* * P R E F A C E * *

THE PURPOSE OF THIS MANUAL IS TO ACQUAINT YOU WITH THE SAFE OPERATION OF YOUR YACHT AND TO FAMILIARIZE YOU WITH ITS INSTRUMENTS, EQUIPMENT, ETC..

THIS MANUAL ALSO PROVIDES ESSENTIAL INFORMATION FOR PROPER SERVICE AND MAINTENANCE, INCLUDING VARIOUS SKETCHES. CAREFULLY READ THE MANUAL FROM COVER TO COVER AND UNDERSTAND HOW ALL INSTRUMENTS AND EQUIPMENT FUNCTION. ADHERE TO ALL INSTRUCTIONS IN THIS MANUAL TO AVOID DAMAGE TO YOUR YACHT AND TO MAKE SURE THAT YOU AND YOUR PASSENGERS ARE SAFE.

HOWEVER, ANY TIME A CONFLICT IS EVIDENT BETWEEN THE EQUIPMENT MANUFACTURER'S INSTRUCTIONS AND THIS MANUAL, FOLLOW THE EQUIPMENT MANUFACTURER'S INSTRUCTIONS.

MAKE SURE THAT ALL THINGS ARE KEPT IN EXCELLENT CONDITION AND READY FOR SAILING. TA-SHING WISHES YOU HAPPY SAILING.

NOTICE-TA-SHING YACHT BUILDING CO., LTD. RESERVES THE RIGHT TO UPDATE ITS PRODUCTS AND INFORMATION WITHIN THIS MANUAL REGARDING THE YACHT. THIS MANUAL SHOULD BE USED AS A GENERAL OPERATION AND MAINTENANCE GUIDE AND NOT AS A SPECIFICATION MANUAL.

--JULY.12,1996.--

CONTENTS

1. CONSTRUCTION DETAILS

1.1 HULL

1.2 DECK

1.3 DECK TO HULL JOINT

1.4 BULKHEADS

1.5 BALLAST

1.6 RUDDER

1.7 MAST STEP

1.8 ENGINE BED

1.9 DECK HARDWARE INSTALLATION

2. ENGINE

2.1 BEFORE STARTING THE ENGINE

2.2 STARTING PROCEDURE

2.3 AFTER STARTING THE ENGINE

2.4 STOPPING THE ENGINE

2.5 ENGINE COOLING AND EXHAUST SYSTEM

3. POWER TRANSMISSION

3.1 SHAFT ALIGNMENT

3.2 SHAFT SEAL

4. FUEL SYSTEM

4.1 FUEL TANK

4.2 DECK FILLER

4.3 FUEL TANK VENT

4.4 SHUT OFF VALVE

4.5 FUEL FILTER

14. WINTERIZING

THE END OF THE SEASON IS A GOOD TIME FOR A COMPLETE INSPECTION OF ALL THE BOAT'S SYSTEMS. TAKING THE TIME TO PUT THE BOAT AWAY IN GOOD ORDER WILL EXPEDITE AN EARLY LAUNCH IN THE SPRING.

14.1 HAULING

THE LIFTING SLINGS IS TO BE PLACED AT A LOCATION TO AVOID DAMAGE TO THE PROPELLER SHAFT AND TO ENSURE THAT THE CENTER OF GRAVITY OF THE BOAT IS BETWEEN THE SLINGS. IF A KNOT METER IMPELLER IS IN THESE AREAS IT SHOULD BE WITHDRAWN PER THE MANUFACTURERS INSTRUCTIONS TO AVOID DAMAGE.

THE BOAT MUST BE WELL SUPPORTED ON A CRADLE WITH MOST OF THE WEIGHT ON THE KEEL. THE SUPPORTING PADS FOR THE HULL SHOULD BE SMOOTH AND SHAPED TO THE HULL IF POSSIBLE. THE IDEAL LOCATIONS FOR THE SUPPORT PADS ARE IN LINE WITH BULKHEADS IN THE BOAT.

14.2 HULL BOTTOM

SCRAPE AND SCRUB THE HULL BOTTOM TO REMOVE ALL GROWTH AS SOON AS THE BOAT IS HAULED. BOTTOM PAINTING SHOULD WAIT UNTIL SPRING FOR BEST RESULTS. SEE SECTION 12.

14.3 ZINCS

REPLACE THE ZINC PLATES AFTER BOTTOM PAINTING IN THE SPRING. THE ZINCS MUST NOT BE PAINTED. SEE SECTION 10.3.

14.4 FRESH WATER SYSTEM

WINTERIZE THE FRESH WATER SYSTEM WITH ONE OF THE COMMERCIALLY AVAILABLE NON-TOXIC ANTIFREEZES DESIGNED FOR POTABLE WATER SYSTEMS. FOLLOW THE INSTRUCTIONS CAREFULLY.

TURN OFF THE PRESSURE WATER PUMP. THEN, THE HOT WATER HEATER SHOULD BE TURNED OFF AND ALLOWED TO COOL. THE PRESSURE RELIEVE VALVE LEVER SHOULD BE OPENED TO RELIEVE PRESSURE AND THEN DISCONNECT THE HOT AND COLD HOSE CONNECTIONS. DO NOT DISCONNECT THE HEAT EXCHANGER HOSES FROM THE ENGINE. USE A SHORT LENGTH OF 1/2" DIAMETER HOSING TO CONNECT THE HOT AND COLD LINES TOGETHER TO BY-PASS THE HEATER.

PUMP THE WATER SYSTEM AND BOTH TANKS DRY BY TURNING ON THE PRESSURE WATER SYSTEM AND ALL TAPS. PUMP OUT FIRST ONE TANK AND THEN THE OTHER AND REMEMBER TO PUMP OUT THE FOOT PUMP SYSTEM AS WELL IF INSTALLED.

OPEN AND DRAIN ALL SEACOCKS AFTER HAULOUT. ALL SEACOCKS ARE THE TEFLON SEAL TYPE WHICH DO NOT REQUIRE LUBRICATION. ANY VALUES WHICH LEAK OR ARE DIFFICULT TO OPERATE SHOULD BE REPLACED.

SEACOCKS USED FOR DRAINAGE OF THE COCKPIT, ANCHOR LOCKER OR COCKPIT LOCKERS MUST BE LEFT OPEN TO DRAIN THESE AREAS.

14.10 BILGE

COMPLETELY PUMP THE BILGE FREE OF ANY WATER AND CLEAN OUT ANY DEBRIS PRESENT. BILGE PUMPS SHOULD BE PUMPED DRY AND HOSES DISCONNECTED IF NECESSARY TO ENSURE THAT NO WATER IS LEFT IN THE SYSTEM.

14.11 ICE BOX

REMOVE ANY REMAINING FOOD FROM THE ICE BOX AND WASH DOWN THOROUGHLY WITH A WARM WATER AND DETERGENT SOLUTION. ODORS CAN BE REMOVED WITH A BAKING SODA AND WATER SOLUTION. COMPLETELY DRAIN OUT ANY WATER FROM THE BOTTOM OF THE ICE BOX. THEN LEAVE THE ICE BOX LID OPEN DURING STORAGE TO ALLOW VENTILATION.

14.12 STOVE

CLEAN THE STOVE THOROUGHLY. FOR CNG OR LPG STOVES, REMOVE THE TANKS CONTAING GAS AND STORE THEM IN A WARM DRY AREA.

14.13 COVERING THE BOAT

COVER THE BOAT ADEQUATELY DURING STORAGE TO PREVENT EXCESSIVE WEATHERING. NOTE: BLACK POLYETHYLENE FILM CAN CAUSE EXCESSIVE FADING IN COLORED GELCOAT IF IN DIRECT CONTACT WITH FIBERGLASS SURFACES. THIS IS CAUSED BY A CHEMICAL REACTION BETWEEN THE POLYETHYLENE AND THE GELCOAT. THE BOAT COVER SHOULD BE OF A BREATHABLE FABRIC OR BE DESIGNED TO ALLOW GOOD VENTILATION.

14.14 MAST

THE ALUMINUM MAST REQUIRES A MINIMUN OF CARE AND MAINTENANCE. AT THE END OF EACH SEASON IT SHOULD BE WASHED WITH A MILD DETERAGENT AND WATER SOLUTION, FOLLOWED BY A COMPLETE RINSING WITH FRESH WATER. TIE OFF ALL HALYARDS AND LIFTS AND INSPECT THE MAST COMPLETELY FOR SCRATCHES THROUGH THE FINISH. PAINT OR A CLEAR LACQUER SHOULD BE APPLIED TO ANY SCRATCHES FOUND TO PREVENT CORROSION.

CHECK ALL HARDWARE ON THE MAST CAREFULLY FOR SIGNS OF CORROSION AND CHECK THE TIGHTNESS OF THE FASTENINGS. MASTHEAD SHEAVES SHOULD SHOW NO SIGNS OF WEAR AND SHOULD MOVE FREELY. LUBRICATE IF

15. SAILS

15.1 SAIL CARE

AT PRESENT, THE VAST MAJORITY OF SAILS ARE MADE FROM POLYESTER AND NYLON. ALTHOUGH THESE SYNTHETIC MATERIALS NEED FAR LESS ATTENTION THAN COTTON SAILS OF OLD, THEY WILL LAST CONSIDERABLY LONGER IF THEY ARE TAKEN CARE OF CORRECTLY.

YOU SHOULD CHECK YOUR SAILS REGULARLY BOTH WHEN SET ALOFT AND WHEN FOLDING THEM AFTER USE. IF YOU LOOK AT THE SAILS CAREFULLY YOU WILL NEARLY ALWAYS NOTICE SIGNS OF DAMAGE STARTING, A SMALL HOLE, AN AREA OF CHAFE, A FEW BROKEN STITCHES. THESE SMALL PROBLEMS SHOULD BE RECTIFIED AS SOON AS POSSIBLE, NOT PUT OFF TO A LATER DATE. REMEMBER THE OLD SAYING 'A STITCH IN TIME SAVES 9.' IN THE CASE OF SAILS IT USUALLY MEANS 'SAVES 9,000'.

WHEN YOU FIND ONE OF THESE PROBLEMS ON YOUR SAIL, TRY AND FIND THE CAUSE OF IT. IF YOU DON'T RECTIFIY THE OBJECT WHICH IS CAUSING THE PROBLEM, IT WILL ONLY HAPPEN AGAIN.

SOME COMMON "SAIL KILLERS" ARE LISTED BELOW FOLLOWED BY SUGGESTIONS ON HOW THEY CAN BE AVOIDED.

1. RIGGING SPLIT PINS

THESE SHOULD ALWAYS BE TAPED UP.

2. SPREADER ENDS

THESE SHOULD EITHER TAPED UP OR BE BOUND WITH SOFT LEATHER.

3. LIFE LINE STANTIONS

THESE CAN CATCH AND CHAFE SAILS DURING TACKING.

ONCE YOU HAVE ESTABLISHED EXACTLY WHERE YOUR SAILS CHAFE AGAINST SPREADERS AND STANTIONS IT IS A GOOD IDEA TO GET YOUR LOCAL SAILMAKER TO SEW PATCHES OVER THESE AREAS TO PROTECT THE SAIL FROM FURTHER CHAFE.

4. THREAD CHAFE

WHEN SAILS TEAR, OTHER THAN WHEN THEY HAVE CAUGHT SOMETHING SHARP, IT IS NEARLY ALWAYS A SEAM FAILURE, AND IT NEARLY ALWAYS STARTS FROM THE LEECH. WHAT USUALLY HAPPENS IS THAT THE LEECH LINE CHAFES THE STITCHING ON THE SEAM WHERE THE CLOTH IS TURNED OVER ON ITSELF TO FORM THE TABLING UP THE LEECH.

YOU SHOULD REGULARLY CHECK THE STITCHING ON EACH SEAM WHERE IT IS FOLDED OVER AT THE LEECH. IF A

10.1 12U D.C. SYSTEM

10.2 110U A.C. SYSTEM

10.3 BONDING SYSTEM

11. BATTERY

11.1 OPERATION OF THE D.C. VOLTMETER

11.2 BATTERY MAINTENANCE

12. ANTIFOULING

12.1 PREPARATION

12.2 SELECTION AN ANTIFOULING COATING

12.3 APPLYING THE BOTTOM COATING

13. FIBERGLASS MAINTENANCE

14. WINTERIZING

14.1 HAULING

14.2 HULL BOTTOM

14.3 ZINCS

14.4 FRESHWATER SYSTEM

14.5 HEAD AND HOLDING TANK

14.6 ENGINE

14.7 FUEL SYSTEM

14.8 BATTERIES

14.9 SEACOCKS

14.10 BILGE

14.11 ICE BOX

14.12 STOVE

14.13 COVERING THE BOAT

14.14 MAST

1. CONSTRUCTION DETAILS

TA SHING YACHT BUILDING CO., LTD. USES HIGHEST QUALITY MATERIALS AND CONSTRUCTION METHODS IN THE PRODUCTION OF THE TASHIBA YACHTS. THE ENGINEERING DEPARTMENT AT THE YARD KEEPS THE FACTORY ABREAST OF THE LATEST MATERIALS AND CONSTRUCTION METHODS.

THE FOLLOWING IS A BRIEF DESCRIPTION OF THE CONSTRUCTION OF THE BASIC COMPONENTS OF THE YACHT.

1.1 HULL

THE HULL IS BUILT ACCORDING TO THE ARCHIETECT'S SPECIFICATIONS. THE LAMINATION SCHEDULE CAN BE SEEN IN FIGURE 1 .

IT IS BUILT AS A ONE PIECE FIBERGLASS MOLDING WITH THE STRIPS OF MATERIAL ALLOWED TO OVERLAP ALONG THE BOOT TOP AND WATERLINE AREA FOR ADDITIONAL STRENGTH. TWO EXTRA PAIRS OF MAT AND ROVING ARE APPLIED ON BOW TO REINFORCE THE BOW AREAS. THE SHEER HULL/DECK JOINT AREA IS ALSO SPECIALLY REINFORCED.

TOP QUALITY U.S. MADE GELCOAT IS USED OF THE ISOPTHALIC TYPE WHICH HAS THE BEST WATER AND CHEMICAL RESISTANCE.

1.2 DECK

THE DECK IS CONSTRUCTED OF THE SAME GELCOAT AND FRP MATERIALS AS THE HULL. ALL DECK SURFACES ARE CORED WITH A HIGH STRENGTH END GRAIN LIGHT WOOD CORE WHILE THE MORE VERTICAL SURFACES ARE CORED WITH END GRAIN BALSA FOR LIGHT WEIGHT AND "PRINT" RESISTANCE.

IN AREAS WHERE HARDWARE IS BOLTED THROUGH THE DECK, MARINE PLYWOOD IS USED AS THE CORE FOR HIGHER COMPRESSIVE STRENGTH.

THE DECK LAMINATION SCHEDULE IS CALLED OUT IN FIGURE 1 .

1.3 DECK TO HULL JOINT

THE HULL FLANGE IS SPECIALLY REINFORCED TO STRENGTHEN THE JOINT BY THE APPLICATION OF EXTRA FIBERGLASS LAYERS. THE DECK IS INSTALLED ON A LAYER OF 3-M-EC 5200 FOR HIGHEST STRENGTH AND WATER-TIGHTNESS. IT IS SCREWED IN PLACE WITH 5MM SS SELF TAPPING SCREWS ON 8" CENTERS. THEN, A TEAK CAP RAIL IS INSTALLED AND THE ENTIRE JOINT IS BOLTED TOGETHER WITH 1/4" S.S. BOLTS ON 8" CENTERS.

DETAILS OF THE JOINT MAY BE SEEN IN FIGURE 2 .

THE TASHIBA 36 AND 40 HAS A KEEL STEPPED MAST. THROUGH A MAST DECK COLLAR WHICH IS BOLTED TO THE CABIN TOP. THE MAST STEP STANDS ON A HEAVY HARWOOD BY 1/2 SELF TAPPING SCREW WHICH IS SOLIDLY GLASSED IN PLACE ON BALLAST KEEL.

DETAILS OF MAST STEP MAY BE SEEN IN FIGURE 4 . (FOR TB31 ONLY)

1.8 ENGINE BED

THE ENGINE BEDS ARE MOLDED IN A SPECIAL MOLD TO SUBSTANTIAL THICKNESSES. THE TOPS OF THE BEDS HAVE 1/2" MILD STEEL PLATES EMBEDDED IN THE FIBERGLASS. THESE PLATES ARE LATER DRILLED AND TAPPED TO ACCEPT THE ENGINE MOUNT BOLTS.

THE ENGINE BED MOLDING IS ACCURATELY LOCATED IN THE HULL AND HEAVILY GLASSED IN PLACE.

SEE FIGURE 5 FOR DETAILS.

1.9 DECK HARDWARE INSTALLATION

ALL DECK HARDWARE IS THROUGH BOLTED INTO POSITION. THE DECK CORE IS REPLACED WITH MARINE PLYWOOD IN THE AREAS WHERE FITTINGS ARE ATTACHED. IN ADDITION, STAINLESS STEEL BACKING PLATES ARE USED TO SPREAD THE LOADS.

PERMANENTLY FLEXIBLE TYPE BEDDING COMPOUNDS ARE USED WHEN THE FITTINGS ARE INSTALLED.

SEE FIGURE 6 FOR DETAILS.

IF THE ENGINE CAN'T BE STARTED IN COLD WEATHER, PLEASE REFER TO THE OWNER'S MANUAL.

2.3 AFTER STARTING THE ENGINE

1. CHECK FOR NORMAL OIL PRESSURE. SHUT DOWN THE ENGINE IF NORMAL OIL PRESSURE IS NOT PRESENT WITHIN 15 SECONDS OF STARTING.

2. CHECK IMMEDIATELY FOR SEA WATER FLOW THROUGH THE EXHAUST OUTLET.

3. OPERATE THE ENGINE AROUND 890-900 R.P.M. FOR AT LEAST FIVE MINUTES TO ALLOW ENGINE TO WARM UP.DO NOT RUN AT HIGH SPEED DURING WARM UP PERIOD.

4. IF WARNING LAMPS LIGHT UP OR THE ALARM DEVICE SOUNDS, IT MAY BE AN INDICATION THAT THERE IS SOME TROUBLE IN THE ENGINE. ALTERNATIVELY, THERE MAY BE A PROBLEM WITH THE WARNING SYSTEM. PLEASE CONTACT THE ENGINE DEALER.

CAUTION: NEVER SHUT OFF THE BATTERY SWITCH WHILE THE ENGINE IS RUNNING AS SERIOUS ALTERNATOR DAMAGE MAY RESULT.

2.4 STOPPIG THE ENGINE

PLACE THE CLUTCH CONTROL IN THE NEUTRAL POSITION AND RUN THE ENGINE AT A LOW SPEED FOR FIVE MINUTES TO COOL IT DOWN. THEN USE THE STOP CONTROL WITH THE ENGINE IDLING AND RETURN THE KEY TO THE "OFF" POSITION. ALWAYS CLOSE THE INTAKE SEACOCK WHEN THE ENGINE IS NOT IN USE.

2.5 ENGINE COOLING AND EXHAUST SYSTEM

1. THE RAW WATER SYSTEM

RAW WATER IS DRAWN THROUGH THE SEACOCK AND THROUGH A RAW WATER FILTER BEFORE BEING PUMPED THROUGH THE ENGINE HEAT EXCHANGER. AFTER THE HEAT EXCHANGER, THE WATER PASSES OUER A HIGH VENTED LOOP AND THEN IS INJECTED INTO THE EXHAUST LINE. THE VENTED LOOP PREVENTS POSSIBLE SIPHON ACTION WHICH MIGHT FILL THE EXHAUST SYSTEM AND ULTIMATELY ENGINE CYLINDERS CAUSING SERIOUS DAMAGE.

THE EXHAUST HOSES SHOULD BE PERIODICALLY CHECKED FOR CONDITION AND SECURITY, AND THE CLAMPS FOR TIGHTNESS.

2. FRESH WATER COOLIN G SYSTEM

THE COOLANT FROM THE HEAT EXCHANGER IS FORCED BY THE FRESH WATER PUMP ON THE ENGINE THROUGH THE

3. POWER TRANSMISSION

IT IS MOST IMPORTANT THAT THE SHAFT ALIGNMENT IS CHECKED BY THE DEALER DURING COMMISSIONING. ALIGNMENTS ARE CAREFULLY CHECKED AT THE FACTORY, BUT SHIPPING STRESSES AND SLIGHT HULL SHAPE CHANGES DUE TO THE DIFFERENCES OF HULL SUPPORT BY THE CRADLE AND THE WATER WILL CAUSE SOME MISALIGNMENT.

THE ALIGNMENT SHOULD BE CHICKED 24~48 HOURS AFTER LAUNCHING AND AGAIN AT 100 HOURS, OR WHENEVER VIBRATION IS NOTED.

3.1 SHAFT ALIGNMENT PROCEDURE

1. REMOVE COUPLING BOLTS AND HOLDING THE FLANGES TOGETHER, INSERT FEELER GUAGES TO FIND THE MAXIMUM GAP BETWEEN THE FACES AT ANY POINT. CHECK RADIALLY ALL AROUND THE COUPLING . THE FACE ALIGNMENT IS ACCEPTABLE IF IT IS WITHIN .1 MM OR .004"

IF NECESSARY, ADJUST THE ENGINE MOUNTS TO ACHIEVE THIS TOLERANCE. RETIGHTEN ANY LOOSENED ENGINE MOUNT BOLTS AND RECHECK ALIGNMENT.

2. WHEN ALIGNMENT IS ACHIEVED, ROTATE THE PROPELLER SHAFT COUPLING 180 DEGREES RELATIVE TO THE TRANSMISSION COUPLING AND RECHECK ALIGNMENT.

IF IT DOES NOT REMAIN WITHIN .1 MM OR .004, THE SHAFT OR COUPLING FLANGES ARE BENT AND MUST BE REPAIRED.

3. WHEN REINSTALLING THE COUPLING BOLTS, USE "LOCK TITE" OR SIMILAR THREAD LOCKING COMPOUND FOR BOLT SECURITY.

3.2 DRIPLESS SHAFT SEAL

1. A DRIPLESS SHAFT SEAL IS USED IN PLACE OF THE CONVENTIONAL STUFFING BOX. THE SYSTEM HAS A HEAVY RUBBER BELLOWS CLAMPED TO THE STERN TUBE WITH A SPECIAL PLASTIC RING AT ITS FORWARD END. A STAINLESS COLLAR, SEALED WITH AN "O" RING TO THE SHAFT, IS CLAMPED TO THE SHAFT AT A POINT WHERE IT PUTS PRESSURE AGAINST THE PLASTIC RING ON THE FLEXIBLE BELLOWS. AS THE S.S. COLLAR TURNS WITH THE SHAFT, IT BEARS AGAINST THE PLASTIC BELLOWS END RING. AND ALLOWS NO WATER INTO THE BOAT.

THE ADVANTAGES OF THIS SYSTEM INCLUDE THE FACT THAT THERE IS NO STUFFING MATERIAL TO CLEAN UP OR REPLACE, AND THAT THE GLAND REQUIRES NO ADJUSTMENT. ALSO NOTE THAT THERE IS NO SHAFT WEAR OR NOISE TRANSMISSION.

4. FUEL SYSTEM

4.1 FUEL TANK

THE BLACK IRON FUEL TANK IS LOCATED UNDER THE CABIN SOLE FORWARD OF THE COMPANIONWAY LADDER, WITH A DIP STICK AND INSPECTION PLATE ON TOP OF THE TANK.

IT IS RECOMMENDED THAT THE FUEL TANK BE PERIODICALLY CHECKED FOR WATER CONDENSATION BY INSERTING A SMALL HOSE TO THE LOWEST POINT THROUGH THE DIPSTICK HOLE. THE WATER WILL SETTLE TO THE LOWEST POINT AND CAN BE EASILY SUCKED OUT WITH A GENERAL PURPOSE PUMP AND THIS SHOULD BE DONE EVERY SIX MONTHS. THE FUEL TANK CAN BE SOUNDED WITH THE DIPSTICK OR WITH THE OPTIONAL FUEL GAUGE.

