A373	STEEL
BS-3	804	1	10" x 10" RUBBER BUMPER		BUTYL RUBBER

REFERENCE DRAWINGS

DWG. Nº	TITLE
001	OUTBOARD PROFILE - SECT. THRU BUOY
002	PLAN @ TOP OF ROTATING DECK
801	MACH. DECK FRAMING PLAN
809	MISC. DETAILS
890	CHAIN STOPPER DETAIL SHT. Nº 2
803	ROTATING DECK FRAMING PLAN

NOTES:

ALL STEEL TO BE ASTM A7 EXCEPT AS NOTED

Nº	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. 7798
REGISTERED PROFESSIONAL ENGINEER
CIVIL ENGINEER

APPROVED

J. RAY McDERMOTT & CO., INC.
DATE 1-28-66

ENGINEERS APPROVAL

	DATE
PROJECT	
STRUCTURAL	1-28-66
PROCESS	
MECHANICAL	
ELECTRICAL	
INSTRUMENT	
P&B CHECK	1-28-66
PROP. CHECK	

MONO-MOORING SYSTEM

FOR

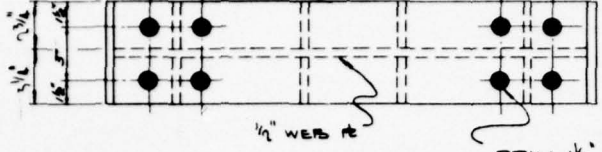
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES

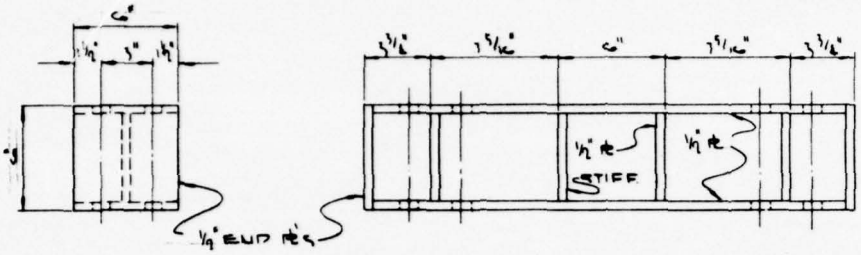
FORT BELVOIR, VIRGINIA

J. RAY McDERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

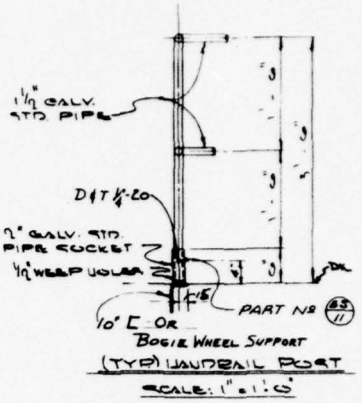
DRAWN BY	SCALE	DATE	PROJECT NO.
RDSS	VOTEN	9-20-64	USA 1971
FABRICATORS JOB NO.	J. RAY McDERMOTT JOB NO.	SHEET Nº	
66017		804	

MISCELLANEOUS DETAILS

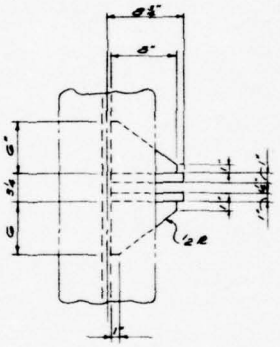




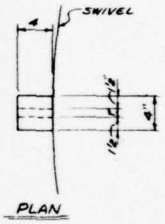
PART Nº (83/3)
DETAIL Nº 805-1
U° REQ'D (16)
SCALE: 3"=1'-0"
SHT. U° 802



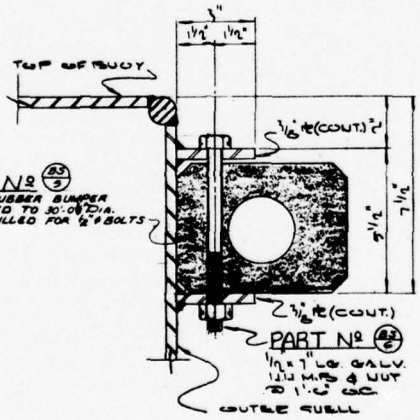
SCALE: 1"=1'-0"



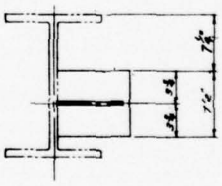
PLAN

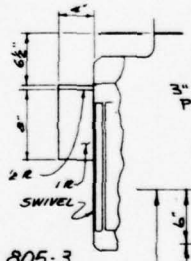


PLAN

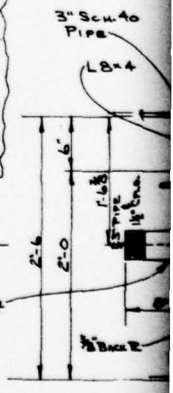


PART Nº (83/2)
9"LGS RUBBER BUMPER PRECURVED TO 30'-0" DIA. & PRE-DRILLED FOR 1/2" ϕ BOLTS



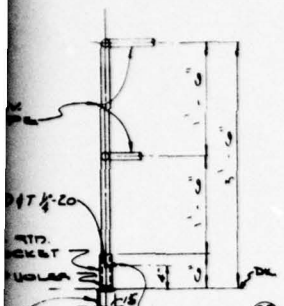


DETAIL 805-3
2 - REQ'D
SHT. 803 & 894
1/2" = 1'-0"

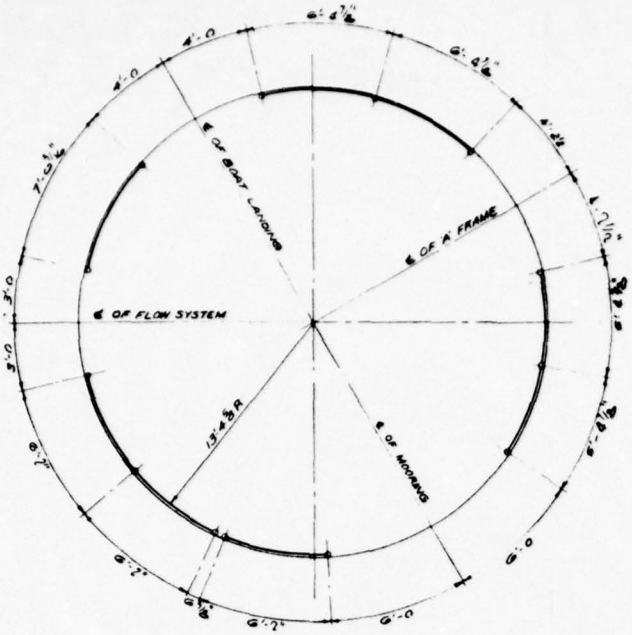


DETAIL 805-2
SCALE: 3/8"=1"
SHT. U°. 806

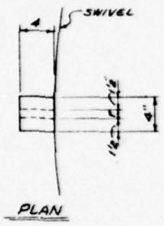
DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING

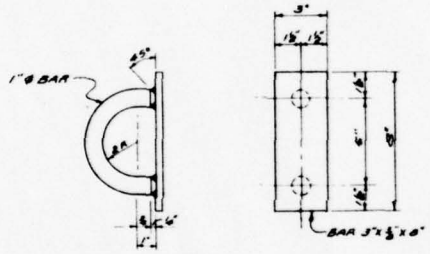


10" ℄ OR
BOGIE WHEEL SUPPORT
(TYP) HANDRAIL POST
SCALE: 1" = 1'-0"

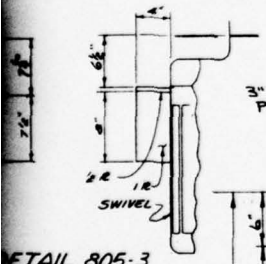


ROTATING DECK
HANDRAIL LAYOUT
1/4" = 1'-0

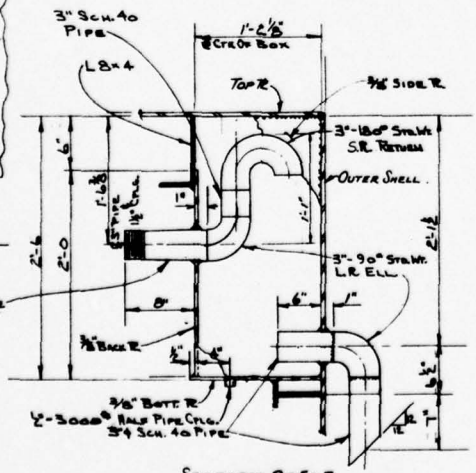




PART Nº 85/7
PAD EYE
20-REQ'D
SHT 803
3" = 1'-0



ETAIL 805-3
2 - REQ'D
SHT. 803 & 804
1½" = 1'-0



SECTION 805-F
SHEET 800 ~ SCALE 1½" = 1'-0

BILL OF MATERIAL

FIND Nº	DWG. Nº.	QTY	NOMENCLATURE	SPEC.	MAT'L
85-4	804	16	STRONG BACK	ASTM A36	STEEL
85-5	805	1	5"x 6½" RUBBER BUMPER		BUTYL RUBBER
85-6	805	03	½"-13 LG. EYE BOLT, NUT & WASHER	ASTM A378	STEEL
85-7	002	20	PAD EYE	MIL-DTL-S-224-B	STEEL
85-11	805	18	½"-20 UNC x ½" HEX SOCKET SET SCREW		

REFERENCE DRAWINGS

DWG. Nº	TITLE
001	OUTBOARD PROFILE - SECT THRU BUOY
804	MISC. DETAILS
806	BULKHEAD DETAILS "UT 1"
800	TOP DECK FRAMING PLAN
814	MONO MOORING SYSTEM SWIVEL TO BUOY CONNECTION
803	ROTATING DECK FRAMING PLAN

NOTES:
ALL STEEL TO BE ASTM A7 EXCEPT AS NOTED

REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. 7120
REVISED 1968
CIVIL ENGINEER

J. RAY McDERMOTT & CO. INC. APPROVED
DATE 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT		
STRUCTURAL	J.C.A.	1-28-66
PIPING		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
PAR. CHIEF		
PROJ. CHIEF		

MONO-MOORING SYSTEM

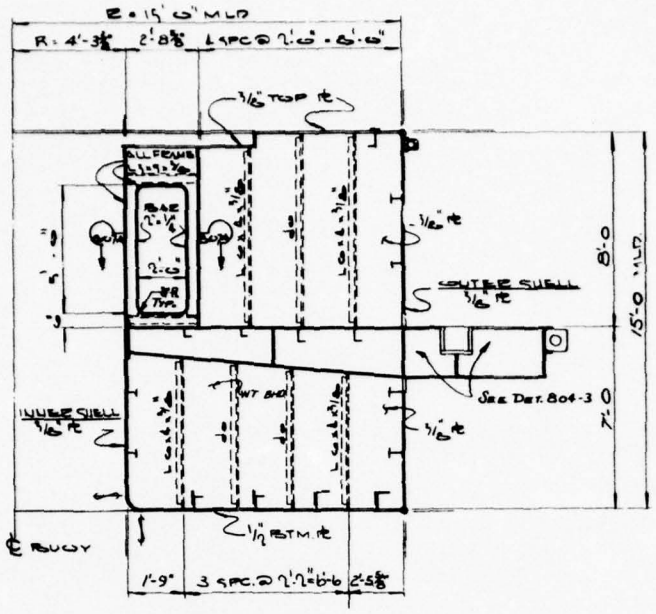
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY McDERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

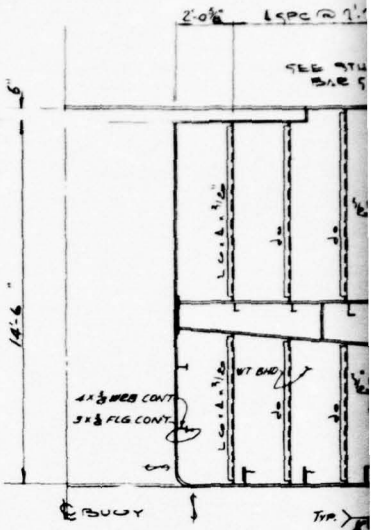
DRAWN BY	SCALE	DATE	PROJECT NO.
ROSS & TONY	VOTED	6-27-65	USA 2911
FABRICATION JOB NO.	96017	J. RAY McDERMOTT JOB NO.	SHEET NO. 805

MISCELLANEOUS DETAILS

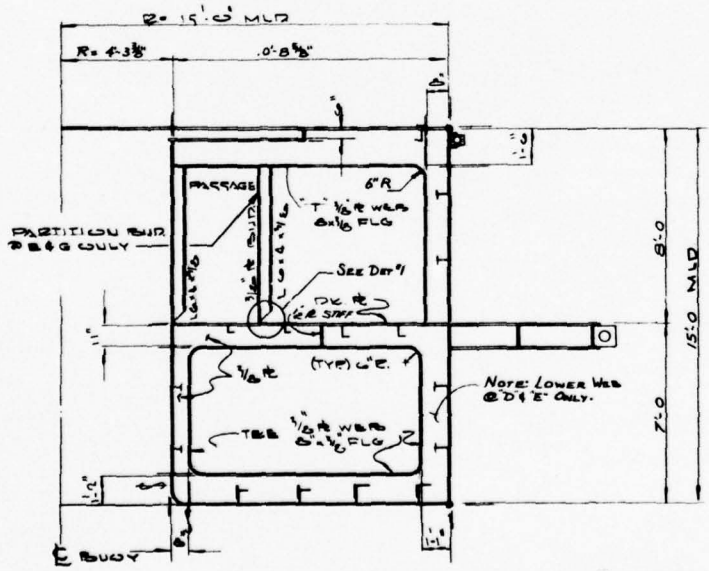
1

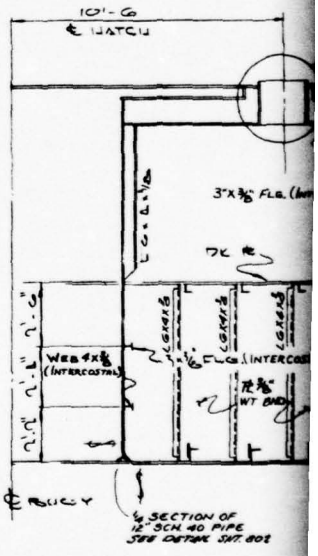


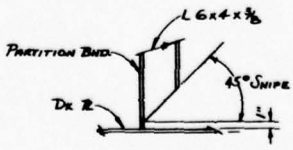
BULKHEAD "A"
"2" BEG'N



BULKHEAD "B"
"2" BEG'N







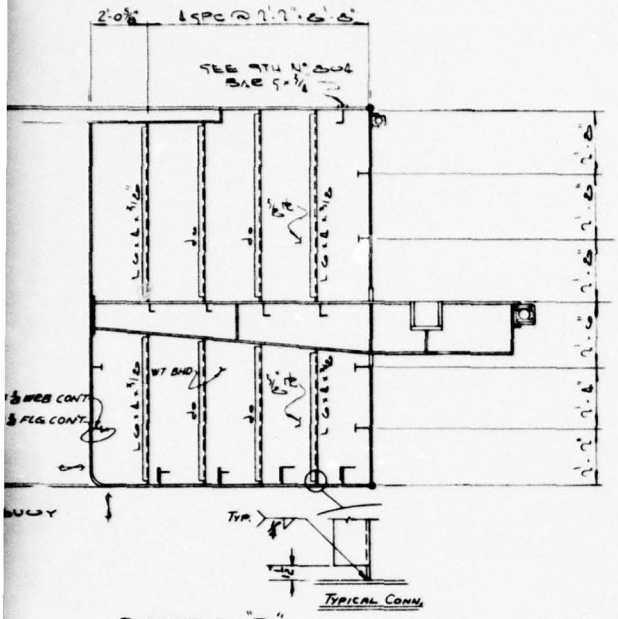
DETAIL #1

WEB FRAMES D.E.F.G

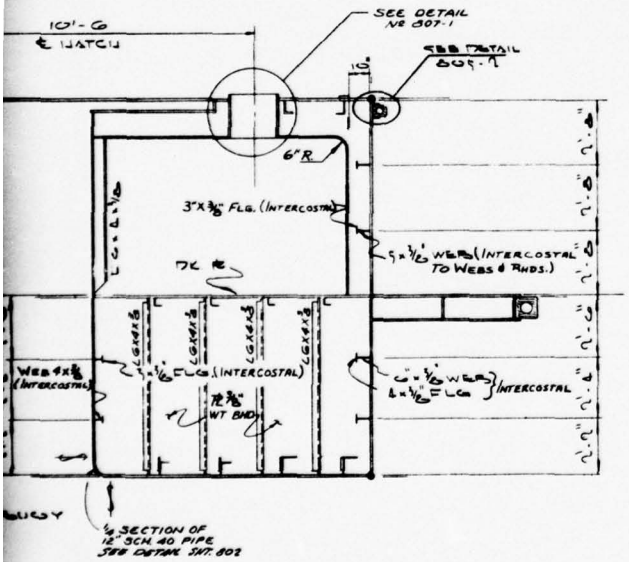
WEB FRM "D" ONE SIDE OF ℄ BEG'N
WEB FRM "E" ONE SIDE OF ℄ BEG'N - SEE NOTE
WEB FRM "F" & "G" ℄ BEG'N - SEE NOTE

BULK-WEB FRAMES @ HATCH OPENINGS
"2" BEG'N

	DESIGN	STRUCT.	PIPING	ELEC.	MR.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MR.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.



BULKHEAD "B"
"2" BEQ'D



BHD-WEB FRAME "C"
@ HATCH OPENING
"2" BEQ'D

BILL OF MATERIAL

FIND NO	DWG NO	QTY	NOMENCLATURE	SPEC	MAT'L

REFERENCE DRAWINGS

DWG NO	TITLE
001	OUTBOARD PROFILE-SECT'NS BUOY
600	TOP DK. FRAMING PLAN
601	MACH. DK. FRAMING PLAN
602	BOTT. DK FRAMING PLAN
605	MISC DETAILS
607	BHD DETAILS OUT "2"
608	MISC DETAILS

NOTES:
ALL STEEL TO BE ASTM A7 EXCEPT AS NOTED

NO	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. 7151
REGISTERED PROFESSIONAL ENGINEER IN CIVIL ENGINEERING

APPROVED: [signature]
J. RAY McDERMOTT & CO., INC.
DATE: 1-28-66
ENGINEERS APPROVAL

	BY	DATE
PROJECT	[signature]	1-28-66
STRUCTURAL	T.C.B.	11-8-65
PIPING		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
FAB. CHECK	[signature]	9-10-65
FIELD CHECK		

MONO-MOORING SYSTEM

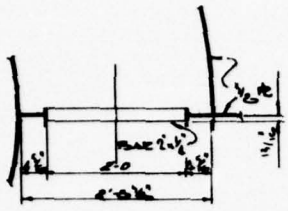
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

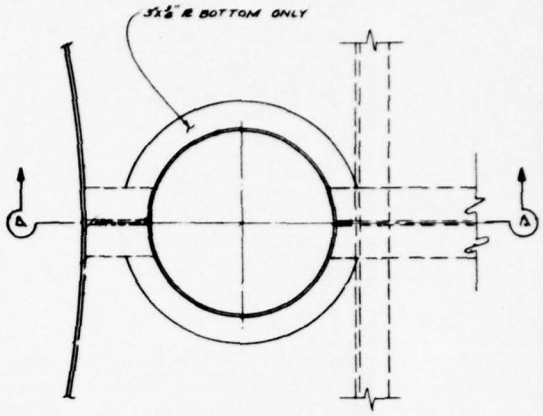
DRAWN BY	SCALE	DATE	PROJECT NO.
ROSS	1/4"=1'-0"	6-9-65	UCA-7971
FABRICATORS JOB NO.	96017	J. RAY McDERMOTT JOB NO.	SHEET NO. 606

BULKHEAD DETAILS SHT. 2

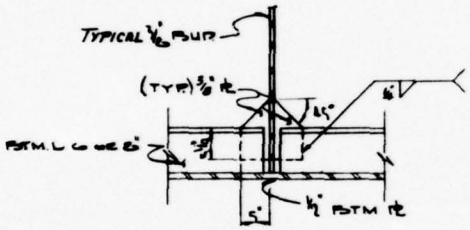
△



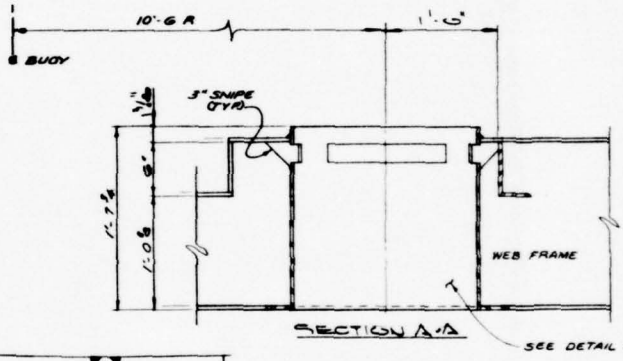
SECT. 807-A
SHT. N° 806
SCALE: 1"=1'-0"

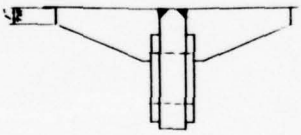


PLAN
HATCH COAMING

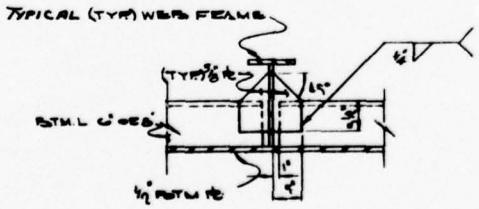


SECT. 807-B
SHT. N° 806
SCALE: 1"=1'-0"

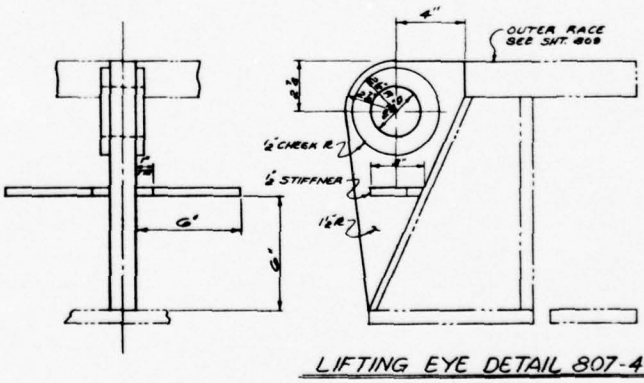




DETAIL 807-1
SHT. N° 806
SCALE: 1½"=1'-0"

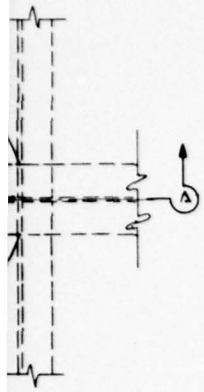


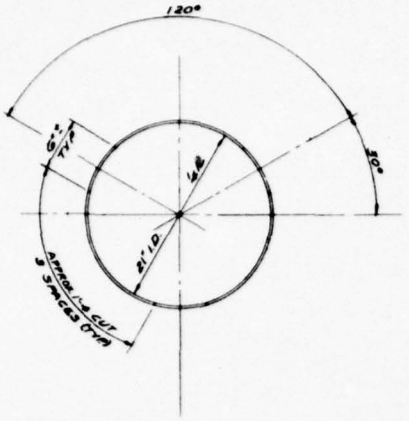
SECT. 807-C
SHT. N° 806
SCALE: 1"=1'-0"



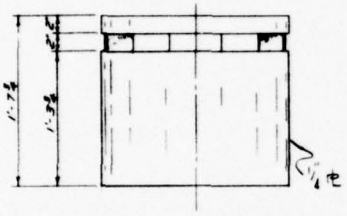
LIFTING EYE DETAIL 807-4
4 REQ'D
3"=1'-0

	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.





PLAN

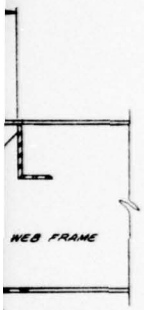


ELEVATION

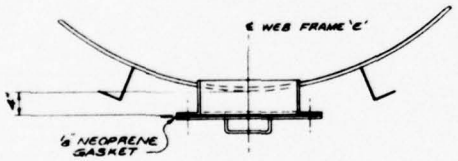
DETAIL 807-2

SHT Nº 807

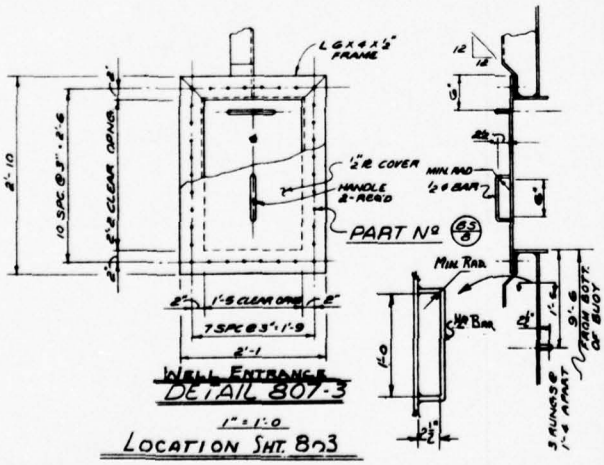
1½" = 1'-0



SEE DETAIL 807-2



ETAIL 807-4



WELL ENTRANCE DETAIL 807-3

1" = 1'-0

LOCATION SHT. 803

BILL OF MATERIAL

FIND Nº	DWG Nº	QTY	NOMENCLATURE	SPEC.	MAT'L.
85-4	807	34	⅝ø x 2½" HHMB WHIZ NUT & LOCK WASHER	ASTM-A-325	ALLOY STEEL

2

REFERENCE DRAWINGS

DWG Nº	TITLE
801	ARRANGEMENT PLANS
802	TOP DK. FRAMING PLAN
803	BOTATING DK FRAMING PLAN
806	BUOY. DETAILS SHT. 1
809	INNER & OUTER RACE

NOTES:
ALL STEEL TO BE ASTM A7 EXCEPT AS NOTED

GRIFF C. LEE
REG. No. 7188
STATE OF LOUISIANA
PROFESSIONAL ENGINEER
CIVIL ENGINEERING

APPROVED: W. F. Lee
DATE: 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	[illegible]	1-17-66
STRUCTURAL	S.C.A.	1-28-66
PIPING		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
PUB. WORKS		
PROP. OWNER		

MONO-MOORING SYSTEM

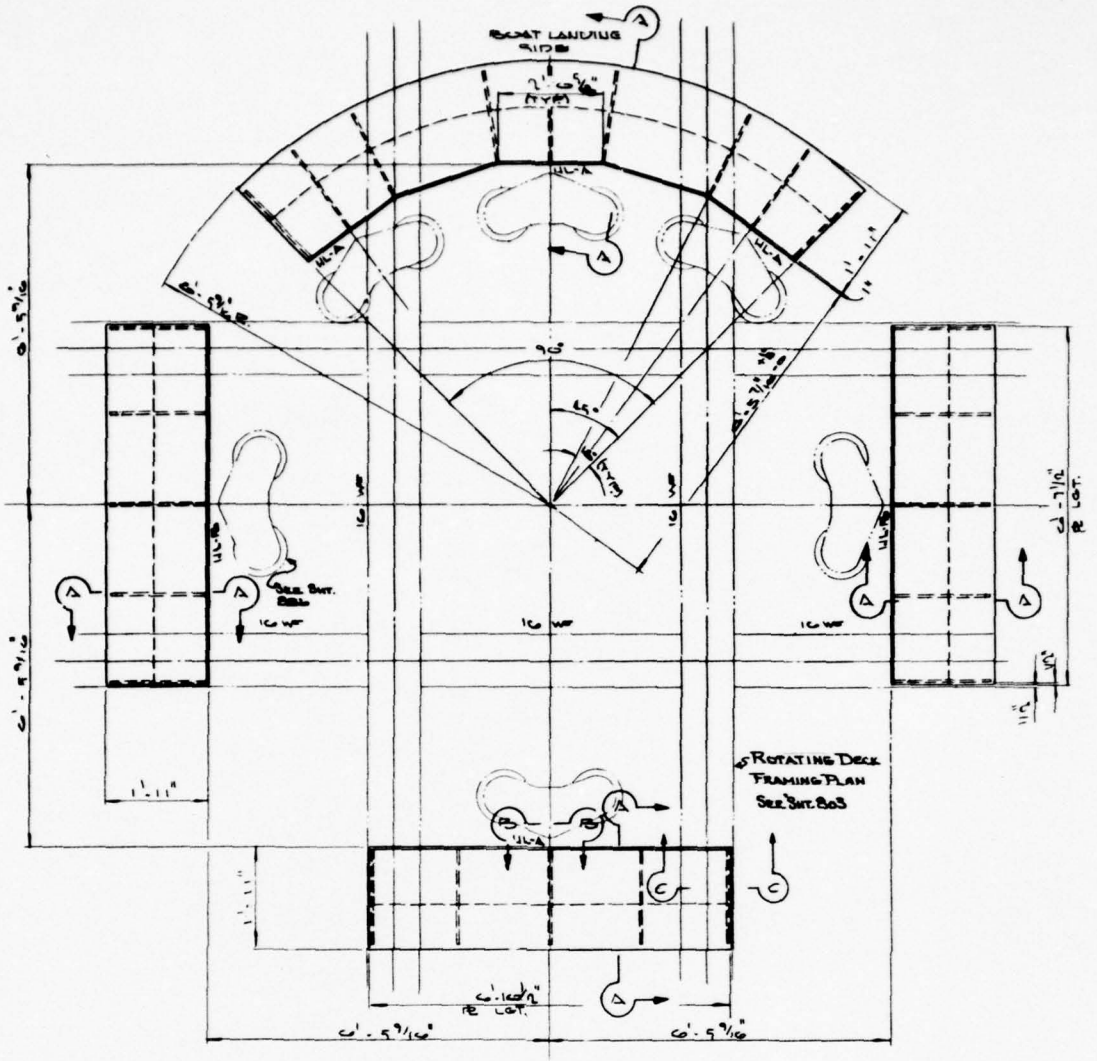
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

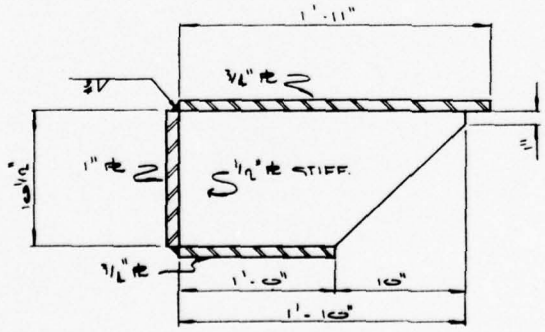
DRAWN BY	SCALE	DATE	PROJECT NO.
ROSS & TONY	VOTEM	6-9-65	USA-7971
PUBLICATIONS JOB NO.	J. RAY Mc DERMOTT JOB NO.		SHEET NO.
566317			807

SULKHEAD & MISCELLANEOUS DETAILS SHT. 2

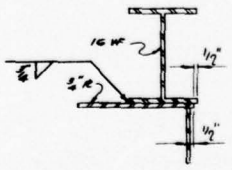
	DATE	APP.
DESIGN		
STRUCT.		
PIPING		
ELEC.		
MK.		
BY		
REVISIONS	DATE	APP.



INNER RACE
BOGIE WHEEL SUPPORT
SCALE: 1/4"=1'-0"

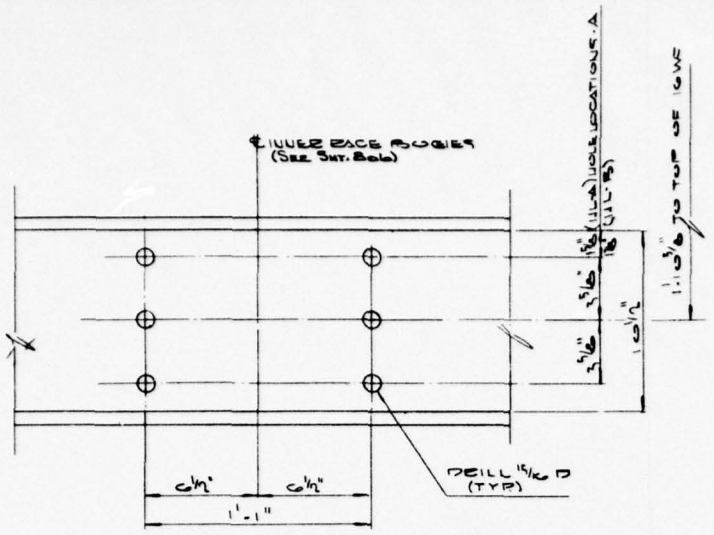


SECTION A-A
SCALE: 3/16"=1"



SECTION "C-C"
1"=1'-0

DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN



VIEW B-B
HOLE LOCATIONS FOR
INNER RACE BOGIE
CONNECTION

BILL OF MATERIAL

FIND No.	DWG No.	QTY	NOMENCLATURE	SPEC.	MAT'L

REFERENCE DRAWINGS

DWG No.	TITLE
B03	ROTATING DECK FRAMING PLAN
B06	BULKHEAD DETAILS
BB6	ASSY & DETAILS - OUTER RACE BOGIE WHEELS SHT 1

NOTES:
ALL STEEL TO BE ASTM A36 EXCEPT AS NOTED

NO.	DATE	APP.	REVISIONS	DATE	APP.
			DESIGN STRUCT. PIPING ELEC. MK. BY		

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7911
REGISTERED ENGINEER
CIVIL ENGINEERING

APPROVED: [signature]
J. RAY McDERMOTT & CO., INC.
DATE: 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	[illegible]	1-28-66
STRUCTURAL	U.C.A.	1-28-66
PIPING		
MECHANICAL		
ELECTRICAL		
CUTTERHEAD		
FOR CHECK	GF	2-2-66
PROP CHECK		

MONO-MOORING SYSTEM

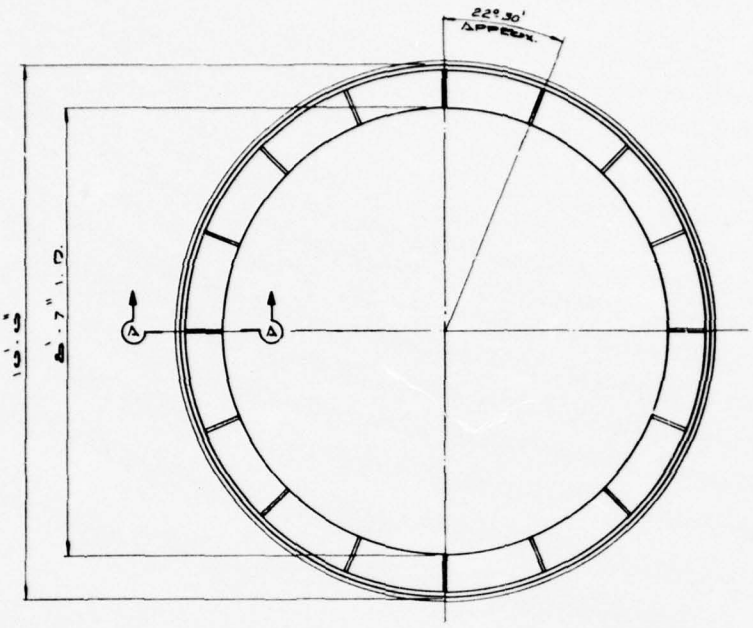
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

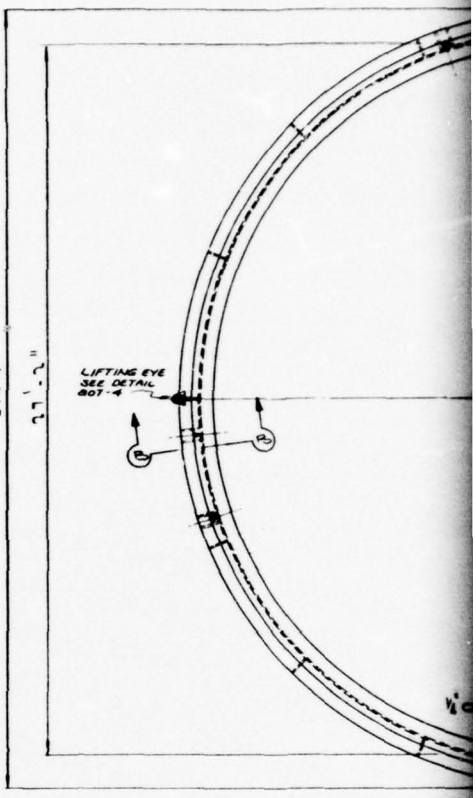
J. RAY McDERMOTT & CO., INC.
ENGINEERS CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
RDSS	VARIED	7-21-65	USA 7911
FABRICATORS JOB NO.	96017	J. RAY McDERMOTT JOB NO.	SHEET NO. 506

INNER RACE BOGIE WHEEL SUPPORT

△



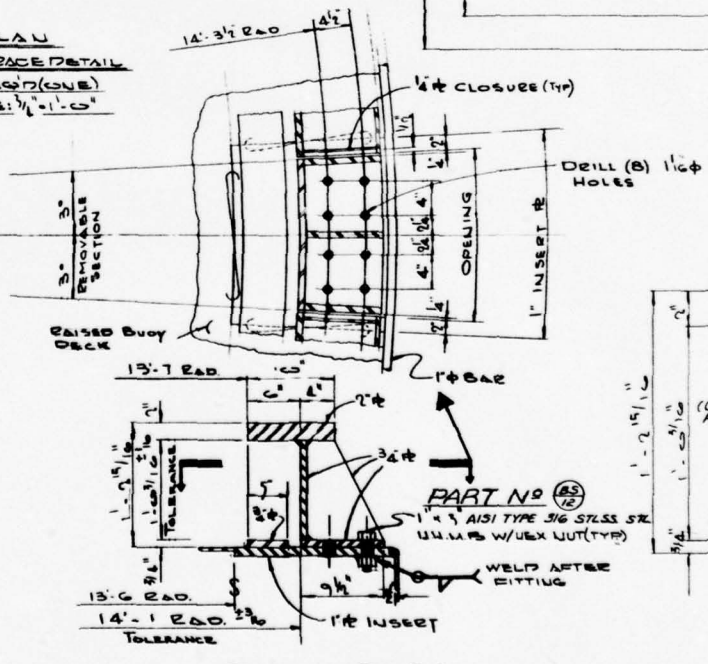


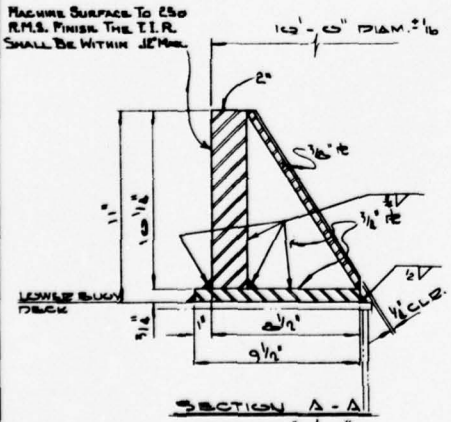
PLAN

INNER RACE DETAIL

N° REQ'D (ONE)

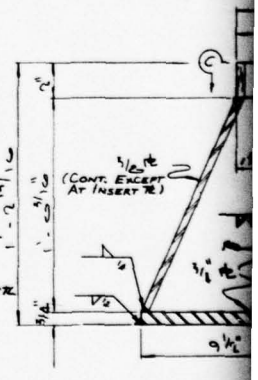
SCALE: 3/4"=1'-0"





SECTION A-A

SCALE: 3"=1'-0"



SECTION

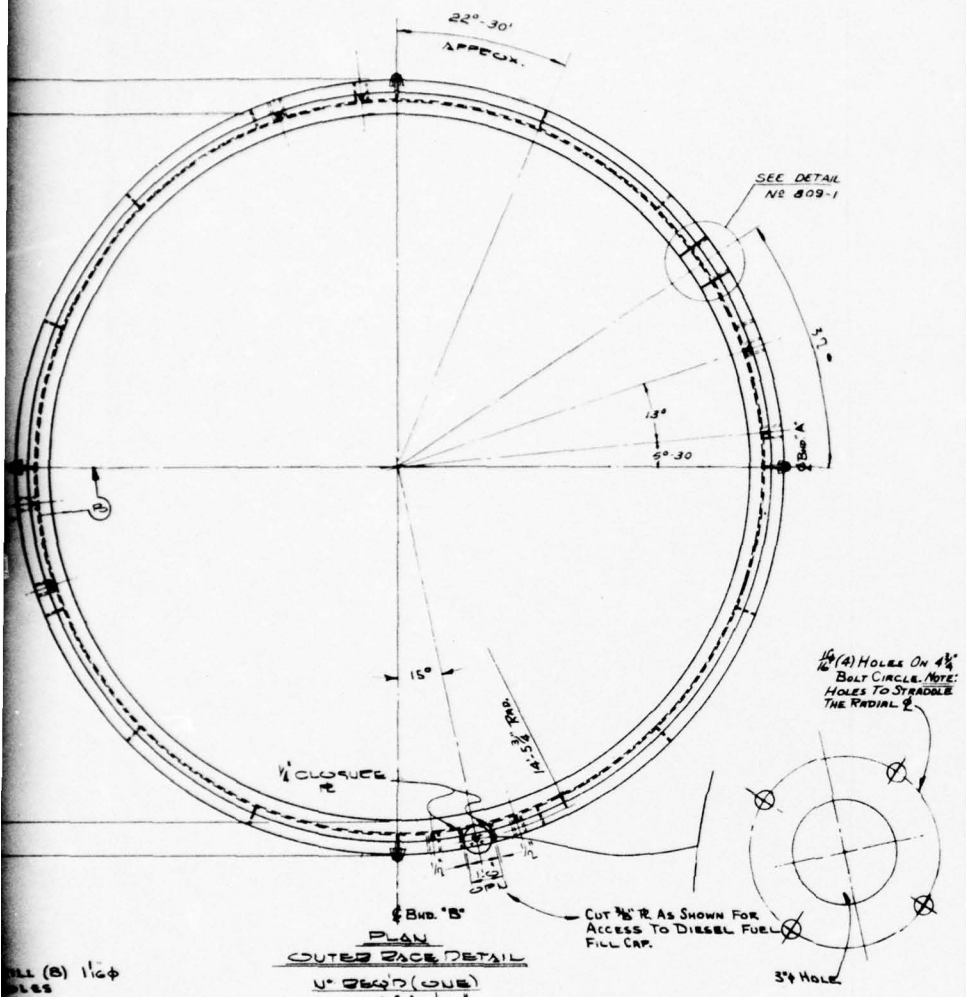
SCALE:

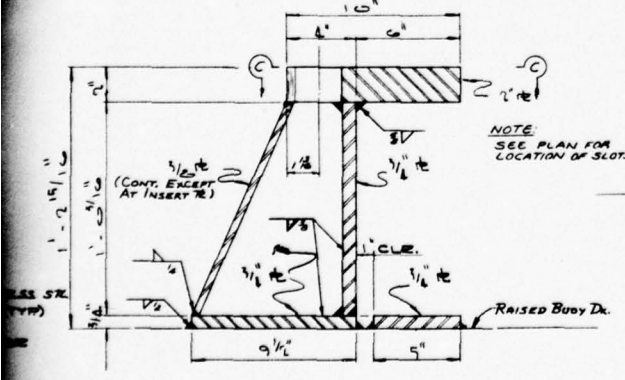
DETAIL 809-1

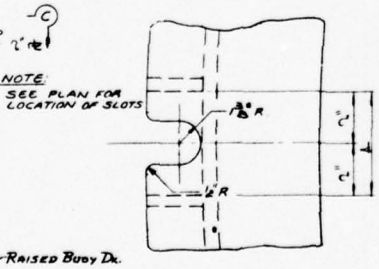
N° REQ'D (ONE)

SCALE AS 1'-0

DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.







BILL OF MATERIAL

FIND Nº	DWG Nº	QTY	NOMENCLATURE	SPEC	MAT'L
BS-14	809	8	1"x3" HHMB	A151 316	S.S

REFERENCE DRAWINGS

DWG Nº	TITLE
800	TOP DECK FRAMING PLAN
801	OUTBOARD PROFILE
809	BULKHEAD & MISC. DETAILS

NOTES:

1 - ALL STEEL FOR INNER & OUTER RACE TO BE ASTM A441 WELDABLE QUALITY.

2 - ALL WELDING ON THE INNER & OUTER RACE SHALL BE DONE USING E70 SERIES ELECTRODES AND SHALL BE IN ACCORDANCE WITH THE LATEST STANDARD CODE FOR WELDING IN BUILDING CONSTRUCTION

REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7186
REGISTERED ENGINEER
CIVIL ENGINEERING

APPROVED: Griff C. Lee
J. RAY McDERMOTT & CO., INC.
DATE: 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	RLS	1/28
STRUCTURAL	JCA	10-26-65
PROCESS		
MECHANICAL		
ELECTRICAL		
SHIPYARD		
FAB. CHECK	SB	9-9-65
PROD. CHECK		

MONO-MOORING SYSTEM

FOR

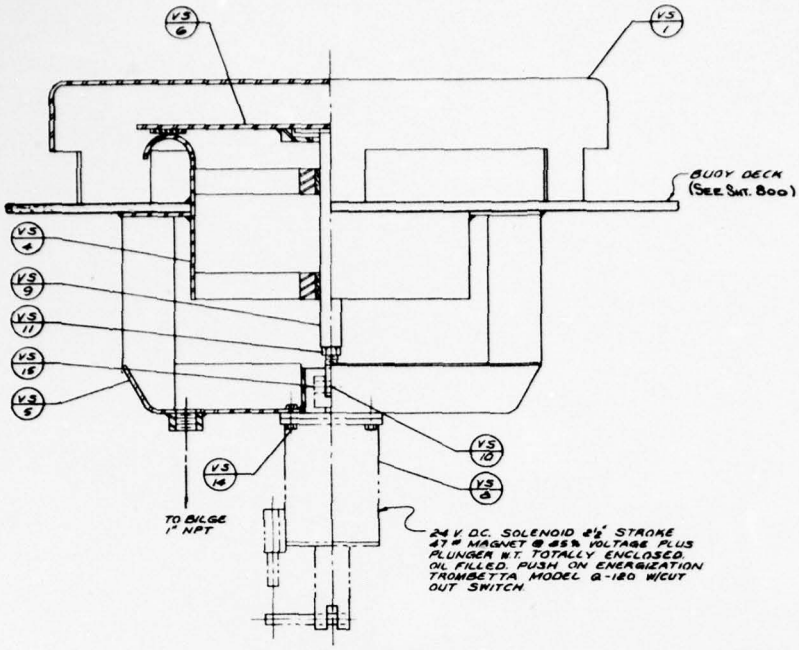
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES

FORT BELVOIR, VIRGINIA

J. RAY McDERMOTT & CO., INC.
ENGINEERS CONTRACTORS
NEW ORLEANS, LA.

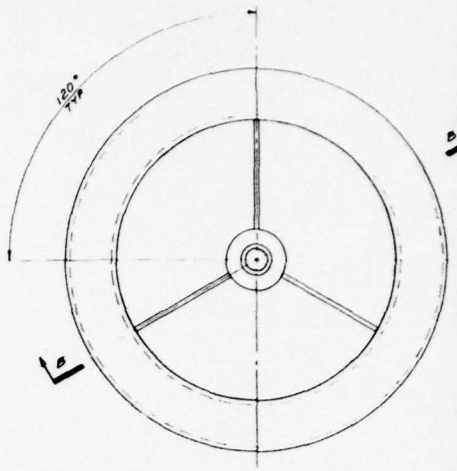
DRAWN BY	SCALE	DATE	PROJECT NO.
BOSS	NOTED	6-2-65	USA 2971
FABRICATORS JOB NO.		J. RAY McDERMOTT JOB NO.	
56017			DRAWING NO. 809

INNER & OUTER RACE

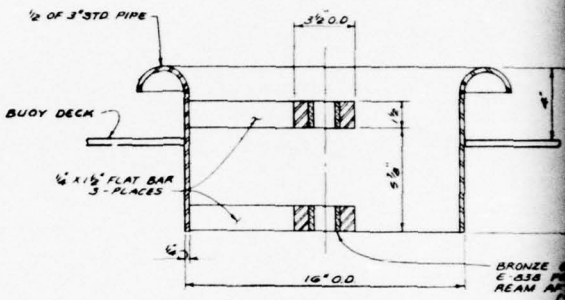


INTAKE VENTILATOR

ONE REQ'D



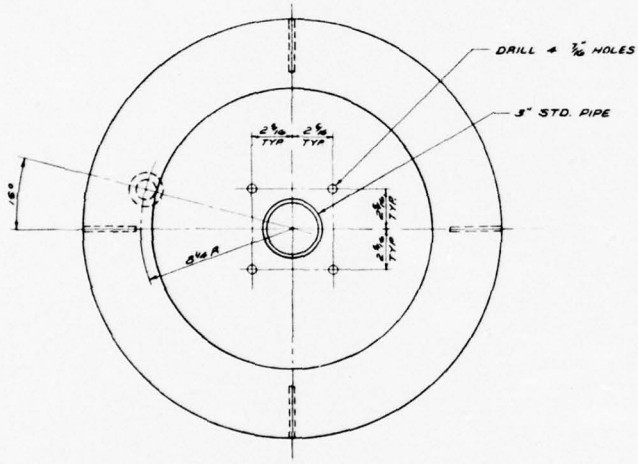
PLAN



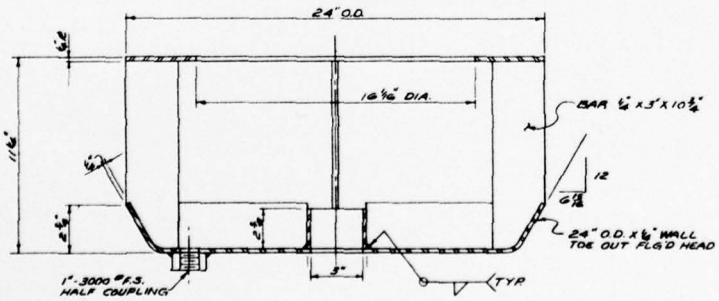
SECTION "B-B"

PART Nº (VS 4)
Nº REQ'D-1
MAT'L-MILD STEEL

3" = 1'-0

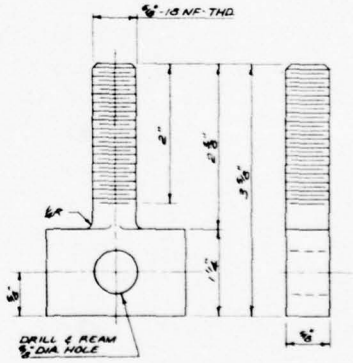


PLAN



PART Nº (VS 5)
Nº REQ'D-1
MAT'L-MILD STEEL

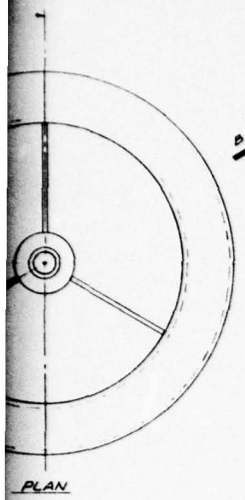
3" = 1'-0



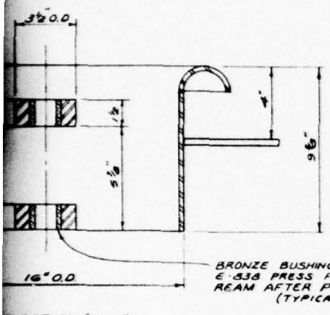
PART Nº (VS 10)
Nº REQ'D-2
MAT'L-BRONZE

SCALE: FULL

	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP	DESIGN	STRUCT.	PIPING



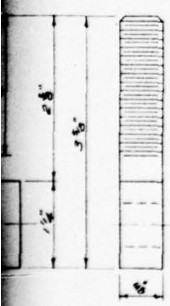
PLAN



BRONZE BUSHING BUNTING E-838 PRESS FIT INTO HUB. REAM AFTER PRESS TO 1½" I.D. (TYPICAL)

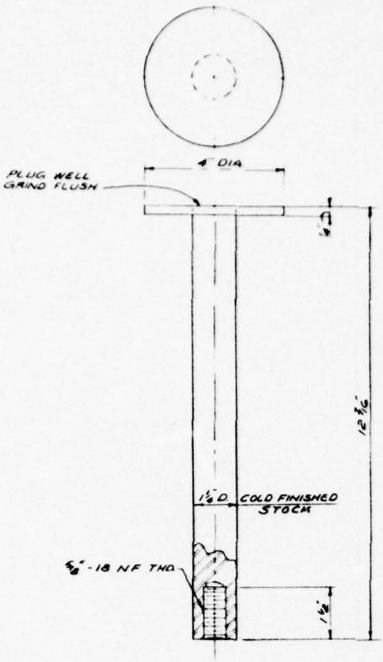
SECTION "B-B"

ART Nº (VS/4)
REQ'D-1
T'L-MILD STEEL
3" = 1'-0

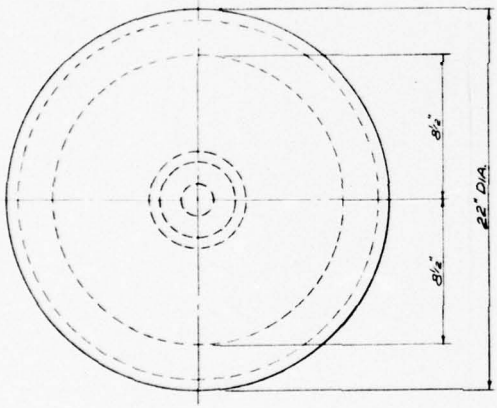


NF-THD

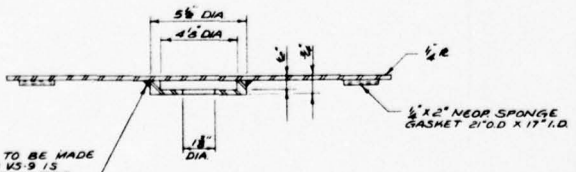
Nº (VS/10)
2'D-2
BRONZE
ALE: FULL



PART Nº (VS/8)
Nº REQ'D-2
MAT'L-TYPE 316 SS
½" = 1"



PLAN



NOTE: THIS WELD NOT TO BE MADE UNTIL PART Nº V3-9 IS INSTALLED IN COUNTER BORE. SEE ASSEMBLY

½"x2" NEOP SPONGE GASKET 21" O.D X 17" I.D.

PART Nº (VS/6)
Nº REQ'D-2
MAT'L-MILD STEEL
3" = 1'-0

BILL OF MATERIAL

FIND Nº	DWG Nº	QTY	NOMENCLATURE	SPEC	MAT'L
VS-1	SEE SHT #11		CAP		MILD STEEL
VS-4	810	1	BODY		MILD STEEL
VS-5	810	1	PAN		MILD STEEL
VS-6	810	2	DISC		MILD STEEL
VS-8	SEE SHT #11		SOLENOID		
VS-9	810	2	STEM		TYPE 316 S.S.
VS-10	810	2	CLEVIS		BRONZE
VS-11	810	2	LOCKNUT ⅝-18 N.F		BRONZE
VS-14	SEE SHT #11		BOLT ⅜"-16NC x 1½" W/NUT		GALV. STEEL
VS-15	810	2	ROLL PIN ⅜" D x 2" LG.		S.S

REFERENCE DRAWING

SHT Nº	TITLE
#11	VENTILATION SYSTEM
800	TOP DECK FRAMING PLAN

	DATE	APP.

DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7015
REGISTERED PROFESSIONAL ENGINEER IN CIVIL ENGINEERING

J. RAY Mc DERMOTT & CO., INC.
DATE: 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	[illegible]	1-28-66
STRUCTURAL		
PROCESS		
MECHANICAL	[illegible]	2/24/66
ELECTRICAL		
INSTRUMENT		
FAB. CHECK	[illegible]	2/24/66
PROP. CHECK		

MONO-MOORING SYSTEM

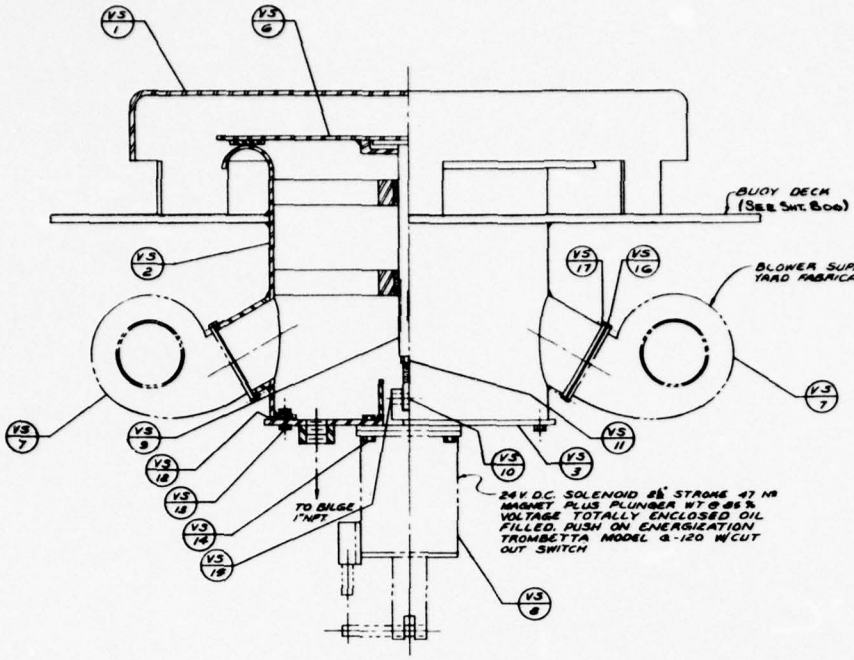
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
FRANCHINA	NOTED	7-14-65	USA 2871
FABRICATORS JOB NO.	66017	J. RAY Mc DERMOTT JOB NO.	SHEET NO. 310

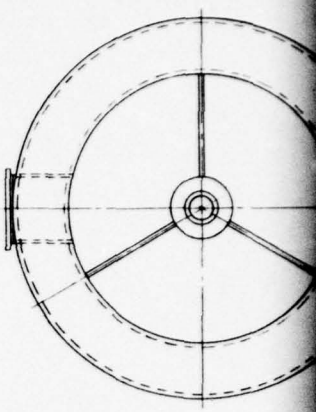
VENTILATION SYSTEM

△

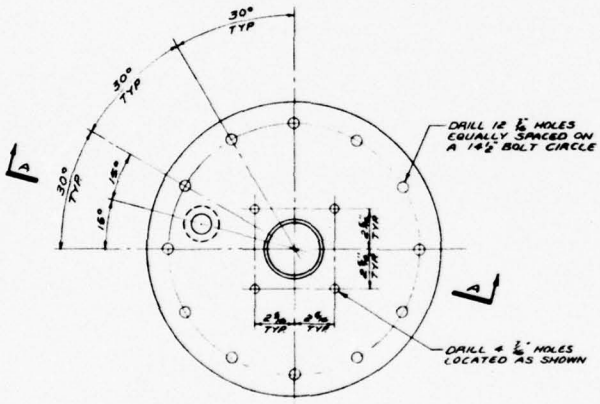


EXHAUST VENTILATOR

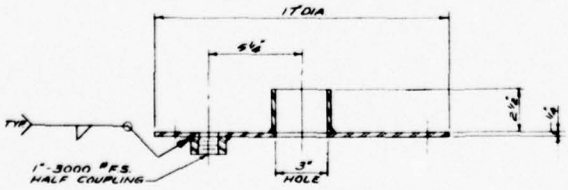
ONE REQ'D



PLAN



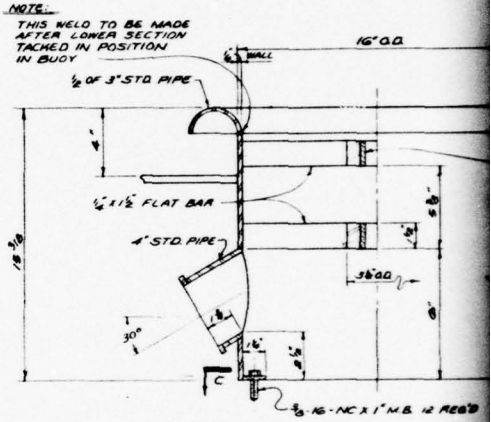
PLAN



SECTION "A-A"

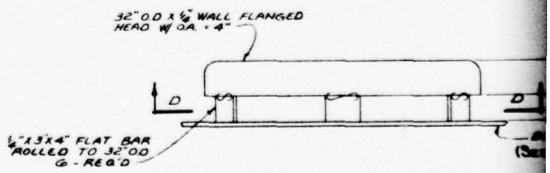
PART Nº (V3 9)
Nº REQ'D - 1
MAT'L - MILD STEEL
3" = 1'-0

NOTE:
THIS WELD TO BE MADE AFTER LOWER SECTION TACKED IN POSITION IN BUOY



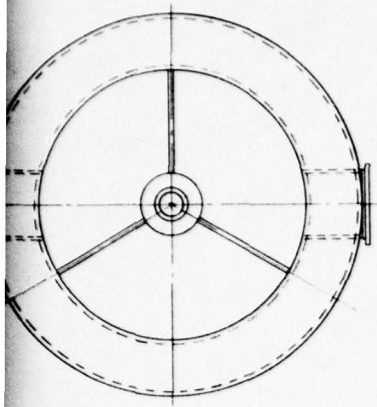
ELEVATION

PART Nº (V3 2)
Nº REQ'D - 1
MAT'L - MILD ST
3" = 1'-0

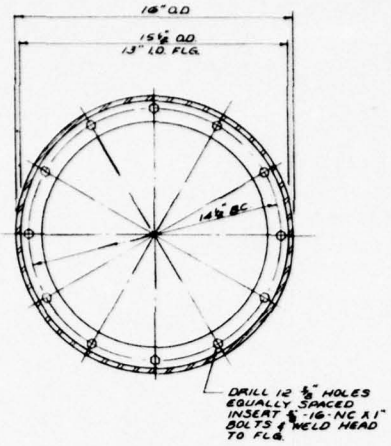


PART Nº (V3 1)
Nº REQ'D - 2
MAT'L - MILD STEEL
3" = 1'-0

	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP	DESIGN	STRUCT.



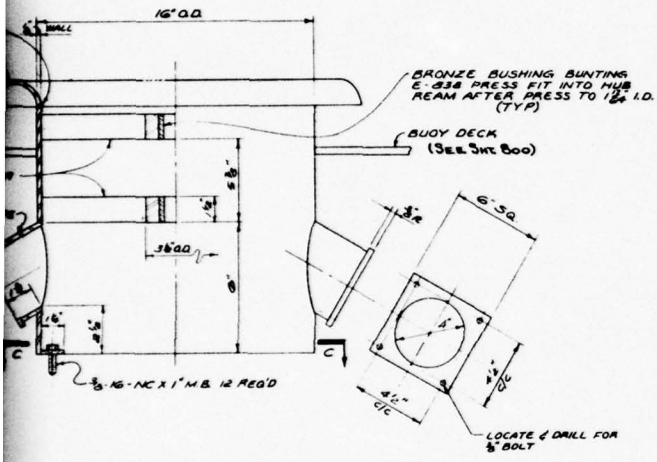
PLAN



SECTION "C-C"

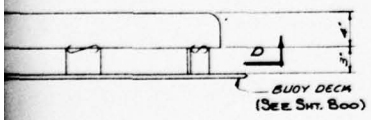
BILL OF MATERIAL

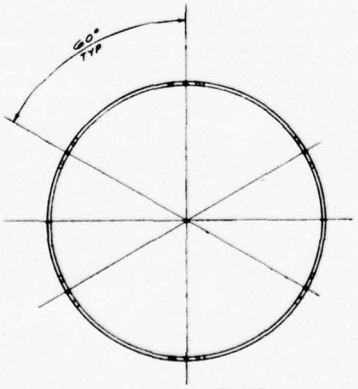
FIND Nº	DWG Nº	QTY	NOMENCLATURE	SPEC.	MAT'L
VS-1	811	2	CAP		MILD STEEL
VS-2	811	1	BODY		MILD STEEL
VS-3	811	1	COVER R		MILD STEEL
VS-6	SEE SHT. 810		DISC		MILD STEEL
VS-7	811	2	E J WILLIS MODEL A-105 24 VOLT D.C.		
VS-8	811	2	SOLENOID		
VS-9	SEE SHT. 810		STEM		TYPE 316 S.S.
VS-10	SEE SHT. 810		CLEVIS		BRONZE
VS-11	SEE SHT. 810		LOCKNUT ⅝-18 N.F.		BRONZE
VS-12	811	1	GASKET 16" O.D. x 13" I.D. x ⅛"		NEOPRENE
VS-13	811	12	COVER BOLT & NUT ⅝"x1"-18 N.C.		GALV. STEEL
VS-14	811	6	BOLT ⅝"-16NC x 1¾" W/NUT		GALV. STEEL
VS-15	SEE SHT. 810		ROLL PIN		S.S.
VS-16	811	2	GASKET		½" NEOPRENE
VS-17	811	6	BOLT ⅜"-16NC x 1½ W/NUT		AISI-316



ELEVATION

PART Nº (VS/2)
Nº REQ'D-1
MAT'L-MILD STEEL
3" x 1'-0





SECTION "D-D"

PART Nº (VS/1)
Nº REQ'D-2
MAT'L-MILD STEEL
3" x 1'-0

REFERENCE DRAWING

SHT Nº	TITLE
810	VENTILATION SYSTEM
800	TOP DECK FRAMING PLAN

NO'S	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7155
REGISTERED PROFESSIONAL ENGINEER IN CIVIL ENGINEERING

APPROVED

J. RAY Mc DERMOTT & CO., INC.
DATE 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	[illegible]	1-27-66
STRUCTURAL		
PROCESS		
MECHANICAL	[illegible]	2-1-66
ELECTRICAL		
INSTRUMENT		
PIPE CHECK	[illegible]	2-1-66
PROP CHECK		

MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

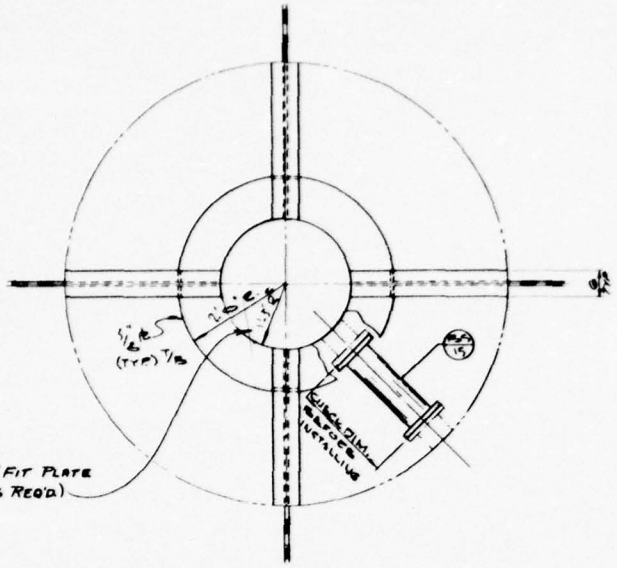
J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — NEW ORLEANS, LA. — CONTRACTORS

DRAWN BY	SCALE	DATE	PROJECT NO.
FRANCHINA	NOTED	7-14-65	USA 2971
FABRICATORS JOB NO.		J. RAY Mc DERMOTT JOB NO.	SHEET NO.
56017			811

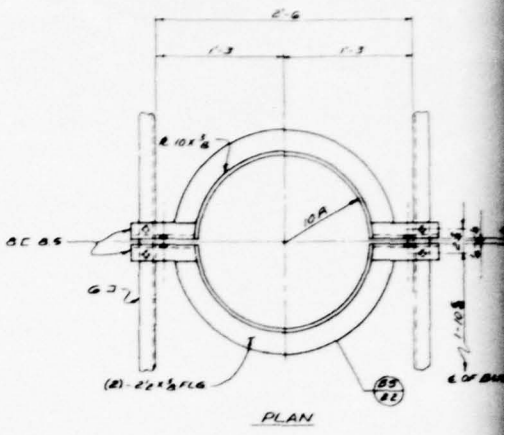
VENTILATION SYSTEM

△

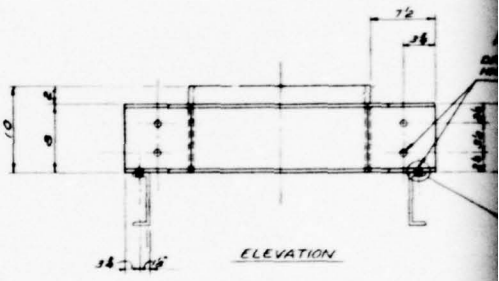
1



PLAN



PLAN

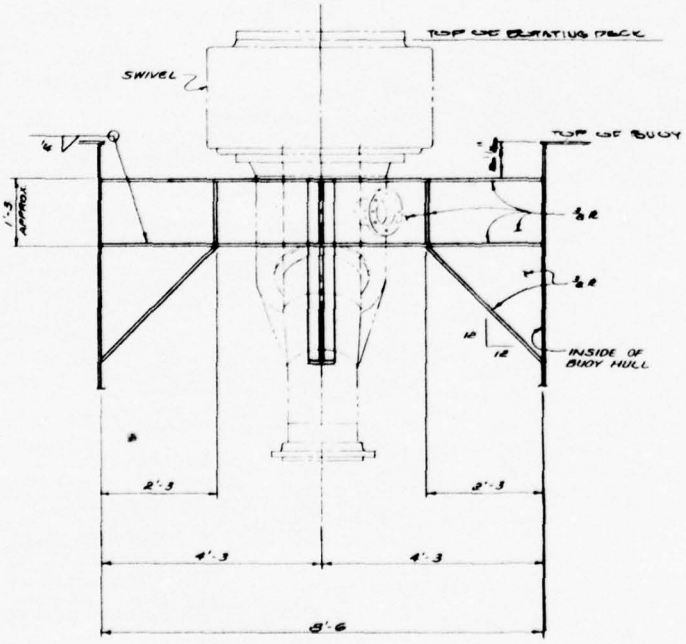


ELEVATION

SUBMARINE HOSE CLAMP

2 - REQ'D

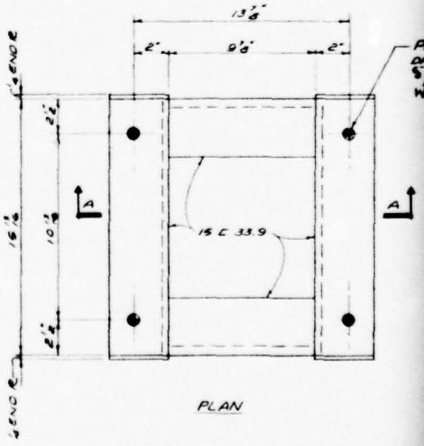
1" = 1'-0



SWIVEL TO BUOY SPIDER CONNECTION

SEE SHT. 874

3/4" = 1'-0



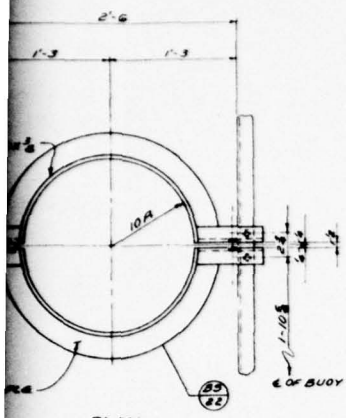
PLAN

BASE FOR

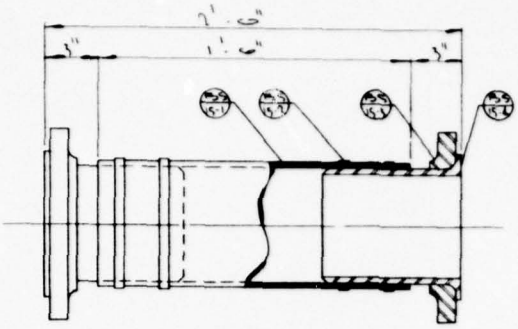
DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP	DESIGN	STRUCT.

BILL OF MATERIAL

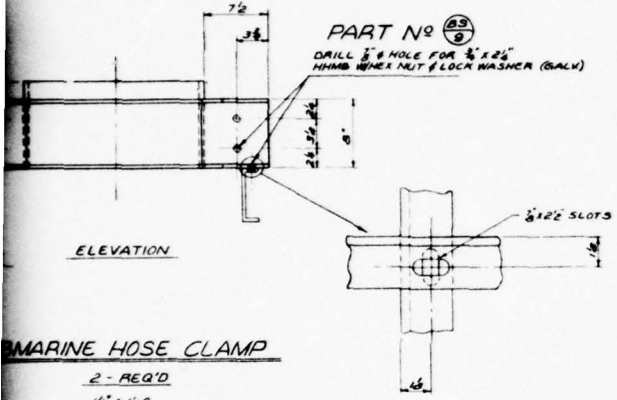
FIND NO	DWG NO	QTY	NOMENCLATURE	SPEC	MAT'L
B3-9	812	8	¾"Ø x 2½" LG HHMB W/NUT & WASH	ASTM A325	(GALV)
B5-15	813	1	SWIVEL TO BUOY GUT LINE CONNECTION		SHOWN
B5-16	"	1	6 5/8 I.D. "PARTAL" SAND SUCTION HOSE		
B5-17	"	6	8-(5-10-9)-OPEN END PUNCH LOCK CLAMPS		9.5
B5-18	"	2	6" IRON A&A LAP JOINT FLG.		ASTM A 181-60 I
B5-19	"	2	6" STD WT. LAP JOINT STUB END		ASTM A 234-WPB
B3-20	"	4	7/8"Ø HHMB WIRE NUT BEVEL WASHER & LOCK WASHER		
B3-21	"	4	3/4"Ø HHMB WIREX NUT BEVEL WASHER & LOCK WASHER		
B5-22	"	4	SUBMARINE HOSE CLAMP		
B5-23	"	1	BASE FOR 5 TON HAND WINCH		STEEL



PLAN

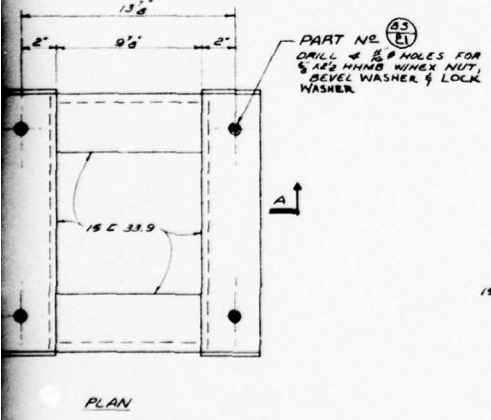


PART Nº B5 15
U° BEND 1
SCALE: 3"=1'-0"

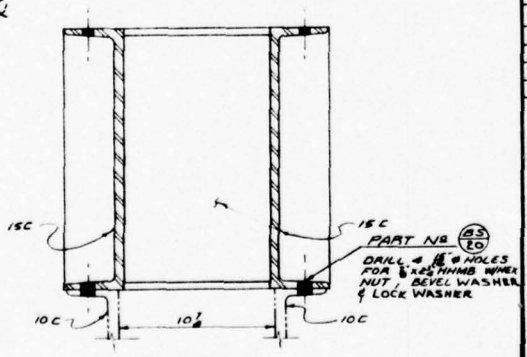


ELEVATION

SUBMARINE HOSE CLAMP
2 - REQ'D
12" = 1'-0



PLAN



SECTION "A-A"

DETAIL 812-1
B5 23 BASE FOR 5 TON HAND WINCH
SEE SHT 803
3" = 1"

REFERENCE DRAWING

DWG NO	TITLE
814	SWIVEL TO BUOY CONNECTION
803	ROTATING DECK FRAMING PLAN

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7016
DYCE FRED
REGISTERED CIVIL ENGINEERS

APPROVED
J. RAY McDERMOTT & CO., INC.
DATE 1-28-66
ENGINEERS APPROVAL

	BY	DATE
PROJECT		
STRUCTURAL	T.C.A.	1-28-66
PIPING		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
FAB. CHECK		2-1-66
PROOF CHECK		

MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

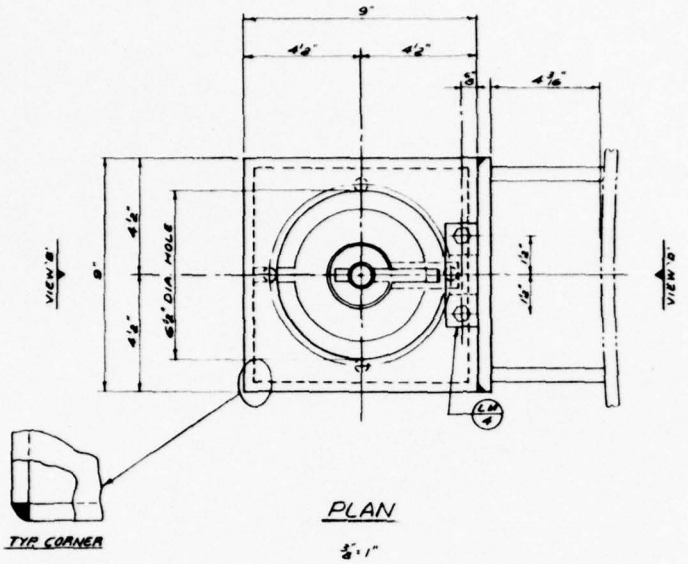
J. RAY McDERMOTT & CO., INC.
ENGINEERS CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
FRANCHINA	NOTED	7-22-65	USA 2971
FABRICATORS JOB NO.	J. RAY McDERMOTT JOB NO.		SHEET NO.
56017			812

MISCELLANEOUS DETAIL

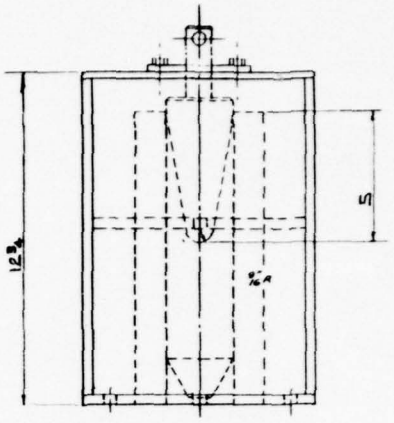
REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

1



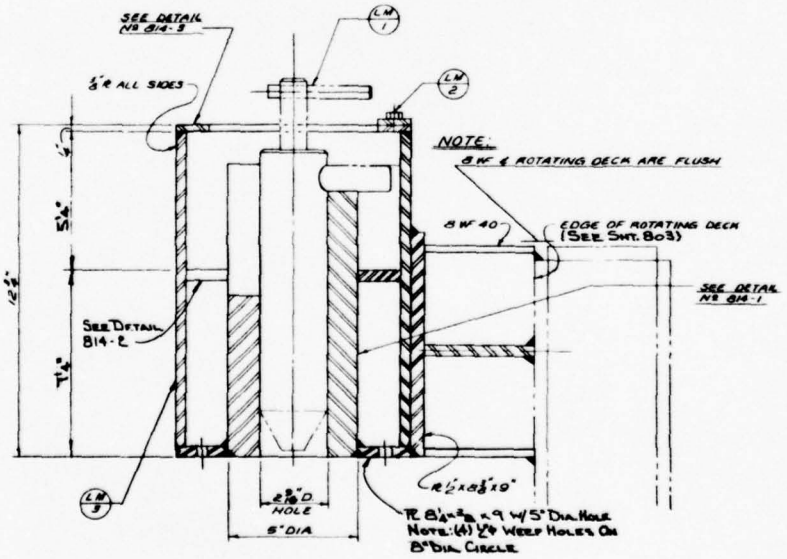
PLAN

3/8" = 1"



VIEW 'B'

3/8" = 1"

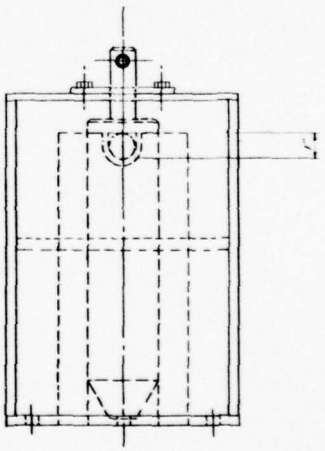


SECTION

MAT'L - MILD STEEL - GALV AFTER FAB

2 - REQ'D

3/8" = 1"



VIEW 'D' WITH 8 WF & ½" R REMOVED

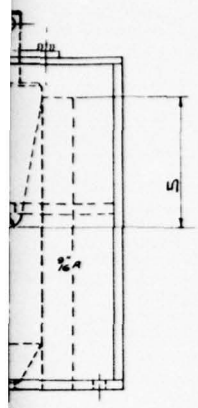
3/8" = 1"

	DESIGN	STRUCT.	PIPING	ELEC.	MR.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MR.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING

2

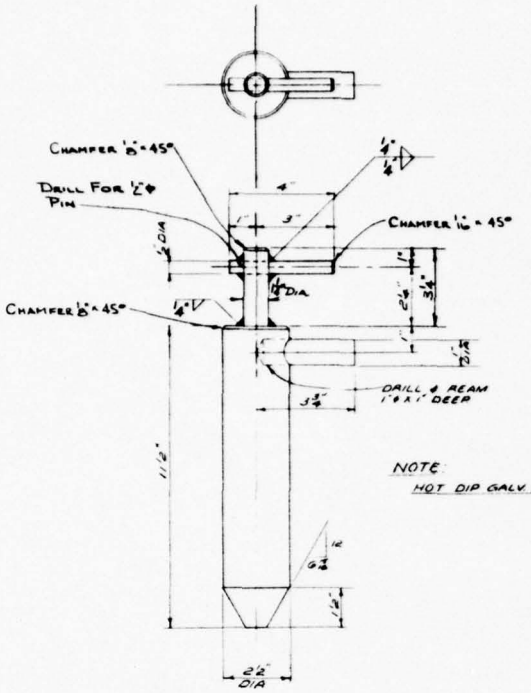
BILL OF MATERIAL

FIND Nº	DWG Nº	QTY	NOMENCLATURE	SPEC	MAT'L
LM 1	813	2	LOCKING PIN		GALV STEEL
LM 2	814	4	5/16-18 x 3/4 NC CAP SCREW		GALV STEEL
LM 3	814	2	BODY		GALV STEEL
LM 4	814	2	COVER PL		GALV STEEL



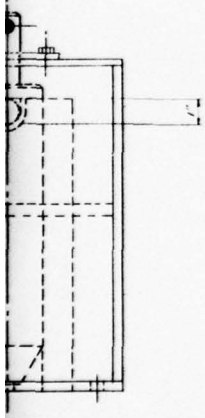
'B'

1"



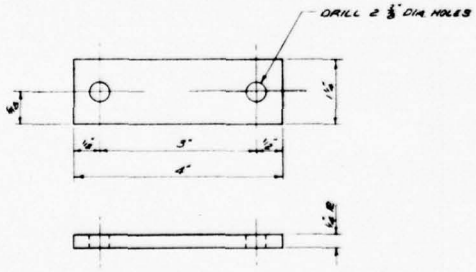
NOTE
HOT DIP GALV AFTER FAB

PART Nº (LM 1)
MAT'L - MILD STEEL GALV
2 - REQ'D
3/8 : 1"



'D' WITH
'R REMOVED

1" = 1"



PART Nº (LM 4)
MAT'L - MILD STEEL GALV
2 - REQ'D
3/4 : 1"

REFERENCE DRAWING

SHT Nº	TITLE
814	ROTATING DECK LOCKING MECHANISM DETAILS
803	ROTATING DECK FRAMING PLAN

NOTE:
ALL WELDING SHALL BE "FULL STRENGTH WELDS"

	DATE	APP.

DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7105
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

APPROVED M. C. Lee
J. RAY McDERMOTT & CO., INC.
DATE 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	JRC	1-31-66
STRUCTURAL	M.C.R.	1-28-66
PROCESS		
MECHANICAL		2/1
ELECTRICAL		
EQUIPMENT		
PUB. CHECK		2/21
PROP. CHECK		

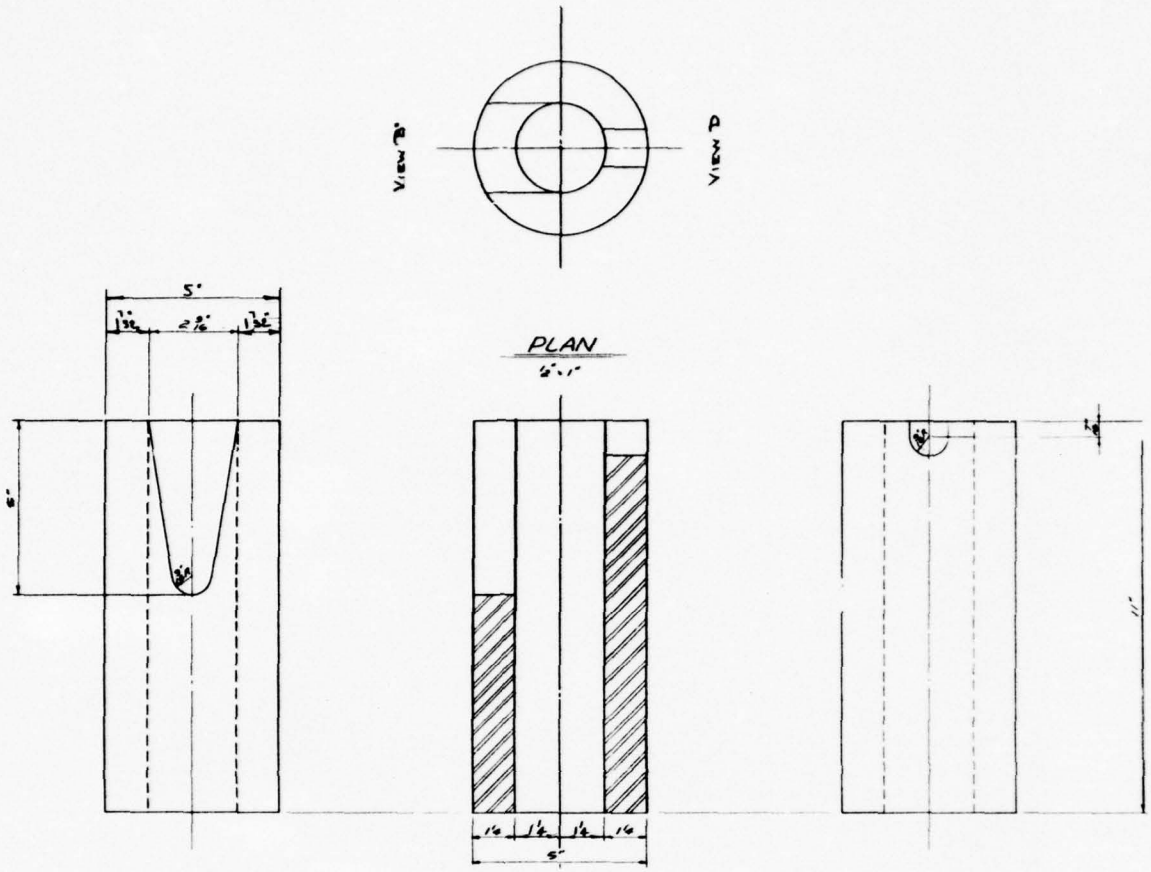
MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
FRANCHINA	NOTED	8-5-65	USA 2971
FABRICATORS JOB NO.	56017	J. RAY McDERMOTT JOB NO.	SHEET NO. 813

ROTATING DECK LOCKING MECHANISM



VIEW 'B'

SECTION

VIEW 'D'

DETAIL Nº 814-1

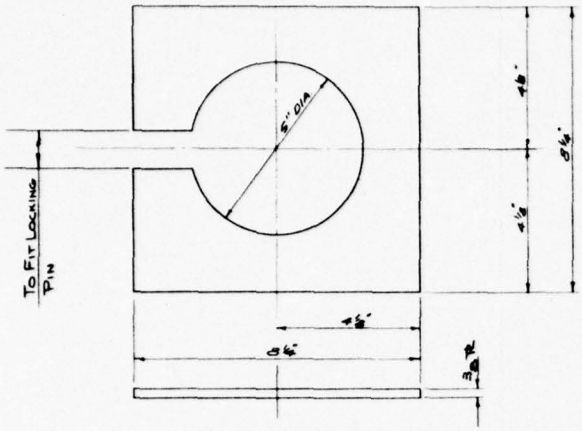
MAT'L - MILD STEEL

2 - REQ'D

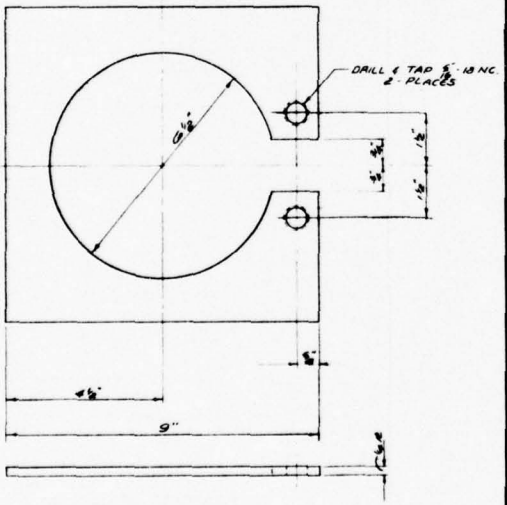
	DESIGN	STRUCT.	PIPING	ELEC.	BK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	BK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.

BILL OF MATERIAL

FIND Nº	DWG Nº	QTY	NOMENCLATURE	SPEC.	MAT'L



DETAIL Nº 814-2
MAT'L - MILD STEEL
2 - REQ'D
½" = 1"



DETAIL Nº 814-3
MAT'L - MILD STEEL
2 - REQ'D
½" = 1"

REFERENCE DRAWING

SNT NO	TITLE
813	ROTATING DECM LOCKING MECHANISM

DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7015
REGISTERED
PROFESSIONAL ENGINEER
IN
Approved
J. RAY McDERMOTT & CO., INC.
DATE 1-28-66
ENGINEERS APPROVAL

	BY	DATE
PROJECT		
STRUCTURAL		
PROCESS		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
PAD CHECK		
PROP CHECK		

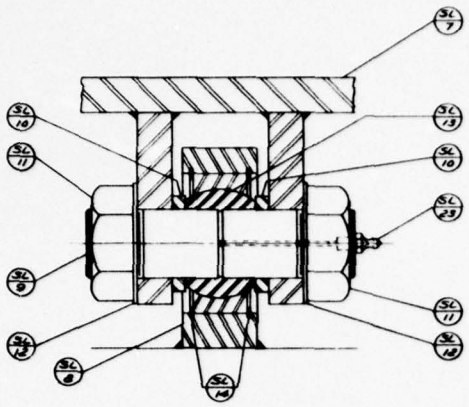
MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY McDERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

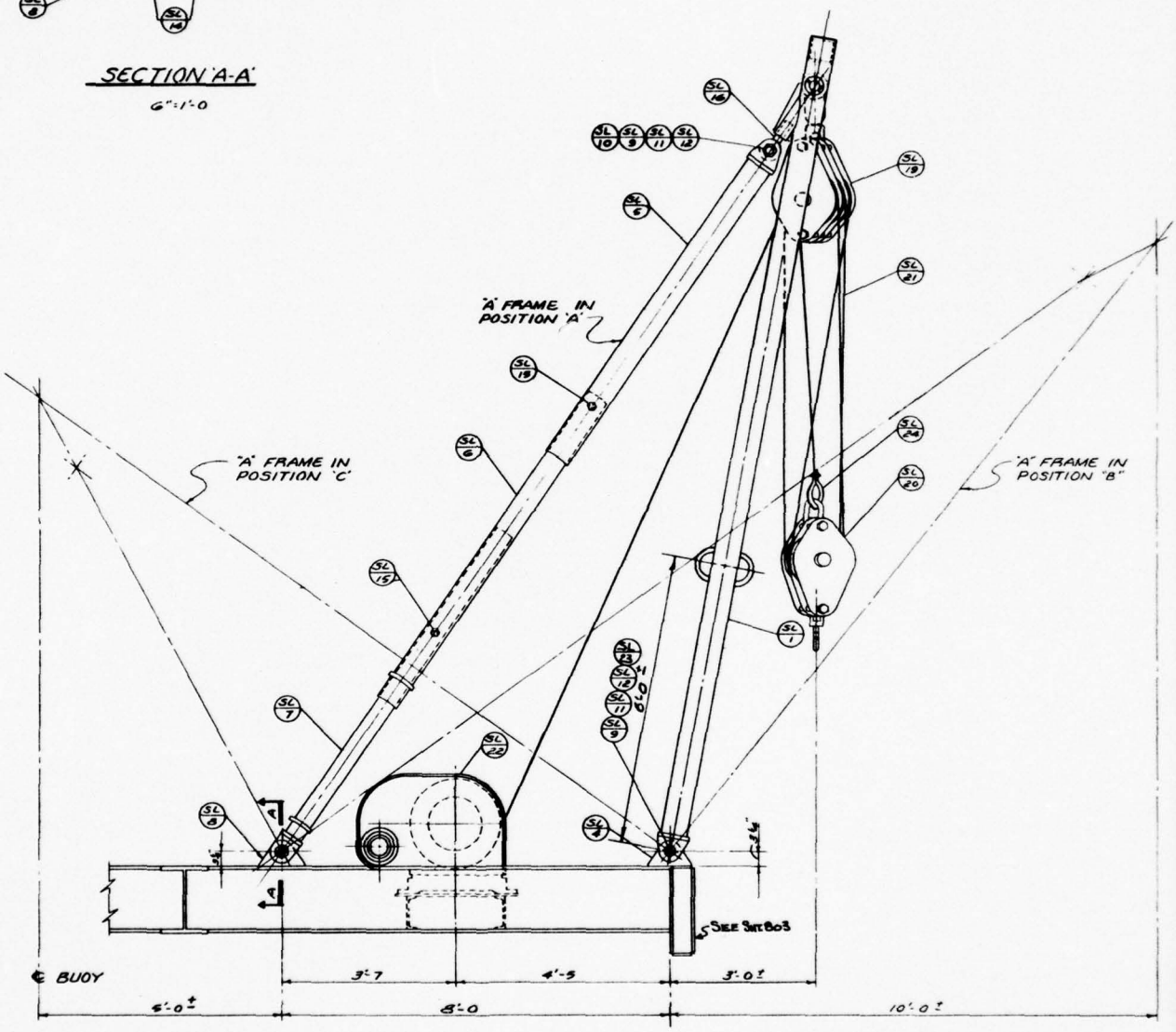
DRAWN BY	SCALE	DATE	PROJECT NO.
FRANCHINA	NOTED	8-5-66	USA-2971
FABRICATORS JOB NO.	5G017	J. RAY McDERMOTT JOB NO.	SHEET NO. 814

ROTATING DECM LOCKING MECHANISM DETAILS



SECTION 'A-A'

6"=1'-0

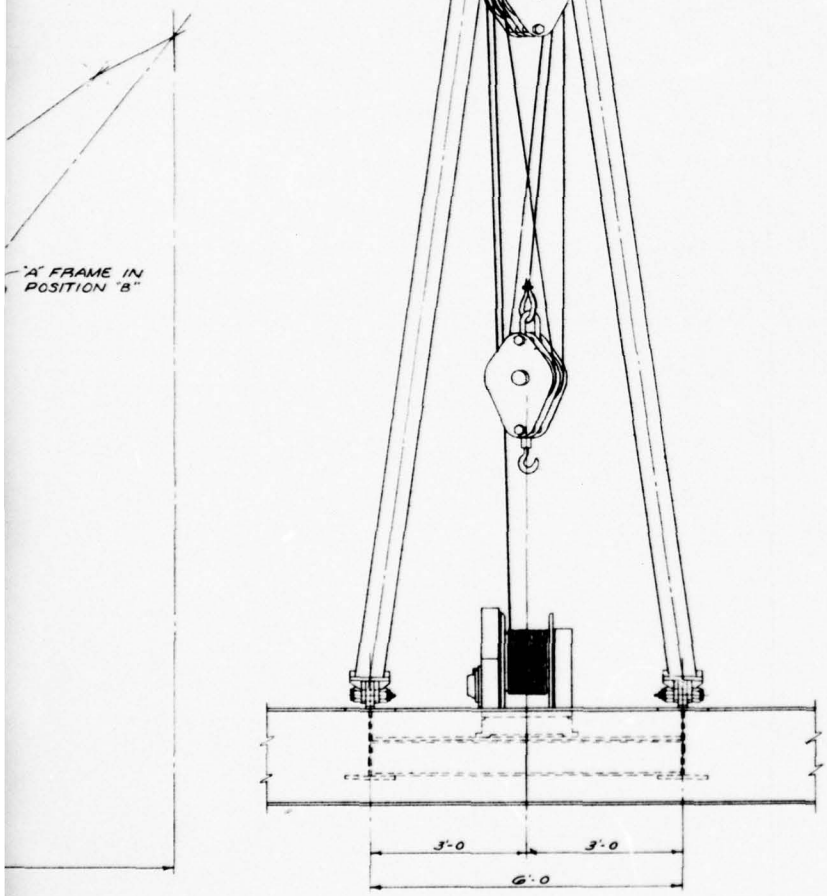


SIDE ELEVATION

DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING

1

2



ELEVATION

BILL OF MATERIAL

FIND Nº	DWG Nº	QTY	NOMENCLATURE	SPEC.	MAT'L
SL-1	816	1	'A' FRAME - LEG ASSY.	ASTM A36	STEEL
SL-2	816	1	TACKLE PIVOT	ASTM A36	STEEL
SL-3	816	1	TACKLE PIVOT PIN	AISI TYPE 316	STAINLESS STEEL
SL-4	816	2	'A' FRAME PADEYE	ASTM A36	STEEL
SL-5	817	2	BACKLEG (UPPER)	ASTM A36	STEEL
SL-6	817	2	BACKLEG (CENTER)	ASTM A36	STEEL
SL-7	817	2	BACKLEG (LOWER)	ASTM A36	STEEL
SL-8	817	2	BACKLEG PADEYE	ASTM A36	STEEL
SL-9	817	6	PIN	AISI TYPE 316	STAINLESS STEEL
SL-10	817	8	WASHER	SAE #660	STEEL
SL-11	815	12	2"-4½ N.C. HEX NUT	SAE #701	BRONZE
SL-12	815	12	2" LOCK WASHER	AISI TYPE 316	STAINLESS STEEL
SL-13	816	2	'ALINABEL' SPHERICAL BEARING TYPE 'C B' SIZE 32' WITH STAINLESS STEEL BALL		
SL-14	815	4	'TAUARC' RETAINER RING #5000-400 PH 15-7 MO	AISI TYPE 316	STAINLESS STEEL
SL-15	815	8	1"ø X 8"LG HEX HD BOLT W/HEX NUT	AISI TYPE 316	STAINLESS STEEL
SL-16	815	2	'ALINABEL' STANDARD MALE TYPE ROD END, TYPE C M SIZE 32, W/STAINLESS STEEL BALL		
SL-17	815	2	2" FLAT WASHER	AISI TYPE 316	STAINLESS STEEL
SL-18	815	2	⅜"ø X 4"LG COTTER PIN	AISI TYPE 316	STAINLESS STEEL
SL-19	815	1	'MERRISSICK' 24"X14" TRIPLE BLOCK FOR ⅝"ø WIRE ROPE W/BRONZE BUSHING FIG. 703 W/SWIVEL		
SL-20	815	1	'MERRISSICK' 24"X14" DOUBLE BLOCK FOR ⅝"ø WIRE ROPE W/ BRONZE BUSHING FIG 602		
SL-21	815	200 LIN FT	⅝"ø 6 X 19 I.P.S. WIRE ROPE W/ I.W.R.C. GALVANIZED	FEDERAL SPEC RR-W-410 A	STEEL
SL-22	815	1	MARINE CONSTRUCTION & DESIGN CO. MODEL WO660 HYDRAULIC WINCH		
SL-23	815	6	¼" NPT. GREASE FITTING		
SL-24	815	1	'NEWCO' COMBINATION CLAMP & THIMBLE FOR ⅝" WIRE ROPE		

REFERENCE DRAWINGS

SHT. Nº.	TITLE
816	'A' FRAME DETAILS SHT. 1
817	'A' FRAME DETAILS SHT. 2
803	ROTATING DECK FRAMING PLAN

DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7116
REGISTERED
CIVIL ENGINEER

APPROVED: Griff C. Lee

J. RAY McDERMOTT & CO., INC.
DATE 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	DRS	1-27-66
STRUCTURAL	C.C.B.	11-29-65
PIPING		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
PUB. CHECK		
PROP. CHECK		

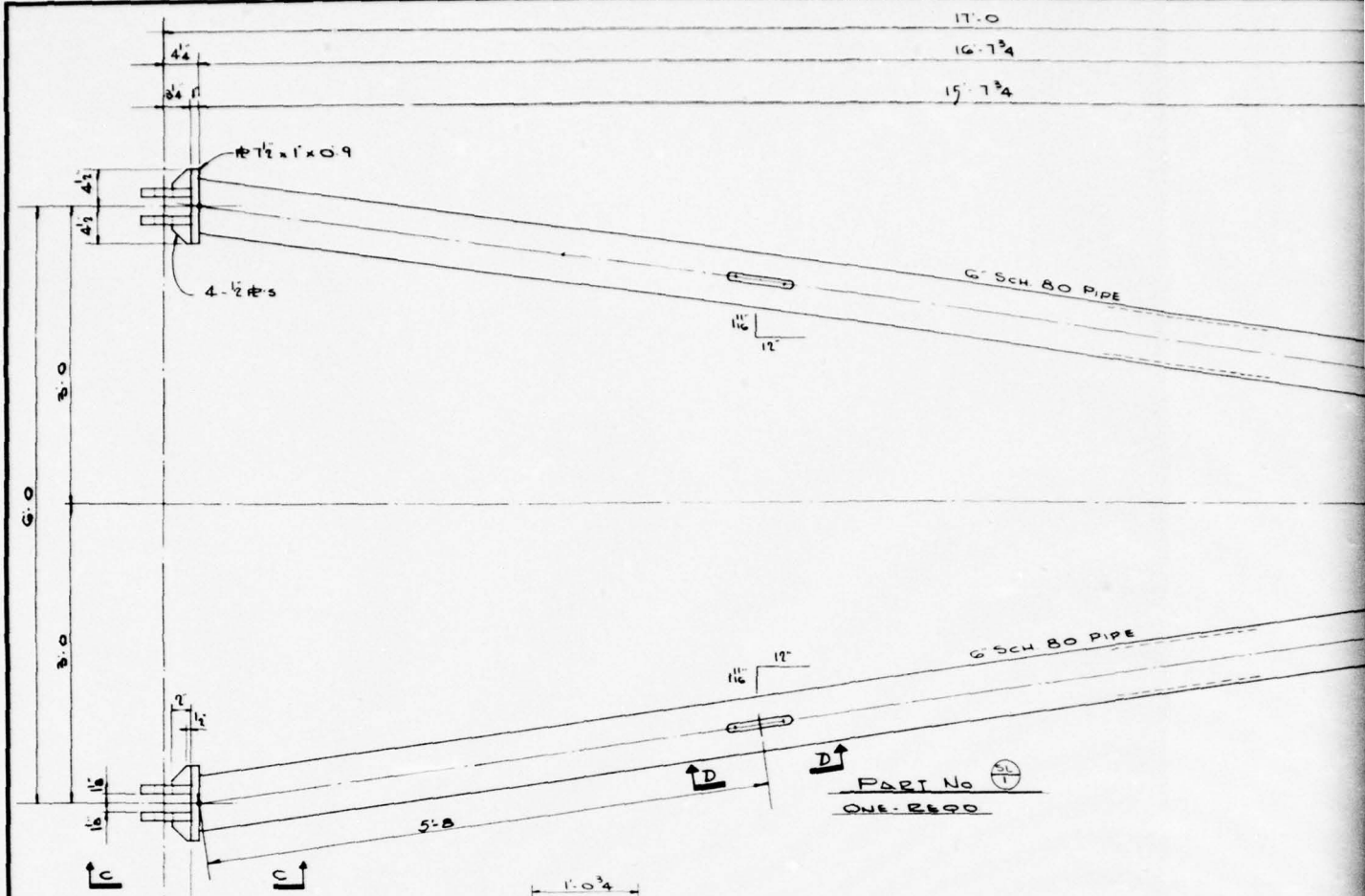
MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

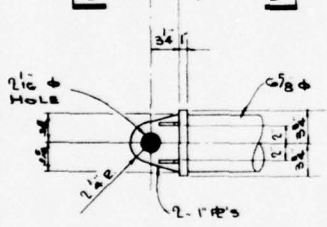
J. RAY McDERMOTT & CO., INC.
ENGINEERS — NEW ORLEANS, LA. — CONTRACTORS

DRAWN BY	SCALE	DATE	PROJECT NO.
FRANCHINA	⅜"=1'-0	8-11-65	USA 2971
FABRICATORS JOB NO.		J. RAY McDERMOTT JOB NO.	SHEET NO.
	56017		815

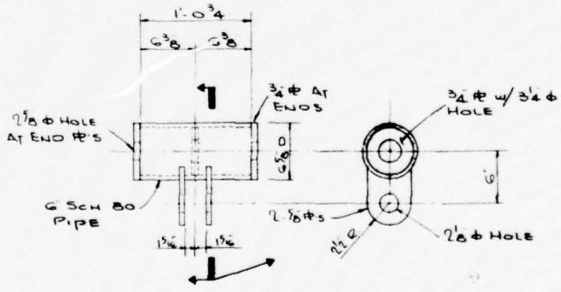
'A' FRAME ASSEMBLY



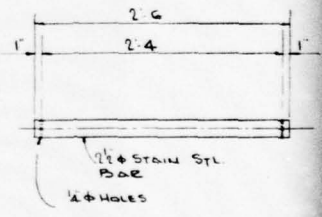
PART NO (SL/1)
ONE-REQD



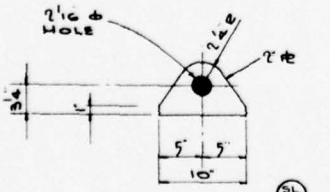
VIEW "C-C"



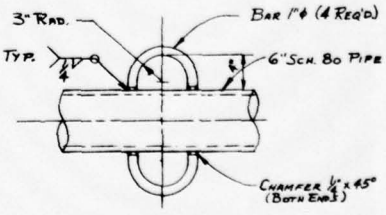
PART NO (SL/2)
ONE-REQD



PART NO (SL/3)
ONE-REQD



PART NO (SL/4)
2-REQD

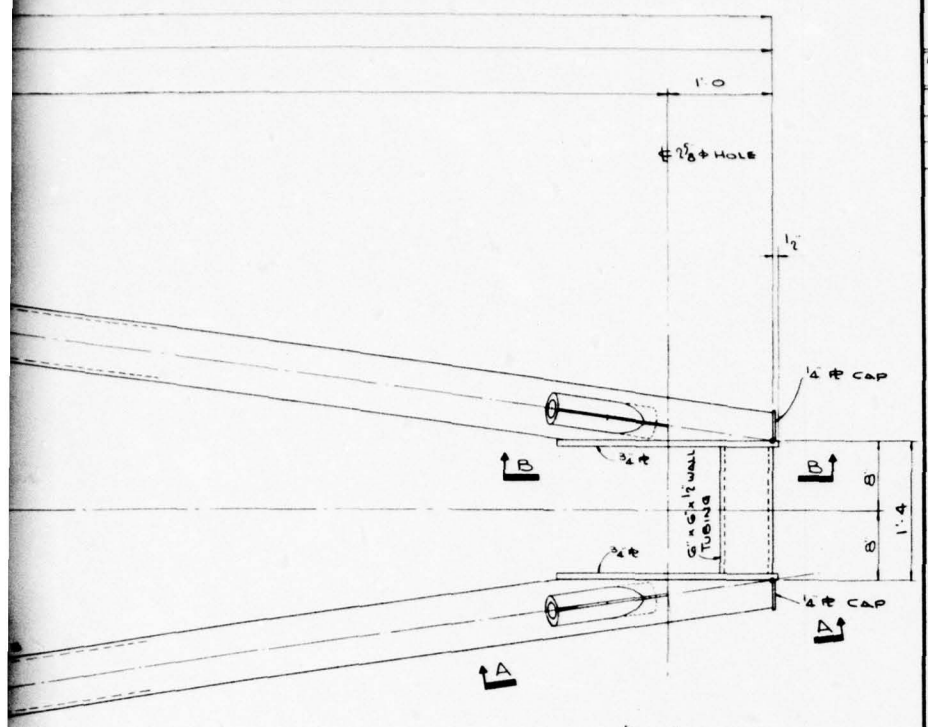


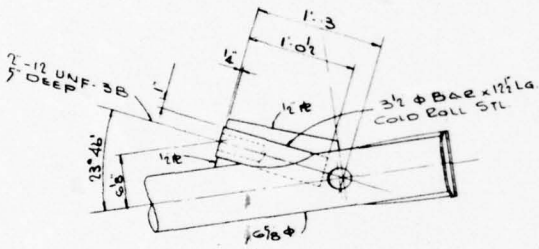
VIEW D-D

DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

DESIGN	STRUCT.



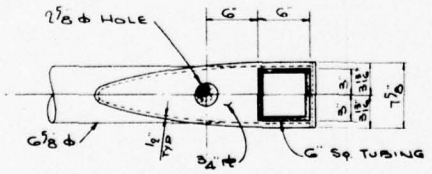


VIEW "A-A"

⌀ HOLES

PART NO. (SL/3)

ONE-REQD



SECTION "B-B"

⌀ REQ'D)

⌀ PIPE

⅝ x 45°

BILL OF MATERIAL

FIND NO.	DWG. NO.	QTY.	NOMENCLATURE	SPEC.	MAT'L.

REFERENCE DRAWINGS

SHT. NO.	TITLE
815	'A' FRAME ASSEMBLY
817	'A' FRAME DETAILS SHT. 2

	DATE	APP.
DESIGN		
STRUCT.		
PIPING		
ELEC.		
MK.		
BY		
REVISIONS		
DATE		
APP.		

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7118
REGD. FIELD
SURVEYOR & CIVIL
ENGINEER
AND PLANNER

APPROVED: [signature]
J. RAY McDERMOTT & CO., INC.
DATE 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	[signature]	1-28-66
STRUCTURAL	T.C.A.	10-28-65
PROCESS		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
FOR CHECK	[signature]	9-28-65
PROP. CHECK		

MONO-MOORING SYSTEM

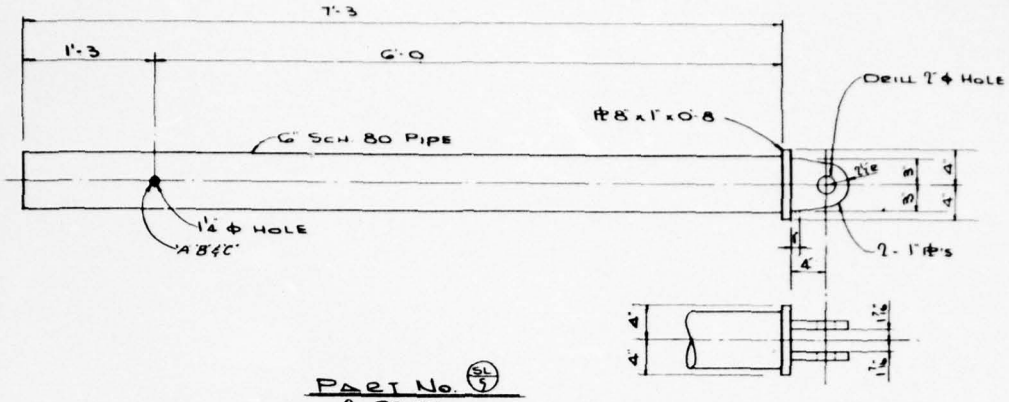
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY McDERMOTT & CO., INC.
ENGINEERS — NEW ORLEANS, LA. — CONTRACTORS

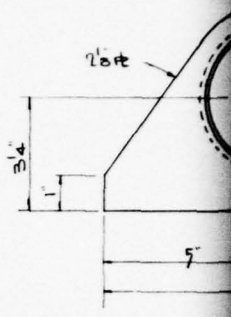
DRAWN BY	SCALE	DATE	PROJECT NO.
F.B.	1½" = 1'-0	6-21-65	USA-2971
FABRICATORS JOB NO.		J. RAY McDERMOTT JOB NO. 56017	SHEET NO. 816

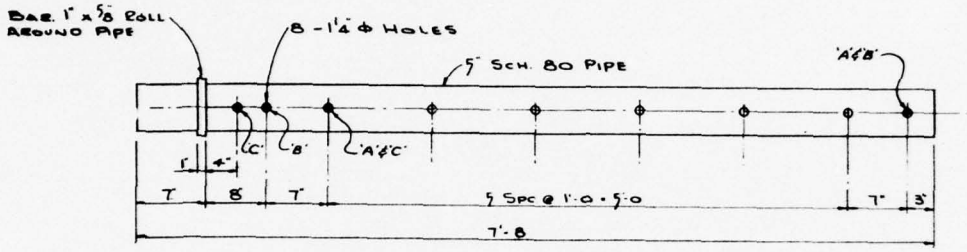
4' FRAME DETAILS SHT 1

△

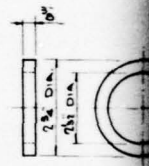


PART No. SL/5
2 REQD

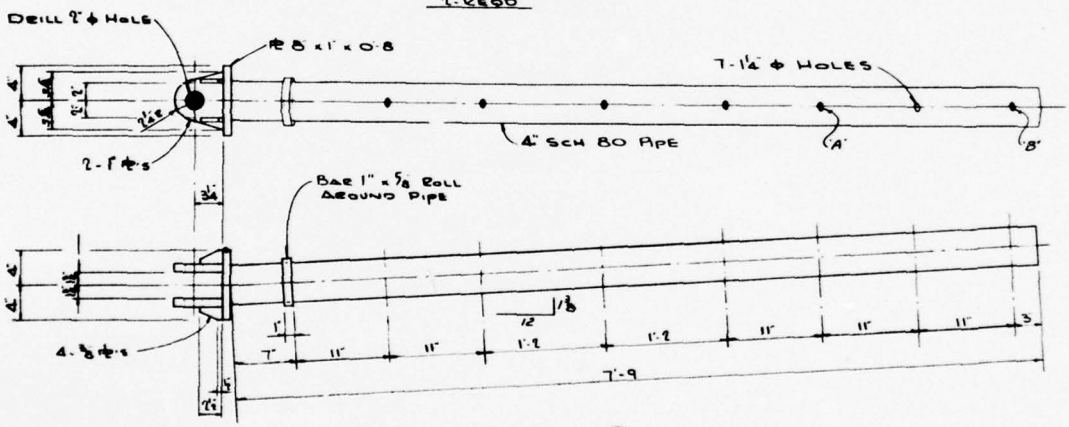




PART No. SL/6
2 REQD



PART No.
8 REQD



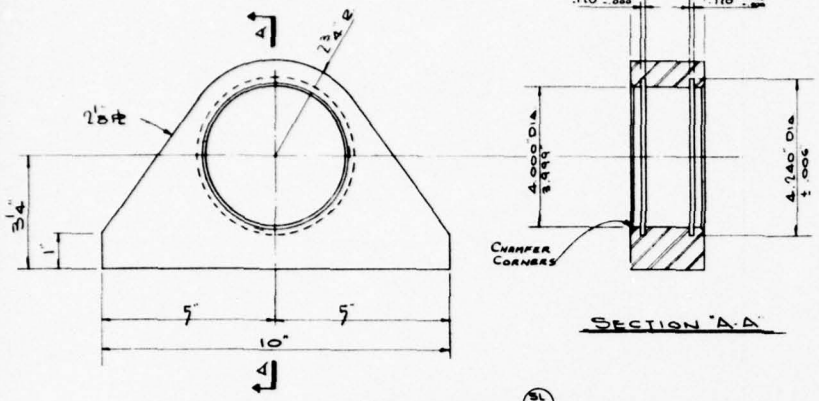
PART No. SL/7
2 REQD

NOTE:
SHADED HOLES FOR POSITIONS

DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING

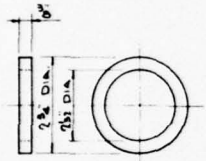
BILL OF MATERIAL

FIND NO.	DWG. NO.	QTY.	NOMENCLATURE	SPEC.	MAT'L.

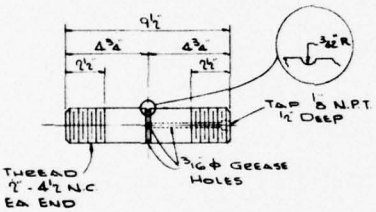


SECTION "A-A"

PART NO. (SL 8)
2 REQD



PART NO. (SL 10)
8 REQD



PART NO. (SL 9)
6 REQD
MATL 2" ø STAINLESS STEEL COMMERICAL GROUND STOCK

NOTE:
SHADED HOLES INDICATE BOLT HOLES FOR POSITIONS A, B & C

REFERENCE DRAWINGS

SHT. NO.	TITLE
815	'A' FRAME ASSEMBLY
816	'A' FRAME DETAILS SHT. 1

DATE	APP	REVISIONS	DATE	APP

DESIGN | STRUCT. | PIPING | ELEC. | MK. | BY

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7205
REGISTERED
PROFESSIONAL
CIVIL ENGINEER

APPROVED

J. RAY McDERMOTT & CO., INC.
DATE 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT		
STRUCTURAL		
PROCESS		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
P&D CHECK		
PROP. CHECK		

MONO-MOORING SYSTEM

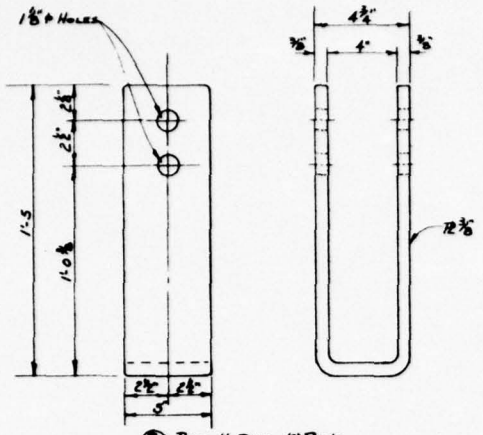
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY McDERMOTT & CO., INC.
ENGINEERS — NEW ORLEANS, LA. — CONTRACTORS

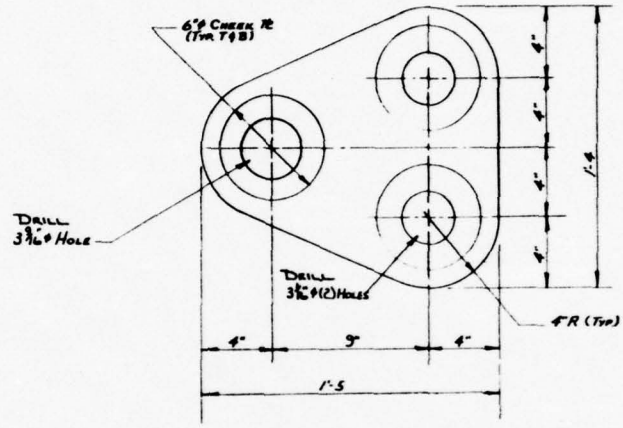
DRAWN BY	SCALE	DATE	PROJECT NO.
F.B	1"=1'0" & NOTED	8-11-65	USA-2971
FABRICATORS JOB NO.		J. RAY McDERMOTT & CO. JOB NO. 56017	DRAWING NO. 817

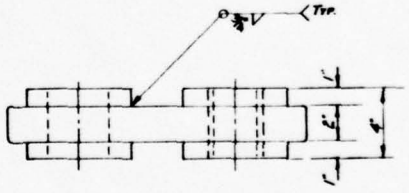
'A' FRAME DETAILS SHT. 2

△



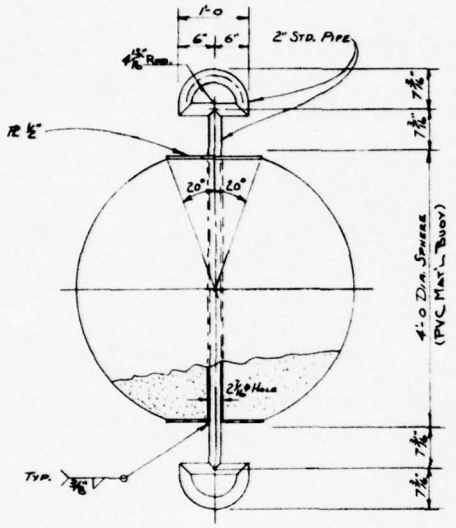
4/8 BAR-U-BOLT - (2) REQ'D.
SCALE 3"=1'-0





10/10 SISTER PLATE - (2) REQ'D.
SCALE 3"=1'-0

	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING



(A/B) BUOY ~ (2) REQ'D.
SCALE 1" = 1'-0

BILL OF MATERIAL

FIND NO.	DWG. NO.	QTY.	NOMENCLATURE	SPEC.	MAT'L.

2

REFERENCE DRAWINGS

SHT. NO.	TITLE
827	MOORING SYSTEM

REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. 7186
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

APPROVED: [signature]
J. RAY McDERMOTT & CO., INC.
DATE 1-28-66
ENGINEERS APPROVAL

	BY	DATE
PROJECT	[illegible]	12-16
STRUCTURAL	J.C.A.	1-28-66
PIPING		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
PUB. CHECK	SD	1-28-66
PROP. CHECK		

MONO-MOORING SYSTEM

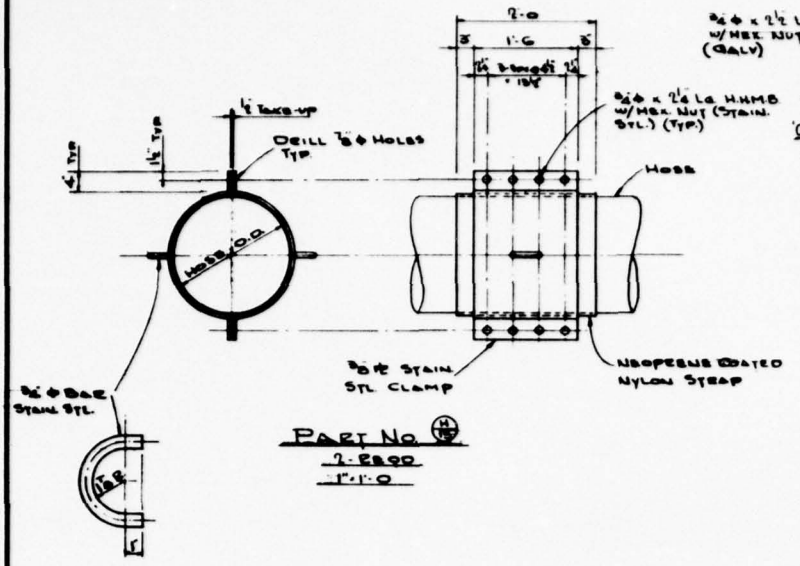
FOR
U.S. ARMY ENGINEER RESEARCH
& DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS CONTRACTORS
NEW ORLEANS, LA.

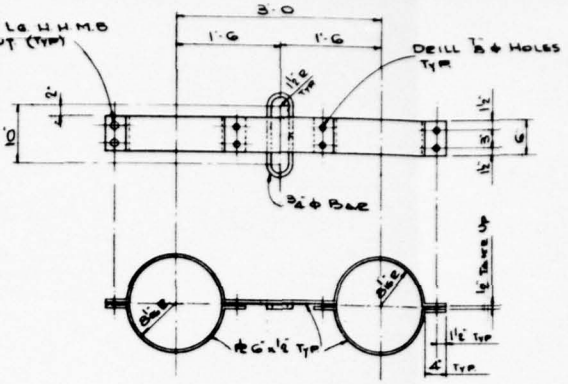
DRAWN BY	SCALE	DATE	PROJECT NO.
S. Guillory	As Noted	8-25-65	U.S.A. 2571
FABRICATORS JOB NO.		J. RAY McDERMOTT JOB NO.	SHEET NO.
56017			828

MOORING SYSTEM DETAILS #1

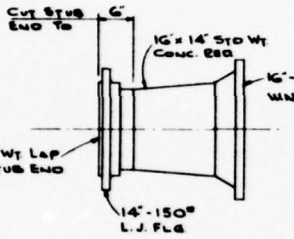
840 - HOSE



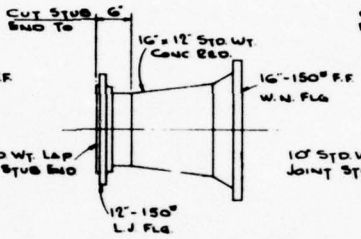
PART NO. H/S
2-REQD
1"=1'-0



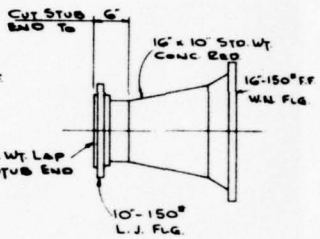
PART NO. H/S
ONE-REQD
1"=1'-0



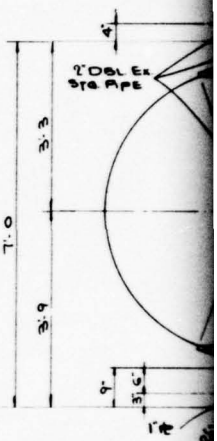
PART NO. H/S
ONE-REQD
1"=1'-0

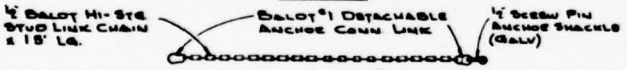


PART NO. H/S
ONE-REQD
1"=1'-0

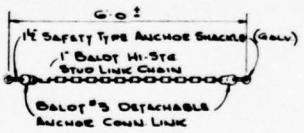


PART NO. H/S
ONE-REQD
1"=1'-0

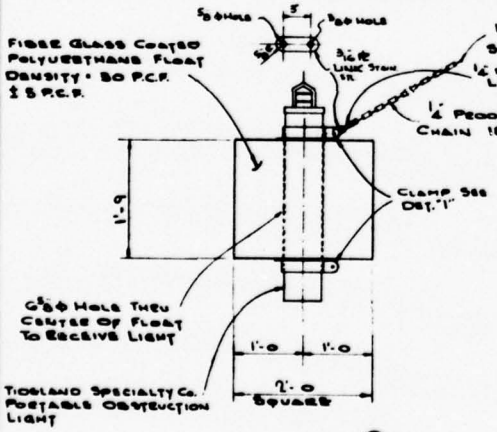




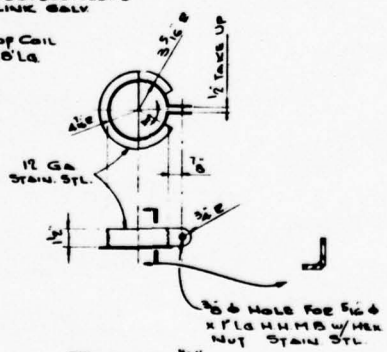
PART NO. H/S
4-REQD



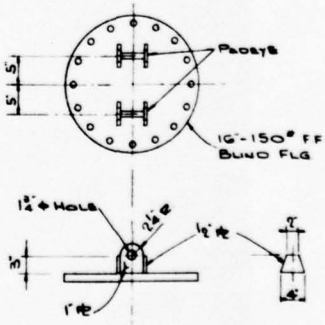
PART NO. H/S
2-REQD



PART NO. H/S
4-REQD
1"=1'-0

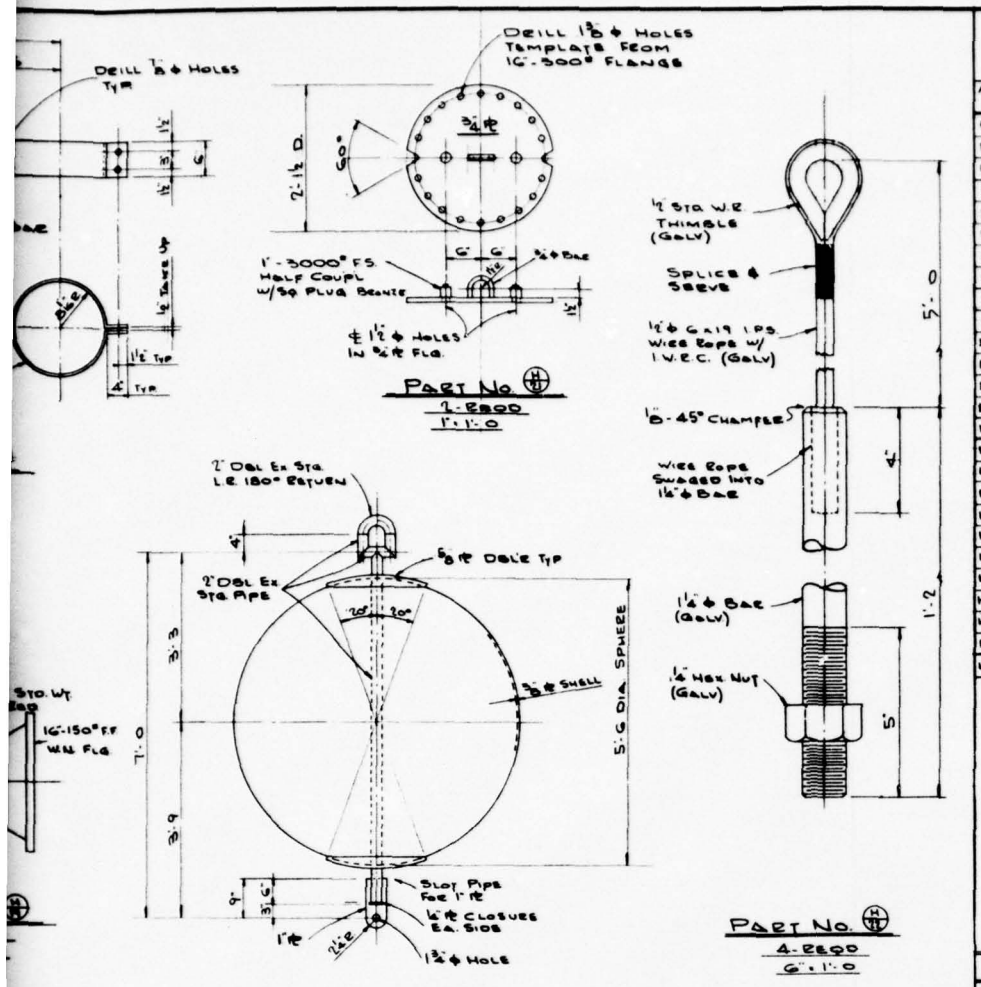


DETAIL "1"



PART NO. H/S
2-REQD
1"=1'-0

DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	EL



BILL OF MATERIAL

FIND NO	DWG NO	QTY	NOMENCLATURE	SPEC.	MAT'L
H1		2	16" FLOATING HOSE GRADUATED 5 SIGHT) W/ 300# FLG BA END		
H2		2	16" FLOAT HOSE (GRADUATED END OPTIONAL) W/150# FLG ONE END & ONE STUB END		
H3		2	16" FLOAT HOSE (LIGHTWEIGHT) W/150# FLG ONE END & ONE STUB END		
H4		2	16" FLOAT HOSE (LIGHTWEIGHT) W/STUB BA END		
H5		36	16" FLOAT HOSE W/STUB BA END		
H6		4	16" SUBMARINE HOSE W/300# FLG ONE END & ONE STUB END		
H7		14	16" SUBMARINE HOSE W/STUB BA END		
H8		56	16" STYLE 44 VICTAULIC COUPLING		
H9		2	SPHERICAL TAG BUOY		
H10		2	TAG BUOY CHAIN		
H11		2	16" BLIND FLG.		
H12		2	16" CAMLOCK FLG FACE GROOVED FOR O-RING SEAL		
H13		2	HOSE HANDLING CLAMP		
H14		4	HOSE HANDLING CHAIN		
H15		4	WINKY LIGHT ASSY		
H16		1	HOSE TO SEABED ANCHOR CONNECTING GUIDE		
H17		1	16"x14" REDUCING SPOOL		
H18		1	16"x12" REDUCING SPOOL		
H19		1	16"x10" REDUCING SPOOL		
H20		4	HOSE TIE DOWN CHAIN		
H21		2	SUBMARINE HOSE TO BUOY CONN. GUIDE FLG		
H22		4	SUBMARINE HOSE TO BUOY ALIGNMENT BOLT		
H23		2	STR TYPE NYLON BUMPER-18"x48"x16" - 40000 Lb. TEST		
H24		AS PER SPECS	FLOAT		
H25		AS PER SPECS	BANDING		
H26		4	16" BLIND FLG		

REFERENCE DRAWINGS

SMT NO	TITLE
840	HOSE ASSEMBLY
842	HOSE INSTALLATION DETAILS

NOTE
PS H17 THRU H20 & H23 TO BE CARRIED ON SERVICE LAUNCH
PS H21 & H22 FOR INSTALLATION OF SUBMARINE HOSE ONLY

DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. 7155
REGISTERED PROFESSIONAL ENGINEER
CIVIL ENGINEERING

APPROVED: G. C. Lee
J. RAY McDERMOTT & CO., INC.
DATE: 2-18-66
ENGINEERS APPROVAL

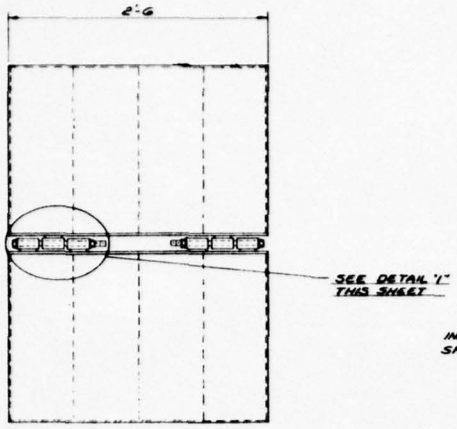
	BY	DATE
PROJECT	GJS	2-18-66
STRUCTURAL	GJL	1-1-66
PIPING		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
TAB CHECK	GJL	2-18-66
PROD. CHECK		

MONO-MOORING SYSTEM
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

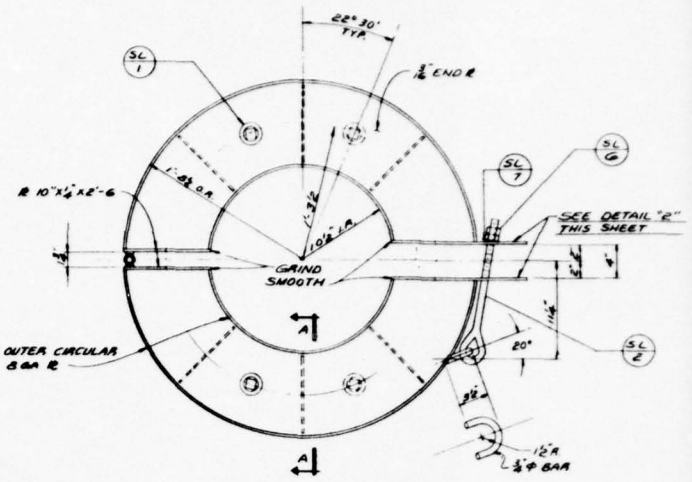
J. RAY McDERMOTT & CO., INC.
ENGINEERS — NEW ORLEANS, LA. — CONTRACTORS

DRAWN BY	SCALE	DATE	PROJECT NO.
F.B	NOTED	2-15-66	USA-2971
FABRICATORS JOB NO.	J. RAY McDERMOTT JOB NO.		SHEET NO.
56017			841

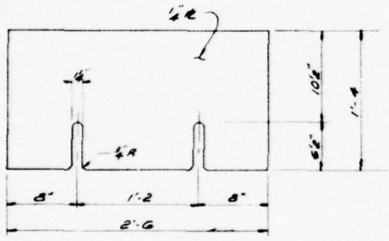
HOSE MISC. DETAILS



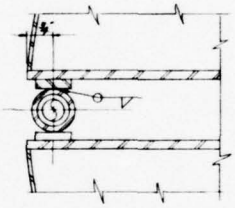
LEFT SIDE ELEVATION
1½" = 1'-0



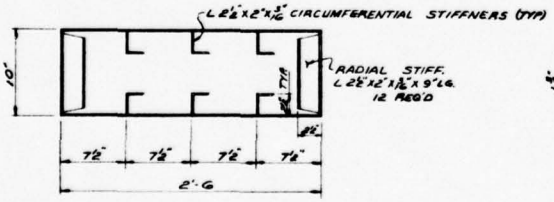
END ELEVATION
1½" = 1'-0



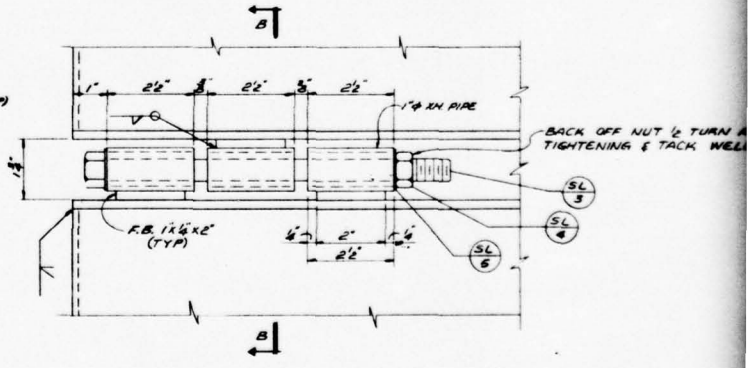
DETAIL "2"
1½" = 1'-0



SECTION "B-B"
HALF SIZE

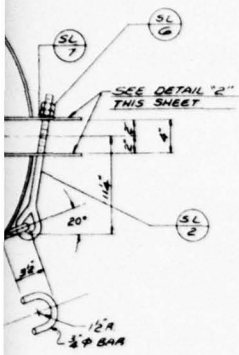


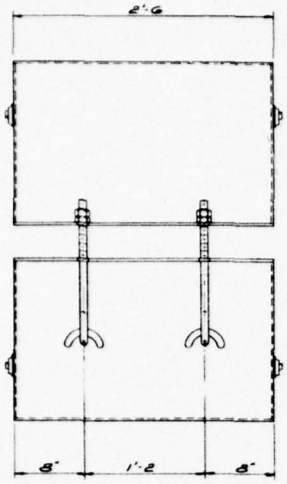
SECTION "A-A"
1½" = 1'-0



DETAIL "1"
HALF SIZE

	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.





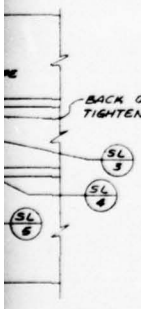
RIGHT SIDE ELEVATION
1½" = 1'-0

BILL OF MATERIAL

FIND Nº	DWG. Nº	QTY.	NOMENCLATURE	SPEC.	MAT'L
SL-1		4	#268 AVERSON 1" STD. HEAVY FLAT WELDING FLANGE W/ BRONZE SCREW PLUG		DF. STEEL
SL-2		2	JOSLYN ⅝"ϕ x 1'-0 LG EYE BOLT	GALV.	DF. STEEL
SL-3		2	⅝"ϕ x 10" HHMB.	GALV.	
SL-4		2	⅝"ϕ HEX NUT	GALV.	
SL-5		4	⅝" I.D. WASHER	GALV.	
SL-6		4	⅝"ϕ HEX HEAD JAM NUT	GALV.	
SL-7		2	½"ϕ I.D. WASHER		

REFERENCE DRAWINGS

SHT. No.	TITLE
840	HOSE ASSEMBLY



FABRICATION NOTES:

1. ALL STRUCTURAL SHAPES & R TO BE A-36
2. ALL WELDS TO BE SEAL WELDS.
3. AFTER ASSEMBLY DIMETCOTE ALL EXTERIOR SURFACES EXCEPT THREADED PORTIONS OF NUTS & BOLTS.
4. AFTER WELDING IS COMPLETED COAT INSIDE OF FLOAT WITH TEXACO COMPOUND "H" OR OTHER APPROVED RUST INHIBITING COATING.

INSTALLATION NOTES

1. SUBMERGED WEIGHT OF FLOAT WHEN FULL OF SEA WATER IS APPROXIMATELY 600 LB.
2. NET BUOYANCY OF FLOAT IN SEA WATER WHEN FILLED WITH AIR IS APPROXIMATELY 300 LB.

	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7100
REGISTERED
PROFESSIONAL ENGINEER

APPROVED: _____
J. RAY McDERMOTT & CO., INC.
DATE: 2-18-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	[illegible]	2-18-66
STRUCTURAL	[illegible]	2-18-66
PROCESS		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
PUB. CHECK	[illegible]	2-18-66
PROF. CHECK		

MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

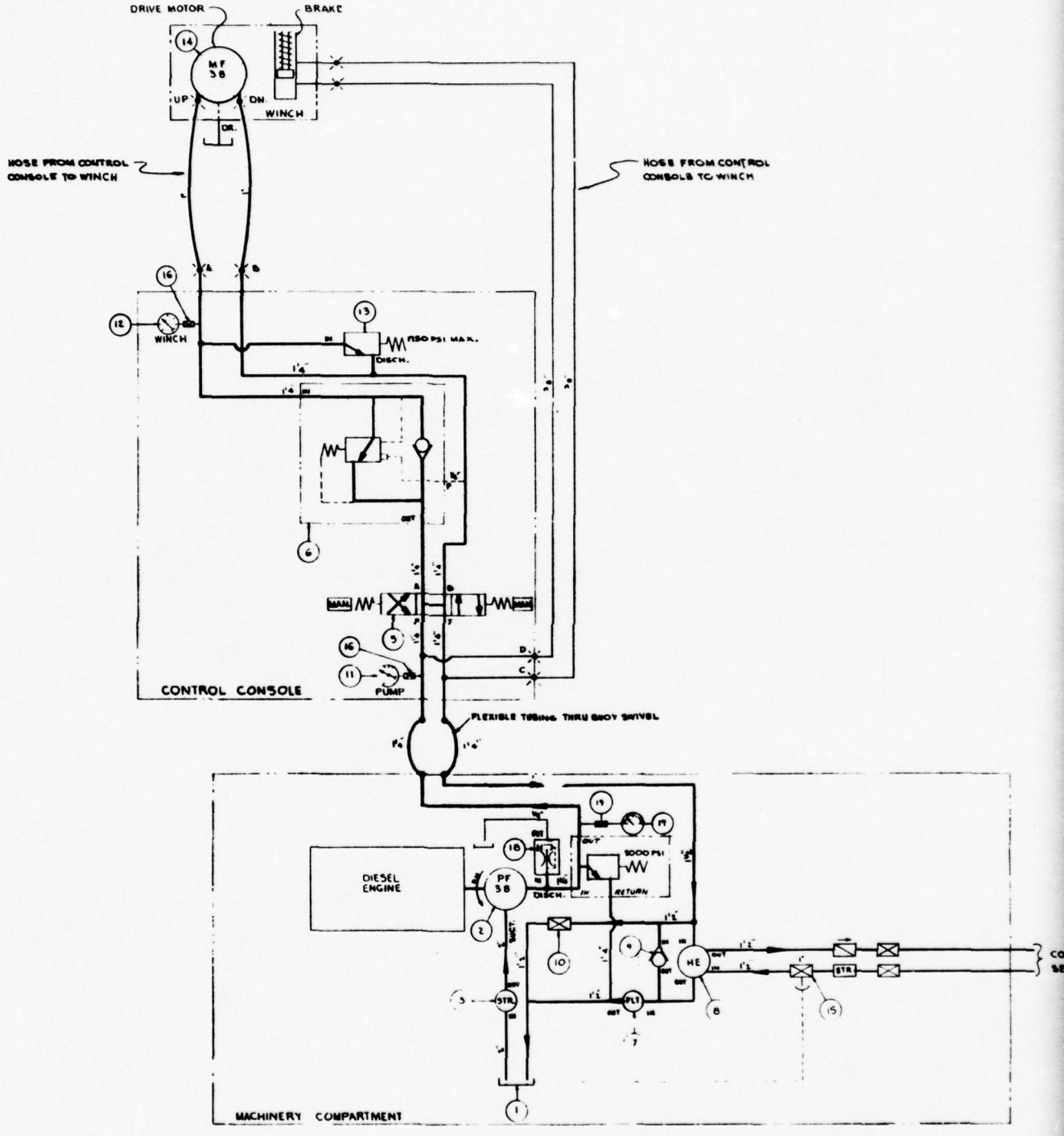
J. RAY McDERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
FRANCHINA	NOTED	2-14-66	USA 2971
FABRICATORS JOB NO.	J. RAY McDERMOTT JOB NO.		SHEET NO.
56017			843

OPTIONAL STEEL FLOAT FOR SUBMARINE HOSE LINES △

860 - MECHANICAL

1



FIRST USED	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP	DESIGN	STRUCT.	PIPING

1

BILL OF MATERIAL

2

FIND No.	REF DWG No	NOMENCLATURE	SPEC	MAT'L
1	SEE SHT 862	HYDRAULIC OIL RESEVOIR		
2		VICKERS PUMP # 35V30A-1C10-1B2		
3		VICKERS FILTER # 303-149-M-B-10#		
4		VICKERS BALANCED TYPE RELIEF VA. No CT 10-C-10		
5		VICKERS DIRECTIONAL VALVE # C-1450-C		
6		VICKERS COUNTER BALANCE VALVE # RCG-10-FB1-10W5 &		
7		VICKERS OFM SERIES OIL FILTER OFM 202 1½" PIPE THRD.		
8		VICKERS COOLER # OCW-4-10 SPECIAL FOR SEA WATER		
9		VICKERS CHECK ANGLE VALVE C2-830-S5		
10		1½ PLUG TYPE ANGLE VALVE VICKERS-DTPA 2-12-10		
11		HELICOID GAGE TYPE #440, SIZE 4½ø FLUSH MTG.; TYP. 316, SOCKET & TIP ASSY.; BACK CONN. ½ NPT; PHENOL CASE; SC. RAG. 0-3000# PSI		
12		do		
13		VICKERS RELIEF VALVE # CG-10-C-10 W/ SUB PLATE		
14		MARINE CONST & DESIGN CO. MOD. WO960 HYD. WINCH		
15		TEMP CONTROL VA. VICKERS MOD 4DCRY-10-B-10 70GBH-10 SALT WTR.		
16		CRANE ANGLE NEEDLE VALVE # 222H FEMALE ENDS ¼"		
17		HELICOID GAGE TYPE #440, SIZE 3½ø TYP. 316, SOCKET & TIP ASSY., BOTTOM CONN. ¼" NPT PHENOL CASE; SC. RAG. 0-3000# PSI.		
18		VICKERS AIR RELEASE VALVE # ABT-02-10		
19		CRANE ANGLE NEEDLE VALVE # 222H FEMALE ENDS ¼"		

REFERENCE DRAWINGS

SHT. No	TITLE
862	BUOY WINCH HYD. SYSTEM ISOMETRIC

COOLING WATER
SEE SHT 868

NOTE:
1. FOR PIPING ARRANGEMENT OF SYSTEM SEE ISOMETRIC ON SHEET 862
2. ALL PIPING SHALL BE TO STANDARD J.I.C. PRACTICES.

NO	DATE	APP	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7196
REGISTERED PROFESSIONAL ENGINEER

APPROVED: J. R. Lee
DATE: 1-28-66

ENGINEERS APPROVAL

	DES.	DATE
PROJECT		
STRUCTURAL	JRS	1-28-66
PIPING		
MECHANICAL	JRP	1-28-66
ELECTRICAL		
INSTRUMENTS		
FAB. SHOPS	JRP	1-28-66
PROP. SHOPS		

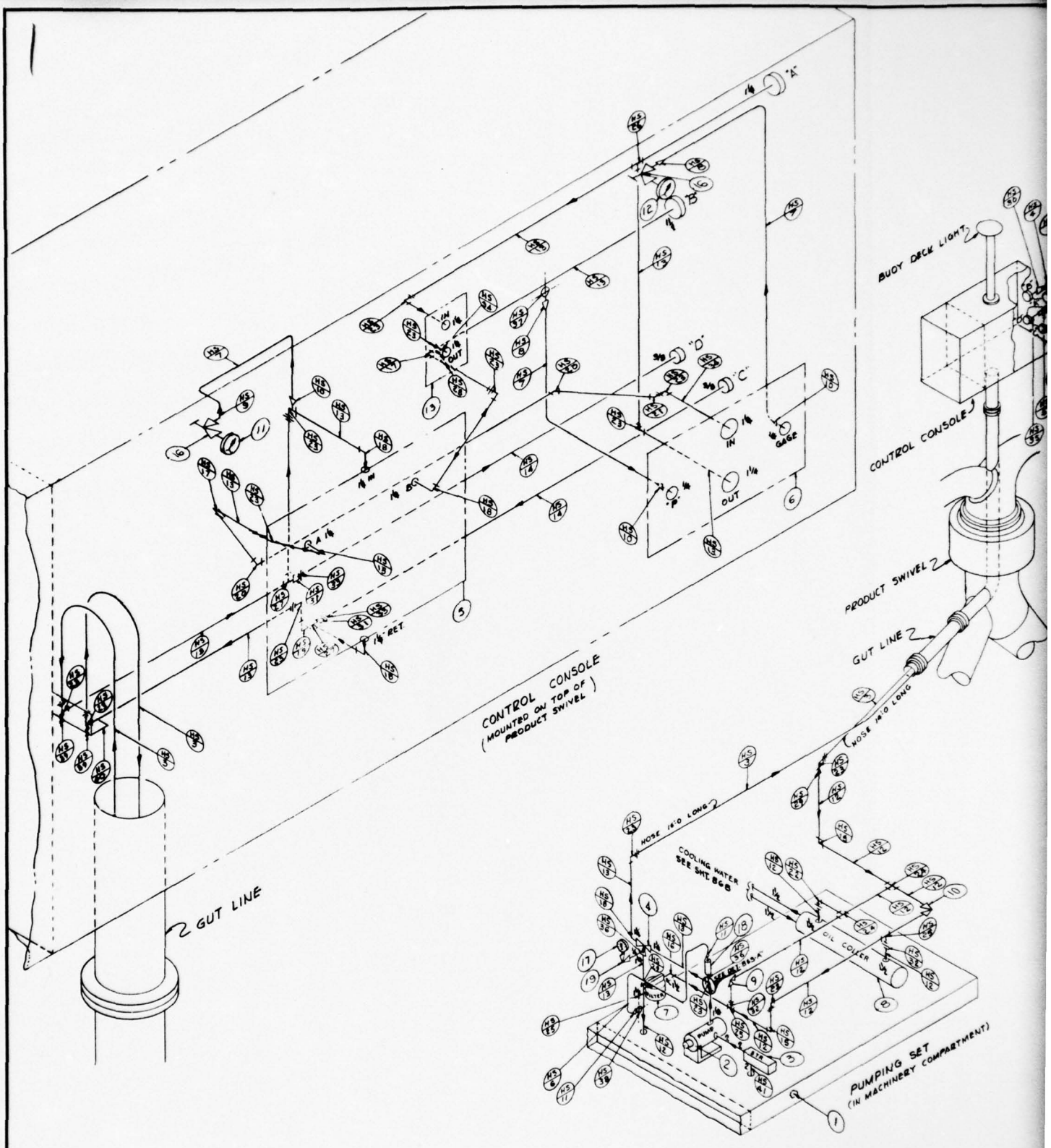
MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — NEW ORLEANS, LA. — CONTRACTORS

DESIGNED BY	SCALE	DATE	DWG. NO.
M. GROVES	NONE	11-12-65	USA-E971
	56017		DRAWING NO. 861

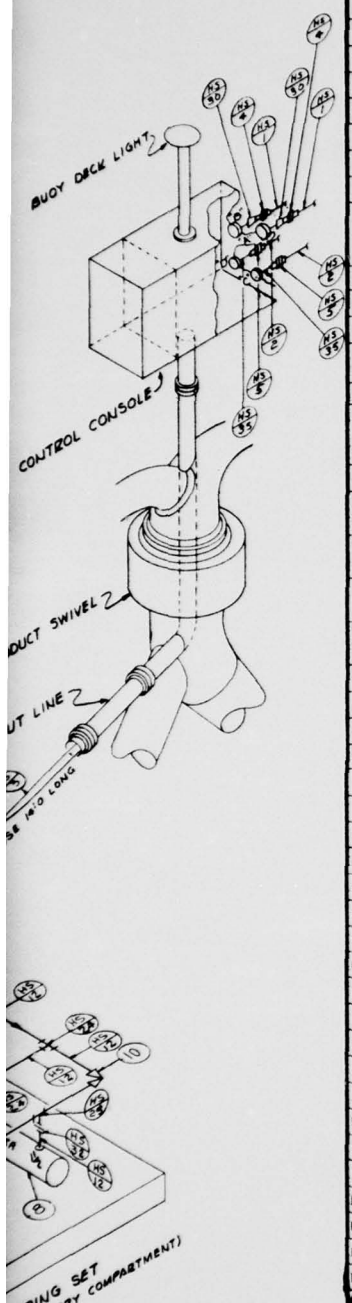
BUOY WINCH-HYD. SYSTEM SCHEMATIC



	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING

BILL OF MATERIAL

FIND No.	REF DWG No.	QTY	NOMENCLATURE	SPEC.	MAT'L
1	892		HYDRAULIC OIL RESEVOIR		
2	892		VICKERS PUMP #35V30A-1C10-132		
3	892		VICKERS FILTER # 50S-149-N-3-P-A		
4	861	1	VICKERS BALANCED RELIEF VA. No. CT-10-C-10		
5	893		VICKERS DIRECTIONAL VALVE # C-1430-C		
6	893		VICKERS COUNTER BALANCE VALVE # RCG-10-FP1-10		
7	861	1	VICKERS OFM SERIES OIL FILTER OFM 203 1½" PIPE THREAD		
8	892		VICKERS COOLER # OCW-4-10 SPECIAL FOR SEA WATER		
9	861	1	VICKERS CHECK ANGLE VALVE C2-830-S3		
10	861	1	1½" PLUG TYPE ANGLE VALVE VICKERS-DTPA 2-12-10		
11	893		HELICOID GA. TYPE 440 SIZE 4½" # FLUSH MTG., TYPE 316, SOCKET & TIP ASSY. BACK CONNECTION ½" NPT PHENOL CASE, SC. RAG. 0-3000 # P.S.I.		
12	893		Do		
13	893		VICKERS RELIEF VALVE # CG-10-C-10		
14	815		MARINE CONST. & DESIGN CO. MOD. WO960 HYD. WINCH		
15	868	1	TEMP. CONTROL VA. VICKERS MOD #OCRV-1-0-8-10 #OCBW-1-10 SALT WATER #		
16	861	2	CRANE ANGLE NEEDLE ¼" VALVE #222-H FEMALE ENDS		
17	861	1	HELICOID GA. TYPE 440 SIZE 3½" # TYPE 316, SOCKET & TIP ASSY. BOTTOM CONN. ½" NPT PHENOL CASE, SC. RAG. 0-3000# P.S.I.		
18	861	1	VICKERS AIR RELEASE VA. #ABT-02-10		
HS-1		2	HYD. HOSE-AEROQUIP STYLE 2766-16, 2.5' LG W/SS FITTING No. 4722-16-16C BOTH ENDS		
HS-2		2	HYD. HOSE AEROQUIP STYLE 2766-6-2.5 LG. W/SS FITTINGS No. 4722-6-6C BOTH ENDS 3/8"		
HS-3		2 SEE NOTE #1	HYD. HOSE ANACONDA STYLE N# BW21-1H-1¼" W/HW4 FITTINGS 5/8 BOTH ENDS		
HS-4		2	QUICK DISCONNECT HYD. CPLG AEROQUIP STYLE 5600-16-16C 1"		
HS-5		2	QUICK DISCONNECT HYD CPLG AEROQUIP STYLE 5600-6-6C-3/8		
HS-6		4'-0	¼" .035 SAE 1010 STEEL TUBING		
HS-7		5'-0	3/8" .035 SAE 1010 STEEL TUBING		
HS-8		2	3/8"x1/2" FLODAR STR. TUBE CONN. BA-1000-6-8		
HS-9		1	3/8"x1/2" FLODAR 90° ELL TUBE TO MALE PIPE CONN BA-1000-6-8		
HS-10		3	3/8"x1/4" FLODAR STR. TUBE CONN. BA-1000-6		
HS-11		2	1/4"x1/4" FLODAR STR. TUBE CONN. BA-1000-4-4		
HS-12		13'-0	1½" XS A53, A106, GR. B PIPE		
HS-13		17'-0	1¼" XS A53, A106, GR. B PIPE		
HS-14		3'-0	3/8" XS A53, A106, GR. B		
HS-15		2	1½" F x F 90° ELL, FLODAR, PF 21-24		
HS-16		1	1½" F x M 90° ELL, FLODAR, PF 201-24		
HS-17		2	1¼" F x F 90° ELL, FLODAR, PF 21-20		
HS-18		5	1¼" F x M 90° ELL, FLODAR, PF 201-20		
HS-19		1	1¼" M x M 90° ELL, FLODAR, PF 20-20		
HS-20		2	1¼" F x F 45° ELL, FLODAR, PF 51-20		
HS-21		1	1¼" M x F 45° ELL, FLODAR, PF501-20		
HS-22		2	1½" 90° UNION ELL, FLODAR, PFU-21-24		
HS-23		13	1¼" 90° UNION ELL, FLODAR, PFU21-20		
HS-24		2	1½" F x F x F TEE, FLODAR, PF 31-24		
HS-25		2	1½" F x F x M TEE, FLODAR PF3110-24		
HS-26		1	1¼" F x F x F TEE, FLODAR, PF 31-20		
HS-27		2	1¼" M x F x F TEE, FLODAR, PF3011-20		
HS-28		1	1¼" F x F x M TEE, FLODAR, PF 3110-20		
HS-29		2	1½"x1¼" RED BUSH, FLODAR, PF101-24-20		
HS-30		2	1¼"x1" RED. NIP, FLODAR, PF10-20-16		
HS-31		2	1¼"x⅜" RED. BUSH., FLODAR, PF101-20-6		
HS-32		2	1½" UNION, FLODAR, PFU11-24		
HS-33		2	⅜" UNION, FLODAR, PFU-11-6		
HS-34		2	1¼" PIPE HEX NIP FLODAR PF-10-20		
HS-35		2	⅜" PIPE HEX NIP. FLODAR PF10-6		
HS-36	861	1	¼" XS A53, A106, GRB 3" LG.		
HS-37		1	½" 3000# THREADOLET		
HS-38		1	¼" 3000# THREADOLET		
HS-39		2	½"x1" MACH. BOLT HEX NUT		
HS-40		1	4"x3"x5" LG. ANGLE IRON		
HS-41		2'-6"	2" XS A53, A106, GRB PIPE		
19	861	1	CRANE ANGLE NEEDLE VA. #222-H FEMALE ENDS ¼"		
		2	AEROQUIP DUST CAP PT. 5659-6 STAINLESS STL.		
		2	AEROQUIP DUST PLUG PT. 5657-6 STAINLESS STL.		
		2	AEROQUIP DUST CAP PT. 5659-16 STAINLESS STL.		
		2	AEROQUIP DUST PLUG PT. 5657-16 STAINLESS STL.		



NOTES:

1. FLEXIBLE HOSE LENGTHS FOR PARTS MARKED HS/3 SHALL BE AS SHOWN ON ISOMETRIC.
2. HOSE LENGTHS FOR PARTS MARKED HS/1 & HS/2 ARE GIVEN PER EACH HOSE, QUANTITY TO BE AS SHOWN
3. REAM ALL PIPE AFTER CUTTING TO INSURE FULL INTERNAL DIAMETER
4. ASSEMBLE SCREWED PIPING WITH TEFLON TAPE ON ALL THREADS
5. TIGHTEN PIPING TO ASSURE LEAK TIGHT JOINT. CARE SHOULD BE EMPLOYED NOT TO OVERTIGHTEN JOINT AND OVER STRESS MATERIALS.
6. PIPING SHALL BE SUPPORTED AT SUITABLE INTERVALS TO THE BUOY STRUCTURE. FOR SUPPORT SEE TYPICAL DETAIL ON SHT. 896 OR AS NOTED ELSEWHERE
7. ALL PIPING SYSTEM SHALL BE CLEANED AND FLUSHED FREE OF ALL FOREIGN MATERIAL PRIOR TO CONNECTION TO EQUIPMENT

REFERENCE DRAWINGS

SHT. NO	TITLE
861	BUOY WINCH-HYD. SYSTEM-SCHEMATIC
863	BUOY WINCH-HYD. SYSTEM-PIPING SKID PLAN-MACH.-COMPT.
864	BUOY WINCH-HYD. SYSTEM-CONTROL BOX-PLAN N#1
865	BUOY WINCH-HYD. SYSTEM-CONTROL BOX-PLAN N#2
866	BUOY WINCH-HYD. SYSTEM-CONTROL BOX-ELEV. "A"
867	BUOY WINCH-HYD. SYSTEM-CONTROL BOX-ELEV. "B"
892	HYDRAULIC PUMPING UNIT & FDN. DET.
893	HYDRAULIC & ELECTRICAL CONTROL BOX-LAYOUT & DETAILS

NO.	DATE	APP.	REVISIONS	DATE	APP.

DESIGN | STRUCT. | PIPING | ELEC. | MK. | BY

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 706
DATE 1950
REGISTERED ENGINEER
CIVIL ENGINEER

APPROVED: Mc Kee
J. RAY McDERMOTT & CO., INC.
DATE: 1-29-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT		
STRUCTURAL	JRS	12/5/66
PROCESS		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
P&I CHECK		
PROP. CHECK		

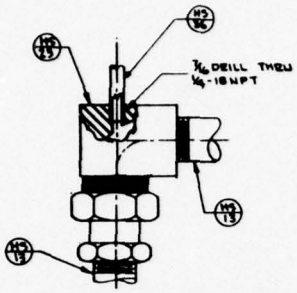
MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

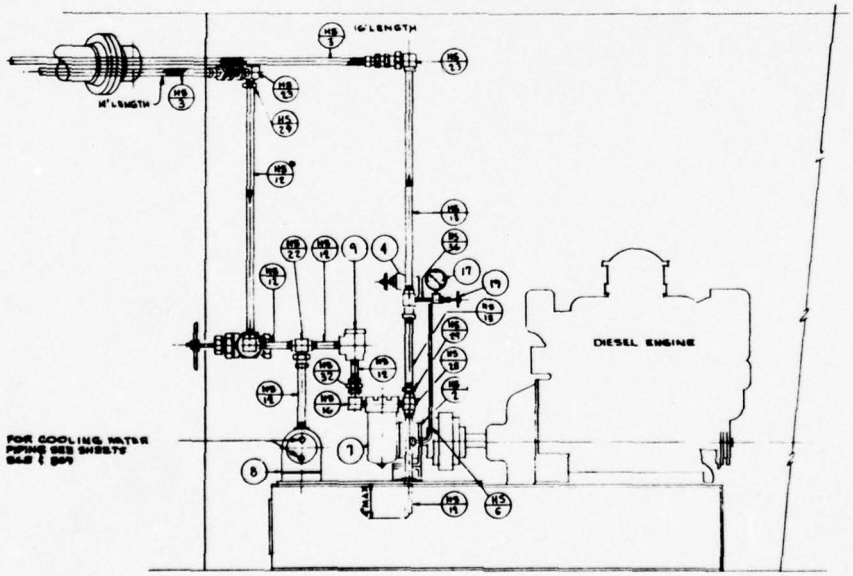
J. RAY McDERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
Nick Cassone MC	NONE	11-19-65	USA-2971
FABRICATORS JOB NO. 56017	J. RAY McDERMOTT JOB NO.		SHEET NO. 862

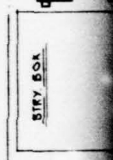
BUOY WINCH-HYD. SYSTEM ISOMETRIC

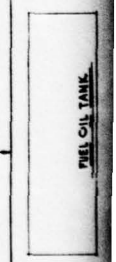


DETAIL 863 "A"
SCALE: HALF SIZE



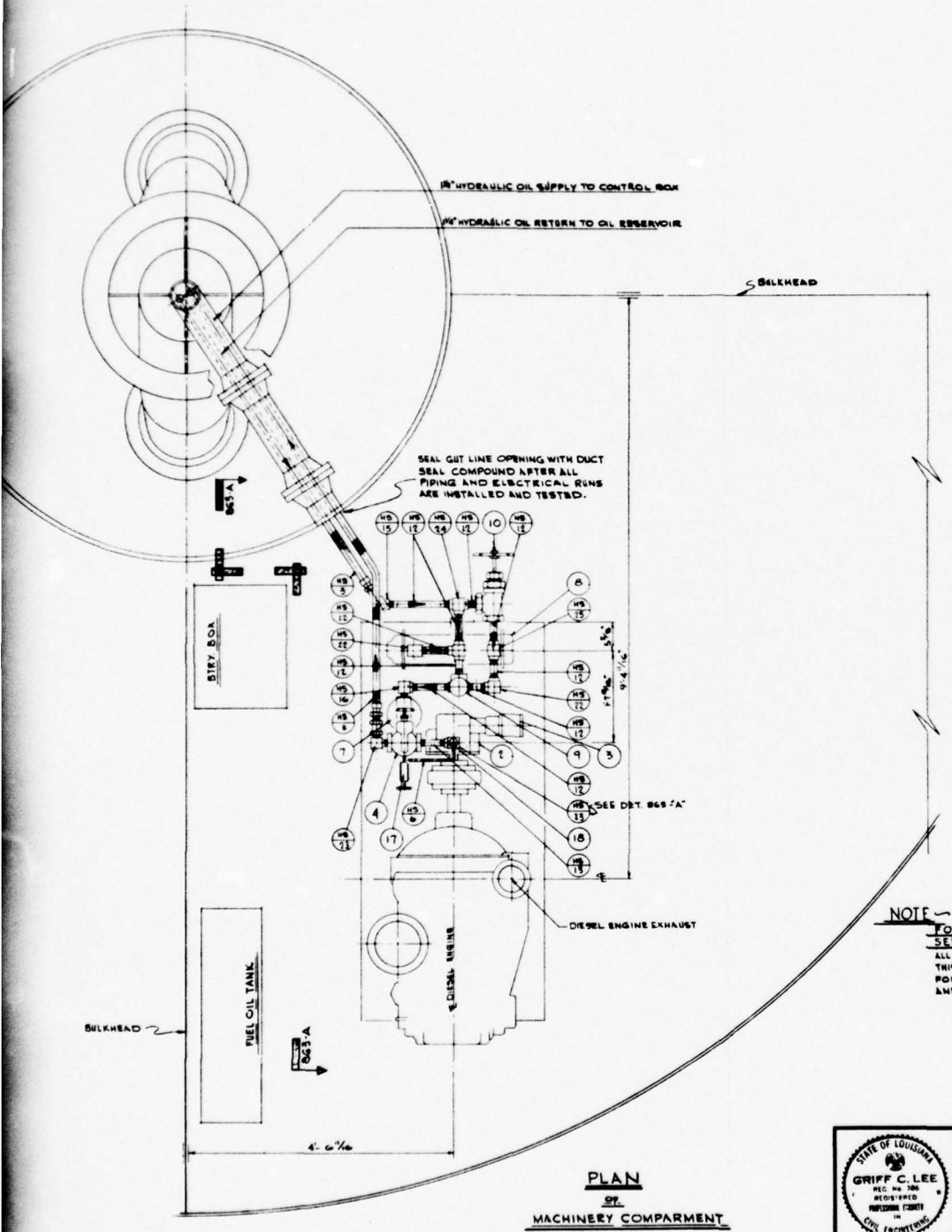
SECTION 863 "A-A"





BULKHEAD

	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP	DESIGN	STRUCT.	PIPING



PLAN
OF
MACHINERY COMPARMENT

NOTE:-
FOR DESCRIPTION OF FIND NOS.
SEE BILL OF MATERIAL SHT 862
ALL NOTES SHOWN ON SHEET 861 APPLY TO THIS DWG. ALSO
FOR PIPING OF COOLING WATER, FUEL, EXHAUST, AND OTHERS SEE SHEETS 865, 869.

