GENERAL NOTES

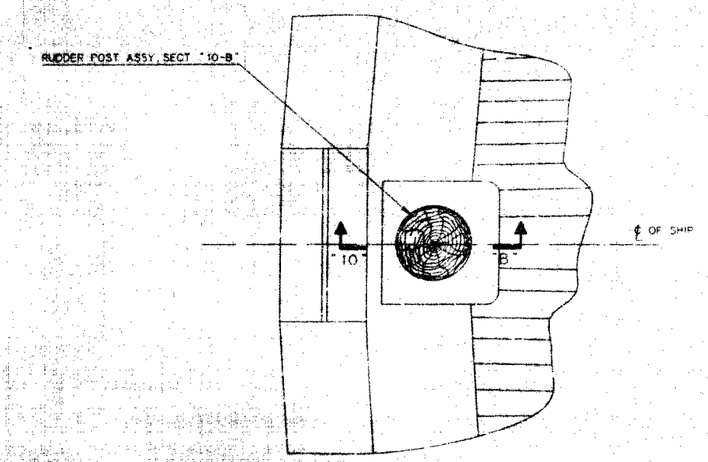
1. THIS DRAWING WAS DEVELOPED FOR RECORD PURPOSES. BASED ON A SHIPCHECK OF THE USS CONSTITUTION.
2. THIS DRAWING IS BASED UPON THE REQUIREMENTS OF NAVSEA 99AA0-AB-GOS-010 OF 16 SEPTEMBER 1983. WHOSE PROVISIONS SHALL PREVAIL IN AREAS WHERE THIS DRAWING IS SILENT.
3. EXCEPT WHERE OTHERWISE NOTED OR APPROVED BY NAVSEA, THE EFFECTIVE DATE OF FEDERAL OR MILITARY SPECIFICATIONS, PUBLICATIONS, AND STANDARD/TYPE DRAWINGS AND REVISIONS AND CHANGES THERETO SHALL BE THE EFFECTIVE DATE OF NAVSEA 99AA0-AB-GOS-010. LATER SPECIFICATION REVISIONS MAY BE USED PROVIDED THAT THEY MEET THE INTENT AND INTERFACE REQUIREMENTS OF THE SPECIFICATION INVOKED FOR THE SPECIFIC AREA/ABILITY.
4. ALL BURRS AND SHARP OR RAGGED EDGES OF EXPOSED STRUCTURE, WHERE LIKELY TO INJURE PERSONNEL OR DAMAGE EQUIPMENT SHALL BE GROUND SMOOTH.
5. TEMPLATE ALL WORK FROM SHIP AND EQUIPMENT.
6. THIS DRAWING MODIFIES NO KNOWN DRAWINGS.
7. THIS DRAWING PROVIDES IDENTIFICATION OF THE RUDDERPOST BEARING RING ASSEMBLY.
8. DIMENSIONS SHOWN ARE MEASURED ON SURFACE OF TRANSOM BEARING PLATE.