4.2 DECK FILL PLATE

THE DECK FILL PLATE AND COVER ARE MOUNTED FLUSH WITH THE DECK. USE ONLY THE SPECIAL WRENCH PROVIDED TO REMOVE OR INSTALL THE COVER.

4.3 FUEL TANK VENT

THE FUEL TANK IS VENTED THROUGH A FLEXIBLE HOSE THAT RUNS TO THE CABIN SIDE WITH A S.S. CAP TO PREVENT SEA WATER FROM ENTERING THE FUEL TANK.

4.4 SHUT-OFF VALVE

A FUEL SHUT-OFF VALVE IS LOCATED ON THE TOP OF THE FUEL TANK. THE HANDLE IS INLINE WHEN OPEN AND AT 90 DEGREES WHEN CLOSED. KEEP THIS VALVE CLOSED AT ALL TIMES WHEN THE ENGINE IS NOT IN USE.

4.5 FUEL FILTER

PRESENCE OF WATER OR DUST IN THE FUEL MAY CAUSE FAILURE OF THE ENGINE AND RAPID WEAR OF FUEL INJECTION EQUIPMENT. A RACOR FUEL FILTER/SEPARATOR IS INSTALLED BETWEEN THE FUEL TANK AND ENGINE FUEL FEED PUMP WHICH SEPARATES WATER FROM THE FUEL THROUGH CENTRIFUGAL AND GRAVITY FORCES. THE CLEAR BOWL ON THE BOTTOM HAS TO BE INSPECTED PERIODICALLY FOR WATER AND LARGE SOLIDS. REPLACE THE FILTER ELEMENT AT LEAST ANNUALLY.

WATER IN THE BOWL IS A DISTINCTIVE, LIGHT COLOR WHICH CAN BE DRAINED BY THE PET-COCK ON THE BOTTOM WHEN NOTED.

A SECONDARY FUEL FILTER IS FITTED ON THE ENGINE, BETWEEN THE FUEL LIFT PUMP AND THE INJECTION

5. FRESH WATER SYSTEM

THERE ARE TWO WATER TANKS (STAINLESS STEEL), ONE IS UNDER THE PORTSIDE SETTEE AND THE OTHER ONE IS UNDER THE STARBOARD SIDE SETTEE.

5.1 WATER TANKS

EACH WATER TANK HAS A FLUSH MOUNTED DECK FILL PLATE. TO REMOVE OR INSTALL THE COVER ALWAYS USE THE SPECIAL WRENCH PROVIDED.

A REMOVABLE INSPECTION PLATE AND A DIP-STICK ARE INSTALLED ON EACH TANK FOR PERIODICAL CLEANING AND CHECKING.

WATER LEFT IN A TANK FOR A LONG PERIOD OF TIME WILL BECOME STALE. THE TANK MUST BE PUMPED OUT IF THIS OCCURS AND CLEANED WITH A BAKING SODA AND WATER SOLUTION FOLLOWED BY RINSING WITH FRESH WATER.

5.2 WATER VENT

THE WATER TANK IS VENTED THROUGH A FLEXIBLE HOSE THAT RUNS TO THE CABIN SIDE WITH A S.S. CAP TO PREVENT SEA WATER FROM ENTERING THE WATER TANK.

5.3 SHUT-OFF VALVE

A S.S. MANIFOLD WITH TWO SHUT-OFF VALVES IS PROVIDED FOR TANK USE SELECTION.

5.4 PRESSURE WATER SYSTEM

A TANK VALVE SHOULD BE OPEN WHEN THE PUMP IS USED, OR DAMAGE TO THE PUMP MAY OCCUR. IF AIR IS PRESENT IN THE SYSTEM, THE PUMP MAY RUN INDEFINITELY, AND WILL OVERHEAT AND DAMAGE PARTS OF THE PUMP. FOR THIS REASON, ALWAYS TURN OFF THE PUMP WHEN OUT WATER.

IF THE PUMP CYCLES ON AND OFF WHEN ALL TAPS ARE CLOSED, THERE MAY BE A LEAK IN THE SYSTEM. THIS MUST BE FOUND AND REPAIRED TO PREVENT WATER LOSS.

5.5 ACCUMULATER TANK

A ACCUMULATER TANK IS MOUNTED IN LINE AFTER THE PRESSURE PUMP. THIS TANK REDUCES WATER SYSTEM PULSATION AND PREVENT RAPID ON/OFF PUMP CYCLING. IT ALSO ACTS TO CUSHION SUDDEN SURGES OF WATER PRESSURE WHICH ASSURES A SMOOTH FLOW TO ALL FIXTURES.

6. TOILET SYSTEM

ALL TASHIBA YACHTS COME EQUIPPED WITH A MARINE HEAD AND HOLDING TANK AS STANDARD EQUIPMENT. THE MARINE HEAD IS PROVIDED WITH A "Y" VALVE WHICH ALLOWS THE OPERATOR TO DIVERT WASTE INTO THE HOLDING TANK OR DIRECTLY OVERBOARD.

FOR TOILET SYSTEM SEE FIGURE 10 .

6.1 OPERATING TOILET

MAKE SURE THE INLET AND DISCHARGE SEACOCKS ARE OPEN. MOVE THE VALVE LEVER TO THE "FLUSH" POSITION AND OPERATE PUMP. RETURN TNE VALVE LEVER TO THE "DRYBOWL" POSITION AND PUMP THE BOWL EMPTY. LEAVE THE VALVE LEVER IN THE "DRYBOWL" POSITION WHEN THE TOILET IS NOT IN USE, AND CLOSE THE SEA-COCKS WHEN THE BOAT IS UNATTENDED.

6.2 TO EMPTY HOLDING TANK

AN OPTIONAL DISCHARGE PUMP CAN BE ORDERED OR, PUMP OUT BY THE STANDARD DECK FITTING IS POSSIBLE IF ACCESS TO A DOCK SIDE PUMPING UNIT IS AVAILABLE. THE OPTIONAL PUMP SHOULD BE PUMPED UNTIL LIQUID IS TOTALLY REMOVED AND AIR IS HEARD FLOWING THROUGH THE PUMP. IT IS RECOMMENDED THAT AFTER EMPTYING THE HOLDING TANK OF WASTE, A DISINFECTANT AND DEODORANT BE PUMPED THROUGH THE HEAD AND INTO THE HOLDING TANK ALONG WITH SUFFICIENT RAW WATER TO FILL THE HOLDING TANK. AFTER PUMPING CHEMICAL AND WATER INTO THE TANK, RE-EMPTY IT AS DESCRIBED.

6.3 IF THE DISCHARGE LINE BECOMES CLOGGED, IT IS ADVISABLE TO CHECK THE FOLLOWING AREAS :

1. CHECK THE SIPHON BREAK FOR CLOGGING BY LOOSING HOSE CLAMPS AND REMOVING THE HOSE. CHECK THE HEAD SIDE OF THE SIPHON BREAK.
2. CHECK THE INLET OF THE "Y" VALVE BY REMOVING THE HOSE.
3. CHECK THE ONE WAY VALVE OUTLET BY REMOVING HOSE.

NOTE: NEVER TRY TO FLUSH HARD ITEMS AS THIS WILL DAMAGE THE MARINE TOILET. AS A SAFEGUARD AGAINST A SPOILED VACATION, IT IS MANDATORY FOR EVERY OWNER TO UNDERSTAND HIS MARINE TOILET SYSTEM, CARRY SPARE PARTS (SEE HEAD MANUAL), AND THOROUGHLY BRIEF HIS GUESTS ON THE UNITS PROPER USE.

7. BILGE PUMP

THE TASHIBA YACHTS COME EQUIPPED WITH A MANUAL BILGE PUMP AND AN ELECTRIC PUMP AS STANDARD EQUIPMENT.

7.1 MANUAL BILGE PUMP

THE PUMP IS EQUIPPED WITH A BILGE STRAINER AND AN ANTISIPHON DISCHARGE LOOP. THE PUMP IS INSTALLED ON THE COCKPIT SEAT BACK-REST FOR EASY OPERATION.

7.2 ELECTRIC BILGE PUMP

THE ELECTRIC PUMP IS OPERATED BY USING THE SWITCH ON THE D.C. PANEL. THE SUGGESTED OPTIONAL AUTOMATIC FLOAT SWITCH WILL AUTOMATICALLY TURN ON THE PUMP WHENEVER EXCESS WATER ENTERS THE BILGE. THIS PUMP ALSO HAS AN ANTISIPHON LOOP IN THE DISCHARGE LINE.

7.3 MAINTENANCE OF THE SYSTEMS INVOLVES KEEPING THE INTAKE SCREENS CLEAR OF DEBRIS, AND REGULAR CHECKS ON THE ANTISIPHON VALVE FUNCTION.

FOR BILGE PLUMBING SYSTEM SEE FIGURE 11 .

9. STEERING SYSTEM

THE TASHIBA YACHTS ARE FITTED WITH A STAINLESS STEEL PEDESTAL OPERATING STEERING SYSTEM. THE CABLES ARE DRIVEN BY A CHAIN OVER A SPROCKET ON THE STEERING WHEEL SHAFT. THE STAINLESS STEEL CABLES ARE SPLICED TO THE CHAIN ENDS AND RUN VIA SHEAVES TO THE QUADRANT AT THE RUDDER POST.

THE TASHIBA PH MODEL HAS A INDOOR STEERING STATION IN ADDITION TO THE PEDESTAL STEERING ON COCKPIT AREA. THE MAINTENANCE AND INSPECTION OF THE SYSTEM IS ESSENTIAL TO THE SAFETY OF THE VESSEL.

9.1 MAINTENANCE AND INSPECTION

THE STEERING CABLE TENSION CAN BE ADJUSTED AT THE QUADRANT BY TURNING THE NUTS ON THE WIRE TAKE-UP EYES AFTER LOOSENING THE LOCK NUTS. THE SAME NUMBER OF TURNS SHOULD BE MADE ON BOTH SIDES TO MAINTAIN THE STEERING CHAIN AT THE CENTER POSITION. ONLY ENOUGH CABLE TENSION IS REQUIRED TO ELIMINATE ANY LOOSE FEEL IN THE STEERING, AND TO PREVENT THE CABLES FORM JUMPING OUT OF THE GROOVES IN THE QUADRANT OR SHEAVES. EXCESSIVE TENSION WILL QUICKLY CAUSE EXCESSIVE WEAR ON PARTS OF THE SYSTEM.

ANNUAL LUBRICATION OF THE SYSTEM IS VERY IMPORTANT. THE SHEAVES MUST BE CAREFULLY GREASED WITH TEFLON GREASE. THE WHEEL SHAFT SHOULD BE OILED. THE PEDESTAL CHAIN AND ALL EXPOSED CABLE SHOULD BE LIGHTLY RUBBED WITH AN OILED CLOTH. THIS WILL ALSO DETECT ANY BROKEN CABLE STRANDS INDICATING THAT THE CABLES MUST BE REPLACED.

CHECK THAT THE SHEAVES AND QUADRANT HAVE PROPER ALIGNMENT TO THE CABLES AND ADJUST AS NECESSARY.

FINALLY, RECHECK YOUR STEERING WHEEL CENTER MARK, IF ANY, AND ADJUST AS NECESSARY.

NOTE THAT THE STEERING CABLE SHOULD BE REPLACED EVERY FIVE YEARS EVEN IF WEAR IS NOT EVIDENT. THE OLD CABLE CAN BE RETAINED AS A SPARE.

9.2 USE OF EMERGENCY TILLER

IF A FAILURE OF THE STEERING SYSTEM OCCURS, THE EMERGENCY TILLER CAN BE USED.

THE RUDDER SHAFT IS MACHINED TO ACCOMODATE THE SOCKET AT THE BASE OF THE TILLER SHAFT.

IT IS RECOMMENDED THAT A SMALL CABLE CUTTER BE CARRIED ABOARD ALLOWING THE OWNER TO CUT AWANY A TANGLED CABLE QUICKLY AND REGAIN STEERING CONTROL.

FOR STEERING SYSTEM SEE FIGURE 13 AND 14 .

IMPORTANT:

TO MINIMISE SHOCK AND FIRE HAZARDS:

1. TURN OFF THE BOAT'S SHORE POWER SWITCH BEFORE CONNECTING OR DISCONNECTING THE SHORE POWER CABLE.
2. CONNECT THE SHORE POWEER CABLE AT THE BOAT FIRST.
3. IF THE POLARITY WARNING LIGHT ON THE PANEL IS ACTIVATED, IMMEDIATELY DISCONNECT THE CABLE AND HAVE THE FAULT CORRECTED BY A QUALIFIED ELECTRICIAN.
4. DISCONNECT THE SHORE POWER CABLE AT THE SHORE OUTLET FIRST.
5. WHEN USING PIGTAIL ADAPTORS, MAKE SURE THE OUTLET BEING USED IS 110 VOLTS WITH GROUND.

12V $ 110V ELECTRIC SYSTEM SEE FIGURE 15 .

10.3 BONDING SYSTEM AND SACRIFICIAL ZINCS

THE TASHIBA YACHTS ARE FITTED WITH A LOW RESISTANCE COMMON GROUND OR BONDING SYSTEM. THIS SYSTEM CONNECTS ALL LARGE METALLIC MASSES, ALL EQUIPMENT GROUNDS (AC + DC), AND ALL UNDERWATER METAL FITTINGS, ELECTRICALLY TOGETHER. THIS IS TO ENSURE THAT THE GROUNDS ARE ALL AT THE SAME POTENTIAL TO REDUCE THE RISK OF ELECTRIC SHOCK. AT THE SAME TIME, THE POSSIBILITY OF STRAY CURRENT CORROSION IS REDUCED.

IN ADDITION, THE SYSTEM IS CONNECTED TO THE SHIP'S ZINCS. THESE ZINCS ARE INTENDED TO PROTECT THE OTHER UNDERWATER METALS BY CORRODING GALVANICALLY FIRST. THEY WILL CONTINUE TO PROTECT THE OTHER FITTINGS AS LONG AS THEY ARE ELECTRICALLY CONNECTED TO THEM AND IMMERSED IN THE SAME BODY OF WATER. IT IS THEREFORE VERY IMPORTANT TO RENEW THE ZINCS REGULARLY AND BEFORE THEY ARE REDUCED BELOW ONE-HALF THEIR ORIGINAL SIZE. WHEN REPLACING THE ZINCS, DO NOT PAINT THEM OR THEIR EFFECTIVENESS WILL BE ELIMINATED. THEIR MOUNTING DETAILS ARE SHOWN IN FIGURE 16 .

IF THE BOAT IS IN A MARINA WHERE STRAY CURRENTS FROM OTHER BOATS OR SHORE POWER GROUND PROBLEMS CAUSE RAPID ZINC LOSS, THIS PROCEDURE MAY BE FOLLOWED. PURCHASE A LARGE ZINC AT YOUR CHANDLERY AND A LENGTH OF 8 GAUGE WIRE. BOLT THE WIRE TO THE ZINC MAKING A GOOD ELECTRICAL CONNECTION. SUSPEND THE ZINC IN THE WATER AND CONNECT IT TO ANY BONDED METAL PART OF THE BOAT, SUCH AS THE BACKSTAY. IT WILL THEN BEGIN TO CORRODE, SLOWING THE ZINC LOSS ON THE REGULAR SHIP'S ZINCS, AND PROTECTING THE

11. BATTERY USE AND MAINTENANCE

THE TASHIBA 31 IS FITTED WITH ONE 100A BATTERY AND A SELECTOR SWITCH WHICH IS USED FOR EXTRA BATTERIES IF NEEDED. MANY OWNERS DO CONSIDERABLE CRUISING AND "LIVING ABOARD" SO THAT A SECOND BATTERY MAY BE ADDED TO MEET THESE REQUIREMENTS AND KEEP ONE BATTERY ONLY FOR THE USE OF ENGINE STARTING. (TASHIBA 36 OR 40 IS FITTED WITH TWO 100A BATTERIES AS STANDARD).

11.1 OPERATION OF THE DC VOLTMETER

TURN THE SELECTION SWITCH TO "OFF" OR "BATT. 1" OR "BATT. 2". THEN, SELECT BATTERY #1 OR BATTERY #2 (OPTIONAL) ON THE BATTERY TEST SWITCH. IT'S VOLTAGE WILL BE INDICATED ON THE DC VOLTMETER.

IT IS IMPORTANT TO KEEP BATTERIES FULLY CHARGED AT ALL TIMES. LOW BATTERIES MAY EFFECT THE FUNCTION OF A RADIO, DEPTH SOUNDER OR OTHER ELECTRONICS. A NO-LOAD READING OF APPROXIMATELY 12.8 VOLTS INDICATES A FULL STATE OF CHARGE.

11.2 BATTERY MAINTENANCE

CORRECT BATTERY USE AND MAINTENANCE WILL PROLONG THEIR LIFE. THESE POINTS SHOULD BE FOLLOWED:

1. SEVERE OVER-DISCHARGING MAY HARM THE BATTERY PLATES. THE DAMAGE WILL BE REDUCED IF THE BATTERIES ARE PROMPTLY RECHARGED.
2. THE BATTERIES MUST NOT BE ALLOWED TO REMAIN BELOW FULL CHARGE FOR AN EXTENDED PERIOD, OR DAMAGE WILL OCCUR.
3. THE BATTERY TOPS SHOULD BE KEPT CLEAN AND DRY TO AVOID TRICKLE DISCHARGING. A BAKING SODA SOLUTION MAY BE USED TO CLEAN THE TOPS, BUT DO NOT ALLOW IT TO ENTER THE CELLS. THE SOLUTION SHOULD BE RINSED OFF AND THE TOPS CAREFULLY DRIED.
4. THE CABLE TERMINALS AND BATTERY POSTS MUST BE KEPT CLEAN AND CORROSION FREE. A STAINLESS WIRE BRUSH OR SAND PAPER MAY BE USED. A LIGHT COATING OF PETROLEUM JELLY SHOULD THEN BE APPLIED TO RETARD CORROSION.

THE CELL ELECTROLYTE LEVEL MUST BE MAINTAINED. FILL THE CELLS WITH DISTILLED WATER ONLY TO THE INDICATOR. DISTILLED WATER SHOULD ALWAYS BE USED UNLESS YOU KNOW THE LOCAL WATER IS LOW IN CHLORINE AND IRON.

CAUTION:

12. ANTIFOULING ON HULL BOTTOM

THE FOLLOWING IS A GENERAL INTRODUCTION, FOLLOW PAINT MANUFACTURER'S INSTRUCTIONS IN PREFERENCE TO THESE SUGGESTIONS.

12.1 PREPARATION

THE PREPARATION OF THE HULL BOTTOM TO RECEIVE COATINGS IS CRITICAL TO THE PERFORMANCE OF THE COATINGS. MOST COATING FAILURES ARE DUE TO POOR PREPARATION.

THE NEW BOAT HAS A WAXY SLICK SURFACE WHICH MUST BE BROKED TO GIVE COATINGS A GOOD SUBSTRATE. USE 280 OR 320 GRADE SAND PAPER ON A SANDING BLOCK. COARSER PAPER WILL SCRATCH THE GELCOAT TOO DEEPLY AND IMPAIR ITS PERFORMANCE AS A WATER BARRIER. THE SURFACE MUST BE SANDED UNTIL WATER EVENLY WETS IT WITH NO BEADING. IT SHOULD APPEAR EVENLY DULL WITH NO GLOSS WHEN DRY. IF AFTER SANDING, WATER STILL BEADS, WIPE DOWN THE SURFACE WITH AN EPOXY THINNER TO REMOVE WAX TRACES. ALLOW TO THOROUGHLY DRY.

12.2 SELECTING A COATING SYSTEM

AN EPOXY BARRIER COAT SYSTEM IS HIGHLY RECOMMENDED TO INCREASE THE TROUBLE-FREE LIFE OF THE HULL BY PREVENTING WATER PASSAGE INTO THE GELCOAT AND LAMINATE.

THE EPOXY BARRIER COATINGS AND THE ANTIFOULING PAINT MUST BE COMPATIBLE AND APPLIED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

DIFFERENT ANTIFOULING PAINTS ARE SUITABLE FOR DIFFERENT USAGES AND THE TYPE OF PAINT DECISION SHOULD BE MADE BY DISCUSSING THE ADVANTAGES OF EACH WITH THE PAINT SUPPLIER AND YOUR DEALER.

12.3 APPLICATION

APPLICATION OF COATINGS IS DEPENDENT ON THEIR TYPE. FOLLOW THE MANUFACTURER'S INSTRUCTIONS CAREFULLY.

NOTE ESPECIALLY THE WARNING AND CAUTIONS GIVEN BY THE MANUFACTURER'S. ANTIFOULING PAINTS ARE TOXIC, AND EPOXIES ARE HIGHLY SENSITIZING. PROPER BREATHING EQUIPMENT, GLOVES, AND CLOTHING MUST BE USED.

13. FIBERGLASS MAINTENANCE

ALTHOUGH FRP BOAT LOOKS SMOOTH AND SHINY, FRP IS ACTUALLY A FAIRLY POROUS MATERIAL AND AS IT AGES, THE PORES IN THE GELCOAT SURFACE WILL BECOME MORE PRONOUNCED. SUNLIGHT AND SALT WATER WILL ATTACK THE GELCOAT, TURNING SHINY SURFACES DULL AND CHALKY, STAINS WILL BECOME PERMANENT, COLORS WILL FADE, AND REFURBISHING WORK WILL TAKE ON LARGE PROPORTIONS.

ALTHOUGH A NEW BOAT COMES WITH THE NATURAL GLOSS OF THE FRESH GELCOAT COMBINED WITH THE WAXED AND RELEASE AGENTS USED IN THE MOLDING PROCESS, THE SHEEN WILL BEGIN TO FADE IMMEDIATELY UNLESS STEPS ARE TAKEN TO PRESERVE IT. THE BEST THING YOU CAN DO FOR A NEW BOAT IS TO PUT A GOOD COAT OF WAX ON IT IMMEDIATELY.