NO	DATE	APP.	REVISIONS	DATE	APP.

DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7015
REGISTERED PROFESSIONAL ENGINEER IN CIVIL ENGINEERING

APPROVED: Griff C. Lee
J. RAY McDERMOTT & CO., INC.
DATE: 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	JRS	12-16
STRUCTURAL		
PIPING		
MECHANICAL	[illegible]	12-16
ELECTRICAL		
INSTRUMENT		
P&B CHECK	[illegible]	12-16
PROP. CHECK		

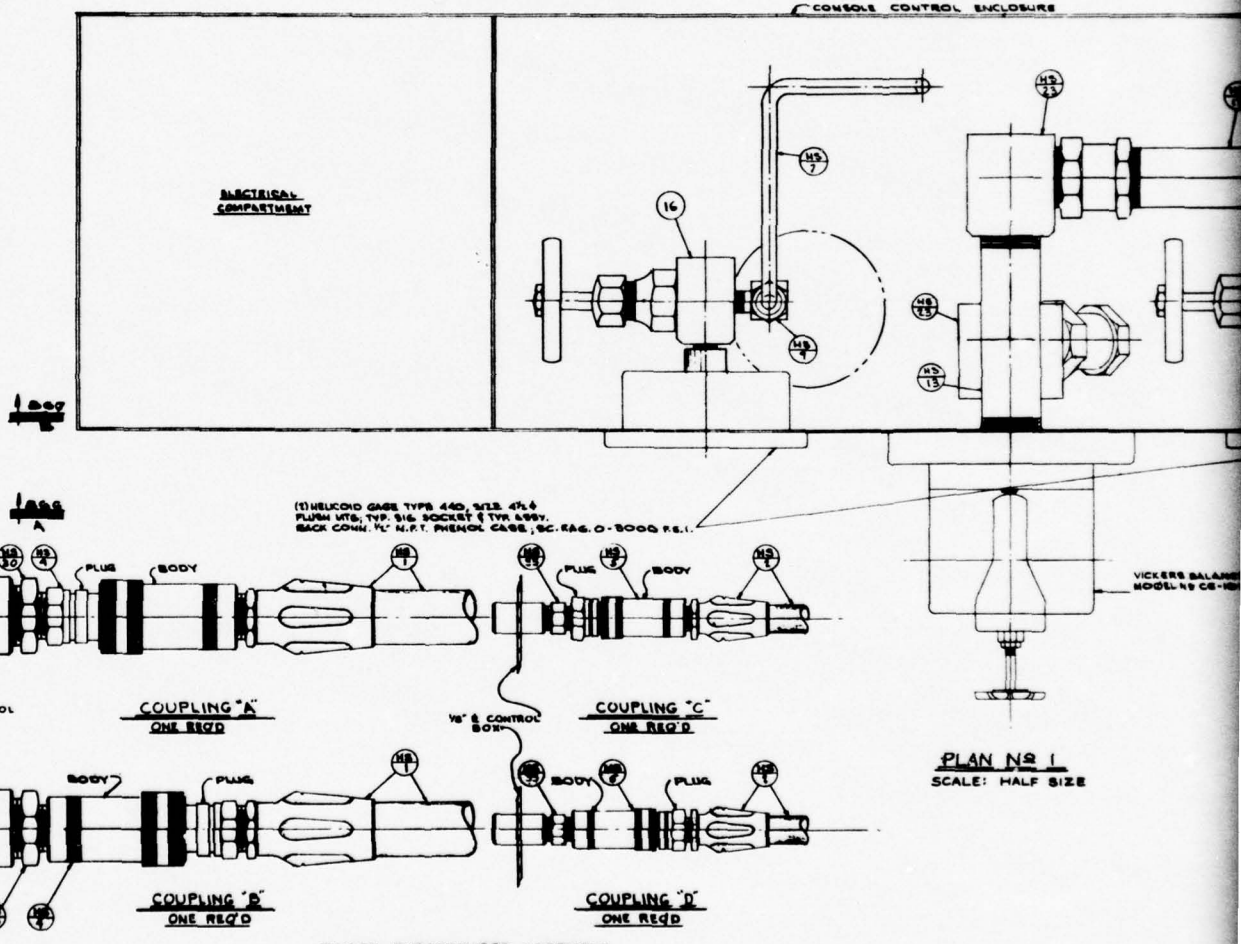
MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
RABALAIS	1"=1'-0"	11/18/65	U.S.A. 2991
FABRICATORS JOB NO.		J. RAY Mc DERMOTT JOB NO.	SHEET NO.
	56019		863

BUOY WINCH - HYD. SYSTEM
PIPING SKID PLAN



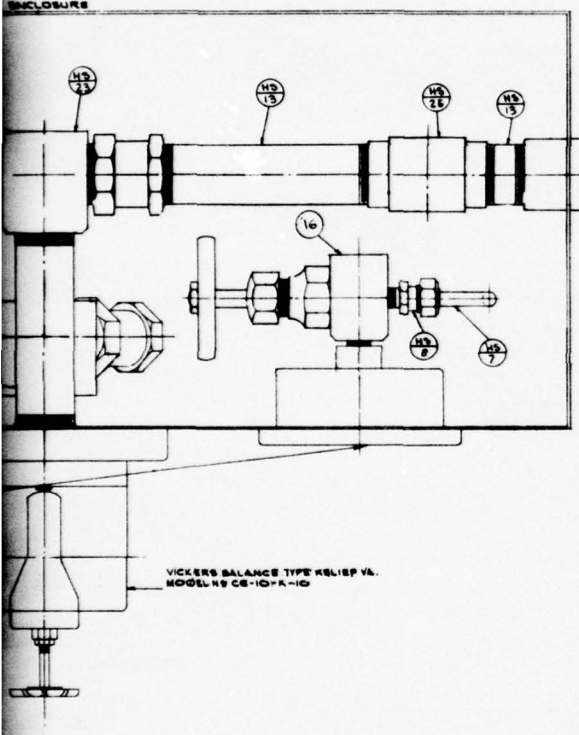
PLAN No. 1
SCALE: HALF SIZE

QUICK DISCONNECT ASSEMBLY
FOR COUPLINGS A, B, C, & D

NOTE:
COUPLINGS ARE INSTALLED WITH BODY AND PLUG COMPONENTS ALTERNATED TO PREVENT IMPROPER HOSE HOOK-UP

DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.

ENCLOSURE



862 /

862 /

N NO 1
E: HALF SIZE

NOTE –

FOR DESCRIPTION OF FIND NUMBERS SEE BILL OF MATERIAL SHT. 862

ALL NOTES SHOWN ON SHT. 862 APPLY TO THIS SHEET

REFERENCE DRAWINGS

SHT. NO	TITLE
861	BUOY WINCH-HYD SYSTEM SCHEMATIC
862	BUOY WINCH-HYD. SYSTEM ISOMETRIC
865	BUOY WINCH-HYD. SYSTEM CONTROL BOX PLAN NO. 2
866	BUOY WINCH-HYD. SYSTEM CONTROL BOX ELEVATION "A"
867	BUOY WINCH-HYD. SYSTEM CONTROL BOX ELEVATION "B"

NO.	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. 7020
PROFESSIONAL ENGINEER
CIVIL ENGINEERING

APPROVED: G. C. Lee
J. RAY McDERMOTT & CO., INC.
DATE: 1-29-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	GCL	1-29-66
STRUCTURAL		
PIPING		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
FAB. SHOPS		
PROP. SHOPS		

MONO-MOORING SYSTEM

FOR

U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES

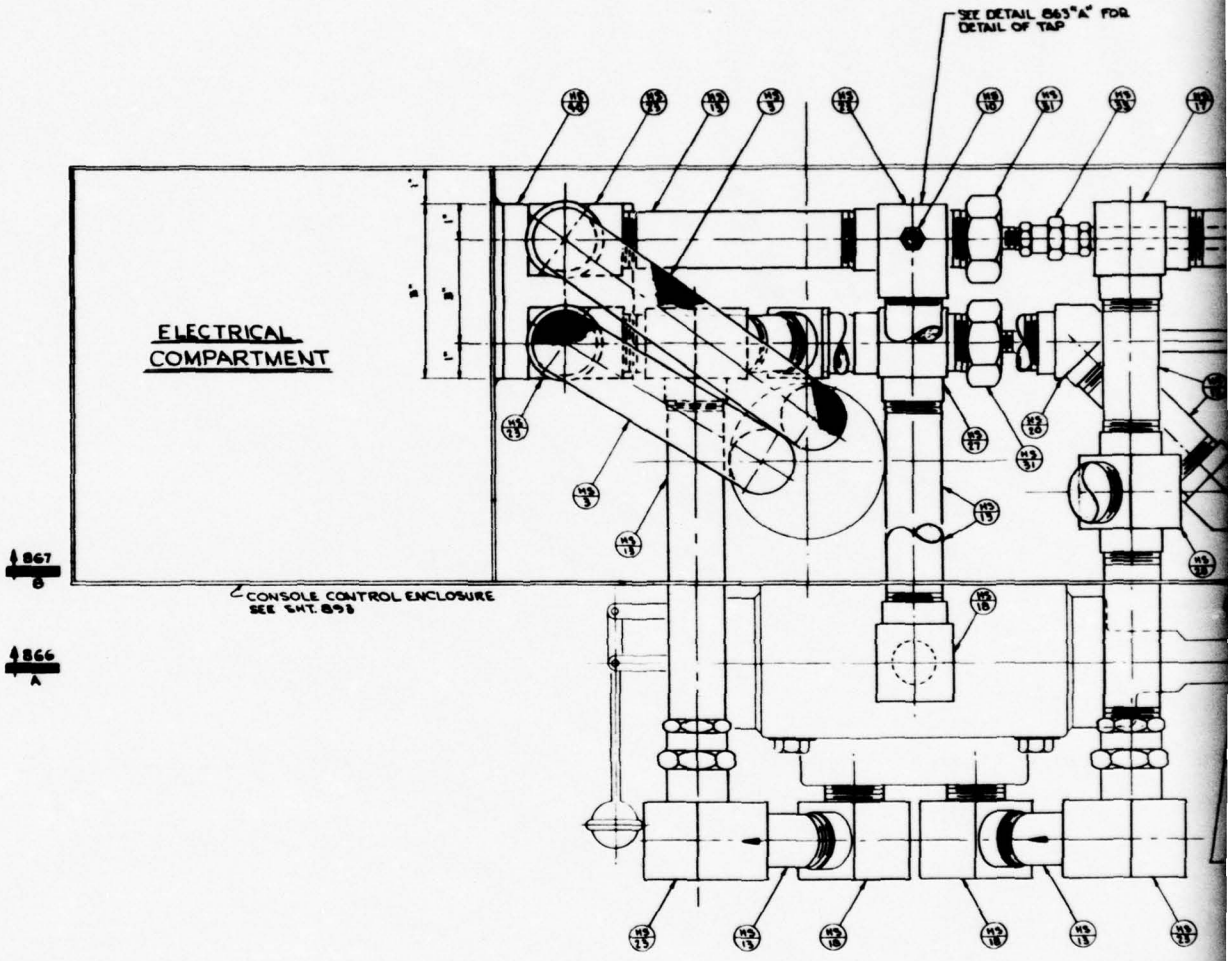
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

DESIGN BY	SCALE	DATE	PROJECT NO.
Barnes	HALF SIZE	10-18-65	U.S.A. 9921
FABRICATION JOB NO.		J. RAY McDERMOTT JOB NO.	SHEET NO.
	66619		864

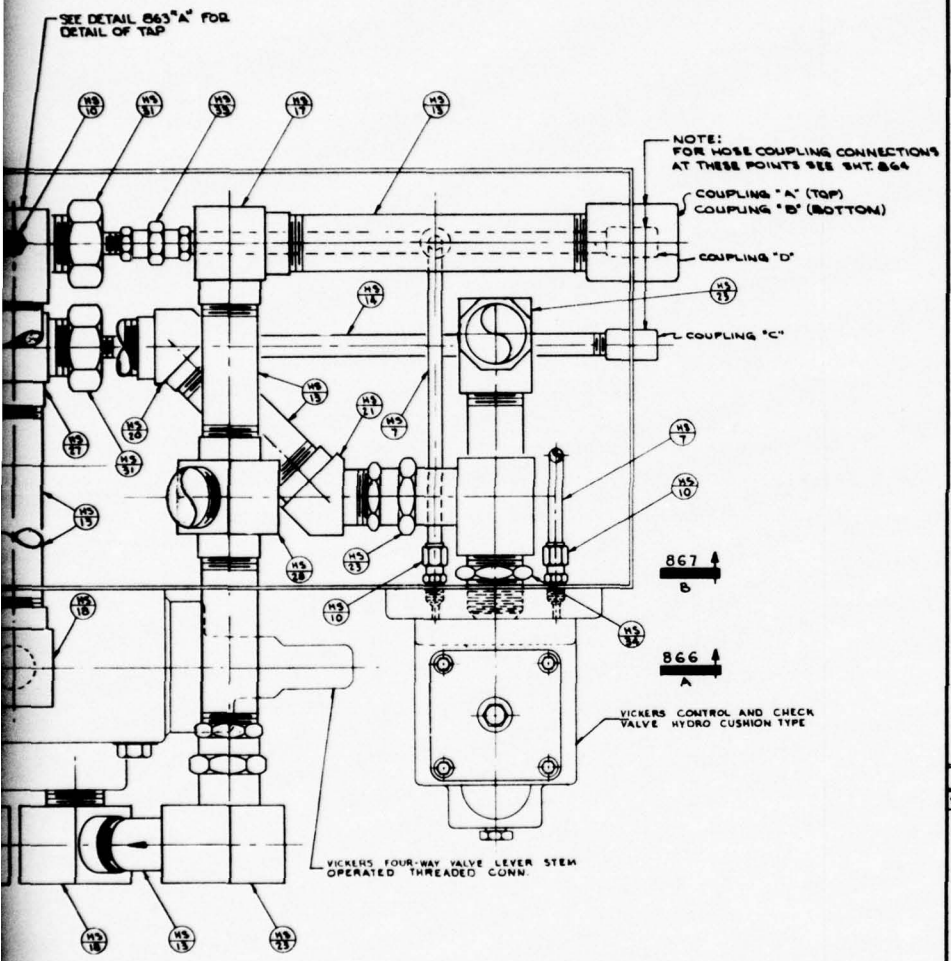
BUOY WINCH-HYD SYSTEM CONTROL BOX PLAN NO. 1

△



PLAN No 2

DESIGN	STRUCT.	PIPING	ELEC.	INS.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	INS.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.



NOTE:
FOR DESCRIPTION OF FIND NOS. SEE BILL OF MATERIAL SHT. 862
ALL NOTES SHOWN ON SHT. 862 APPLY TO THIS SHEET

REFFERENCE DRAWINGS

SHT. NO	TITLE
861	BUOY WINCH-HYD. SYSTEM SCHEMATIC
862	BUOY WINCH-HYD. SYSTEM ISOMETRIC
864	BUOY WINCH-HYD. SYSTEM CONTROL BOX PLAN No. 1
866	BUOY WINCH-HYD. SYSTEM CONTROL BOX ELEVATION "A"
867	BUOY WINCH-HYD. SYSTEM CONTROL BOX ELEVATION "B"

NO	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7180
REGISTERED PROFESSIONAL ENGINEER
DEPT. ENGINEERING

APPROVED: [signature]
J. RAY McDERMOTT & CO., INC.
DATE: 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	[signature]	1/28/66
STRUCTURAL		
PIPING		
MECHANICAL	[signature]	1/28/66
ELECTRICAL		
INSTRUMENT		
FAB. CHECK	[signature]	1/28/66
PROD. CHECK		

MONO-MOORING SYSTEM

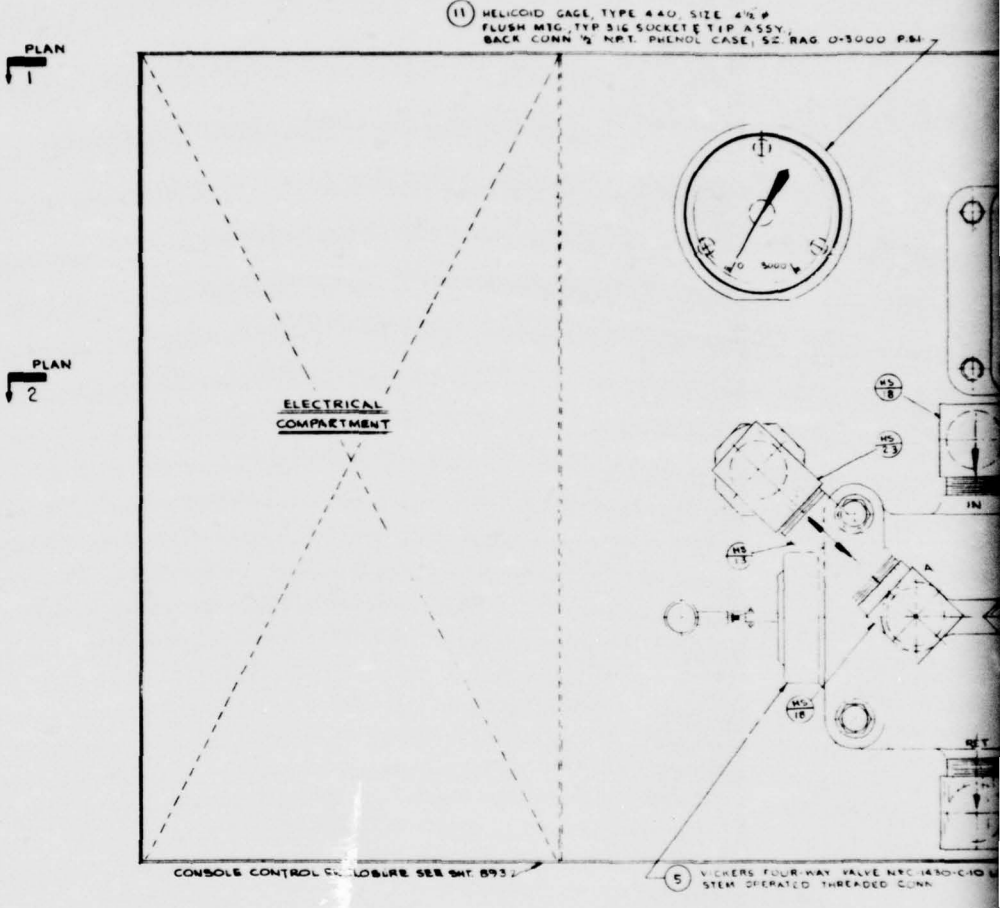
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
A. CAMILL	HALF SIZE	11-29-65	USA 2971
FABRICATORS JOB NO.	36017	J. RAY McDERMOTT JOB NO.	SHEET NO. 865

BUOY WINCH-HYD SYS. CONTROL BOX PIPING PLAN NO 2

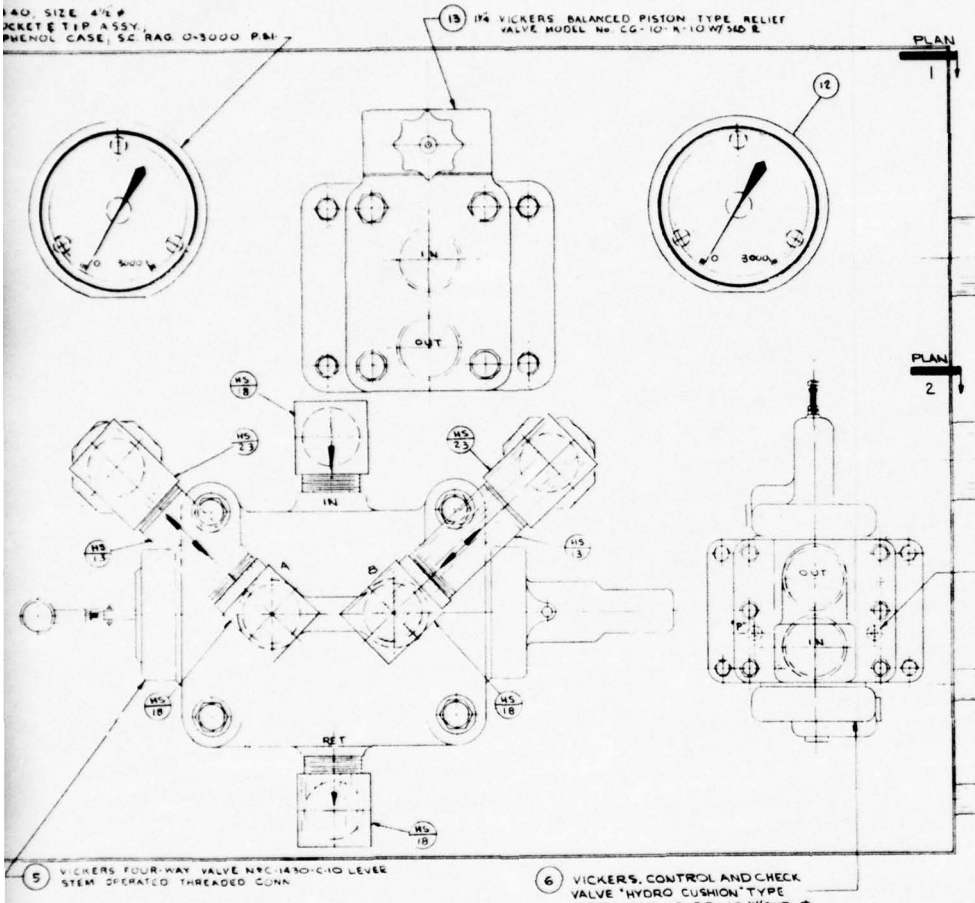
1



ELEVATION 866 "A - A

SCALE HALF SIZE

	DESIGN	STRUCT.	PIPING	ELEC.	MR	BY	REVISIONS	DATE	APP	DESIGN	STRUCT.	PIPING	ELEC	MR	BY	REVISIONS	DATE	APP	DESIGN	STRUCT.	PIPING	



ELEVATION B66 "A-A"
SCALE HALF SIZE

REFERENCE DRAWINGS

SHT. NO	TITLE
B61	BUOY WINCH-HYD. SYSTEM-SCHEMATIC
B62	BUOY WINCH-HYD. SYSTEM-ISOMETRIC
B64	BUOY WINCH-HYD. SYSTEM-CONTROL BOX PIPING PLAN NO 1
B65	BUOY WINCH-HYD. SYSTEM-CONTROL BOX PIPING PLAN NO 2
B67	BUOY WINCH-HYD. SYSTEM-CONTROL BOX ELEVATION "B"

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. 786
REGISTERED
CIVIL ENGINEER

APPROVED: Griff Lee
J. RAY Mc DERMOTT & CO. INC.
DATE 1-28-66
ENGINEERS APPROVAL

	BY	DATE
PROJECT		
STRUCTURAL		
PROCESS		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
PAR. CHECK		
PROP. CHECK		

MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
RJR./M.G.	HALF SIZE	11-1-65	USA-2971
FABRICATORS JOB NO.	56017	J. RAY Mc DERMOTT JOB NO.	SHEET NO. B66

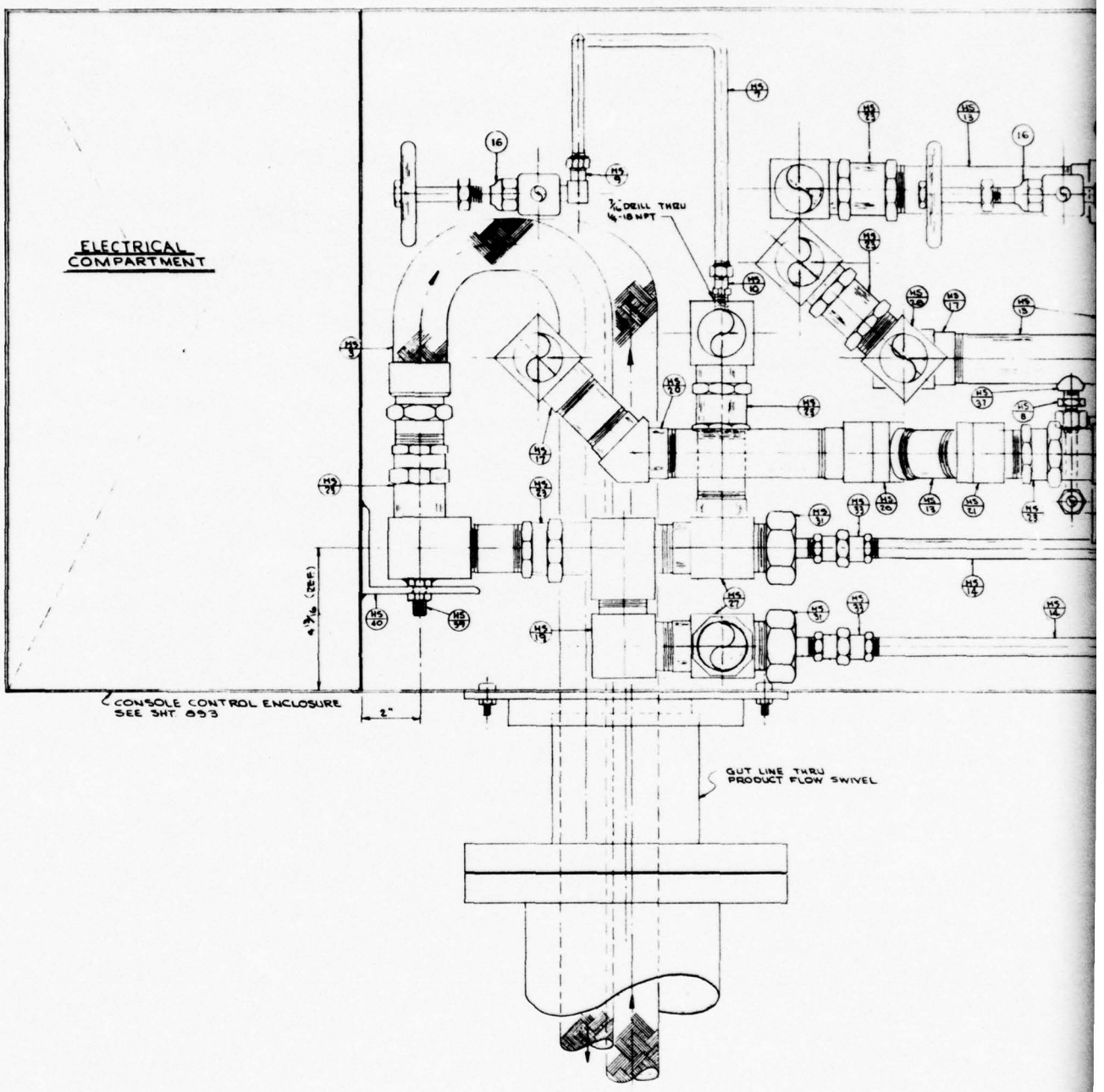
BUOY WINCH - HYD SYSTEM CONTROL BOX ELEVATION "A"

REVISIONS	DATE	APP	DESIGN	STRUCT	PIPING	ELEC	MK	BY	REVISIONS	DATE	APP

1

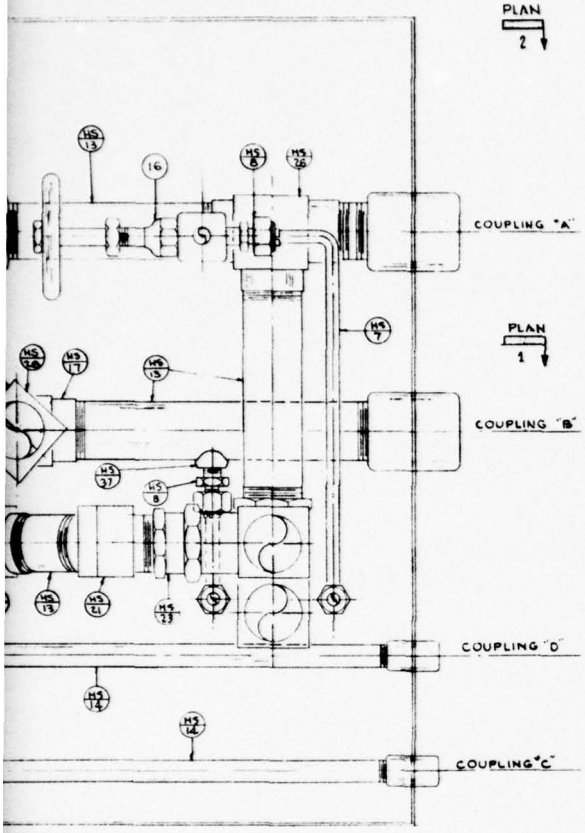
PLAN 2

PLAN 1



ELEVATION-867 "B-B"

	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING



NOTE:
FOR HOSE COUPLINGS CONNECTIONS AT COUPLINGS "A"-"B"-"C"-"D" SEE SHT. 864

NOTES
FOR DESCRIPTION OF FIND NO'S. SEE B.O.M. SHT. 862
ALL NOTES SHOWN ON SHT. 862 APPLY TO THIS SHEET.

REFERENCE DRAWINGS

SHT. No	TITLE
861	BUOY WINCH-HYD. SYSTEM SCHEMATIC
862	BUOY WINCH-HYD. SYSTEM ISOMETRIC
864	BUOY WINCH-HYD. SYSTEM CONTROL BOX PLAN NO. 1
865	BUOY WINCH-HYD. SYSTEM CONTROL BOX PLAN NO. 2
866	BUOY WINCH-HYD. SYSTEM CONTROL BOX ELEVATION "A"

	DATE	APP.

DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 1886
REGISTERED
PROFESSIONAL ENGR.
CIVIL ENGINEER
APPROVED
J. RAY McDERMOTT & CO., INC.
DATE 1-28-66

ENGINEERS APPROVAL	BY	DATE
PROJECT	JRS	1-27-66
STRUCTURAL		
PROCESS		
MECHANICAL	[illegible]	1-28-66
ELECTRICAL		
INSTRUMENT		
FAB. CHECK	[illegible]	1-28-66
PROP. CHECK		

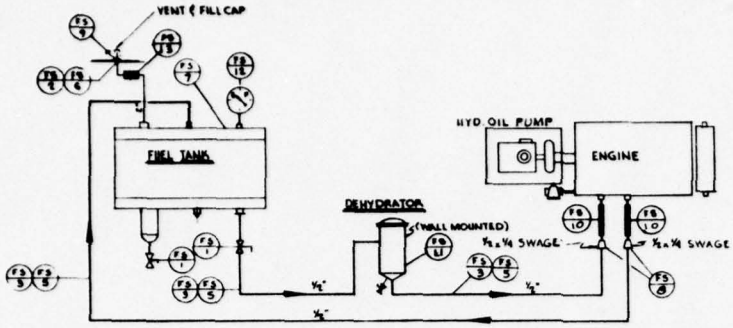
MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

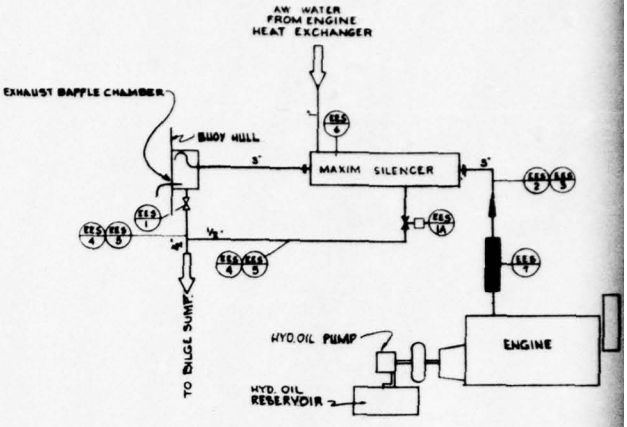
J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
MACH GROVES	HALF SIZE	11-14-65	USA-2971
FABRICATORS JOB NO.		J. RAY McDERMOTT JOB NO.	SHEET NO.
56017			867

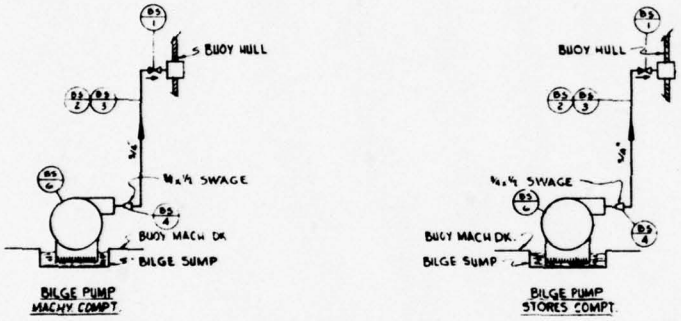
BUOY WINCH-HYD. SYSTEM CONTROL BOX ELEVATION "B"



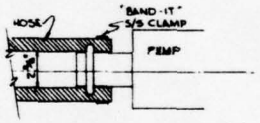
FUEL OIL SCHEMATIC



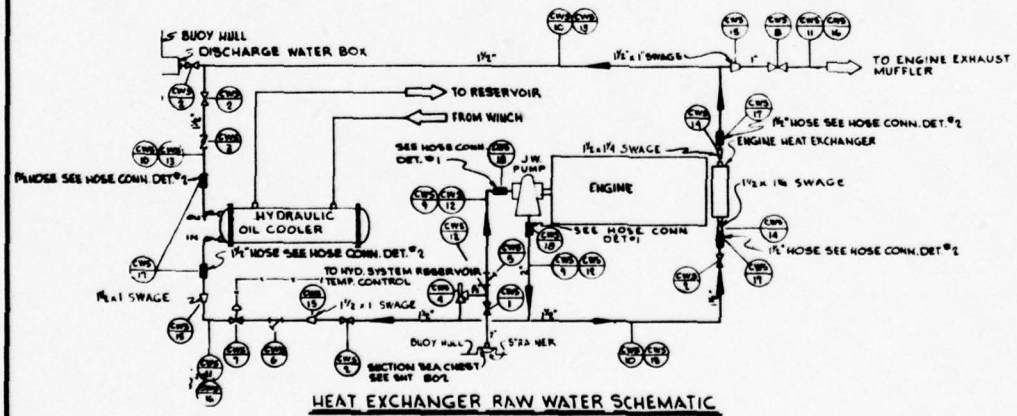
DIESEL ENGINE EXHAUST SCHEMATIC



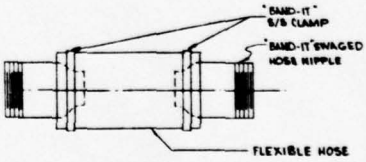
BILGE PIPING SCHEMATIC



HOSE CONNECTION DETAIL #1
SCALE: NONE



HEAT EXCHANGER RAW WATER SCHEMATIC

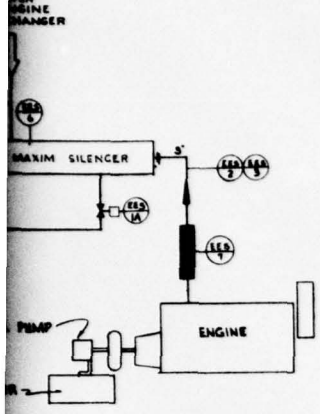


HOSE CONNECTION DETAIL #2
SCALE: NONE

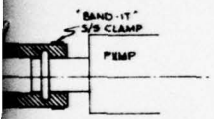
	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING

LEGEND

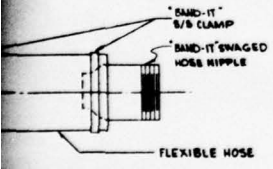
- GATE VALVE
- PLUG VALVE
- STOP CHECK
- SWING CHECK
- TEMP. CONTROL VALVE
- HOSE CONNECTION
- STRAINER
- RELIEF VALVE
- SOLENOID VALVE



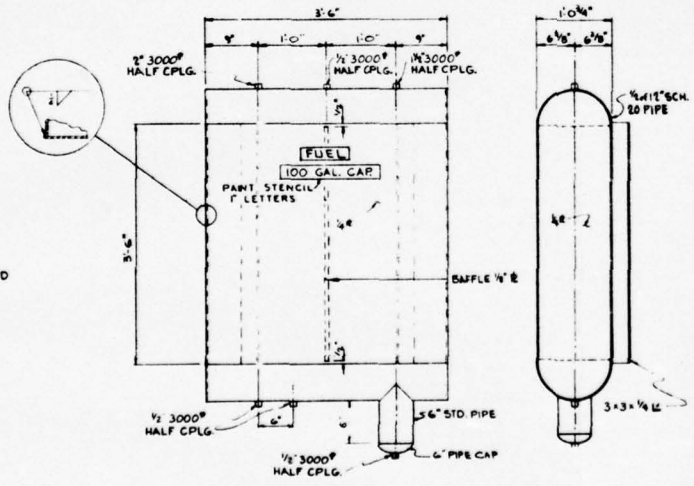
NGINE EXHAUST SCHEMATIC



ONNECTION DETAIL #1
NONE



ONNECTION DETAIL #2
NONE



FUEL TANK DETAIL
SCALE: 1"-1'-0"

BILL OF MATERIAL

FIND Nº	DWG. Nº	QTY.	NOMENCLATURE	SPEC.	MAT'L.
FS-1	868	2	½"-150# SCR'D. PLUG COCK POWELL FIG. 988 OR EQUAL		BRONZE
FS-2		3 LN.FT.	2" STD. SMLS. BLACK PIPE A53-B		A-53-B
FS-3		22 LN.FT.	½" STD. SMLS BLACK PIPE A53-B		A53-B
			SCR'D PIPE FITTINGS		FORGED STEEL
FS-4		2	⅛"-6000# 90° ELBOW		
		2	⅛"-3000# GRD JT UNION		
FS-5		13	½"-2000# 90° ELBOW		FORGED STEEL
		2	½"-3000# GRD JT. UNION		
		1	½"-2000# SQ. HD. PLUG		
FS-6		2	2"-2000# 90° ELBOW		FORGED STEEL
		1	2"-3000# COUPLING		
FS-7		1	FUEL TANK.		STEEL
FS-8		2	½"x¼" STD. SWAGE T.B.E		A53-B
FS-9	SEE DWG. 897		VENT FILL CAP		———
FS-10	868	2	FLEXIBLE CONNECTION ANACONDA FLEXAPIPE #½MIO		BRONZE
FS-11		1	FUEL DEHYDRATOR. ROL-PAK #PD-1001WK ½"		
FS-12		1	FUEL GAUGE (DIESEL) BOSTON AUTO GAUGE CO. MODEL 114 FOR 54" DEEP TANK.		
FS-13		1	HOSE ASSEMBLY: 2" I.D. x 12" LG, 4 PLY NEO. HOSE 2, "EBOB BAND-IT SWAGED HOSE NIP. 2, ⅝ W/BAND-IT CLAMPING BANDS W/SCRD-LOKT BUCKLES TP 316 S.S.		
EES-1		1	½"-200# SCR'D GATE VALVE POWELL FIG. NO. 375 OR EQUAL		BRONZE
EES-1A		1	ASCO ½" SOLENOID VALVE WP-8276 A-19, 24 V. DC., N.O.		BRONZE
EES-2		1 L.F.	3" STD. SMLS. PIPE		GALV. A53-B
EES-3		1	8"-150#, 90° SCRD. ELBOW		GALV. MALL. IRON
EES-4		14 L.F.	½" STD. SMLS. PIPE		GALV. A53-B
EES-5			150# SCRD. PIPE FITTINGS		GALV. MALL IRON
		5	½" 90° ELBOW		"
		1	½" BRASS SEAT GRD. JT. UNION		"
		1	½" TEE		"
EES-6		1	EXHAUST SILENCER MAXIM MODEL MX-3"6		
EES-7		1	FLEXIBLE EXHAUST CONN. ANACONDA RD-15 HOSE #PM1B END CONNECTIONS, 2'-11½" OVER ALL LENGTH.		GALV. STEEL
BS-1		2	¾"-200# SCRD STOP CHECK V. POWELL FIG. 184 OR EQUAL		BRONZE
BS-2		16 L.F.	¾" STD. SMLS. PIPE		GALV. A53-B
BS-3			150# SCRD. PIPE FITTINGS		GALV. MALL. IRON
		4	¾" 90° ELBOW		
		2	¾" BRASS SEAT GRD. JT. UNIONS		
BS-4		2	¾"x¼" 360 SWAGE T.B.E.		GALV. A53-B
BS-5		ASSORTED	½" & ¾" STD. PIPE NIPPLES		GALV. A53-B
BS-6		2	BILGE PUMP SUTTON MFG. CORP. MODEL Nº PSA-24 (24 V. D.C.)		BRONZE

— B/M CONTINUES ON SHEET 869 —

REFERENCE DRAWINGS

SHT. NO.	TITLE
869	DIESEL ENGINE PIPING ARRANGEMENT
861	HYDRAULIC SYSTEM SCHEMATIC
862	HYDRAULIC SYSTEM ISOMETRIC

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7006
CIVIL ENGINEERING
APPROVED: G.C. Lee
J. RAY McDERMOTT & CO., INC.
DATE: 1-28-66
ENGINEERS APPROVAL

MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

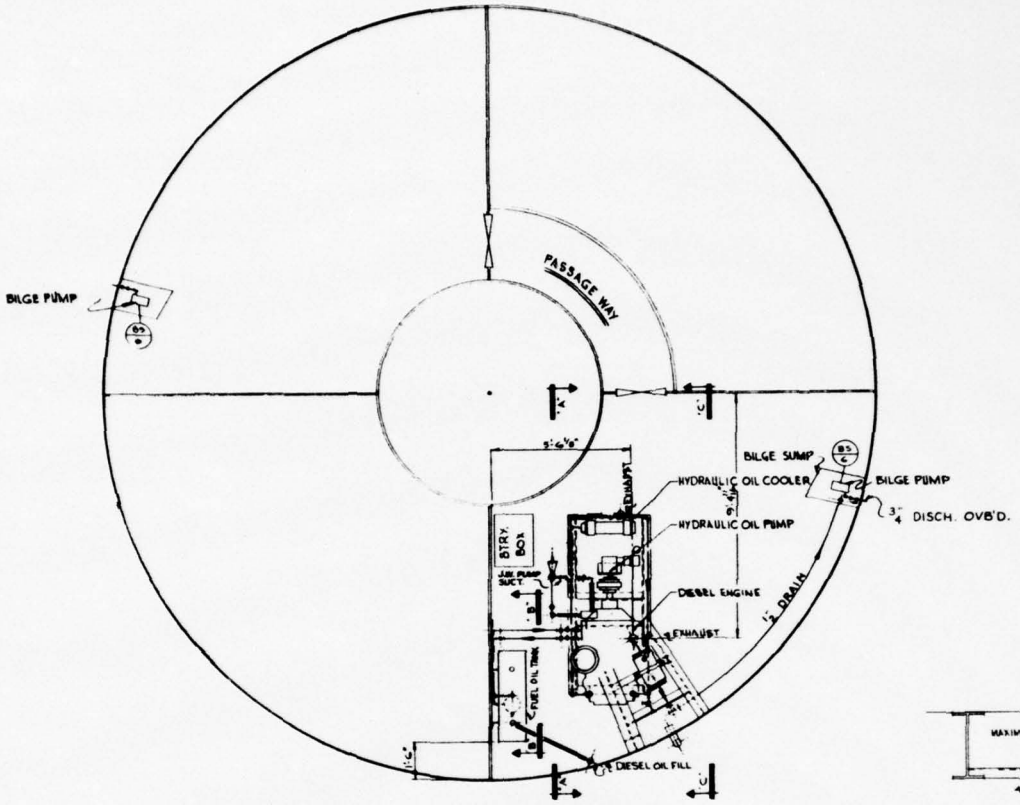
J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

	BY	DATE
PROJECT	GRC	1-27-66
STRUCTURAL		
PIPING		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
FAB. CHECK		
PROD. CHECK		

DRAWN BY	SCALE	DATE	PROJECT NO.
Robert J. Rabalais		8-19-65	U.S.A., 5971
FABRICATORS JOB NO.		J. RAY McDERMOTT JOB NO.	SHEET NO.
	54017		868

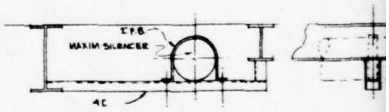
DIESEL ENGINE PIPING SCHEMATICS

REVISIONS	DATE	APP.

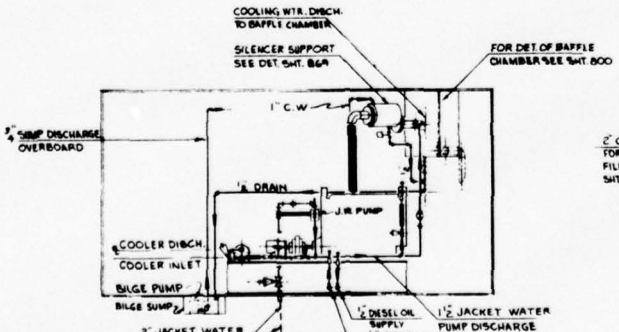


PLAN

SCALE: 3/8"=1'-0"

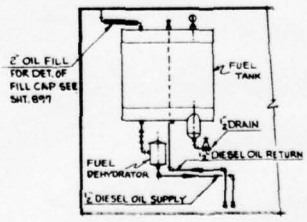


SILENCER SUPPORT



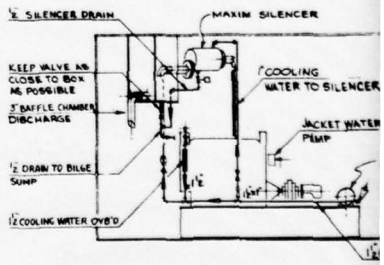
SECTION-"A-A"

SCALE: 3/8"=1'-0"



SECTION-"B-B"

SCALE: 3/8"=1'-0"



SECTION-"C-C"

SCALE: 3/8"=1'-0"

	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING

1

2

GENERAL NOTES:

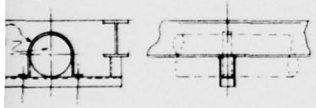
1. REAM ALL PIPE AFTER CUTTING TO INSURE FULL INTERNAL DIAMETER
2. ASSEMBLE SCREWED PIPING WITH TEFLON TAPE ON ALL THREADS
3. TIGHTEN PIPING TO ABSURE LEAK TIGHT JOINT, CARE SHOULD BE EMPLOYED NOT TO OVER TIGHTEN JOINT AND OVER STRESS MATERIALS.
4. PIPING SHALL BE SUPPORTED AT SUITABLE INTERVALS TO THE BUOY STRUCT. FOR SUPPORT SEE TYPICAL DETAIL ON SHT 8"6 OR AS NOTED ELSEWHERE
5. ALL PIPING SYSTEM SHALL BE CLEANED AND FLUSHED FREE OF ALL FOREIGN MATERIAL PRIOR TO CONNECTION TO EQUIPMENT.

BILL OF MATERIAL

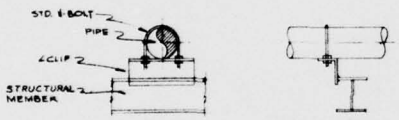
FIND Nº	DWG. Nº	QTY.	NOMENCLATURE	SPEC.	MAT'L.
CWS-1	868	1	2"-200# SCRD. GATE VALVE POWELL FIG. 375 OR EQUAL		BRONZE
CWS-2		4	1½-200# SCRD. GATE VALVE POWELL FIG. 375 OR EQUAL		BRONZE
CWS-3		1	1½" 200# SCRD. SWING CHECK VALVE POWELL FIG. 378 OR EQ.		BRONZE
CWS-4		1	1½" SCRD. RELIEF VA. SET 40 psi, CRANE FIG. 2614 OR EQ.		BRONZE
CWS-5		1	INTAKE WATER STRAINER PERKO FIG. 493-#6-2"		BRONZE
CWS-6		1	STRAINER-VICKERS MODEL OCST-1-08-10, 1" FOR SEA WATER SERVICE		BRONZE
CWS-7		1	TEMPERATURE CONTROL VA. VICKERS MODEL OCRY-1-08-10 W/OCBW-1-10 FOR SALT WTR. SERVICE		BRONZE
CWS-8		1	1"-200# SCRD. GATE VALVE POWELL FIG. 375 OR EQUAL		BRONZE
CWS-9		15 L.F.	2" STD. SMLS. PIPE		GALV. A53-B
CWS-10		24 L.F.	1½" STD. SMLS PIPE		GALV. A53-B
CWS-11		12 L.F.	1" STD. SMLS PIPE		GALV. A53-B
CWS-12			2" 150# SCRD. PIPE FITTINGS		GALV. MALL. IRON
		2	90° ELBOW		do
		1	BRASS SEAT GRD. JT. UNION		do
		1	2x1½ x 2 RED. TEE		do
CWS-13			1½"-150# SCRD. PIPE FITTINGS		GALV. MALL. IRON
		10	90° ELBOW		do
		4	1½" TEE		do
		5	BRASS SEAT GRD. JT. UNION		do
CWS-14		2	1½ x 1¼ 3/80 SWAGE NIPPLE (T.B.E.)		GALV. A53-B
CWS-15		3	1½ x 1" 3/80 SWAGE NIPPLE (T.B.E.)		GALV. A53-B
CWS-16			1"-150# SCRD. PIPE FITTINGS		GALV. MALL. IRON
		2	90° ELBOW		do
		1	BRASS SEAT GRD. JT. UNION		do
CWS-17		4	HOSE ASSEMBLY 1½" I.D. x 12" LG. 4 PLY. WATER HOSE 2-#EB06 BA-IT SWAGED HOSE NIPP. 2-5/8" w BAND-IT CLAMPING BANDS w/SCRD. LOKT BUCKLES, TP3655		
CWS-18		2	HOSE ASSEMBLY 2 3/8" I.D. x 12" LG. 4 PLY. WATER HOSE 2-5/8" w BAND-IT CLAMPING BANDS W/SCRD-LOKT BUCKLES, TP3655.S.		
CWS-19		ASSORTD.	2" STD. SMLS. PIPE NIPPLE		GALV. A53-B
CWS-20		ASSORTD.	1½" STD. SMLS. PIPE NIPPLE		GALV. A53-B
CWS-21		ASSORTD	1" STD. SMLS. PIPE NIPPLE		GALV. A53-B

REFERENCE DRAWINGS

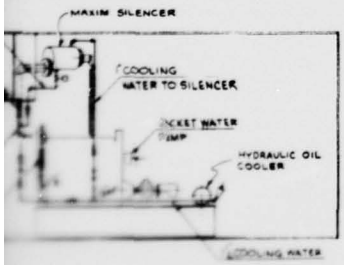
SHT. Nº	TITLE
868	DIESEL ENGINE PIPING SCHEMATICS
800	TOP DECK FRAMING PLAN
805	MISC. DETAILS
003	ARRGT. PLANS
861	HYDRAULIC SYSTEM SCHEMATIC
862	HYDRAULIC SYSTEM ISOMETRIC
892	HYDRAULIC PUMPING UNIT FDTN & DET.



LENCER SUPPORT



TYP. PIPE SUPPORT DETAIL



REVISIONS	DATE	APP

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7108
REGISTERED PROFESSIONAL ENGINEER
CIVIL ENGINEERING

APPROVED Griff Lee
J. RAY McDERMOTT & CO., INC.
DATE 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT		
STRUCTURAL	[illegible]	1-28-66
PROCESS		
MECHANICAL	[illegible]	[illegible]
ELECTRICAL		
INSTRUMENT		
PAR. CHECK	[illegible]	[illegible]
PROP. CHECK		

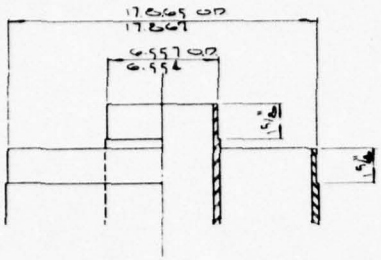
MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

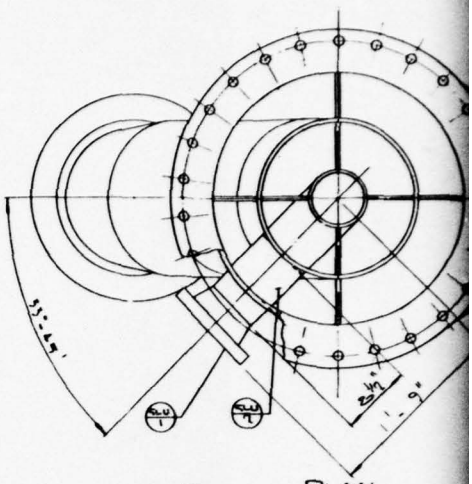
J. RAY McDERMOTT & CO., INC.
ENGINEERS CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
R. BALAIS	3/8"=1'-0"	9/1/65	U.S.A. 2971
FABRICATORS JOB NO. 56017		J. RAY McDERMOTT JOB NO.	SHEET NO. 869

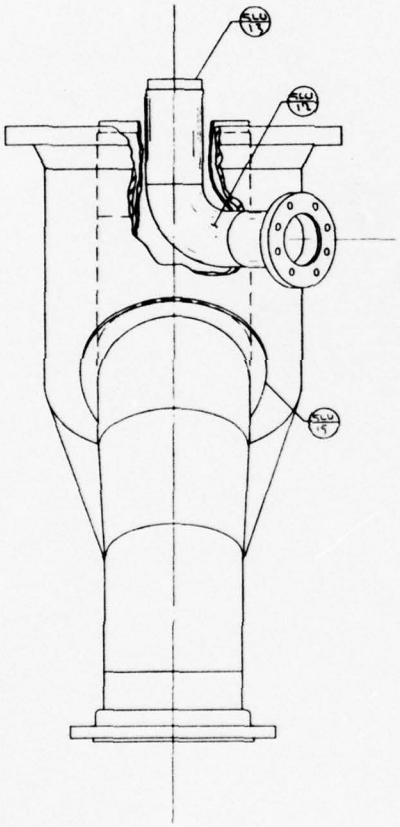
DIESEL ENGINE PIPING ARRANGEMENT



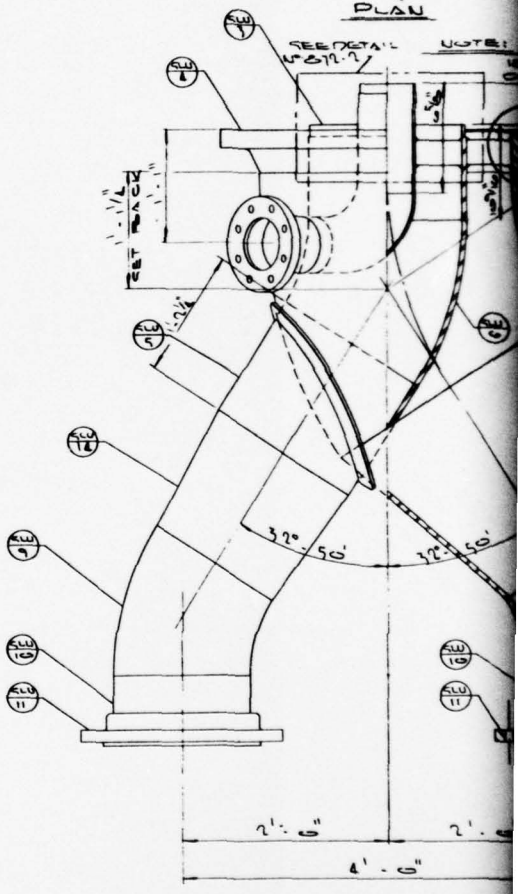
DETAIL N° 672-7
SCALE: 3"=1'-0"



PLAN

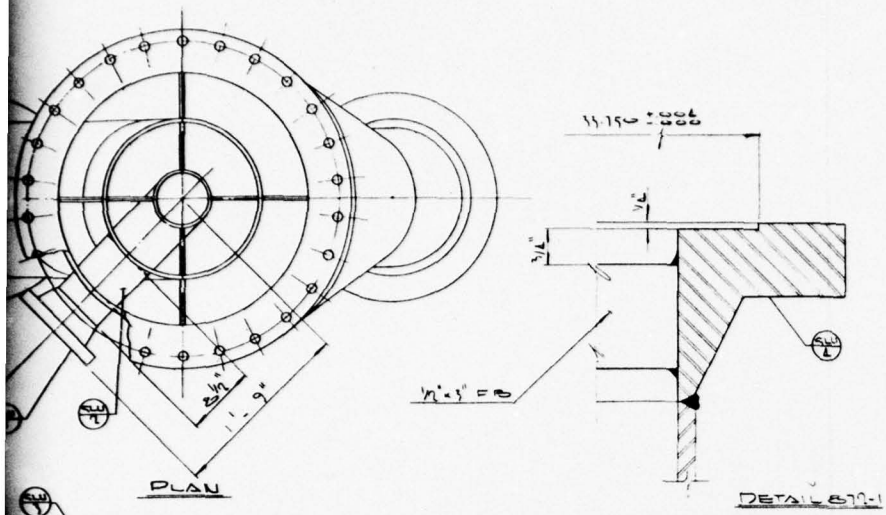


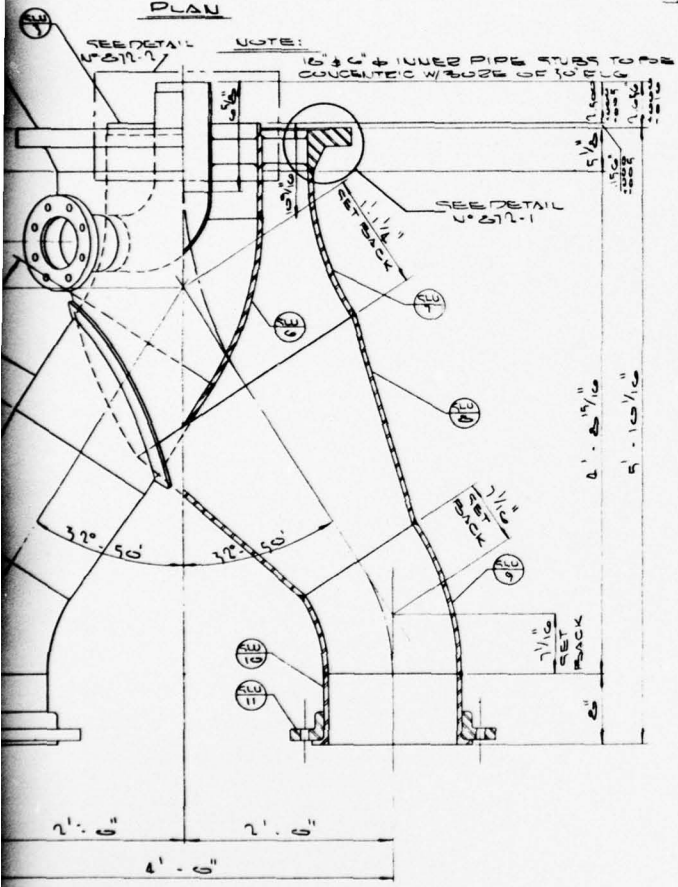
SIDE ELEVATION



FRONT ELEVATION
SCALE: 1/2"=1'-0"

	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING





FRONT ELEVATION
SCALE: 1/2" = 1'-6"

BILL OF MATERIAL

FIND N°	DWG N°	QTY	NOMENCLATURE	SPEC.	MAT'L
FLU-1	672	1	6" 150# FF ASA WN FLG		ASTM A181-GR
FLU-2	"	1	6" STD PIPE		ASTM A106-B
FLU-3	"	1	16" XS PIPE		"
FLU-4	"	1	30"-150# ASA WN FLG		ASTM A181-GR
FLU-5	"	1	16" XS PIPE		ASTM A106-B
FLU-6	"	1	16" XS 1 PELL CUT TO 37°-50' 7.93" SET BACK		ASTM A234-B
FLU-7	"	1	30" XS 45° ELL CUT TO 37°-50' 13.73 SET BACK		"
FLU-8	"	1	30X16-XS REDUCER		"
FLU-9	"	2	16" XS 1 PELL CUT TO 37°-50' (7.05" SET BACK)		"
FLU-10	"	2	16" XS STUB END CUT TO 8"		"
FLU-11	"	2	16" 300# ASA LAP JOINT FLG.		ASTM A181-GR
FLU-12	"	1	6" STD 90° LR. ELL		ASTM A234-B
FLU-13	"	1	6" STD PIPE		ASTM A106-B
FLU-14	"	1	18X16-XS REDUCER		ASTM A234-B
FLU-15	"	1	5"x½ SELF COLLAR		ASTM A285-C

REFERENCE DRAWINGS

DWG N°	TITLE
671	FLOW SWIVEL ASSEMBLY
674	UPPER UNIT DETAILS
670	FLOW SYSTEM PIPING ARRANGEMENT
675	FLOW SWIVEL ASSEMBLY

NOTE:
ALL BEVELS & WELDING SHALL BE IN ACCORDANCE WITH SPECIFICATIONS & ASA CODE FOR PRESSURE PIPING ASA B31.1

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. 786
REGISTERED PROFESSIONAL
CIVIL ENGINEER

APPROVED: Griff Lee
J. RAY Mc DERMOTT & CO. INC.
DATE: 1-28-66
ENGINEERS APPROVAL

	BY	DATE
PROJECT	GLS	1-27-66
STRUCTURAL		
PROCESS		
MECHANICAL	EP	2/11
ELECTRICAL		
INSTRUMENT		
FAB. CHECK	GLS	2/11
PROD. CHECK		

MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

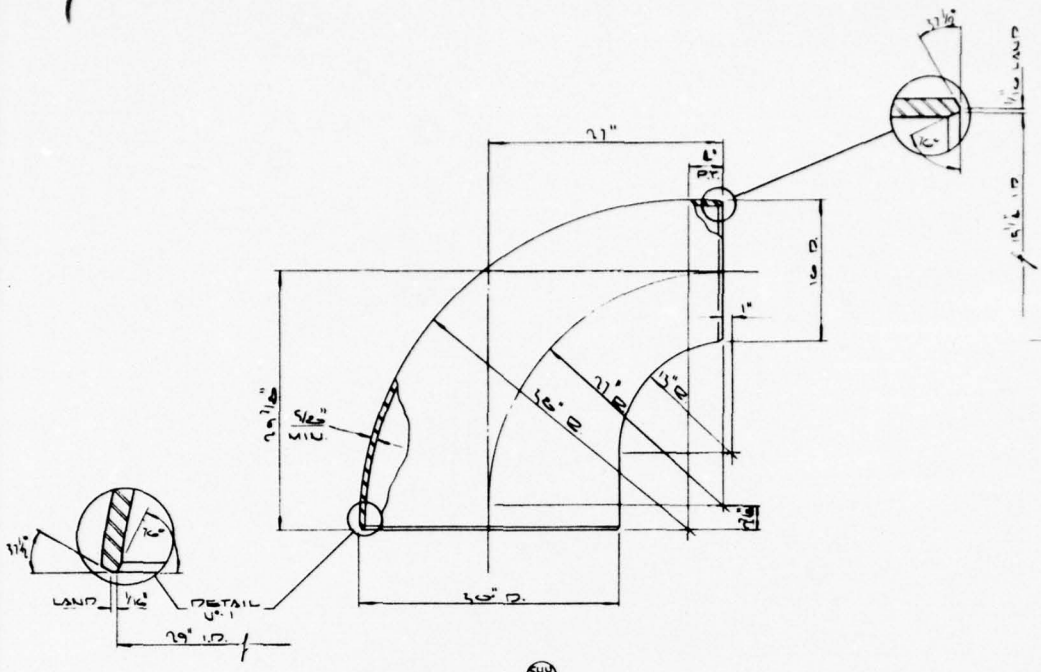
J. RAY Mc DERMOTT & CO., INC.
ENGINEERS CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
DOSS	NOTED	6-18-65	USA-7971
FABRICATORS JOB NO. 960017		J. RAY Mc DERMOTT JOB NO.	SHEET NO. 672

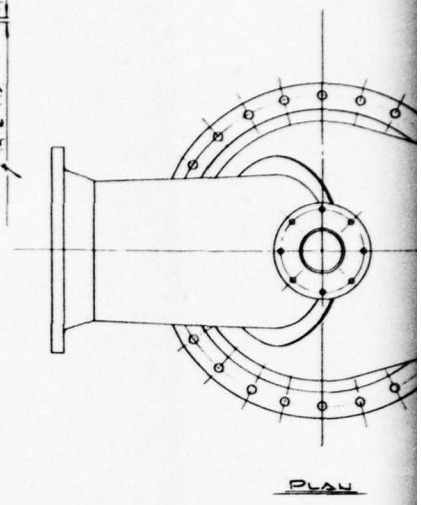
FLOW SWIVEL
LOWER UNIT DETAILS

NO	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.
			MP	FB			A	AE	REVISED GAUGE RATING ON SLU-11 FROM 150# TO 300#	2/11/66	MP

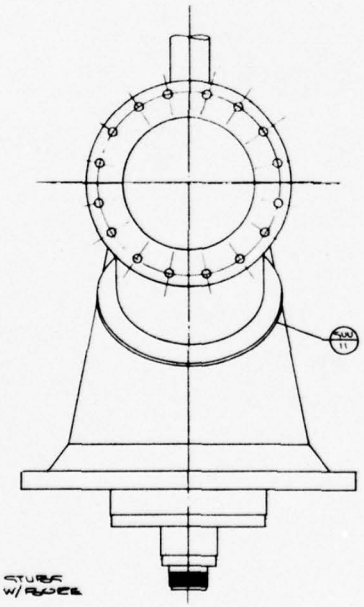
1



PART No. SUU/1
U° REQ'D (1)
MAT'L. ANI7 WCB

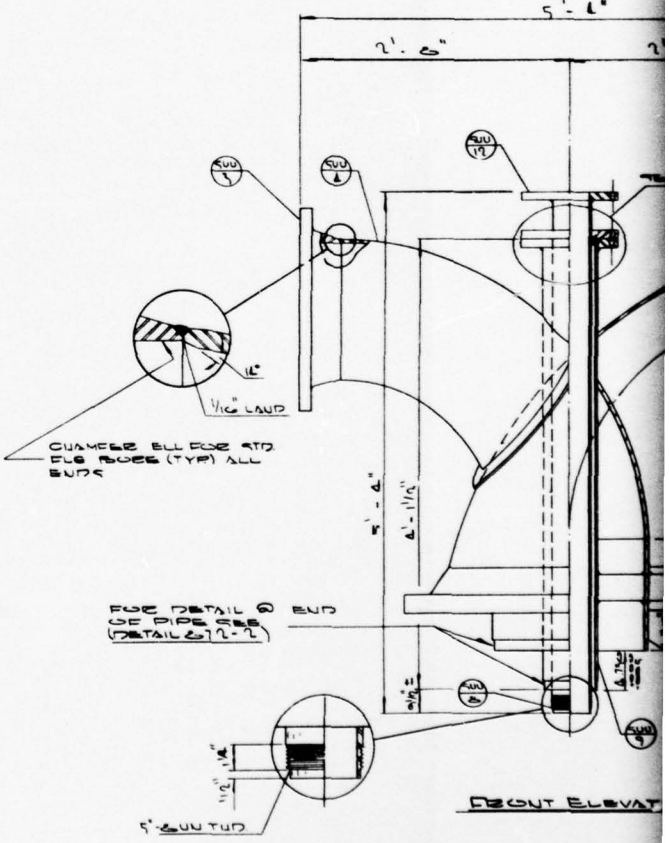


PLAN



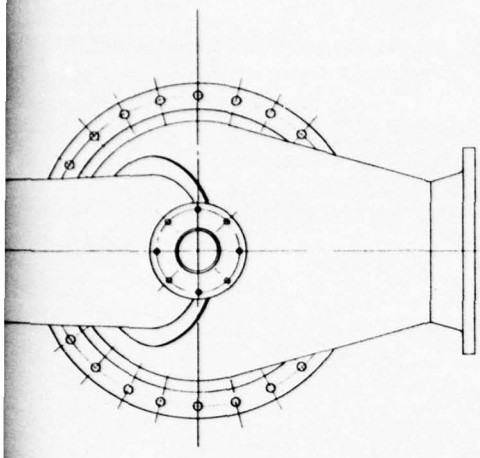
NOTES:
1. 6" & 6" INNER PIPE STUBS TO BE CONCENTRIC W/ BORE OF 16" FLG

SIDE ELEVATION

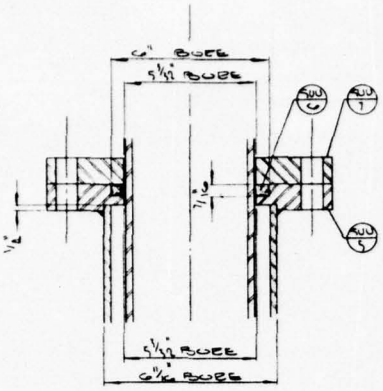


FRONT ELEVAT

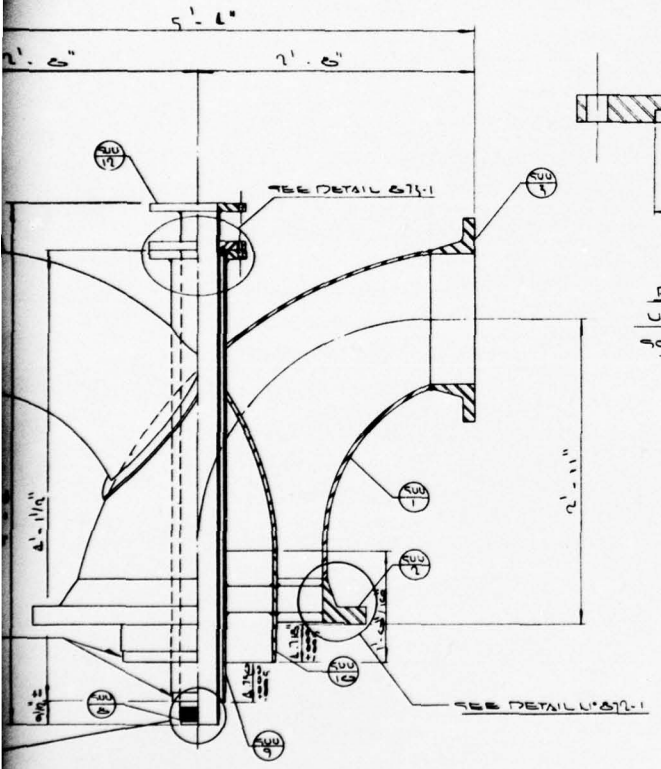
	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING



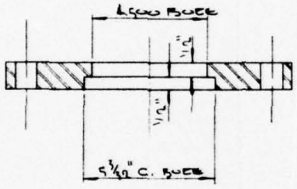
PLAN



DETAIL N° 673-1
SCALE: 3/8" = 1"



ABOUT ELEVATION



PART N° SUU 19
U° BEAM (1)
SCALE: 3/8" = 1"

BILL OF MATERIAL

FIND N°	DWG. N°	QTY.	NOMENCLATURE	SPEC	MAT'L
SUU-4	673	1	SPECIAL CAST STL 30"x16"-90° BEND. ELL		ASTM A217 WC6
SUU-7	"	1	30"x150# ASA W.N. FLG		ASTM A181 GR1
SUU-3	"	2	16"-150# FF ASA W.N. FLG		do
SUU-4	"	1	16"x16"x5.99 BEND ELL		ASTM A234-WB
SUU-5	"	1	6"-150# ASA FF BLND FLG		ASTM A181 GR1
SUU-6	"	2.6	PACKING 1/16"x1/2"		LUB. FLAX
SUU-7	"	1	6"-150# ASA FF BLD FLG.		ASTM A181 GR1
SUU-8	do		CUT LINE 5" OD x 1/4" WALL TUBING		AISI 1010
SUU-9	673	1	6" STD PIPE		ASTM A106-B
SUU-10	"	1	16"x< PIPE		ASTM A106-B
SUU-11	"	1	5x1/2 REINF. COLLAR		ASTM A36
SUU-12	"	1	6"-150# ASA FF BLD FLG		ASTM A181 GR1

REFERENCE DRAWINGS

SHT. N°	TITLE
670	FLOW SYSTEM-PIPING ARRANGEMENT
671	FLOW UNIT SWIVEL ASSEMBLY
672	LOWER UNIT DETAILS
675	FLOW SWIVEL ASSEMBLY

NOTE:
ALL BEVELS & WELDING SHALL BE IN ACCORDANCE WITH SPECIFICATION & ASA CODE FOR PRESSURE PIPING ASA B 31.1

DO NOT SCALE DWG. FOR DIMENSIONS.

	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 786
REGISTERED
PROFESSIONAL ENGINEER
IN
ENGINEERING

APPROVED: G.C. Lee
J. RAY McDERMOTT & CO., INC.
DATE: 1-29-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	GLS	1-27-66
STRUCTURAL		
PROCESS		
MECHANICAL	[illegible]	2/17
ELECTRICAL		
INSTRUMENT		
PUB. CHECK	[illegible]	2/17
PROP. CHECK		

MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

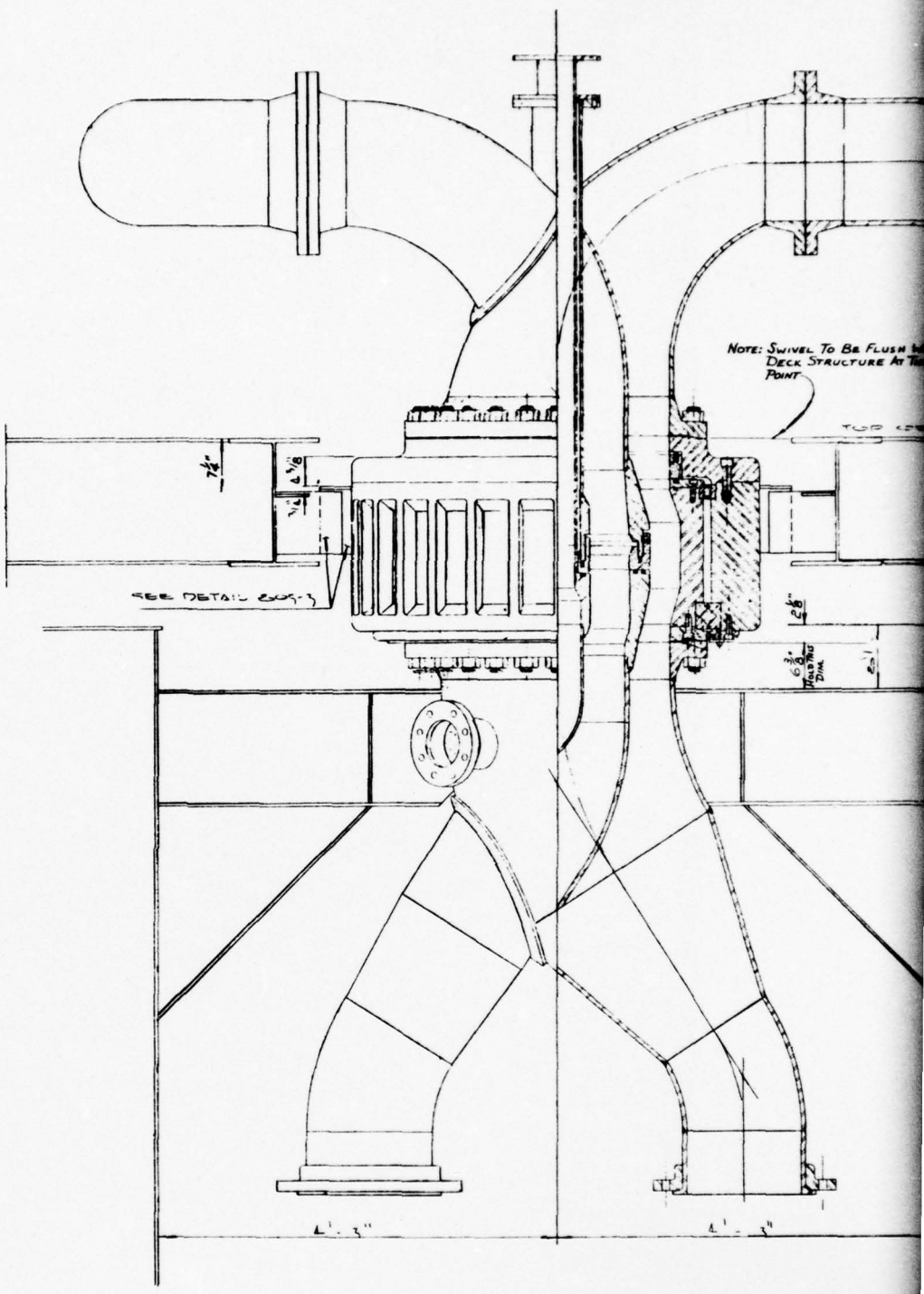
J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
DOSS	1 1/2" = 1'-0"	6-21-65	USA 7971
FABRICATORS JOB NO.	566017	J. RAY McDERMOTT JOB NO.	SHEET NO. 673

FLOW SWIVEL
UPPER UNIT DETAILS

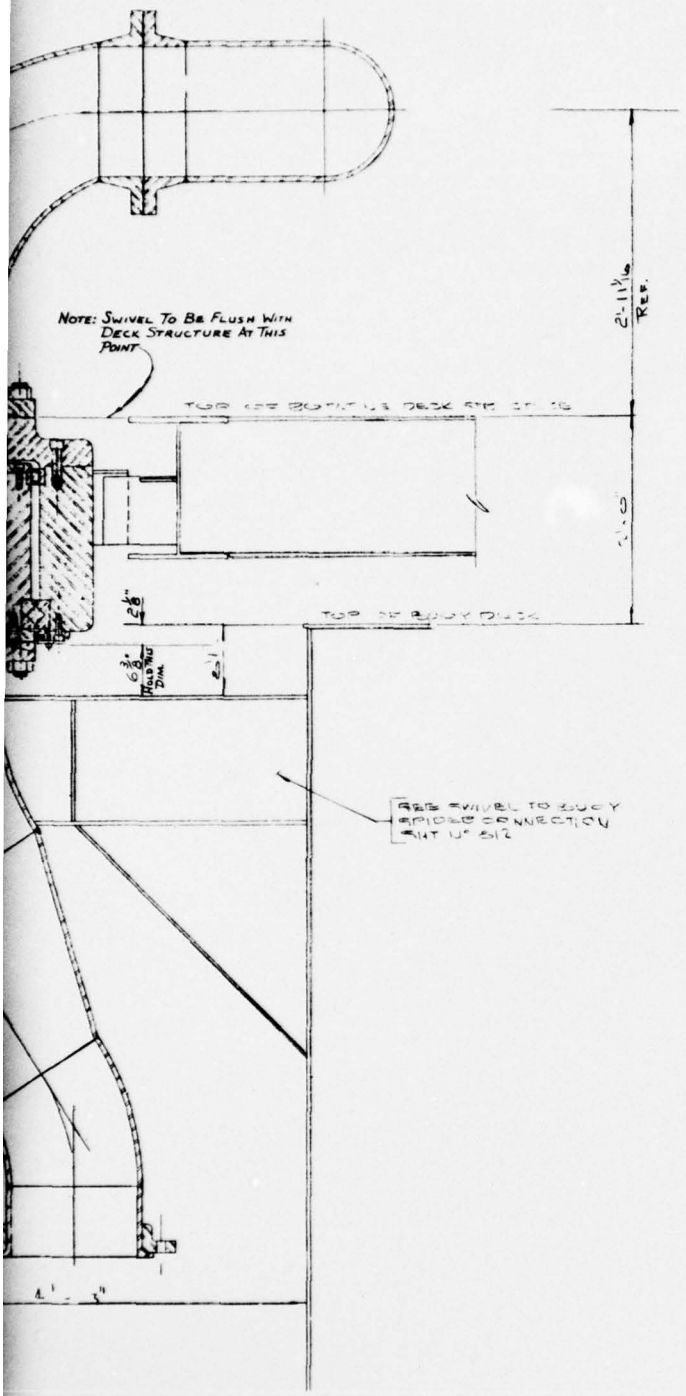
△

1



ELEVATION

	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	E



BILL OF MATERIAL

ITEM No.	DWG No.	QTY	NOMENCLATURE	SPEC	MATE.