INSTALLATION NOTES

1. LIFT THE RUDDER INTO PLACE AT THE STERN OF THE SHIP USING TWO PIERSIDE CRANES OF ADEQUATE LIFTING CAPACITY. ONE CRANE IS USED TO LOWER THE RUDDER BELOW THE TRANSOM WHILE THE OTHER IS USED TO BRING THE RUDDERPOST INTO THE SHIP (THE SECOND CRANE'S HOOK IS DROPPED THROUGH THE SPAN DECK HATCH DIRECTLY ABOVE THE RUDDERPOST).
2. [illegible] ON THE RUDDER ON CENTERLINE USING COME ALONGS (P/S) ATTACHED TO RUDDER'S MONKEY TAIL TO RESTRAIN THE RUDDER FROM SWINGING.
3. [illegible] THE WEIGHT OF THE RUDDER IS BORNE COMPLETELY BY THE GUDGEONS, THE FIRST CRANE'S RIGGING IS COMPLETELY REMOVED. THE SECOND CRANE IS THEN TEMPORARILY UNHOOKED.
4. TEMPORARILY FASTEN THE TRANSOM BEARING PLATE TO THE SHIP WITH SEVERAL LAG BOLTS AND SET THE RUDDERPOST BEARING RING OVER THE RUDDERPOST.
5. WITH THE RUDDERPOST BEARING RING IN PLACE, SET THE RUDDERPOST INTERFACE RINGS INTO POSITION AND MARK THEIR LOCATION. THE RINGS CAN BE SET WITH TWO BOLTS ON THE FORWARD SIDE OF THE RUDDER POST AND ONE AFT, OR VICE VERSA.
6. REATTACH THE SECOND PIERSIDE CRANE TO THE TOP OF THE RUDDERPOST AND LIFT THE RUDDER 10". (THE PINTLES ARE 12" LONG, SO THEY WILL NOT SLIDE OUT OF THE GUDGEONS).
7. FROM INSIDE THE SHIP, INSTALL THE RUDDERPOST INTERFACE RINGS AT THE LOCATION MARKED IN STEP 5. (THE THREE BOLTS WHICH FASTEN THE RINGS TO THE RUDDERPOST ONLY ONE OR TWO OF THE LOCATIONS WILL BE ACCESSIBLE FROM INSIDE THE SHIP DUE TO TIGHT CLEARANCES AT THE AFT SIDE OF THE RUDDERPOST).
8. TO COMPLETE INSTALLATION OF THE INTERFACE RINGS, LOWER THE RUDDER ABOUT 7" AND REMOVE THE TRANSOM BEARING PLATE. AT THIS POINT, THE AFT BOLT (A) TO THE INTERFACE RINGS CAN BE INSTALLED FROM OUTSIDE THE SHIP, SINCE IT WILL BE JUST ABOVE THE RUDDERPOST BEARING RING BUT BELOW THE TRANSOM CUT-OUT.
9. FINISH LOWERING THE RUDDER SO THAT IT RESTS FULLY ON THE GUDGEONS AND REMOVE THE RIGGING TO THE CRANE.
10. INSTALL THE TRANSOM BEARING PLATE AND BOLT THE RUDDERPOST BEARING RING INTO PLACE.
11. SET THE BOTTOM RING ONTO THE RUDDER POST AND INSERT THE TILLER LOCKING BARS.
12. INSTALL THE TILLER AND TIGHTEN THE TILLER LOCKING NUTS UNTIL TOP AFTER FACE OF THE TILLER IS FLUSH WITH THE AFTER NOTCH IN THE BOTTOM RING.
13. INSTALL THE INTERMEDIATE RING ON THE RUDDERPOST, ENSURING ITS NOTCH ALIGNS WITH THE EMERGENCY TILLER SLOT IN THE FORWARD SIDE OF THE RUDDERPOST.
14. INSTALL THE TOP RING ON THE RUDDERPOST, ENSURING ITS NOTCH ALIGNS WITH THE EMERGENCY TILLER SLOT ON THE AFT SIDE OF THE RUDDERPOST.

LIST OF MATERIAL (QUANTITY FOR ONE SHIP)

ITEM NO	QTY REQD	DESCRIPTION	LAST NO USED	SIZE REQD	MTL SPEC	MTL REQ	NSN NO / GFP PT NO	NCE	APL NO	UNIT WT	REMARKS
1	3	3/4" SLOT HD SCREW	-	-	-	BRASS		-	-	-	LG= 4"
2	4	1/2" HEX HD LIFTING SCREW	2	-	-	STEEL	-	-	-	-	LG 4 1/2"
3	3	3/4" SQ HD LAG BOLT	-	-	-	BRASS	-	-	-	-	LG= 8"
4	2	3/4" SQ HD LAG BOLT	-	-	-	BRASS	-	-	-	-	LG= 6"
5	3	3/4" HEX HD BOLT	-	-	-	BRASS		-	-	-	LG= 2 1/2"
6	13	1/2" CSKH LAG PIN	-	-	-	COPPER		-	-	-	LG= 12"
7	6	1" CSKH LAG PIN	-	-	-	COPPER	-	-	-	-	LG= 12"
8	4	1 1/4" HEX HD NUT	-	-	-	STEEL	-	-	-	-	



KEY PLAN "4-B"
GUN DECK
(COMMODORES AFT CABIN)
NO SCALE

NO	NULL	TITLE	REN
1	IX-21	RUDDER & DETAILS	BOSTON 28A29

REFERENCES

DIMENSIONAL TOLERANCES UNLESS OTHERWISE SPECIFIED

MACHINED			GEOMETRIC (WHERE IND)		
DIM	DEC	FRAC	DIM	GEOMETRY	TOL
LNGTH &		±1/2		FLAT & STR	/IN
4 TO 24		±1/8		PERPENDICULAR	/IN
OVER 24		±1/4		PARALLELISM	/IN
DIM ACE IN INCHES				CONCENTRICITY	/IN
FILLETS & MARK TO BE			SYM IN ACCORDANCE WITH		
TOL ON HOLES					