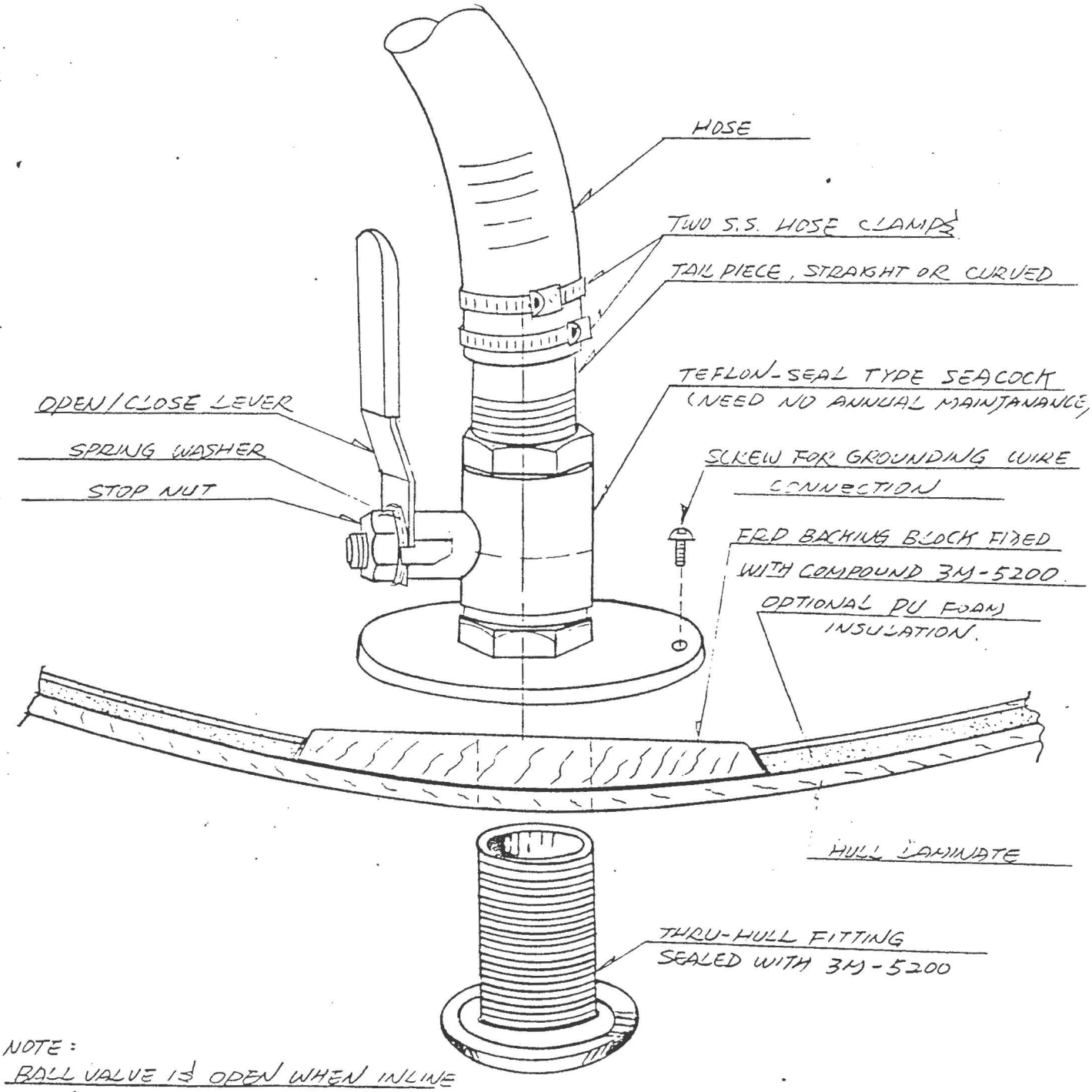
AS THE BOAT BEGINS TO LOOK USED, THE FOLLOWING STEPS MAY BE FOLLOWED:

STARTING WITH A THOROUGH WASHING WITH WARM FRESH WATER, LIQUID DETERGENT AND A SOFT-BRISTLED BRUSH, THE ENTIRE BOAT SHOULD BE SCRUBBED DOWN TO REMOVE DIRT, DRIED SALT, AND ANY RESIDUES. NO ABRASIVE POWDERS SHOULD BE USED THAT MIGHT SCRATCH THE DELICATE GELCOAT SURFACE. PAINT THINNER HELPS TO REMOVE OIL AND EXHAUST STAINS AND STUBBORN STAINS CAN USUALLY BE REMOVED WITH A CAUTIOUS APPLICATION OF ACETONE, BUT REMEMBER THAT TOO MUCH CAN DAMAGE THE GELCOAT. USE ACETONE OR PAINT THINNERS ONLY IN WELL VENTILATED AREAS AWAY FROM FIRE OR ELECTRICIAL APPLIANCES. WEAR RUBBER GLOVES AND EYE PROTECTION AND AVOID BREATHING VAPORS.

ONCE THE HULL IS CLEAN, A LARGE AUTOMOTIVE-STYLE BUFFER SHOULD BE USED ON THE TOPSIDES AND CABIN SIDES. START WITH A MILD POLISHING COMPOUND FOLLOWING THE INSTRUCTIONS ON THE CONTAINER. SCUFFS AND STAINS ARE ERASED BY THE COMPOUND, WHICH ALSO REMOVES ANY OXIDATION THAT MAY HAVE STARTED TO FORM ON THE GELCOAT. DUPONT'S WHITE POLISHING COMPOUND OR SIMILAR TYPES MAY BE USED (THE RED IS TOO ABRASIVE.)

THE MOST COMMON MISTAKE THAT OWNERS MAKE IS TO SIMPLY APPLY THE WAX WHEN THEY FINISH USING THE RUBBING COMPOUND. IT IS IMPORTANT TO COMPLETELY RE-WASH THE SURFACE, USING PLENTY OF WATER AND A SPONGE TO SLUICE OFF THE RESIDUE OF RUBBING COMPOUND.

ONCE CLEAN AGAIN, THE HULL AND SMOOTH DECK AREAS SHOULD RECEIVE A COAT OF PASTE WAX. DEPENDING UPON THE TYPE OF WAX USED, IT MAY BE APPLIED WHILE THE HULL IS STILL DAMP OR WHEN IT HAS FULLY DRIED, BUT BE SURE TO FOLLOW THE DIRECTIONS CAREFULLY. USE ONLY A MARINE PASTE WAX SINCE AUTOMOTIVE