REFERENCE DRAWINGS

DWG No.	TITLE
877	LOWER UNIT DETAILS
874	UPPER UNIT DETAILS
875	SWIVEL ASSEMBLY
811	FLOW UNIT SWIVEL ASSEMBLY
803	ROTATING DECK FRAMING PLAN
812	SWIVEL TO BUOY SPIDER CONNECTION

DATE	APP	DESIGN	STRUCT.	PIPING	ELEC.	MK	BY	REVISIONS	DATE	APP

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. 7105
REGISTERED PROFESSIONAL ENGINEER

APPROVED M Lee
J. RAY McDERMOTT & CO., INC.
DATE 1-28-66
ENGINEERS APPROVAL

	BY	DATE
PROJECT	JHS	1-27-66
STRUCTURAL		
PROJ. ENG.		
MECHANICAL	MF	8/17
ELECTRICAL		
APPROVED BY:		
BAR. CHIEF	JHS	1/27
PROJ. CHIEF		

MONO-MOORING SYSTEM

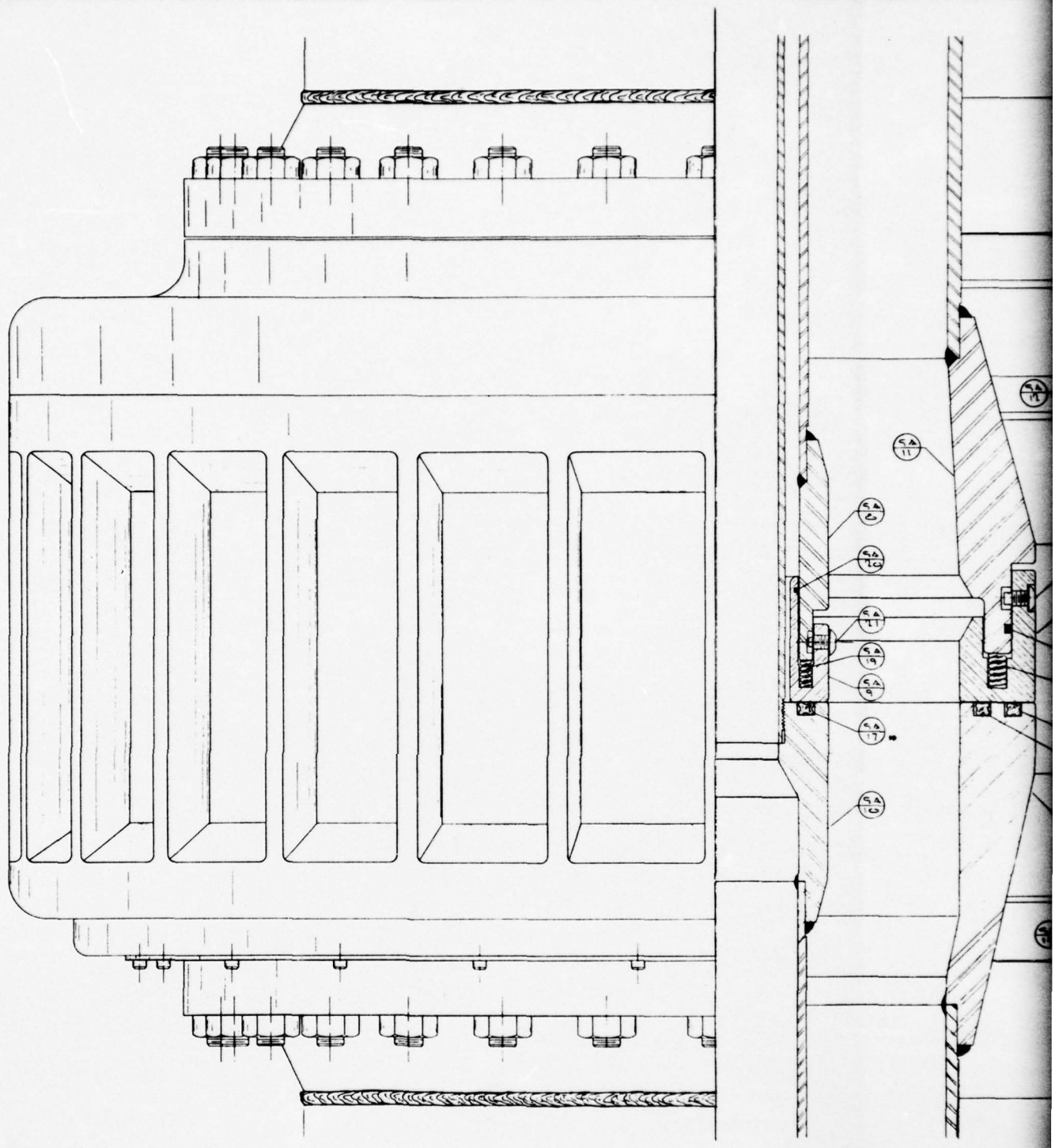
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	UNIT	
DCSG	NOTED	6 17 65	USA 2971
FABRICATORS JOB NO.	EG-917	J. RAY McDERMOTT & CO., INC.	878

SWIVEL TO BUOY CONNECTION

A



NOTES

SA-13 - ARP-586-A-470 21" ID x 21½" OD x ½" CS BUNA-N COMPOUND TO DURO A

SA-16 - ARP-586-5¾" ID x 6" OD x ⅛" C.S. BUNA-N COMPOUND TO DURO A

SA-23 - MESSINGER ROLLER BEARING NO 7471 ID x 81 MOL OD x 1.675" WIDE (REF DWG 7760-1)

SA-24 - MESSINGER (X TYPE) ROLLER BEARING 39.498 ID x 62 7/64" OD x 1.375" WIDE (REF DWG 7760-1)

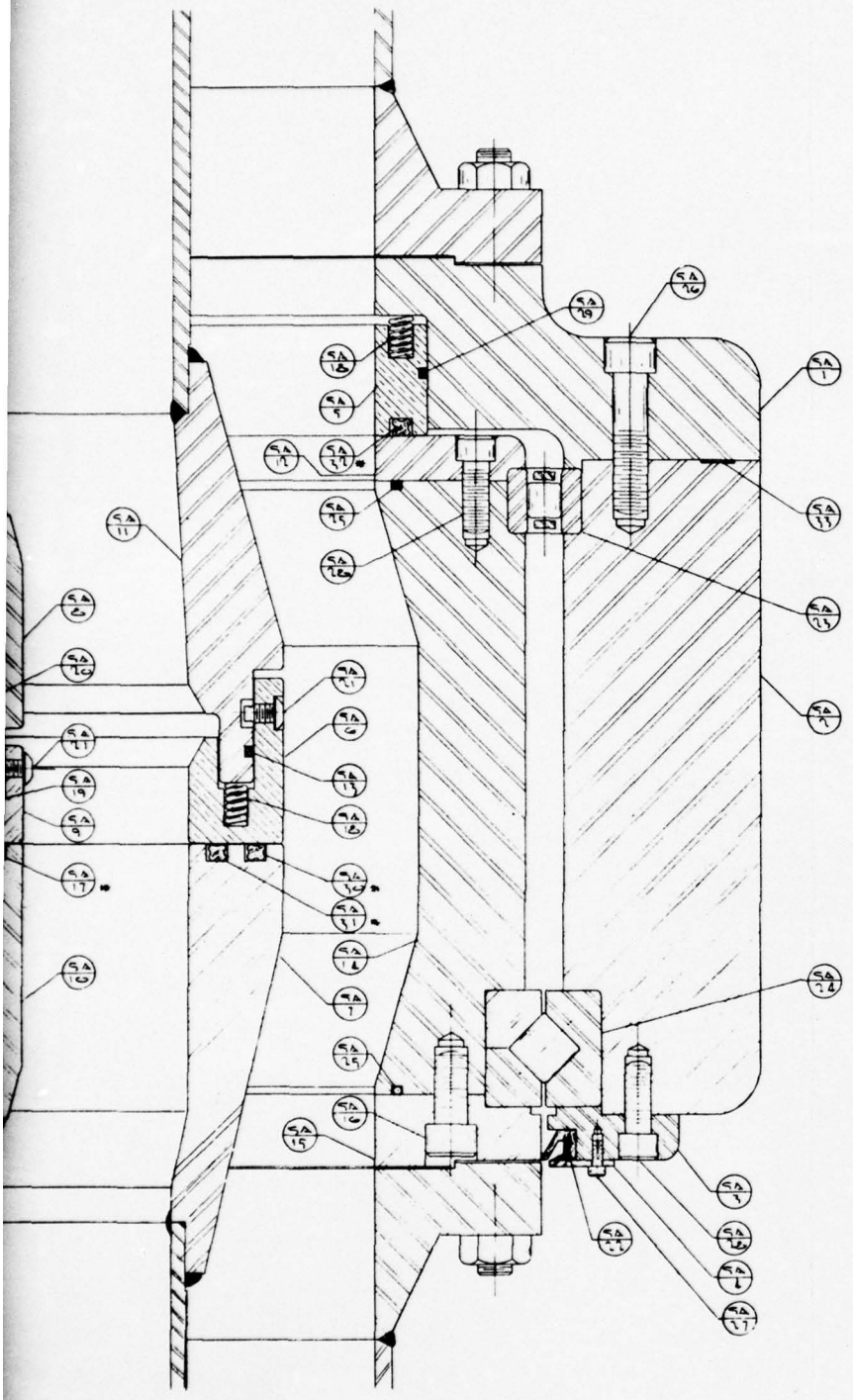
SA-25 - 40" ID x 40½" OD x ½" CS BUNA N TO DURO A

SA-27 - GARLOCK SEAL # 23964 (45½" ID x 46½" OD x ¼" W)

SA-29 - 21⅛" ID x 22" OD x ½ CS BUNA N COMPOUND TO DURO A

SA-31 GASKET COMPOUND NATIONAL GASKET PRODUCTS NO COMPALITE 2000 "

	DESIGN	STRUCT	PIPING	ELEC	MK	BY	REVISIONS	DATE	APP	DESIGN	STRUCT	PIPING	ELEC	MK	BY	REVISIONS	DATE	APP	DESIGN	STRUCT	PIPING	E



BILL OF MATERIAL

FIND NO.	DWG NO.	QTY	NOMENCLATURE	SPEC.	MAT'L
SA-1	676	1	BEARING CAP		
SA-2	677	1	MAIN HOUSING		
SA-3	678	1	SEAL HOUSING		
SA-4	678	1	SEAL RETAINER		
SA-5	679	1	SEAL SLEEVE		
SA-6	682	1	INTERMEDIATE FLOATING SEAL SLEEVE		
SA-7	680	1	INTERMEDIATE SEAL RING		
SA-8	681	1	INNER SEAL TONGUE		
SA-9	681	1	INNER FLOATING SEAL SLEEVE		
SA-10	681	1	INNER SEAT RING		
SA-11	680	1	INTERMEDIATE SEAL TONGUE		
SA-12	676	1	TOP BEARING RETAINER		
SA-13	675	1	SEE NOTE SA-13		BUNA N
SA-14	677	1	INNER HOUSING		
SA-15	679	1	LOWER BEARING RETAINER		
SA-16	675	28	1" DIA x 2" SOCKET CAP SCREW		STEEL
* SA-17	675	1	QUAD RING MINNESOTA RUBBER CO. PART #G1947		BUNA N
SA-18	675	6	DANLY DIE SPRING #9-1906-21		STEEL
SA-19	675	16	DANLY DIE SPRING #9-0505-31		STEEL
SA-20	675	1	SEE NOTE SA-20		BUNA N
SA-21	682	7	KEEPER		STEEL
SA-22	675	1	SEE NOTE SA-22		EUROME
SA-23	675	1	SEE NOTE SA-23		STEEL
SA-24	675	1	SEE NOTE SA-24		STEEL
SA-25	675	2	SEE NOTE SA-25		BUNA N
SA-26	675	28	1"-8 UNC-2A SOCKET DOG SCREW		SS.
SA-27	675	22	5/16-18 UNC-2A do		SS.
SA-28	675	56	1/4-20 UNC-2A do		SS.
SA-29	675	1	SEE NOTE SA-29		BUNA N
* SA-30	675	1	QUAD RING MINN. RUBBER PART #G1962		BUNA N
* SA-31	679	1	QUAD RING #G1961		BUNA N
* SA-32	675	1	QUAD RING #G1950		BUNA N
SA-33	675	1/2 LB	SEE NOTE SA-33		
SA-34					
SA-35					
SA-36					

REFERENCE DRAWING

SHT NO.	TITLE
671	FLOW UNIT SWIVEL ASSEMBLY
672	LOWER UNIT DETAILS
673	UPPER UNIT DETAILS
676	FLOW SWIVEL DETAILS SHT 1
677	do SHT 2
678	do SHT 3
679	do SHT 4
680	do SHT 5
681	do SHT 6
682	do SHT 7

* THREE SEAL RINGS ARE DESIGNS MANUFACTURED BY MINNESOTA RUBBER CO., MINNEAPOLIS MINN. & SHALL BE TO THEIR COMPOUND # 471T 4 (X 92L) TREATED

NO.	DATE	APP	REVISIONS	DATE	APP
			DESIGN STRUCT PIPING ELEC MK BY		

STATE OF LOUISIANA
GRIFF C. LEE
REGISTERED
PROFESSIONAL
ENGINEER

APPROVED
J. RAY McDERMOTT & CO. INC.
DATE 1-28-66
ENGINEERS APPROVAL

	BY	DATE
PROJECT	JRC	1-28-66
STRUCTURAL		
PIPING		
MECHANICAL	RMP	8/17
ELECTRICAL		
INSTRUMENT		
FAB CHECK	RMP	8/17
PROP CHECK		

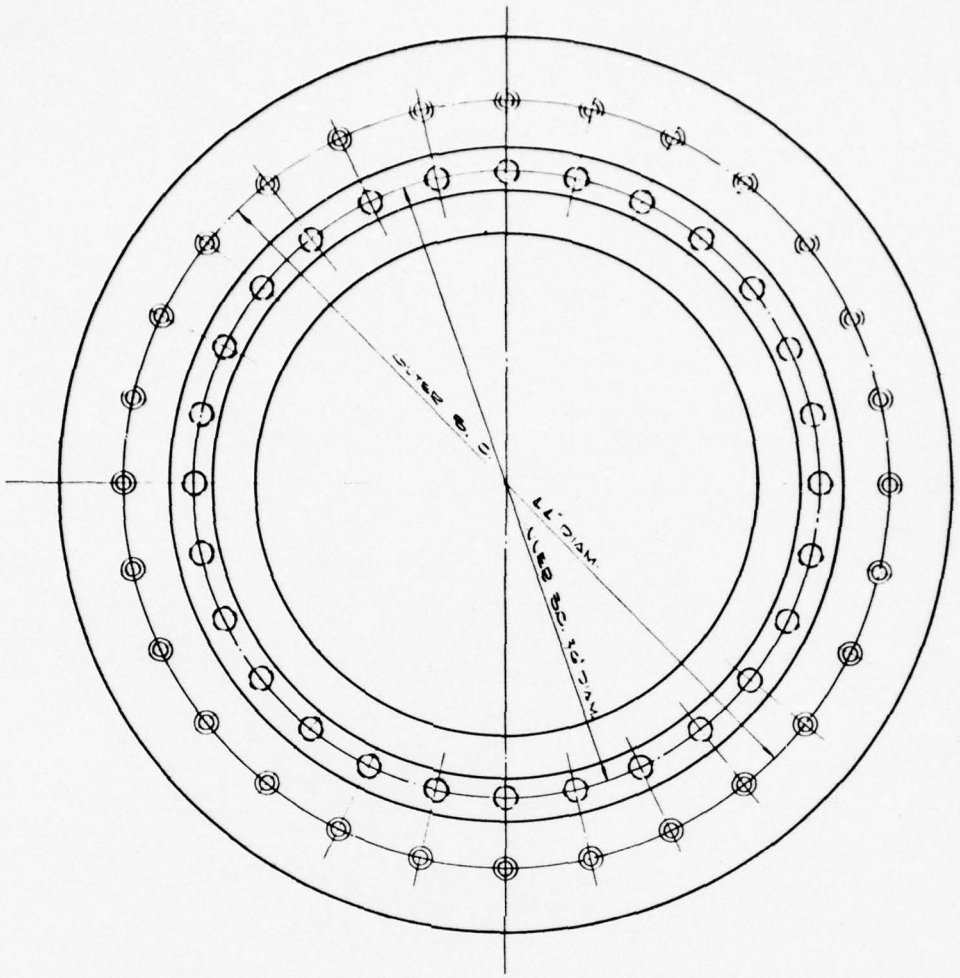
MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

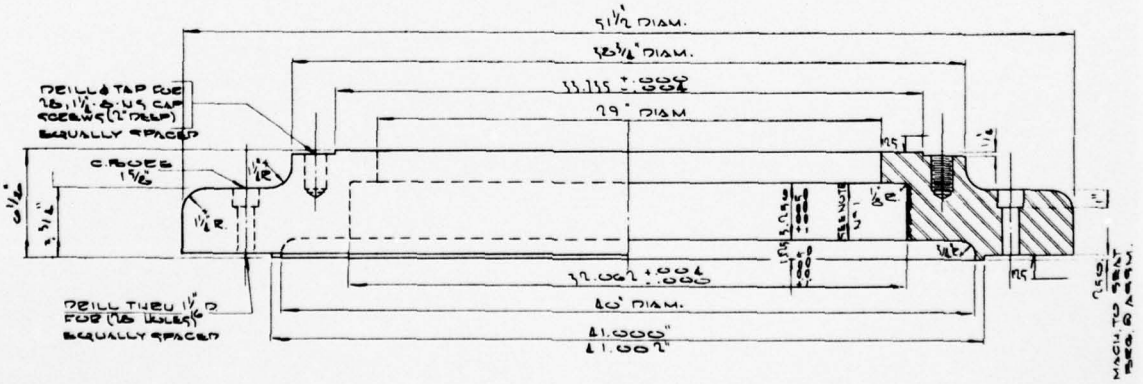
J. RAY McDERMOTT & CO., INC.
ENGINEERS CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
ROSS	HALF	7-1-65	USA-7971
FABRICATORS JOB NO.		J. RAY McDERMOTT JOB NO.	SHEET NO.
	56017		675

FLOW SWIVEL ASSEMBLY



PLAN



PART U° (9A/1)
U° BEAM (1)
MAT'L: A711 GR WCB
SCALE: 1" = 1'-0"

DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

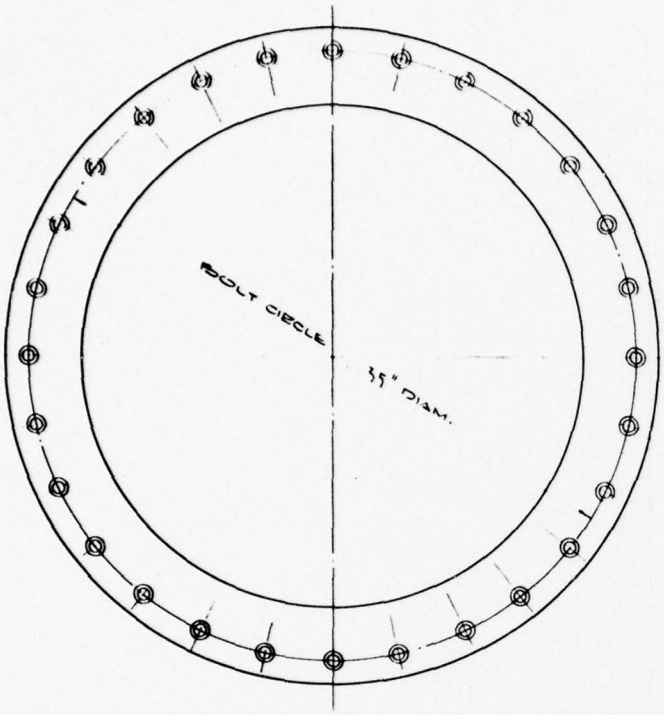
DESIGN	STRUCT.	PIPING

1

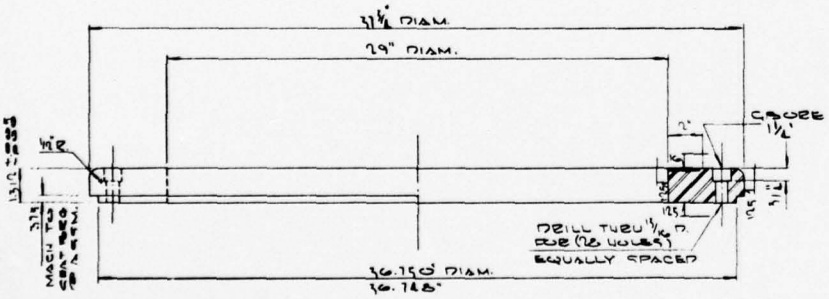
2

BILL OF MATERIAL

ITEM NO.	DWG NO.	QTY.	NOMENCLATURE	SPEC.	MAT'L
5A-1	6576	1	REG. CAP		STEEL
5A-17	6576	1	TOP REG RETAINER		S.S.



PLAN



PART NO. 5A/17
NO. REQ'D (1)
MAT'L-AISI TYPE 410 S.S.
SCALE: 3" = 1'-0"

MACH TO SEAT REG. RAISED FACE

REFERENCE DRAWINGS

SUT. NO.	TITLE
671	FLOW UNIT SWIVEL ASSEMBLY
679	FLOW SWIVEL ASSEMBLY

NOTE:
(NO. 1) PART NO. 5A/1 TO HAVE A SURFACE FACED WITH EUTETIC WELDING ALLOY CORP EUTALLOY #16185 TO A .015-.025 THICKNESS & FINISH GROUND TO 32

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. 7316
REGISTERED PROFESSIONAL ENGINEER IN CIVIL ENGINEERING

APPROVED: H C Lee
J. RAY McDERMOTT & CO., INC.
DATE: 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	[illegible]	1/28/66
STRUCTURAL		
PROCESS		
MECHANICAL	[illegible]	2/1/1
ELECTRICAL		
INSTRUMENT		
PAR. CHECK	[illegible]	2/1/1
PROT. CHECK		

MONO-MOORING SYSTEM

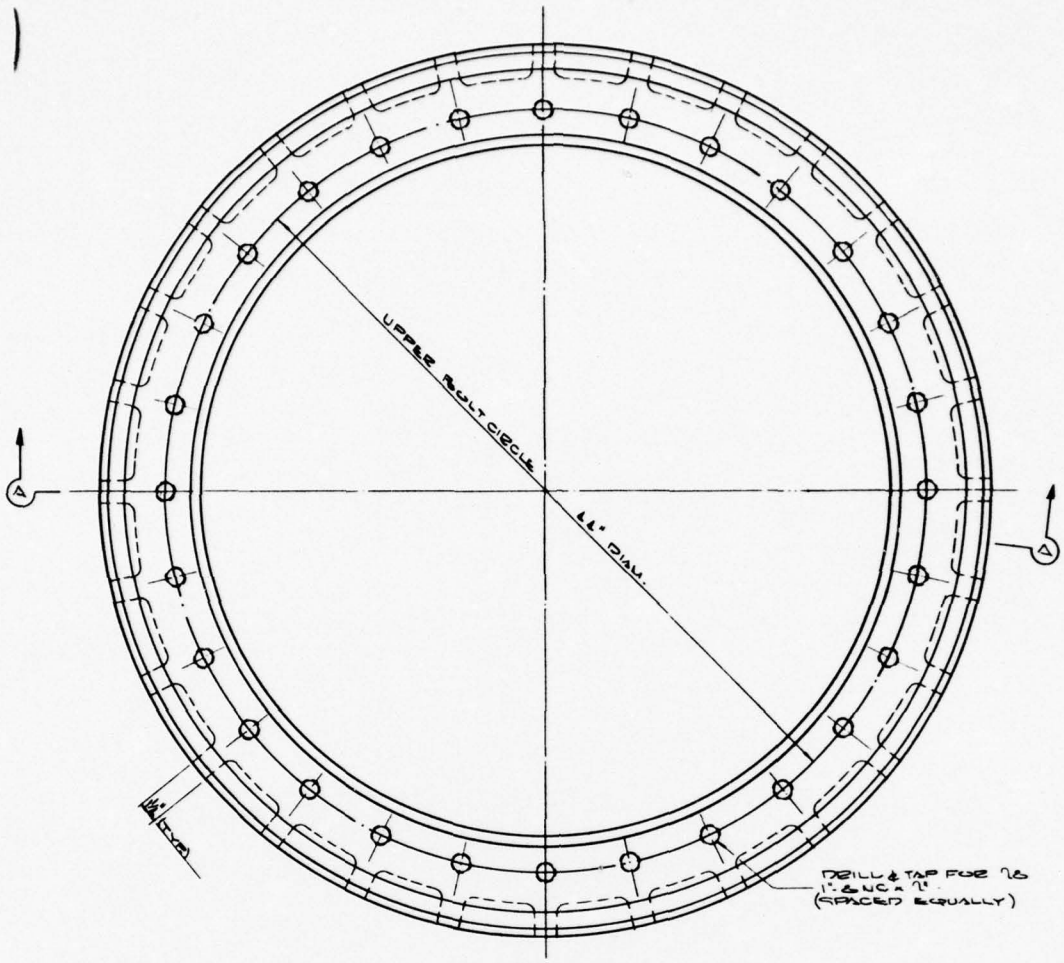
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

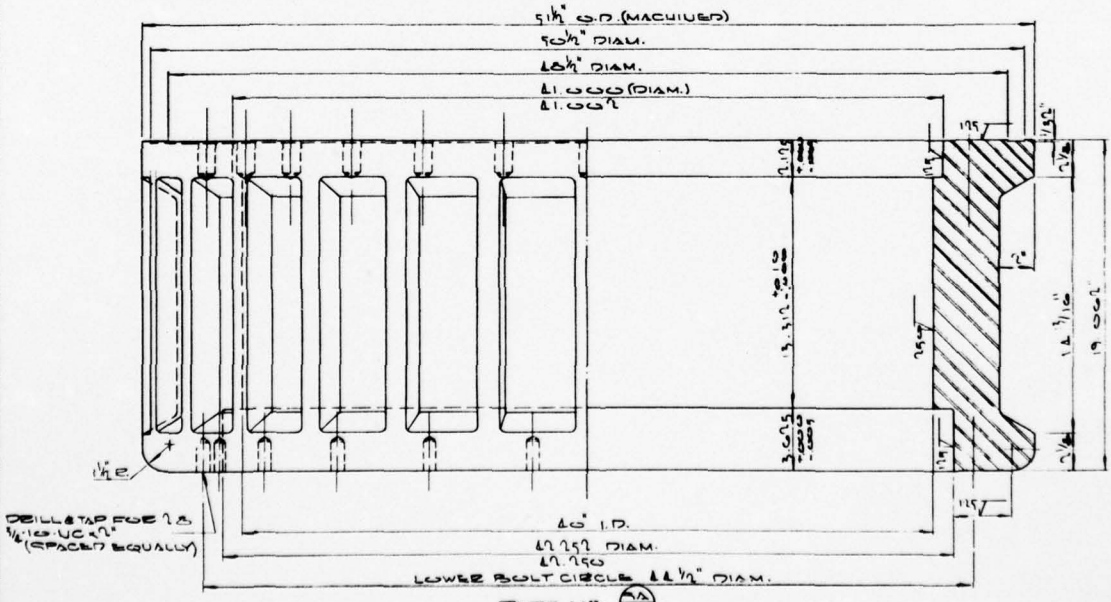
DRAWN BY	SCALE	DATE	PROJECT NO.
DORR	VARIES	1-12-66	USA 7971
FABRICATORS JOB NO.		J. RAY McDERMOTT JOB NO.	SHEET NO.
	66017		6576

FLOW SWIVEL
DETAIL SUT NO. ONE

REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.



PLAN



PART No. 4A (2)
4" REQ'D (1)
MATL A217-GR WC6

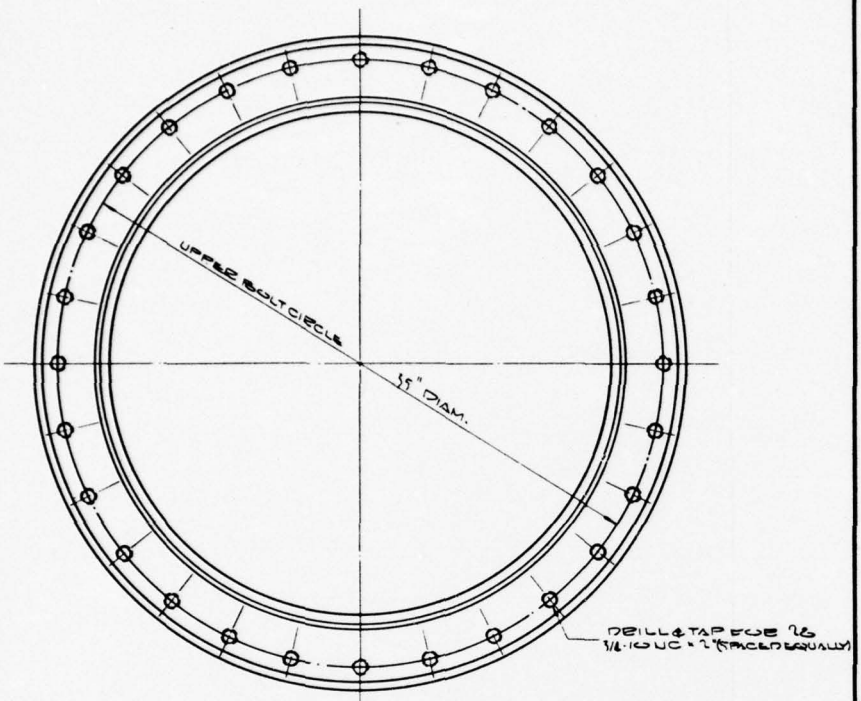
	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING

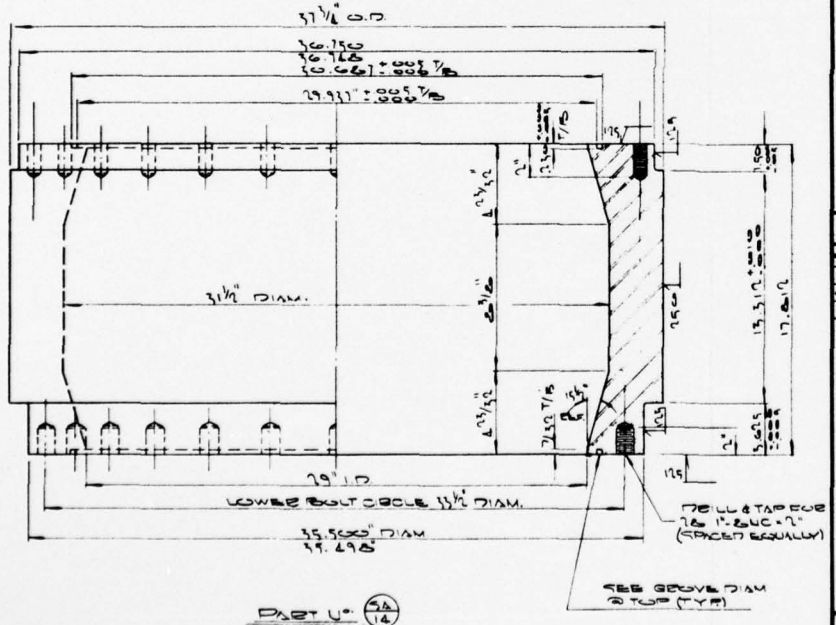
1

2

BILL OF MATERIAL

FIUD. U°	DWG. N°	QTY.	NOMENCLATURE	SPEC	MAT'L
9A-2	677	1	MAIN HOUSING		STL.
9A-14	677	1	INNER HOUSING		STL.





PART U° 9A/14
U° REQ'D (1)
MAT'L A711 GR WCB
SCALE: 1" = 1'-0"

REFERENCE DRAWINGS

FIUD U°	TITLE
671	FLOW UNIT SWIVEL ASSEMBLY
675	FLOW SWIVEL ASSEMBLY

NOTE:
ALL DIAMETERS TO BE CONCENTRIC ABOUT ℄

	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 788
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

APPROVED: G. C. Lee
J. RAY McDERMOTT & CO., INC.
DATE 1-28-66
ENGINEERS APPROVAL

	BY	DATE
PROJECT	JRMcD	1-27-66
STRUCTURAL		
PIPING		
MECHANICAL	JRMcD	8-17
ELECTRICAL		
INSTRUMENT		
FAB. CHECK	JRMcD	8-17
PROD. CHECK		

MONO-MOORING SYSTEM

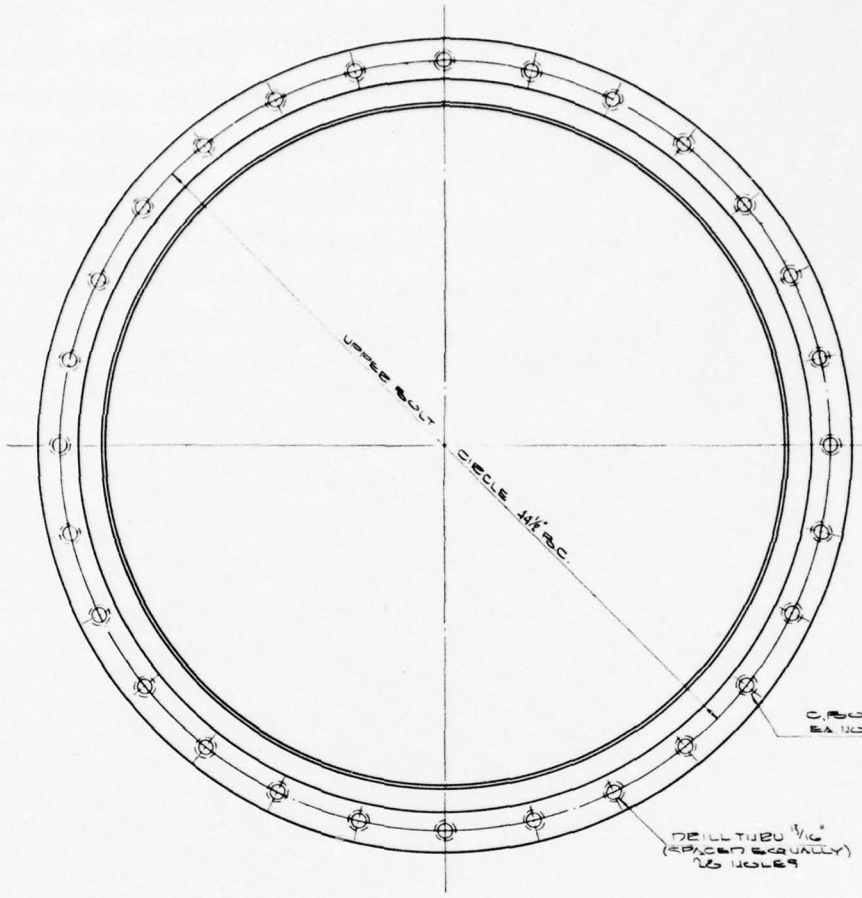
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS CONTRACTORS
NEW ORLEANS, LA.

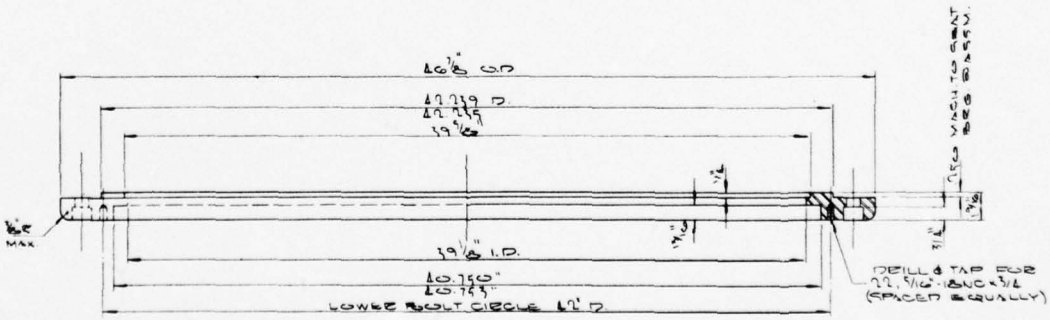
DRAWN BY	SCALE	DATE	PROJECT NO.
ROSS	NOTED	7-12-65	USA 7971
FABRICATORS JOB NO.		J. RAY McDERMOTT JOB NO.	SHEET NO.
66017			677

FLOW SWIVEL
DETAIL UNIT U° 9

1



PLAN

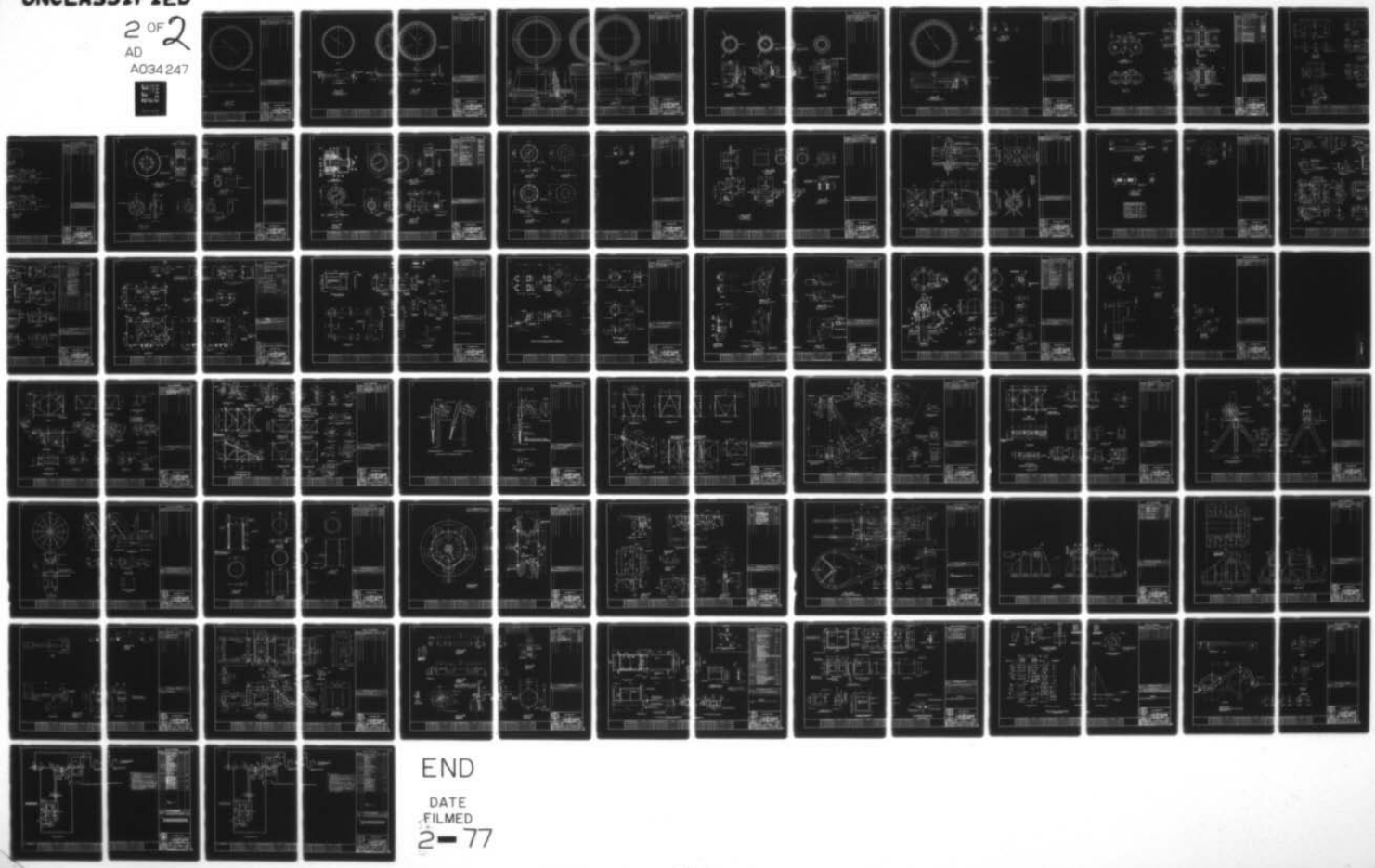


PART N° 9A/3
N° REQ'D "1"
MATL ASTM-A36
SCALE: 1" = 1'-0"

DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STR

AD-A034 247 MCDERMOTT (J RAY) CO INC NEW ORLEANS LA F/G 13/10
ENGINEER DESIGN OF A MONO-MOORING SYSTEM. DRAWINGS.(U)
1966 DA-44-009-AMC-841(T)
UNCLASSIFIED NL

2 OF 2
AD
A034 247



END

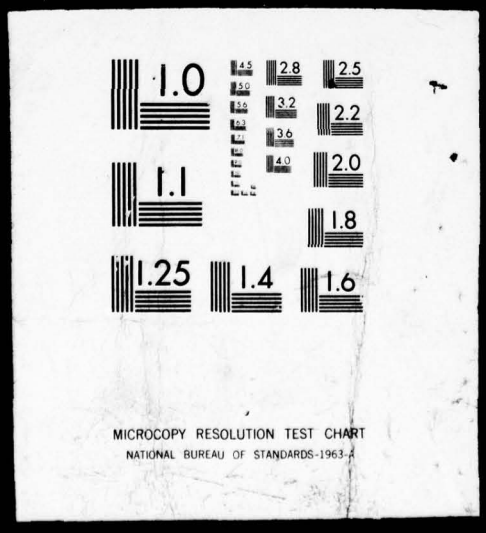
DATE
FILMED
2-77

SIFIED

2 OF 2

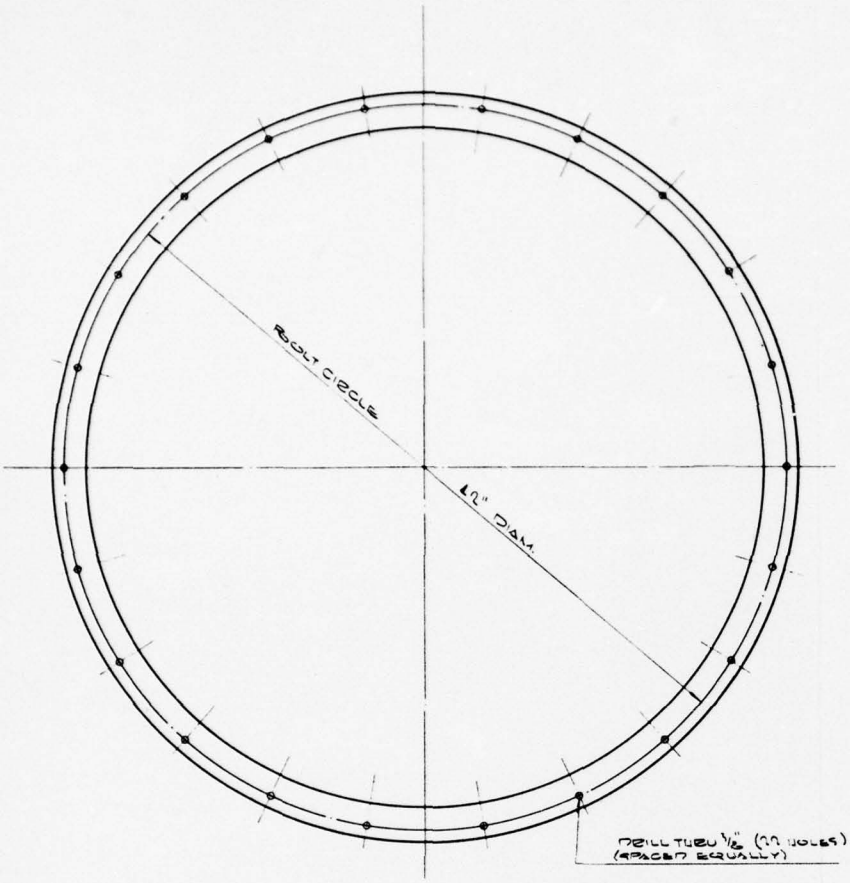
AD

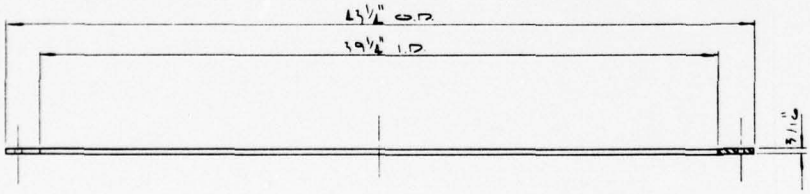
A034247



BILL OF MATERIAL

FLT U°	DWG U°	QTY	NOMENCLATURE	SPEC.	MAT'L
SA-3	6726	1	SEAL HOUSING		STEEL
SA 4	6726	1	SEAL RETAINER		TYPE 316 S.S.





TAP FOR
NSNC x 3/4
EQUALLY)

PART N° SA 4
U° REQ'D 1
MAT'L: AISI TYPE 316 S.S.
SCALE: 3" = 1'-0"

REFERENCE DRAWINGS

FLT U°	TITLE
6671	FLOW UNIT SWIVEL ASSEMBLY
6679	FLOW UNIT ASSEMBLY

REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.
							1	MG	REVISED PART N° SA-3 UPPER BOLT CIRCLE FROM 20" DIA. TO 19 1/2" DIA.	4-7-66	

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7186
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

APPROVED: G. C. Lee
J. RAY McDERMOTT & CO., INC.
DATE 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	GRS	1/27/66
STRUCTURAL		
PROCESS		
MECHANICAL		2/1/66
ELECTRICAL		
INSTRUMENT		
FAB. CHECK		2/1/66
PROD. CHECK		

MONO-MOORING SYSTEM

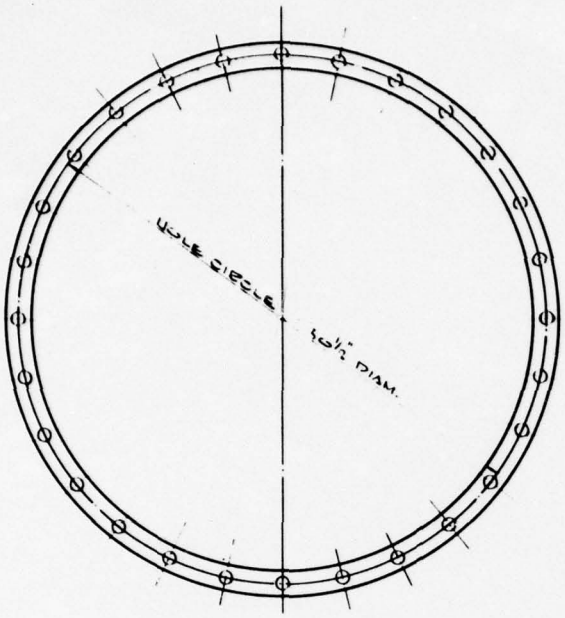
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

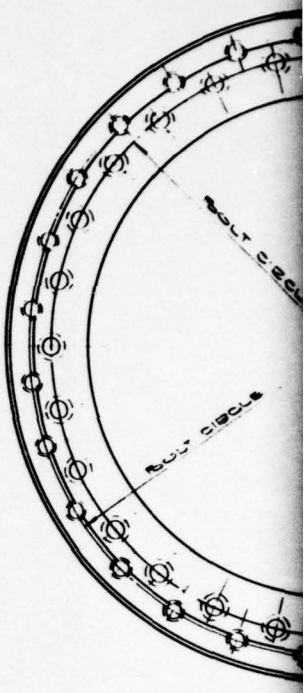
J. RAY Mc DERMOTT & CO., INC.
ENGINEERS CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
DOSS	VOTED	7-18-65	USA 7991
FABRICATORS JOB NO. 66017		J. RAY McDERMOTT JOB NO.	SHEET NO. 678

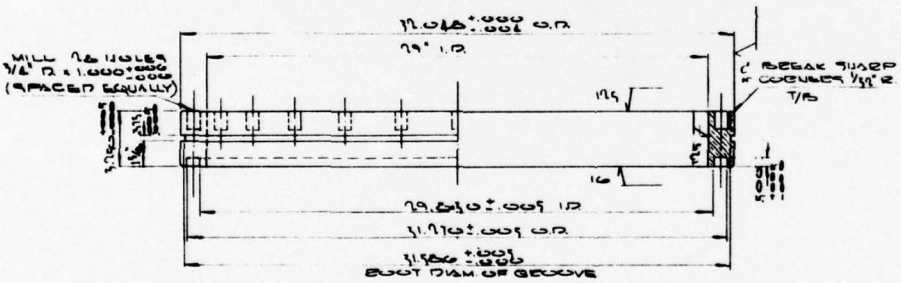
FLOW SWIVEL
DETAIL FLT. N° 3

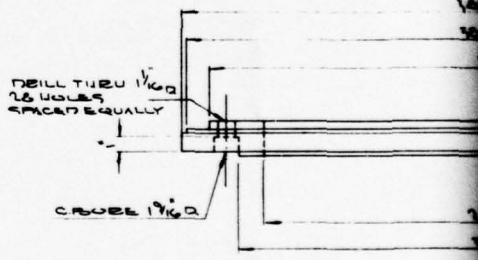
1





PLAN





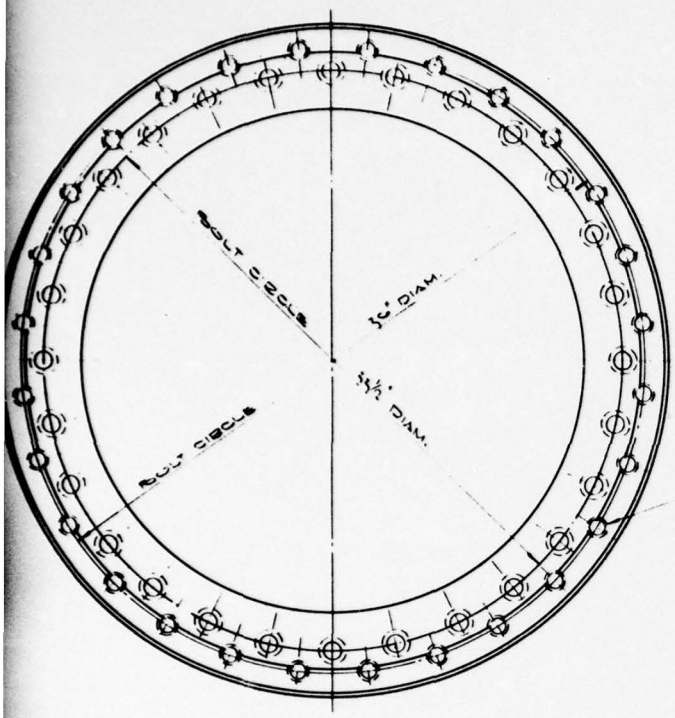
PART U° (5A/9)

U° SEG'M (1)

MAT'L SA36 GRADE REG. REQUIRE

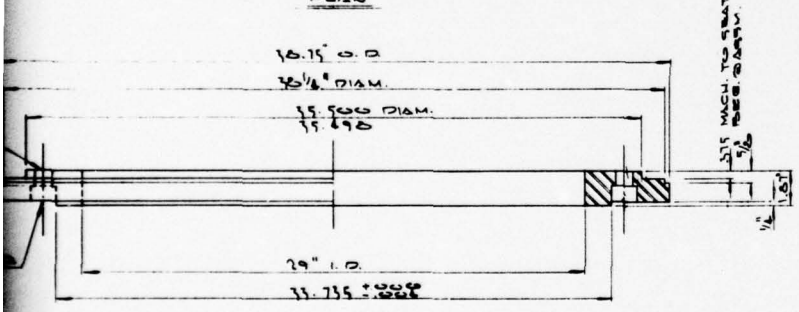
SCALE: 3"=1'-0"

DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.



DRILL & TAP FOR 1¼"-6-NF HOLES (SPACED EQUALLY)

PLAN



NOTE: 125 √ ALL SURFACES

PART NO. 9A/15
MATL ASTM-A36
SCALE 1" = 1.0"

BILL OF MATERIAL

FIND NO.	DWG NO.	QTY.	NOMENCLATURE	SPEC.	MAT'L
9A-9	879	1	SEAL SLEEVE		1020 ROUND
9A-15	879	1	LOWER RACE RETAINER		STEEL

REFERENCE DRAWING

DWG NO.	TITLE
871	FLOW UNIT SWIVEL ASSEMBLY
879	FLOW SWIVEL ASSEMBLY

NOTE:

NO	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. 7155
REGISTERED (EXPIRES) IN
CIVIL ENGINEERING

APPROVED: [signature]
J. RAY McDERMOTT & CO., INC.
DATE: 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	GRS	1-27-66
STRUCTURAL		
PROCESS		
MECHANICAL	WP	2/67
ELECTRICAL		
INSTRUMENT.		
PUB. CHECK	WP	2/67
PROP. CHECK		

MONO-MOORING SYSTEM

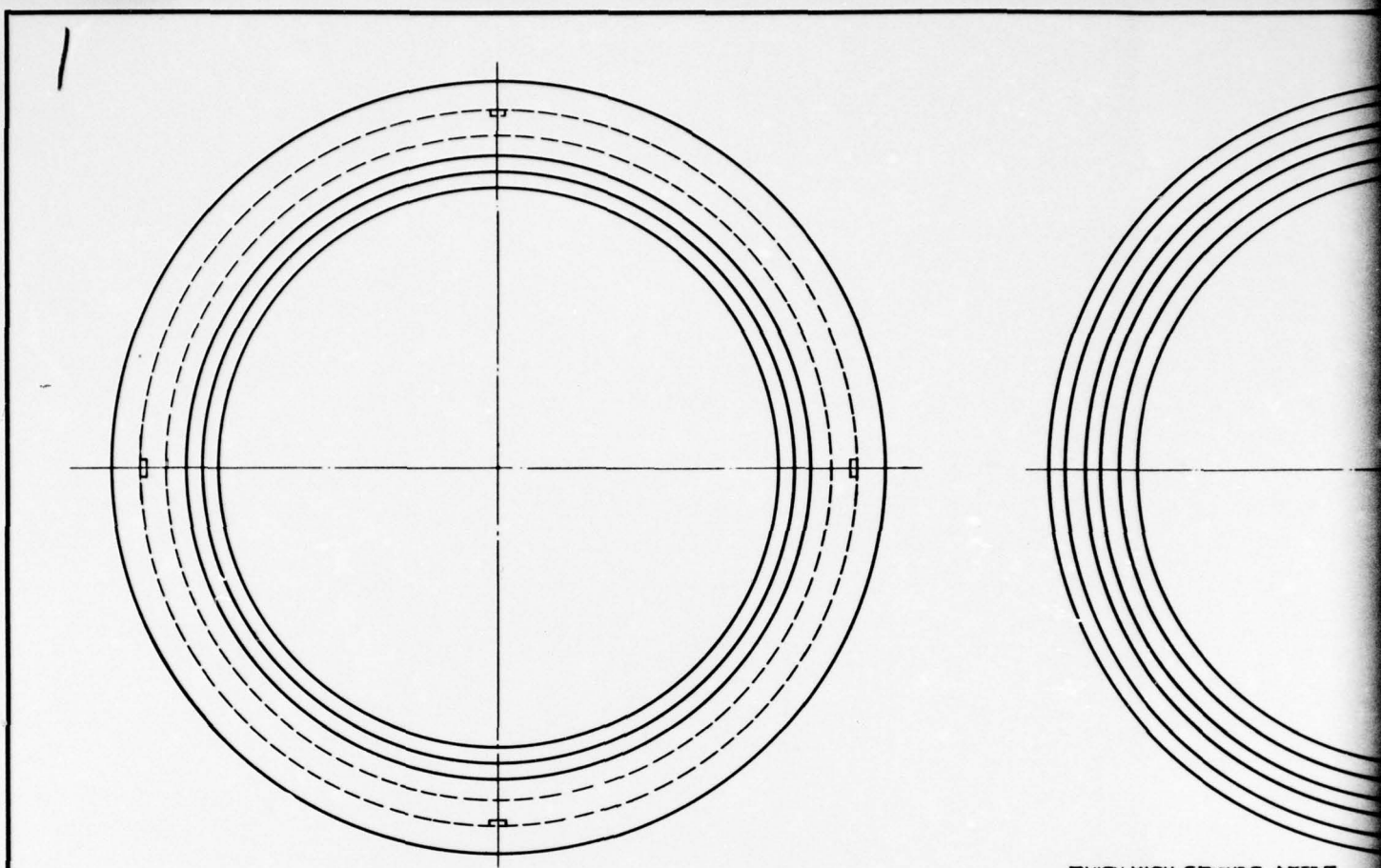
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

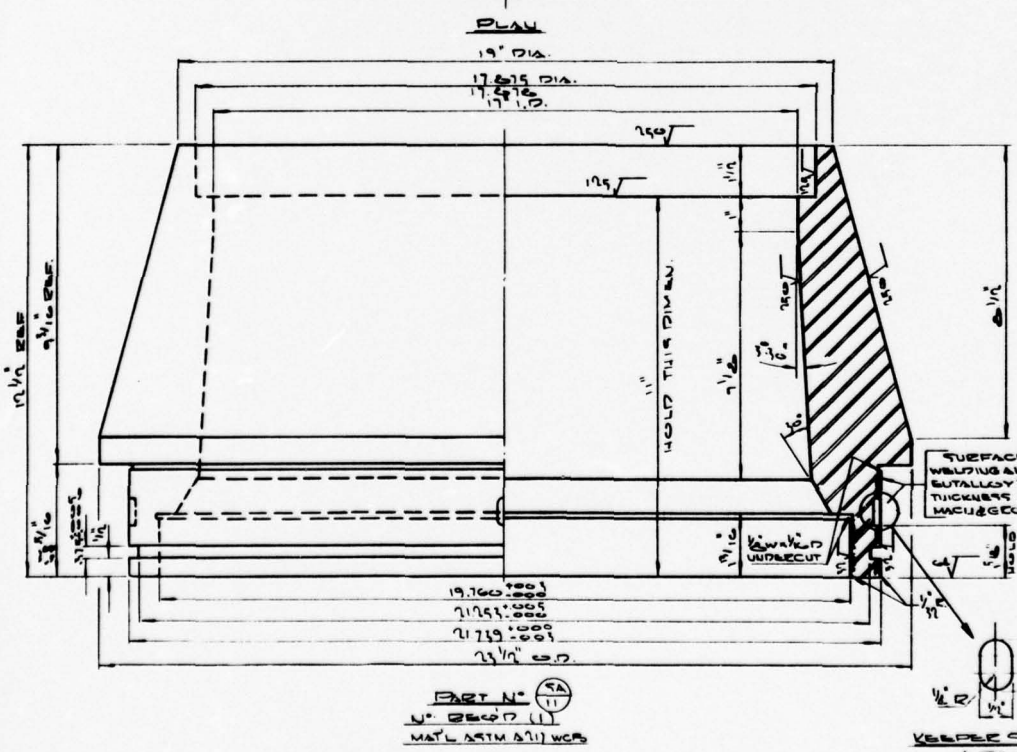
DRAWN BY	SCALE	DATE	PROJECT NO.
RCOOK	NOTED	7-12-65	USA. 9971
FABRICATORS JOB NO.	J. RAY McDERMOTT JOB NO.		SHEET NO.
66017			879

FLOW SWIVEL
DETAIL ASST. NO. 2

△



PLAN

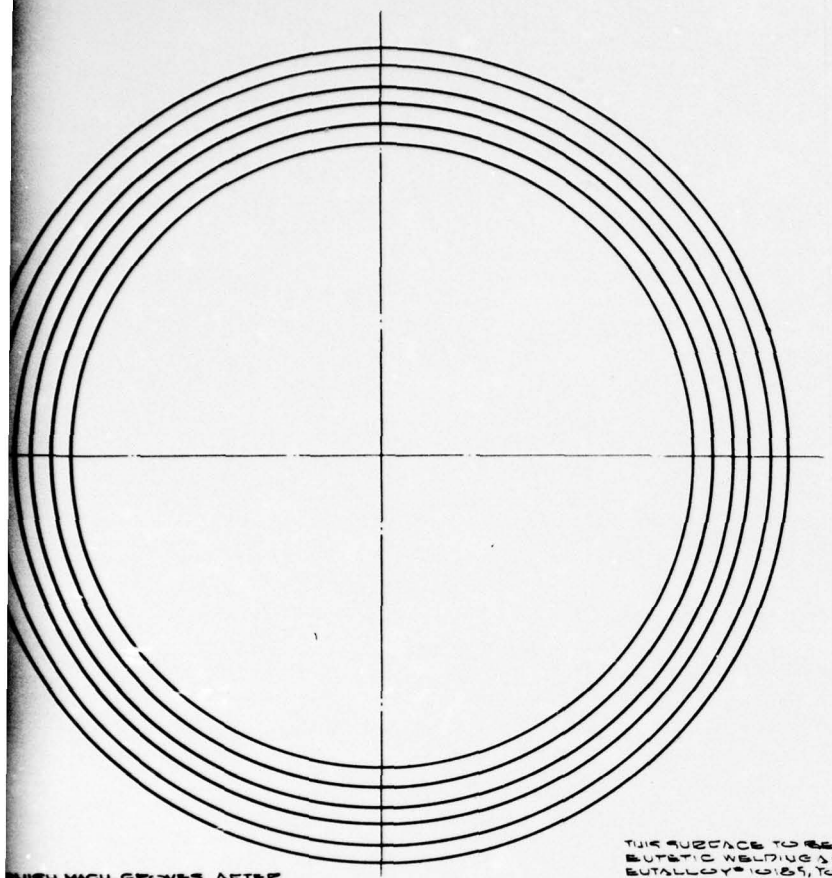


PART N° 9A (11)
N° REQ'D (1)
MAT'L ASTM A711 WCB

KEEPER SLOT DETAIL
1 REQ'D

EQUIRU MACH. GROOVES AFTER HARD SURFACING FACE ALL GROOVE SURFACES 64 MAX.

DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.



BILL OF MATERIAL

FIND NO	DWG NO	QTY	NOMENCLATURE	SPEC.	MAT'L
9A-7	6899	1	INTERMEDIATE SEAT RING		STL.
9A-11	6899	1	INTERMEDIATE SEAL TONGUE		STL.

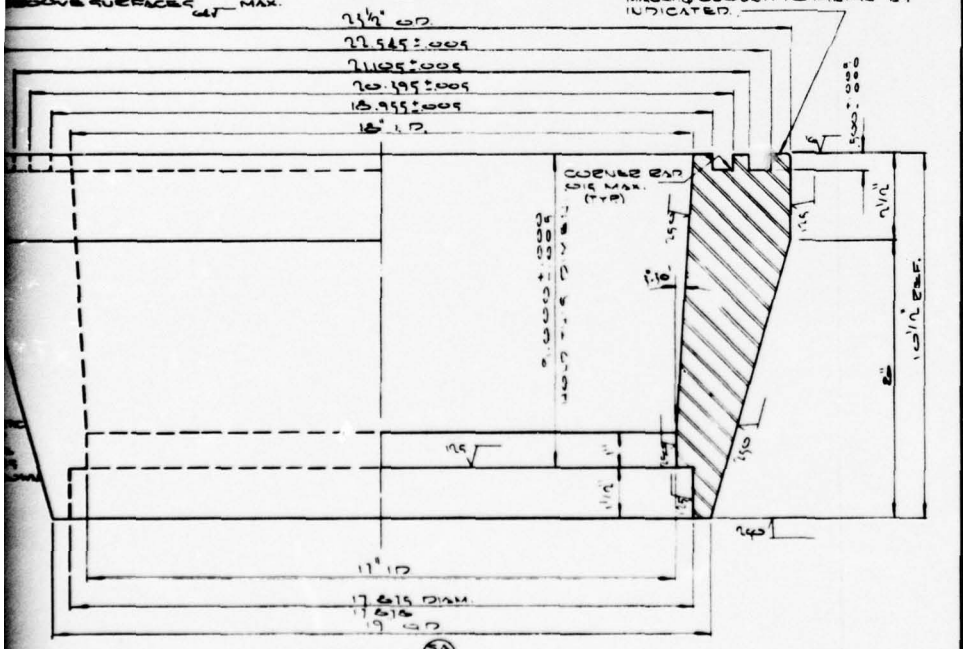
REFERENCE DRAWINGS

SHT NO	TITLE
671	FLOW UNIT SWIVEL ASSEMBLY
675	FLOW SWIVEL ASSEMBLY

FINISH MACH. GROOVES AFTER HARD SURFACING FACE ALL GROOVE SURFACES ⌀ MAX.

PLAN

THIS SURFACE TO BE FACED W/ EUTECTIC WELDING ALLOYS OVER EUTALLOY® 10185, TO A FINISHED THICKNESS OF .019 - .029" MACH. & GROUND TO FINISH AS INDICATED.



PART NO 9A (7)
4" SCH 80 (1)
MAT'L: ASTM A312 WP316

DESIGNED	DATE	APP	DESIGN	STRUCT	PIPING	ELEC	MR	BY	REVISIONS	DATE	APP

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. 7108
REGISTERED
CIVIL ENGINEERING

APPROVED [signature]
J. RAY McDERMOTT & CO. INC.
DATE 1-29-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	[signature]	1-29-66
STRUCTURAL		
PROCESS		
MECHANICAL	[signature]	1-29-66
ELECTRICAL		
INSTRUMENT		
P&D CHECK	[signature]	1-29-66
PROD CHECK		

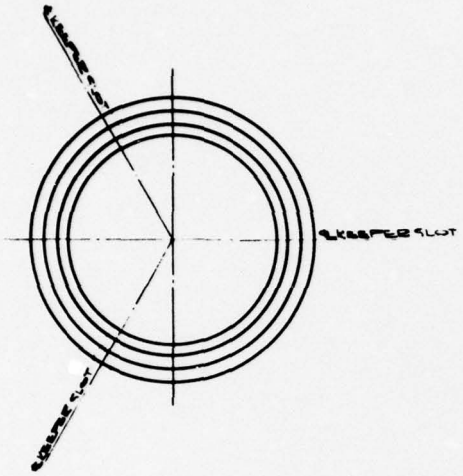
MONO-MOORING SYSTEM

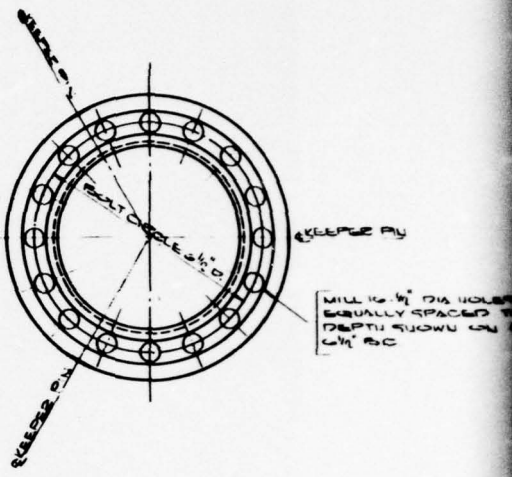
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

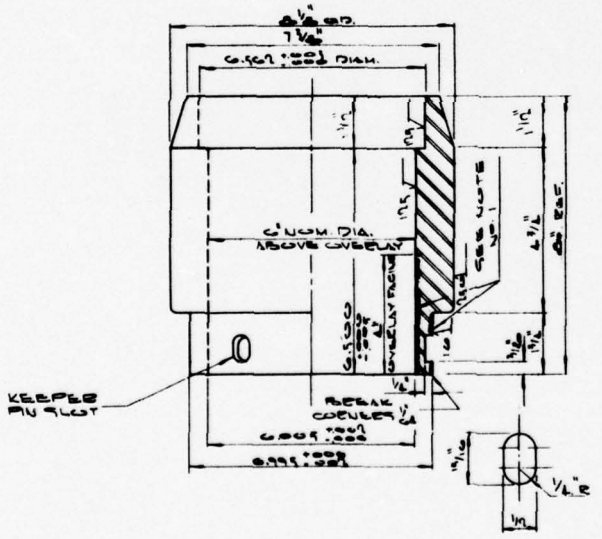
J. RAY McDERMOTT & CO., INC.
ENGINEERS — NEW ORLEANS, LA. — CONTRACTORS

DRAWN BY	SCALE	DATE	PROJECT NO.
2099	HALF SIZE	7-19-65	USA 7971
FABRICATORS JOB NO.	66017	J. RAY McDERMOTT JOB NO.	SHEET NO. 680

FLOW SWIVEL DETAIL SHT NO. 5

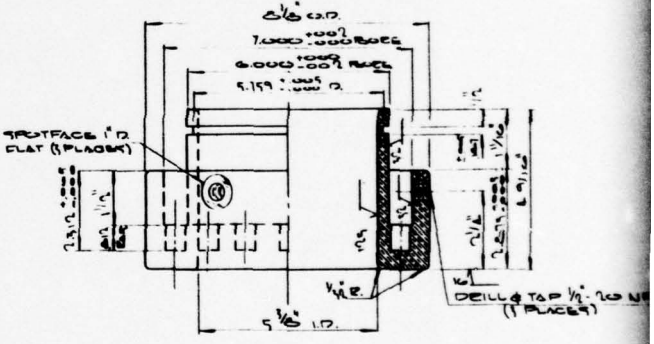






PART N° 9A/8
N° REQ'D (1)
MAT'L ASTM A217 WC8

KEEPER SLOT DETAIL
3 PLACES

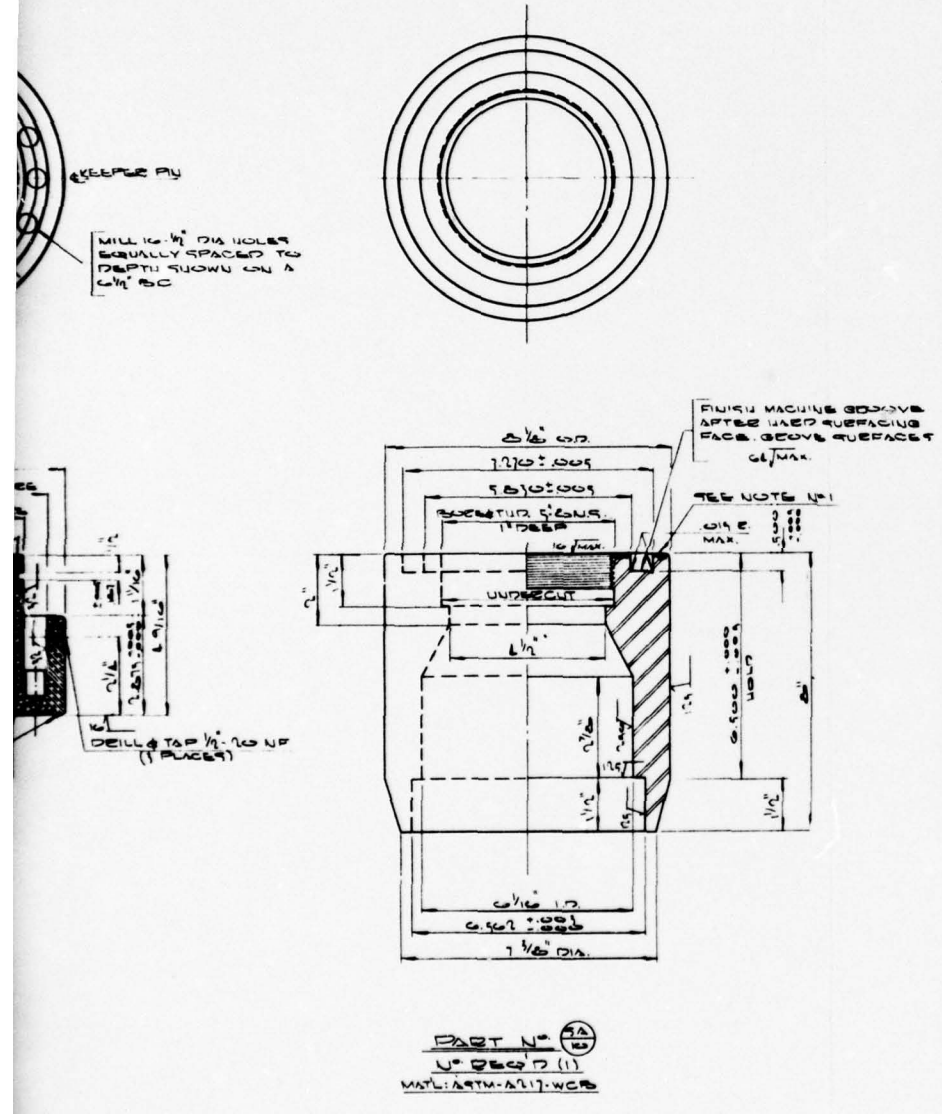


PART N° 9A/9
N° REQ'D (1)
MAT'L SAE 660 BEG. BRONZE

	DESIGN	STRUCT.	PIPING	ELEC.	INS.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	INS.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.

BILL OF MATERIAL

FIND NO.	DWG NO.	QTY.	NOMENCLATURE	SPEC.	MAT'L
FA 8	881	1	INNER SEAL TONGUE		RTL.
FA 9	881	1	INNER FLOATING SEAL SLEEVE		RUBBER
FA 10	881	1	INNER SEAT RING		RTL



PART NO. FA 8
U° REQ'D (1)
MAT'L: ASTM-A217-WC6

REFERENCE DRAWINGS

DWG NO.	TITLE
871	FLOW UNIT SWIVEL ASSEMBLY
875	FLOW SWIVEL ASSEMBLY

NOTES:

1. THIS SURFACE TO BE FACED W/EUTETIC WELDING ALLOY CODE EUTALLOY #101 & 9 TO A FINISHED THICKNESS OF .015-.025. MACHINED & GROUND TO SURFACE FINISH SHOWN.

REVISIONS	DATE	APP.

	DESIGN	STRUCT.	PIPING	ELEC.	MECH.	BY

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. 7155
REGISTERED
PROFESSIONAL
ENGINEER
IN
CIVIL ENGINEERING

APPROVED: M C Lee
DATE: 1-28-66

J. RAY McDERMOTT & CO. INC. ENGINEERS APPROVAL

	BY	DATE
PROJECT	MC	1-28-66
STRUCTURAL		
PIPING		
MECHANICAL	MP	2/1
ELECTRICAL		
INSTRUMENT		
PUB. CODES	MP	2/1
PROP. CODES		

MONO-MOORING SYSTEM

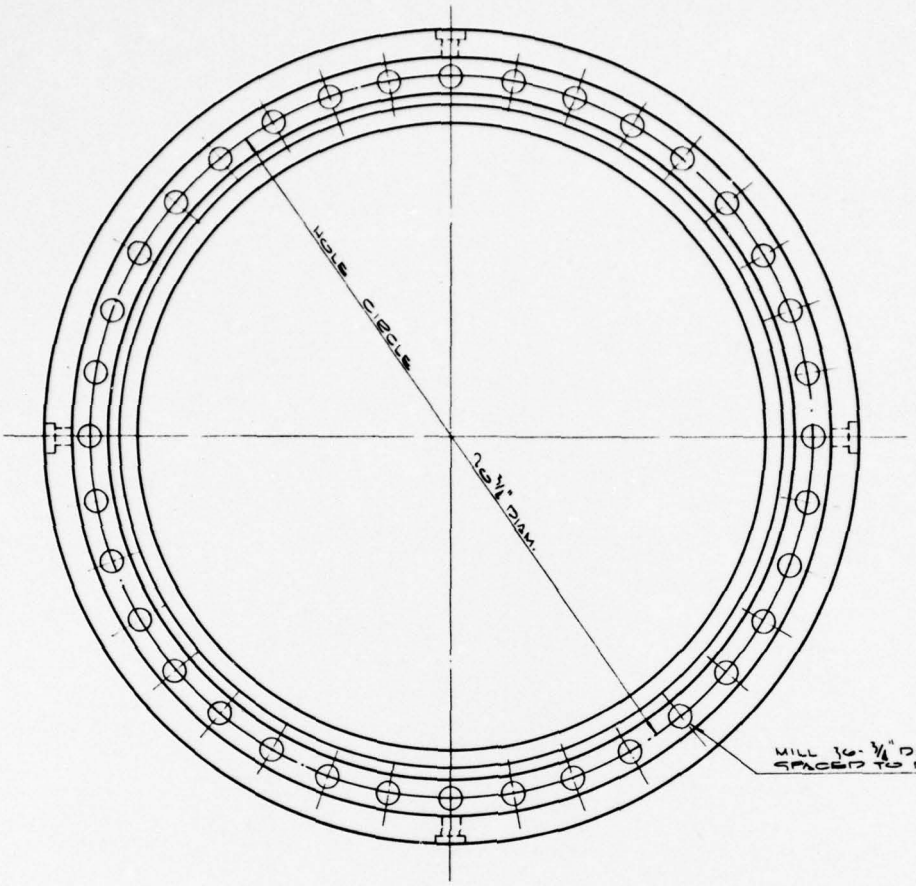
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

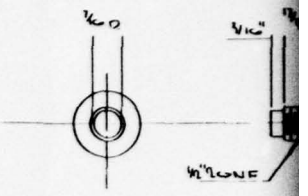
J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — NEW ORLEANS, LA. — CONTRACTORS

DRAWN BY	SCALE	DATE	PROJECT NO.
DGG	HALF SIZE	1-20-66	USA 7971
FABRICATORS JOB NO.	66017	J. RAY McDERMOTT JOB NO.	SHEET NO. 881

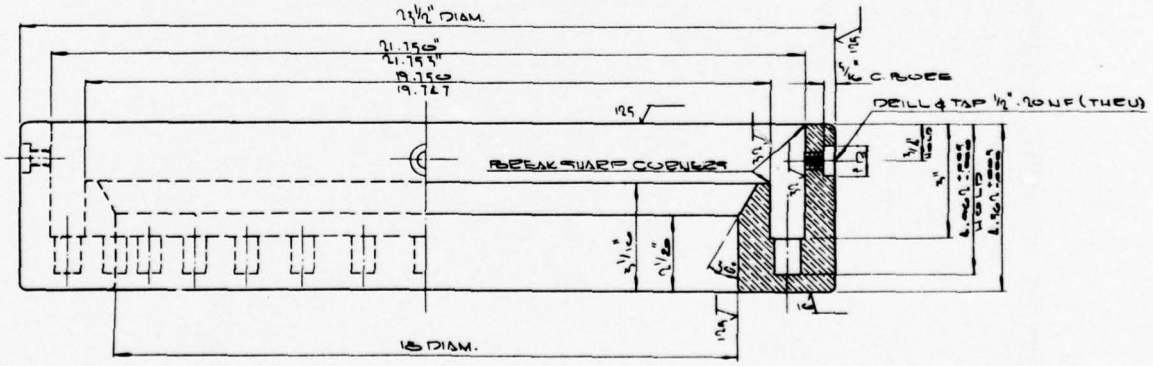
FLOW SWIVEL DETAIL SUB. NO. 6

1





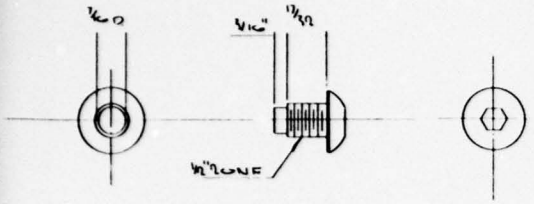
PART N°
N° REQ'D
MAT'L: CUT FROM
BUTTON HEAD
CAP SCREW
SCALE: FULL



PART N° 9A
N° REQ'D 11
MAT'L: SAE 660 BEG BRONZE
SCALE: HALF SIZE

	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING

1



PART No. (A-11)
½" BEND 1
MAT'L CUT FROM ½"-20 BUTTON HEAD SOCKET CAP SCREW
SCALE: FULL

ET EQUALLY SHOWN.

P ½"-20 UNF (THEU)

BILL OF MATERIAL

ITEM No.	DWG No.	QTY.	NOMENCLATURE	SPEC.	MAT'L.
SA-6	887	1	INTERMEDIATE FLOATING SEAL SLEEVE		BRONZE
SA-21	887	1	KEEPER		STL.

2

REFERENCE DRAWINGS

SHT No.	TITLE
871	FLOW UNIT SWIVEL ASSEMBLY
879	FLOW SWIVEL ASSEMBLY

ORS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	INS.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7115
APPROVED PROFESSIONAL ENGINEER IN CIVIL ENGINEERING

APPROVED: G. C. Lee
J. RAY McDERMOTT & CO., INC.
DATE: 1-28-66
ENGINEERS APPROVAL

	BY	DATE
PROJECT	GRS	1-21-66
STRUCTURAL		
PROCESS		
MECHANICAL	GRS	1-21-66
ELECTRICAL		
INSTRUMENT		
PUB. CHECK	GRS	1-21-66
PROP. CHECK		

MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

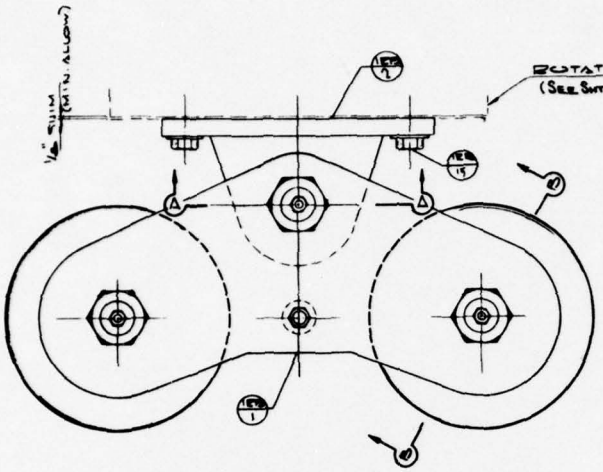
J. RAY McDERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
BOSS	NOTED	1-21-66	USA-2971
FABRICATORS JOB NO.	6017	J. RAY McDERMOTT JOB NO.	SHEET NO. 887

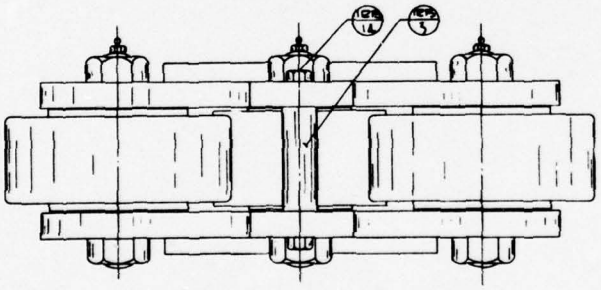
ELBOW SWIVEL
DETAIL SHEET No. 1

△

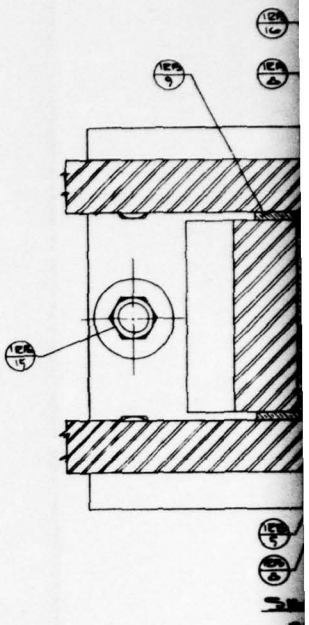
1

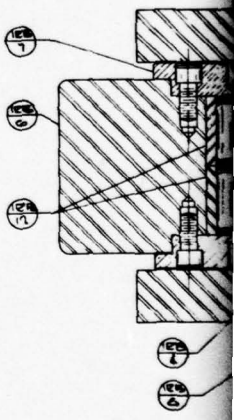


PLAN
INNER RACE ROGIE
SCALE: 1"=1'-0"

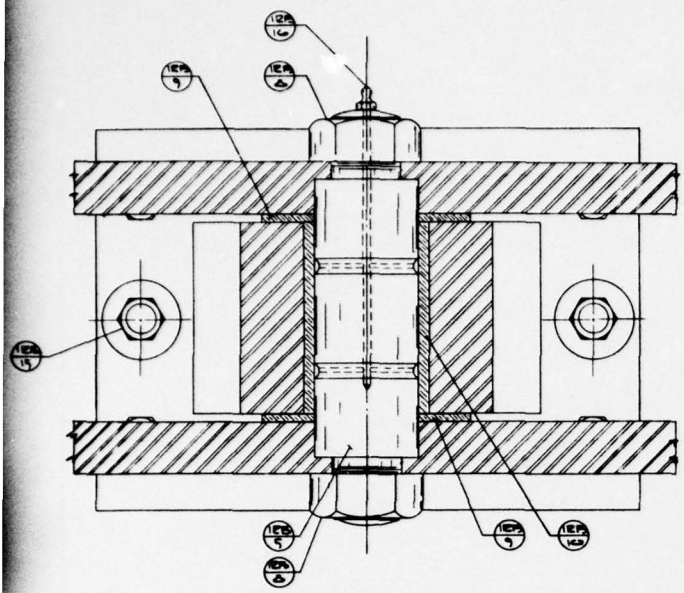


ELEVATION
SCALE: 1"=1'-0"



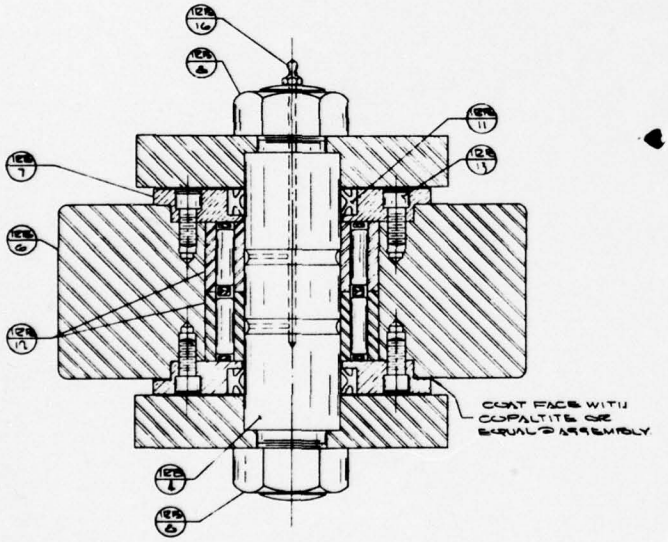


	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING



SECTION A-A

SCALE: HALF



SECTION B-B

SCALE: HALF

BILL OF MATERIAL

FIND No.	DWG No.	QTY	NOMENCLATURE	SPEC.	MAT'L.
12R-1	SEE SHT. 4		BOGIE YOKE		W.E.R.
12R-2	do		BOGIE CLEVIS		W.E.R.
12R-3	do		SPACER		C.E.S.
12R-4	do		WHEEL AXLE		1/2 MO S. STL.
12R-5	do		CLEVIS AXLE		1/2 MO S. STL.
12R-6	SEE SHT. 4 & 5		WHEEL		CLEV. STL. M1020 MOD. 1050 OR 660
12R-7	do		BEARING RETAINER & SEAL RE		ALUM 1050. SAE 1321 RES. 1050 OR 660
12R-8	do		NUT		ALUM 1050. SAE 1321 RES. 1050 OR 660
12R-9	do		THRUST WASHER		MOD. 1050 OR 660
12R-14	do		BEARING		MOD. 1050 OR 660
12R-11	4 & 5	24	GARLOCK GYNGCTFE STAINLESS CASE & SPRING		
12R-17	do	24	AMERICAN ROLLER BRG. & RCS-7355 ELUB.		
12R-13	do	192	5/8-11 UC-x 1 1/2 ROCK HD. 316 SS		STAINLESS
12R-16	do	12	7/16-9 NC-x 2 1/2 HEX HD-316 SS		do
12R-15	do	24	7/16-9 NC-x 2 1/2 HEX HD. SS W/ NUTS & WASHERS 316 SS		do
12R-16	do	18	GREASE FITTING W/ CAP LINCOLN #5000 OR EQ.		