REVISION STATUS OF SHEETS: 1 2 3 4

SHIP APPLICABILITY: IX-21 | SBSN | 3/80 | SHIP | REV | SHIPCHK BY | DT

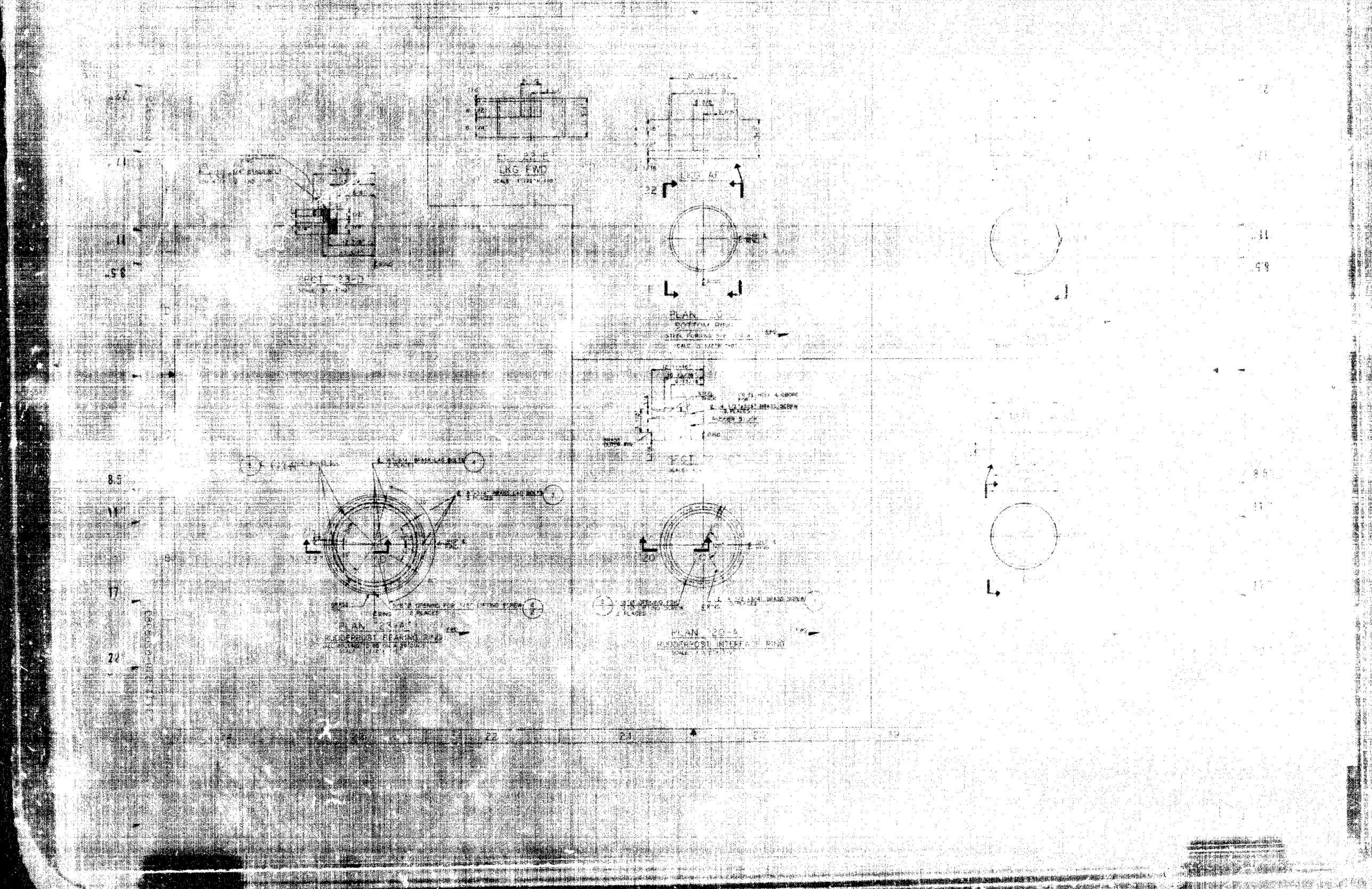
CONTRACT NO / FSSN NO

PREPARED / DATE
CHECKED
ENGINEER
APPROVED
AUTHORITY

PREPARED / DATE
CHECKED
ENGINEER
APPROVED
ACCEPTED FOR NAVSEA
APPROVED BY NAVSEA NOT REQUIRED

SCALE NONE

TOP RING
(STEEL CASTING)
SEE PLAN "18-A"
INTERMEDIATE RING
(STEEL CASTING)
SEE PLAN "18-D"
BOTTOM RING
(STEEL CASTING)
SEE PLAN "20-D"
RUDDER INTERFACE RINGS
OUTER RING (BRASS)
INNER RING (STEEL)
SEE PLAN "20-A"
RUDDER AND TRANSOM BEARING RING
(BRASS)
SEE PLAN "23-A"
TRANSOM FLANGE PLATE
(BRASS)
SEE PLAN "27-A"
SIGN
TOP RING
(STEEL)
INTERMEDIATE RING
(STEEL)
BOTTOM RING
(STEEL)
TILLER LOCKING DEVICE
(STEEL)
SEE PLAN "31-A"
TRANSOM FLANGE PLATE
(BRASS)
ELEVATION "15-A"
OF MOUNTING BEARING RING ASSY & DETAILS.
SEE PLANS ON PAGES 3 & 4
22"
17"
11"
8.5"
8.5"
11"
17"
22"


LKG FWD
LKG AFT
PLAN
BOTTOM RING
PLAN
RUDDERPOST BEARING RING
PLAN
RUDDERPOST INTERFACE RING