NOTE:
BALL VALVE IS OPEN WHEN INLINE
IT IS CLOSED WHEN IN 90°

FIG. 12

SEA-COCK DETAIL

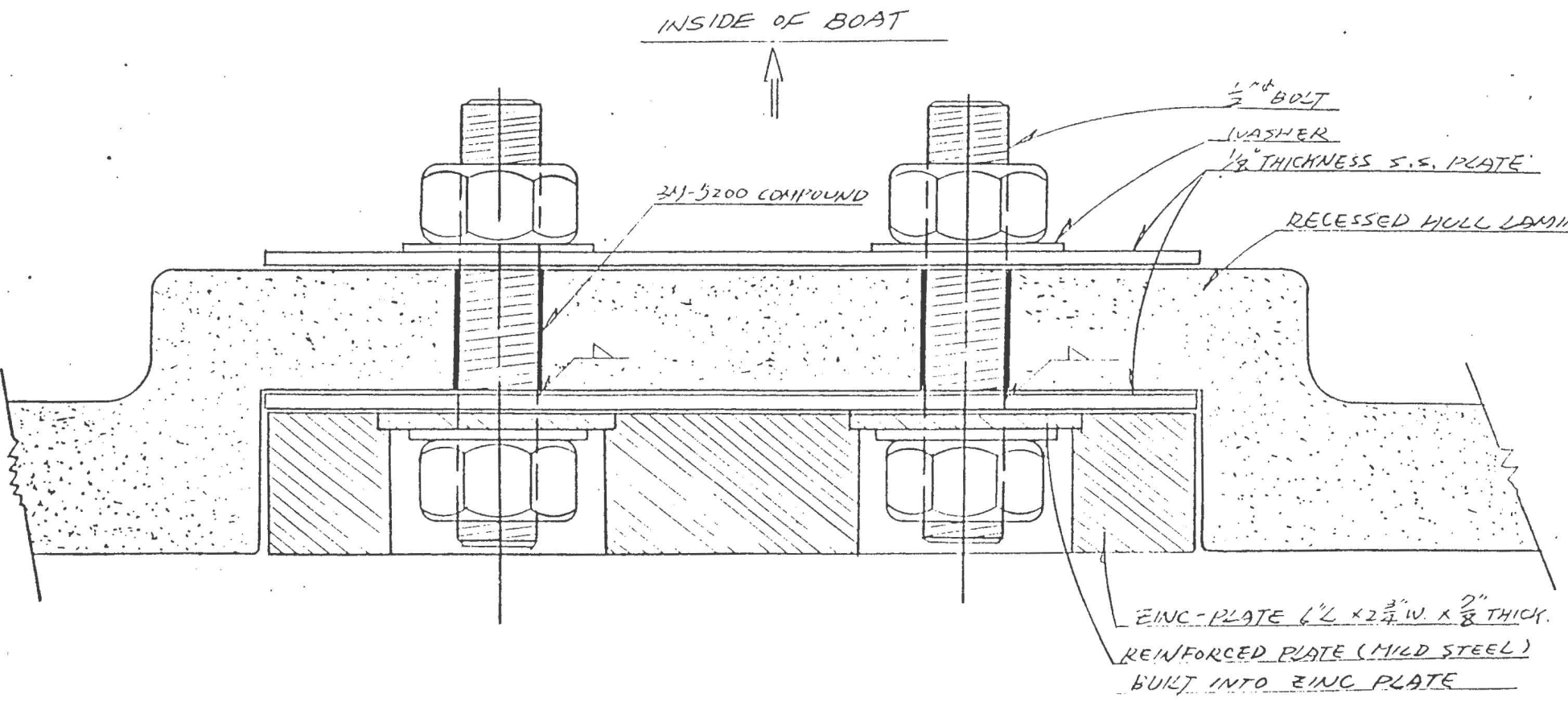


FIG. 16
ZINC-PLATE DETAIL

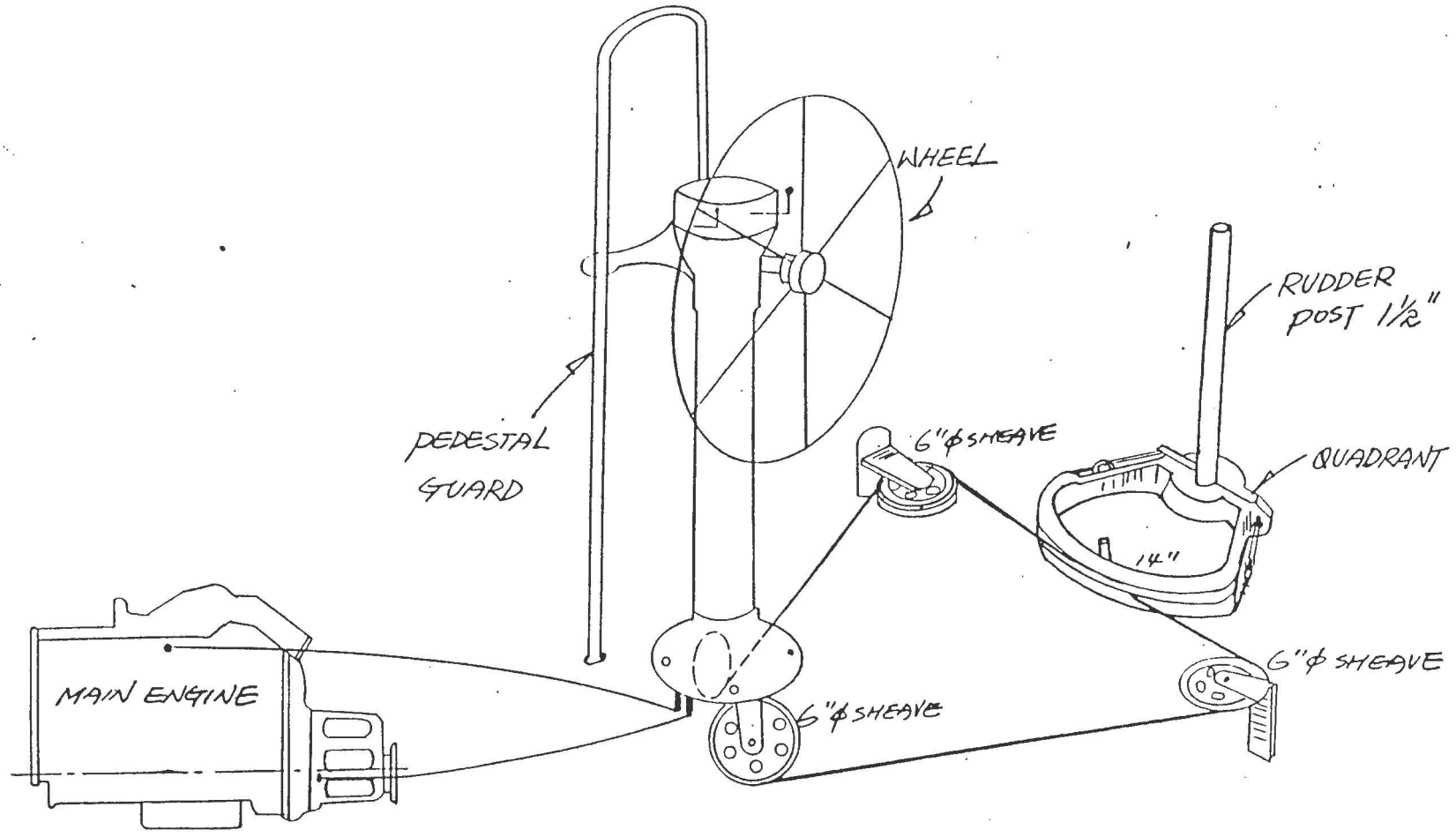


FIG. 13
STEERING SYSTEM

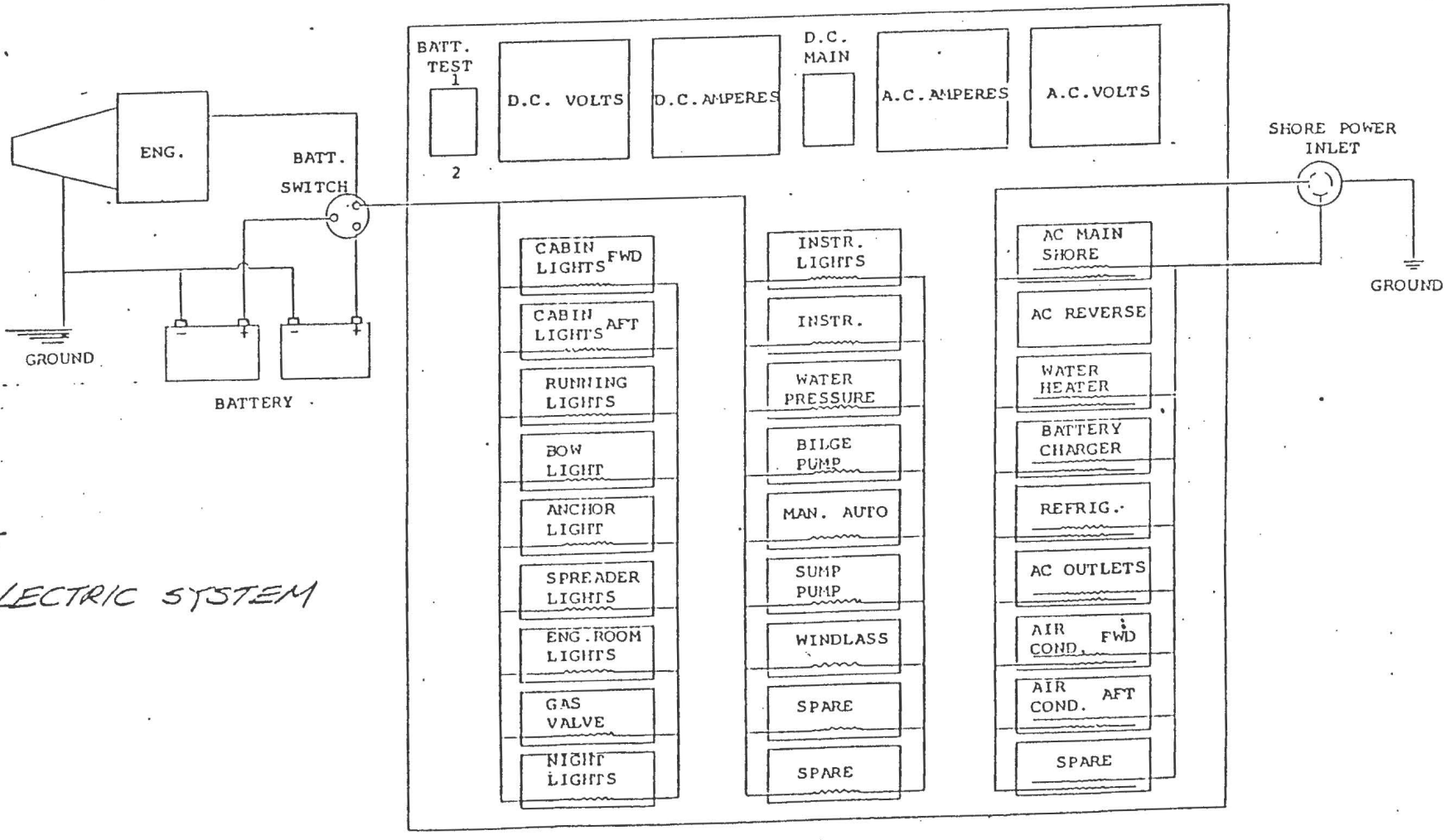


FIG. 15
110V/12V ELECTRIC SYSTEM

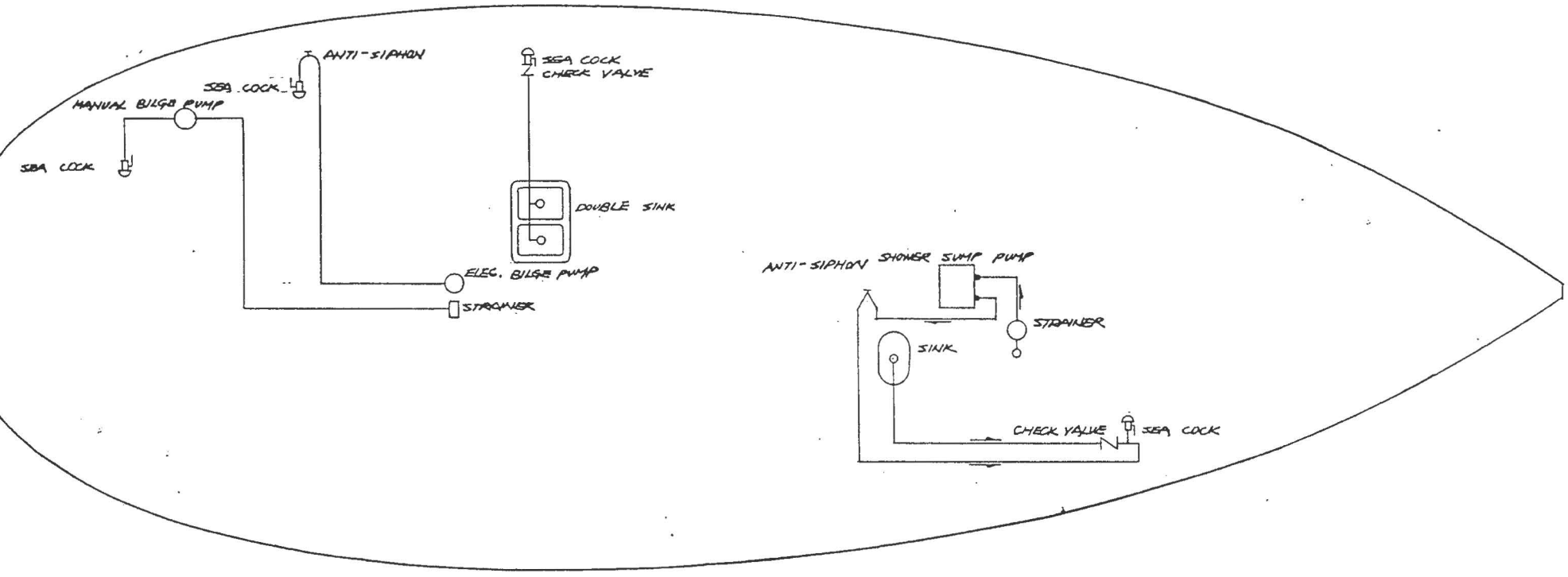


FIG. 11
PLUMBING SYSTEM

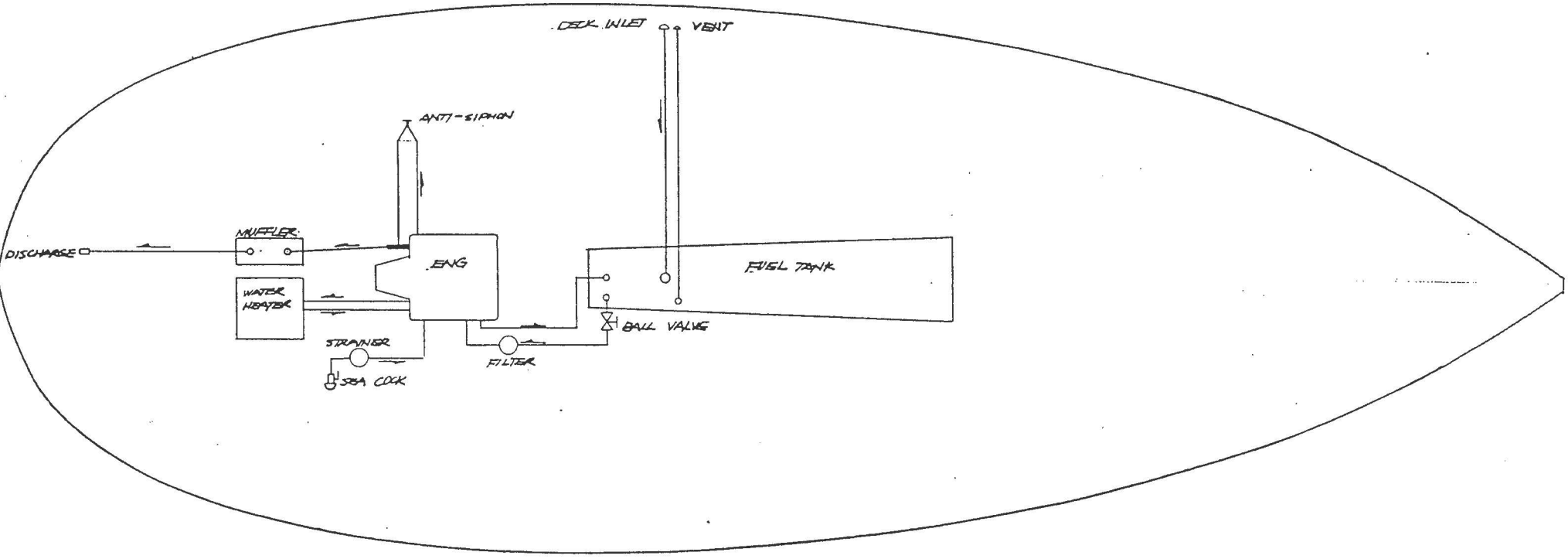


FIG. 8
FUEL SYSTEM

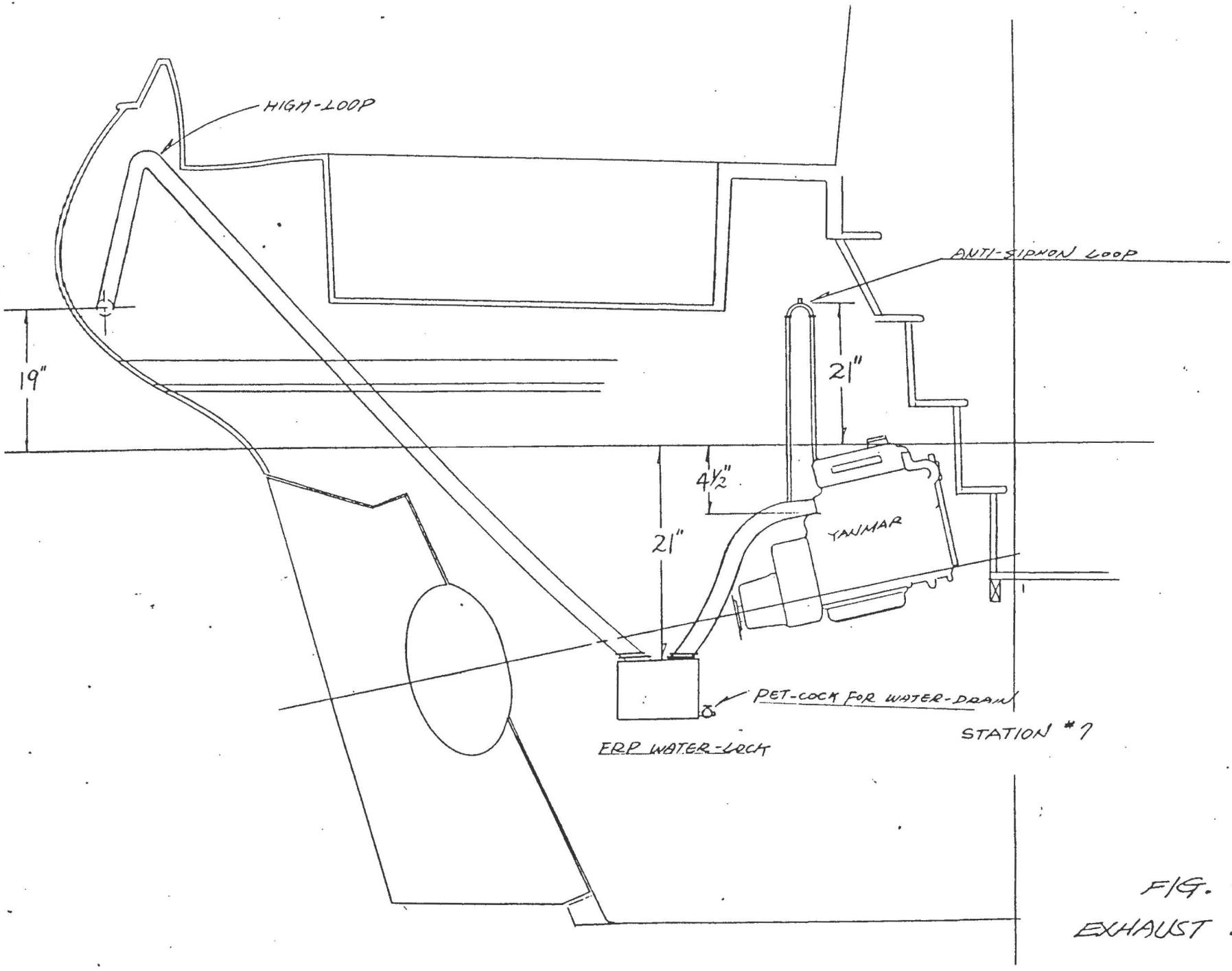


FIG. 7
EXHAUST SYSTEM

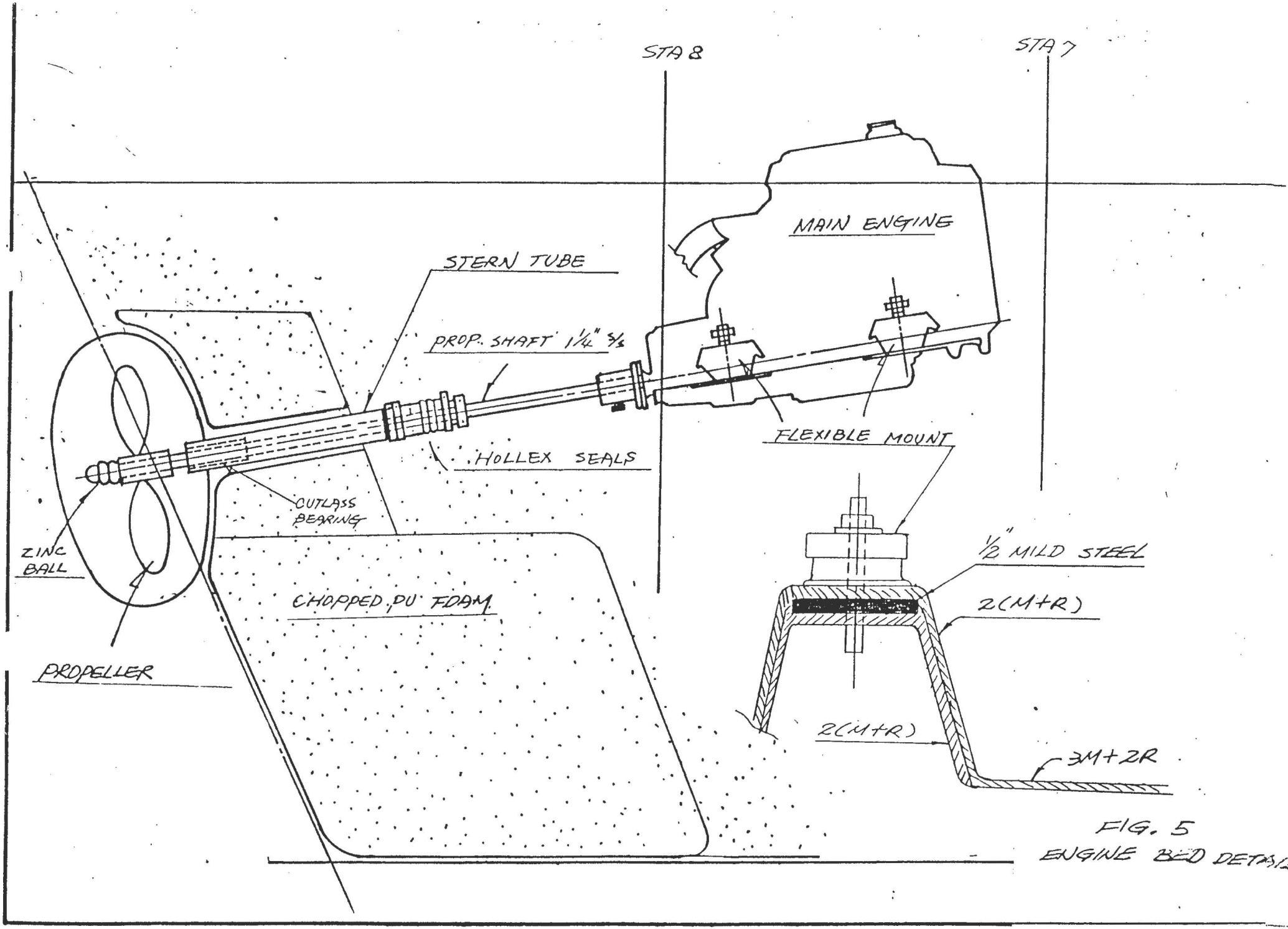


FIG. 5
ENGINE BED DETAIL

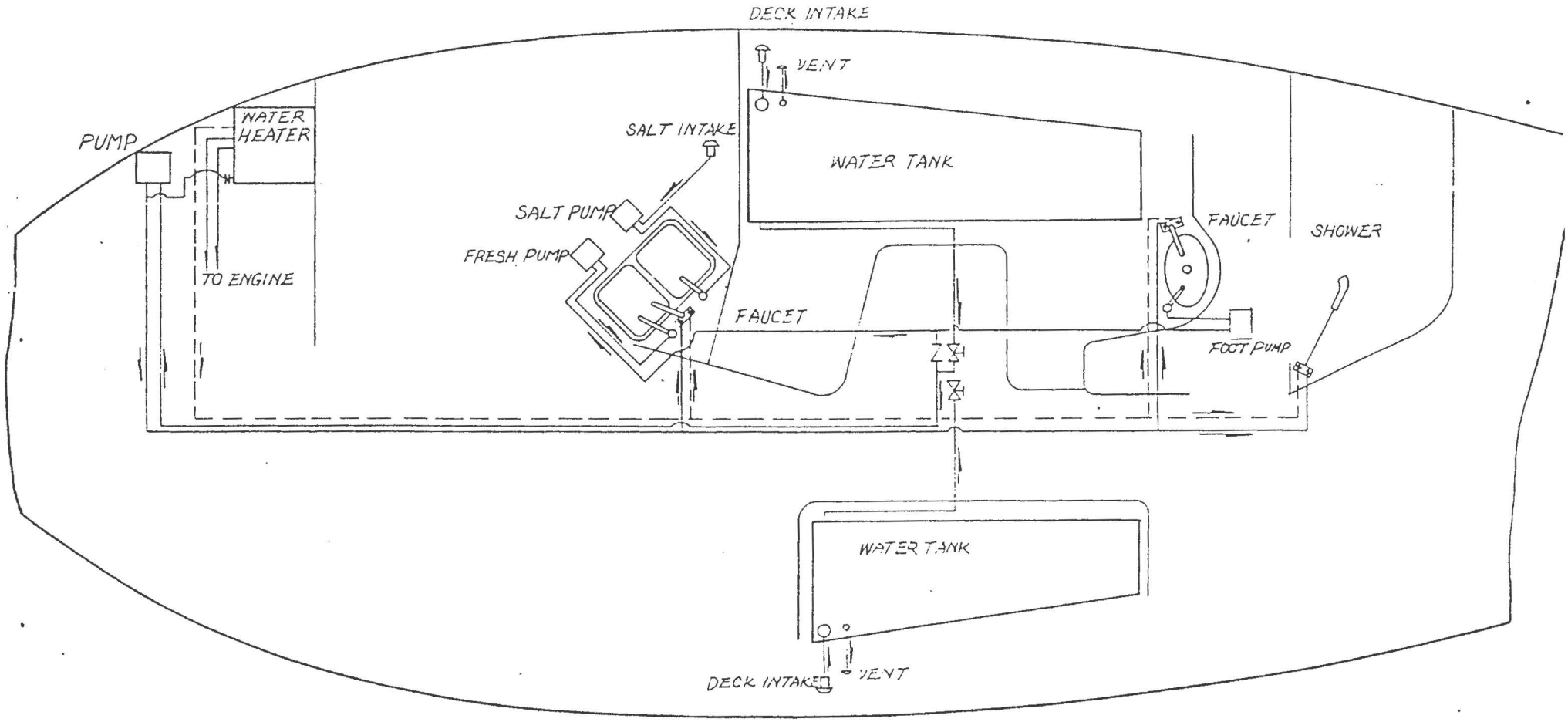


FIG. 9

FRESH WATER SYSTEM.

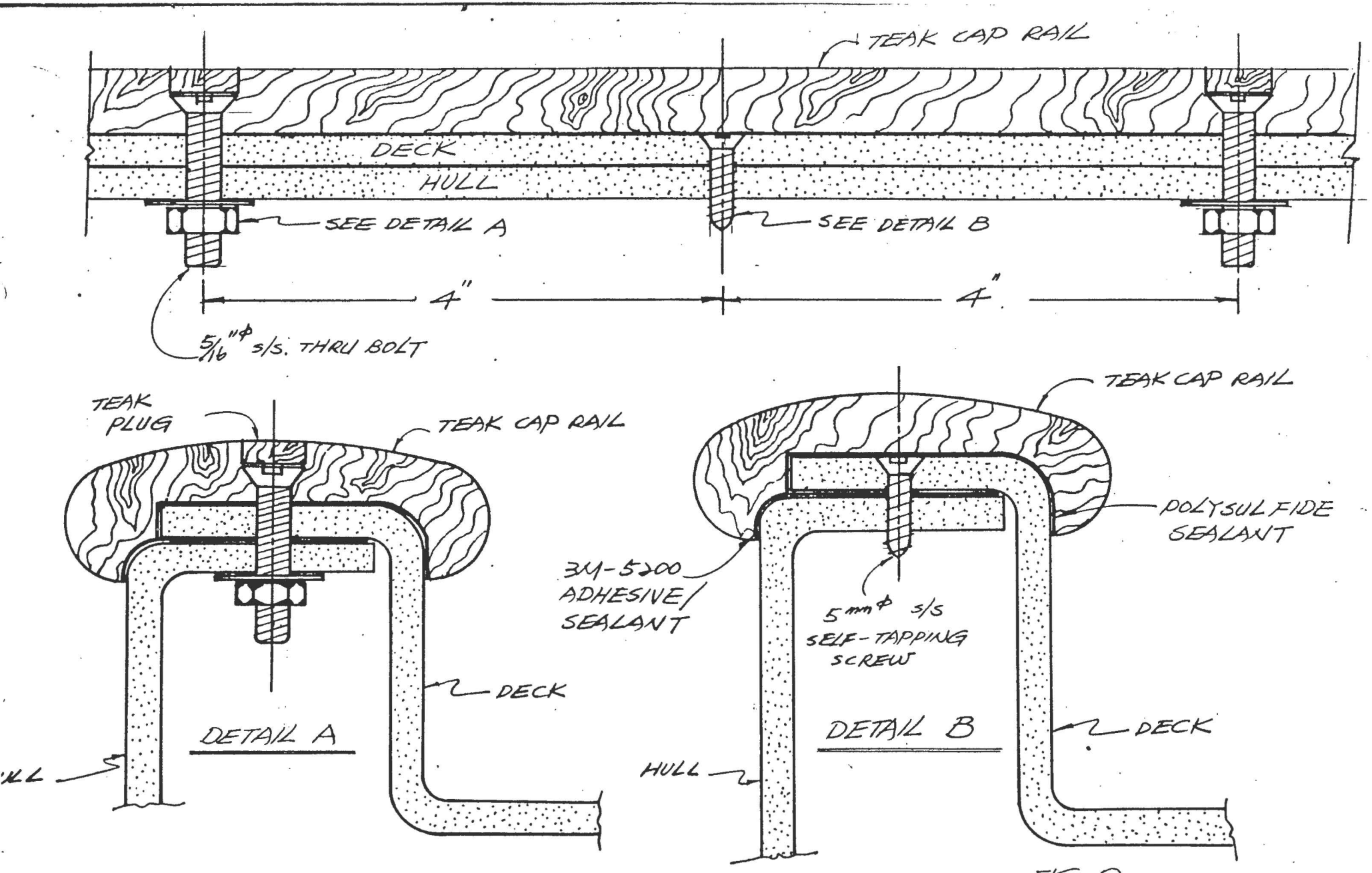


FIG. 2
HULL/DECK JOINT

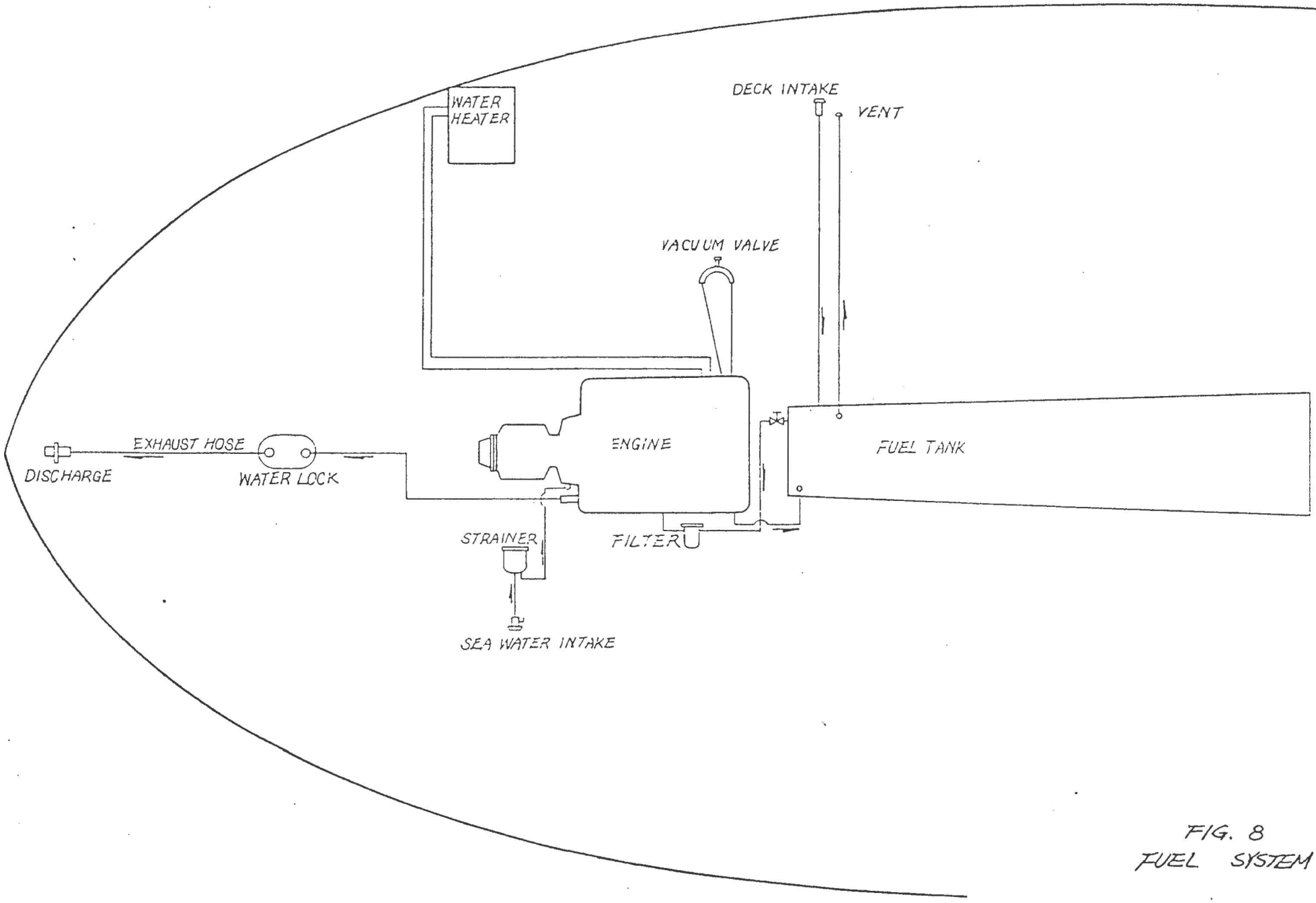


FIG. 8
FUEL SYSTEM

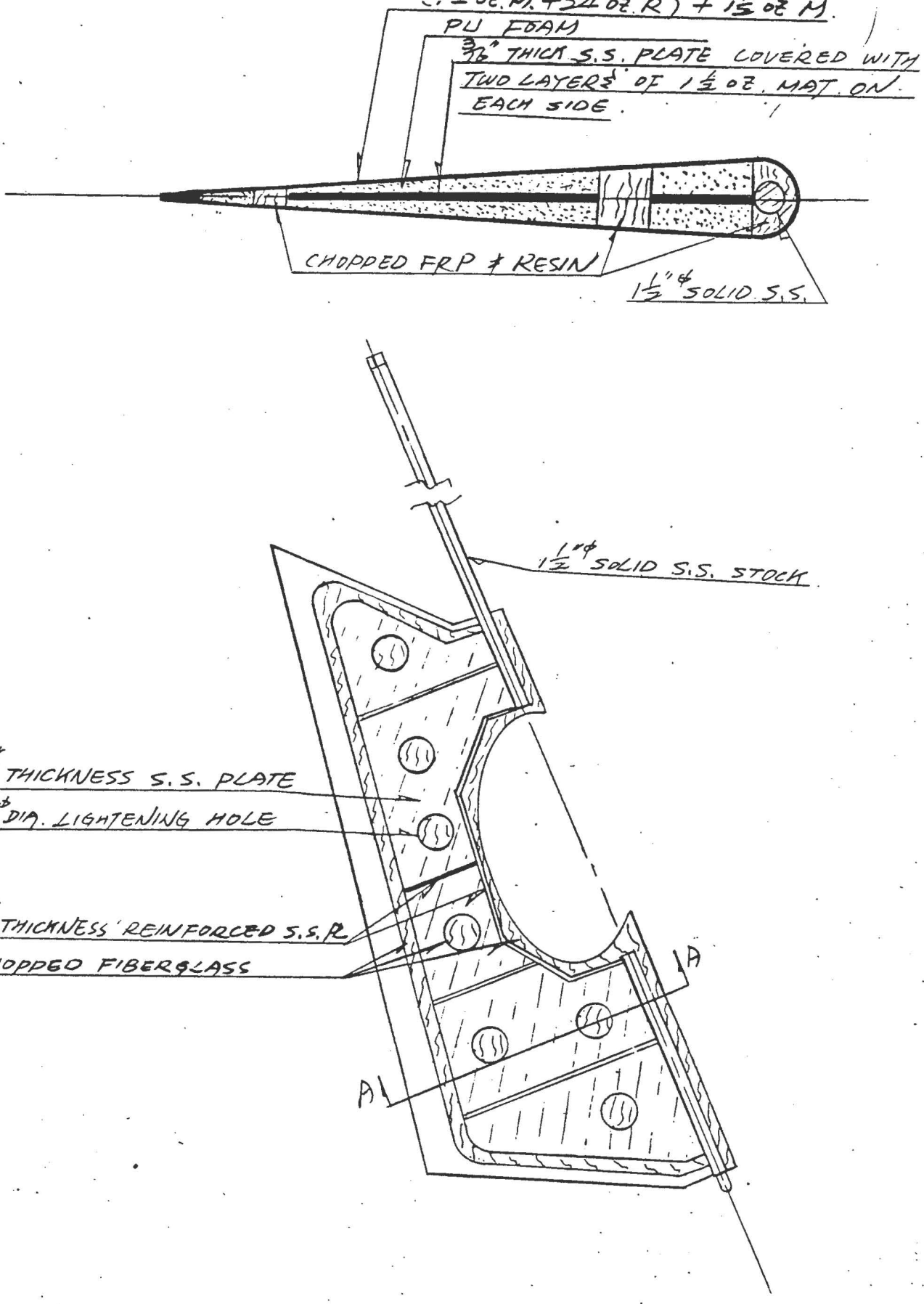


FIG. 3

RUDDER CONSTRUCTION DETAIL

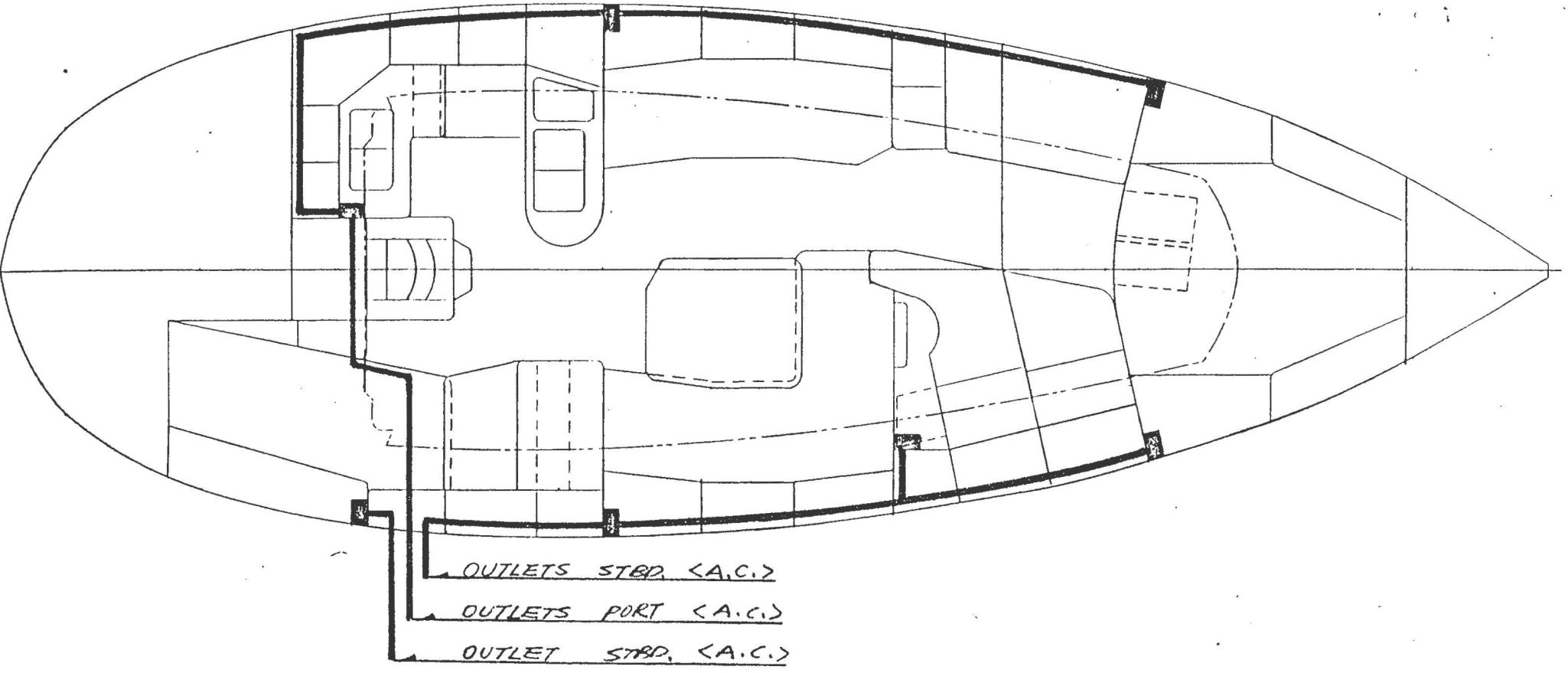
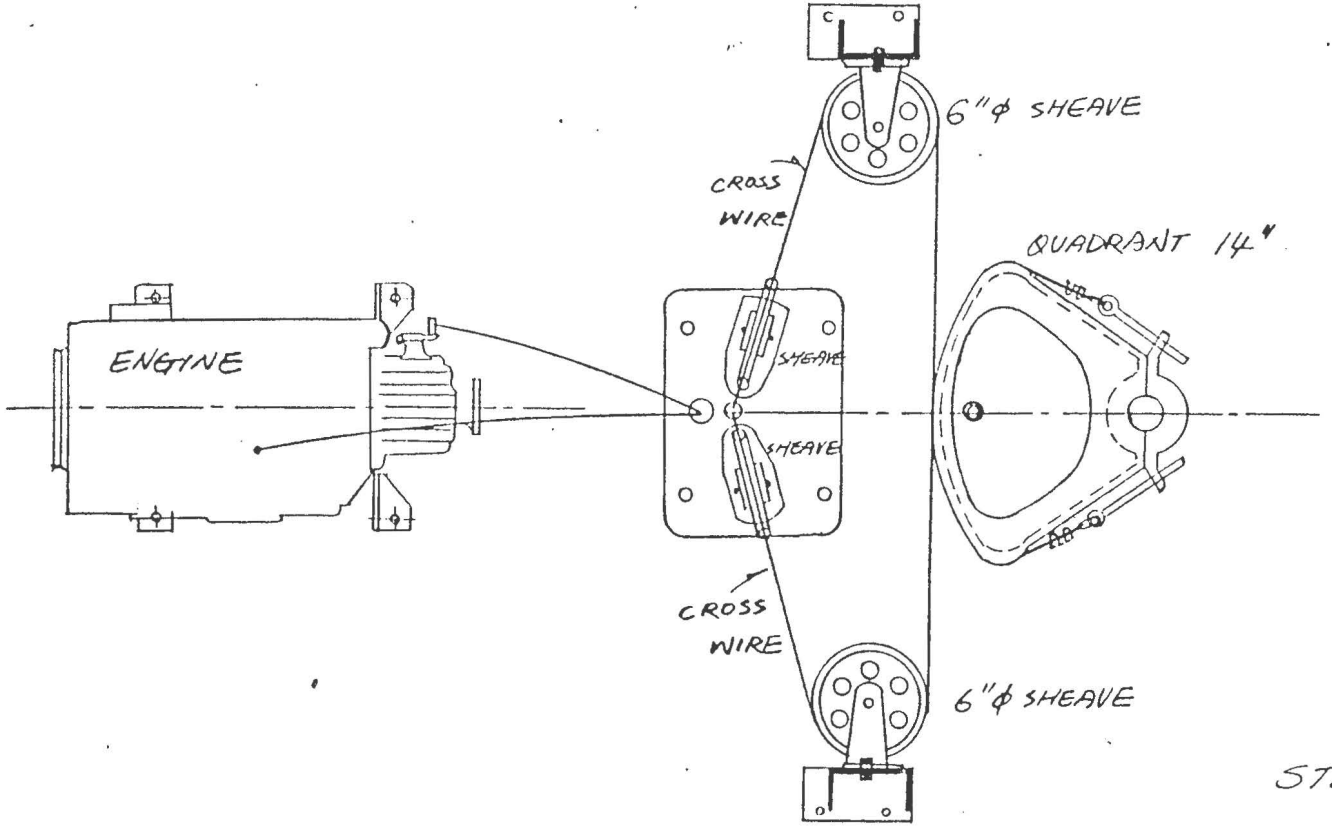