REFERENCE DRAWINGS

SHT. No.	TITLE
601	INNER FACE BOGIE WHEELS DETAILS SHT. 1
602	INNER FACE BOGIE WHEELS DETAILS SHT. 2
603	INNER FACE BOGIE WHEEL SUPPORT
803	ROTATING DECK FRAMING PLAN

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. 7781
REGISTERED
CIVIL ENGINEER

APPROVED: Griff C. Lee
DATE: 1-28-66

ENGINEERS APPROVAL

Author		
STRUCTURAL		
PIPING		
MECHANICAL		
ELECTRICAL		
HYDRAULIC		
PUB. WORKS		
PROD. ENGR.		

MONO-MOORING SYSTEM

FOR

U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES

FORT BELVOIR, VIRGINIA

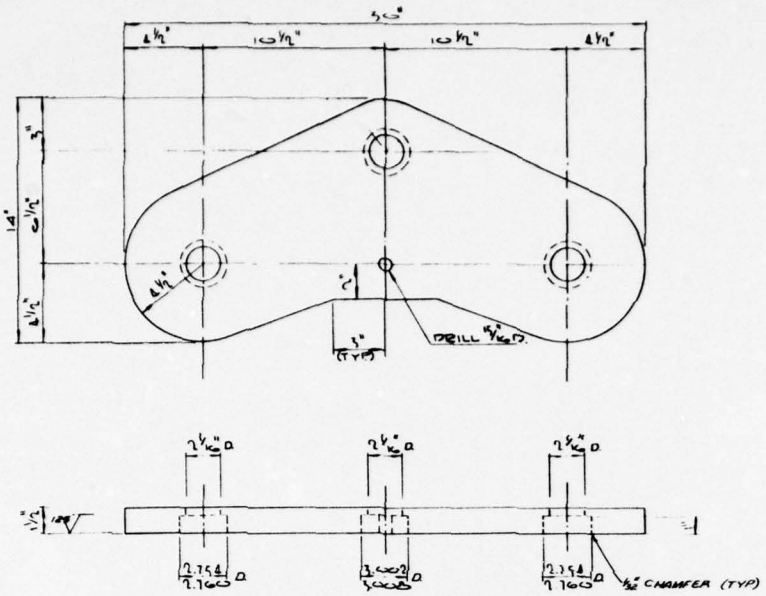
J. RAY Mc DERMOTT & CO., INC.

ENGINEERS — NEW ORLEANS, LA. — CONTRACTORS

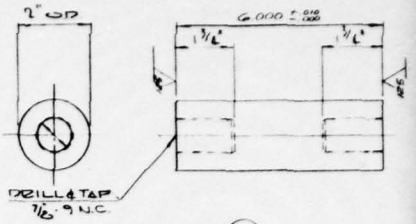
DRAWN BY	SCALE	DATE	PROJECT NO.
2033	NOTED	5-6-65	988-7371
PUBLICATION JOB NO.	66017	J. RAY McDERMOTT JOB NO.	SHEET NO. 603

ASSEMBLY
INNER FACE BOGIE WHEELS

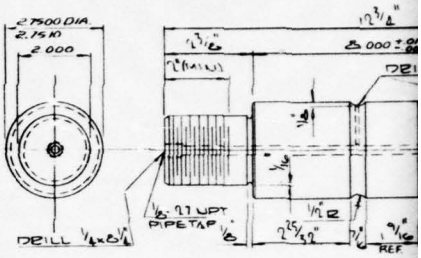
NO.	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.



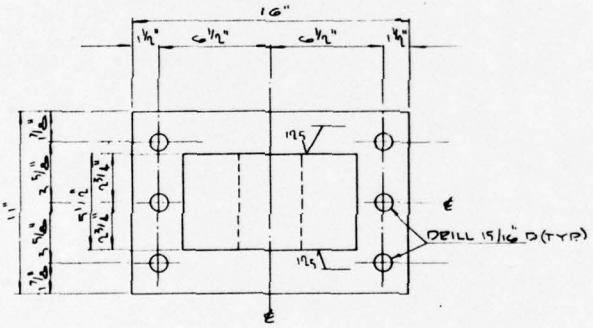
PART U° (12B/1)
MAT'L: 1.2 S.
U° REQ'D (12)
SCALE: 3" = 1'-0"

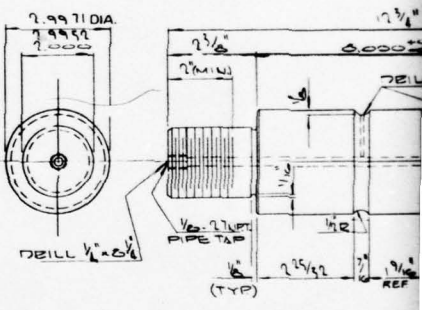


PART U° (12B/3)
MAT'L C.R.S.
U° REQ'D (6)
SCALE: HALF SIZE

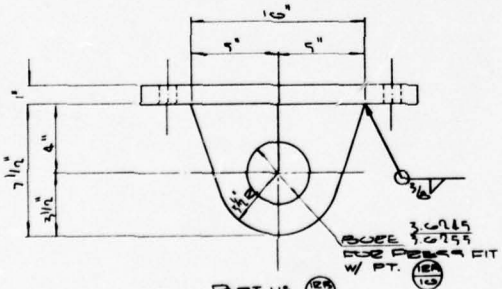


PART U° (12B/4)
MAT'L TYPE 316 MOD S.S.
U° REQ'D (12)
SCALE: HALF SIZE



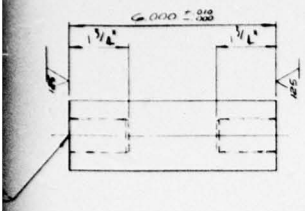


PART U° (12B/5)
MAT'L TYPE 316 MOD S.S.
U° REQ'D (6)
SCALE: HALF SIZE

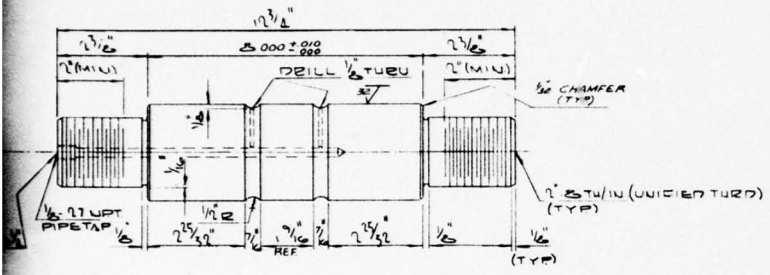


PART U° (12A/6)
MAT'L: 1.2 S.
U° REQ'D (6)
SCALE: 3" = 1'-0"

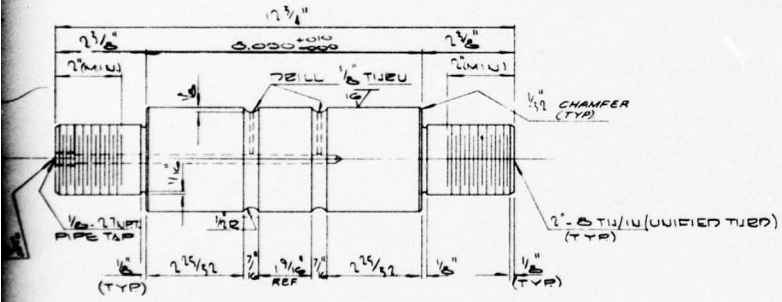
DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUC



PART No. (128/1)
MAT'L: CRS.
No. REQ'D (6)
SCALE: HALF SIZE



PART No. (128/4)
MAT'L: TYPE 316 MOD S.S.
No. REQ'D (12)
SCALE: HALF SIZE



PART No. (127/5)
MAT'L: TYPE 316 MOD S.S.
No. REQ'D (6)
SCALE: HALF SIZE

BILL OF MATERIAL

FIND No.	DWG No.	QTY.	NOMENCLATURE	SPEC.	MAT'L.
128,1	554	12	BOGIE YOKE		HRS.
128,2	do	6	BOGIE CLEVIS		HRS.
128,3	do	6	SPACER		CRS.
128,4	do	12	WHEEL AXLE		316 MOD S. STL.
128,5	do	6	CLEVIS AXLE		316 MOD S. STL.

REFERENCE DRAWINGS

SHT No.	TITLE
553	ASSEMBLY-INNER RACE BOGIE WHEELS
555	INNER RACE BOGIE WHEELS-DETAILS SHT 1

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 786
REGISTERED PROFESSIONAL ENGINEER IN CIVIL ENGINEERING

APPROVED: Griff C. Lee
J. RAY McDERMOTT & CO., INC.
DATE 1-28-66
ENGINEERS APPROVAL

	BY	DATE
PROJECT	GCL	1/28
STRUCTURAL		
PROCESS		
MECHANICAL	RMP	2/11
ELECTRICAL		
INSTRUMENT		
FAB. CHECK	RMP	2/11
PROOF CHECK		

MONO-MOORING SYSTEM

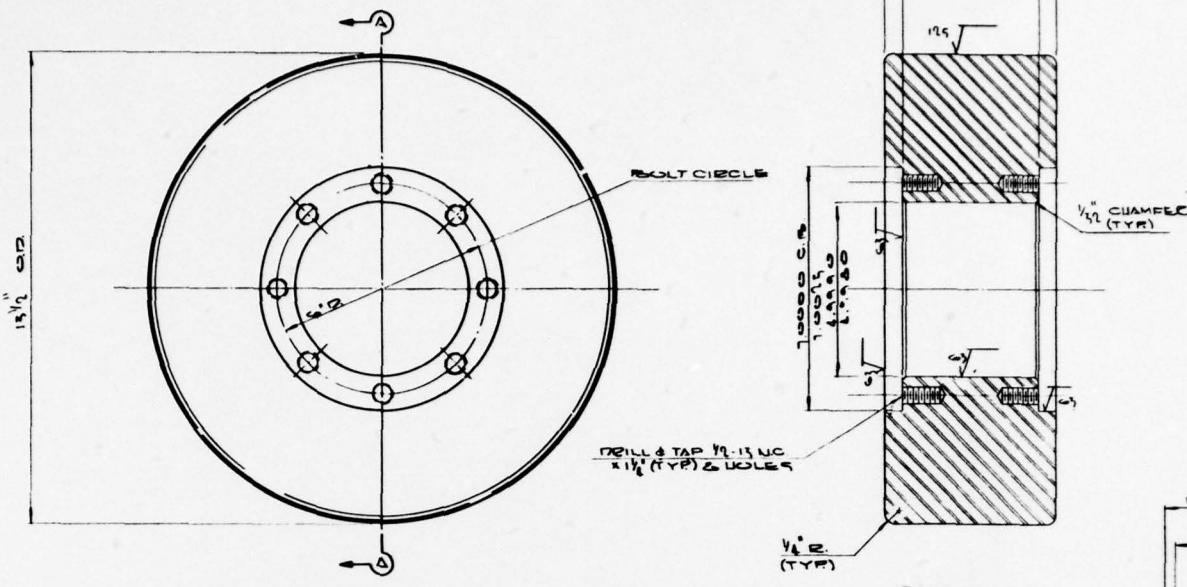
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY McDERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
ROSS	NOTE	5-10-65	USA 2971
FABRICATORS JOB NO.	66017	J. RAY McDERMOTT JOB NO.	SHEET NO. 554

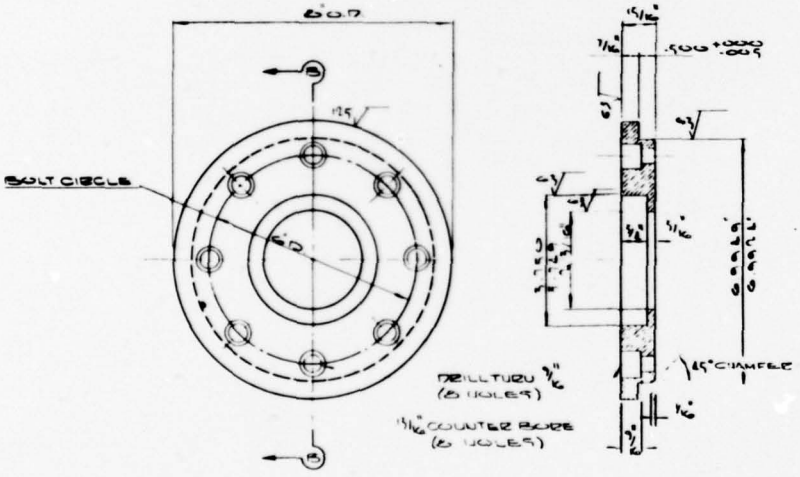
DETAILS SHT 1
INNER RACE BOGIE WHEELS

REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.



SECTION A-A

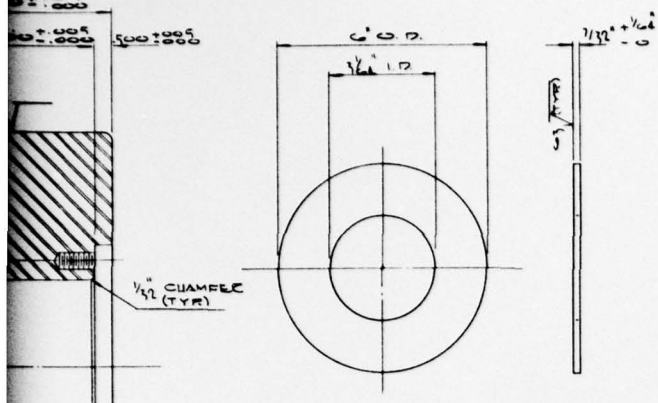
PART NO. (12A/6)
MAT'L: CARBON STL. 70000 MIN YIELD
NO. REQ'D (12)
SCALE: HALF SIZE



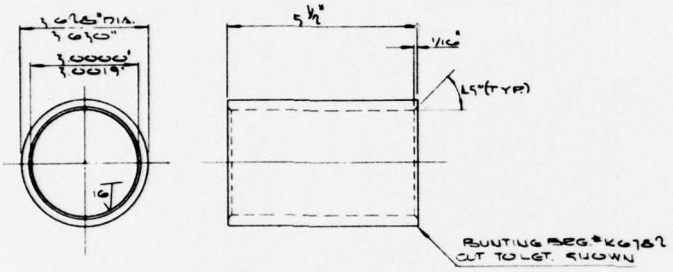
SECTION B-B

PART NO. (12A/7)
MAT'L BRONZE SAE 660
NO. REQ'D (12)
SCALE HALF SIZE

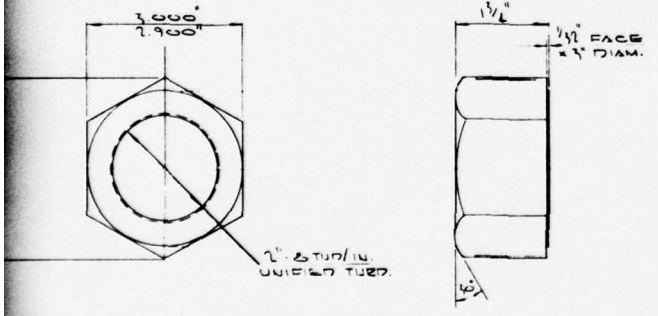
	DESIGN	STRUCT	PIPING	ELEC	ME	BY	REVISIONS	DATE	APP



PART N° (IER 9)
MAT'L: REG BRONZE SAE # 660
N° REQ'D (12)
SCALE: HALF SIZE



PART N° (IER 6)
MAT'L: REG BRONZE (SAE 660)
N° REQ'D (6)
SCALE: HALF SIZE



PART N° (IER 8)
MAT'L: ALUM. BRONZE SAE N° 701
N° REQ'D (12)
SCALE: 1/2 = 1"

BILL OF MATERIAL

FIND N°	DWG N°	QTY	NOMENCLATURE	SPEC	MAT'L
IER-6	888	12	WHEEL		CAST STL. (MODIFIED)
IER-7	do	24	REG. RETAINER & SEAL RE		REG. NEOP. SAE # 660
IER-8	do	24	NUT		ALUM BRZ. SAE 701
IER-9	do	12	THRUST WASHER		REG BRZ. SAE # 660
IER-10	do	6	BEARING		REG. BRZ. SAE # 660

REFERENCE DRAWINGS

FILE N°	TITLE
886	ASSEMBLY-INNER RACE BOGIE WHEELS
886	INNER RACE BOGIE WHEELS - DETAILS SHT 1

STATE OF LOUISIANA
GRIFF C. LEE
No. [illegible]
REGISTERED
PROFESSIONAL ENGINEER

APPROVED Griff C. Lee
J. RAY McDERMOTT & CO., INC.
DATE 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	[illegible]	1-28
STRUCTURAL		
PIPING		
MECHANICAL	[illegible]	2/2
ELECTRICAL		
INSTRUMENT		
P&D CHECK	[illegible]	2/17
PROOF CHECK		

MONO-MOORING SYSTEM

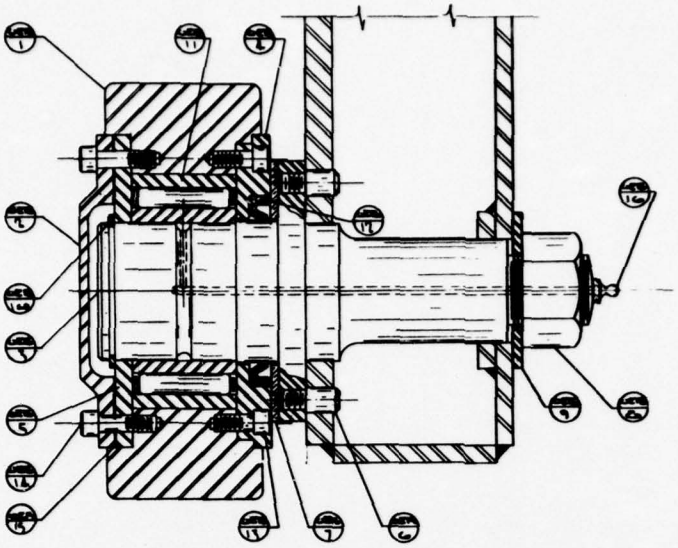
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA

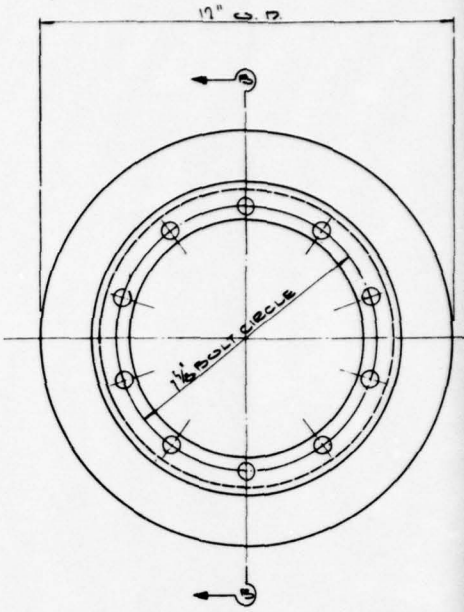
DRAWN BY	SCALE	DATE	PROJECT NO.
RDSS	VGTEM	5-8-65	USA 7971
FABRICATORS JOB NO.	66017	J. RAY McDERMOTT JOB NO.	SHEET NO.

DETAILS SHT 2 OF 2
INNER RACE BOGIE WHEELS

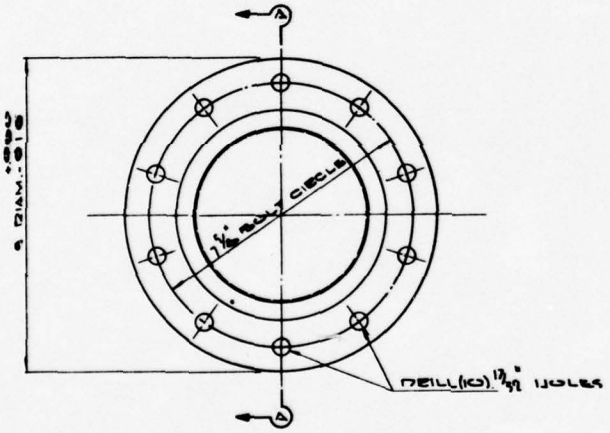
NO	DATE	APP	DESIGN	STRUCT	PIPING	ELEC	MK	BY	REVISIONS	DATE	APP

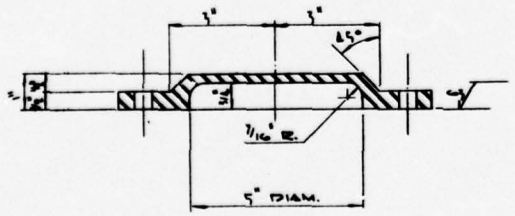


ASSEMBLY
OUTER RACE BOGIE

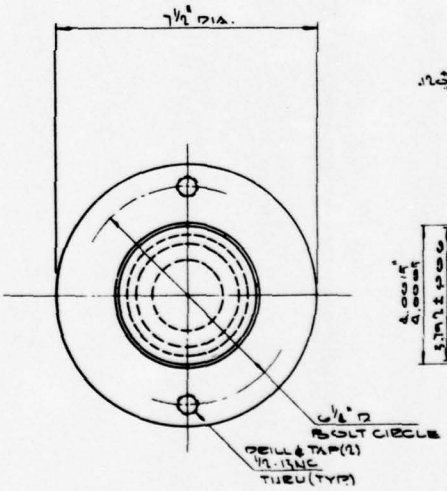


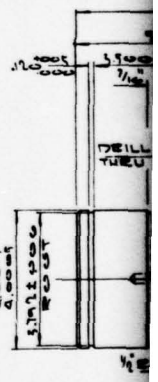
PART
MAT'L: CARBON STL.
Nº REQ'D
SCALE: HA





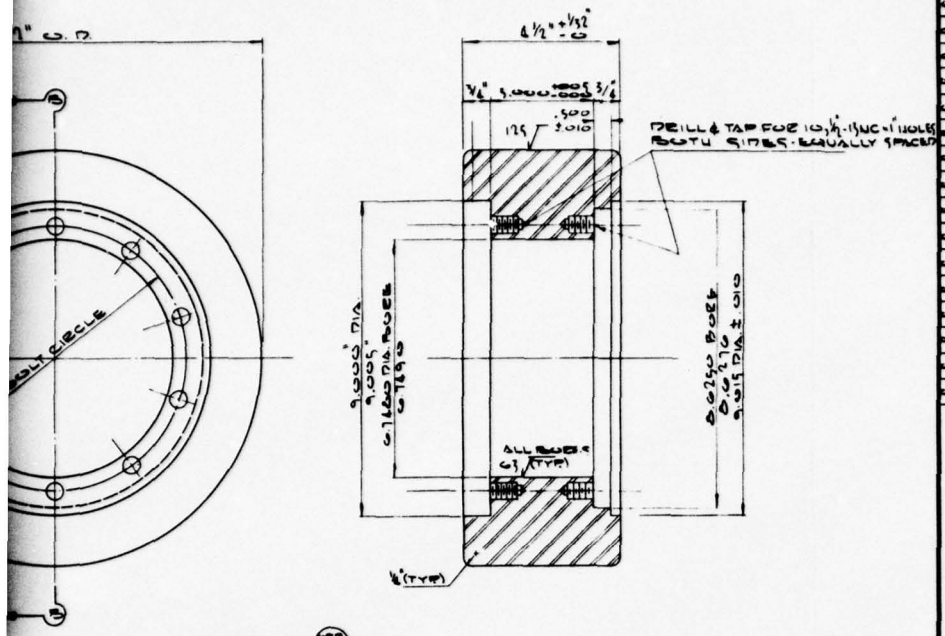
PART Nº 7
MAT'L. HR 9
Nº REQ'D (16)
SCALE: HALF SIZE



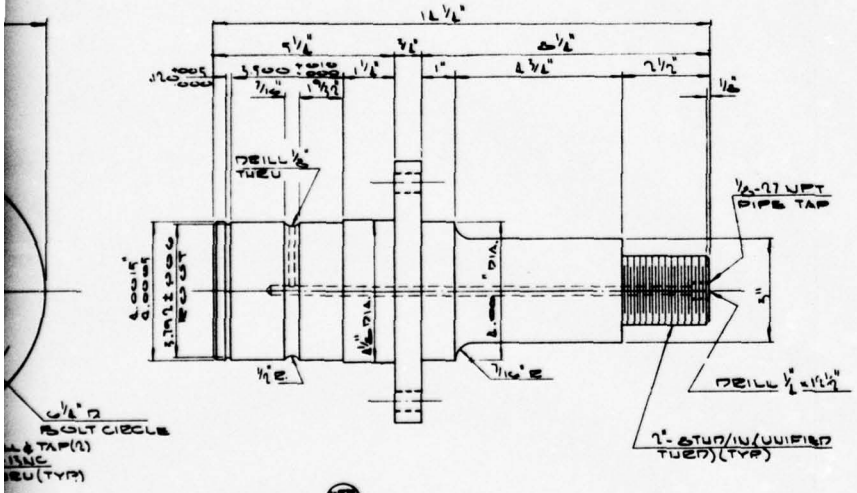


PART
MAT'L TYPE 316
Nº REQ'D
SCALE: HA

DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING



PART No. (SEE 1)
MAT'L CARBON STL. 60,000 MIN. YIELD
No. 8601-7 (16)
SCALE: HALF SIZE



PART No. (SEE 1)
MAT'L. TYPE 316 MOD S.S.
No. 8601-7 (16)
SCALE: HALF SIZE

BILL OF MATERIAL

FIND No.	DWG No.	QTY.	NOMENCLATURE	SPEC.	MAT'L.
UMER-1	8601	16	WHEEL		CAST STL 65,000 YIELD
UMER-2	do	16	CAP		U.S.S.
UMER-3	do	16	WHEEL AXLE		316 MOD S. STL.
UMER-4	SEE SHT. 8601		OIL SEAL HOUSING HOUSING RES. RETAINER		PURE PODL. 968°660
UMER-5	do		RES. RETAINER		316 MOD S/S
UMER-6	do		RODS		316 MOD S/S
UMER-7	do		THRUST WASHER		PURE PODL. 968°660
UMER-8			SEALER & SHT 8601		
UMER-9	SEE SHT. 8601		WASHER		U.S.S.
UMER-10	8601	16	TRU-ARC RETAINER RING #5100-100 (PH-15-7-MO)		PH-15-7-MO
UMER-11	do	16	AMERICAN ROLLER BEE #HCS-771		
UMER-12	do	16	GARLOCK 5 F3 X 7 G 10 #3 CASE & SPRING		S. STL
UMER-13	do	160	1/4"-13 UC x 1 1/2 SOCK. HD. 316 S/S		S. STL.
UMER-14	do	160	1/4"-13 UC x 1 1/2 LG SOCK. HD 316 S/S		S. STL.
UMER-15	do		COPALTITE COATING		GASKET
UMER-16	do		GREASE FITTING W/CRACK LINCOLN #5000 SEAWEL		

REFERENCE DRAWINGS

DWG No.	TITLE
8601	DETAILS OUTER FACE ROSIE WHEELS
8601	ROTATING DECK REAMING PLAN

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. 7115
REGISTERED
IN
CIVIL ENGINEERING

APPROVED: [signature]
J. RAY McDERMOTT & CO., INC.
DATE: 1-28-66
ENGINEERS APPROVAL

MOND-MOORING SYSTEM

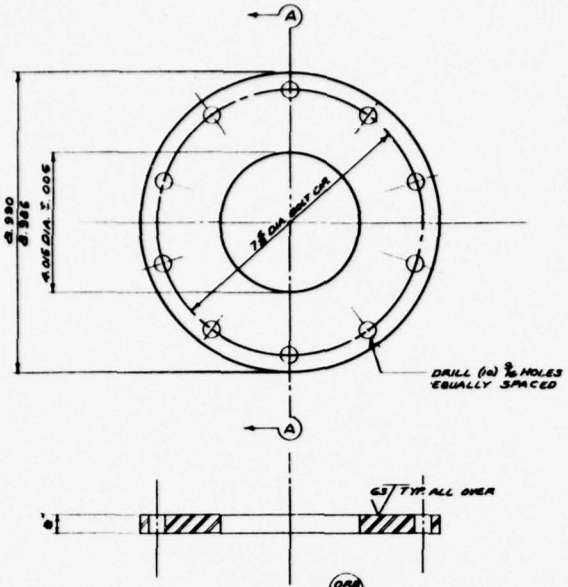
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY McDERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

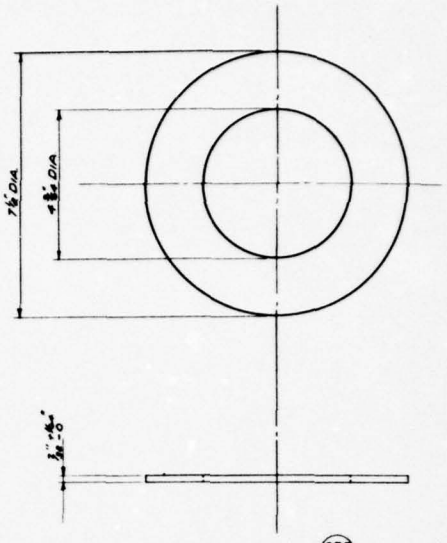
DRAWN BY	SCALE	DATE	PROJECT NO.
ROSS	NOTED	5-26-65	USA-7971
FABRICATION JOB NO.	56017	J. RAY McDERMOTT JOB NO.	SHEET NO. 8&9

ASSEMBLY & DETAILS OUTER FACE ROSIE WHEELS (SHT. 1)

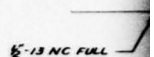
NO.	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

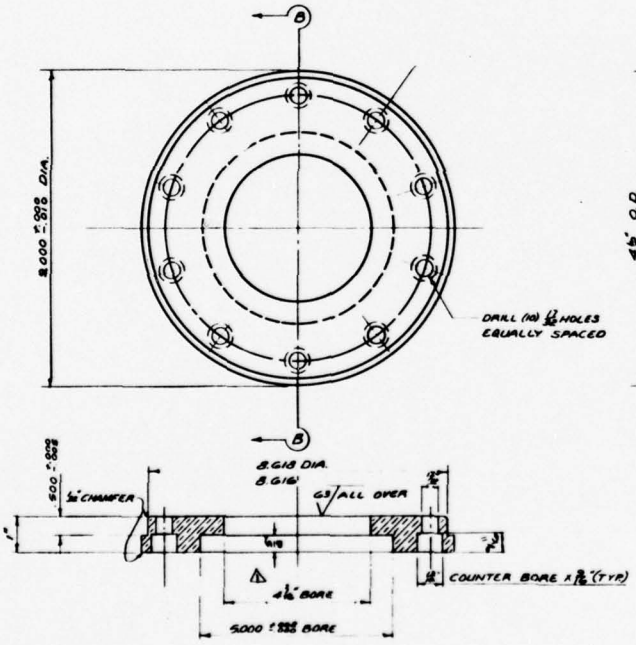


PART NO. (ORB 3)
MAT'L - TYP 316 M10 S/S
Nº REQ'D (1G)
SCALE: HALF SIZE

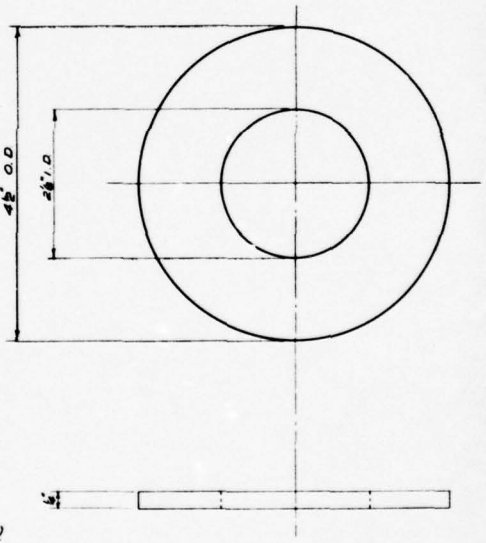


PART NO. (ORB 7)
MAT'L - BRG BRONZE SAE #660
Nº REQ'D (1G)
SCALE: HALF SIZE



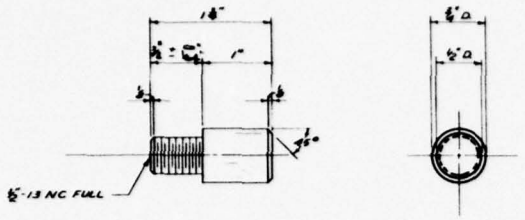


PART NO. (ORB 4)
MAT'L - BRG BRONZE SAE #660
Nº REQ'D (1G)
SCALE: HALF SIZE



PART NO. (ORB 9)
MAT'L - HR.S.
Nº REQ'D (1G)
SCALE FULL SIZE

	DESIGN	STRUCT.	PIPING	ELEC.	MR.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MR.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPE



PART NO (ORB 6)
MAT'L - TYPE 316 MO S/S
NO REQ'D (32)
SCALE FULL SIZE

AE "GGO

BILL OF MATERIAL

FIND NO	DWG NO	QTY	NOMENCLATURE	SPEC.	MAT'L
ORB 4	2057	16	OIL SEAL HOUSING AND BEARING RETAINER		BRG. BRONZE SAE "660
ORB 5	do	16	BEARING RETAINER		316 MO S/S
ORB 6	do	32	DOGS		316 MO S/S
ORB 7	do	16	THRUST WASHER		BRG. BRONZE SAE "660
ORB 9	do	16	WASHER		HR S

REFERENCE DRAWING

SHT NO	TITLE
2056	OUTER RACE BOGIE WHEELS, ASSEMBLY & DETAILS

REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.
							1	MS	CHANGED DWG NO ORB 4 FROM 4X6 TO 4	4-1-66	

STATE OF LOUISIANA
GRIFF C. LEE
REG NO 7551
REGISTERED
PROFESSIONAL ENGINEER
APPROVED
DATE 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT		
STRUCTURAL		
PIPING		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
PAR. CHECK		
PROP. CHECK		

MONO-MOORING SYSTEM

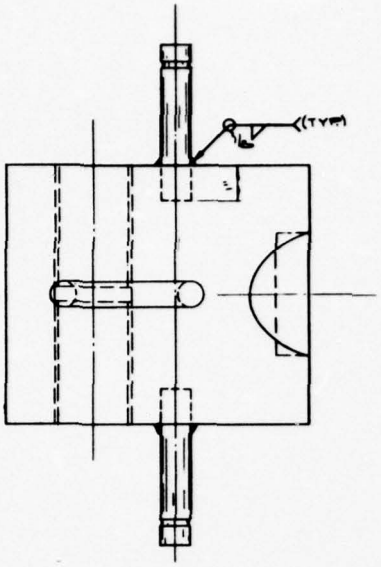
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

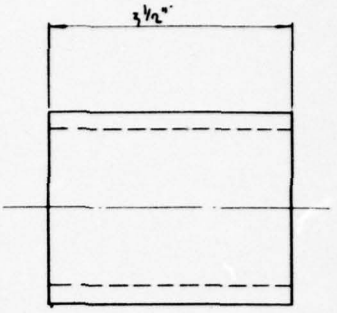
J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

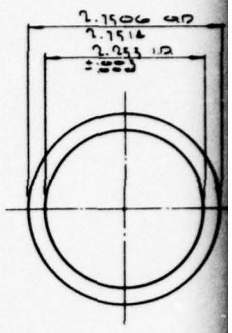
DRAWN BY	SCALE	DATE	PROJECT NO.
FRANCHINA	NOTED	5-20-65	USA 2871
FABRICATORS JOB NO.	56017	J. RAY McDERMOTT JOB NO.	SHEET NO. 2057

DETAILS
OUTER RACE BOGIE WHEELS (SHT 2)

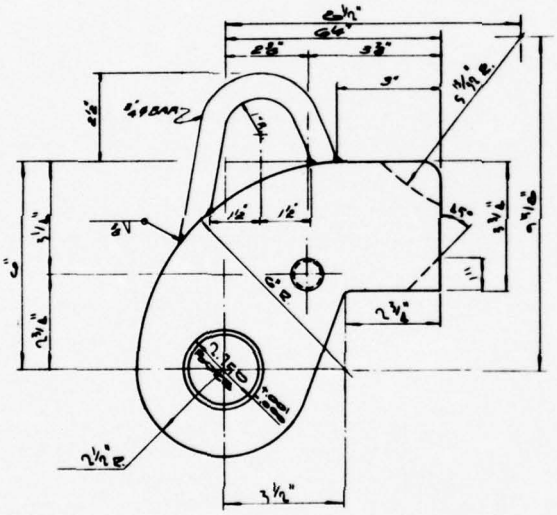
1

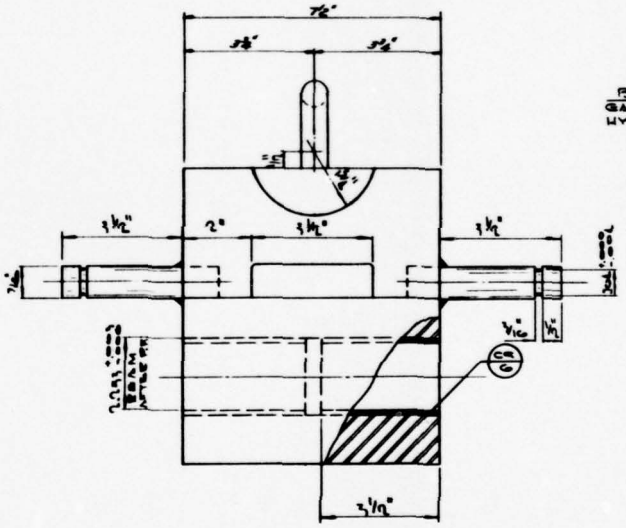






PART U° (CS/6)
MATL: GATKIB / HYDELYTE® 114
U° REQ'D (92)
SCALE: FULL



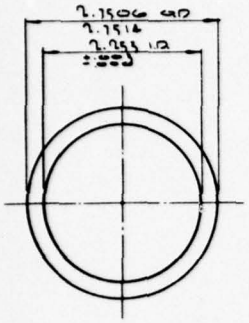


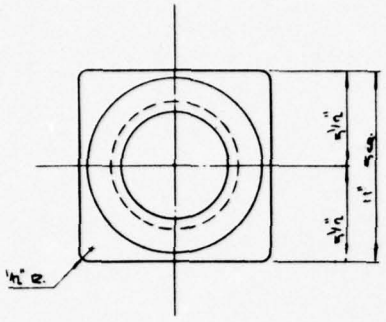
PART N° (CS/1)
MATL: MILD STEEL
U° REQ'D (10)
SCALE: HALF SIZE

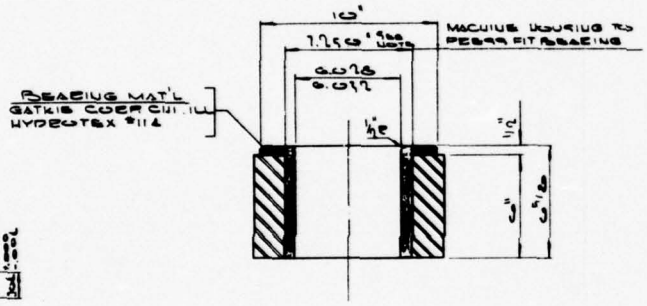
DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	EL

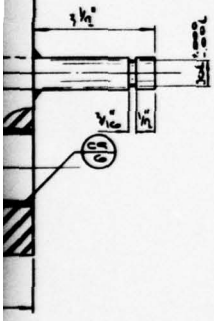
BILL OF MATERIAL

FIND No.	DWG. No.	QTY.	NOMENCLATURE	SPEC	MAT'L.
CR-1	888	16	PAWL		MILD STL.
CR-2	do	16	TRUNNION BEARING		MEB DET.
CR-6	do	32	BUSHING		GATKE HYDROTEX









PART No. CR-9

MAT'L: MILD STEEL HOUSING

No. REQ'D (16)

SCALE: 3" = 1'-0"

REFERENCE DRAWINGS

PART No.	TITLE
888	ASSEMBLY - CHAIN STOPPER

No.	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7155
REGISTERED ENGINEER
CIVIL ENGINEERING

APPROVED: G. C. Lee

J. RAY McDERMOTT & CO., INC. DATE 1-28-66

ENGINEERS APPROVAL

PROJECT		
STRUCTURAL		
PIPING		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
FAB. CHECK		
FIELD CHECK		

MONO-MOORING SYSTEM

FOR

U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES

FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.

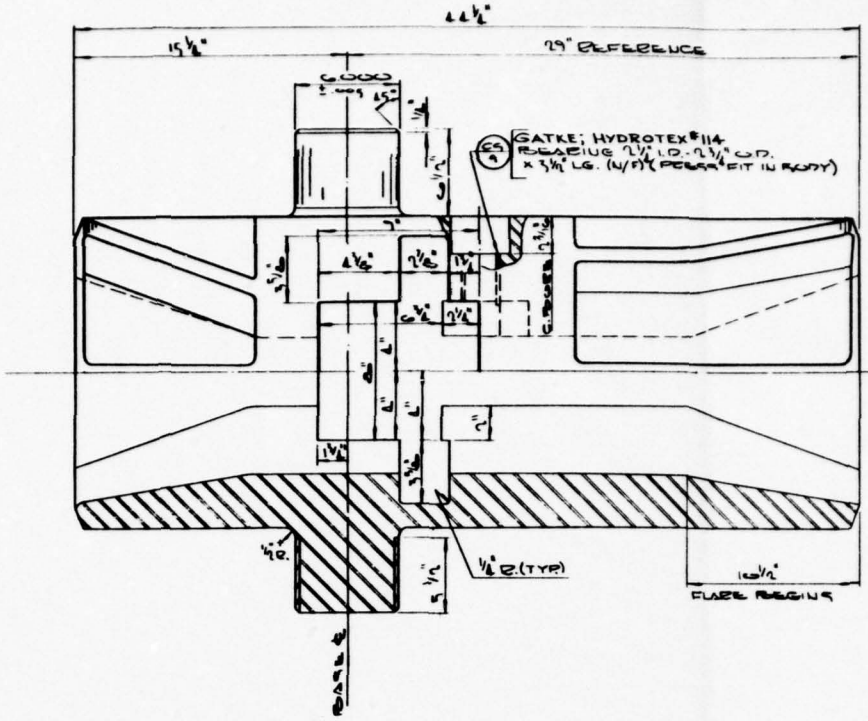
ENGINEERS — CONTRACTORS

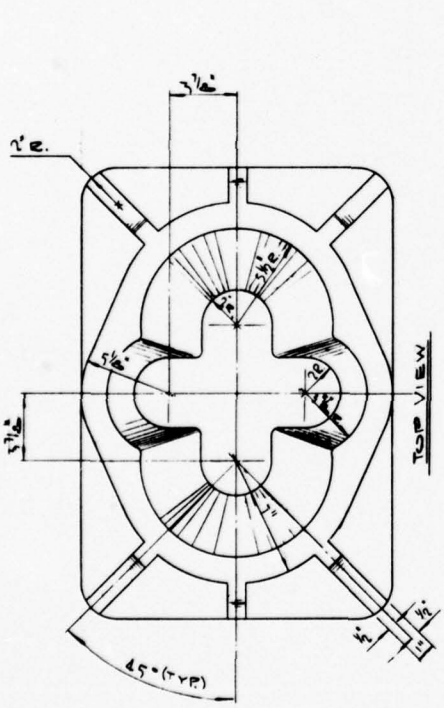
NEW ORLEANS, LA.

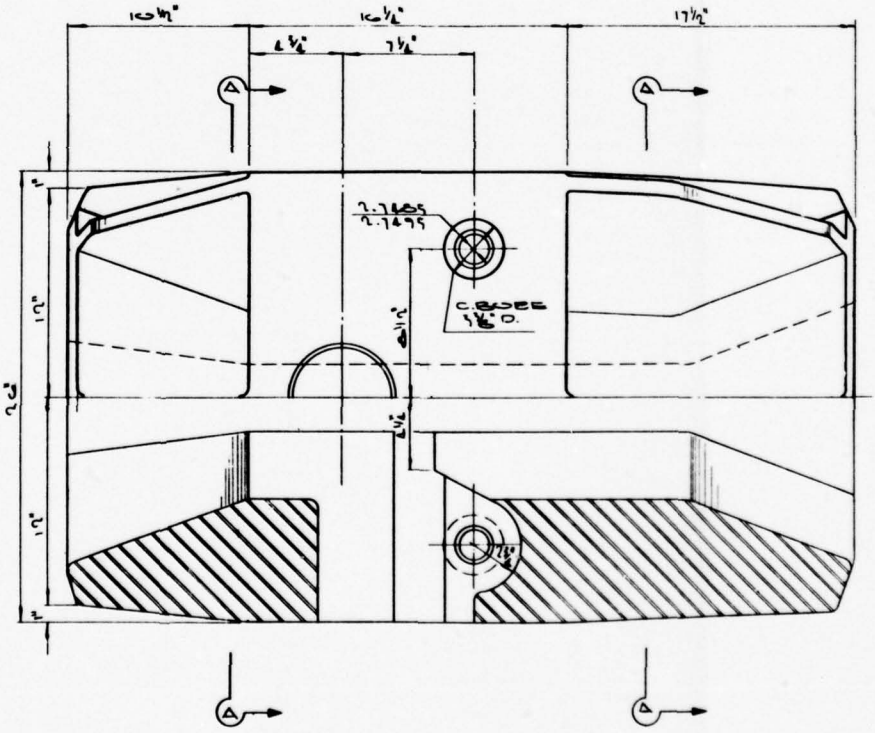
DRAWN BY	SCALE	DATE	PROJECT NO.
RSYE	VARIES	7-26-65	USA-7971
FABRICATORS JOB NO.	66017	J. RAY McDERMOTT JOB NO.	SHEET NO. 889

CHAIN STOPPER DETAIL SHEET No. 1.

1



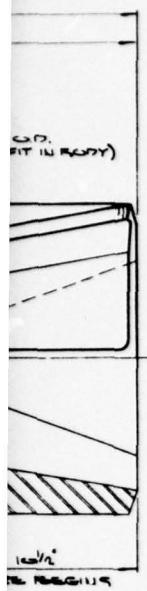




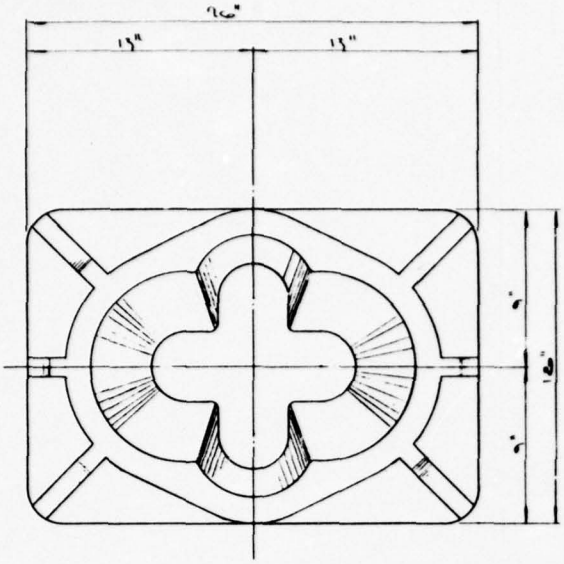
	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.

1

2

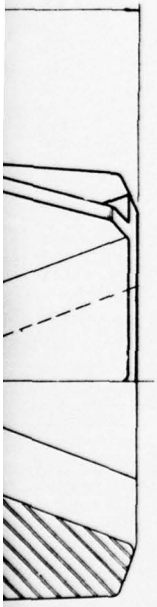


FRONT ELEVATION

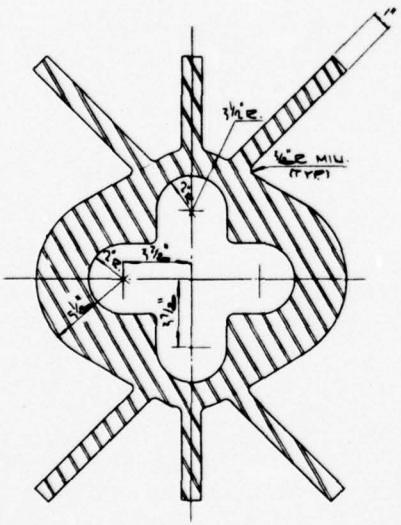


BOTTOM VIEW

PART No. (5)
MAT'L MILD STL.
No REQ'D (8)



SIDE ELEVATION



SECTION A-A

BILL OF MATERIAL

FIND No.	DWG No.	QTY	NOMENCLATURE	SPEC	MAT'L.
CS-5	[illegible]	8	BODY		STEEL
DS-9	[illegible]	16	BUSHING		HYDROTEX 94

REFERENCE DRAWINGS

DWG No.	TITLE
[illegible]	ASSEMBLY - CHAIN STOPPER

DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7126
REGISTERED
PROFESSIONAL ENGINEER

APPROVED: M C Lee
J. RAY McDERMOTT & CO., INC.
DATE: 1-28-66

ENGINEERS APPROVAL

		DATE
PROJECT	[illegible]	1-27-66
STRUCTURAL		
PIPING		
MECHANICAL	[illegible]	2/67
ELECTRICAL		
INSTRUMENT		
PAR. CODES	[illegible]	2/67
PROP. CODES		

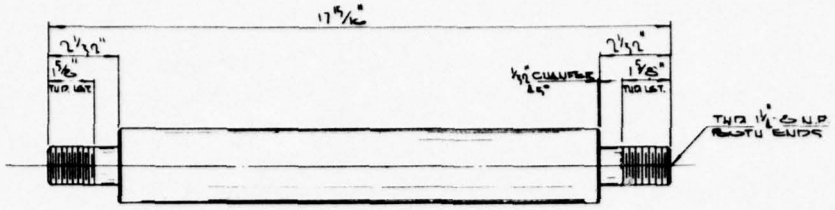
MONO-MOORING SYSTEM

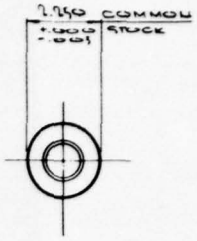
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY McDERMOTT & CO., INC.
ENGINEERS CONTRACTORS
NEW ORLEANS, LA.

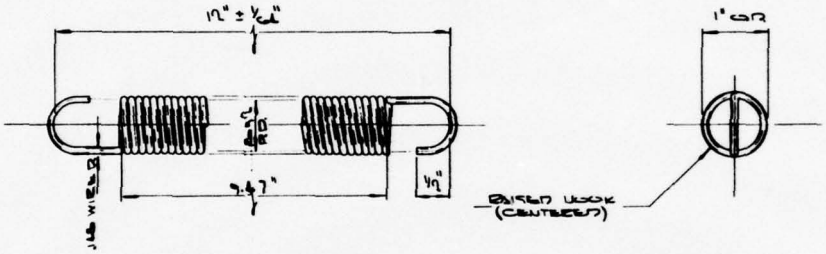
DRAWN BY	SCALE	DATE	PROJECT NO.
RDSS	1"=1'-0"	7-10-65	USA 7971
FABRICATORS JOB NO.	J. RAY McDERMOTT JOB NO.		SHEET NO.
66017			890

CHAIN STOPPER
DETAIL SHEET No. [illegible]





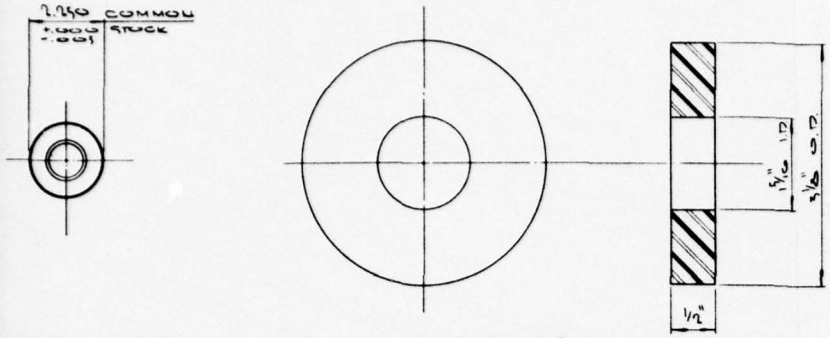
PART N° (EG 9)
N° REQ'D (6)
MAT'L: MONEL
SCALE: HALF SIZE



PART N° (EG 4)
N° REQ'D (10)
MAT'L: SAE 30310 S.S
BEARING MONEL
SCALE: FULL

SPRING WORKING SPECIFICATIONS	
OUTSIDE DIAM.	1"
PITCH DIAM	.892"
WIRE DIAM.	.148"
INITIAL TENSION	10 lbs
N° COILS	64
COIL LENGTH	9.47
LGT. INSIDE HOOKS	17"
APPROX. SPRING RATE	1.5 lbs/" DEFLECTION
TOTAL DEFLECTION	6" MAX.

	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING



PART Nº CS/7
Nº REQ'D (16)
MAT'L: A191 TYPE 316 S.S.
SCALE: FULL

BILL OF MATERIAL

FIND Nº	DWG Nº	QTY	NOMENCLATURE	SPEC	MAT'L
CS-6	891	16	SPACING		5/8 MONEL
CS-5	do	8	SHAFT		MONEL
CS-7	do	16	WASHER		5/16 S/S

REFERENCE DRAWINGS

SHT. Nº	TITLE
885	ASSEMBLY - CHAIN STOPPER

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7186
REGISTERED PROFESSIONAL ENGINEER
CIVIL ENGINEERING

APPROVED: G.C. Lee
J. RAY McDERMOTT & CO., INC.
DATE: 1-22-62
ENGINEERS APPROVAL

	BY	DATE
PROJECT		
STRUCTURAL		
PROCESS		
MECHANICAL		9/7
ELECTRICAL		
INSTRUMENT		
PIPE STRESS		
PROP. STRESS		

MONO-MOORING SYSTEM

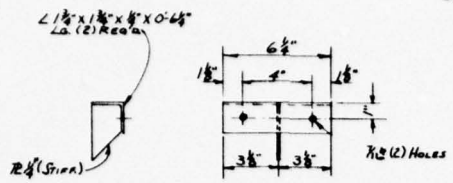
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — NEW ORLEANS, LA. — CONTRACTORS

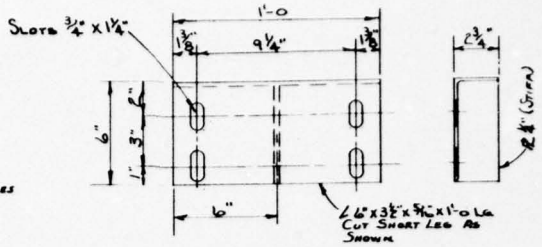
DRAWN BY	SCALE	DATE	PROJECT NO.
BOSS	3" = 1'-0"	7-25-61	098-2971
FABRICATORS JOB NO.	96617	J. RAY McDERMOTT JOB NO.	SHEET NO. 891

CHAIN STOPPER
DETAILS SHEET Nº 3

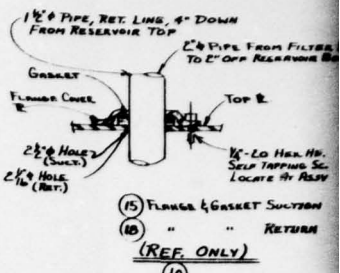
DESIGNS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

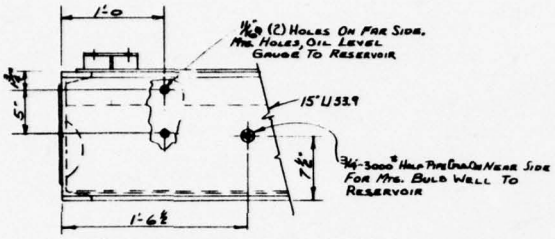


DETAIL 3
SCALE 3"=1'-0

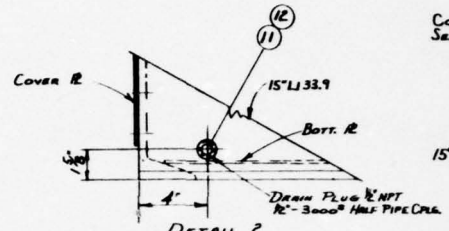


DETAIL 4
SCALE 3"=1'-0

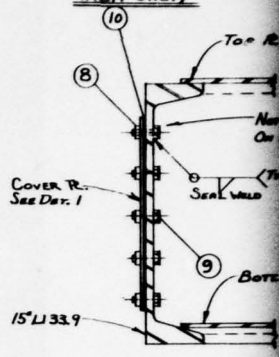




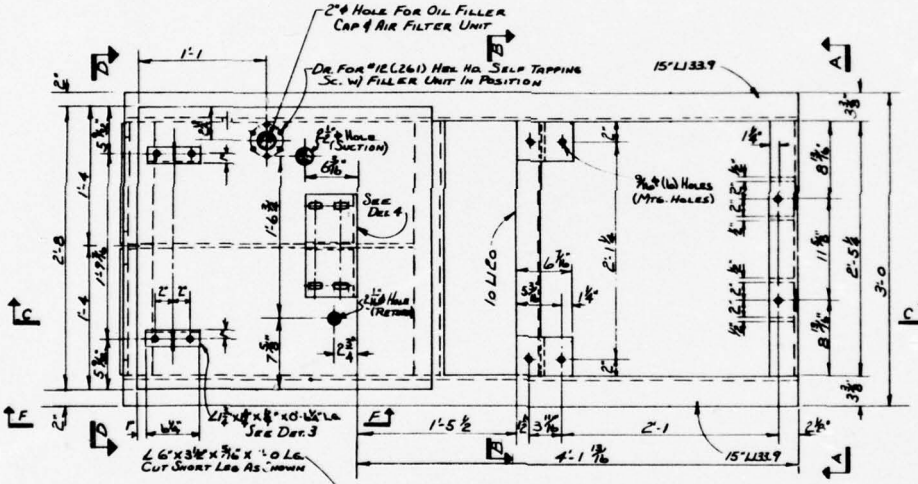
SECTION F-F

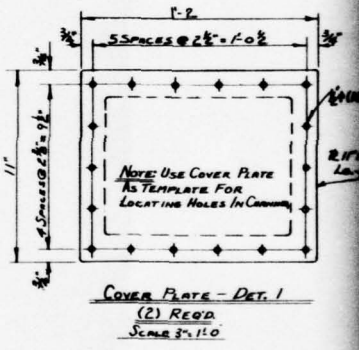


DETAIL 2
(2) REQ'D - ONE NS & ONE FS
SCALE 3"=1'-0

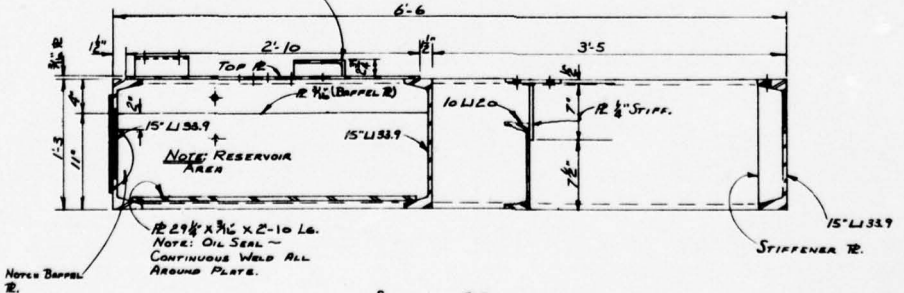


SECTION E-E
SCALE 3"=1'-0

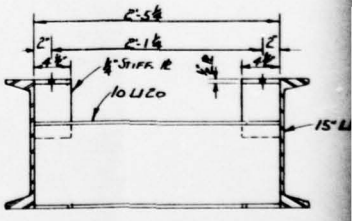




COVER PLATE - DET. 1
(2) REQ'D.
SCALE 3"=1'-0

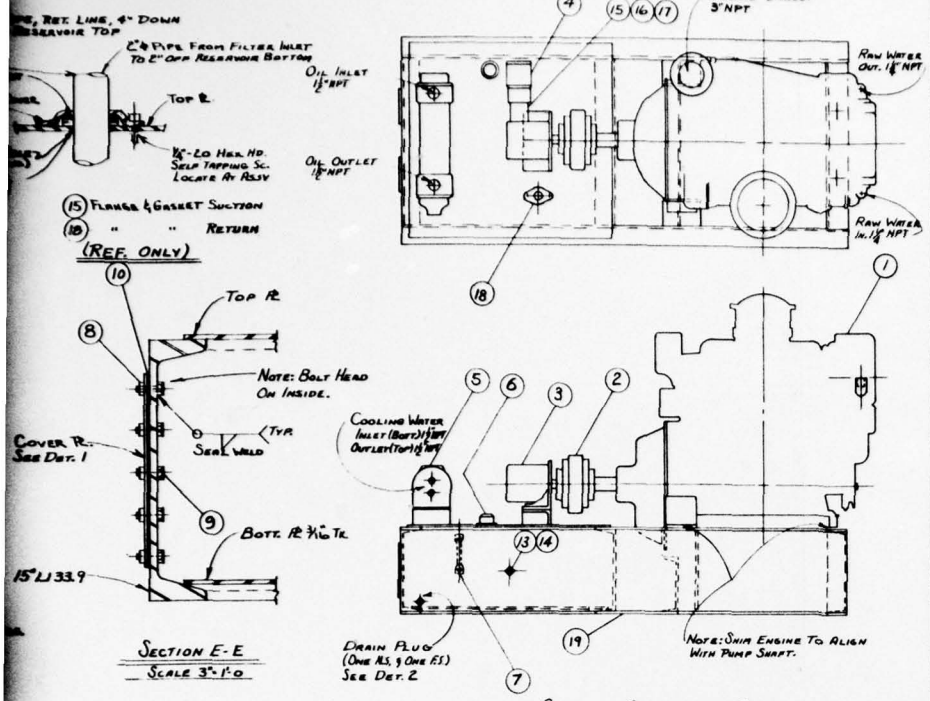


SECTION C-C



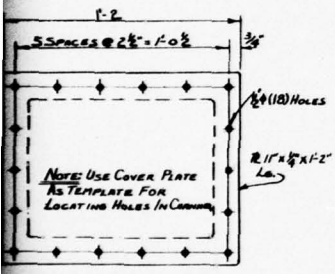
SECTION B-B

DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING

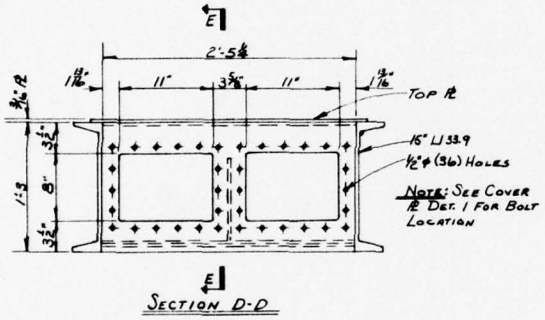


General Arrangement Plan
Scale 1" = 1'-0

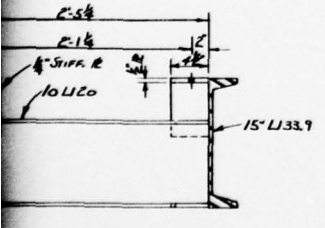
Section E-E
Scale 3" = 1'-0



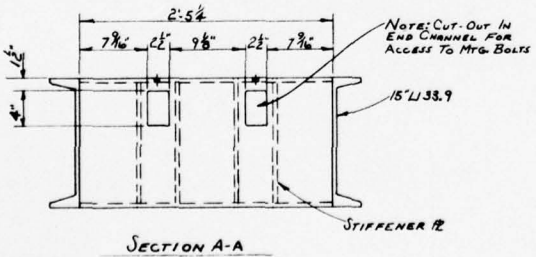
Cover Plate - Det. 1
(2) Reqd
Scale 3" = 1'-0



Section D-D



Section B-B



Section A-A

Bill of Material

Find No.	Dwg. No.	Qty.	Nomenclature	Spec.	Mat'l.
1	892	1	Engine (G.M. Model 3061-M)		
2	"	1	Dodge Cplg. # PX-100 B		
3	"	1	Vickers Pump # 35V30A-1C10-13L		
4	"	1	Vickers Filter # 50S-149-M-3-BL		
5	"	1	Vickers Cooler # OCW-4-10 Spec.		Spec For Seawater
6	"	1	Vickers Filler & Air Breather # SP-113-B		
7	"	1	Racine Level Gauge		
8	"	36	Nut-Reg. Semi-Fin Hex. ⅝"-16		
9	"	36	Bolt-Sq. Hd. Reg. ⅝"-16 x 1½" Lg.		
10	"	2	1/16" Neoprene Sheet Gasket		
11	"	2	Forged Stl. 3000# Half Cplg. 1½"-NPT		
12	"	2	Forged Stl. Hex. Hd. Plug 1½" NPT		
13	"	1	Forged Stl. 3000# Half Cplg. ¾" NPT		
14	"	1	Drive Well, Vickers # OCBW-1-10		
15	"	1	Vickers Tank Flange & Gasket # 39396 (Suction)		
16	"	1	1½" Pipe (Length To Suit)		
17	"	1	Steel Nipple Pipe 1½" NPT x 4" Lg.		
18	"	1	Vickers Tank Flange & Gasket # 39395 (Return)		
19	"	1	Engine Fdn. & Reservoir		Steel

Reference Drawings

Dwg. No.	Title
003	Arrangement Plan
801	Machinery Deck Framing Plan
862	Buoy Winch Hydraulic System Piping Skid Plan

No.	Date	App.	Design	Struct.	Piping	Elec.	Mk.	By	Revisions	Date	App.

State of Louisiana — Griff C. Lee — Reg. No. 786 — Registered Professional Engineer in Civil Engineering

Approved: G. C. Lee
J. Ray McDermott & Co., Inc.
Date 1-27-66

Engineers Approval

	By	Date
Project		1/26/66
Structural		
Process		
Mechanical		9/21
Electrical		
Instrument		
Fab. Check		9/21
Prod. Check		

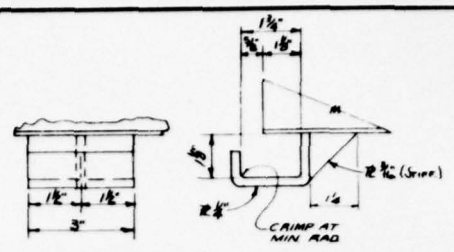
Mono-Mooring System

For
U.S. Army Engineer Research & Development Laboratories
Fort Belvoir, Virginia

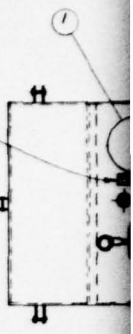
J. Ray Mc Dermott & Co., Inc.
Engineers — Contractors
New Orleans, La.

Drawn By	Scale	Date	Project No.
S. Gill Hosty	1½"=1'-0" Ex. As Noted	8-12-65	USA 2971
Fabricators Job No. 56017		J. Ray McDermott Job No.	Sheet No. 892

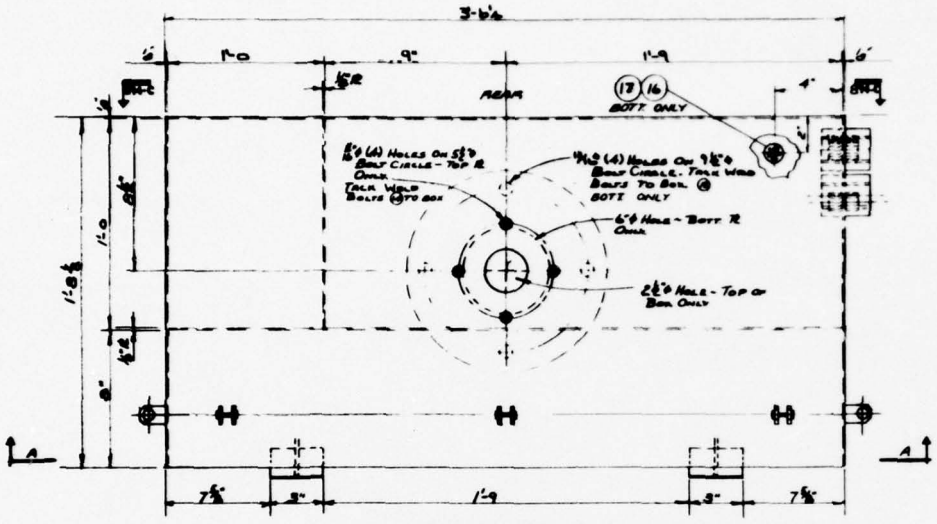
Hydraulic Pumping Unit & Fdn. Det.



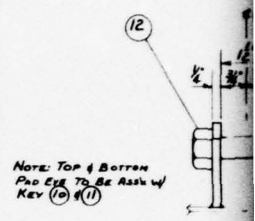
DETAIL #3
HALF SIZE

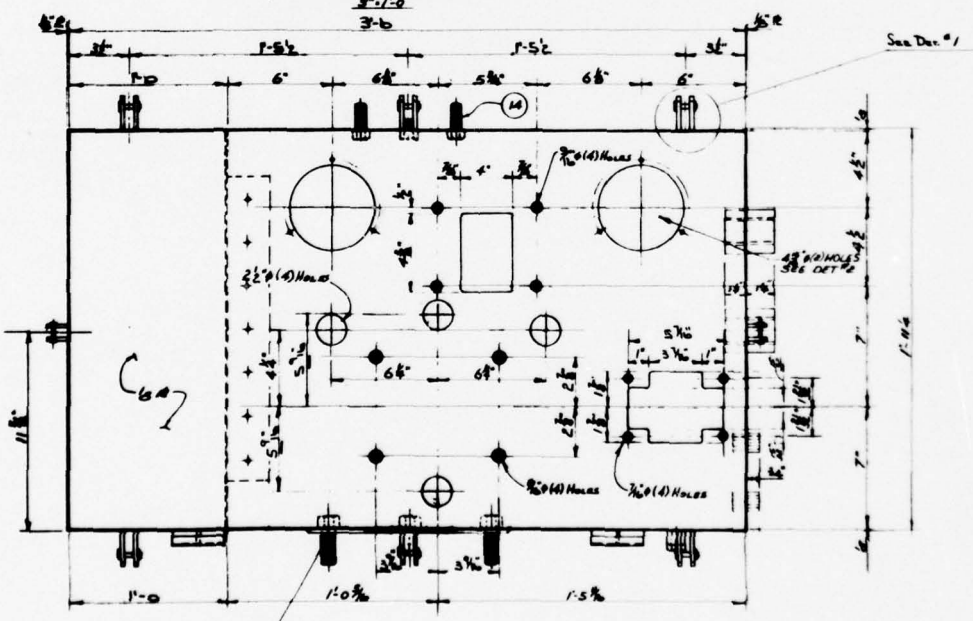


NOTE: ATTACH NAME PLATES TO CONTROL PANEL AFTER GAUGES HAVE BEEN MOUNTED TO PANEL.

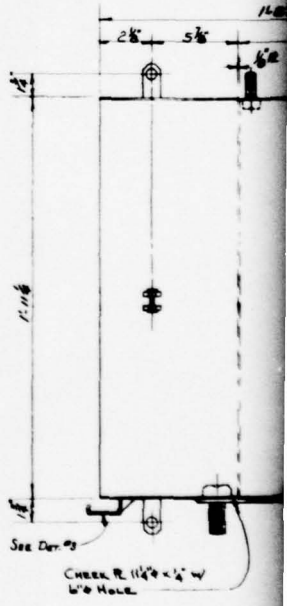


PLAN AT TOP
COVER #3 REMOVED
3"=1'-0



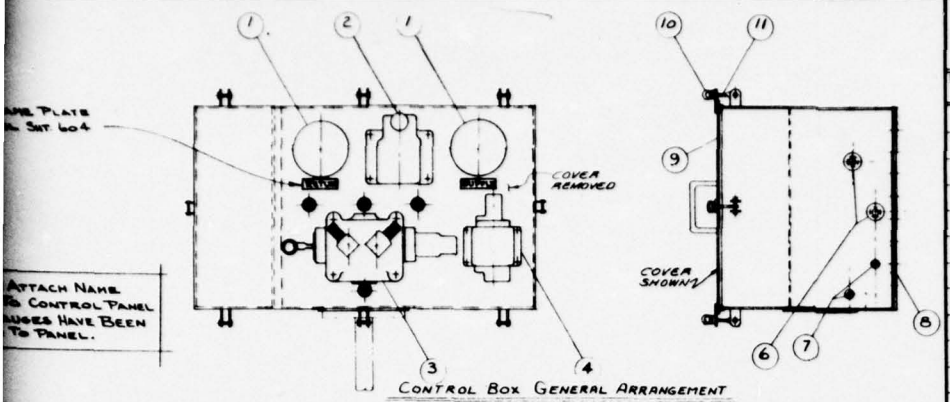


SECTION "A-A"
3"=1'-0



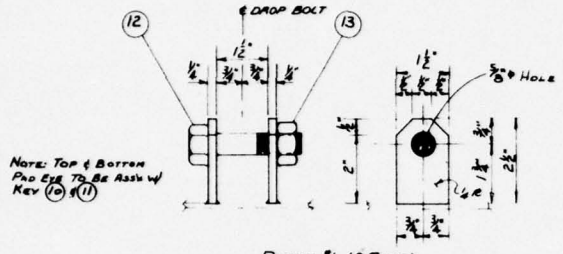
END E
3"

DESIGN	STRUCT	PIPING	ELEC	MK	BY	REVISIONS	DATE	APP	DESIGN	STRUCT	PIPING	ELEC	MK	BY	REVISIONS	DATE	APP	DESIGN	STRUCT	PIPING

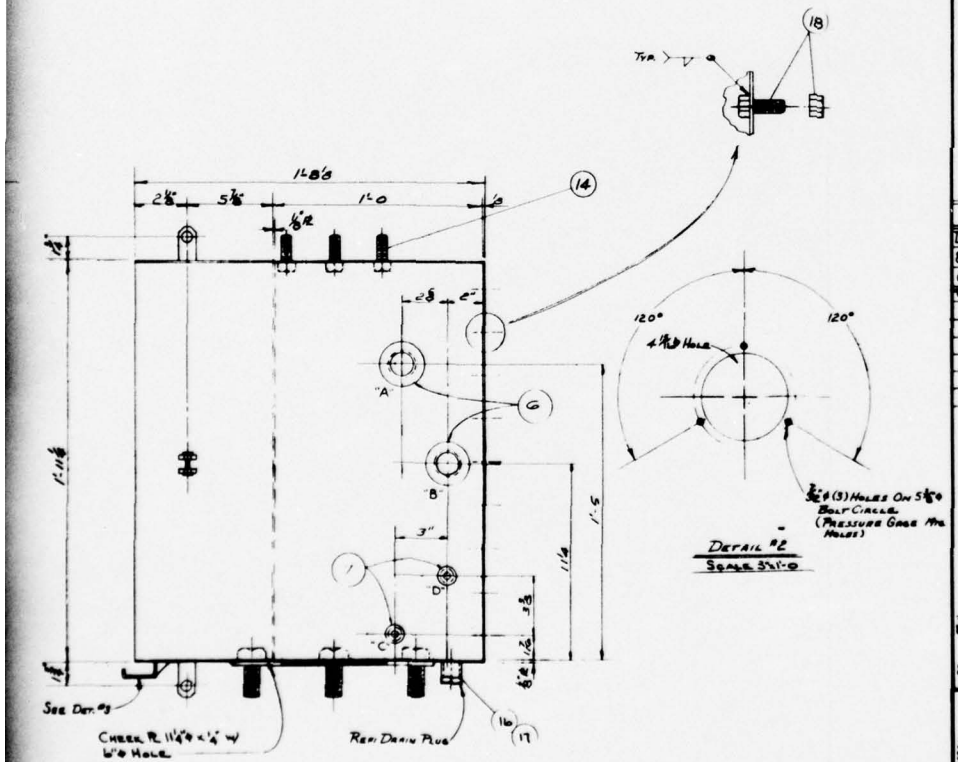


CONTROL BOX GENERAL ARRANGEMENT

SCALE 1½" = 1'-0



DETAIL "1" (8 REQ'D)
AS SHOWN - SC ½"=1"



END ELEVATION

3" = 1'-0

DETAIL "2"
SCALE 3"=1'-0

BILL OF MATERIAL

FIND NO.	DWG. NO.	QTY.	NOMENCLATURE	SPEC.	MATL.
1	893	2	HELICOID GAGE, TYPE "440, SIZE 4½", FLUSH MTD., 3½ MOVEMENT & TIP ASSY., BRASS CONN. ½" NPT, PHENOL CASE) SC. RNG. & LENS		
2	"	1	VICKERS RELIEF VALVE "CG-10-C-10		
3	"	1	VICKERS DIRECTIONAL VALVE "C-1430-C		
4	"	1	VICKERS PRESSURE CONTROL VALVE PRCG-10-FP1-10		
6	"	2	FORGED STL. CPLG. 1½" NPT	3000 PSI	STL.
7	"	2	FORGED S.L. CPLG. ¾" NPT	3000 PSI	"
8	SEE SHT. 894		REAR COVER R w/GASKET		——
9	SEE SHT. 894		FRONT COVER R w/GASKET		——
10	893	6	EYENUT ⅝"-11		BRONZE
11	SEE SHT. 894		WILLIAMS DROP FORGED ROD ENDS "78		AISI-316
12	893	8	⅝"-11 NC, HHMB - 2½" LG. W/NUT		GALV. STL.
13	"	8	NUT, REG. SEMI. FIN. HEX. JAM ⅝"-11 NC		"
14	"	4	⅝"-11 NC, HHMB - 1½" LG. W/NUT		"
15	"	4	⅜"-10 NC HHMB - 2¼" LG. W/HEX NUT		"
16	"	1	FORGED STL. HALF CPLG. ½" NPT	3000# PSI	STL.
17	"	1	FORGED STL. HEX. PLUG ½" NPT	2000# PSI	"
18	"	58	⅜"-16 NC, MACH. SC. - ¾" LG. W/NUT		GALV. STL.

REFERENCE DRAWINGS

DWG. NO.	TITLE
894	HYDRAULIC & ELECTRICAL CONTROL BOX LAYOUT & DETAILS
001	OUTBOARD PROFILE & SECTION THRU BUOY
002	WIRING DIAGRAM

NOTE:

1) CONTROL BOX & COVER PLATES TO BE HOT DIP GALV. AFTER FABRICATION.
2) KEY NO's. 2 & 4 TO BE SUPPLIED WITH MOUNTING SUB PLATE.