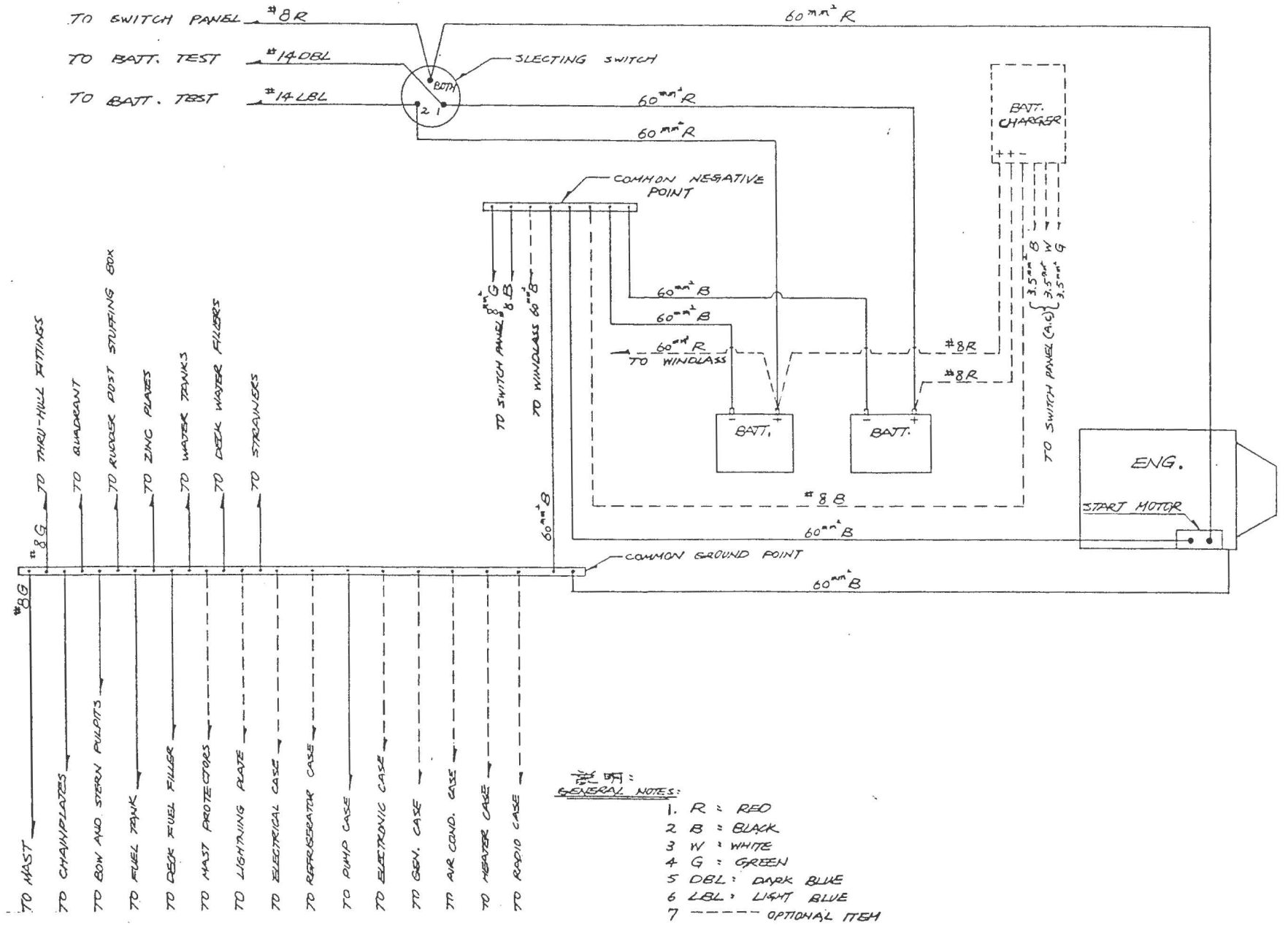
FIG. 15

OUTLET WIRING DIAGRAM

TB36



FIG·14
STEERING SYSTEM



說明：
GENERAL NOTES:

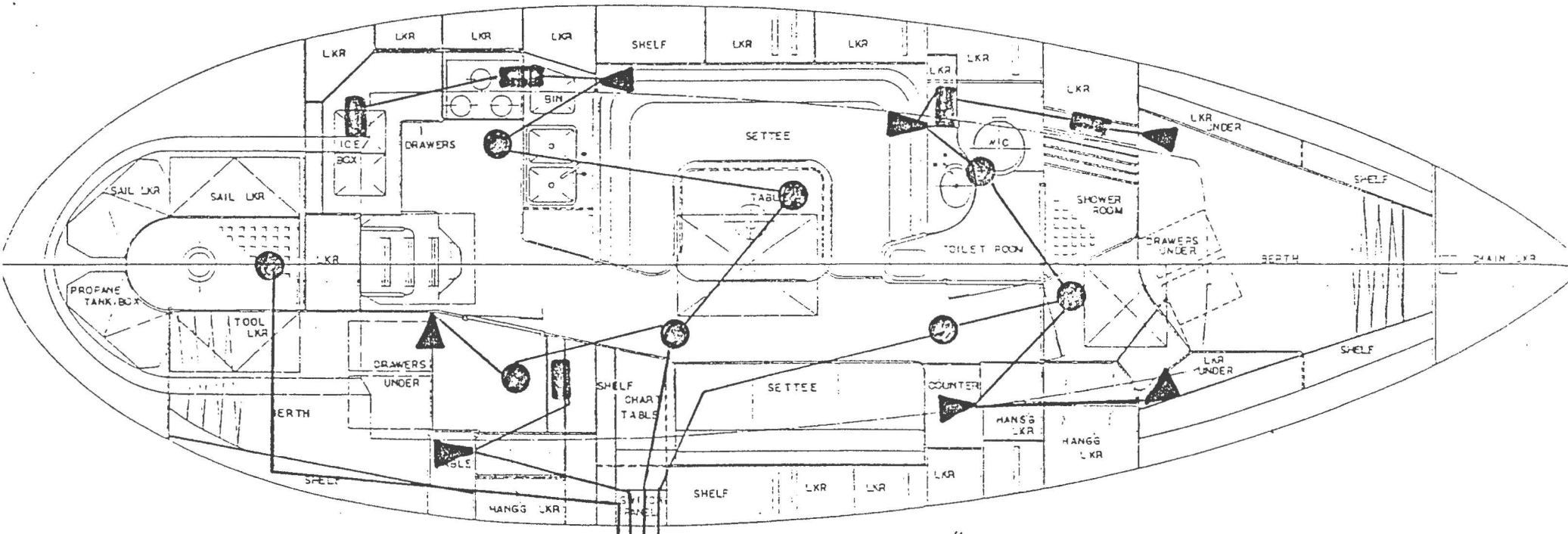
1. R = RED
2. B = BLACK
3. W = WHITE
4. G = GREEN
5. DBL = DARK BLUE
6. LBL = LIGHT BLUE
7. ----- OPTIONAL ITEM

FIG. 15.

DOME LITE

FLUORECENT LITE

BHD LITE.



FWD. CABIN LITE 12# DK. BL.

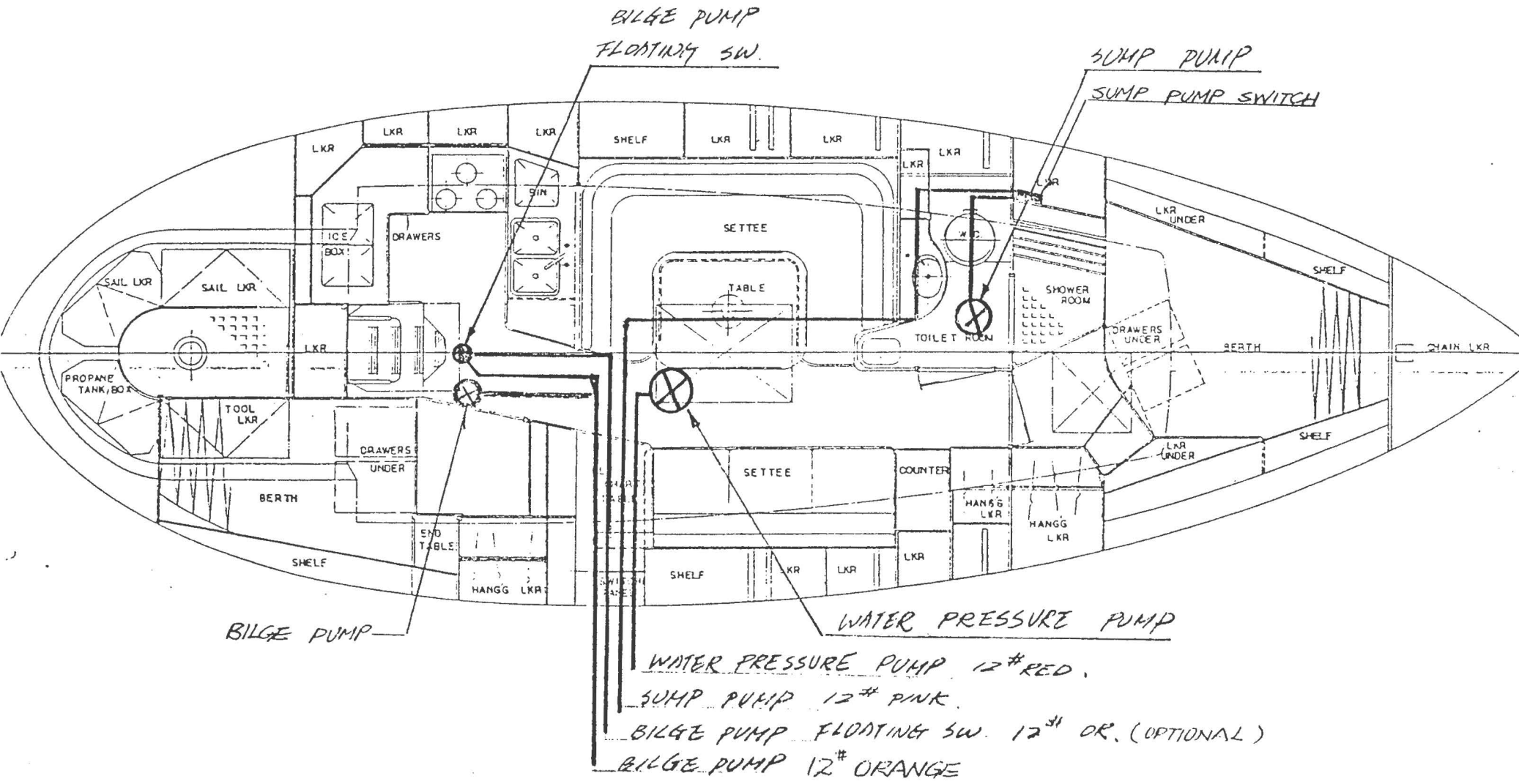
AFT CABIN LITE 12# LT. BL.

AFT CABIN LITE 12# LT. BL.

ENG. ROOM LITE 14# DK. BL.

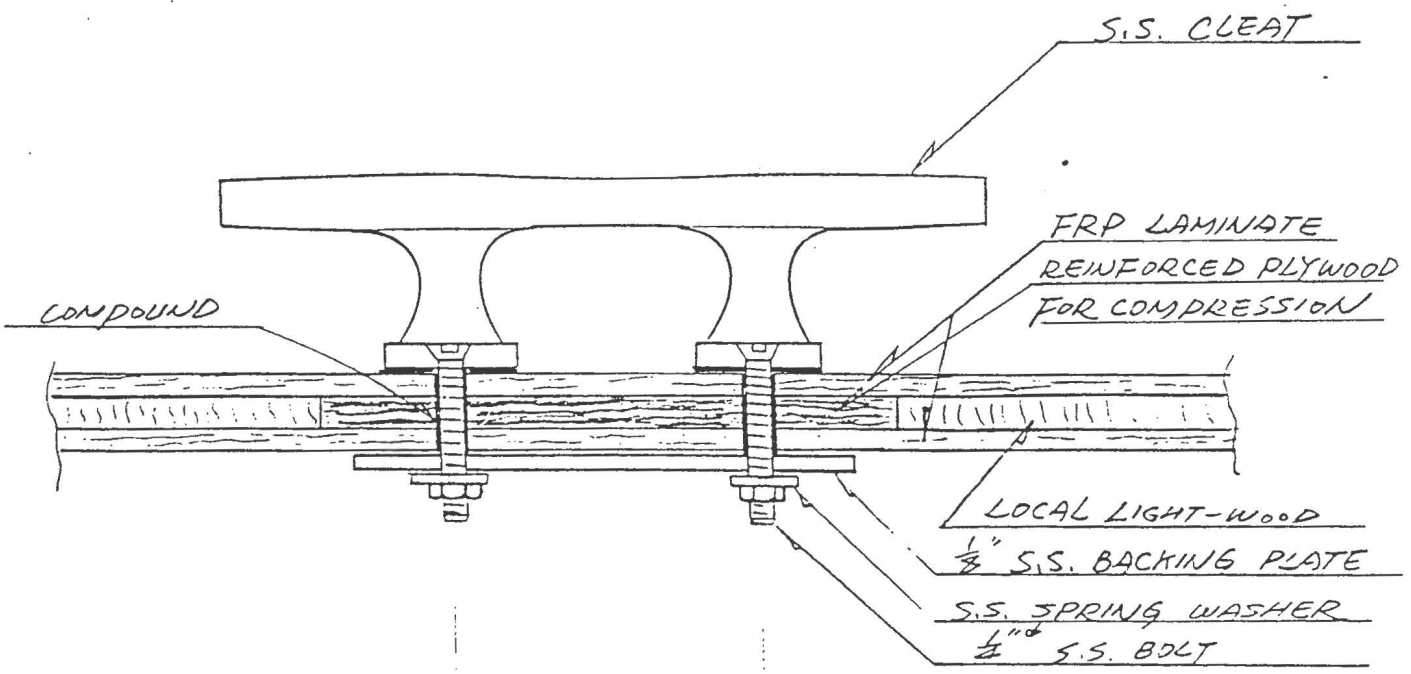
CABIN LITES WIRING DIAGRAM

FIG. 15.



PUMP WIRING DIAGRAM

FIG. 15



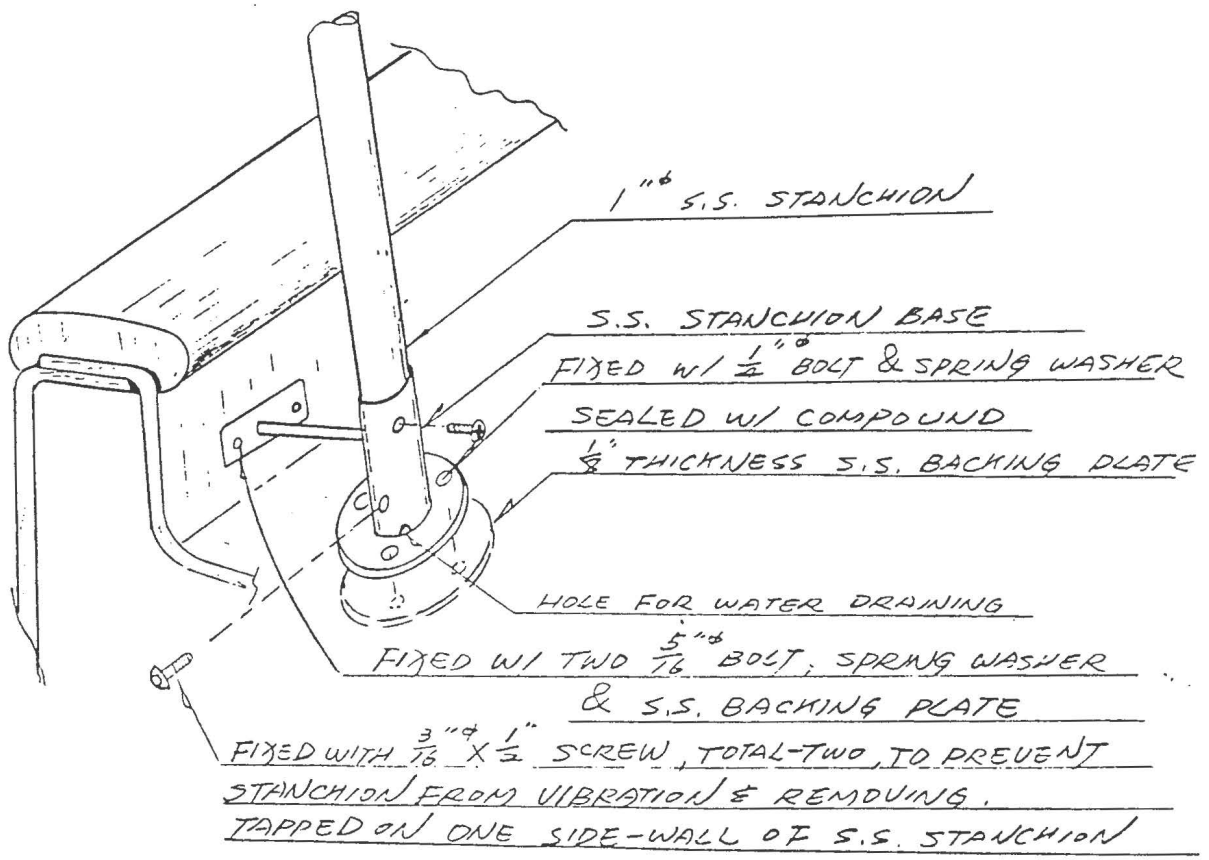


FIG. 6
DECK HARDWARE INSTALLATION

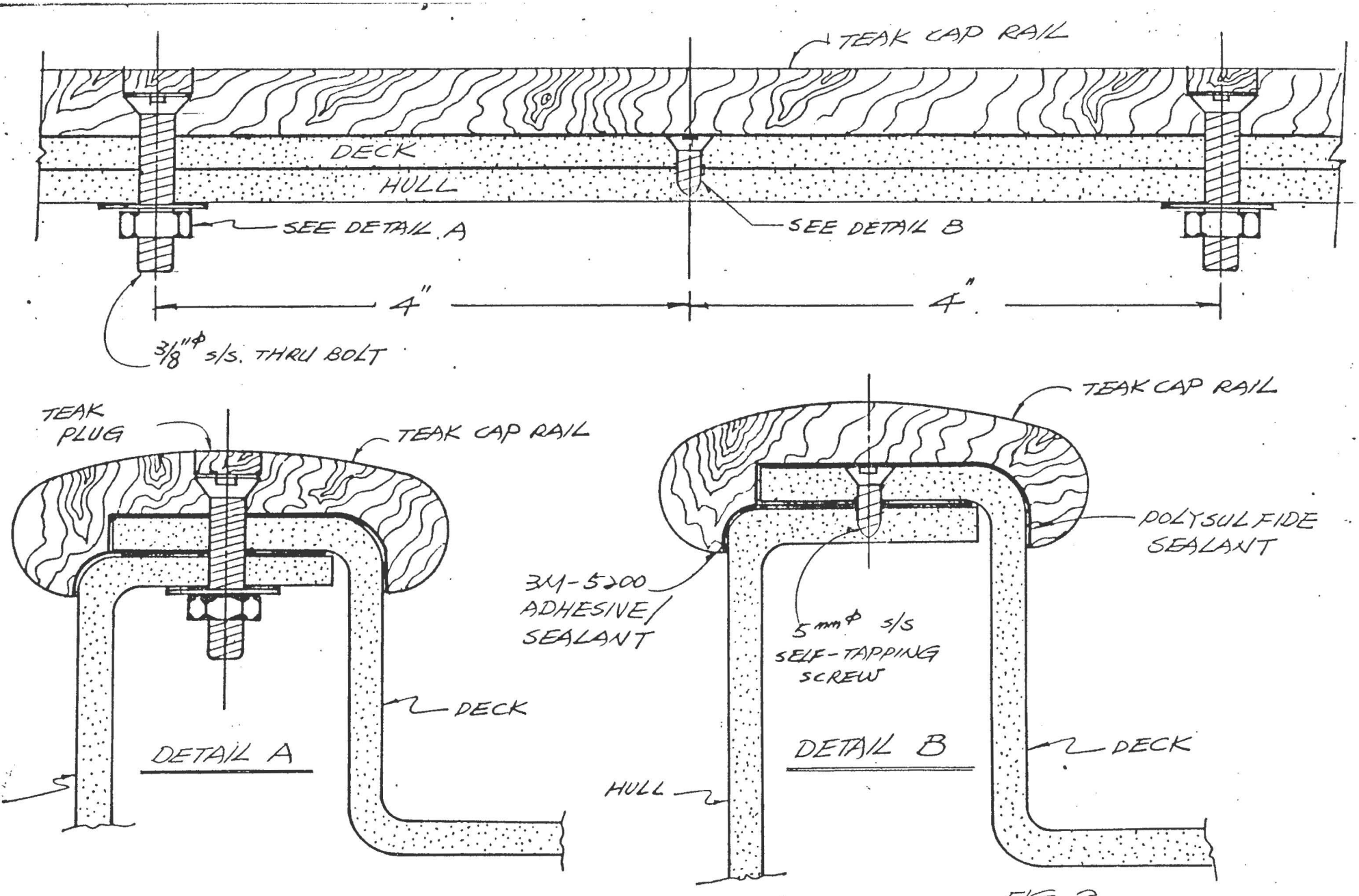


FIG. 2
HULL/DECK JOINT

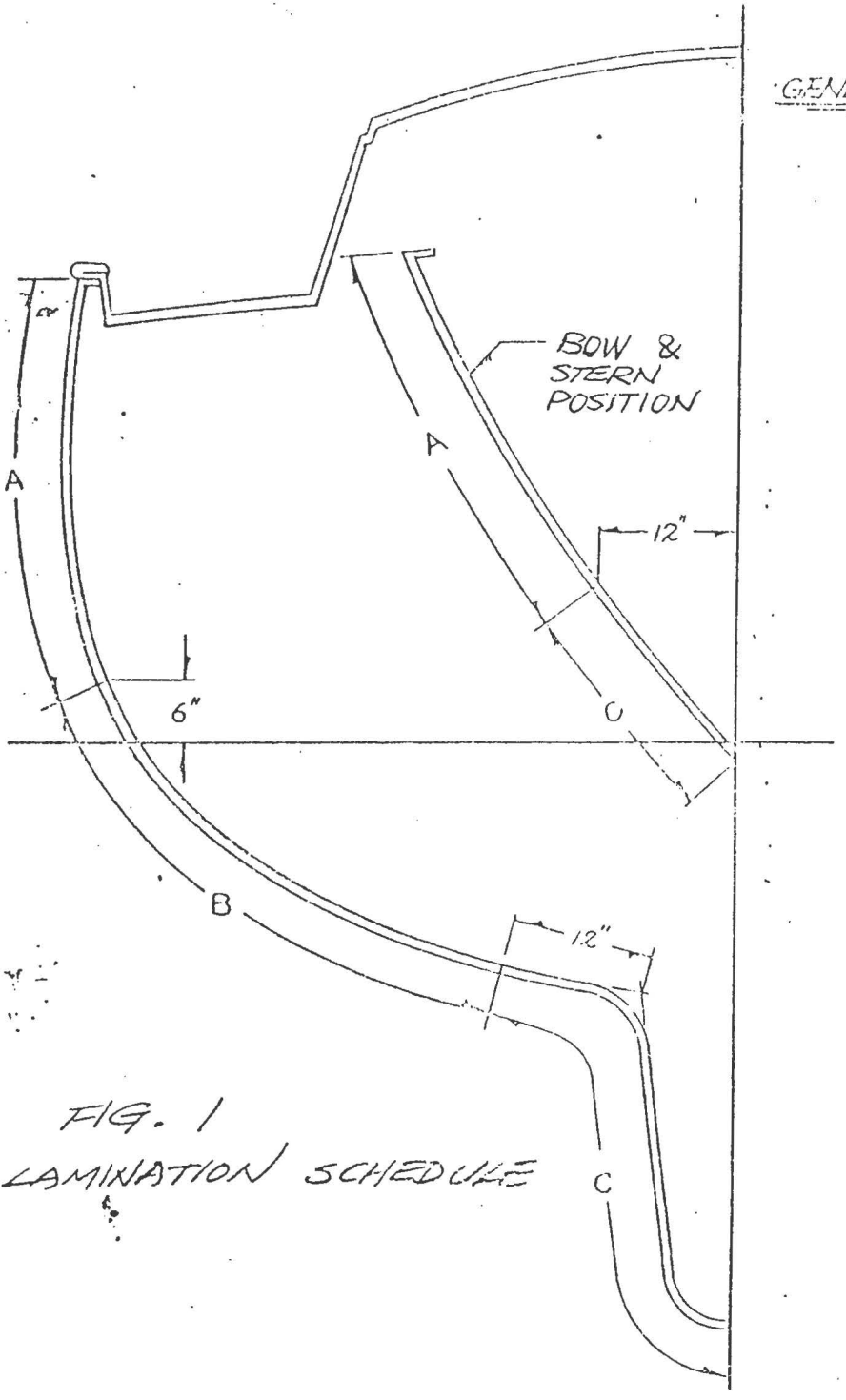


FIG. 1
LAMINATION SCHEDULE

GENERAL NOTES :

1. C = 200 g/m² CLOTH
2. M' = 300 g/m² MAT
3. M = 450 g/m² MAT
4. R' = 600 g/m² WOVEN ROVING
5. R = 800 g/m² WOVEN ROVING

TB31 :

SECTION "A"	G + 30 g/m² M + 3M' + R' + 2 (M' + R)
= "B"	G + 30 g/m² M + M' + 4 (M' + R)
= "C"	G + 30 g/m² M + M' + 4 (M' + R) + M + R
DECK AND CABIN TOP	G + 2M' + R + M + CORE + M' + R
CABIN SIDE	G + M' + M + M' + R' + M + CORE + M' + R

TB36 :

SECTION "A"	G + 30 g/m² M + 2M' + M + R' + 3 (M' + R)
= "B"	G + 30 g/m² M + 2M' + R + 3 (M + R) + M' + R
= "C"	G + 30 g/m² M + 2M' + R + 4 (M + R) + M' + R
DECK AND CABIN TOP	G + 2M' + R + M + CORE + M' + R
CABIN SIDE	G + M' + M + M' + R' + M + CORE + M' + R

TB40 :

SECTION "A"	G + 30 g/m² M + M' + M + C + M + R' + 2 (M + R)
= "B"	G + 30 g/m² M + M' + 5 (M + R)
= "C"	G + 30 g/m² M + M' + 10 (M' + R)
DECK AND CABIN TOP	G + 2M' + R + M' + R + M + CORE + M + R + M
CABIN SIDE	G + M' + M + M' + R' + M' + R + M + CORE + M + R + M