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. 7105
REGISTERED
CIVIL ENGINEER

APPROVED
J. RAY McDERMOTT & CO., INC.
DATE 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT		
STRUCTURAL		1-28-66
PROCESS		
MECHANICAL		1-28-66
ELECTRICAL		
INSTRUMENT		
PAD CHECK		
PROP. CHECK		

MONO-MOORING SYSTEM

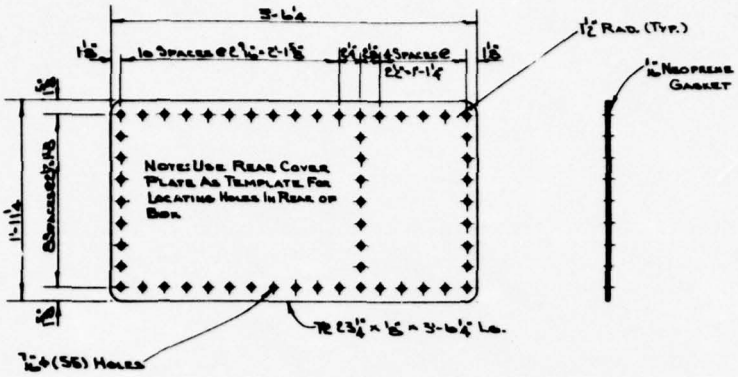
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY McDERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

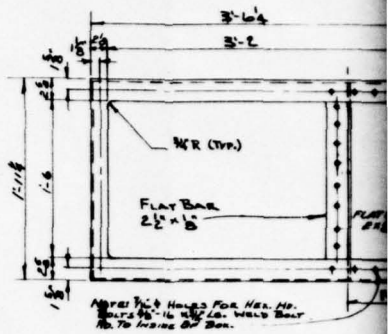
DRAWN BY	SCALE	DATE	PROJECT NO.
S. Guillory	NOTED	8-17-65	USA 2971
FABRICATORS JOB NO. 56017	J. RAY McDERMOTT JOB NO.		SHEET NO. 893

Hydraulic & Electrical Control Box Layout & Details

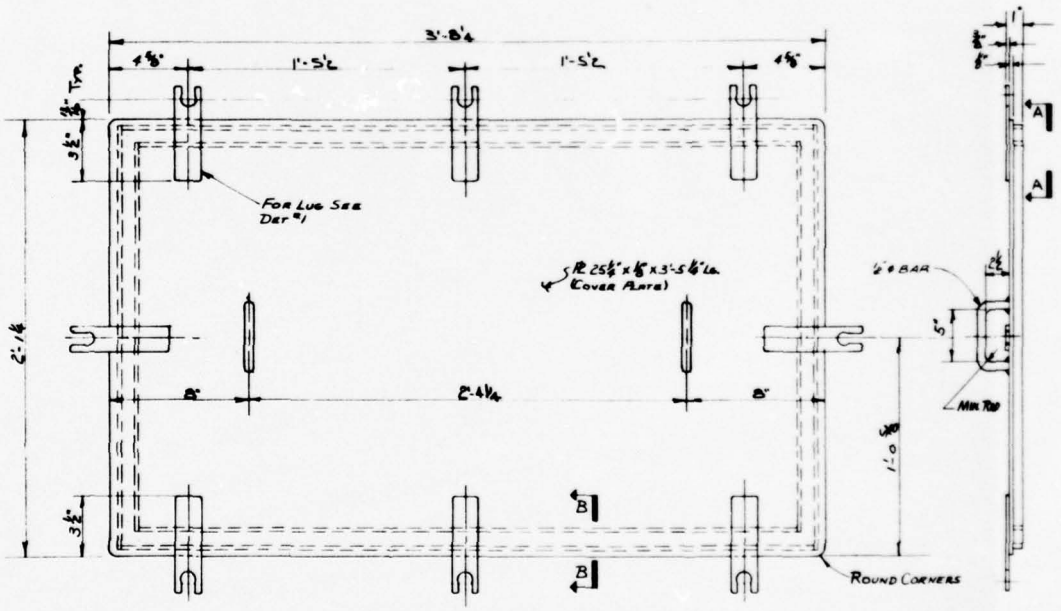
NO	DATE	APP	DESIGN	STRUCT	PIPING	ELEC	MK	BY	REVISIONS	DATE	APP



⑧ REAR COVER PLATE
SCALE 1½" = 1'-0



VIEW 894-C
SHEET 893
SCALE 1½" = 1'-0

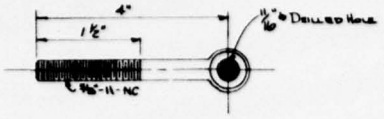


⑨ FRONT COVER
SCALE 3" = 1'-0

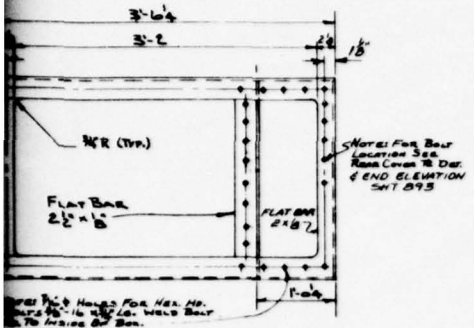
DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

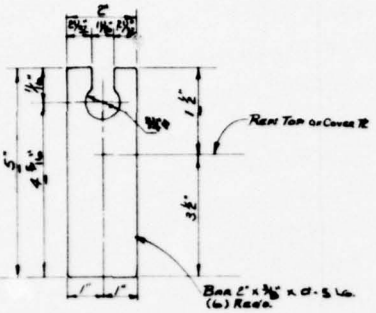
DESIGN	STRUCT.



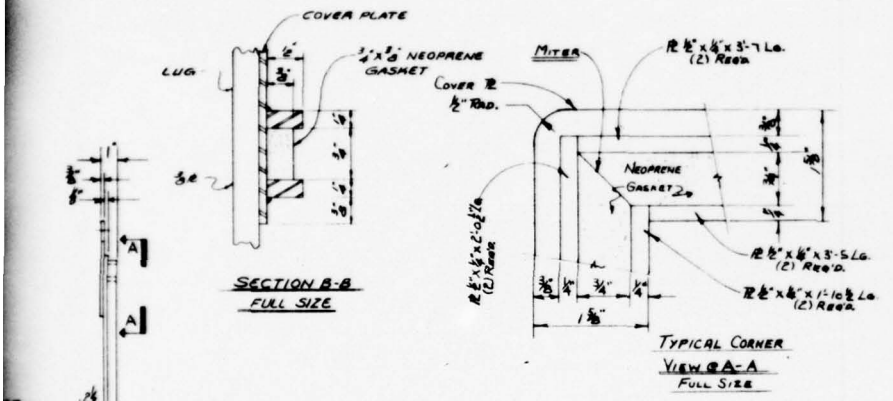
(11) ROD END
(EQUAL TO WILLIAMS #78)



VIEW 894-C
SHEET 893
SCALE 1½"=1'-0

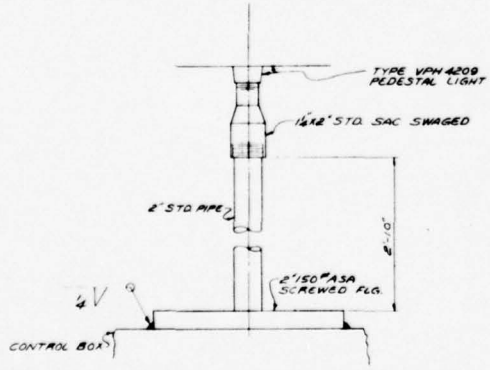


LUG - DETAIL #1



SECTION B-B
FULL SIZE

TYPICAL CORNER
VIEW @ A-A
FULL SIZE



LAMP STAND DETAILS
NO SCALE
SEE SHT 001

BILL OF MATERIAL

FIND NR.	DWG. NO.	QTY.	NOMENCLATURE	SPEC.	MAT'L.
8	894	1	REAR COVER PLATE		STEEL
9	854	1	FRONT COVER		"
11	894	8	ROD END		AISI S1B 5/8

REFERENCE DRAWINGS

DWG NR.	TITLE
893	HYDRAULIC & ELECTRICAL CONTROL BOX LAYOUT & DETAILS

NOTE
SEE SHT 893 FOR COATING INSTRUCTIONS

REVISIONS	DATE	APP.

DESIGN	STRUCT.	PIPING	ELEC.	MK	BY

REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. 1196
REGISTERED PROFESSIONAL ENGINEER IN CIVIL ENGINEERING

APPROVED
J. RAY McDERMOTT & CO., INC.
DATE 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	[illegible]	1-28-66
STRUCTURAL		
PROCESS		
MECHANICAL		2/1/66
ELECTRICAL		
INSTRUMENT		
PAD CHECK		2-3-66
PROP. CHECK		

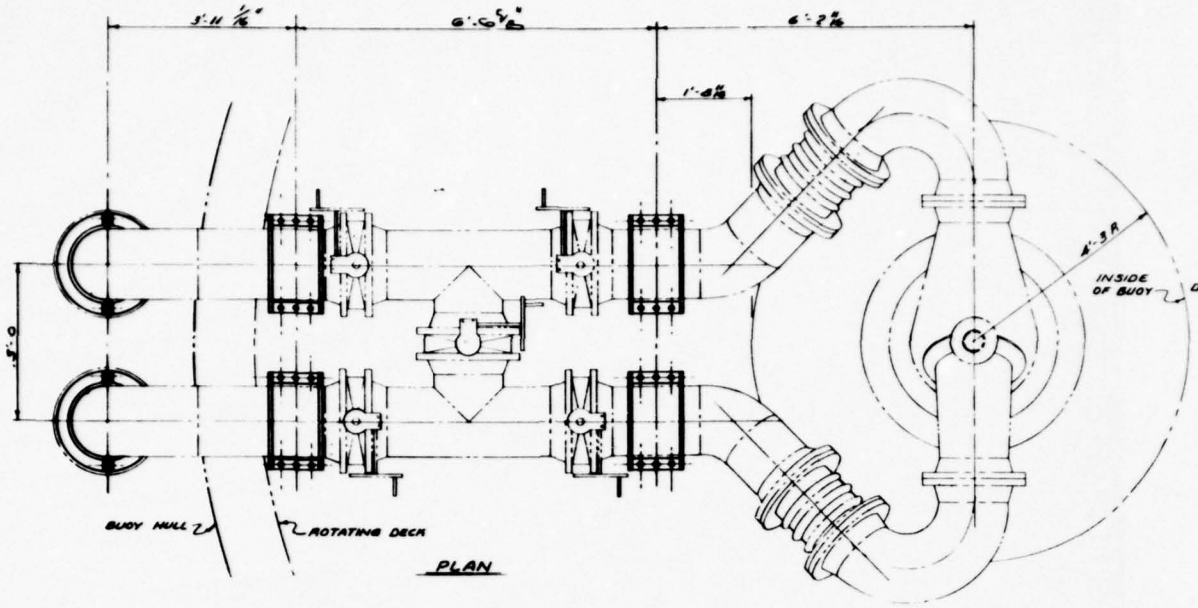
MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

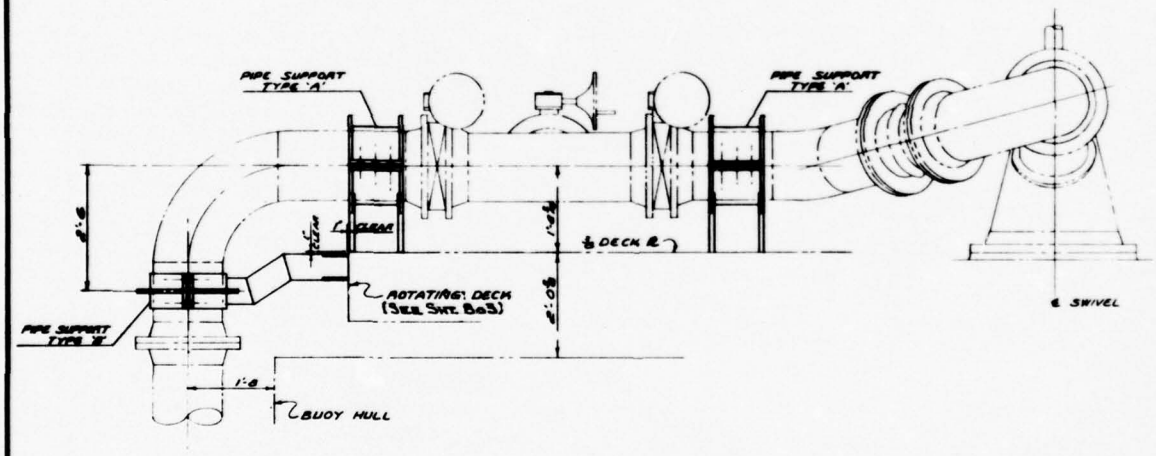
J. RAY McDERMOTT & CO., INC.
ENGINEERS — NEW ORLEANS, LA. — CONTRACTORS

DRAWN BY	SCALE	DATE	PROJECT NO.
S. Guillory	As Noted	8-19-65	U.S.A. E971
FABRICATORS JOB NO. 56017	J. RAY McDERMOTT JOB NO.		SHEET NO. 894

HYDRAULIC & ELECTRICAL CONTROL BOX LAYOUT & DETAILS



PLAN

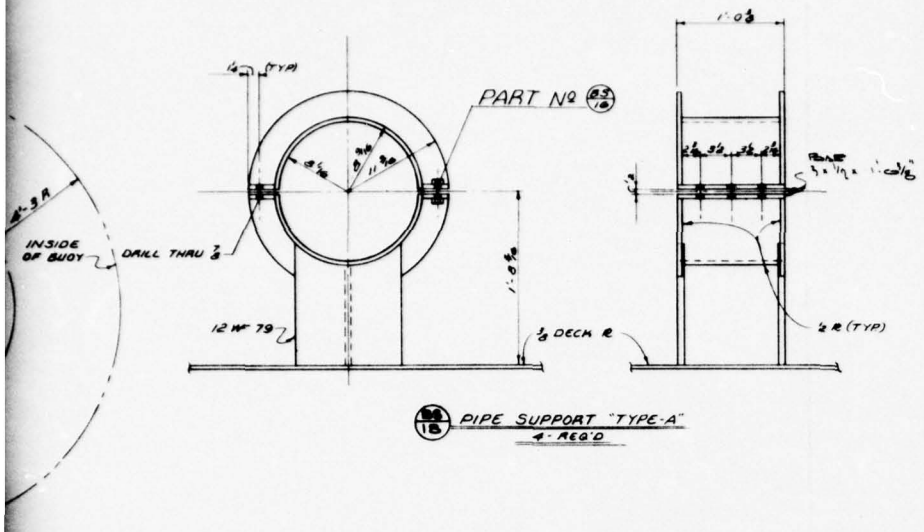


ELEVATION

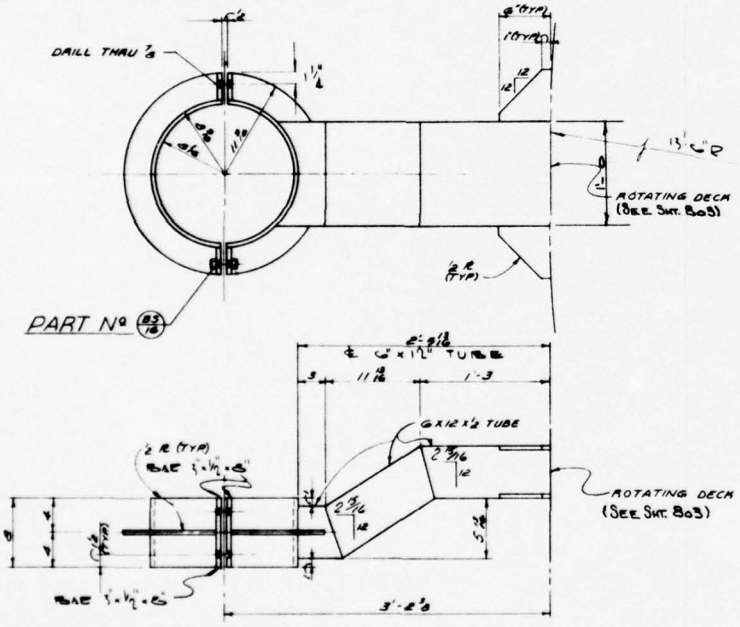
FLOW SYSTEM PIPE SUPPORT LOCATIONS

3/4" = 1'-0

	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING



83/18 PIPE SUPPORT "TYPE-A"
4 - REQ'D



83/19 PIPE SUPPORT "TYPE-B"
2 - REQ'D

FLOW SYSTEM PIPE SUPPORT DETAILS

1/2" = 1'-0

BILL OF MATERIAL

FIND Nº	DWG Nº	QTY	NOMENCLATURE	SPEC	MAT'L
BS-16		32	5/8" DIA X 2 1/2 HH A&B W/REX. NUT & LOCK WASHER	GALV.	
BS-18	895	4	PIPE SUPPORT - TYPE "A"		STEEL
BS-19	895	2	PIPE SUPPORT - TYPE "B"		STEEL

REFERENCE DRAWINGS

SHT Nº	TITLE
870	FLOW SYSTEM PIPING ARRANGEMENT
803	ROTATING DECK FRAMING PLAN

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. 0
REGIS. FIELD
DATE
APPROVED:
J. RAY McDERMOTT & CO., INC.
DATE 1-28-66
ENGINEERS APPROVAL

	BY	DATE
PROJECT	JCS	1-31-66
STRUCTURAL	T.C.A.	1-31-66
PROCESS		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
P&E CHECK		
PROD CHECK	JP	2-2-66

MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

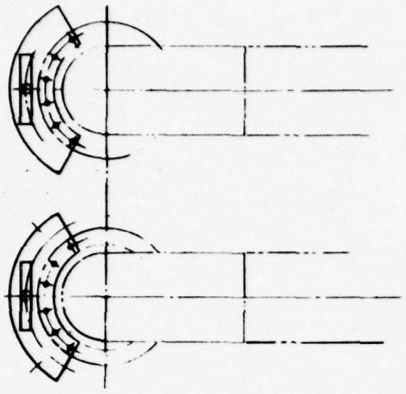
J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA

DRAWN BY	SCALE	DATE	PROJECT NO.
FRANCHINA	NOTED	8-17-65	USA 2971
FABRICATORS JOB NO.	J. RAY McDERMOTT JOB NO.		SHEET NO.
56017			895

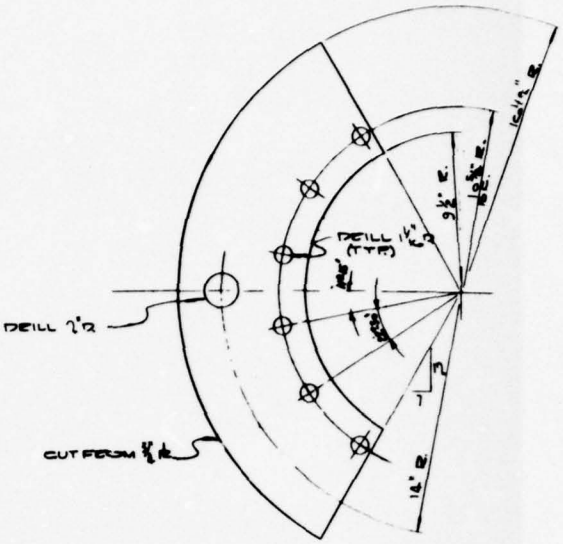
FLOW SYSTEM PIPE SUPPORTS

	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

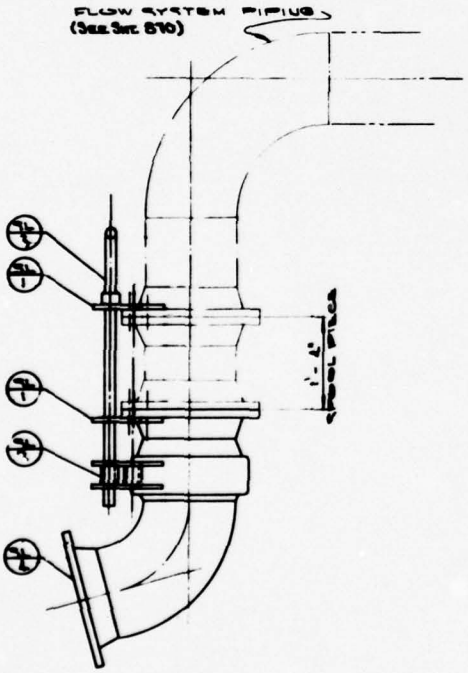
1



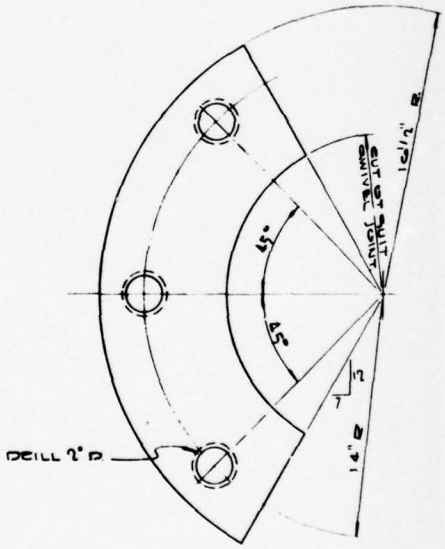
PLAN

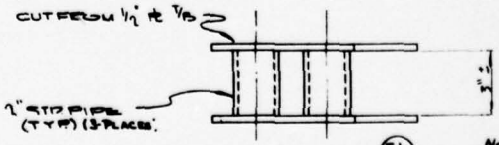


PART U° (9/1)
U° BEND D
MAT'L: MILD W.E.S. (GALV AFTER FAB.)
SCALE: 1"=1'-0"



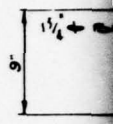
ASSEMBLY
SWIVEL LOCK
SCALE: 1"=1'-0"

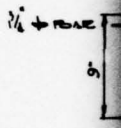


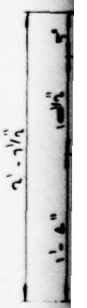


PART U° (9/7)
U° BEND "J"
MAT'L: MILD W.E.S.
SCALE: 1"=1'-0"

NOTE: GALV AFTER FAB.







⚠ 1 C'BORE FLANGE

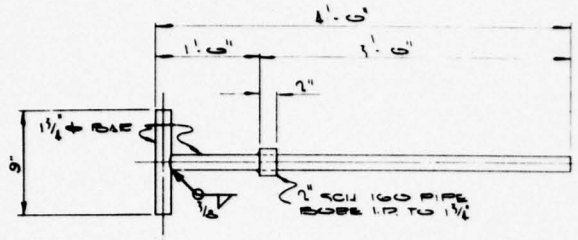
DESIGN	STRUCT.	PIPING	ELEC.	MK.	QTY	REVISIONS	DATE	APP.

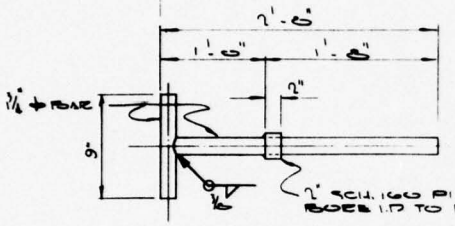
DESIGN	STRUCT.	PIPING	ELEC.	MK.	QTY	REVISIONS	DATE	APP.

DESIGN	STRUCT.	PIPING	ELEC.

BILL OF MATERIAL

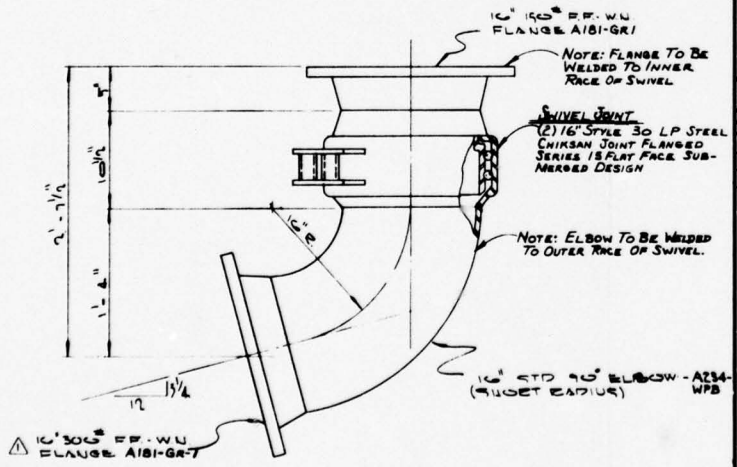
FIND N°	DWG N°	QTY	NOMENCLATURE	SPEC	MAT'L
SL-1	696	4	POSITION LOCK PR		STEEL
SL-2	do	2	DETAIL PIECE FOR SL-4		STEEL
SL-3	do	2	LOCKING PIN		STEEL
SL-4	do	2	SWIVEL ASSEMBLY		STEEL





NOTE:
SWIVEL LOCKING PINS USED WHEN 1'-4 SPOOL PIECE IS NOT USED

PART N° (SL 3)
N° REQ'D 2 EACH SIDE (SEE NOTE)
MAT'L: HR CS (GALV.)
SCALE: 1 1/2" = 1'-0"



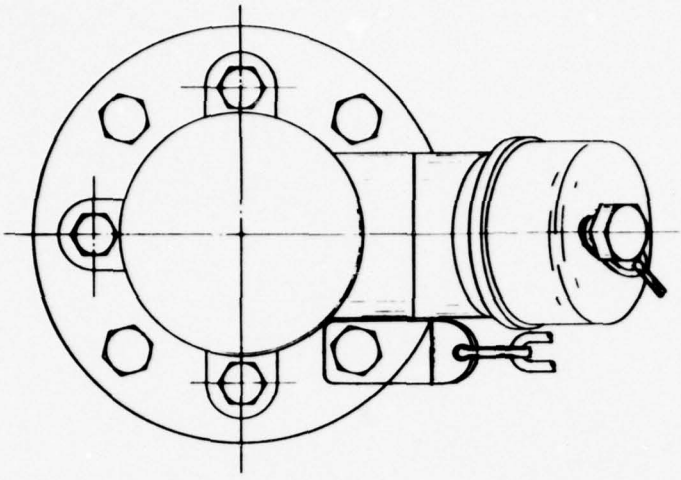
PART N° (SL 4)
N° REQ'D 2
MAT'L: SEE PARTS NOTES

REFERENCE DRAWINGS

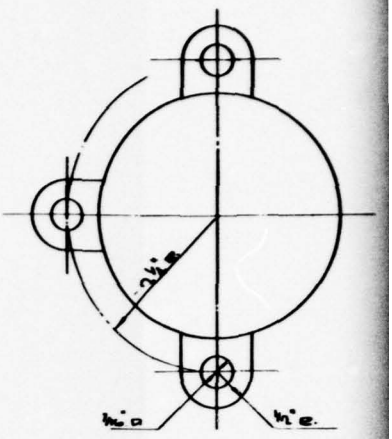
DWG N°	TITLE
696	FLOW SYSTEM PIPING ARRANGEMENT

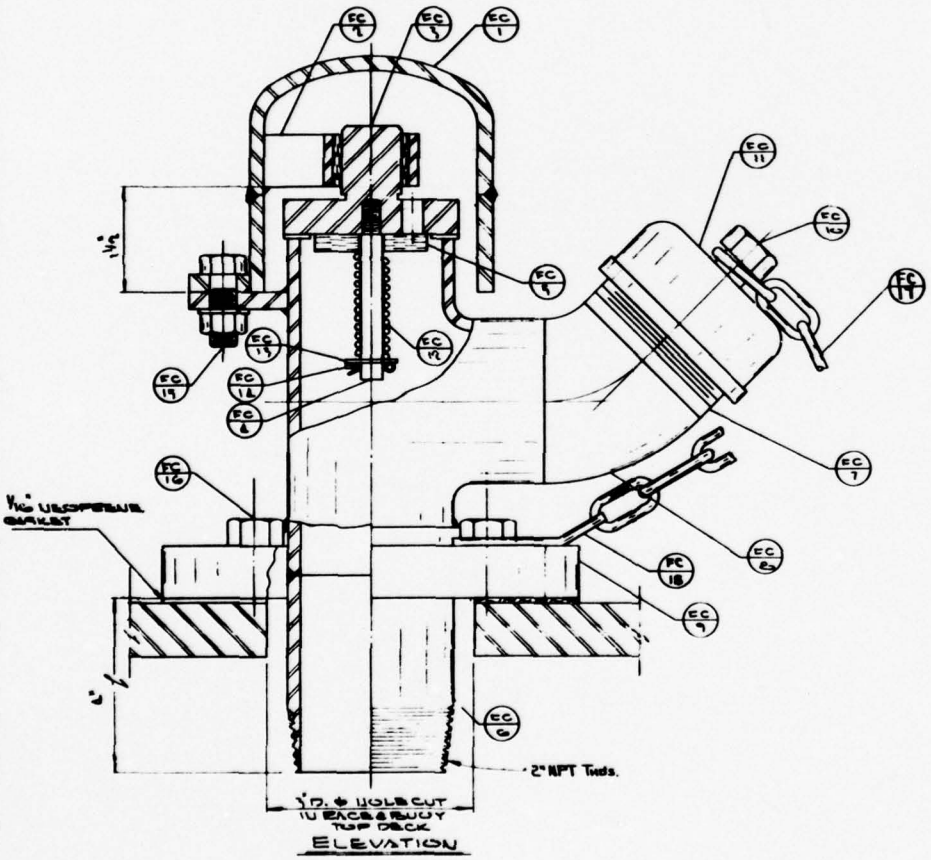
DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

1

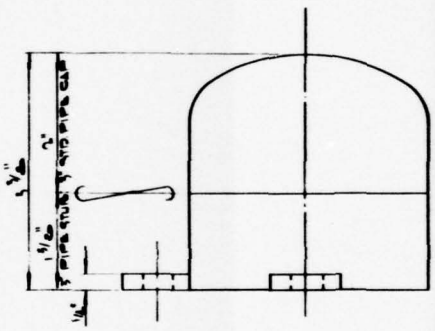


PLAN

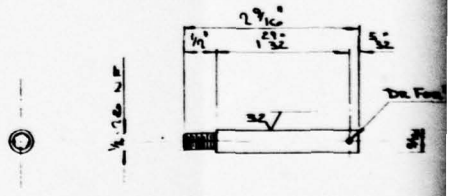




ELEVATION



PART No. (EC 1)
½" DECK'D "I"
MAT'L. A234-B
SCALE: FULL

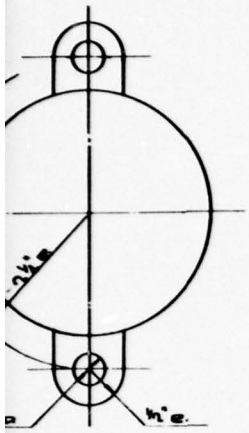


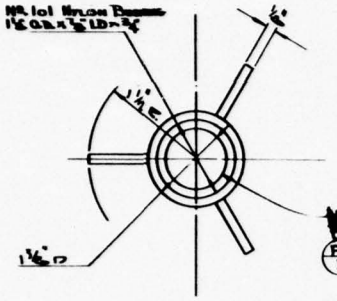
PART No. (EC 8)
½" DECK'D "I"
MAT'L. A151-TYPE 316
SCALE: FULL

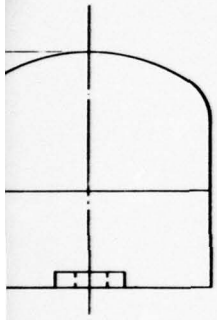
	DESIGN	STRUCT.	PIPING	ELEC.	MK	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	EL

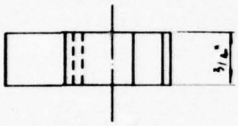
BILL OF MATERIAL

FIND No.	DWG No.	QTY.	NOMENCLATURE	SPEC.	MAT'L
FC-1	897	1	HOOD		A234-B
FC-2	"	1	SPIDER		STEEL
FC-3	"	1	DISC		AISI-316
FC-4	"	1	STEM		AISI-316
FC-5	SEE SHT 896		WAFER DISC		
FC-6	do		BODY		
FC-7	897	1	4" STD PIPE NIPPLE PE8/T&E x 1½" LG.		A106-B
FC-8	"	1	4" STD 45° ELL		A234-B
FC-9	"	1	4" 150# FF-SO FLANGE		AISI-GR1
FC-10	"	1	SHOULDER BOLT W/NUT		BRASS
FC-11	"	1	4" STD BE&SS PIPE CAP		BRASS
FC-12	"	1	COMPRESSION SPRING CAL. SPRING C° 4" 11#		SPRING STEEL
FC-13	"	1	STD ⅝" WASHER (BE&SS)		BRASS
FC-14	"	1	⅛"x⅛" BE&SS COTTER KEY		BRASS
FC-15	"	3	⅜"x1" HUMB LOCK WASH & NUT (GALV.)		GALV. STEEL
FC-16	"	6	⅜"x 7/8" HUMB & NUT (GALV.)		GALV. STEEL
FC-17	"	12'	#10 JACK CHAIN		BRASS
FC-18	SEE SHT. 898		CHAIN HOLDER		BRASS

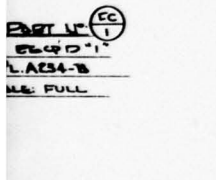




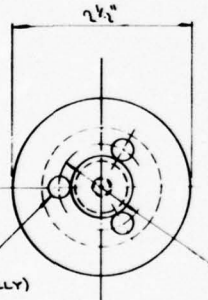


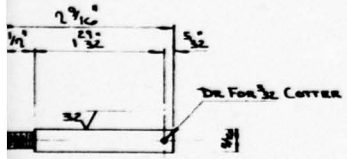


PART No. FC 7
No REQ'D "1"
MAT'L. STEEL & NYLON 101
SCALE: FULL

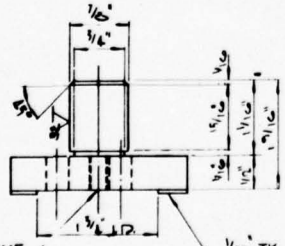


PART No. FC 1
REQ'D "1"
MAT'L. A234-B
SCALE: FULL





PART No. FC 6
REQ'D "1"
MAT'L. AISI-TYPE 316
SCALE: FULL



PART No. FC 3
No REQ'D "1"
MAT'L. AISI-TYPE 316
SCALE: FULL

REFERENCE DRAWINGS

SHT No.	TITLE
809	INNER & OUTER RACE
896	DIESEL FUEL FILL CAP (DETAILS)

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 4696
REGISTERED
CIVIL ENGINEER

APPROVED: Griff Lee
J. RAY Mc DERMOTT & CO. INC.
DATE: 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT		
STRUCTURAL		
PROCESS		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
FAB. CHECK		
PROD. CHECK		

MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — NEW ORLEANS, LA. — CONTRACTORS

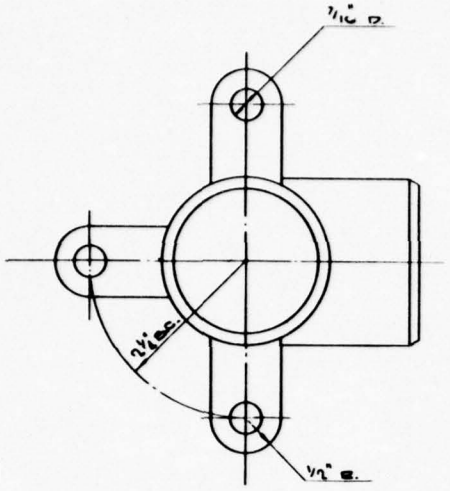
DRAWN BY	SCALE	DATE	PROJECT NO.
2095	FULL	9-7-65	USA-9971
FABRICATORS JOB NO. 96017		J. RAY Mc DERMOTT JOB NO.	SHEET NO. 897

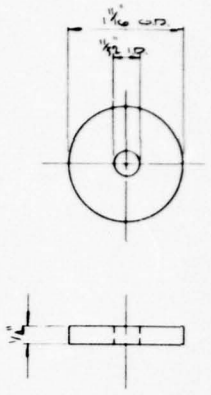
DIESEL FUEL FILL CAP & VENT ASSEMBLY & DETAILS

△

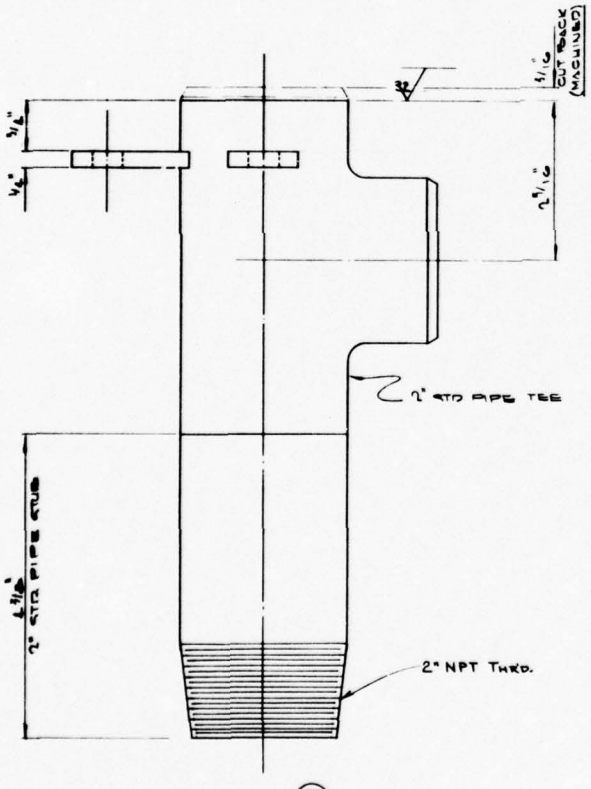
	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	INS.	BY	REVISIONS	DATE	APP.

1

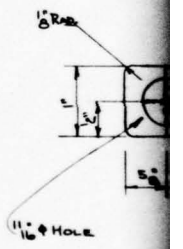




PART U° (EC/9)
U° REQ'D "1"
MAT'L: NYLON 101
SCALE: FULL



PART N° (EC/6)
4° REQ'D "1"
MAT'L: STEEL
SCALE: FULL

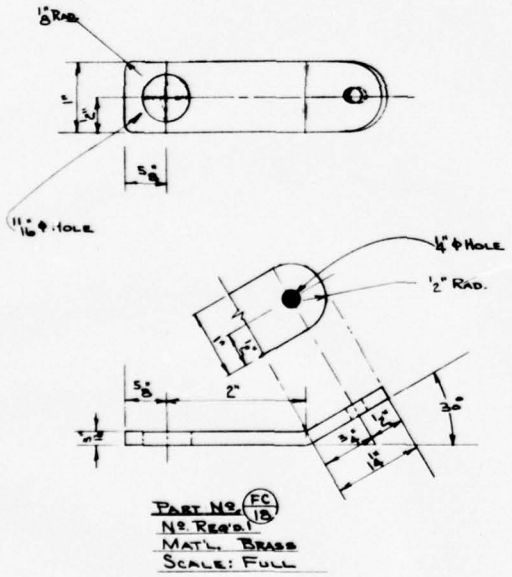


	DESIGN	STRUCT.	PIPING	ELEC.	MK	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	EL

BILL OF MATERIAL

FIND No.	DWG. No.	QTY	NOMENCLATURE	SPEC.	MAT'L
FC-5	898	1	WEDGE DISC		
FC-9	do	1	BODY		
FC-18	do	1	CHAIN HOLDER		

2



PART No. FC 18
No. REQ'D 1
MAT'L. BRASS
SCALE: FULL

REFERENCE DRAWINGS

MAT'L No.	TITLE
897	DIESEL FUEL FILL CAP ASS'Y. & DETAILS

NO.	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7100
REGISTERED PROFESSIONAL ENGINEER IN CIVIL ENGINEERING

APPROVED
J. RAY McDERMOTT & CO. INC.
DATE 1-28-66
ENGINEERS APPROVAL

	BY	DATE
PROJECT	[illegible]	1/28
STRUCTURAL		
PROCESS		
MECHANICAL	[illegible]	2/17
ELECTRICAL		
INSTRUMENT		
PIPE CHECK	[illegible]	2/17
PROOF CHECK		

MONO-MOORING SYSTEM

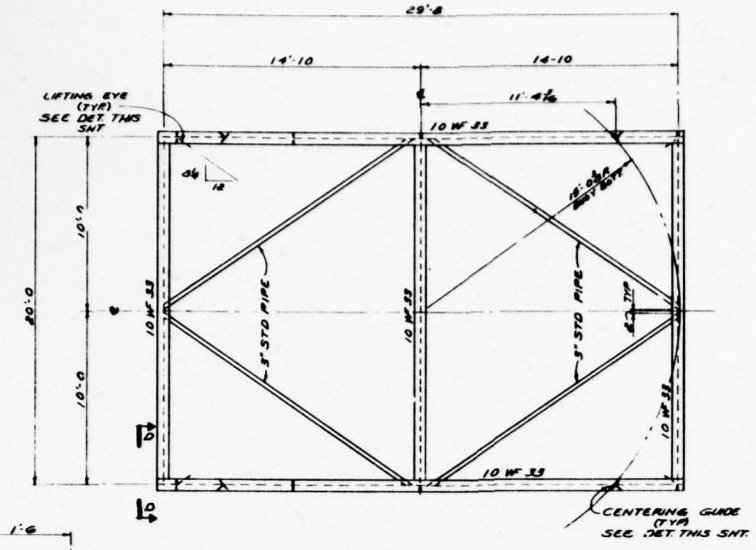
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY McDERMOTT & CO., INC.
ENGINEERS CONTRACTORS
NEW ORLEANS, LA.

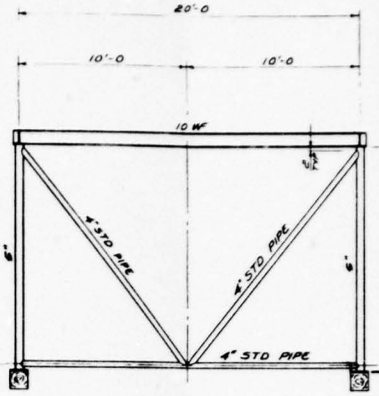
DRAWN BY	SCALE	DATE	PROJECT NO.
ROSS	FULL	9-8-57	USA-7971
FABRICATORS JOB NO. 56017		J. RAY McDERMOTT JOB NO.	SHEET NO. 898

DIESEL FUEL FILL CAP DETAILS

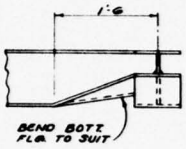
1



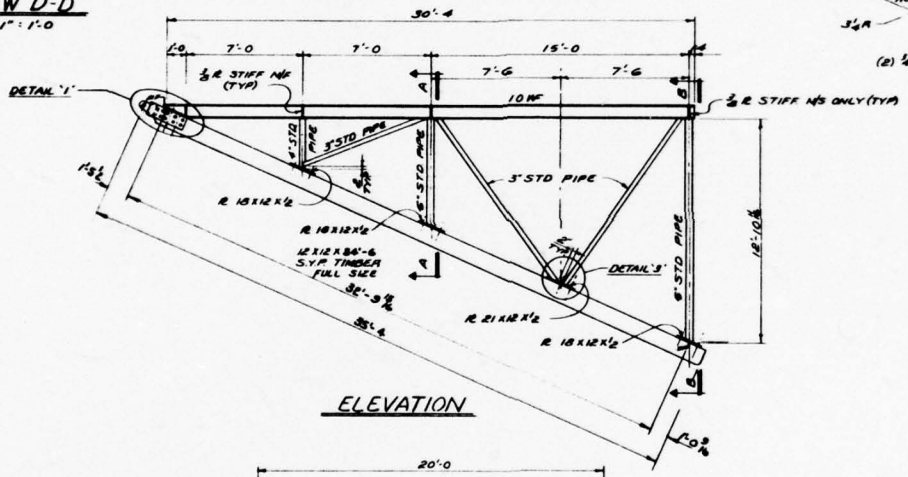
PLAN



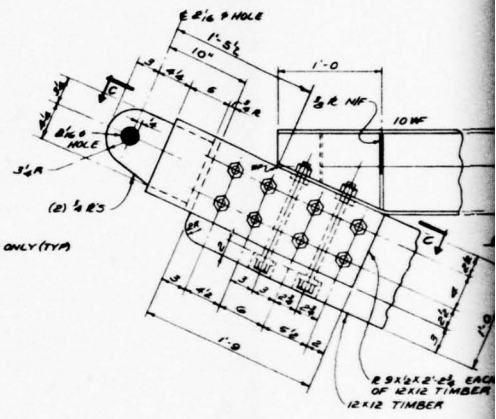
SECTION 'B-B'



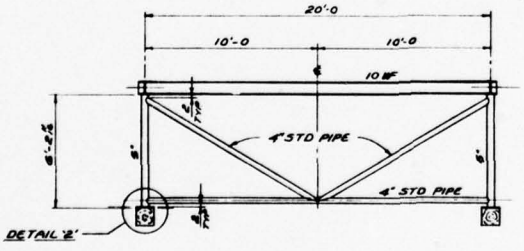
VIEW "D-D"
1" = 1'-0



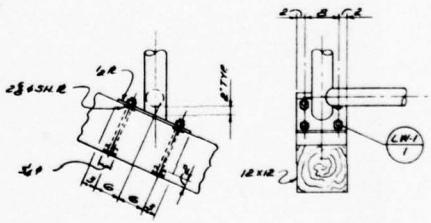
ELEVATION



DETAIL '1'
1" = 1'-0



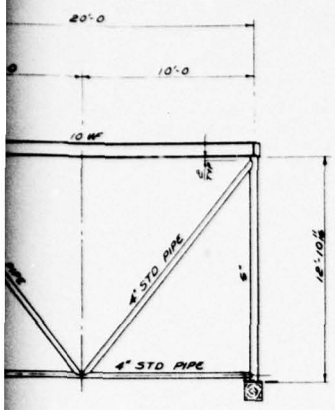
SECTION 'A-A'



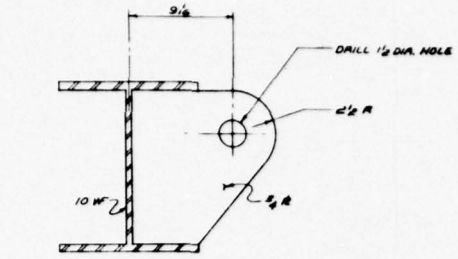
DETAIL '2'
3/4" = 1'-0

LAUNCHING SKID (LW-1)
1/4" = 1'-0

	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING



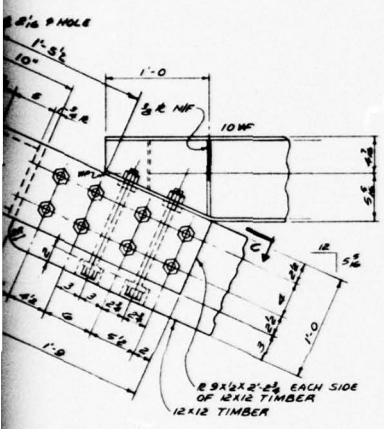
SECTION 'B-B'



LIFTING EYE DETAIL

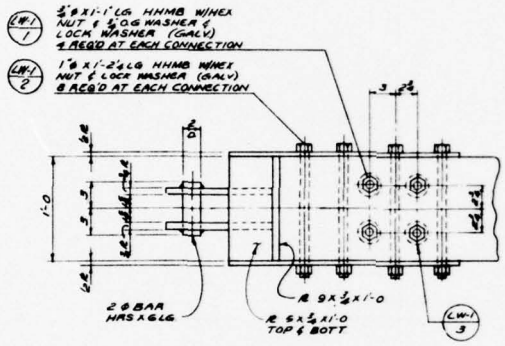
4 - REQ'D

3" = 1'-0

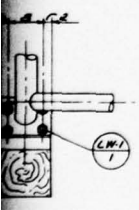


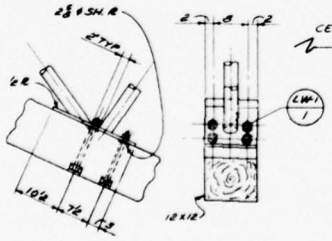
DETAIL '1'

1½" = 1'-0



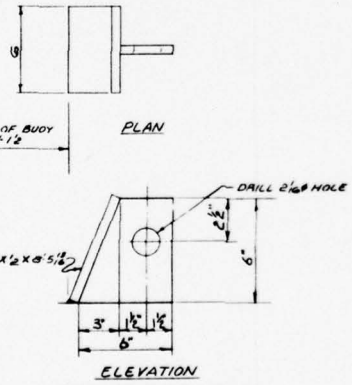
SECTION 'C-C'





DETAIL '3'

3" = 1'-0



ELEVATION

CENTERING GUIDE

BILL OF MATERIAL

2

FIND NO.	DWG NO.	QTY	NOMENCLATURE	SPEC	MAT'L
LW-1	901	1	LAUNCHING SKID	SEE SPECIFICATIONS	MILD STEEL
LW-1/1	901	40	⅞ X 1'-1" LG. HHMB W/HEX NUT & 2 ¼" O.G WASHER & LOCK WASHER (GALV)	ASTM A307	STEEL
LW-1/2	901	16	1" ø X 1'-2½ LG HHMB W/HEX NUT & LOCK WASHER (GALV)	ASTM A307	STEEL
LW-1/3	901	40	2" ø SHEAR R (GALV)		STEEL

REFERENCE DRAWING

SHT. NO.	TITLE
900	LAUNCHING ARRANGEMENT

GRIFF C. LEE
REG. No. 786
REGISTERED
PROFESSIONAL ENGINEER
STATE OF LOUISIANA

APPROVED: J. RAY McDERMOTT & CO., INC.
DATE: 1-28-66
ENGINEERS APPROVAL

	BY	DATE
PROJECT	JRS	1-27-66
STRUCTURAL	T.C.A.	11-15-65
PROCESS		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
FAB. CHECK	GCL	1-28-66
PROD. CHECK		

MONO-MOORING SYSTEM

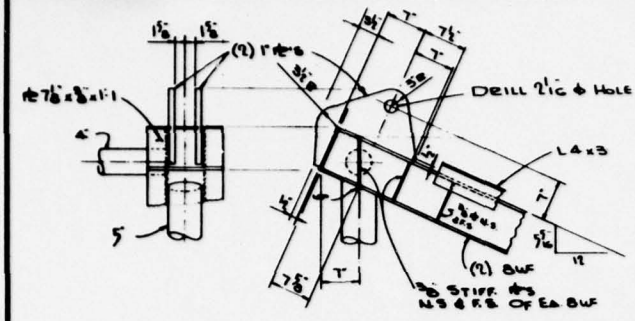
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY McDERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

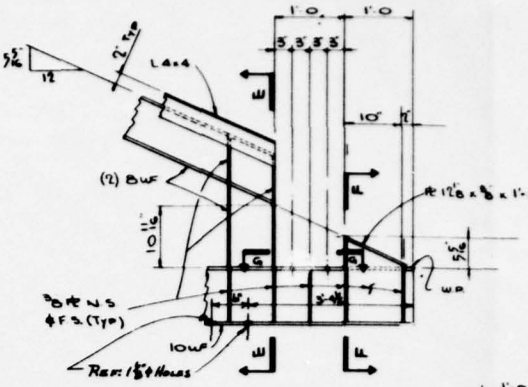
DRAWN BY	SCALE	DATE	PROJECT NO.
FRANCHINA	NOTED	8-24-65	USA-2971
FABRICATORS JOB NO. 56017	J. RAY McDERMOTT JOB NO.		SHEET NO. 901

LAUNCHING SKID

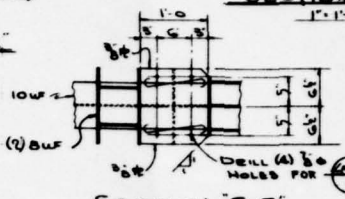
SIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.



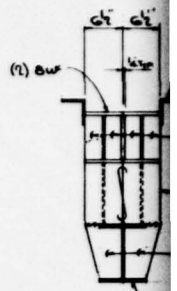
DETAIL "1"
1" = 1'-0



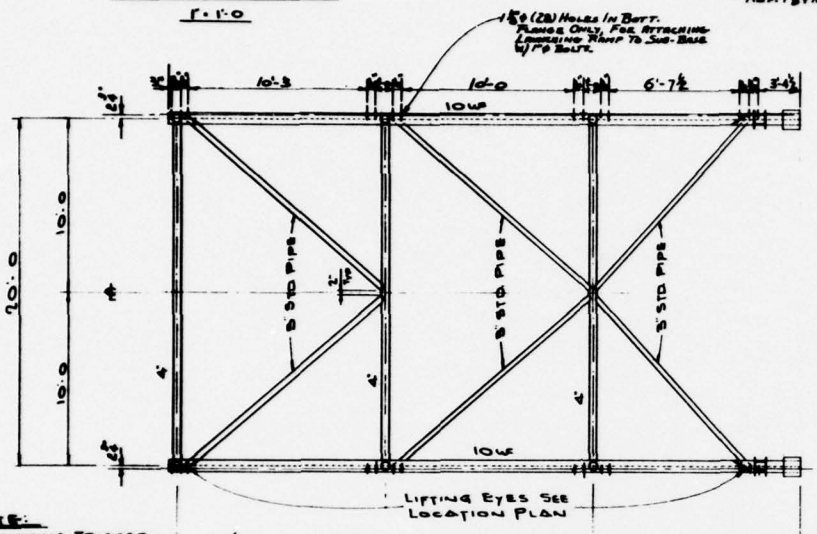
DETAIL "2"
1" = 1'-0



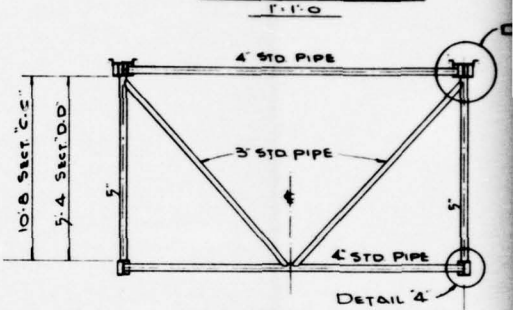
SECTION "G-G"
1" = 1'-0



SECTION "E
1" = 1'-0



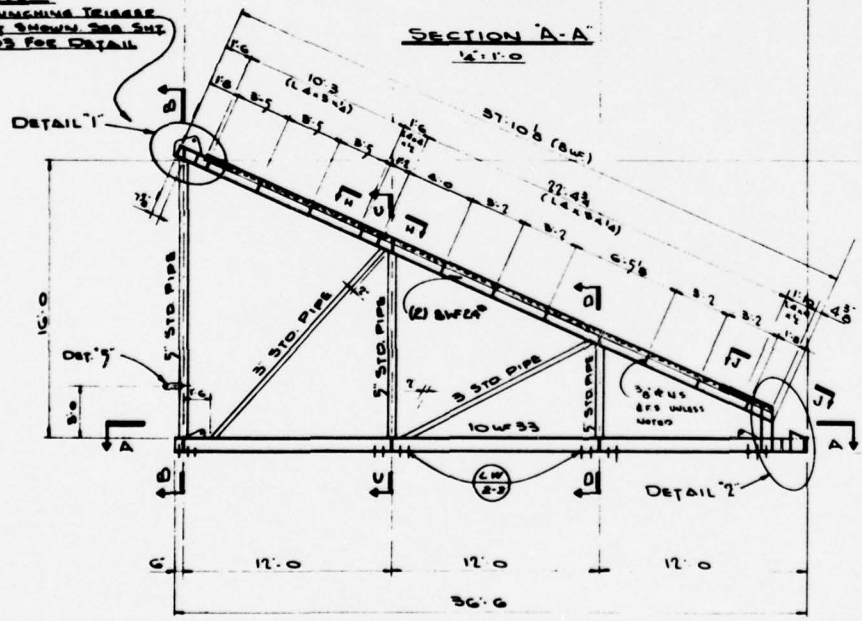
SECTION "A-A"
¼" = 1'-0



DETAIL "4"

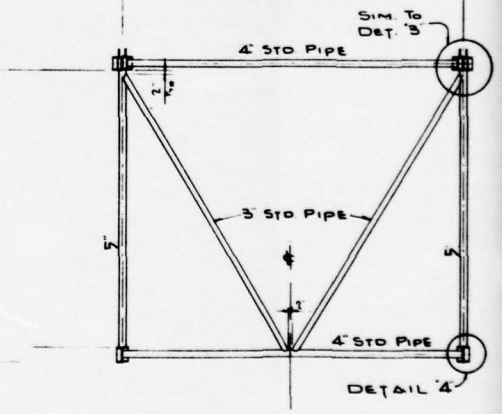
SECTION "C-C"
SECTION "D-D"
¼" = 1'-0

NOTE:
LAUNCHING TRIGGER NOT SHOWN SEE SHT 903 FOR DETAIL



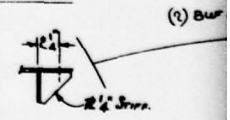
SIDE ELEVATION

LAUNCHING RAMP (LW/2)
¼" = 1'-0



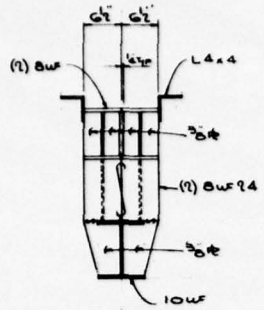
DETAIL "4"

SECTION "B-B"
¼" = 1'-0

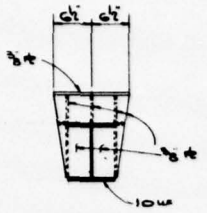


TYPICAL

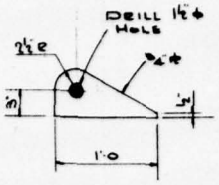
	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING



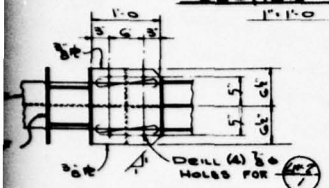
SECTION "E-E"
1" = 1'-0



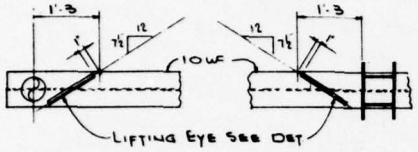
SECTION "F-F"
1" = 1'-0



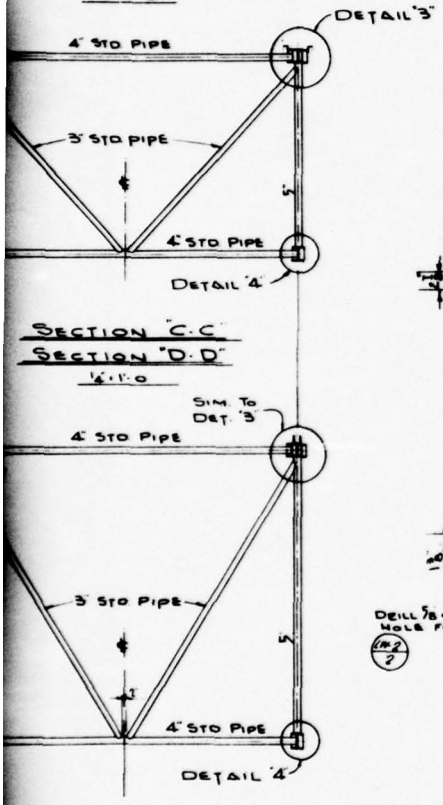
LIFTING EYE
4 REQD
1½" = 1'-0



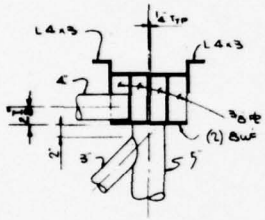
SECTION "G-G"
1" = 1'-0



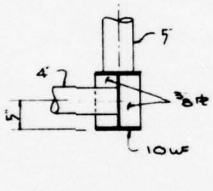
PLAN LIFTING EYES LOCATIONS
¾" = 1'-0



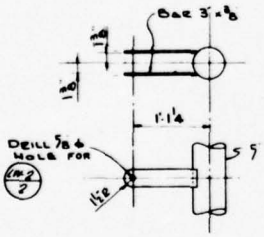
SECTION "C-C"
SECTION "D-D"
1½" = 1'-0



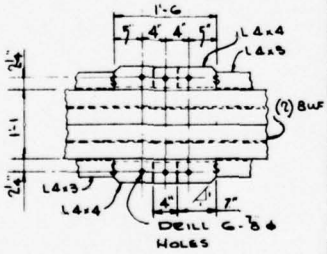
DETAIL "3"
1" = 1'-0



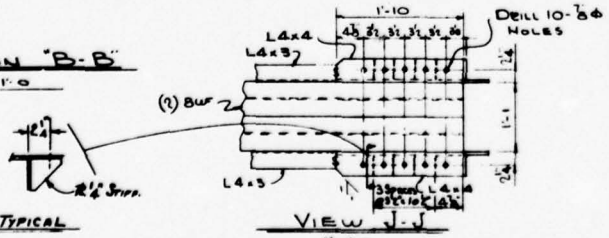
DETAIL "4"
1" = 1'-0



DETAIL "5"
1" = 1'-0



VIEW "H-H"
1" = 1'-0



SECTION "B-B"
1½" = 1'-0

TYPICAL

VIEW "J-J"
1" = 1'-0

BILL OF MATERIAL

FIND NO	DWG NO	QTY	NOMENCLATURE	SPEC	MAT'L
LW-2	902	1	LAUNCHING RAMP	SEE SPEC.	STEEL
LW2-1	902	8	⅝"ϕ x 2" LG. H.H.M.B. WHEX. NUT & LOCK WASHER	ASTM A307	GALV.
LW2-2	902	2	⅞"ϕ x 8" LG. H.H.M.B. WHEX. NUT	ASTM A307	GALV.
LW2-3	902	28	¾"ϕ H.H.M.B. WHEX. NUT & LOCK WASHER	ASTM A307	GALV.

REFERENCE DRAWING

SHT. NO	TITLE
903	LAUNCHING RAMP "SHT-2"
900	LAUNCHING ARRANGEMENT

REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. 7005
REGISTERED PROFESSIONAL ENGINEER
CIVIL ENGINEERING

APPROVED: G. C. Lee
J. RAY Mc DERMOTT & CO., INC.
DATE: 1-25-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	GCL	1-25-66
STRUCTURAL	F.C.B.	11-30-65
PROCESS		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
FAB. CHECK	GCL	1-25-66
PROP. CHECK		

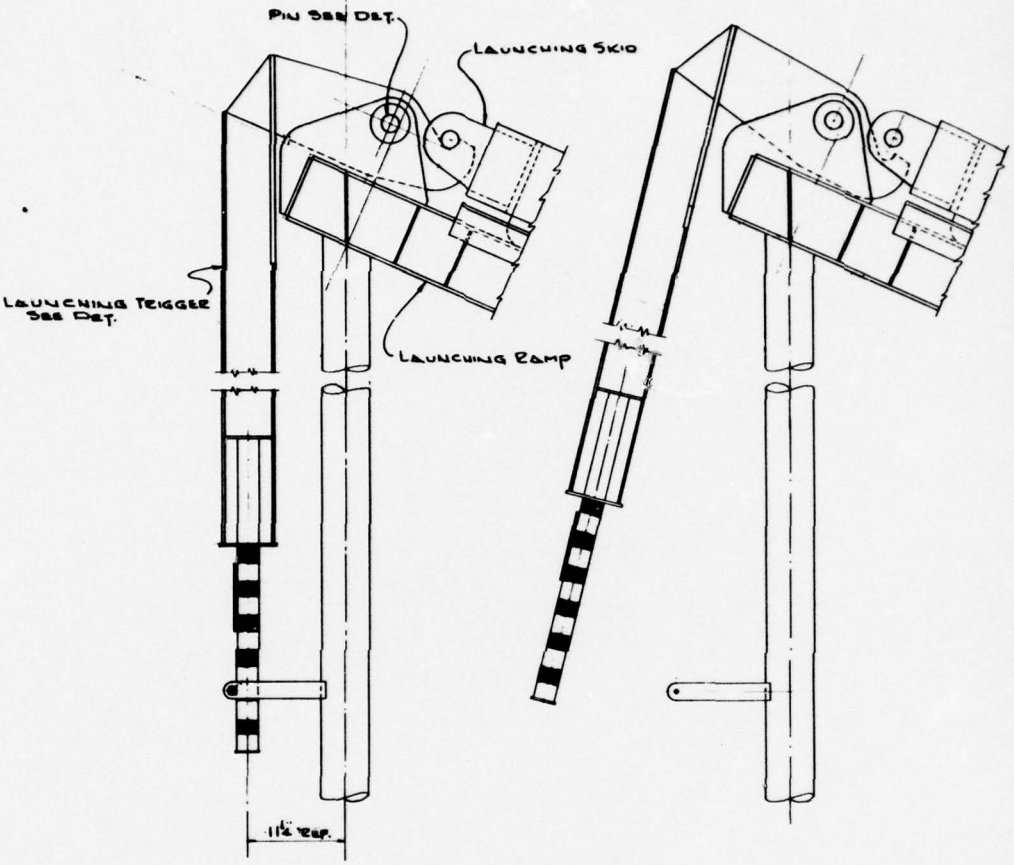
MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
F.B.	NOTED	8-24-65	USA-2971
FABRICATORS JOB NO.	56017	J. RAY Mc DERMOTT JOB NO.	SHEET NO. 903

LAUNCHING RAMP SHT "1"



LOCKED POSITION

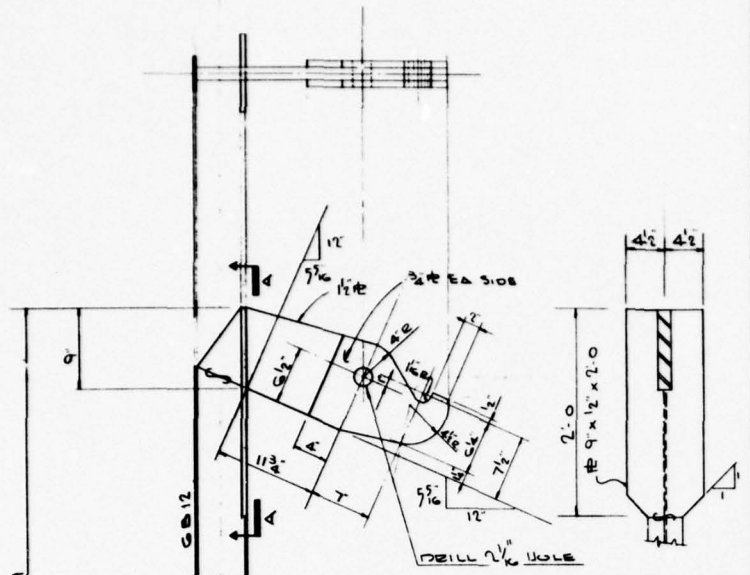
UNLOCKED POSITION

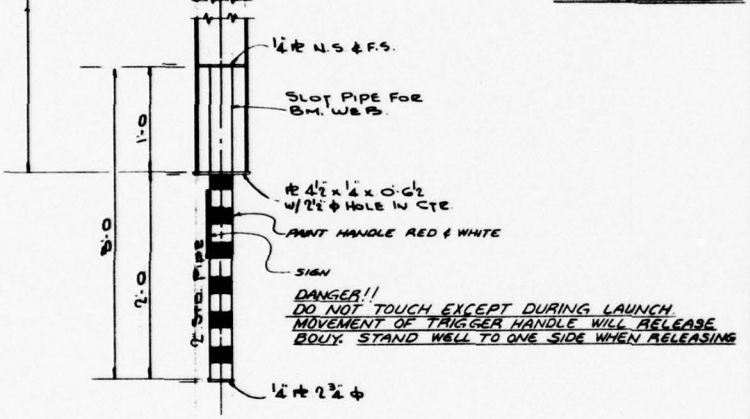
LAUNCHING TRIGGER ASSY.

DESIGN	STRUCT.	PIPING	ELEC.	BR.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	BR.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING

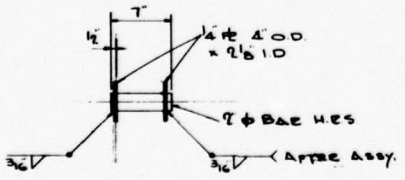
BILL OF MATERIAL

FIND NO.	DWG NO.	QTY	NOMENCLATURE	SPEC	MAT'L





LAUNCHING TRIGGER DETAIL
2 REQD



PIN DETAIL
2 REQD

REFERENCE DRAWING

SHT NO	TITLE
900	LAUNCHING ARRANGEMENT
902	LAUNCHING RAMP "SHT-1"

NO.	DATE	APP.	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF G. LEE
REG. NO. 5261
REGISTERED
CIVIL ENGINEER

APPROVED: G.G. Lee
DATE: 1-28-66
ENGINEERS APPROVAL

	BY	DATE
PROJECT	JRMcD	1-28-66
STRUCTURAL	J.C.B.	10-20-65
PIPING		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
PUB. CONST.	GGP	1-28-66
PROP. DESIGN		

MOND-MOORING SYSTEM

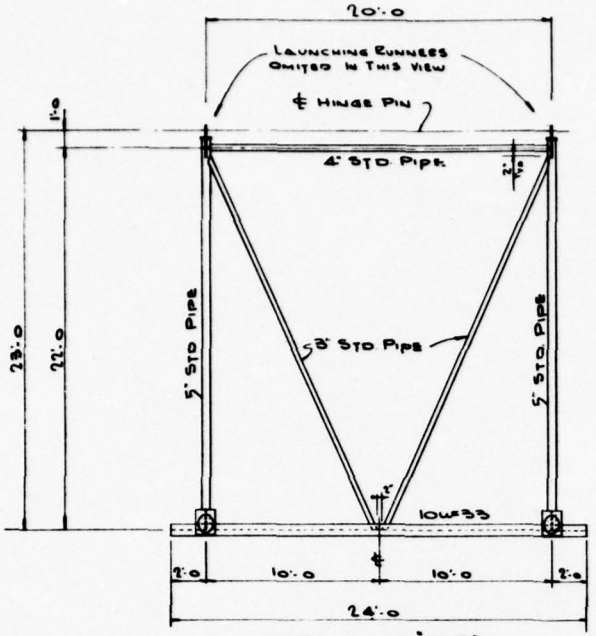
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — NEW ORLEANS, LA. — CONTRACTORS

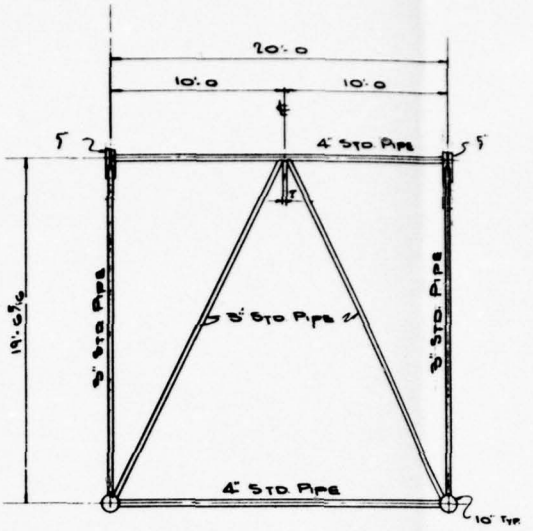
DRAWN BY	SCALE	DATE	PROJECT NO.
F.B.	1"=1'-0	8-26-65	USA-2971
FABRICATORS JOB NO.	56017	J. RAY Mc DERMOTT JOB NO.	SHEET NO. 903

LAUNCHING RAMP SHT. 2

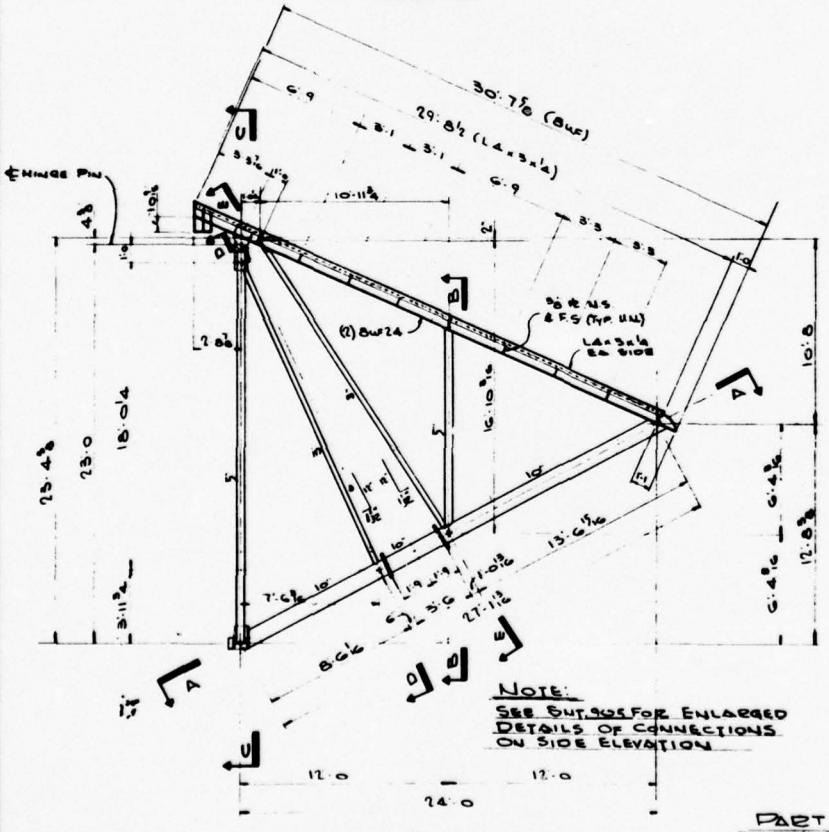
△



SECTION "C-C"
1/4"-1'-0

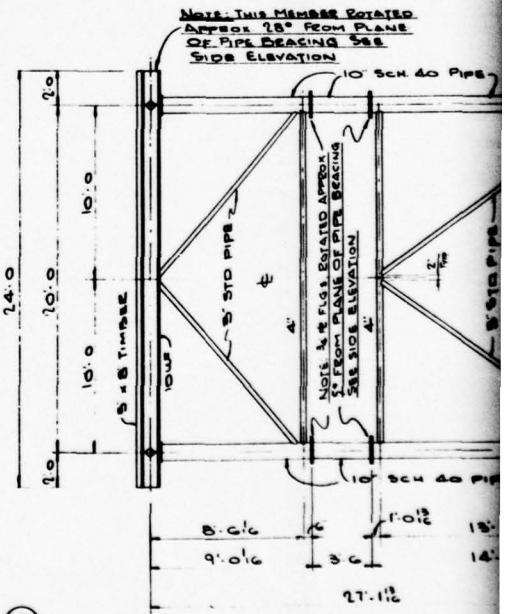


SECTION "D-D"
1/4"-1'-0



NOTE:
SEE OUTSIDE FOR ENLARGED DETAILS OF CONNECTIONS ON SIDE ELEVATION

SIDE ELEVATION
1/4"-1'-0



SECTION A-A
1/4"-1'-0

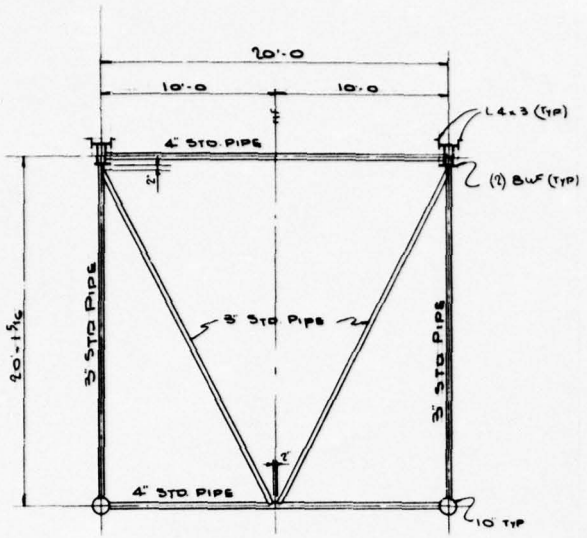
PART U° (LW)

DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.

BILL OF MATERIAL

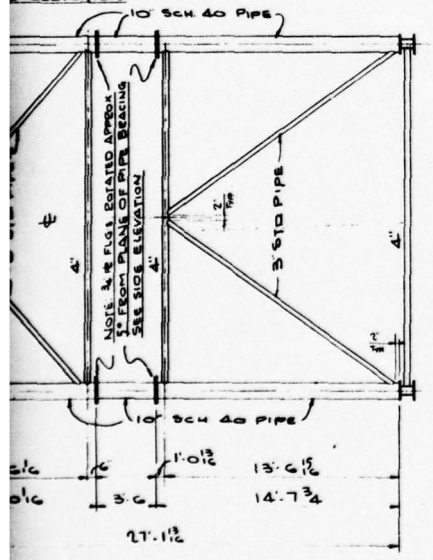
FIND NO.	DWG NO.	QTY	NOMENCLATURE	SPEC	MAT'L
LW-1	902 & 905	1	LAUNCHING RAMP EXTENSION	SEE SPECIFICATIONS	STEEL

D-D"

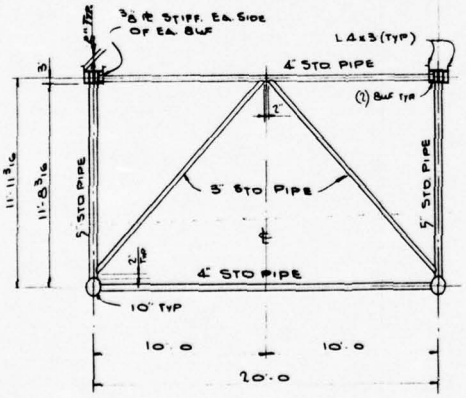


SECTION "E-E"
1/4" = 1'-0

THIS MEMBER ROTATED
28° FROM PLANE
PIPE BRACING SEE
ELEVATION



SECTION "A-A"
1/4" = 1'-0



SECTION "B-B"
1/4" = 1'-0

REFERENCE DRAWING

SHT NO.	TITLE
900	LAUNCHING ARRANGEMENT
905	LAUNCHING RAMP EXTENSION "SHT-2"

REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. 7088
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

APPROVED: W C Lee
J. RAY McDERMOTT & CO., INC.
DATE: 1-28-66
ENGINEERS APPROVAL

	BY	DATE
PROJECT	WCL	1-28-66
STRUCTURAL	S.C.A.	1-26-66
PROCESS		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
PUB. CHECK	CP	2-7-66
PROD. CHECKS		

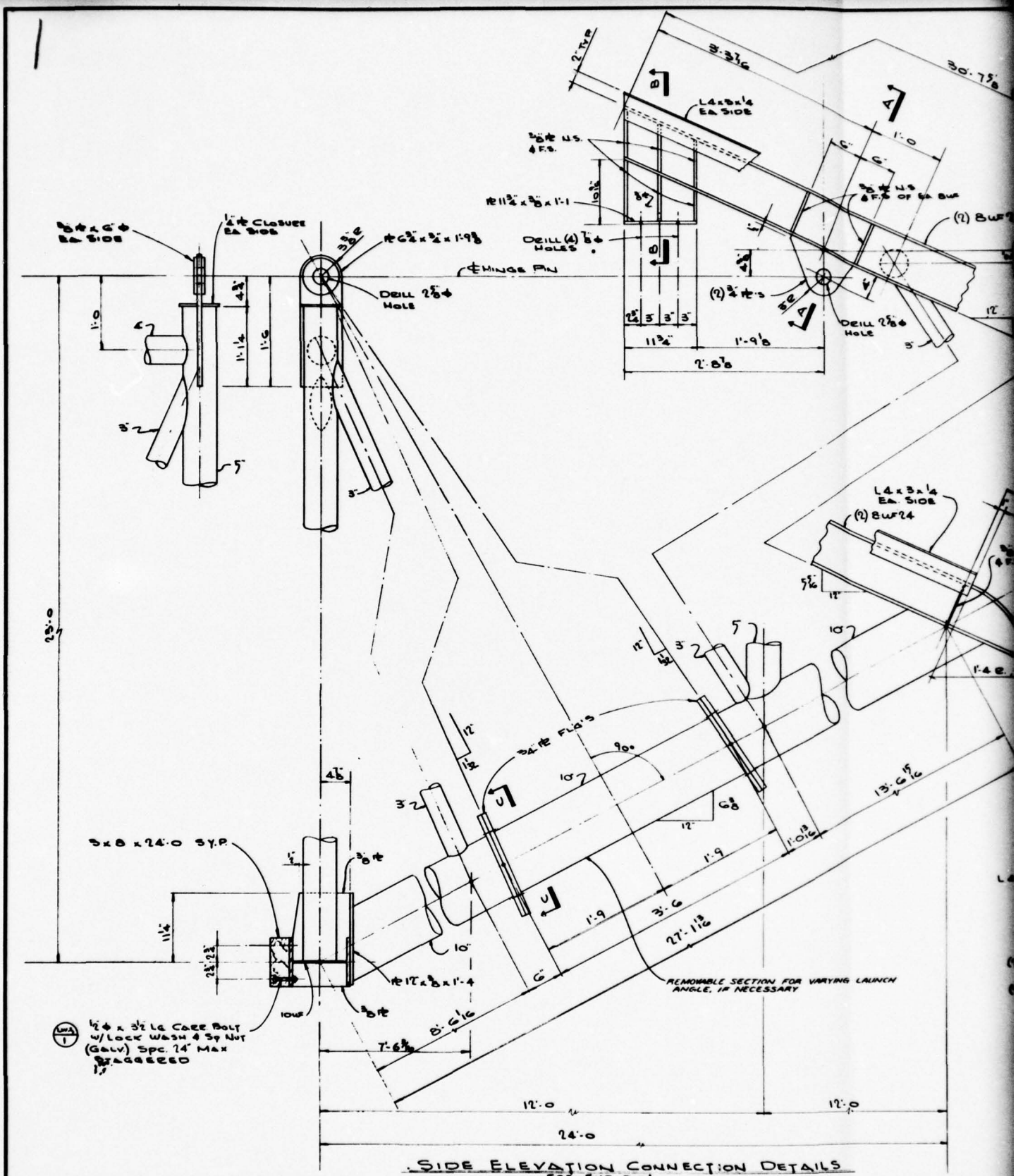
MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

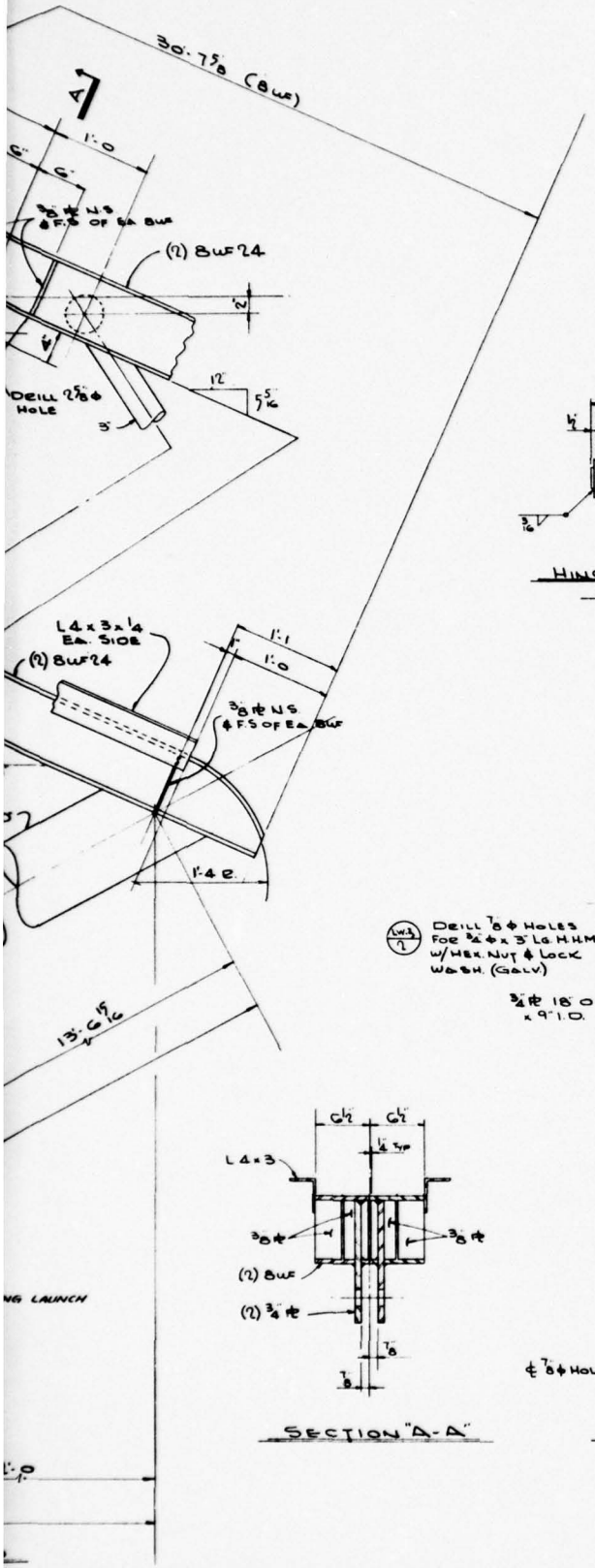
J. RAY McDERMOTT & CO., INC.
ENGINEERS CONTRACTORS
NEW ORLEANS, LA.