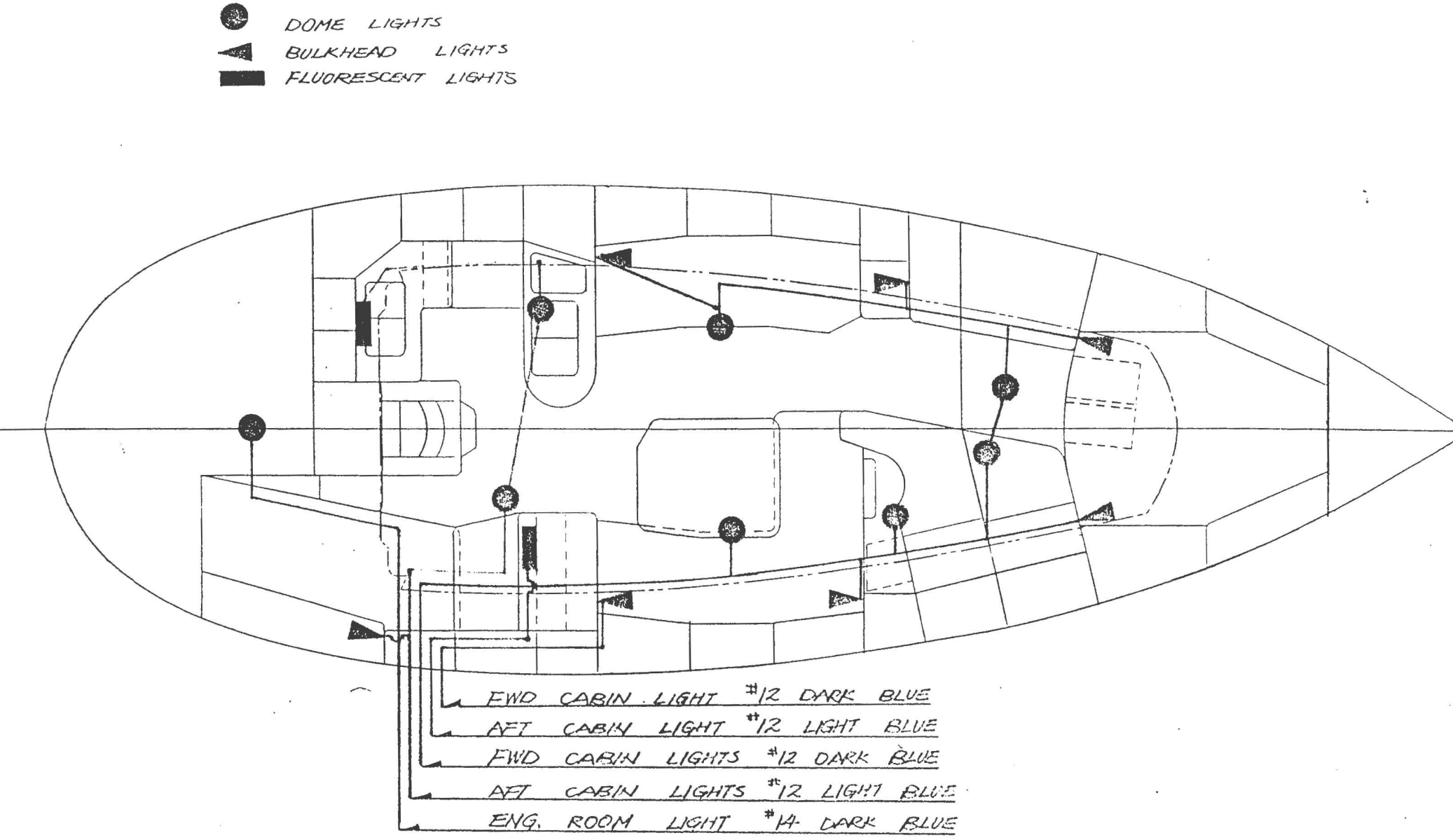


FIG. 15

CABIN LIGHTS WIRING DIAGRAM

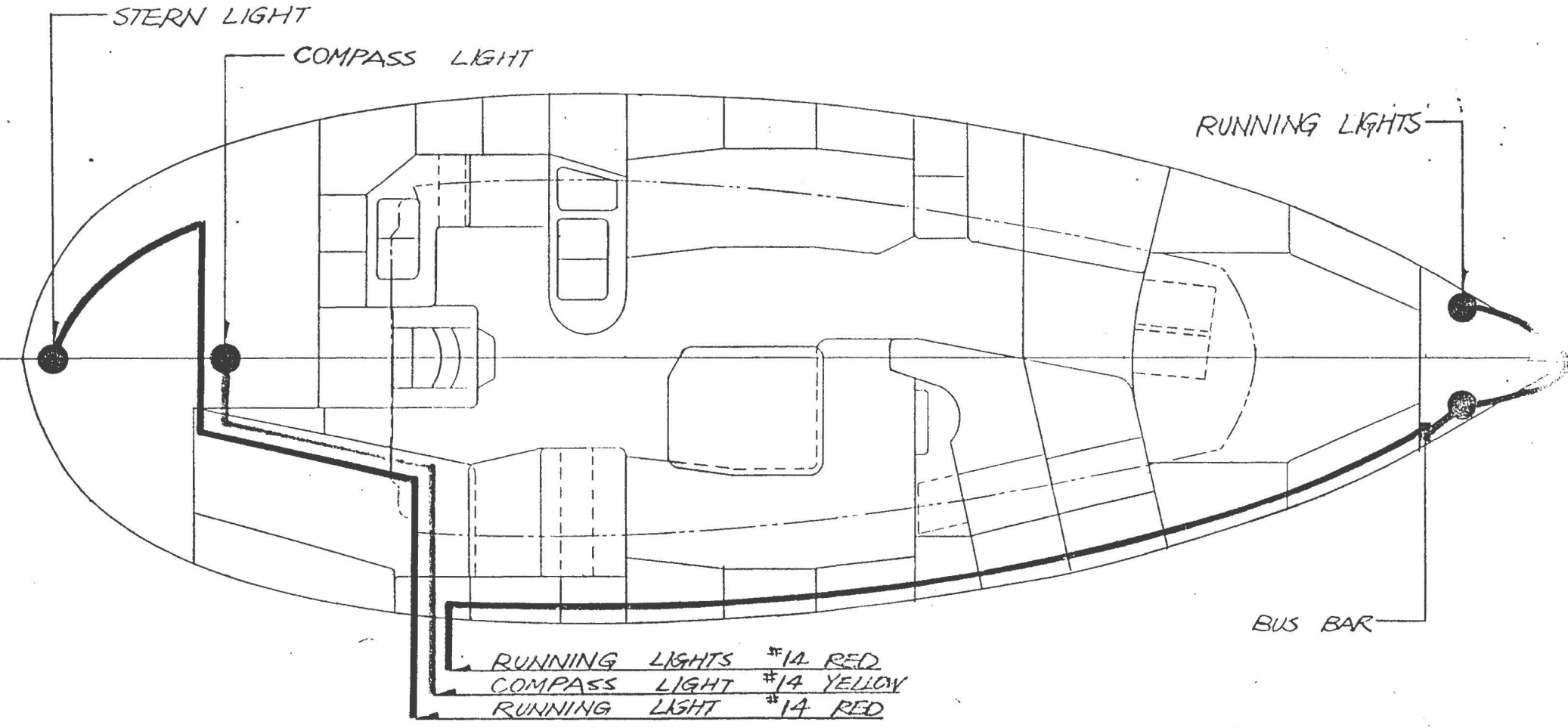


FIG. 15

RUNNING LIGHT WIRING DIAGRAM

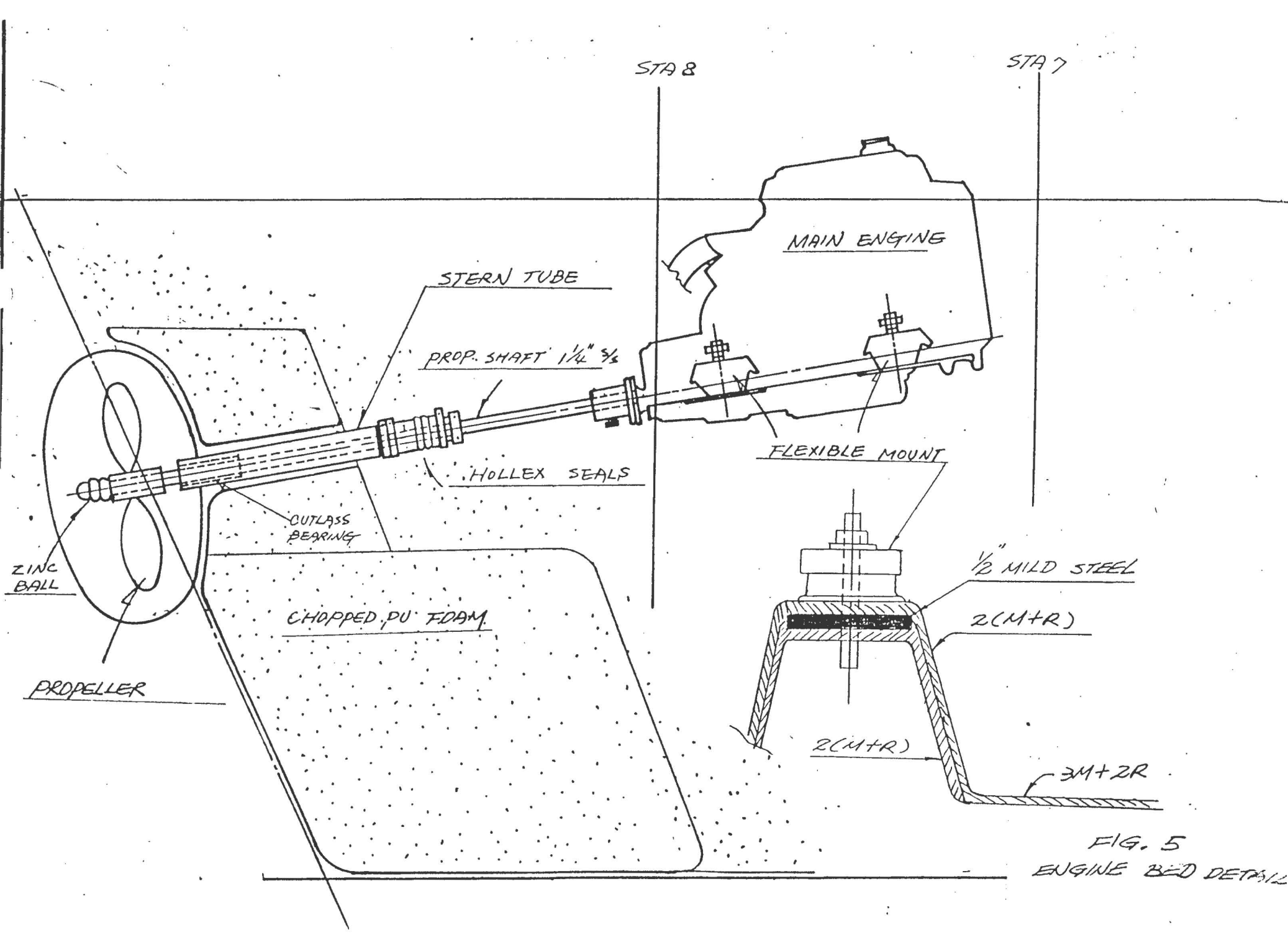


FIG. 5
ENGINE BED DETAIL

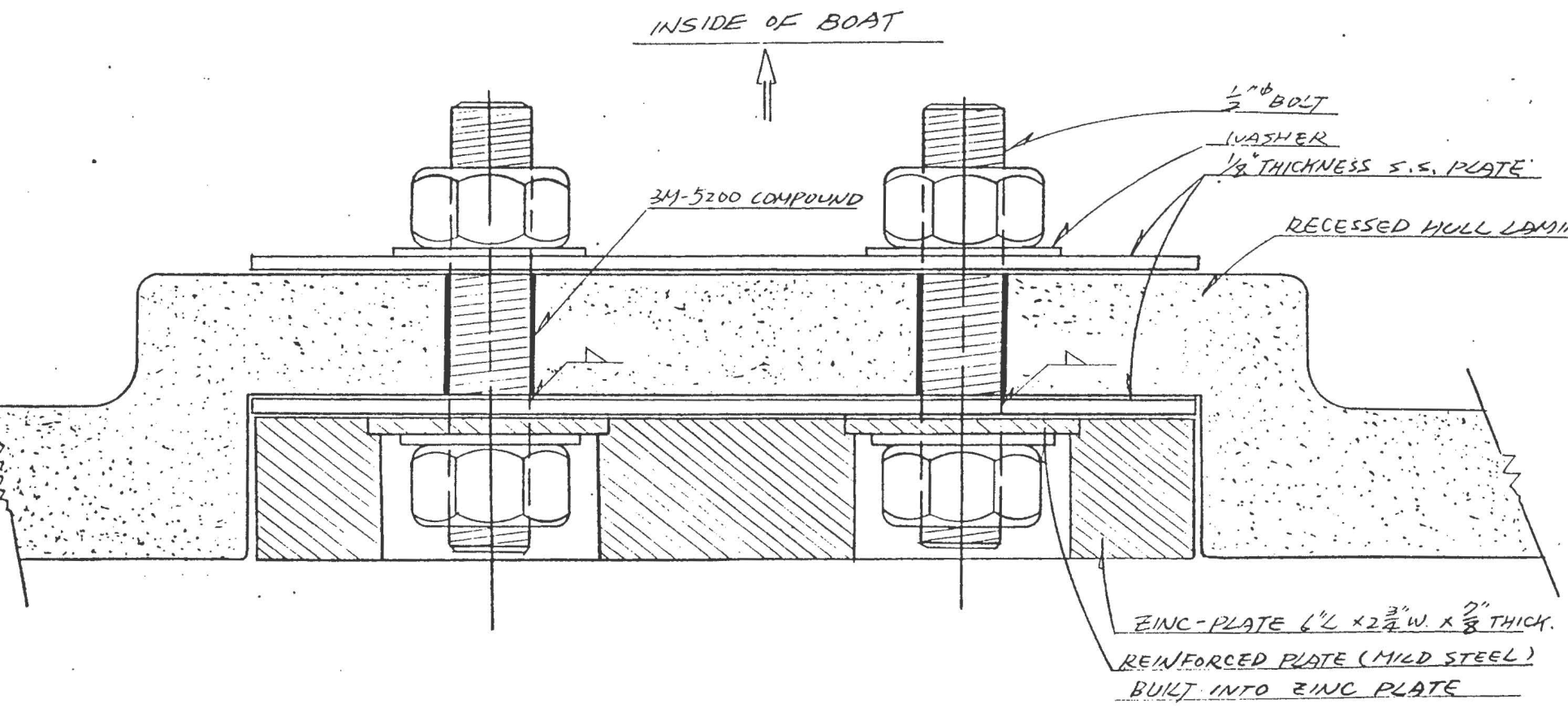


FIG. 16
ZINC-PLATE DETAIL

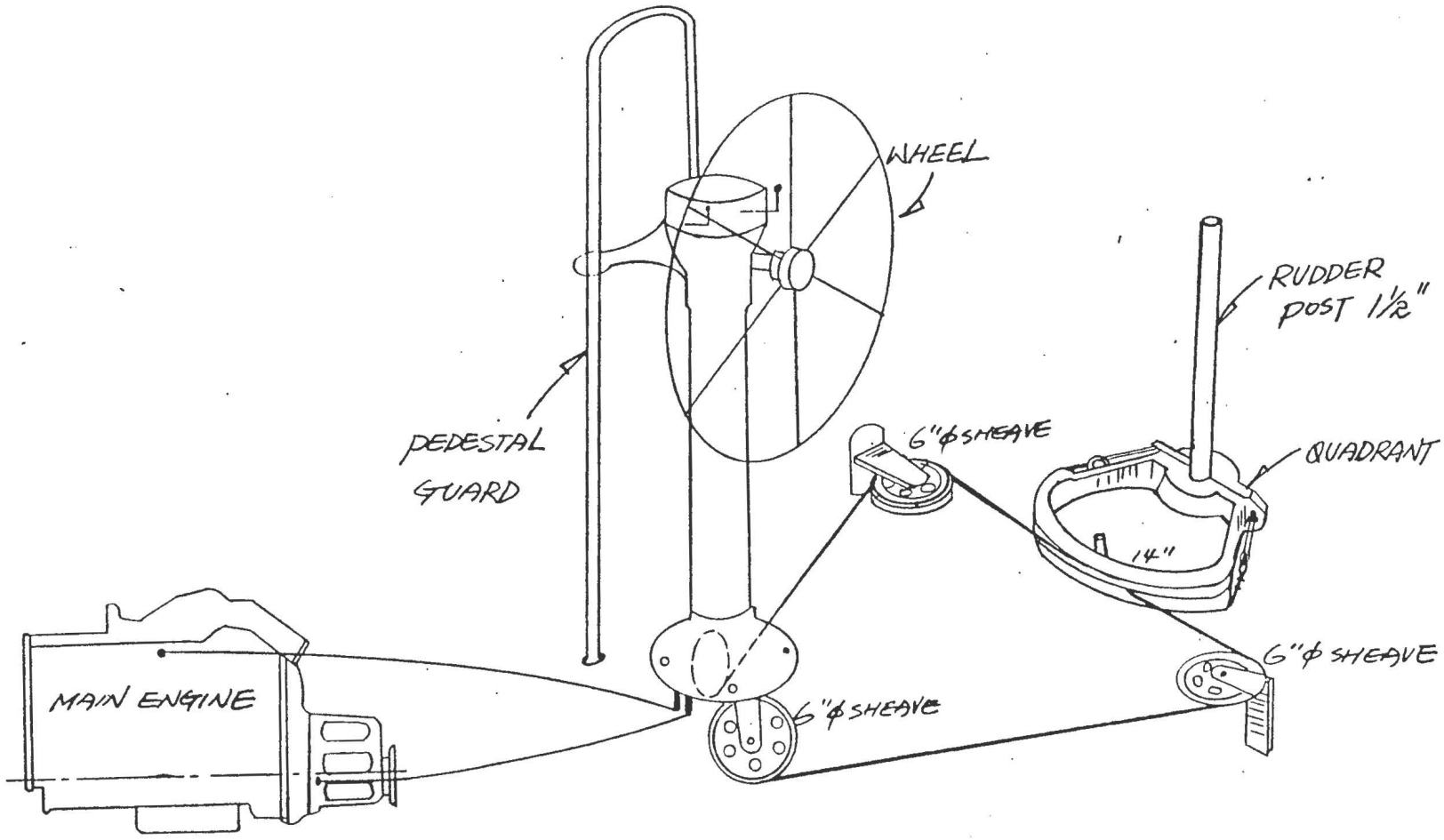
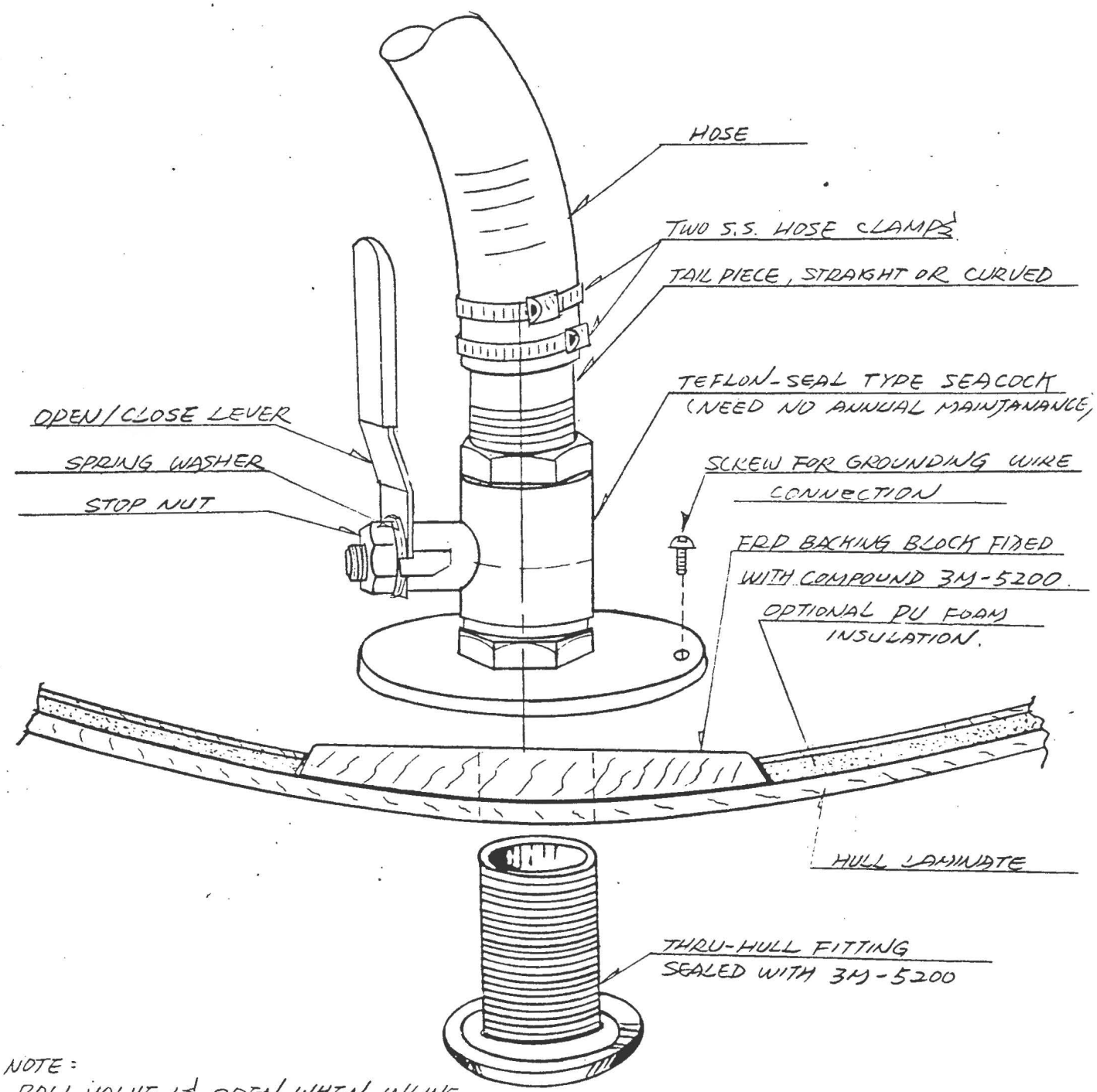


FIG. 13
STEERING SYSTEM



NOTE:
BALL VALVE IS OPEN WHEN INLINE
IT IS CLOSED WHEN IN 90°

FIG. 12

SEA-COCK DETAIL

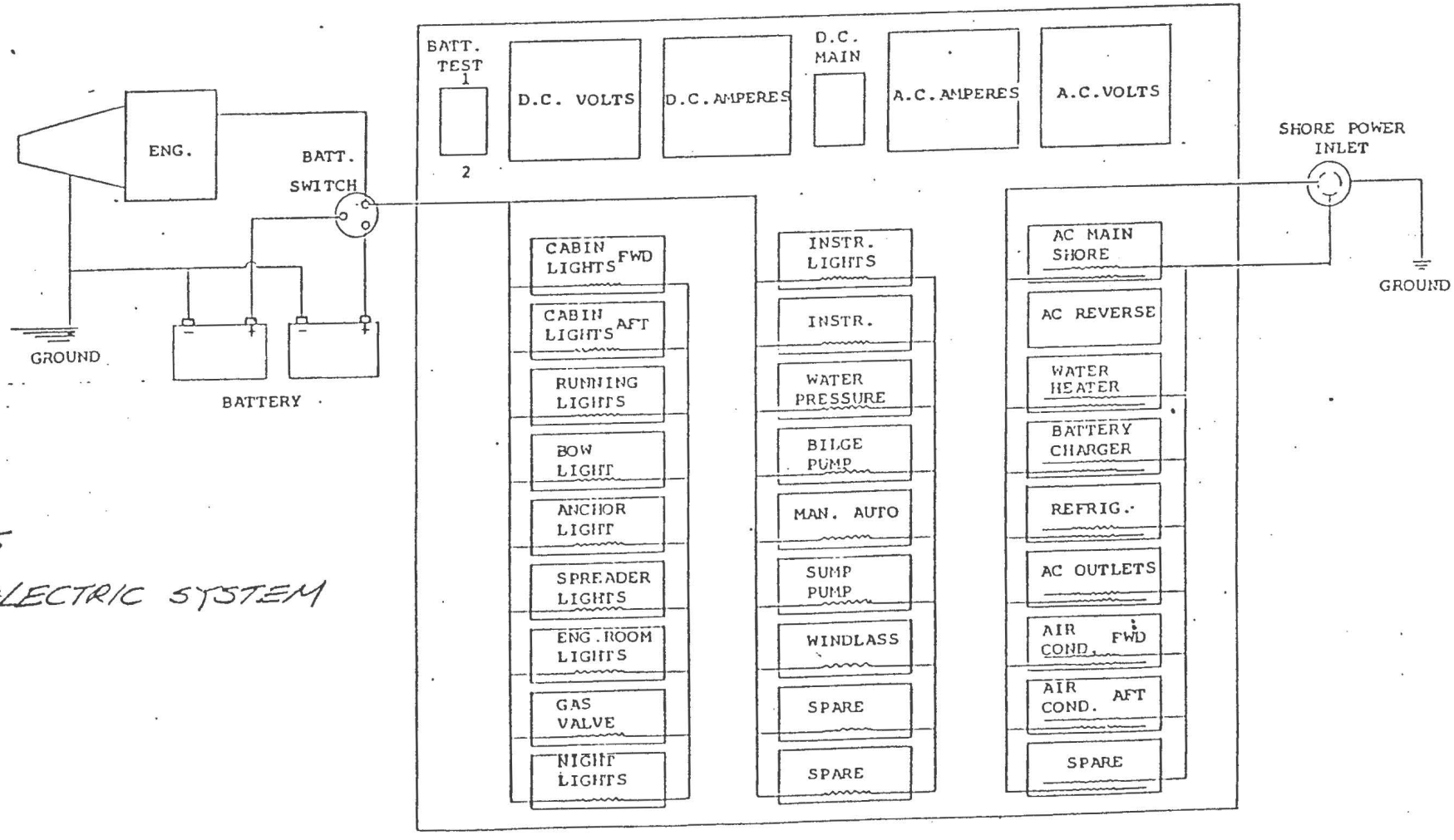


FIG. 15
110V/12V ELECTRIC SYSTEM

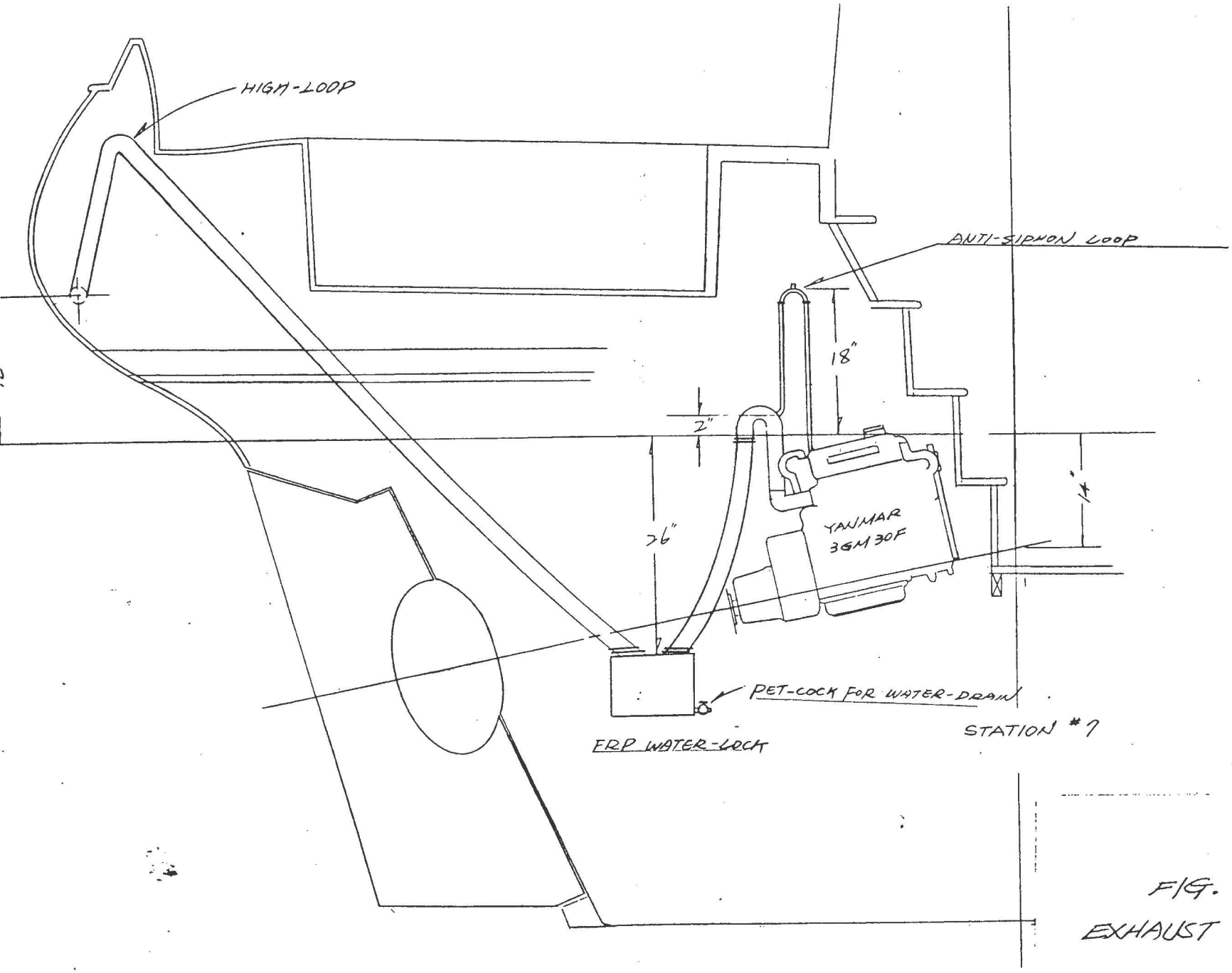


FIG. 7
EXHAUST SYSTEM

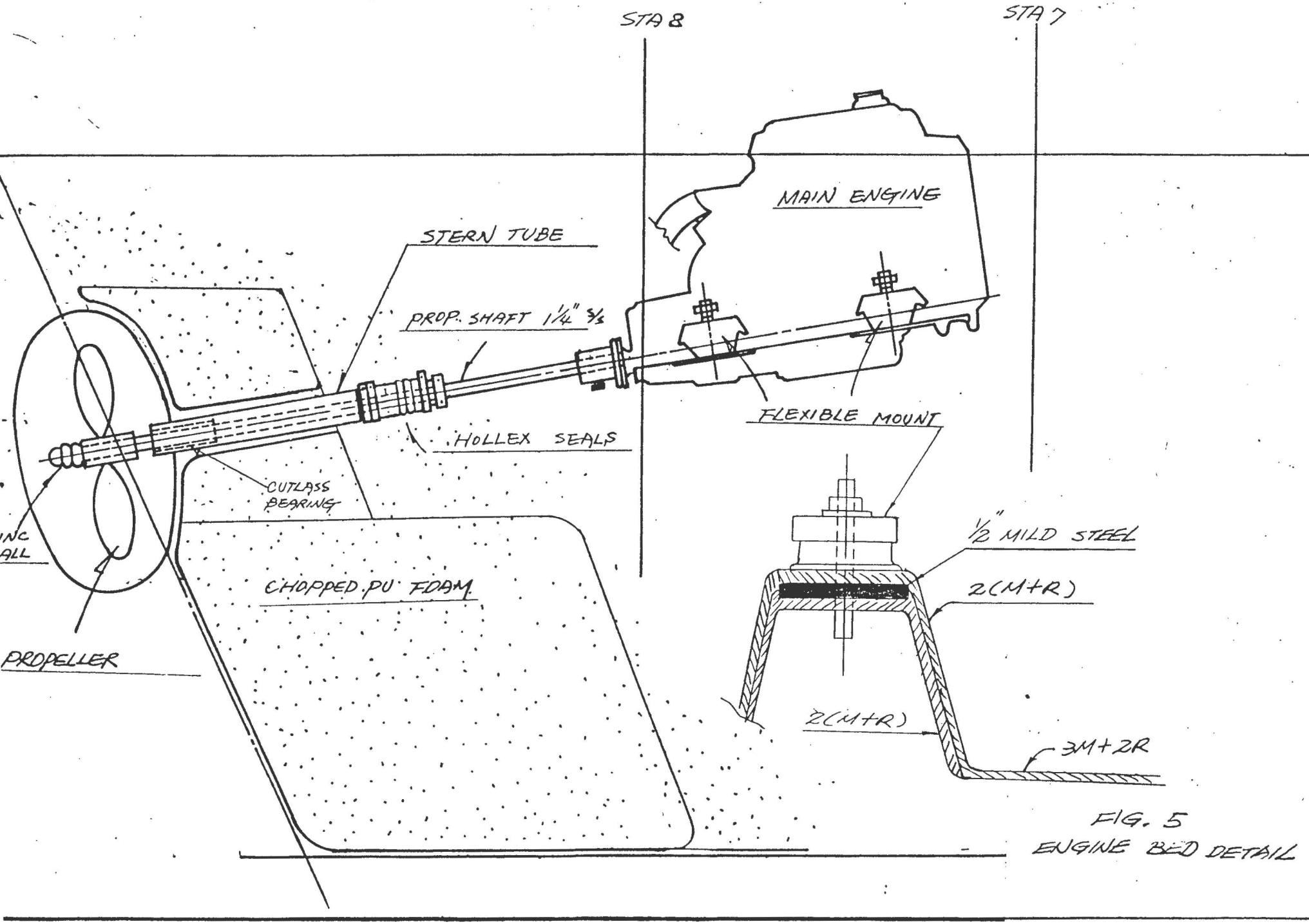


FIG. 5
ENGINE BED DETAIL

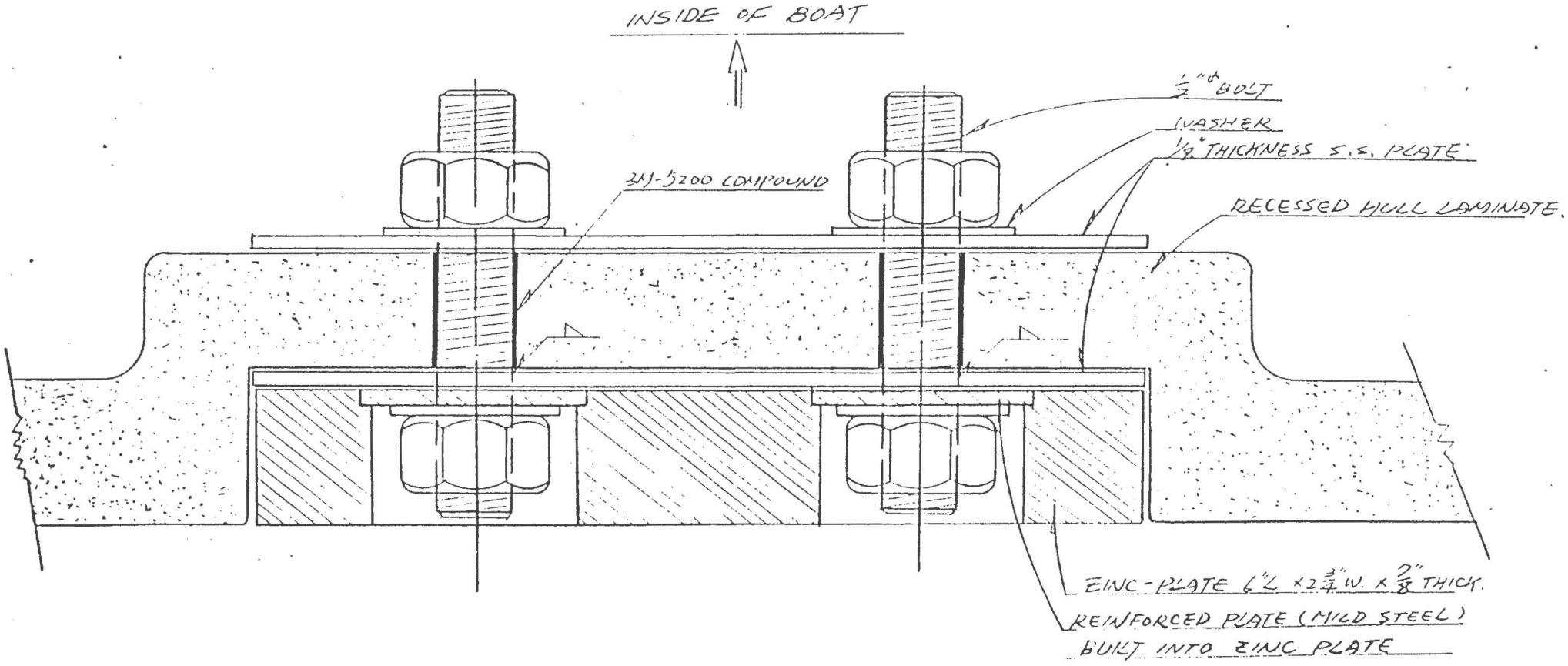


FIG. 16
ZINC-PLATE DETAIL

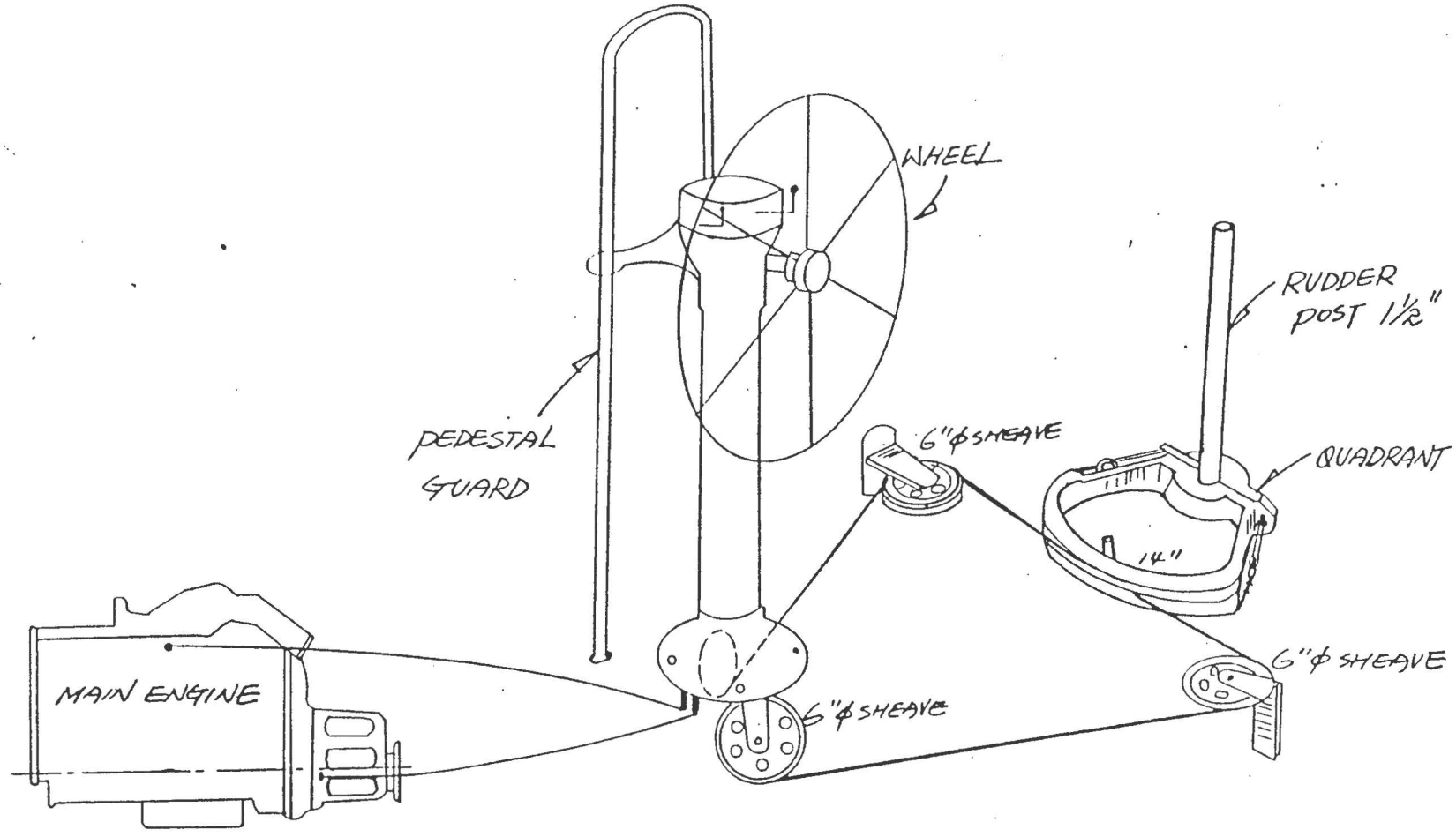
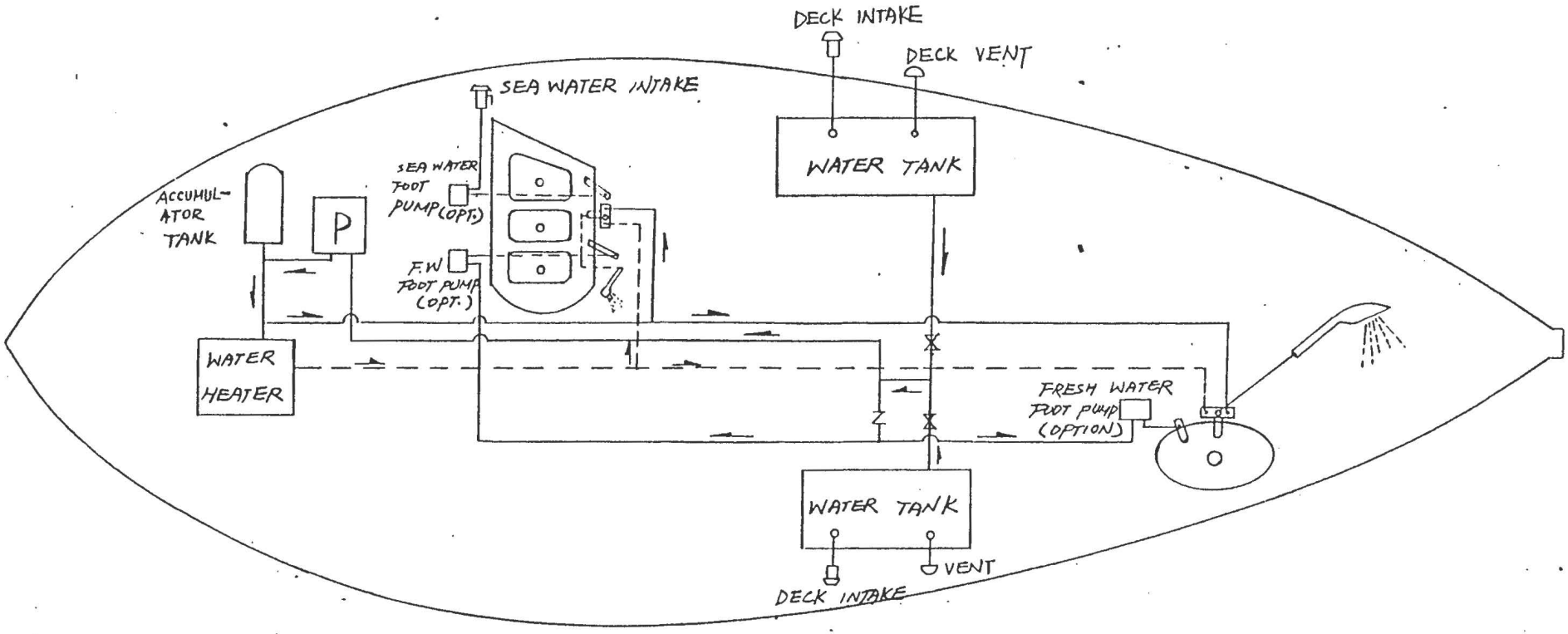