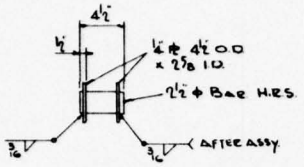
DRAWN BY	SCALE	DATE	PROJECT NO.
F.B.	NOTED	8-25-65	USA-2971
FABRICATORS JOB NO.	J. RAY McDERMOTT JOB NO.		SHEET NO.
56017			905

LAUNCHING RAMP EXTENSION SHT. 1

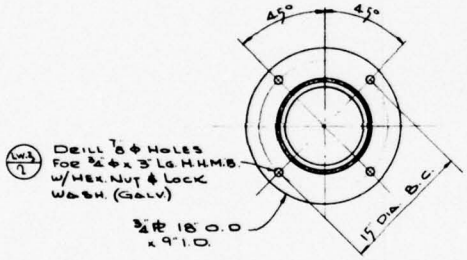


DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING



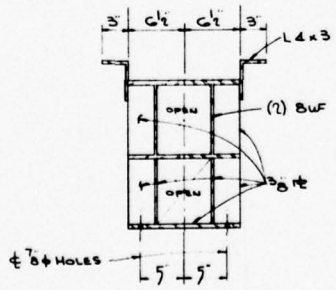


HINGE PIN DETAIL
2 REQD.



SECTION "C-C"

SECTION "A-A"



SECTION "B-B"

BILL OF MATERIAL

FIND NO	DWG NO	QTY	NOMENCLATURE	SPEC	MAT'L
LW-1	904 905		LAUNCHING RAMP EXTENSION	SEE SPECIFICATIONS	STEEL
LW-1-1	905	25	½" x 3½ CARR. BOLT W/ LOCK WA. & ½ø NUT	ASTM A307	GALV
LW-1-9	905	8	⅝" x 2" U.H.M.B. W/HEX. NUT & LOCK WASH.	ASTM A307	GALV

REFERENCE DRAWING

SHT NO	TITLE
900	LAUNCHING ARRANGEMENT
904	LAUNCHING RAMP EXTENSION "SHT-1"

NO.	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 115
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

APPROVED: G. C. Lee

J. RAY McDERMOTT & CO., INC.
DATE: 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	JRS	1-27-66
STRUCTURAL	JCA	1-28-66
PIPING		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
P&S CHECK	GLP	1-28-66
PROP. CHECK		

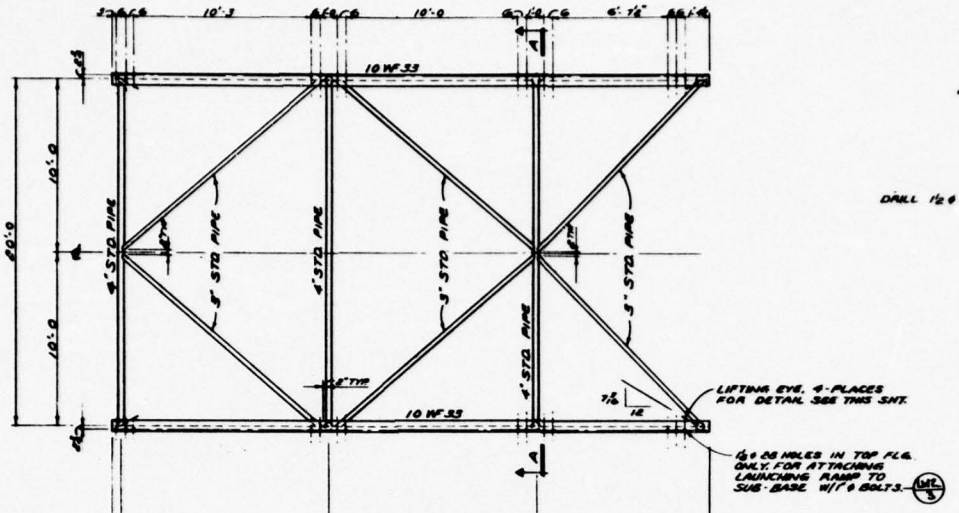
MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY McDERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

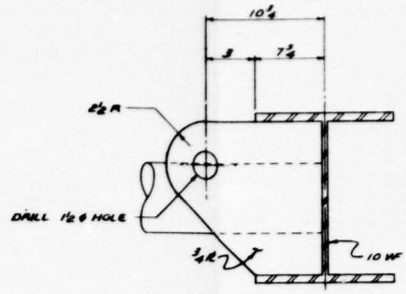
DRAWN BY	SCALE	DATE	PROJECT NO.
F.B.	1½" = 1'-0	8-25-65	USA-2971
FABRICATORS JOB NO.	56017	J. RAY McDERMOTT JOB NO.	SHEET NO. 905

LAUNCHING RAMP EXTENSION SHT. 1



PLAN

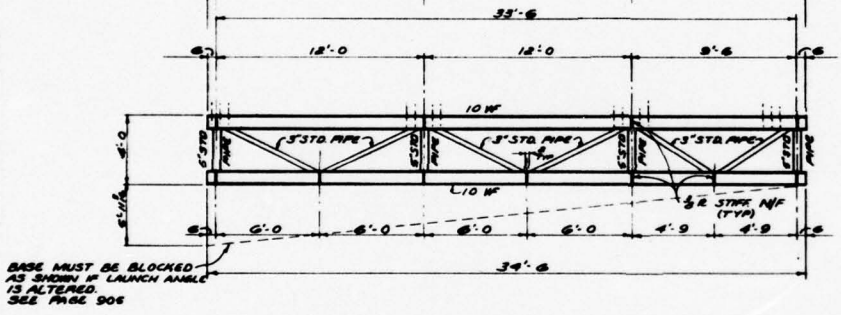
TOP & BOTT. CHORD



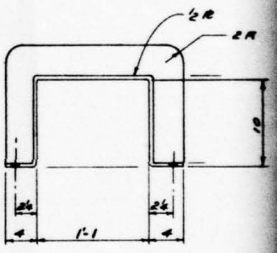
LIFTING EYE DETAIL

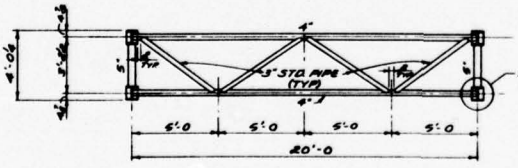
4 REQ'D

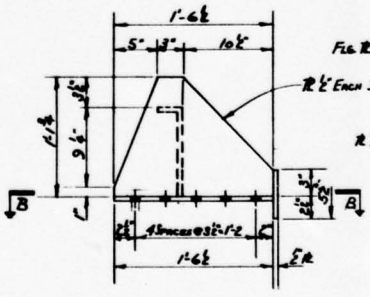
3" = 1'-0

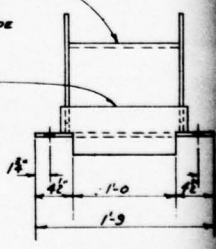


ELEVATION









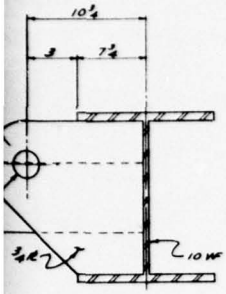
SECTION A-A

TYPICAL IN THREE PLACES

PART No. 1W/4

1" = 1'-0

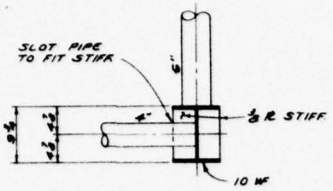
	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING



TING EYE DETAIL

4-REQ'D

3" = 1'-0

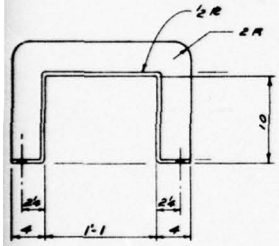


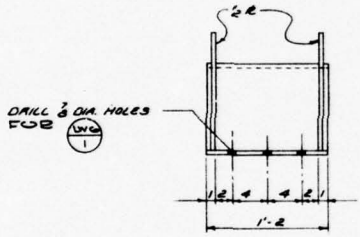
DETAIL "1"

1" = 1'-0

BILL OF MATERIAL

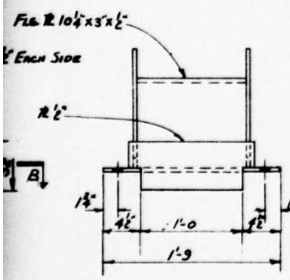
FIELD NO.	DWG NO.	QTY	NOMENCLATURE	SPEC.	MAT'L
LW-1	906	1	LAUNCHING RAMP SUB-BASE	SEE SPECIFICATIONS	STEEL
LW-5	906	2	STOP	ASTM A7	STEEL
LW-6	906	2	CLAMP	ASTM A7	STEEL
LW-6/1	906	32	5/8" ⌀ LH.M.R. W/HEX NUT & LOCK WASH.	ASTM A307	GALV.

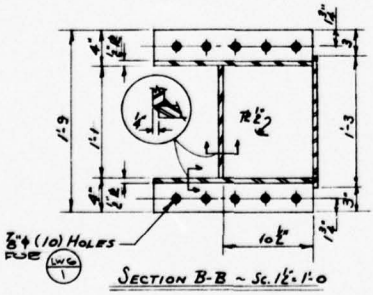




PART No. (LW-6)

1½" = 1'-0





SECTION B-B ~ Sc. 1½" = 1'-0

PART No. (LW-5)

1½" = 1'-0

REFERENCE DRAWING

SHT No.	TITLE
900	LAUNCHING ARRANGEMENT
902	LAUNCHING RAMP SHT. "1"

	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 786
REGISTERED
PROFESSIONAL ENGINEER
CIVIL ENGINEERING

APPROVED: GCL

J. RAY McDERMOTT & CO., INC.

DATE: 1-28-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	GCL	1-28-66
STRUCTURAL	T.C.A.	1-28-66
PROCESS		
MECHANICAL		
ELECTRICAL		
EQUIPMENT		
PUB. CHECK	GCL	1-28-66
PROP. CHECK		

MONO-MOORING SYSTEM

FOR

U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES

FORT BELVOIR, VIRGINIA

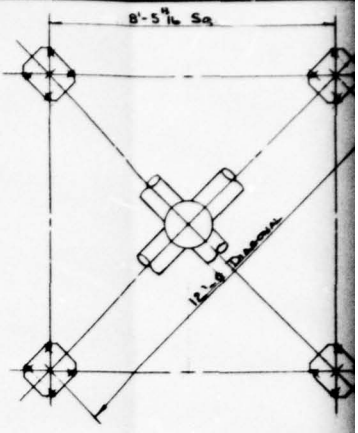
J. RAY Mc DERMOTT & CO., INC.

ENGINEERS — NEW ORLEANS, LA. — CONTRACTORS

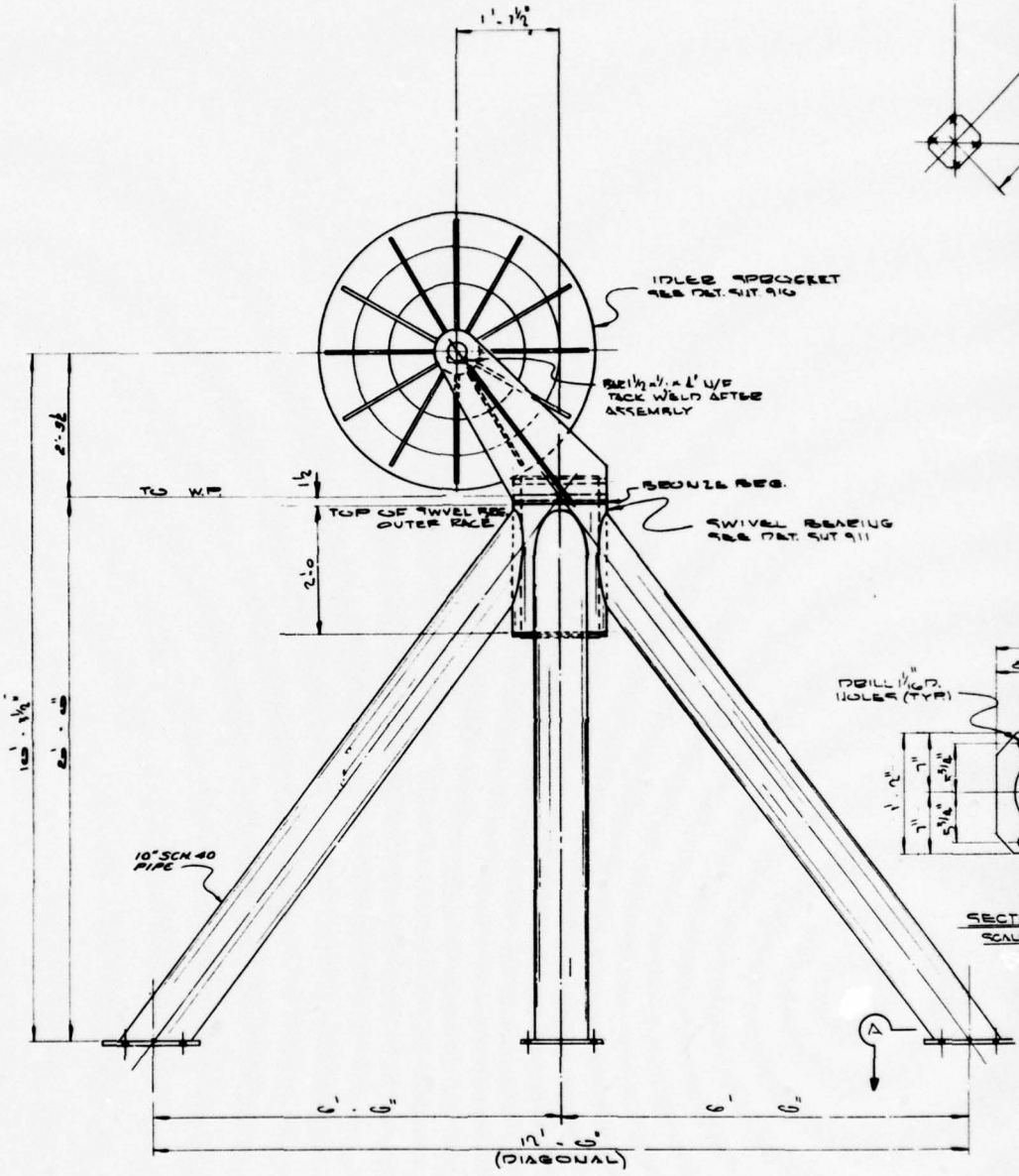
DRAWN BY	SCALE	DATE	PROJECT NO.
FRANCHINA	NOTED	8-24-65	USA 2971
FABRICATORS JOB NO.	56017	J. RAY McDERMOTT JOB NO.	SHEET NO. 906

LAUNCHING RAMP SUB-BASE

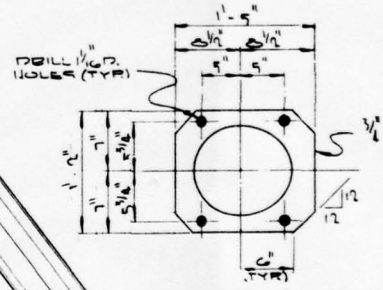
△



KEY PLAN
SCALE 1/2"=1'-0"

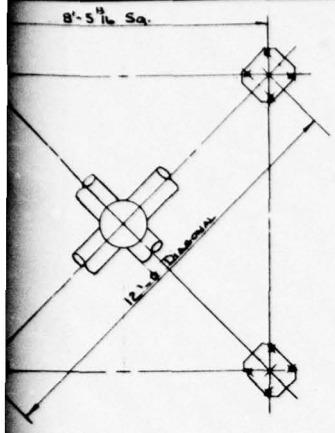


ELEVATION ACE099 DIAG.
SCALE: 1"=1'-0"

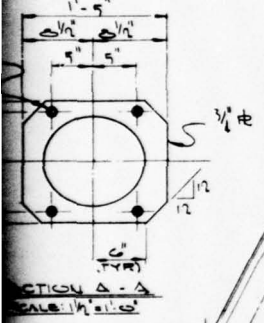


SECTION A - A
SCALE: 1 1/2"=1'-0"

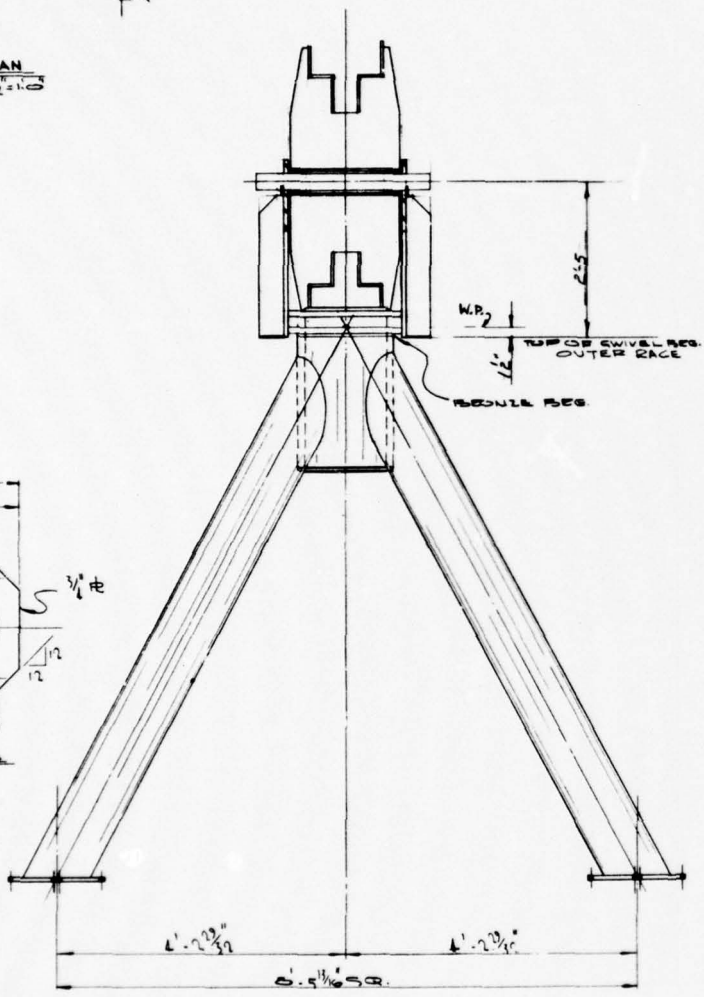
DESIGN	STRUCT.	PIPING	ELEC.	MR.	BY	REVISIONS	DATE	APP.



KEY PLAN
SCALE 1/2"=1'-0"



SECTION A - A
SCALE: 1 1/2"=1'-0"



END ELEVATION
SCALE: 1"=1'-0"

BILL OF MATERIAL

FIND No.	DWG No.	QTY	NOMENCLATURE	SPEC.	MAT'L

REFERENCE DRAWINGS

SHT. No.	TITLE
910	CHAIN TRANSFER FAIRLEAD DETAILS. SHT No 1.
911	do SHT No 2.
907	CHAIN STORAGE BOX

NO	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFFIN C. LEE
No. 7116
REGISTERED
CIVIL ENGINEER

APPROVED: [signature]
J. RAY McDERMOTT & CO., INC.
DATE: 1-20-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	[signature]	1-20-66
STRUCTURAL	F.C.L.	1-20-66
PROCESS		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
PUB. CHECK	[signature]	1-20-66
PROP. CHECK		

MONO-MOORING SYSTEM

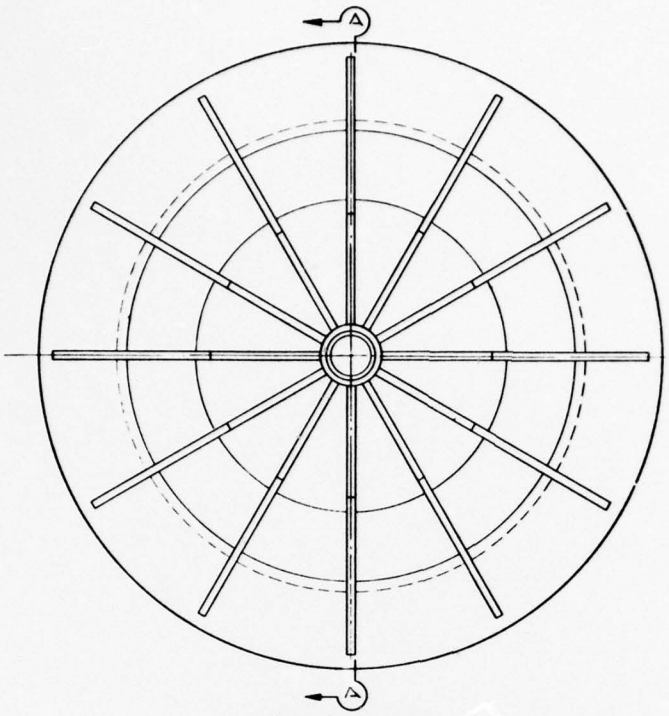
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

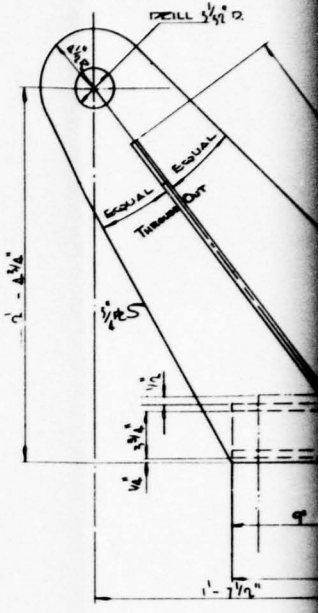
J. RAY McDERMOTT & CO., INC.
ENGINEERS — NEW ORLEANS, LA. — CONTRACTORS

DRAWN BY	SCALE	DATE	PROJECT NO.
ROSS	VOTED	9-13-65	USA 7971
FABRICATORS JOB NO.		J. RAY McDERMOTT JOB NO.	SHEET NO.
96011			909

CHAIN TRANSFER FAIRLEAD

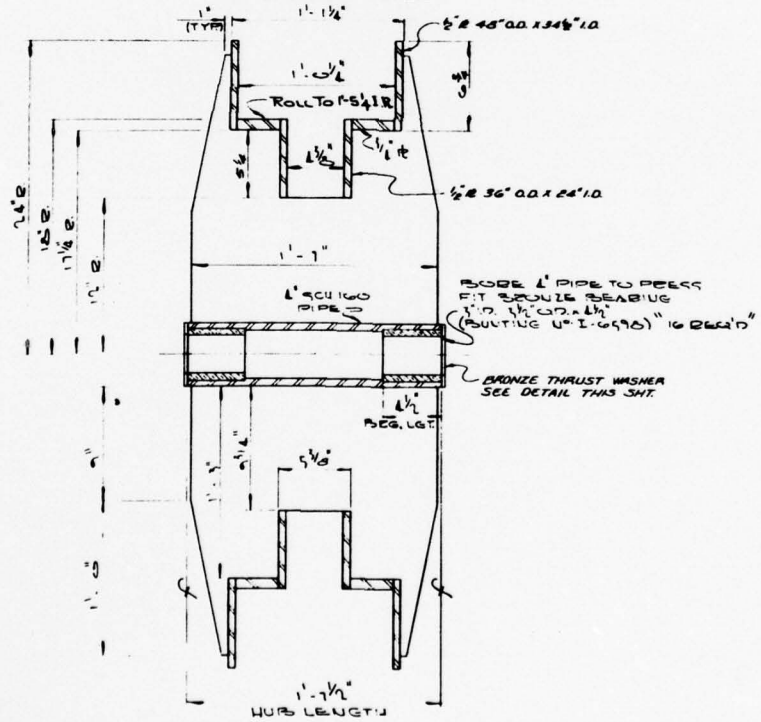
1





SIDE ELEVATIO

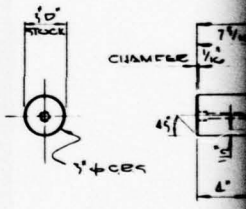
SIDE ELEVATION



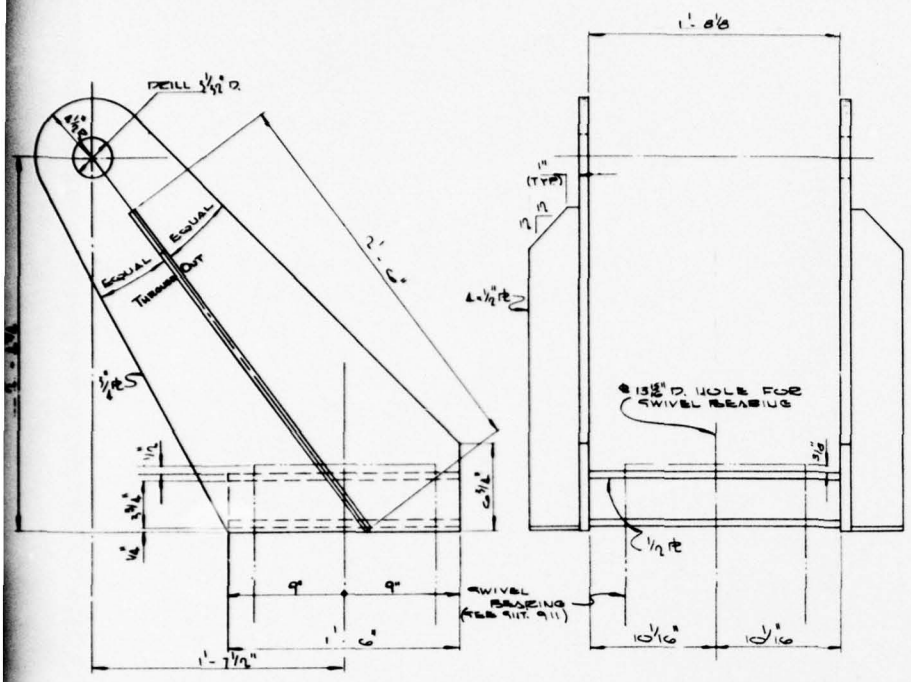
SPROCKET DETAIL

U° REQ'D (2)

SECTION A-A



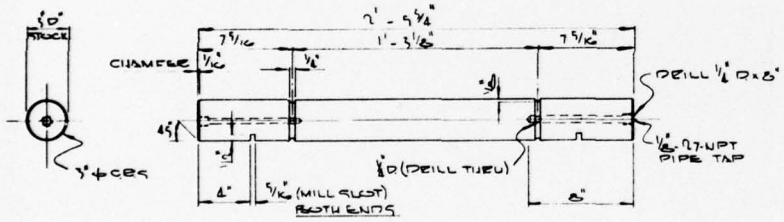
DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING



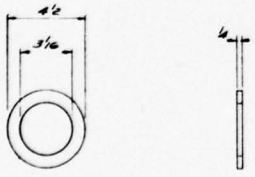
SIDE ELEVATION

FRONT ELEVATION

SPROCKET HOUSING
U° REQ'D. (6)



SHAFT DETAIL
U° REQ'D (6)



BRONZE THRUST WASHER
CAST PHOSPHOR
2 - REQ'D
4" I.D.

BILL OF MATERIAL

FIND No.	DWG No.	QTY.	NOMENCLATURE	SPEC.	MAT'L.

REFERENCE DRAWINGS

DWG No.	TITLE
909	CHAIN TRANSFER FAIRLEAD
911	do DETAILS SHT No. 2

DESIGNED	DATE	APP.

DESIGN	STRUCT.	PIPING	ELEC.	MK	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7551
REGISTERED PROFESSIONAL ENGINEER IN CIVIL ENGINEERING

APPROVED: Griff Lee

J. RAY McDERMOTT & CO., INC.
DATE 1-20-66

ENGINEERS APPROVAL

	BY	DATE
PROJECT		
STRUCTURAL	J.C.A.	10-25-66
PROCESS		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
PAD CHECK		
PROP. CHECK		

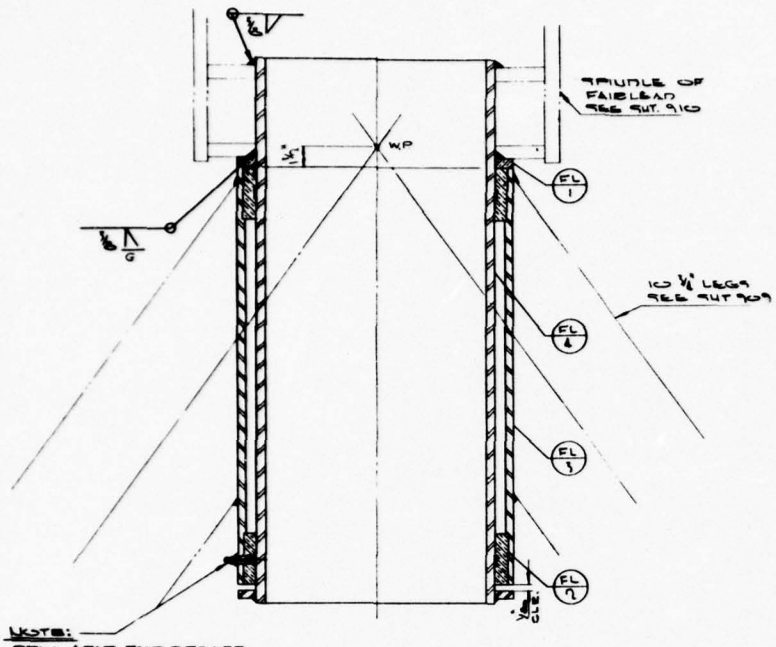
MONO-MOORING SYSTEM

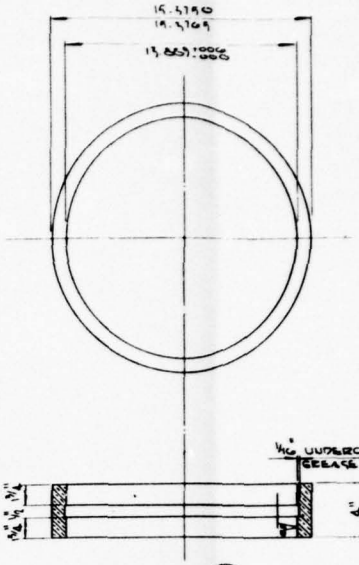
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY McDERMOTT & CO., INC.
ENGINEERS CONTRACTORS
NEW ORLEANS, LA.

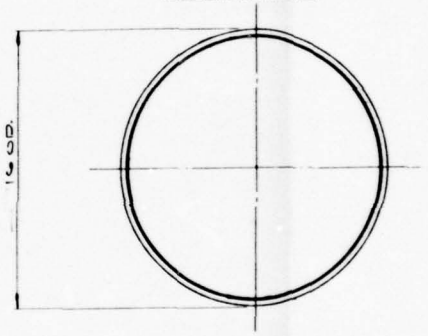
DRAWN BY	SCALE	DATE	PROJECT NO.
BJSS	3/16" = 1"	9-21-66	USA-2971
FABRICATORS JOB NO.	56017	J. RAY McDERMOTT JOB NO.	SHEET NO. 910

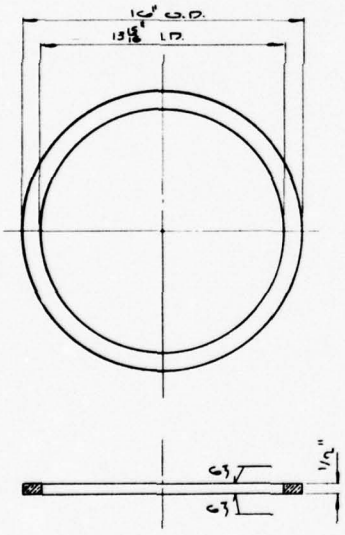
CHAIN TRANSFER FAIRLEAD DETAILS SHT. 1



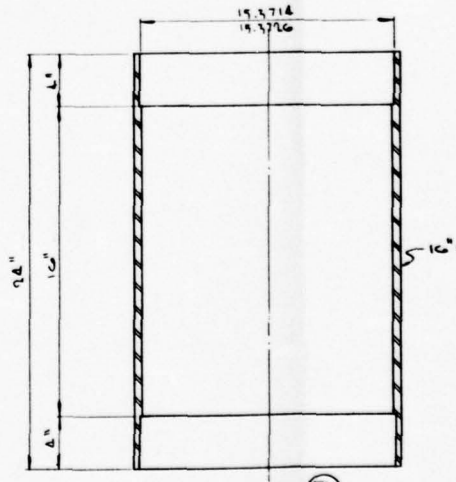


PART N° (FL 1)
N° REQ'D 10
MAT'L: SAE 1015 BEZ.



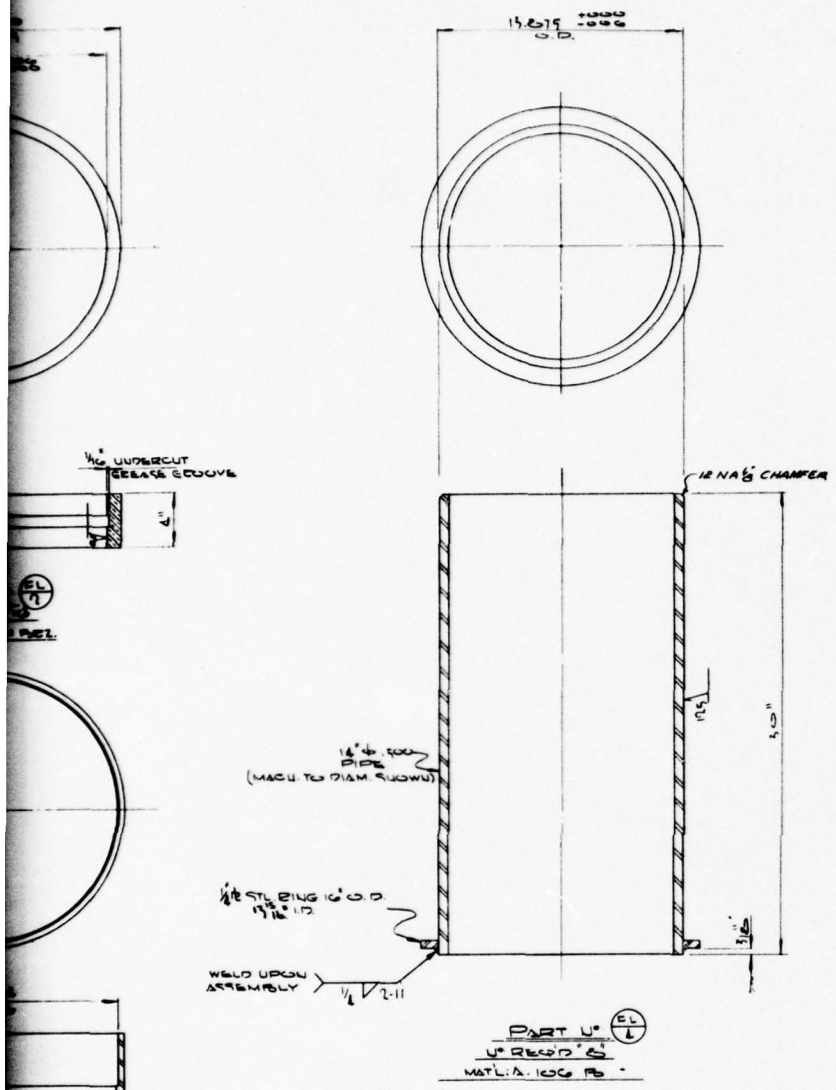


PART N° (FL 1)
N° REQ'D 2
MAT'L: SAE 1015 BEZ.



PART N° (FL 3)
N° REQ'D 2
MAT'L: A-1026 B

	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING



BILL OF MATERIAL

FIND NO.	DWG NO.	QTY	NOMENCLATURE	SPEC.	MAT'L
FL-1	911	6	THRUST BEARING		SAE 10 BRZ.
FL-2	do	16	COLLAR REG.		SAE 10 BRZ.
FL-3	do	6	OUTER RACE		A-106-Gr B
FL-4	do	6	INNER RACE		A-106-Gr B

REFERENCE DRAWINGS

SHT. NO.	TITLE
909	CHAIN TRANSFER FAIRLEAD
910	do DETAILS SHT "1"

NO.	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
No. 7126
REGISTERED
CIVIL ENGINEER

APPROVED: Griff C. Lee
J. RAY Mc DERMOTT & CO., INC.
DATE: 1/20/66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	GLB	1-17-66
STRUCTURAL	J.C.B.	11-26-65
PROCESS		
MECHANICAL		
ELECTRICAL		
INSTRUMENT.		
FAB. CHECK	GLB	1-17-66
PROD. CHECK		

MONO-MOORING SYSTEM

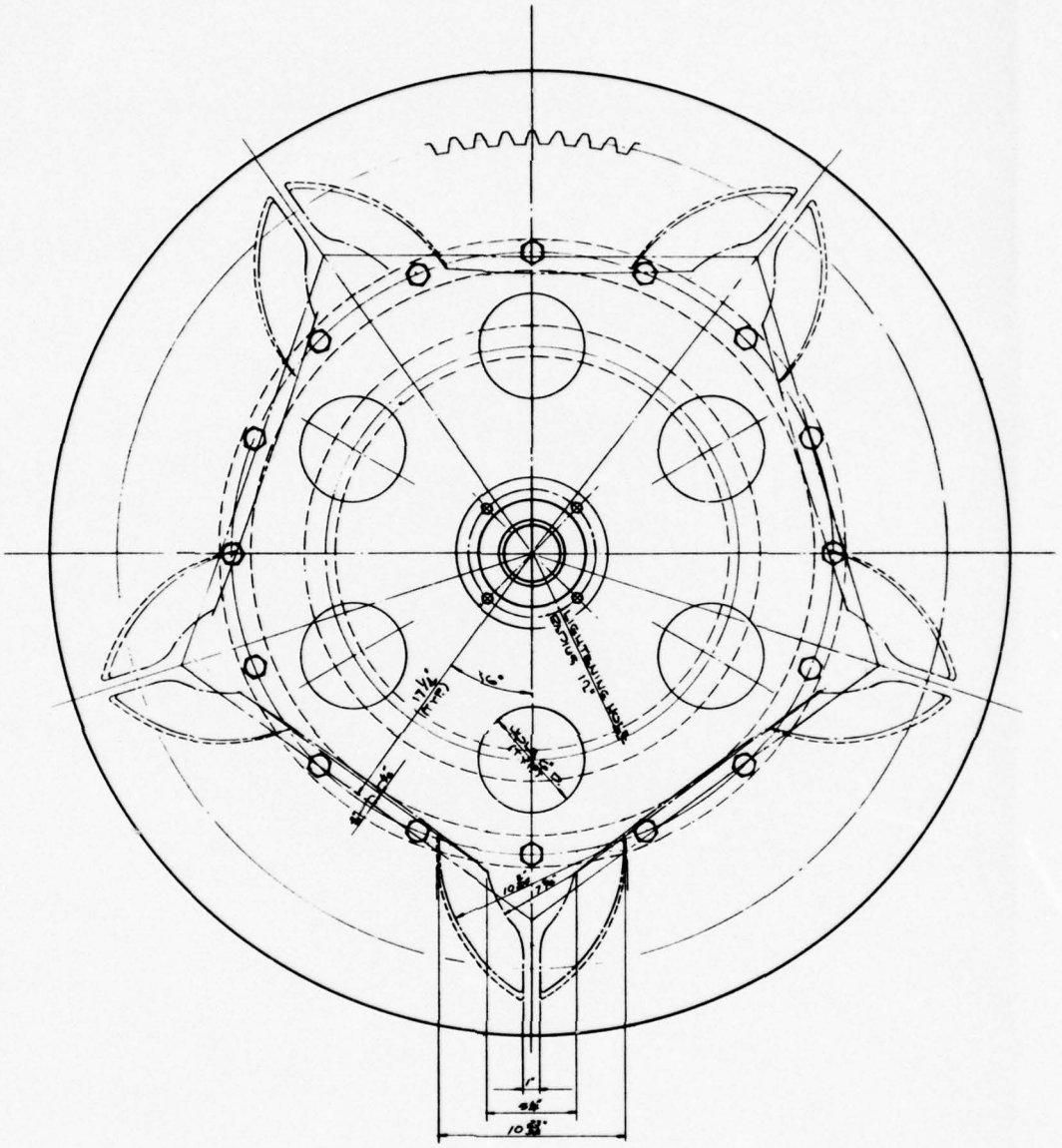
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

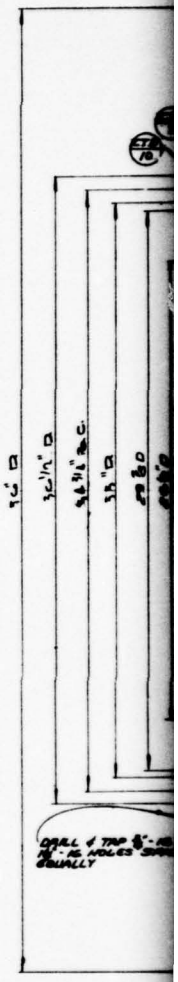
J. RAY Mc DERMOTT & CO., INC.
ENGINEERS CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
ROSS	3"=1'-0"	9-19-64	USA-7971
FABRICATORS JOB NO.	J. RAY Mc DERMOTT JOB NO.		SHEET NO.
560217			911

CHAIN TRANSFER FAIRLEAD DETAILS SHT. 2

SPROCKET DATA				
CHAIN	P. D.	TEETH	PITCH	No. REQ'D
ASA # 120	47.79	100	1½"	(2) ONLY

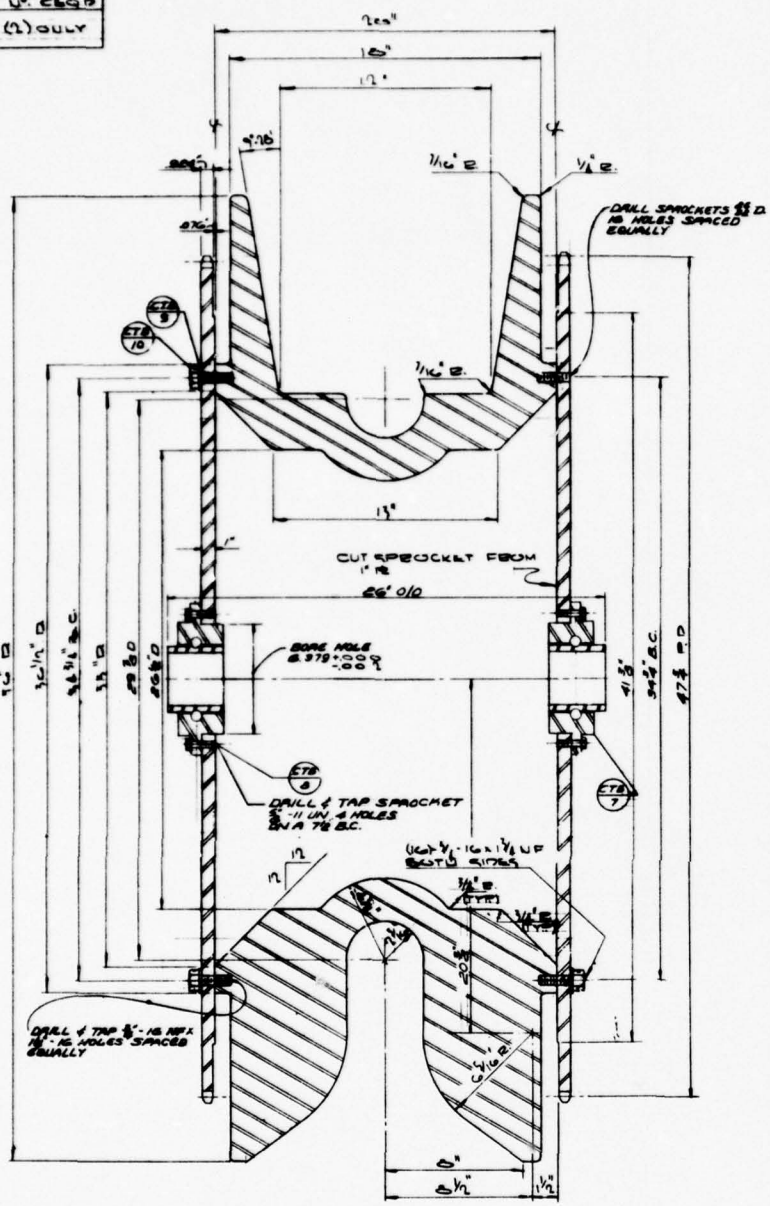




WILDCAT DETAIL
No REQ'D: (1)
MAT'L: MILD STL.

DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

SPROCKET DATA		
TEETH	PITCH	Ø. ESQ'D
100	1½"	(2) GULY



BILL OF MATERIAL

FIND No.	DWG. No.	QTY.	NOMENCLATURE	SPEC.	MAT'L
CTB-7	913	2	5" SEAL MASTER MFC 48		
CTB-8	913	6	⅝" x 2" LG. H.H.M.B.		
CTB-9	913	32	⅝" STD. WASHER		
CTB-10	913	32	⅝" x 2" H.H.M.B. 18 NFX		

REFERENCE DRAWINGS

SHT. No.	TITLE
912	CHAIN TRANSFER BOOM

	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	INS.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF. C. LEE
REG. No. 7181
REGISTERED ENGINEER
APPROVED: [signature]
J. RAY McDERMOTT & CO., INC.
DATE: 1/26/66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	[signature]	1/26/66
STRUCTURAL		
PROCESS		
MECHANICAL	[signature]	2/2/66
ELECTRICAL		
INSTRUMENT		
PAD. CODES	SB	2/2/66
PROP. CODES		

MONO-MOORING SYSTEM

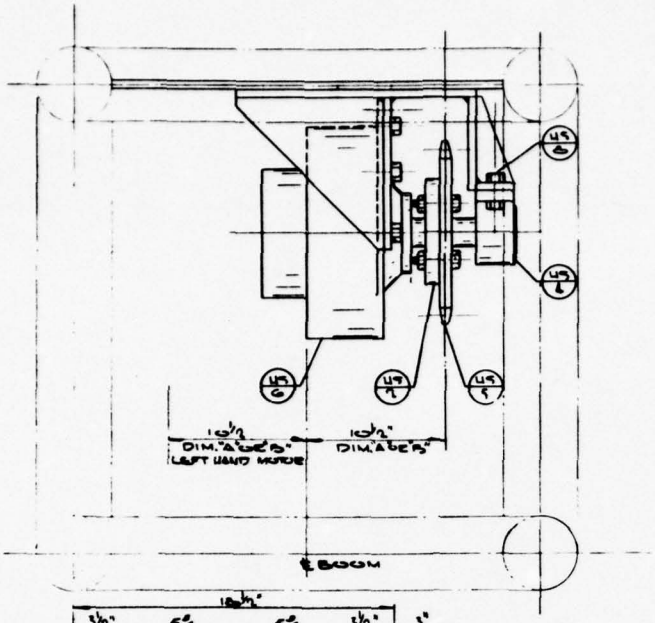
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

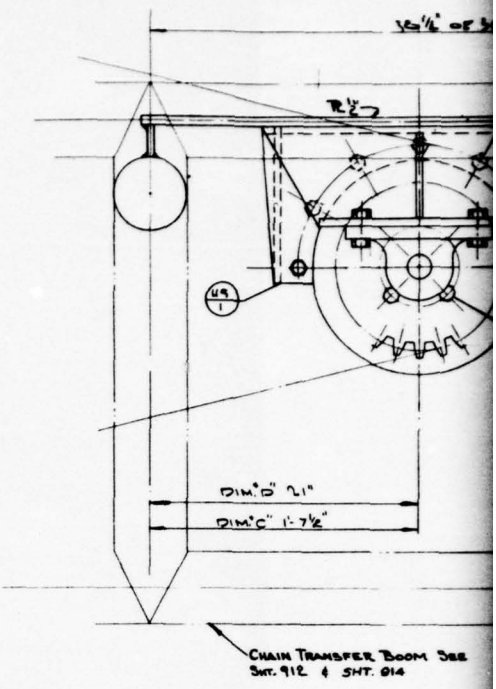
J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

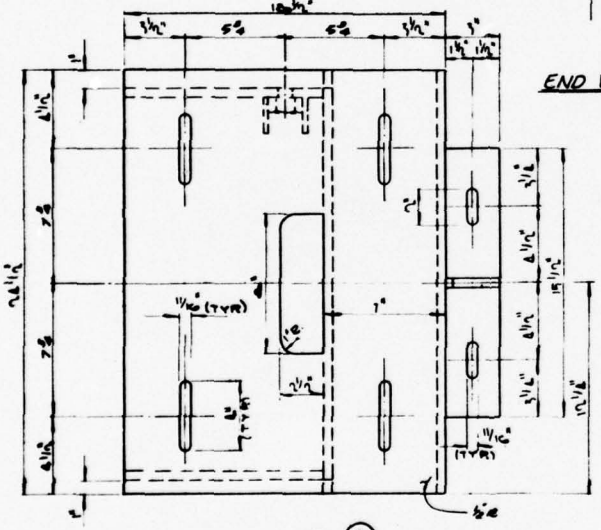
DESIGN BY	SCALE	DATE	PROJECT NO.
BOSS	1" = 1'-0"	9-28-65	USA-7971
FABRICATORS JOB NO.		J. RAY McDERMOTT JOB NO.	SHEET NO.
	66017		913

CHAIN TRANSFER BOOM
WILDCAT DETAILS

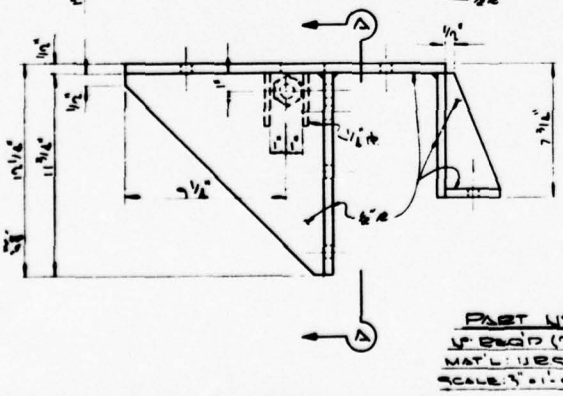
Δ





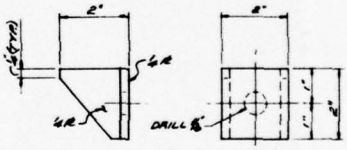


END VIEW

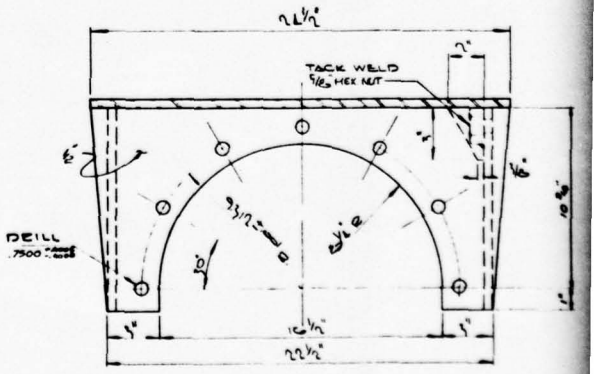


PART Nº 49/1
Nº REQ'D (1)
MAT'L: HRS
SCALE: 3"=1'-0"

SECTION "914-B" ASSEMBLY
SCALE: 3/16"=1"
SHT.

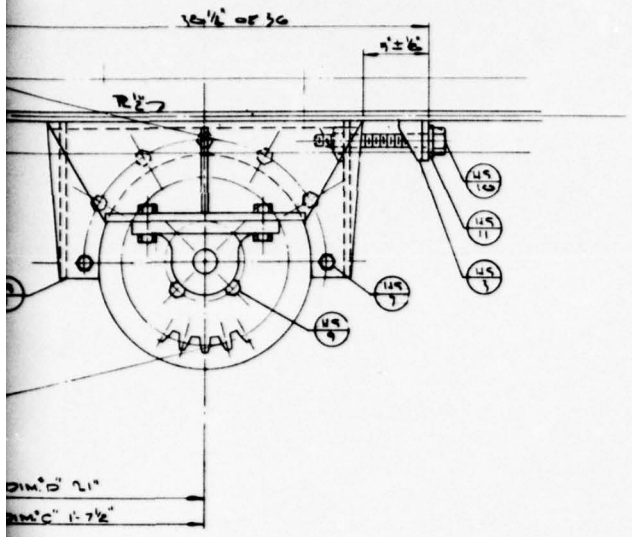


PART Nº 49/3
Nº REQ'D 2
MAT'L: HRS
SCALE: 4"=1"

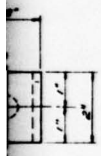


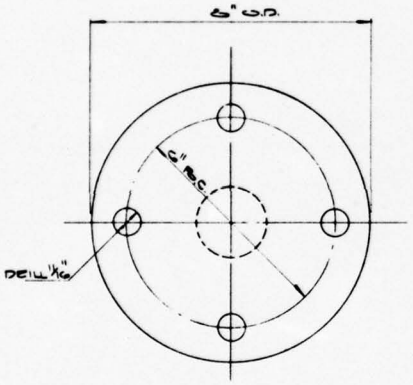
SECTION A-A

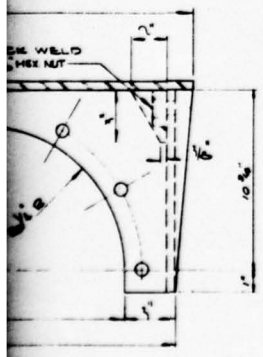
DESIGN	STRUCT.	PIPING	ELEC.	MR.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MR.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING

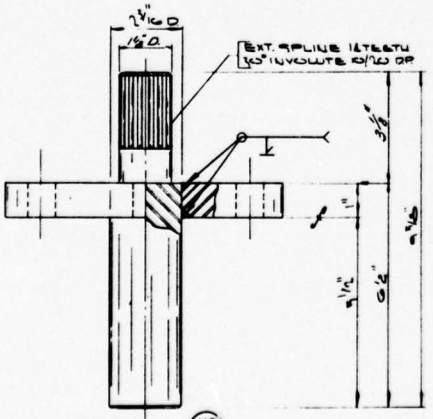


CHAIN TRANSFER BOOM SEE SHT. 912 & SHT. 914









PART Nº 49 U° REQ'D (9)

MAT'L: CRS

SCALE: HALF SIZE

A

BILL OF MATERIAL

FIND Nº	DWG Nº	QTY.	NOMENCLATURE	SPEC.	MAT'L
49-1	SEE SHT 912	2	MOTOR MOUNT		WELD.
49-2		2	MOTOR SHAFT		C.R.S.
49-3		2	TAKE UP BRACKET		H.R.S.
49-4		2	LINK, PAULT SELF-ALIG. ROLLER BLOCK (FIG. 2356)		
49-5		2	STL. ROLLER CHAIN, 1¼" PITCH 11 PITCH LONG (120A1 ROLLER)		
49-6		2	11,000 FOOT POUND GEAR-MATIC HYD. MOTOR.		
49-7		16	⅝-18 UNF x 1" MACH. BOLT & HEX. NUT (GALV)		STEEL
49-8		8	⅝-11 UNC HEX MACHINE BOLT & LOCK WASH & NUT		do
49-9		8	⅝-18 UNF-2 x 1½ MACH BOLT & HEX NUT (CRS) (GALV)		do
49-10		2	⅝-11 UNC-2 x 9" MACH. BOLT (GALV)		do
49-11		2	½" SLEEVE W/ WASHER ½" (GALV)		do

REFERENCE DRAWINGS

PLAT Nº	TITLE
913	CHAIN GUARD FOR BOOM HYD MOTORS
912	CHAIN TRANSFER BOOM

	DATE	APP.
DESIGN		
STRUCT.		
PIPING		
ELEC.		
MK.		
BY		
REVISIONS		
DATE		
APP.		

GRIFF C. LEE
REG. NO. 703
STATE OF LOUISIANA

APPROVED:

J. RAY Mc DERMOTT & CO., INC.

DATE: 12-8-69

ENGINEERS APPROVAL

	BY	DATE
PROJECT		
STRUCTURAL		
PIPING		
MECHANICAL		
ELECTRICAL		
INSTRUMENT		
PAD CHECK		
PUMP CHECK		

MONO-MOORING SYSTEM

FOR

U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES

FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.

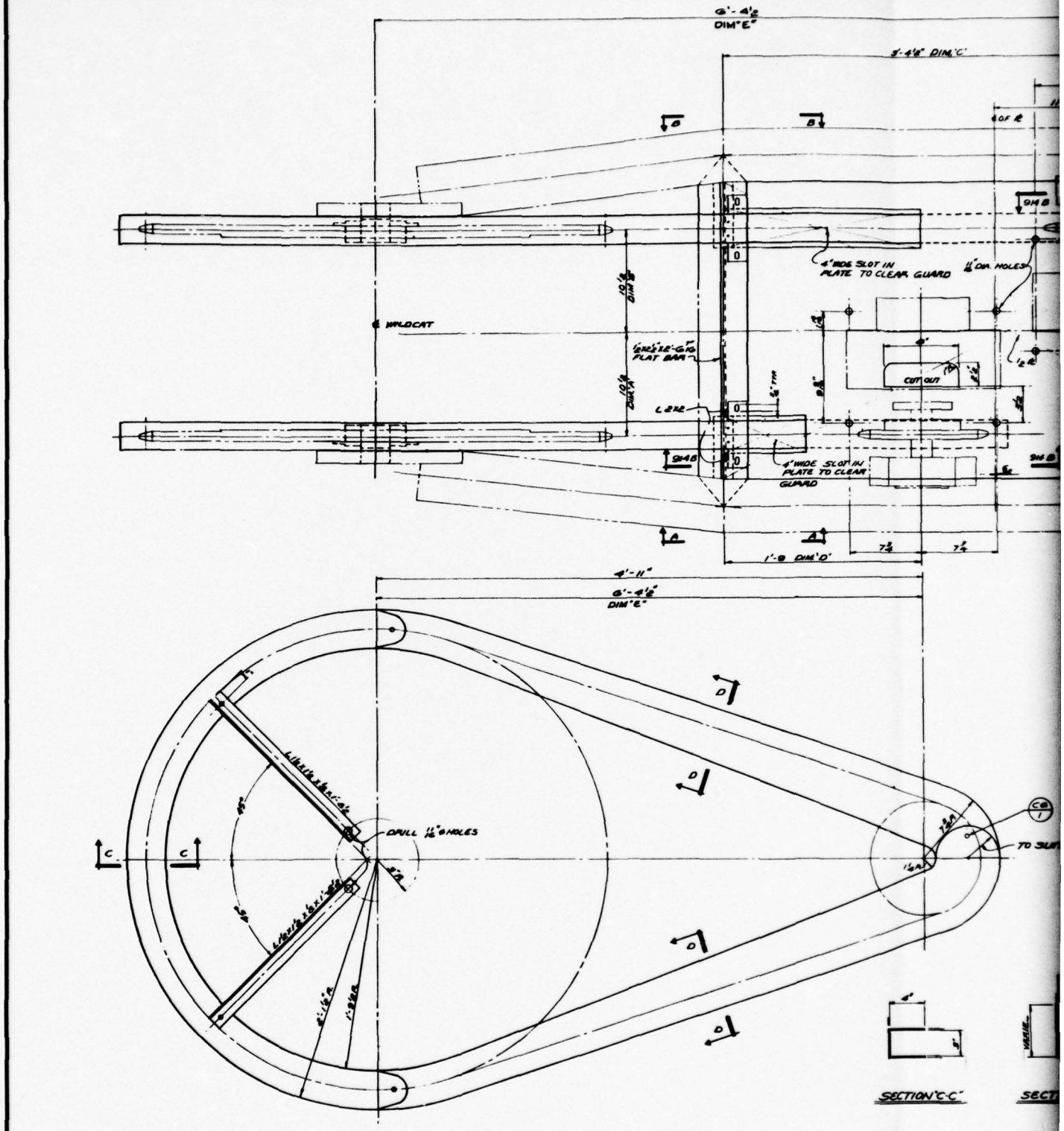
ENGINEERS — CONTRACTORS

NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
BOSS	NOTED	9-2-69	USA-7971
FABRICATORS JOB NO.	J. RAY Mc DERMOTT JOB NO.		SHEET NO.
566017			914

CHAIN BOOM HYD. MOTOR ASSEMBLY

△

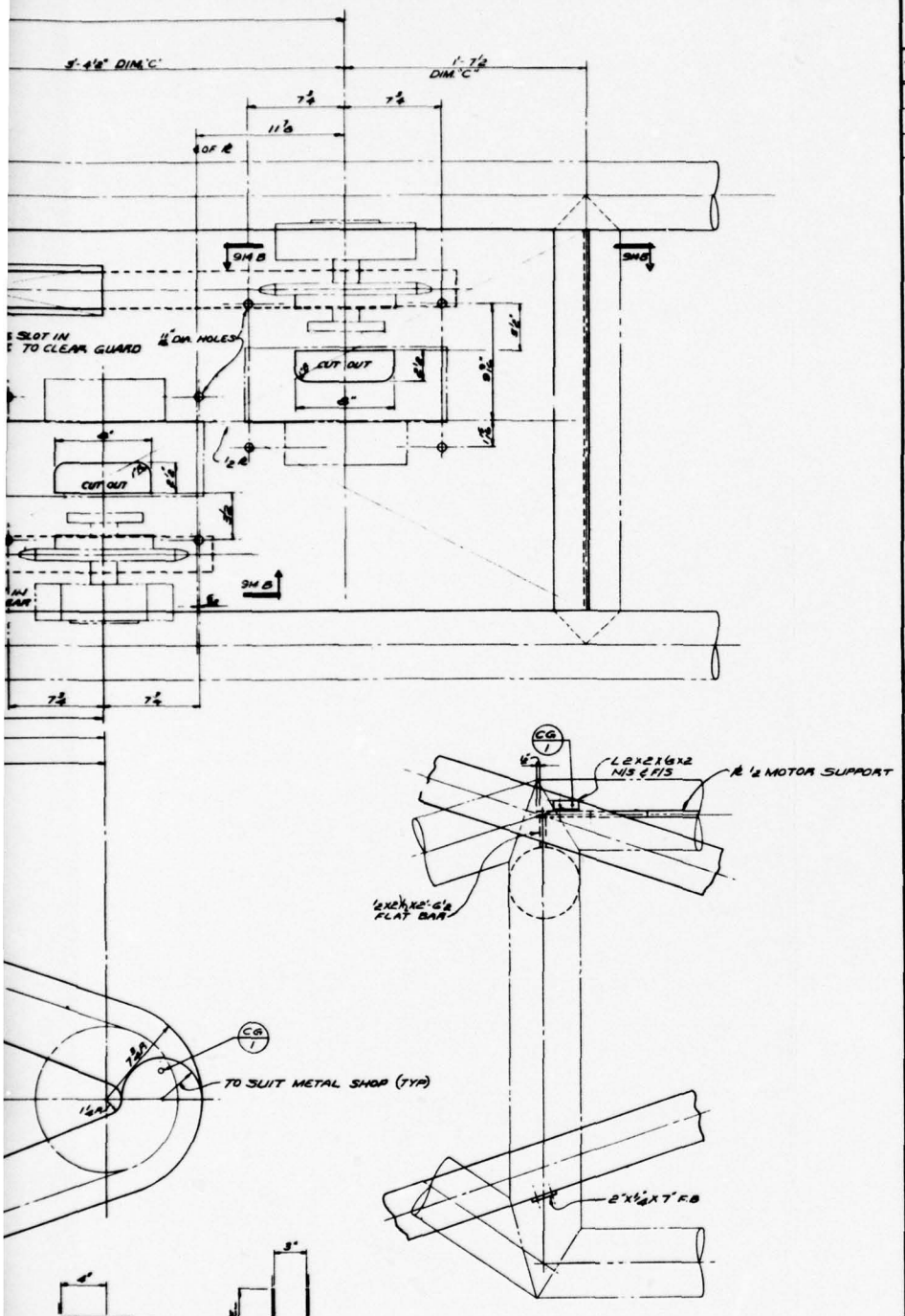


CHAIN GUARD

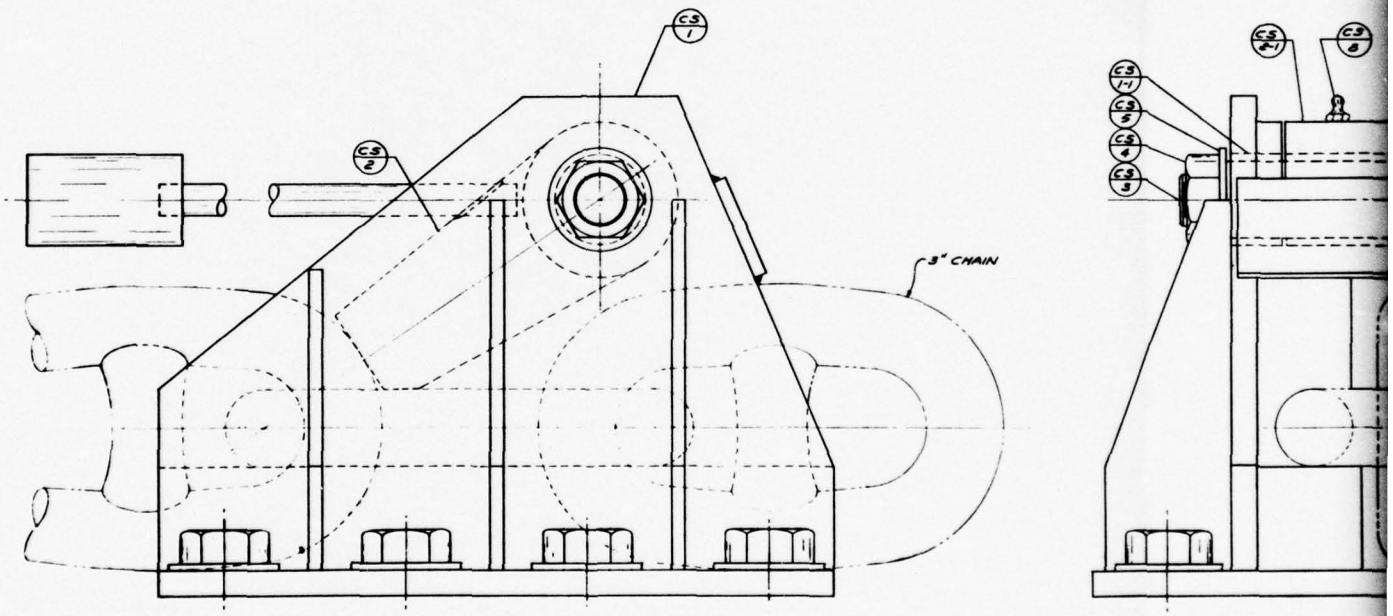
ONE SHOWN - ONE OPPOSITE HAND

3/16" = 1"

DESIGN	STRUCT.	PIPING	ELEC.	MECH.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MECH.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.


3'-4⅛" DIM. 'C'
1'-7½" DIM. 'C'
7¼
7¼
11⅛
40F R
SHB
SHB
SHB
SLOT IN TO CLEAR GUARD
4" DIA. HOLES
CUT OUT
CUT OUT
CUT OUT
½
½
½

1



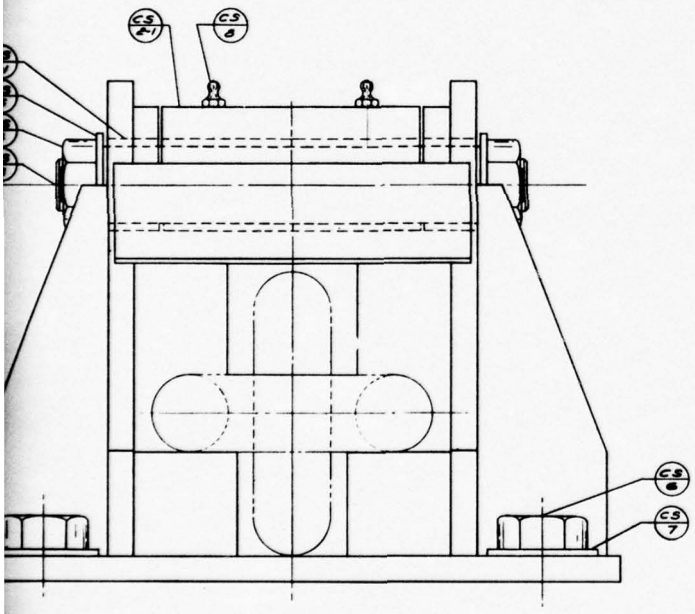
ASSEMBLY
CHAIN STOPPER

	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING

2

BILL OF MATERIAL

FIND NO	DWG NO	QTY	NOMENCLATURE	SPEC.	MAT'L
CS-1	SEE SHT 917		BODY		NAS
CS-1-1			3"ID X 3 1/2" OD X 2 1/2" CUT FROM BUNTING INDUSTRIAL TYPE BEARING 1-6714		BRONZE
CS-2			PAWL		CAST STEEL
CS-2-1	SEE SHT. 918		3"ID X 3 1/2" OD X 2" BUNTING INDUSTRIAL TYPE BEARING 1-6714		BRONZE
CS-3			SHAFT		CRS
CS-4	916	2	2"-8UN HEAVY HEX NUT		STEEL
CS-5	916	2	2" STD. FLAT WASHER		STEEL
CS-6	916	3	2"-8 UN X 4 1/2" BOLT		STEEL
CS-7	916	3	2" STD. FLAT WASHER		STEEL
CS-8	916	2	LINCOLN NO 6210 1/4"-28 THREAD GREASE FITTING		



REFERENCE DRAWINGS

SHT. NO	TITLE
917	CHAIN STOPPER DETAILS SHT. 1
916	CHAIN STOPPER DETAILS SHT. 2

NO.	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. 7121
CIVIL ENGINEER
U.S.A.

APPROVED: [signature]
J. RAY Mc DERMOTT & CO., INC.
DATE: 11-29-66
ENGINEERS APPROVAL

	BY	DATE
PROJECT	GCS	10-26
STRUCTURAL		
PIPING		
MECHANICAL	BHP	11/66
ELECTRICAL		
INSTRUMENT		
PUB. CODES	GLP	11-29-66
PROP. CODES		

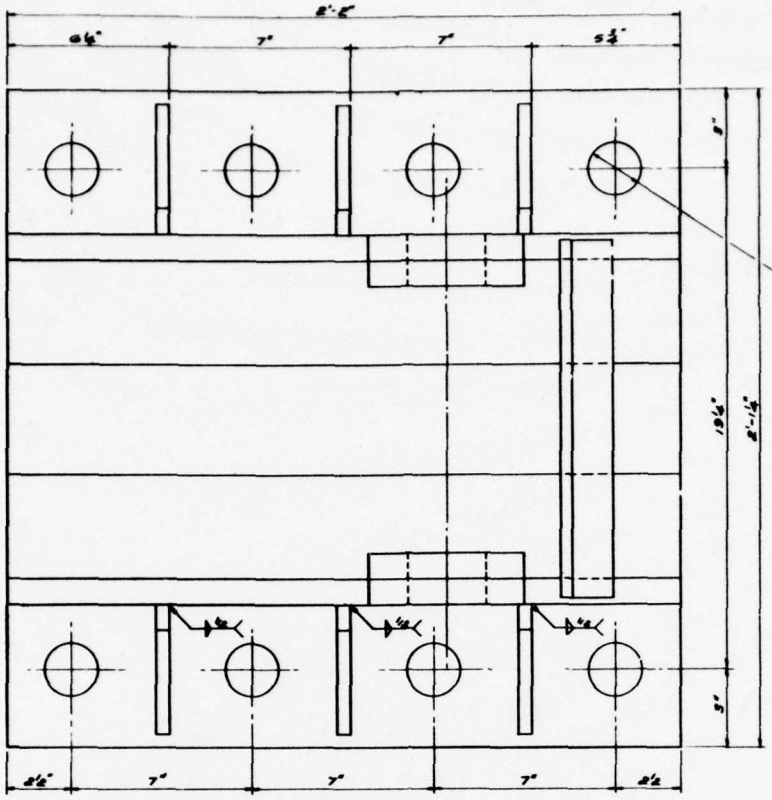
MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

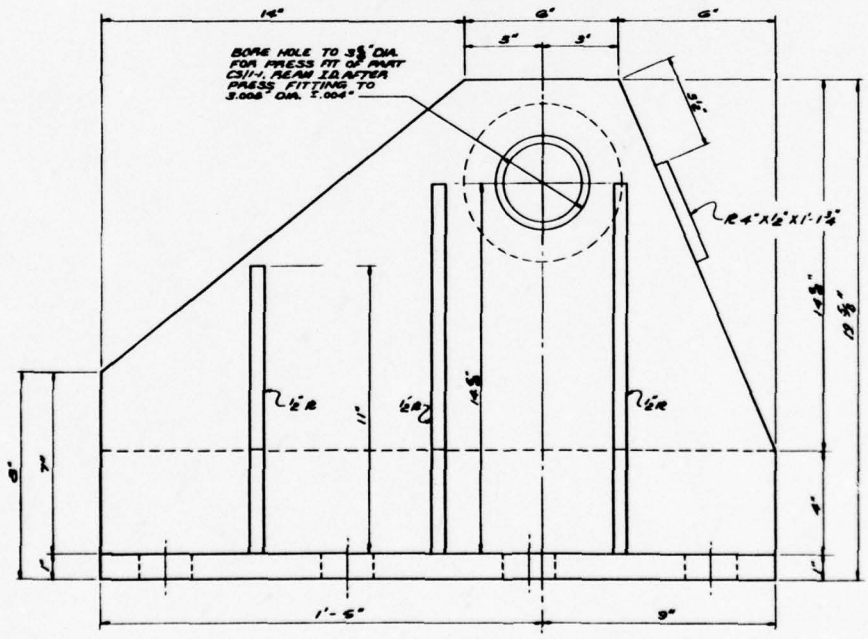
J. RAY Mc DERMOTT & CO., INC.
ENGINEERS CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
FRANCHINA	8" = 1"	10-14-66	USA-2971
FABRICATORS JOB NO.	56017	J. RAY Mc DERMOTT JOB NO.	SHEET NO. 916

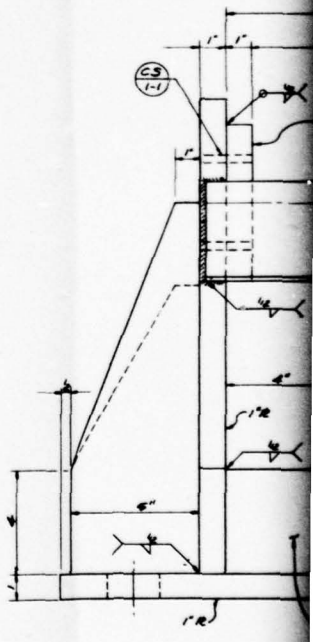
CHAIN STOPPER ASSEMBLY



PLAN



SIDE ELEVATION



PART Nº (CS 1)

Nº REQ'D 1

MAT'L - HRS

SCALE: ½ = 1"

DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING

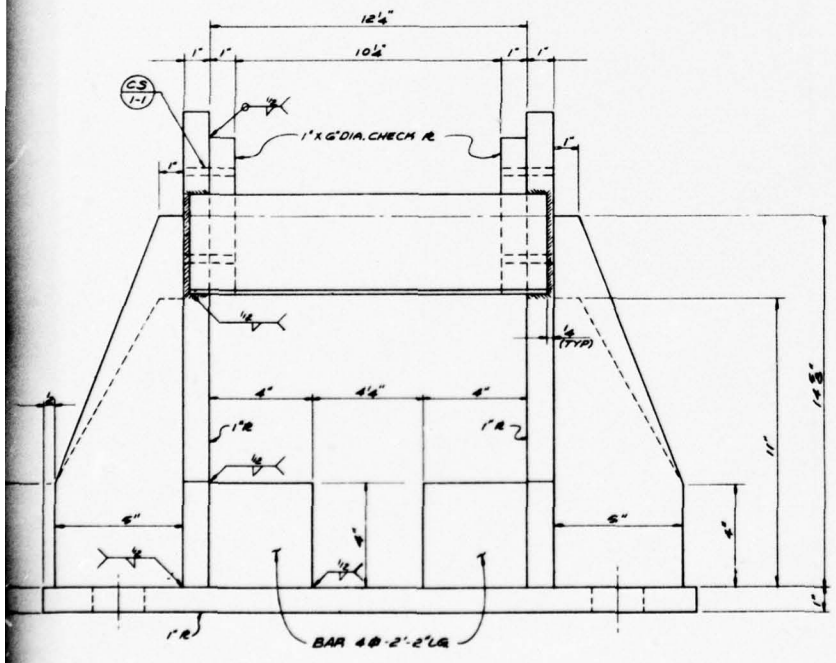
2

BILL OF MATERIAL

FIND NO	DWG. NO	QTY.	NOMENCLATURE	SPEC.	MAT'L
CS-1	917	1	BODY		HRS
CS-1-1	917	2	3" I.D. 3½ OD x 2" CUT FROM BUNTING INDUSTRIAL TYPE BEARING 1-6734		BRONZE

REFERENCE DRAWING

SHT NO	TITLE
916	CHAIN STOPPER ASSEMBLY
918	CHAIN STOPPER DETAILS SHT. 2



END ELEVATION

	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. 7101
REGISTERED ENGINEER
CIVIL

APPROVED: GC Lee

J. RAY McDERMOTT & CO., INC.
DATE: 1/29/68

ENGINEERS APPROVAL

	BY	DATE
PROJECT	GCL	1/29/68
STRUCTURAL		
PROCESS		
MECHANICAL	WP	1/29/68
ELECTRICAL		
INSTRUMENT.		
PAR. CHECK	GCL	1-29-68
PROP. CHECK		

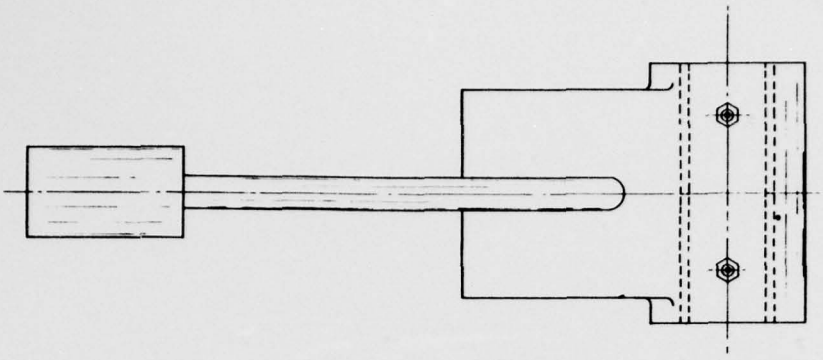
MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

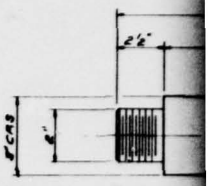
J. RAY McDERMOTT & CO., INC.
ENGINEERS CONTRACTORS
NEW ORLEANS, LA.

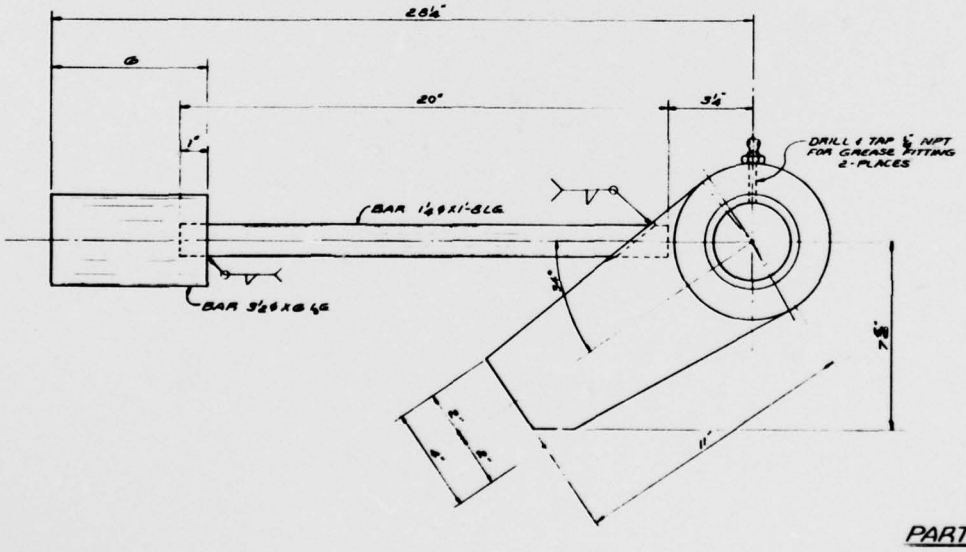
DRAWN BY	SCALE	DATE	PROJECT NO.
FRANCHINA	3"=1'	10-14-65	USA-2871
FABRICATORS JOB NO.		J. RAY McDERMOTT JOB NO.	SHEET NO.
66017			917

CHAIN STOPPER DETAILS SHT. 1



PLAN

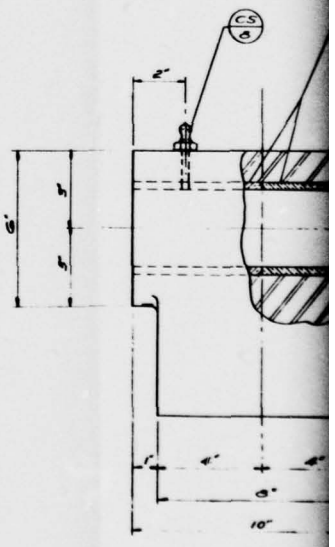




SIDE ELEVATION

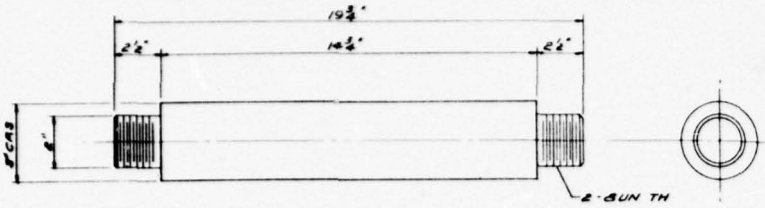
PART Nº (CS/B)

Nº REQ'D - 1
MAT'L - CAST STEEL
SCALE - 3" = 1'



REAR ELEVATI

	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING

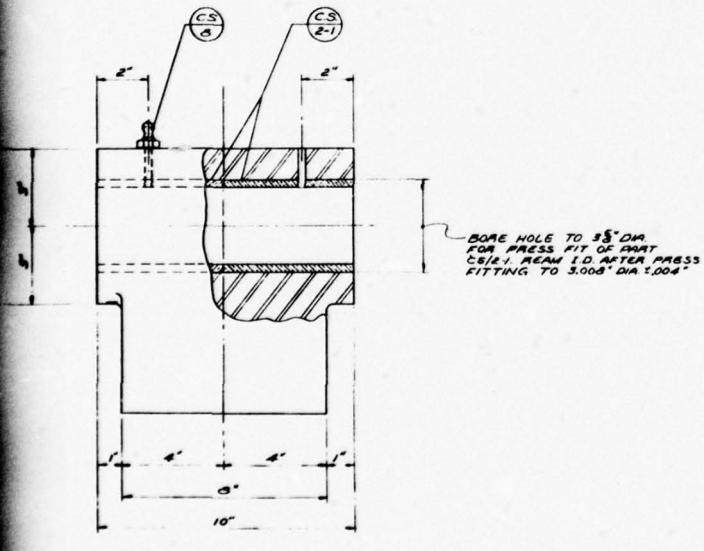


PART Nº (CS/3)

Nº REQ'D 1
MAT'L - CAS
SCALE: ½ = 1'

BILL OF MATERIAL

FIND Nº	DWG. Nº	QTY.	NOMENCLATURE	SPEC.	MAT'L
CS-2	918	1	PAWL		CAST STEEL
CS-2-1	918	2	3"I.D. 3⅝"O.D. X 5" BUNTING INDUSTRIAL TYPE BEARING 1-G774		BRONZE
CS-3	918	1	SHAFT		CRS
CS-8	SEE SHT. 916		LINCOLN Nº 5010 ¼-28 THREAD GREASE FITTING		



REAR ELEVATION

REFERENCE DRAWING

SHT. Nº	TITLE
916	CHAIN STOPPER ASSEMBLY
917	CHAIN STOPPER DETAILS SHT. 1

	DATE	APP.	DESIGN	STRUCT	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. No. 7201
REGISTERED PROFESSIONAL ENGINEER
CIVIL ENGINEER

APPROVED: G C Lee
J. RAY Mc DERMOTT & CO., INC.
DATE: 11-9-65

ENGINEERS APPROVAL

	BY	DATE
PROJECT	GCB	11-8-65
STRUCTURAL		
PROCESS		
MECHANICAL	[illegible]	11-8-65
ELECTRICAL		
INSTRUMENT.		
PAR. CHECK	GCB	11-8-65
PROF. CHECK		

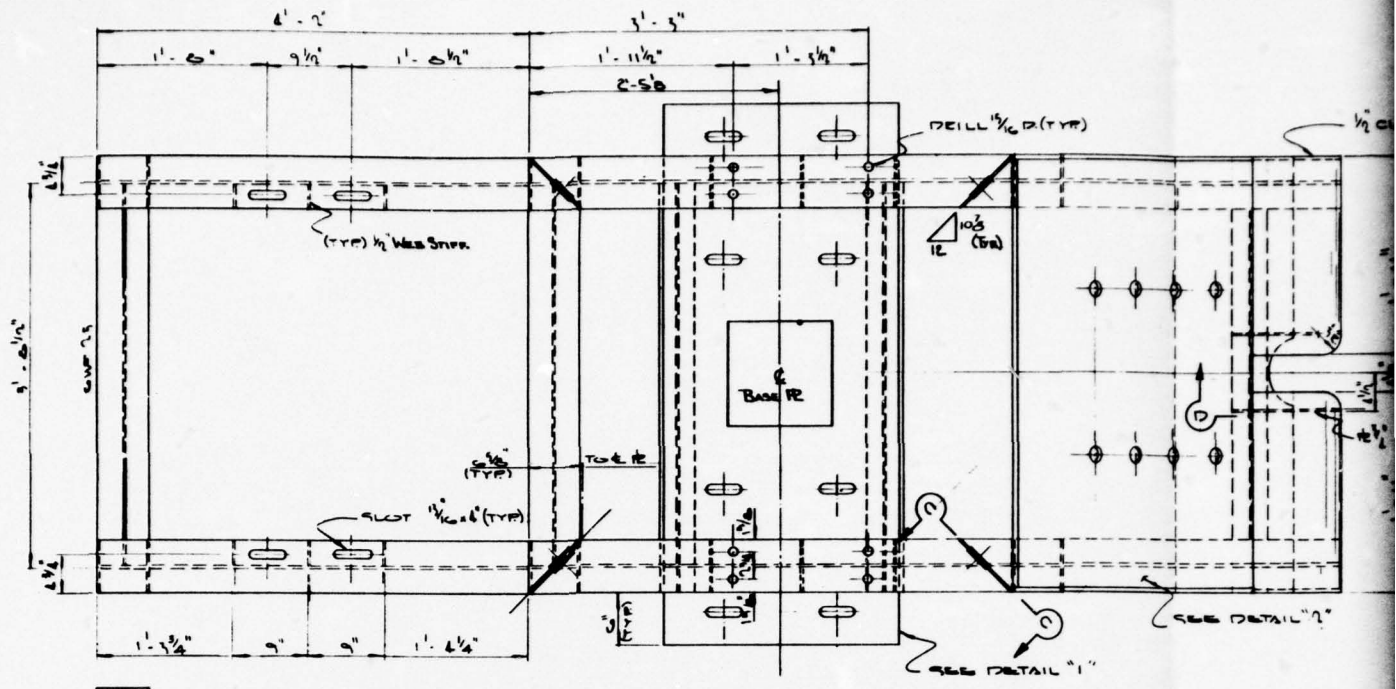
MONO-MOORING SYSTEM

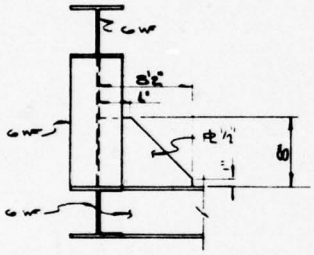
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
FRANCHINA	½" = 1"	10-15-65	USA-2971
FABRICATORS JOB NO.	56017	J. RAY Mc DERMOTT JOB NO.	SHEET NO. 918

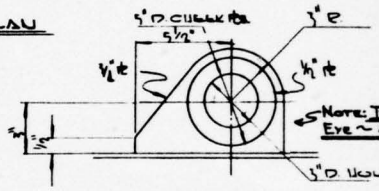
CHAIN STOPPER DETAIL SHT. 2





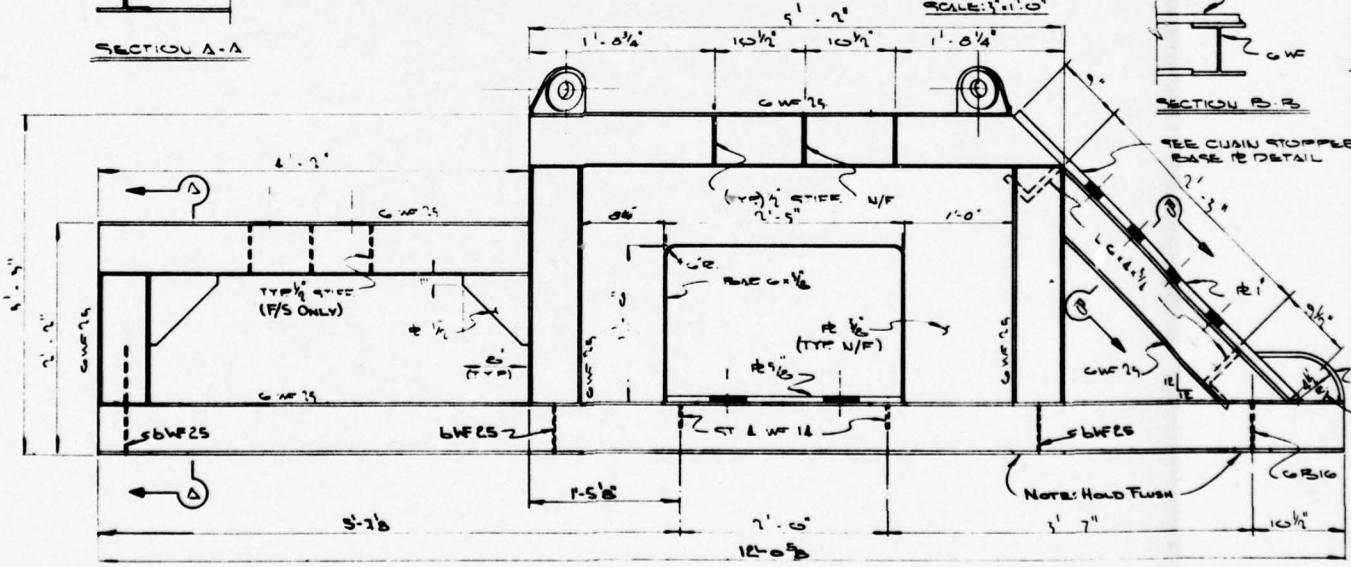
SECTION A-A

PLAN



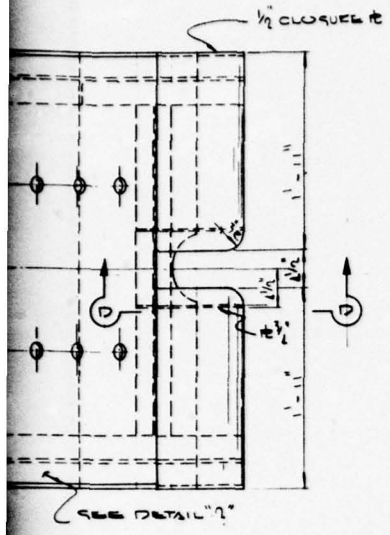
SECTION C-C
SCALE: 3"=1'-0"

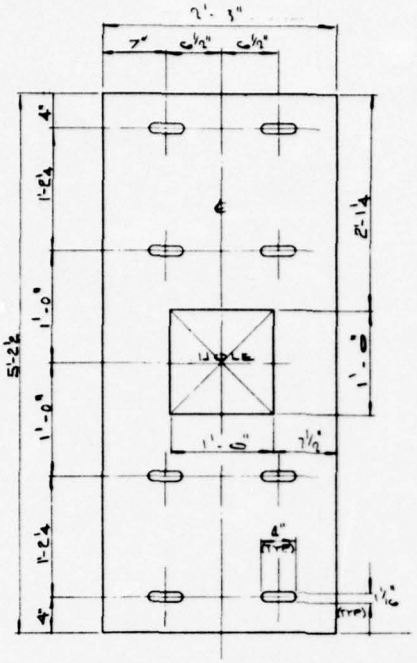
SECTION B-B



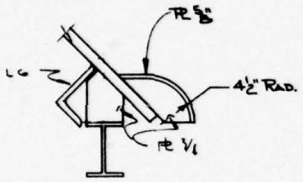
PART No. (1)
SIDE ELEVATION
No. Reqd (1)
SCALE: 1½"=1'-0"

DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING





DETAIL "1"

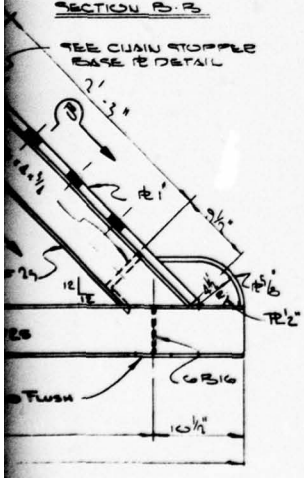


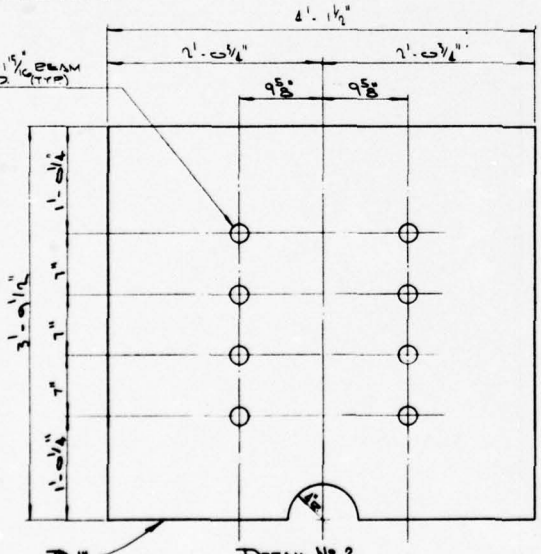
SECTION D-D
SCALE: 1½"=1'-0

NOTE: TYPICAL LIFTING
EYE ~ 4 REQ'D.

2 HOLE

SECTION B-B





DETAIL NO. 2
CHAIN STOPPER
BASE PL DETAIL
SCALE: 1½"=1'-0

BILL OF MATERIAL

FIND NO	DWG NO	QTY.	NOMENCLATURE	SPEC.	MAT'L.
CHN-1	920	1	FRAME		STL

REFERENCE DRAWINGS

SHT. NO	TITLE
919	CHAIN HANDLING WINDLASS
921	CHAIN HANDLING WINDLASS DETAILS SHT. 2

NO	DATE	APP.	REVISIONS	DATE	APP.

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. 7121
REGISTERED
PROFESSIONAL ENGINEER

ENGINEERS APPROVAL

	BY	DATE
PROJECT	JRK	12-2-65
STRUCTURAL		
PROCESS		
MECHANICAL	GCL	12-2-65
ELECTRICAL		
EQUIPMENT		
PUB. CHECK	SD	12-2-65
PROP. CHECK		

MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

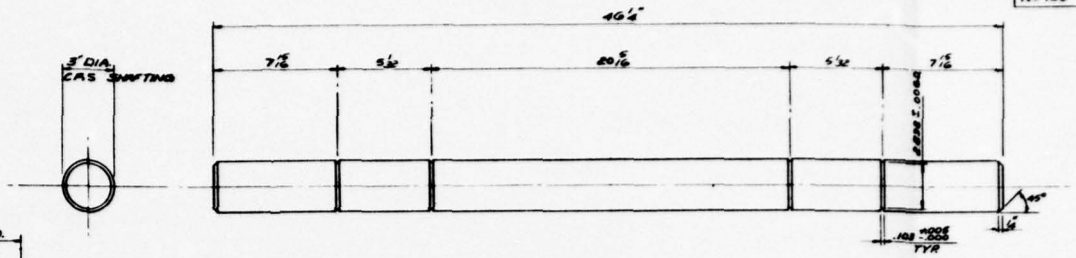
J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
DDS	NOTED	11-2-65	USA-2971
FABRICATION JOB NO.	9017	J. RAY Mc DERMOTT JOB NO.	DRAWING NO. 920

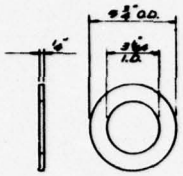
CHAIN HANDLING WINDLASS DETAILS SHT-1

1

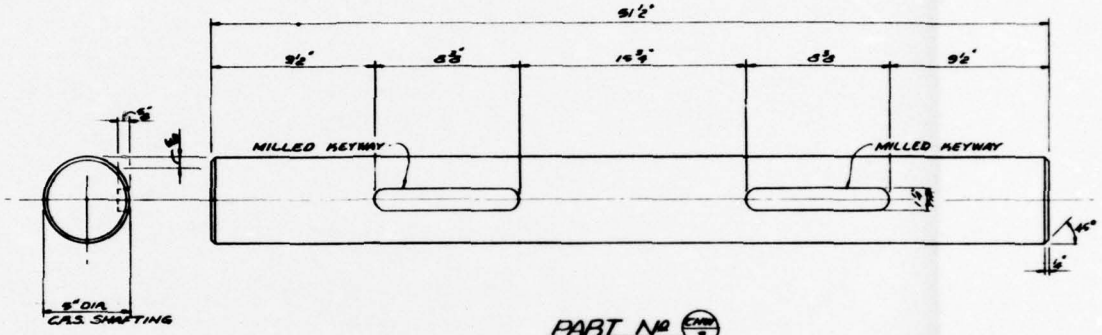
SPR		
CHAIN	P.D.	
ASA NO 120	47.75	
ASA NO 120	10.084	



PART No (CHN 2)
No REQ'D - ONE
MAT'L CAS.
SCALE: 3" = 1'-0

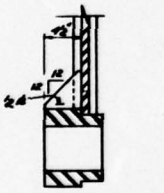


PART No (CHN 6)
No REQ'D ●
MAT'L BRONZE
SCALE: 3" = 1'-0

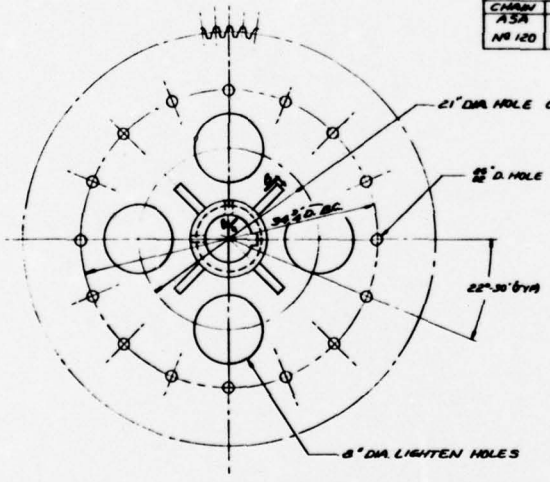


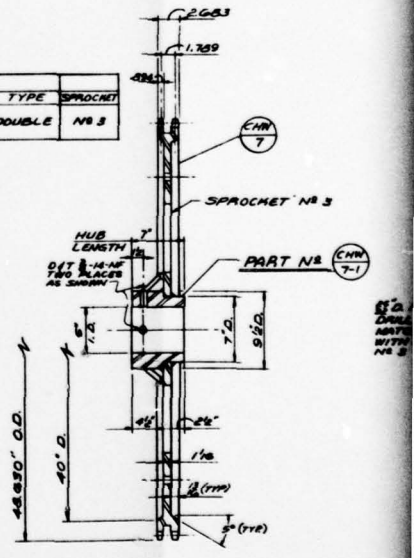
PART No (CHN 3)
No REQ'D - ONE
MAT'L CAS.
SCALE: 3" = 1'-0

SPROCKET DATA					
CHAIN	P.D.	TEETH	PITCH	TYPE	SPROCKET
ASA NO 120	47.75	100	1 1/2	DOUBLE	NO 3



SECTION "B-B"

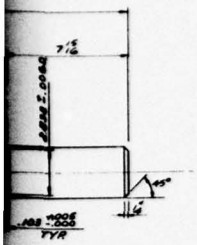


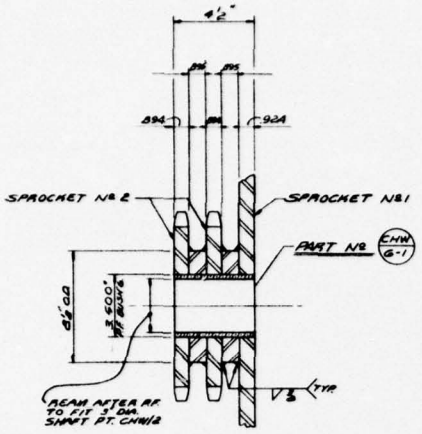


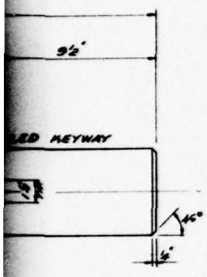
PART No (CHN 7)
No REQ'D - TWO
MAT'L CAS.
SCALE: 1 1/2" = 1'-0

DESIGN	STRUCT.	PIPING	ELEC.	MECH.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MECH.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.

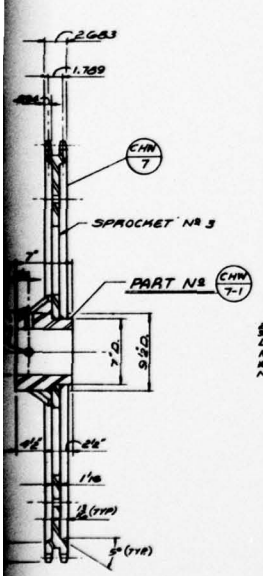
SPROCKET DATA					
CHAIN	P.D.	TEETH	PITCH	TYPE	SPROCKET
ASA NO 120	47.75	100	1½"	A	NO 1
ASA NO 120	10.064	21	1½"	A	NO 2

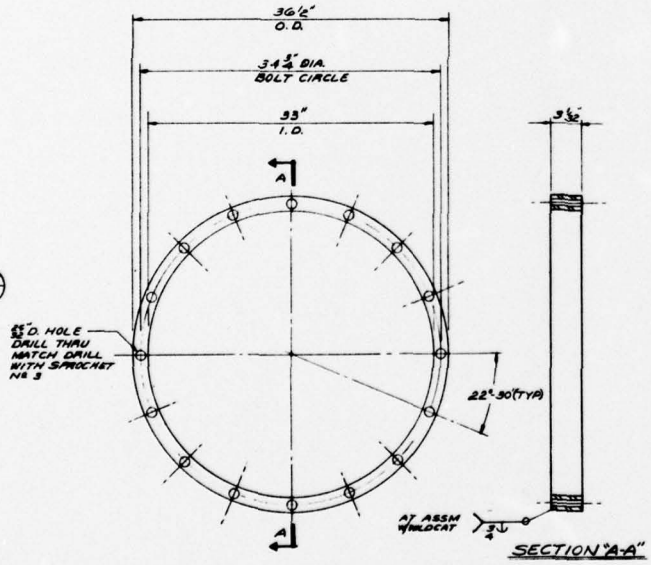






PART NO (CHW 6)
NO REQ'D - TWO
MAT'L. C.R.S.
SCALE: 3" : 1'-0





PART NO (CHW 6)
NO REQ'D - TWO
MAT'L. C.R.S.
SCALE: 1½" : 1'-0

BILL OF MATERIAL

FIND NO	DWG. NO	QTY	NOMENCLATURE	SPEC.	MAT'L
CHW 2	921	1	SHAFT		CAS
CHW 3	921	1	SHAFT		CAS
CHW 4	921	2	SPACER RING		CAS
CHW 5	921	6	THRUST BEARING		BAG BRONZE
CHW 6	921	2	TRIPLE SPROCHET		STEEL
CHW G-1	921	2	CUT FROM BUNTING INDUST. RIAL TYPE BEARING 1-6604		BAG BRONZE
CHW 7	921	2	DOUBLE SPROCHET		CAS
CHW 7-1	921	2	HUB		STEEL

REFERENCE DRAWINGS

SHT NO	TITLE
919	CHAIN HANDLING WINDLASS

	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

ENGINEERS APPROVAL

MOND-MOORING SYSTEM

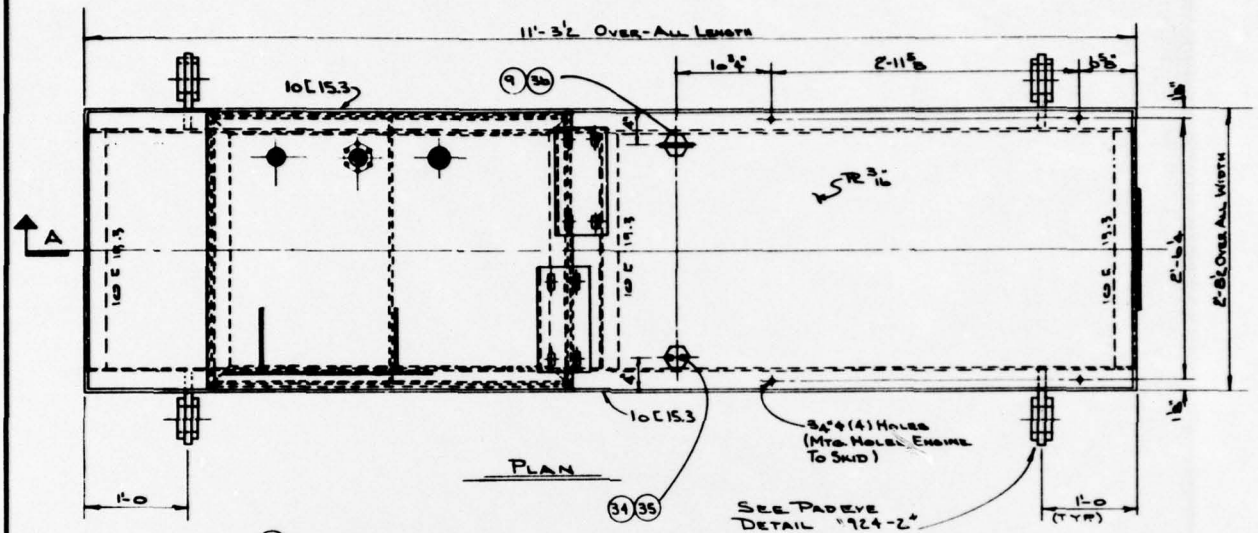
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

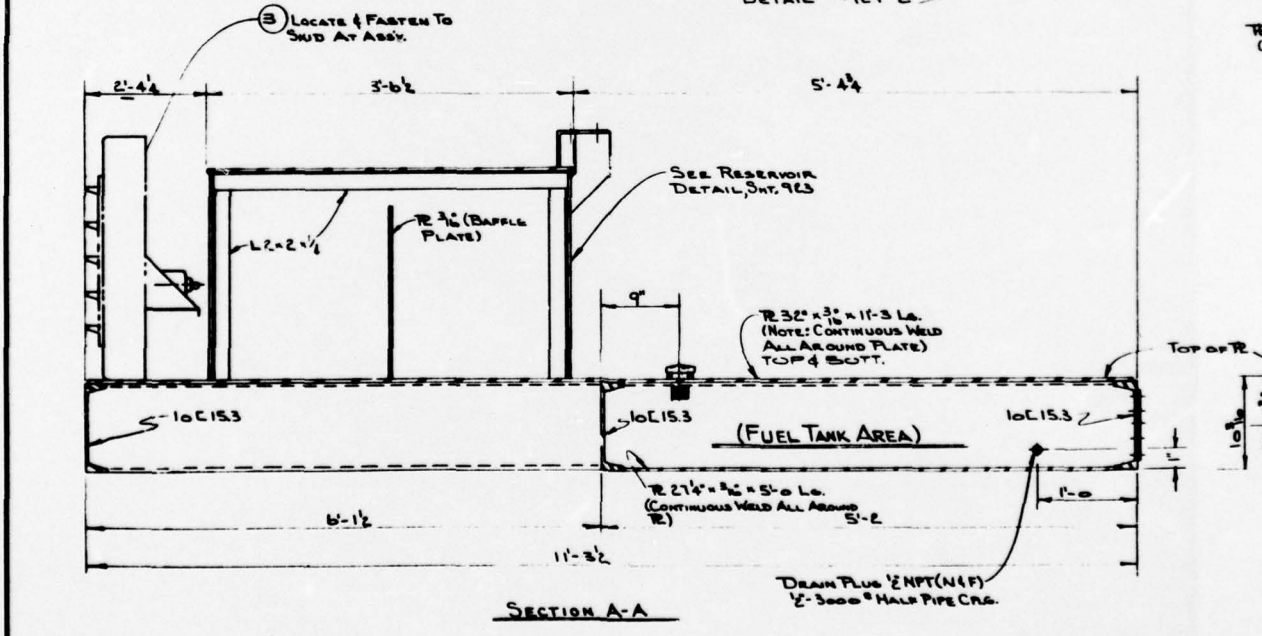
J. RAY Mc DERMOTT & CO., INC.
ENGINEERS CONTRACTORS
NEW ORLEANS, LA.

DESIGN BY	SCALE	DATE	PROJECT NO.
FRANCHINA	NOTED	10-21-68	USA-2971
FABRICATORS JOB NO.	SGO17	J. RAY Mc DERMOTT JOB NO.	SHEET NO. 921

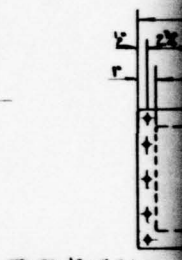
CHAIN HANDLING WINDLASS DETAILS SHT. 2

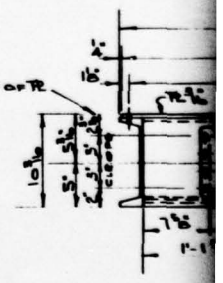
1





Section A-A

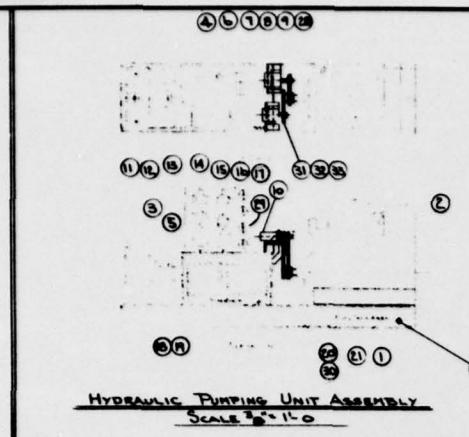




End View

(1) Engine & Reservoir Foundation
Scale 1½" = 1'-0

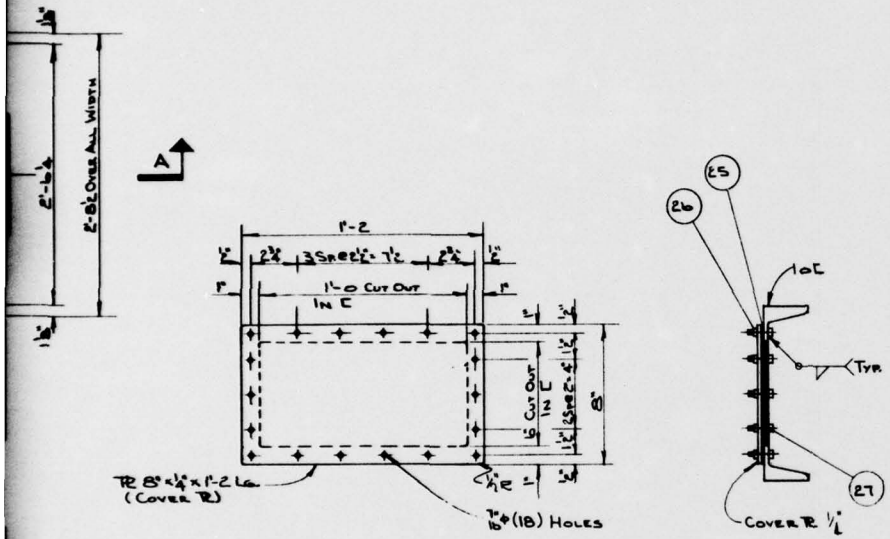
	Design	Struct.	Piping	Elec.	Mk.	By	Revisions	Date	App.	Design	Struct.	Piping	Elec.	Mk.	By	Revisions	Date	App.	Design	Struct.



HYDRAULIC PUMPING UNIT ASSEMBLY
SCALE 3/8" = 1'-0

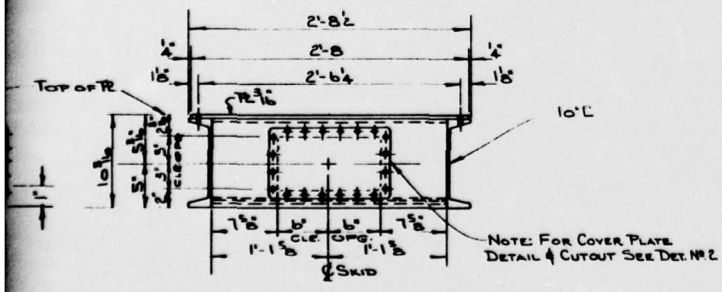
BILL OF MATERIAL

FIND NO.	DWG. NO.	QTY	NOMENCLATURE	SPEC.	MAT'L.
1	922	1	ENGINE & RESERVOIR FDN.		STL.
2	"	1	ENGINE (G.M. MODEL 3031 C)		
3	"	1	HYDRAULIC OIL COOLER VICKERS OCA-30-10-32VDC MOTOR.		
4	922	1	TANK FLANGE & GASKET (RETURN) VICKERS #39395		
5	922	1	RESERVOIR		STL.
6	922	1	FILLER & AIR BREATHER VICKERS #SP-113-B		
7	"	1	FILTER VICKERS #503-149-M-3-P4		STL.
8	"	1	2" ϕ PIPE (LENGTH TO SUIT)		STL.
9	"	2	STEEL NIPPLE PIPE 2" ϕ STD. x 4½" Lg.		
10	"	2	PUMP - VICKERS #35V25 A-1C10-1BC		
11	"	1	DIRECTIONAL CONTROL VALVE VICKERS #CMS NO 1-K82-20		
12	"	1	RELIEF VALVE VICKERS FG-06-F-10		
13	"	1	RELIEF VALVE VICKERS FG-06-F-10		
14	"	1	DIRECTIONAL VALVE VICKERS DG-1T34-012A-41		
15	"	1	PRESSURE CONTROL VALVE VICKERS #RG-06-P4-10		
16	"	1	DIRECTIONAL CONTROL VALVE VICKERS #CM2 H0-K0L-20		
17	"	4	PRESSURE GAUGE - HELICOID #440, SIZE 3½" FLUSH MTG. SS SOCKET (1% ACCY. PHENOL CASE, BALANCED		(RANGE 0-6000 PSI)
18	"	3	FORGED STEEL 3000# HALF CPLG. ½" NPT		STL.
19	"	3	FORGED STEEL HEX. HD. PLUG ½" NPT		
20	"	1	FORGED STEEL 3000# HALF CPLG. ¾" NPT		
21	922	1	RACINE LEVEL GAGE		
22	SEE SHT. 923		NUT-REQ. SEMI-FIN. HEX. ⅜"-16		STL.
23	SEE SHT. 923		1/16" NEOPRENE GASKET SHEET		
24	SEE SHT. 923		BOLT-SQ. HD. REQ. ⅜"-16 x 1" Lg.		STL
25	922	1	1/16" NEOPRENE GASKET SHT.		
26	922	18	NUT-REQ. SEMI-FIN. HEX. ⅜"-16		STL.
27	922	18	BOLT-SQ. HD. REQ. ⅜"-16 x 1" Lg.		STL.
28	922	1	TANK FLANGE & GASKET (SUCTION) VICKERS #39396		
29	SEE SHT. 924		HYDRAULIC CONTROL PANEL		STL.
30	922	1	BULB WELL VICKERS #CBW-2-20		
31	"	2	SPROCKET - #DBoB2b FOR ASA 60-2 ROLLER CHAIN, BORE & KEYWAY FOR 2¼" SHAFT		STL.
32	"	2	SPROCKET - #DBoB40 FOR ASA-60-2 ROLLER CHAIN, BORE & KEYWAY FOR 1¼" SHAFT		STL.
33	922	2	ROLLER CHAIN - ASA #60-2 78 PITCHES EACH WITH 2 CONN. LINK		STL.
34	922	1	FUEL TANK TO ENGINE CONN. CLAY BAILEY #121 BUSHING		STL.
35	922	1	FORGED STEEL 6000# HALF CPLG. 2" NPT		STL.
36	922	1	CAP - CLAY BAILEY #342		BRASS



DETAIL "1"
FUEL TANK COVER PLATE
NO. REQ'D. 1 - SCALE 3"=1'-0

NOTE: USE COVER PLATE AS TEMPLATE FOR LOCATING HOLES IN CHANNEL



END VIEW SHOWING COVER PLATE

REFERENCE DRAWINGS

DWG. NO.	TITLE
923	INSTALLATION EQUIPMENT - RESERVOIR DETAILS
924	INSTALLATION EQUIPMENT - HYDRAULIC CONTROL PANEL

NOTE

1) KEY NO's. 12, 13, 14 & 15 TO BE SUPPLIED WITH MOUNTING SUB PLATE.

FOUNDATION

NO.	DATE	APP.	REVISIONS	DATE	APP.

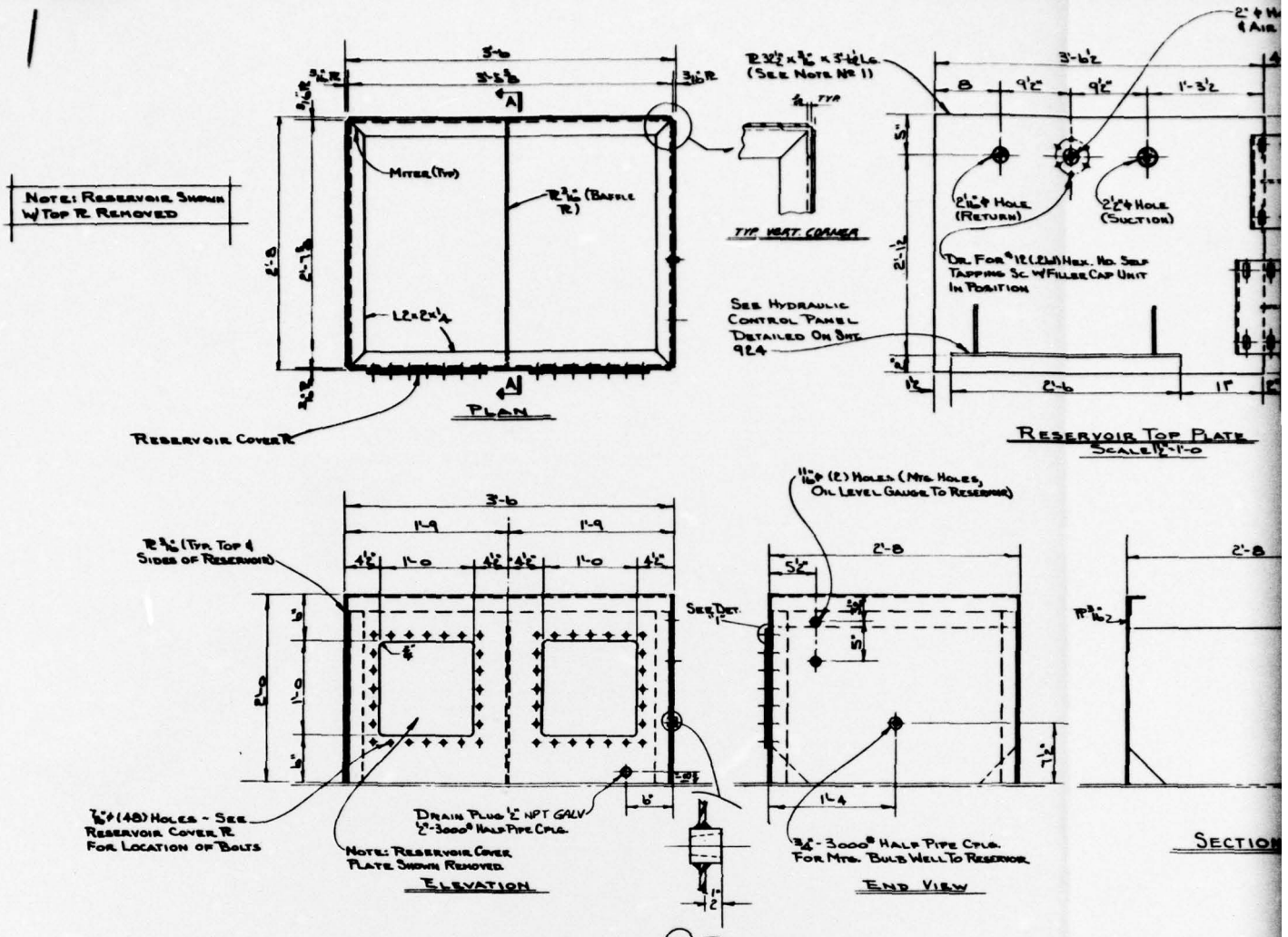
STATE OF LOUISIANA — JEFF C. LEE — REGISTERED PROFESSIONAL ENGINEER

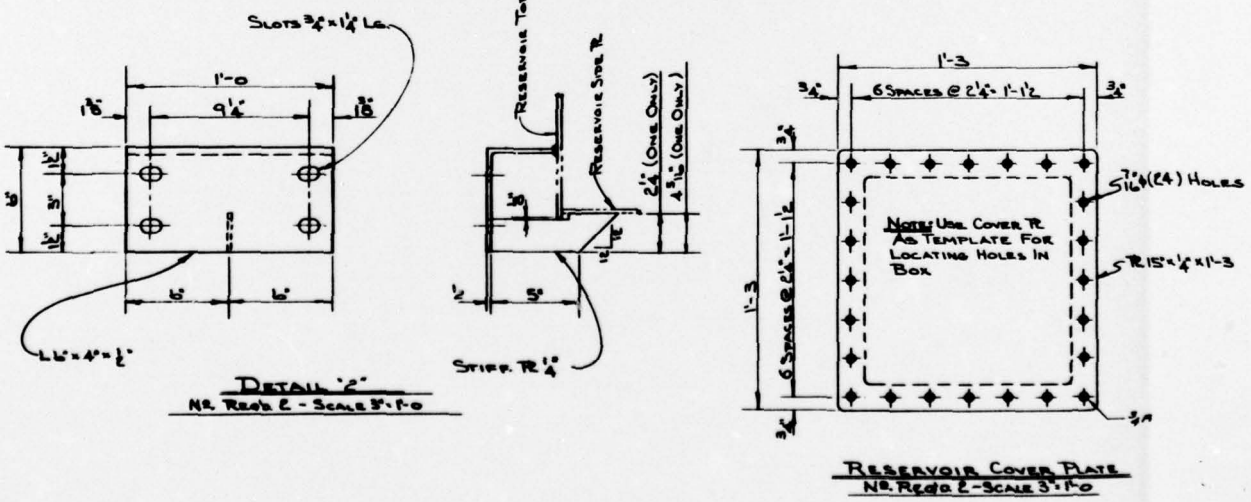
APPROVED: JCLee
J. RAY McDERMOTT & CO., INC.
DATE: 10/28/66
ENGINEERS APPROVAL

MONO-MOORING SYSTEM
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA
J. RAY Mc DERMOTT & CO., INC.
ENGINEERS CONTRACTORS
NEW ORLEANS, LA.

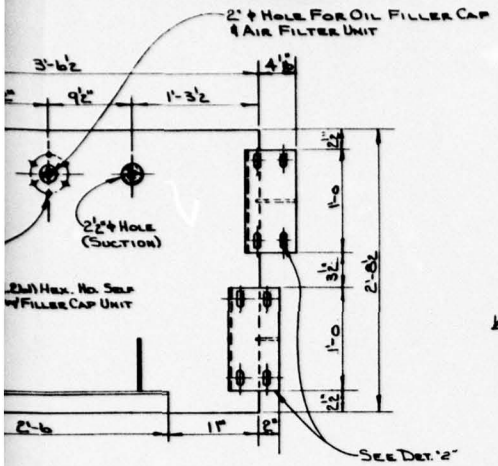
DESIGN BY	SCALE	DATE	PROJECT NO.
S. Guillory	As Noted	10-28-66	USA 2971
PUBLICATIONS JOB NO.	J. RAY McDERMOTT JOB NO.		SHEET NO.
56017			922

INSTALLATION EQUIPMENT — HYDRAULIC PUMPING UNIT & FDN. DETAILS

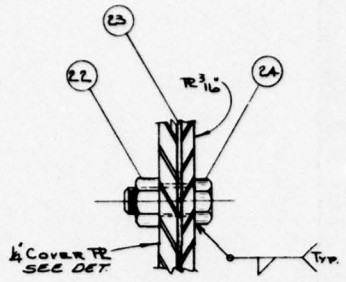




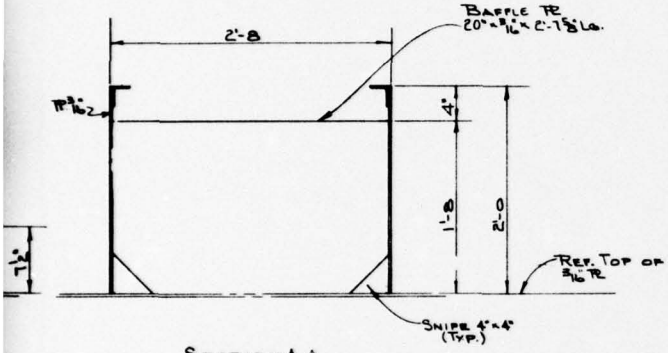
DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING



RESERVOIR TOP PLATE
SCALE ½"=1'-0



DETAIL "1"
FULL SIZE



SECTION A-A

BILL OF MATERIAL

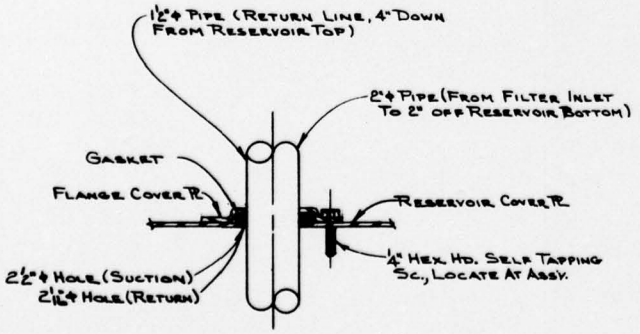
Find No.	Dwg. No.	Qty.	Nomenclature	Spec.	Mat'l.
4	See Sht. 922	1	Tank Flange & Gasket (Return) Vickers ® 39595		
5	923	1	Reservoir		Stl.
22	"	48	Nut-Reg. Hex. Hd. ⅜-16		Stl.
23	"	2	1/16" Neoprene Gasket Sheet		
24	"	48	Bolt-Sq. Hd. Reg. ⅜-16 × 1" Lg.		Stl.
28	See Sht. 922	1	Tank Flange & Gasket (Suction) Vickers ® 39596		

REFERENCE DWGS.

Dwg. No.	Title
922	Installation Equipment - Hydraulic Pumping Unit & Fdn. Det.
924	Installation Equipment - Reservoir Details

NOTES

1) Weld Reservoir Top Plate To Reservoir After Box Has Been Welded To Skid.



(4) Flange & Gasket Suction
(28) Flange & Gasket Return

Ref. Only

	Date	App.	Design	Struct.	Piping	Elec.	Mk.	By	Revisions	Date	App.

GRIFF C. LEE
Approved: G. C. Lee
J. Ray Mc Dermott & Co., Inc.
Date: 12-2-65

ENGINEERS APPROVAL

	By	Date
Project		
Structural		
Piping		
Mechanical		
Electrical		
Instrument		
Pub. Cond.		
Prop. Cond.		

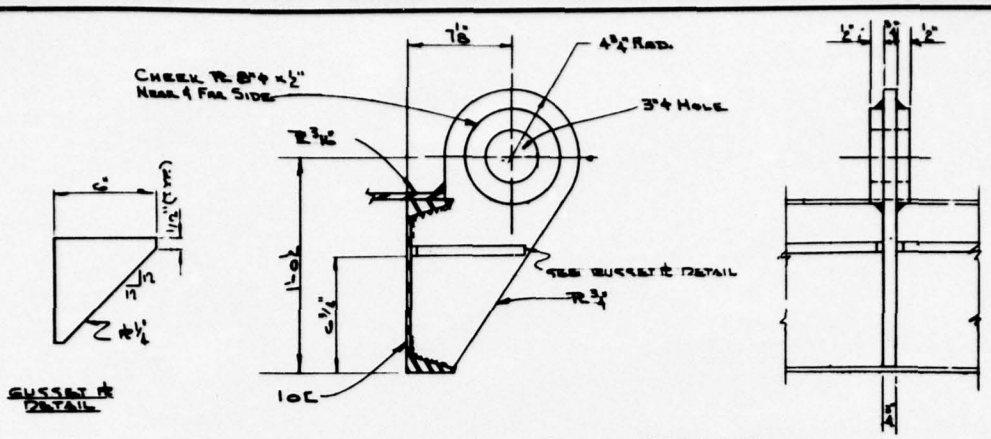
MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

Drawn By	Scale	Date	Project No.
S. Bullory	As Noted	11-1-65	USA 2971
Fabrication Job No. 56017		J. Ray Mc Dermott Job No.	Sheet No. 925

Installation Equipment - Reservoir Details

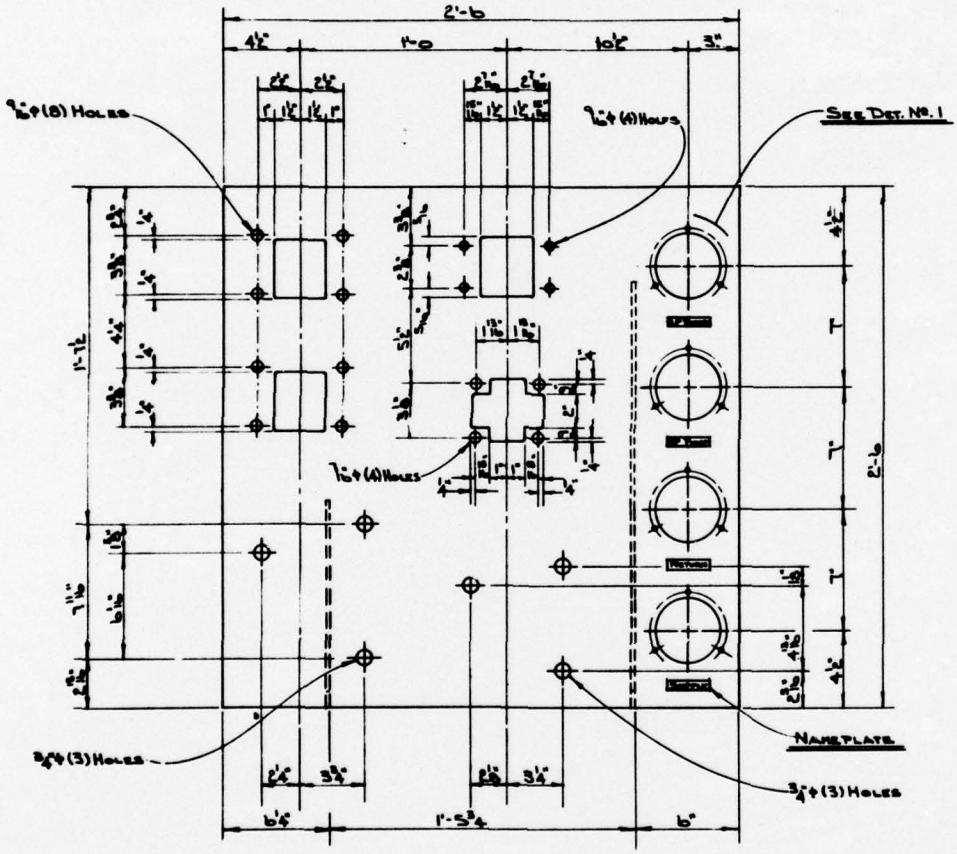


DETAIL No 924-2 PADEYE
No REQ'D. 4 - SCALE 3"=1'-0
SUT. LP. 999

LP PUMP
HP PUMP
RETURN
SUPPLY

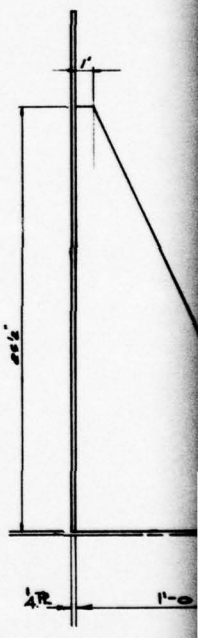
NAMEPLATE
ONE EACH REQ'D.

SEE NAME PLATE DETAIL SHT-604



ELEVATION

NOTE: PANEL HAS ½ TK FACE



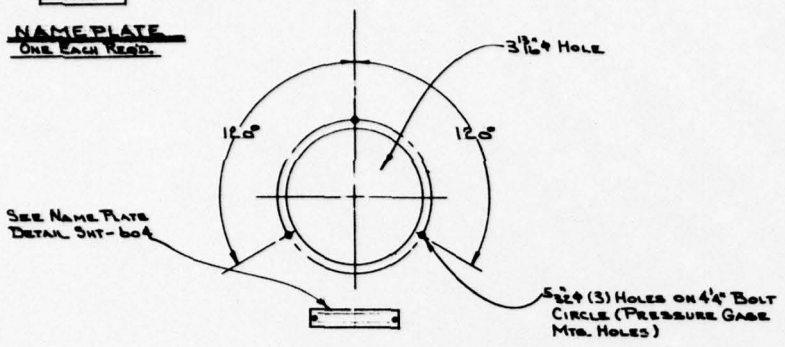
SIDE EL

(29) HYDRAULIC CONTROL PANEL
SCALE 3"=1'-0

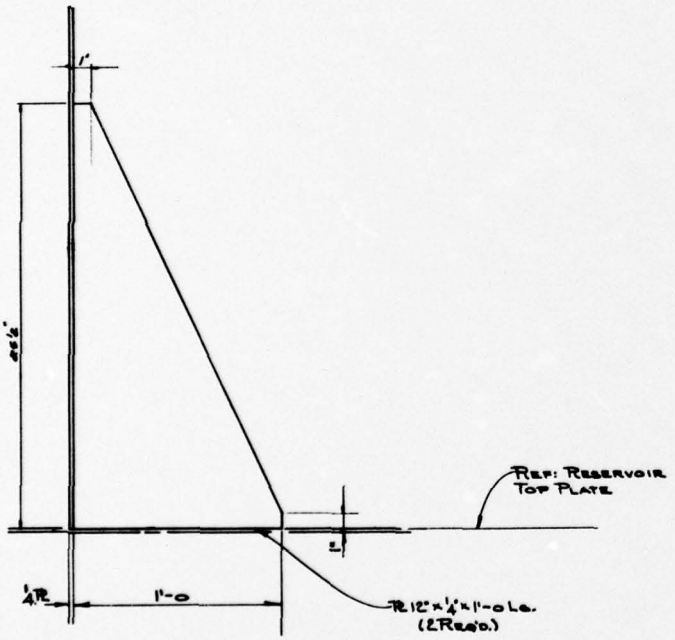
DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING

LP PUMP
HP PUMP
RETURN
SUPPLY

NAMEPLATE
ONE EACH REQ'D.



DETAIL NO. 1 (TYPICAL)
HALF SCALE



SIDE ELEVATION

BILL OF MATERIAL

FIND NO.	DWG. NO.	QTY.	NOMENCLATURE	SPEC.	MAT'L
29	924	1	HYDRAULIC CONTROL PANEL		STL.

REFERENCE DRAWINGS

DWG. NO.	TITLE
922	INSTALLATION EQUIPMENT - HYDRAULIC PUMPING UNIT & FOUNDATION DETAILS
923	INSTALLATION EQUIPMENT - RESERVOIR DETAILS
604	ELECTRICAL ARRANGEMENT IN CONSOLE (NAMEPLATE DET.)

NOTES

1) LOCATE AND ATTACH NAME PLATES TO CONTROL PANEL AFTER GAUGES HAVE BEEN MOUNTED.

	DATE	APP.
DESIGN		
STRUCT.		
PIPING		
ELEC.		
MK.		
ST		
REVISIONS		

GRIFF C. LEE
REG. NO. 7103
DESIGNED
DRAWN
CHECKED

ENGINEERS APPROVAL

MONO-MOORING SYSTEM

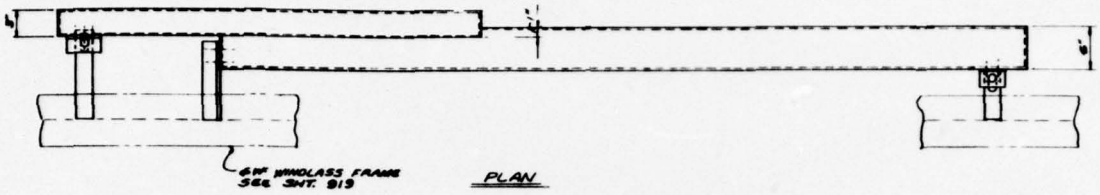
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS CONTRACTORS
NEW ORLEANS, LA.

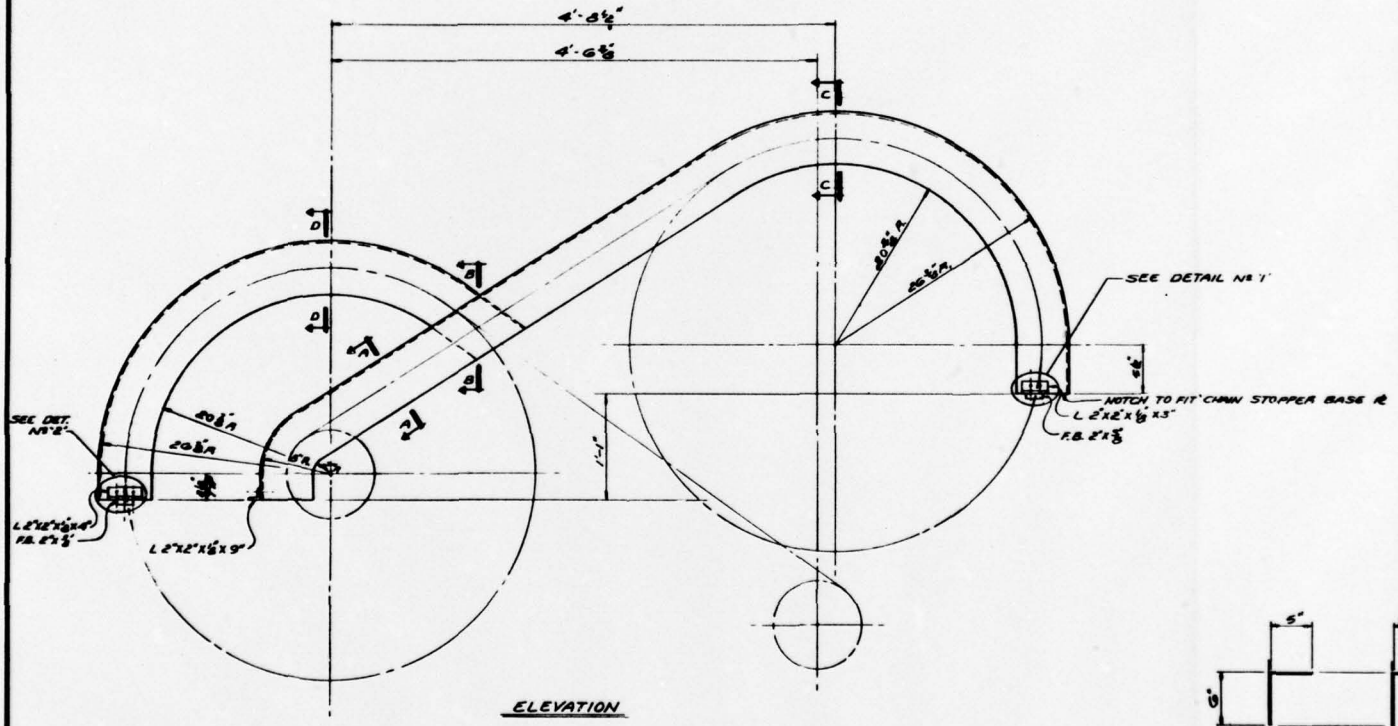
DRAWN BY	SCALE	DATE	PROJECT NO.
S. Guillory	As Noted	11-4-65	USA-C971
PUBLICATION JOB NO.	56017	J. RAY McDERMOTT JOB NO.	SHEET NO. 924

INSTALLATION EQUIPMENT - HYDRAULIC CONTROL PANEL DETAILS

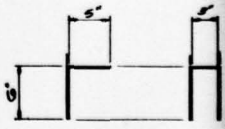
△



PLAN



ELEVATION



SEC "A-A"

SEC "B-

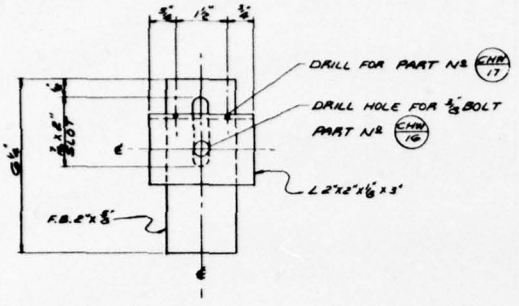
PART Nº (Dwg 18)

Nº REQ'D - 2 ONE IS SHOWN ONE OPPOSITE HAND
MAT'L - 12 GAUGE STEEL
SCALE: 1½" = 1'-0

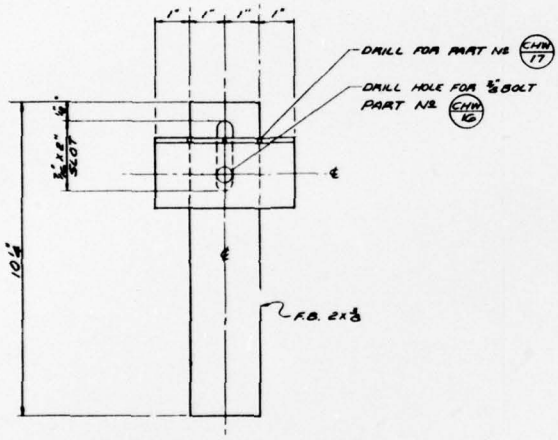
DESIGN	STRUCT.	PIPING	ELEC.	MEL.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MEL.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING

BILL OF MATERIAL

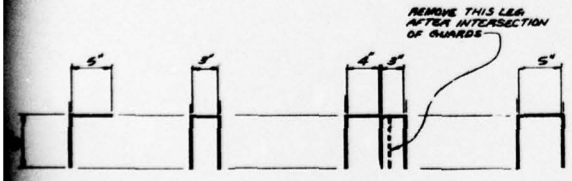
FIND Nº	DWG Nº	QTY.	NOMENCLATURE	SPEC.	MAT'L
CHW 15		2	CHAIN GUARD	(GALV)	12 GAUGE STEEL
CHW 16		4	⅝"x1½" H.HEB W/HEX NUT & LOCK WASHER		
CHW 17		14	10-24 x ½ CAP SCREW NUT & LOCK WASHER		



DETAIL Nº 1
TWO REQ'D
½" = 1"



DETAIL Nº 2
TWO REQ'D
½" = 1"



SEC 'A-A' SEC. 'D-D' SEC. 'B-B' SEC. 'C-C'

REFERENCE DRAWINGS

SHT. Nº	TITLE
919	CHAIN HANDLING WINDLASS

STATE OF LOUISIANA — CURTIS C. LEE — REG. NO. 7123 — REGISTERED ENGINEER — CIVIL ENGINEER

APPROVED: [signature]
J. RAY McDERMOTT & CO., INC.
DATE: 11/10/65
ENGINEERS APPROVAL

	BY	DATE
PROJECT	[illegible]	11/10/65
STRUCTURAL		
PIPING		
MECHANICAL	[illegible]	[illegible]
ELECTRICAL		
INSTRUMENT		
FOR. ENGRG.	GE	11-10-65
PROD. ENGRG.		

MONO-MOORING SYSTEM

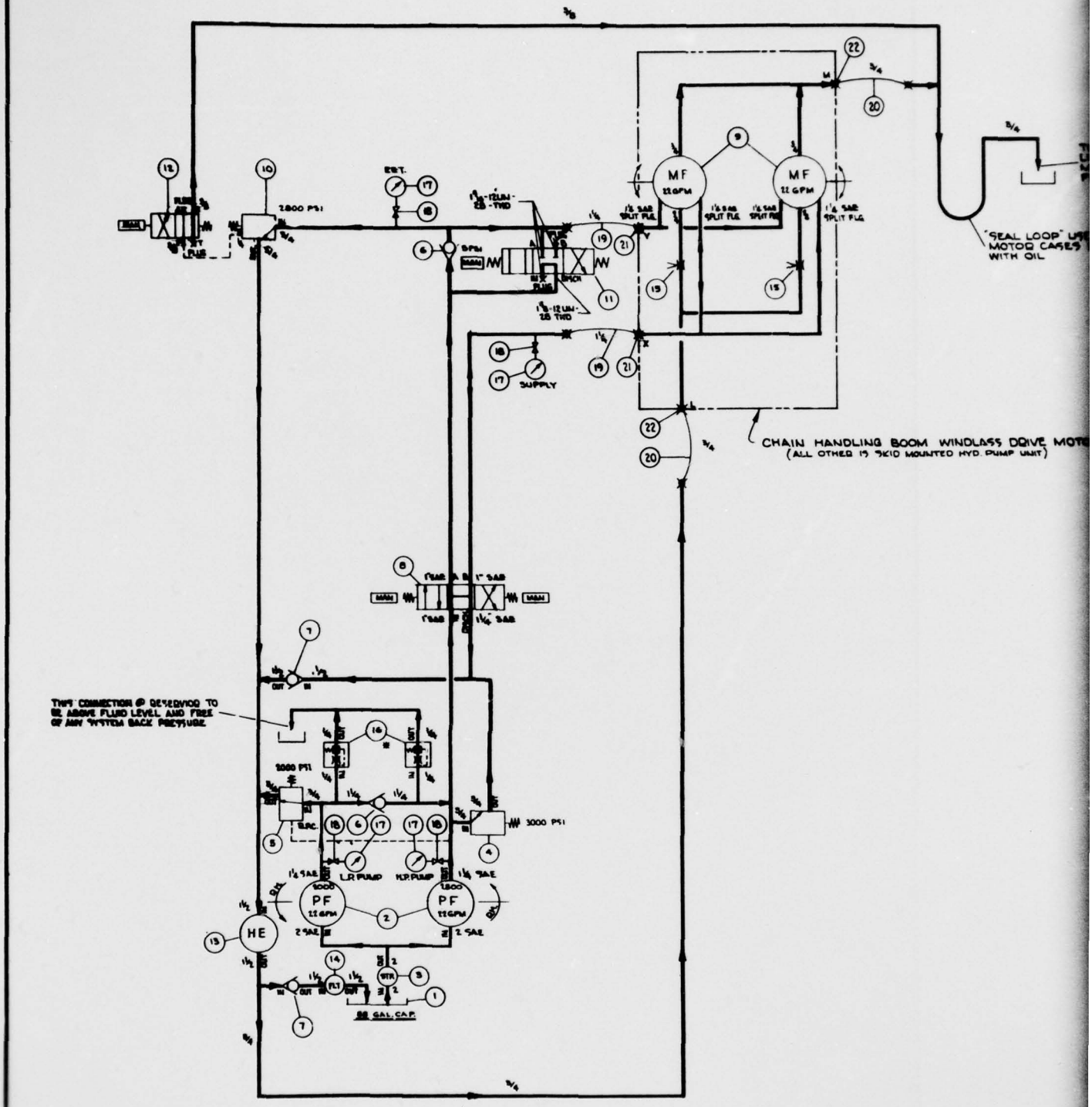
FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	PROJECT NO.
FRANCHINA	NOTED	11-10-65	USA-2871
J. RAY McDERMOTT JOB NO.	56017	J. RAY McDERMOTT JOB NO.	SHEET NO. 925

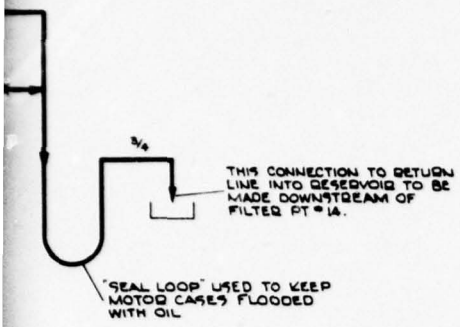
CHAIN HANDLING WINDLASS CHAIN GUARD

DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	INS.	BY	REVISIONS	DATE	APP.



* AIR RELEASE VALVES MUST MOUNT IN A VERTICAL POSITION

DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP	DESIGN	STRUCT.



OM WINDLASS DRIVE MOTORS
MOUNTED HYD. PUMP UNIT)

ERECTION NOTES:

1. ALL EQUIPMENT CONNECTIONS ARE NPT OR AS SHOWN.
2. ALL PIPE SHALL BE ASTM A-106, GR B OF "XS" OR SCHEDULE 80 WALL.
3. ALL TUBING SHALL BE SAE 1010 SUITABLE FOR CONTINUOUS DUTY RATING OF 3000 PSI @ 190° F.
4. ALL FITTINGS SHALL BE RATED FOR 3000 PSI SERVICE CONTINUOUS DUTY.
5. REAM ALL PIPE AFTER CUTTING TO INSURE FULL INTERNAL DIAMETER.
6. ASSEMBLE ALL SCREWED PIPING WITH THREAD JOINT COMPOUND SUITABLE FOR HYDRAULIC SERVICE.
7. TIGHTEN PIPING TO INSURE LEAK TIGHT JOINTS; CARE SHOULD BE EMPLOYED NOT TO OVER TIGHTEN CONNECTION AND INDUCE EXCESSIVE STRESS IN CONNECTIONS.
8. PIPING SYSTEM SHOULD BE CLEANED AND FLUSHED FREE OF ALL FOREIGN MATERIAL BEFORE EQUIP HOOK-UP
9. PIPING SHOULD BE SUPPORTED AS REQUIRED.
10. ALL PIPING SHALL BE DONE IN ACCORDANCE WITH STANDARD J.I.C. PRACTICES.
11. UNLESS OTHERWISE SPECIFIED ALL SAE CONNECTIONS TO BE 4 BOLT FLANGE TYPE.

BILL OF MATERIAL

FIND No.	DWG. NO.	QUAN	NOMENCLATURE	SPEC	MAT'L.
1	922 SHT. 922		HYDRAULIC OIL RESERVOIR 88 GAL. NOM. CAP.		
2	do		PUMP: VANE TYPE - FIXED VOLUME VICKERS - 2V12SA-1C10-1B2		
3	do		STRAINER VICKERS - 50S-150-M-S P6		
4	do		RELIEF VALVE VICKERS - C6-06-P-10		
5	do		UNLOADING VALVE DA-06-P6-10		
6	SEE SHT. 927		CHECK VALVE VICKERS - C2-B2S		
7	do		CHECK VALVE VICKERS - C7-B3D-S4S		
8	SEE SHT. 922		DIRECTIONAL VALVE VICKERS - CM3W01-KBL-30		
9	SEE SHT 914		MOTOR - BY GEARMATIC (OTO VEGRAL 21,000 SERIES) (HDH, 1-140		
10	SEE SHT 922		RELIEF VALVE VICKERS - C6-06-P-10		
11	do		DIRECTIONAL VALVE VICKERS - CM3W01-KBL-30		
12	do		DIRECTIONAL VICKERS - D01784-01A-01		
13	do		OIL COOLER VICKERS - OCA-30-10		
14	SEE SHT. 927		FILTER VICKERS - OPM-302		
15	2		NEEDLE VALVE		STEEL
16	do		AIR BLEED VALVE VICKERS - ABT-01-10		
17	SEE SHT 922		[redacted] PRESSURE GAUGE - WELDED 0-660 PSI 2½" FLUSH MOUNTING, 316 SOCKET (TIP ASSY, PRIMAL CORE, BRASS CASE), RANGE 0-4000 PSI		
18	SEE SHT 927		ANGLE TYPE NEEDLE VALVE, C[redacted] NO. 228 M		STEEL
19	do		HYDRAULIC HOSE, AEROQUIP STYLE 5730-30 W/5721-20-30S END-FITTINGS, 30' LONG EACH		
20	do		HYDRAULIC HOSE, AEROQUIP STYLE 5766-12 W/5722-12-12S END-FITTINGS, 30' LONG EACH		
21	do		UNION COUPLING, AEROQUIP STYLE 5101-30S - STEEL W/DUST CAP & PLUG		STEEL
22	do		UNION COUPLING, AEROQUIP STYLE 5101-12S - STEEL W/DUST CAP & PLUG		STEEL

NOTE
PIPE & FITTINGS NOT LISTED.

REFERENCE DRAWINGS

DWG. No.	TITLE
919	CHAIN BOOM HYDRAULIC MOTOR ASSY
922	INSTALLATION EQUIPMENT-HYD. PUMPING UNIT & FDN. DETAILS

NOTE

THIS DRAWING SHOWS THE HYDRAULIC SYSTEM WHICH IS COMMON TO BOTH THE "CHAIN HANDLING BOOM" AND THE "SKID MOUNTED WINDLASS". THE "CHAIN HANDLING BOOM" IS SHOWN ON THIS SHEET. SEE SHEET 927 FOR "SKID MOUNTED WINDLASS" CONNECTIONS IN THIS SYSTEM

	DATE	APP	DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	REVISIONS	DATE	APP.

APPROVED: [signature]
DATE: 12/8/64

ENGINEERS APPROVAL

PROJECT	[signature]	12/8/64
STRUCTURAL		
PIPING		
MECHANICAL	[signature]	1-27-65
ELECTRICAL		
INSTRUMENT		
PUB. WORKS	[signature]	1-27-65
PROP. WORKS		

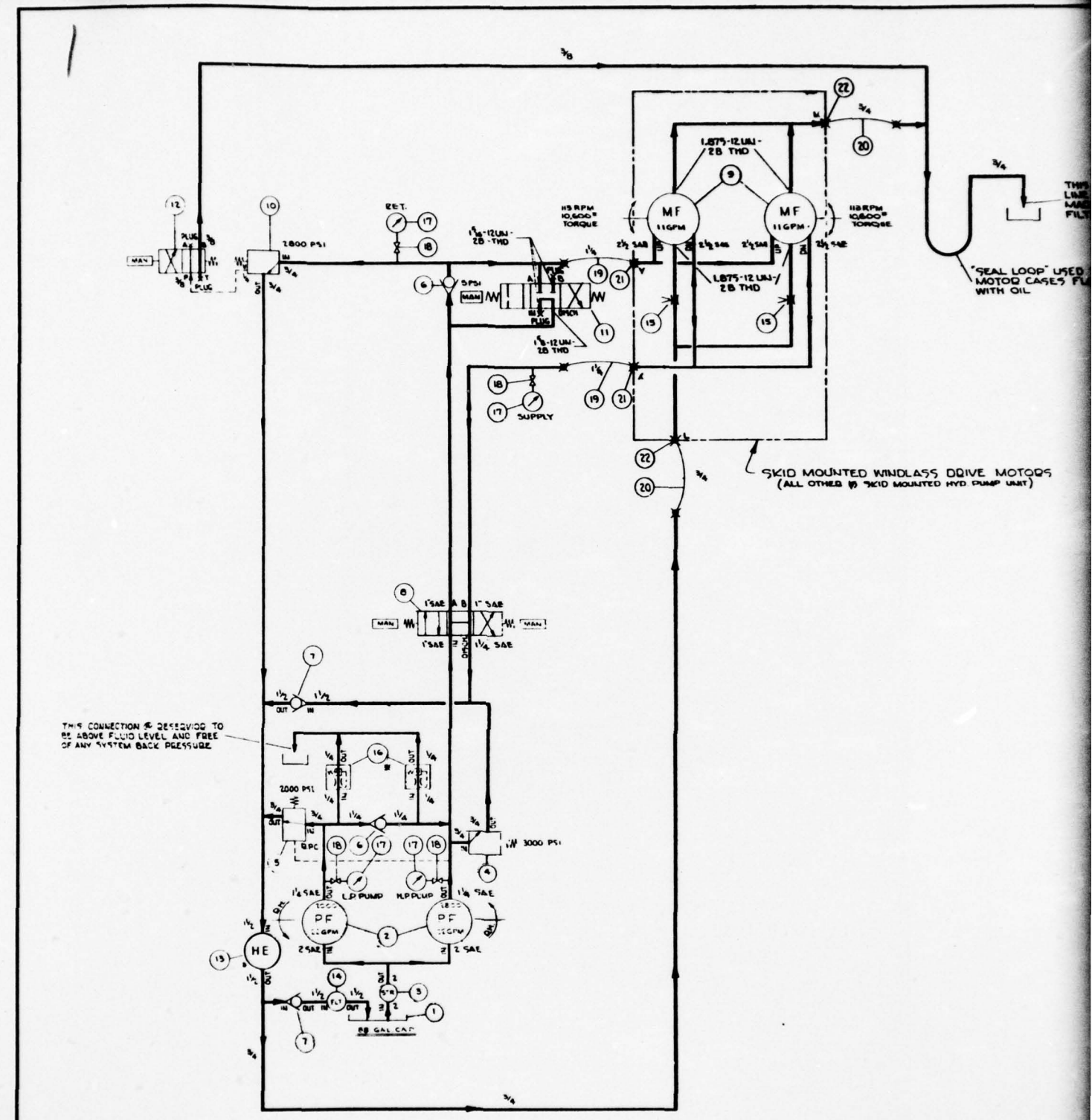
MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS — NEW ORLEANS, LA. — CONTRACTORS

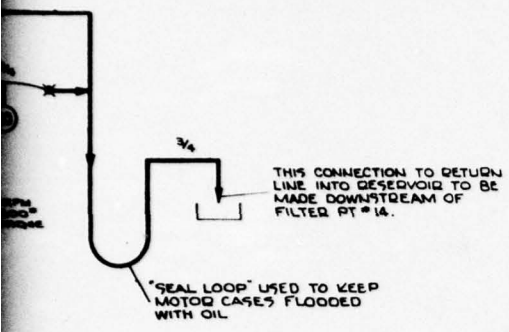
DESIGN BY	DRAWN BY	DATE	DWG. NO.
R.J.R. & A.C.	MDH&B	11/16/65	U.S.A. 6971
	65019		SHEET NO. 923

SCHEMATIC
CHAIN [illegible] HYD. SYSTEM



* AIR RELEASE VALVES MUST MOUNT IN A VERTICAL POSITION

FAB STDS REQ'D THIS SHT	DESIGN	STRUCT	PIPING	ELEC	MK	BY	REVISIONS	DATE	APP	DESIGN	STRUCT	PIPING	ELEC	MK	BY	REVISIONS	DATE	APP	DESIGN	STRUCT	PIPING



) WINDLASS DRIVE MOTORS
SKID MOUNTED HYD PUMP UNIT)

EREDTION NOTES:

1. ALL EQUIPMENT CONNECTIONS ARE NPT OR AS SHOWN.
2. ALL PIPE SHALL BE ASTM A-106, GR B OF "XS" OR SCHEDULE 80 WALL.
3. ALL TUBING SHALL BE SAE 1010 SUITABLE FOR CONTINUOUS DUTY RATING OF 3000 PSI @ 150°F.
4. ALL FITTINGS SHALL BE RATED FOR 3000 PSI SERVICE CONTINUOUS DUTY.
5. REAM ALL PIPE AFTER CUTTING TO INSURE FULL INTERNAL DIAMETER.
6. ASSEMBLE ALL SCREWED PIPING WITH THREAD JOINT COMPOUND SUITABLE FOR HYDRAULIC SERVICE.
7. TIGHTEN PIPING TO INSURE LEAK TIGHT JOINTS; CARE SHOULD BE EMPLOYED NOT TO OVER TIGHTEN CONNECTION AND INDUCE EXCESSIVE STRESS IN CONNECTIONS.
8. PIPING SYSTEM SHOULD BE CLEANED AND FLUSHED FREE OF ALL FOREIGN MATERIAL BEFORE EQUIP HOOK-UP.
9. PIPING SHOULD BE SUPPORTED AS REQUIRED.
10. ALL PIPING SHALL BE DONE IN ACCORDANCE WITH STANDARD J.I.C. PRACTICE".
11. UNLESS OTHERWISE SPECIFIED ALL SAE CONNECTIONS TO BE 4 BOLT FLANGE TYPE.

BILL OF MATERIAL

FIND NO	DWG. NO.	QUAN.	NOMENCLATURE	SPEC	MAT'L.
1	SEE SHT 922		HYDRAULIC OIL RESERVOIR 80 GAL NOM. CAP		
2	do		PUMP-VANE TYPE-FIXED VOLUME VICKERS-35V35A-1C10-1B2		
3	do		STRAINER VICKERS-50S-150-M-S P4		
4	do		RELIEF VALVE VICKERS-CG-06-F-10		
5	do		UNLOADING VALVE BG-06-P4-10		
6	SEE SHT 926		CHECK VALVE VICKERS-C2-825		
7	do		CHECK VALVE VICKERS-C2-830-S10		
8	SEE SHT 922		DIRECTIONAL VALVE VICKERS-CM3N01-KBL-20		
9	SEE SHT 919		MOTOR-PISTON TYPE-FIXED VOLUME VICKERS-MPA120-30-F-U-10		
10	SEE SHT 922		RELIEF VALVE VICKERS-CG-06-F-10		
11	do		DIRECTIONAL VALVE VICKERS-CM2N02-KDL-20		
12	do		DIRECTIONAL VICKERS-DG1754-0124-41		
13	do		OIL COOLER VICKERS-OCA-30-10		
14	SEE SHT 926		FILTER VICKERS-OFM-202		
15	SEE SHT 927		NEEDLE VALVE		STEEL
16	SEE SHT 926		AIR BLEED VALVE VICKERS-ABT-02-10		
17	SEE SHT 922		PRESSURE GAUGE-HELICOID® 660, SIZE 3½", FLUSH MOUNTING, 316 SOCKET & TIP ASSY, PHENOL CASE, BACK CONN., RANGE 0-4000 PSI		
18	SEE SHT #26		ANGLE TYPE NEEDLE VALVE, CRANE NO. 223M		STEEL
19	do		HYDRAULIC HOSE, AEROQUIP STYLE 2766-20 W/4722-20-20S END FITTINGS, 30" LONG EACH		
20	do		HYDRAULIC HOSE, AEROQUIP STYLE 2762-12 W/4722-12-12S END FITTINGS, 30" LONG EACH		
21	SEE SHT 927		UNION COUPLING, AEROQUIP STYLE 5101-20S-STEEL W/DUST CAP & PLUG		STEEL
22	do		UNION COUPLING, AEROQUIP STYLE 5101-12S-STEEL W/DUST CAP & PLUG		STEEL

NOTE
PIPE & FITTINGS NOT LISTED.

REFERENCE DRAWINGS

DWG. No.	TITLE
919	CHAIN HANDLING WINDLASS - SKID MOUNTED
922	INSTALLATION EQUIPMENT-HYD. PUMPING UNIT & FDN. DETAILS

NOTE

THIS DRAWING SHOWS THE HYDRAULIC SYSTEM WHICH IS COMMON TO BOTH THE "CHAIN HANDLING ROOM" AND THE "SKID MOUNTED WINDLASS". THE "SKID MOUNTED WINDLASS" IS SHOWN ON THIS SHEET. SEE SHEET 926 FOR "CHAIN HANDLING BOOM" CONNECTIONS IN THIS SYSTEM.

NO.	DATE	APP	REVISIONS	DATE	APP

STATE OF LOUISIANA
GRIFF C. LEE
REG. NO. [illegible]
REGISTERED
CIVIL ENGINEERING

APPROVED: [signature]
DATE: 4/28/66

ENGINEERS APPROVAL

	BY	DATE
PROJECT	[signature]	1/26
STRUCTURAL		
PIPING		
MECHANICAL	[signature]	1/27/66
ELECTRICAL		
ARCHITECT		
SOILS & FOUND.	[signature]	1/28/66
CIVIL		

MONO-MOORING SYSTEM

FOR
U.S. ARMY ENGINEER RESEARCH & DEVELOPMENT LABORATORIES
FORT BELVOIR, VIRGINIA

J. RAY Mc DERMOTT & CO., INC.
ENGINEERS CONTRACTORS
NEW ORLEANS, LA.

DRAWN BY	SCALE	DATE	DRG.
RJR & AC	NONE	11/16/65	USA 2971
	DESIGN		SHEET NO. 927

SCHEMATIC
SKID MOUNTED WINDLASS HYDRAULIC SYSTEM.