FIG. 13
STEERING SYSTEM



P ——— PRESSURE PUMP

——— COOLING WATER

- - - - - - - - - HOT WATE

——— DECK INTA

——— DECK VENT

——— BALL VALV

——— CHECK VAL

FIG. 9
FRESH WATER SYSTEM

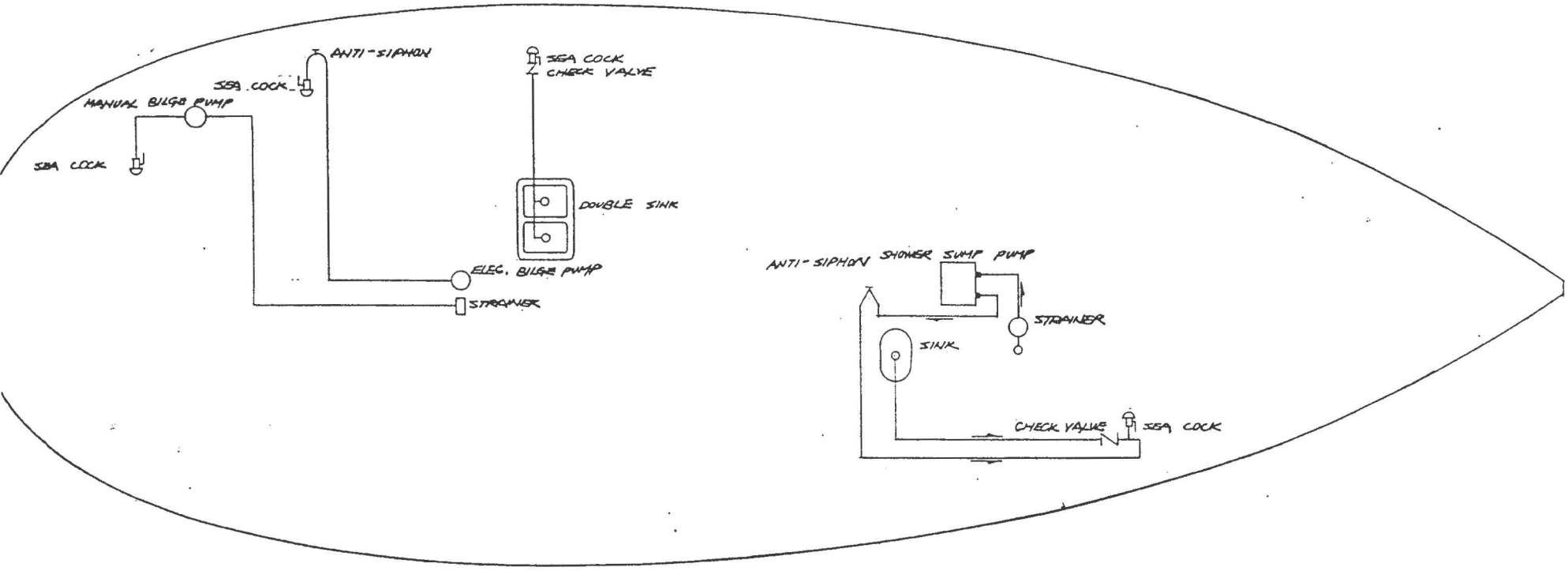


FIG. 11
PLUMBING SYSTEM

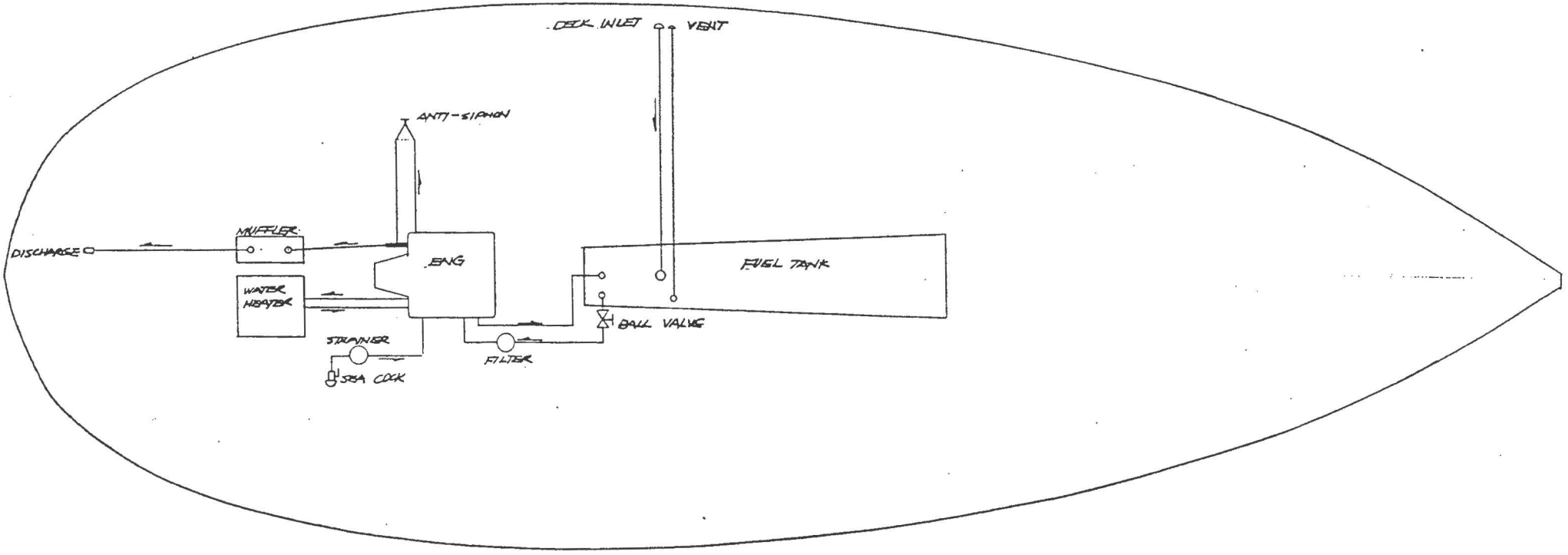


FIG. 8
FUEL SYSTEM

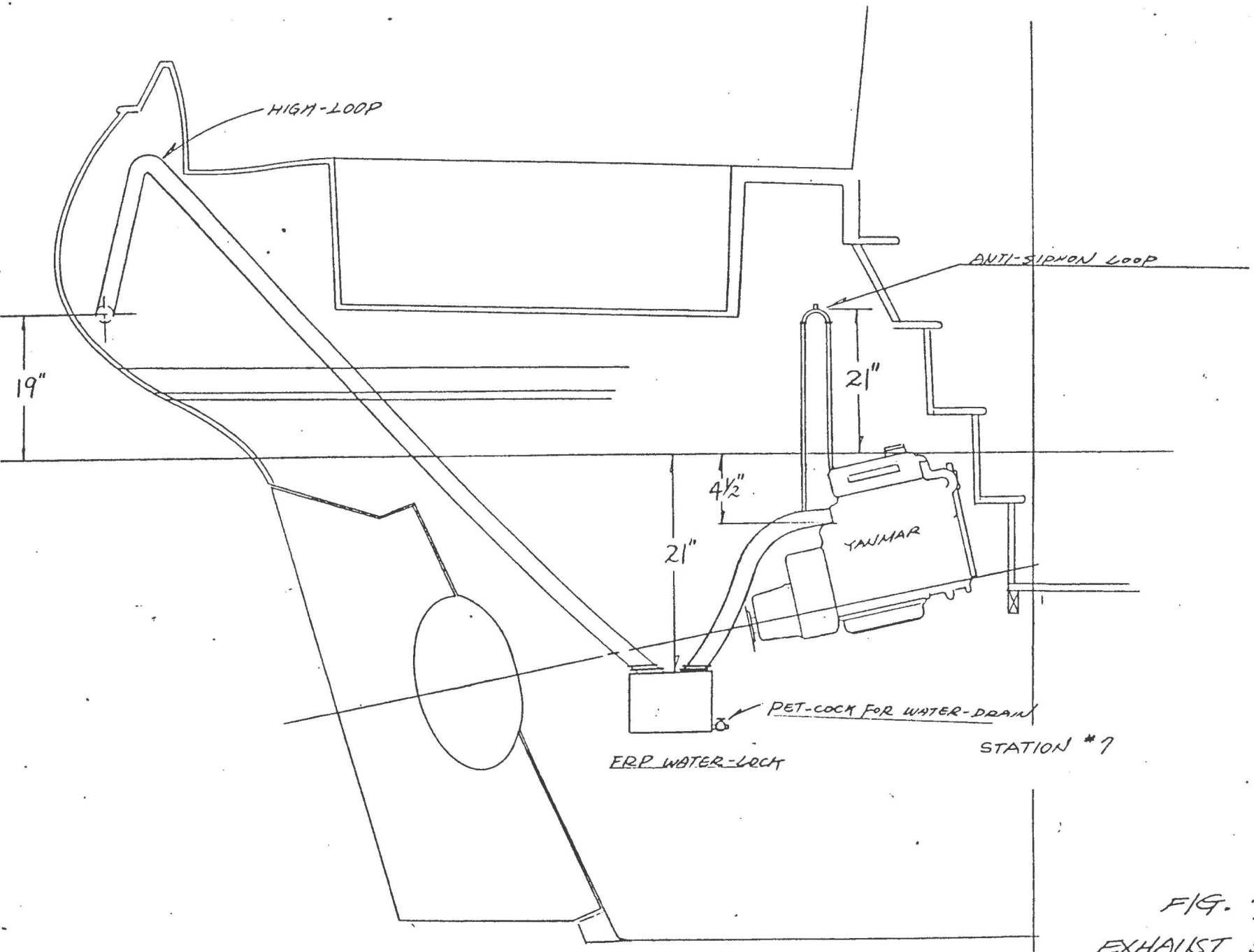


FIG. 7
EXHAUST SYSTEM

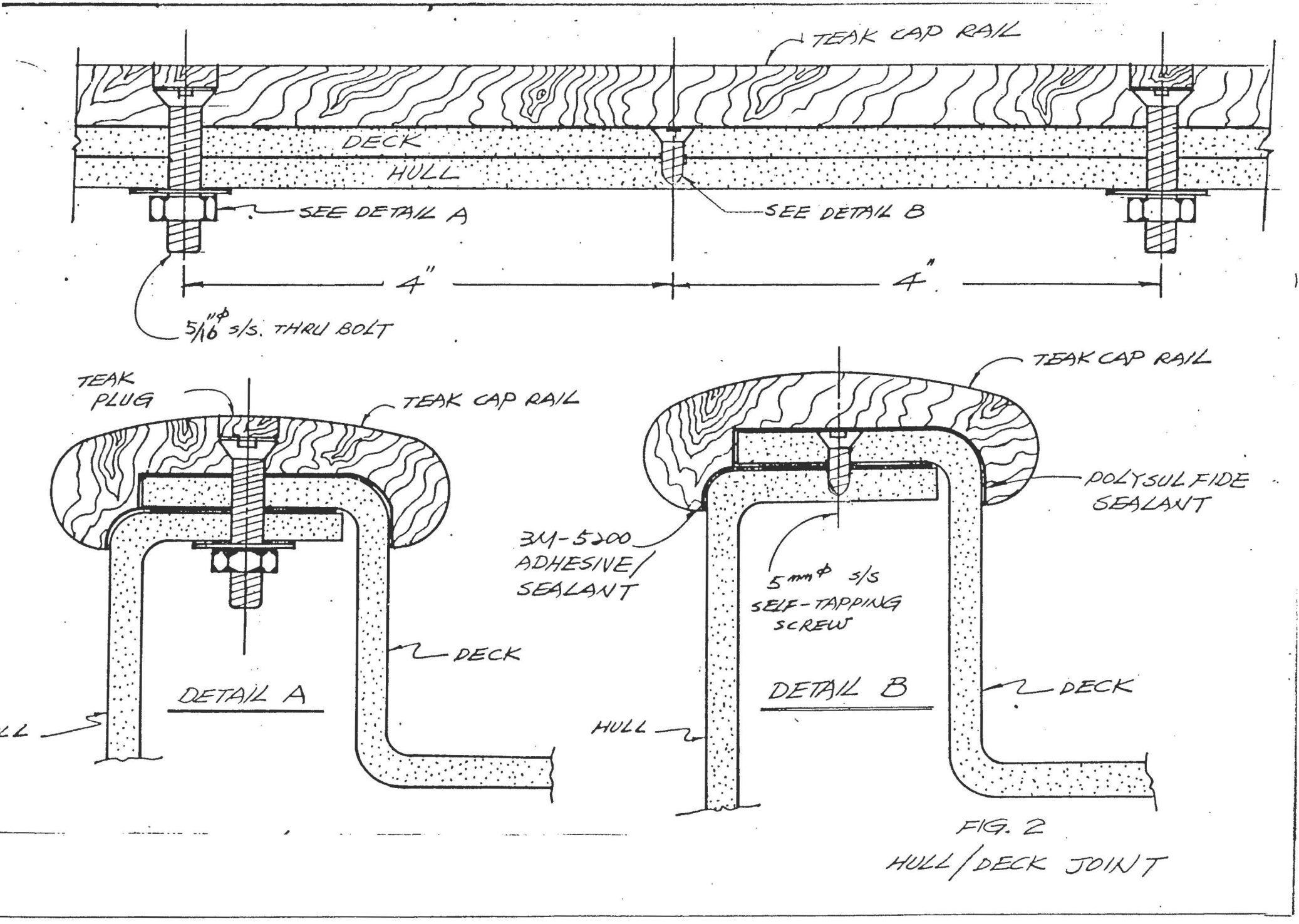


FIG. 2
HULL/DECK JOINT

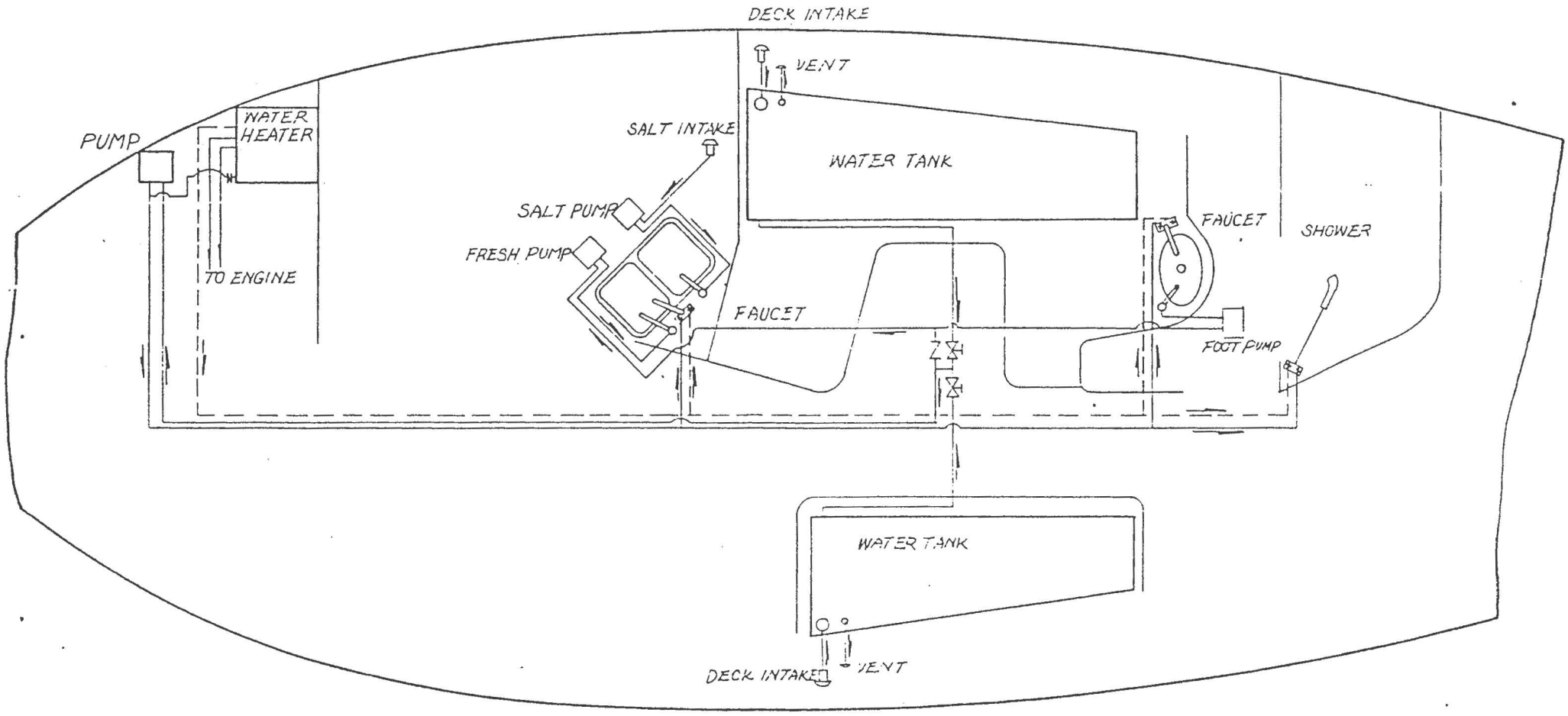


FIG. 9

FRESH WATER SYSTEM.

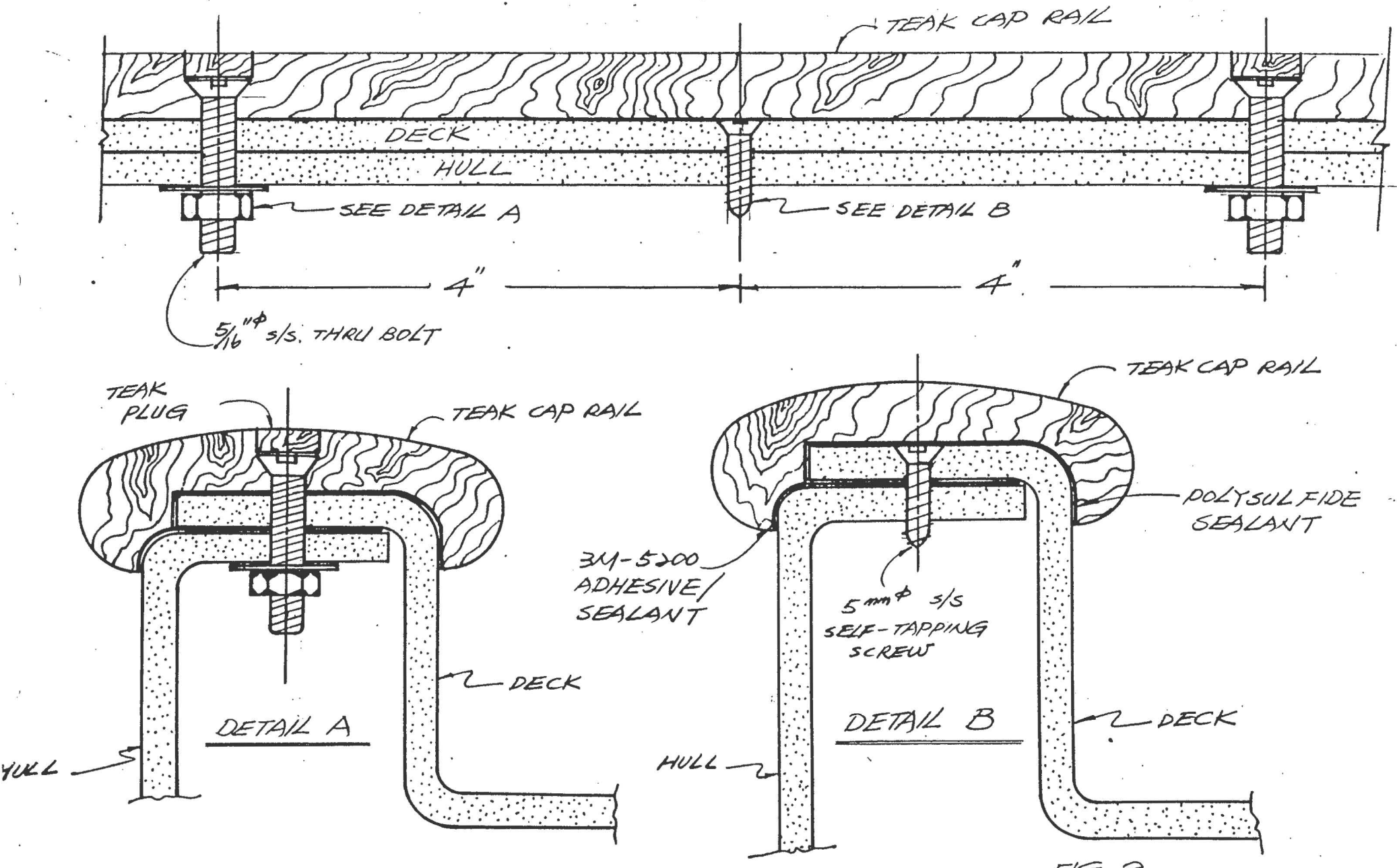


FIG. 2
HULL/DECK JOINT

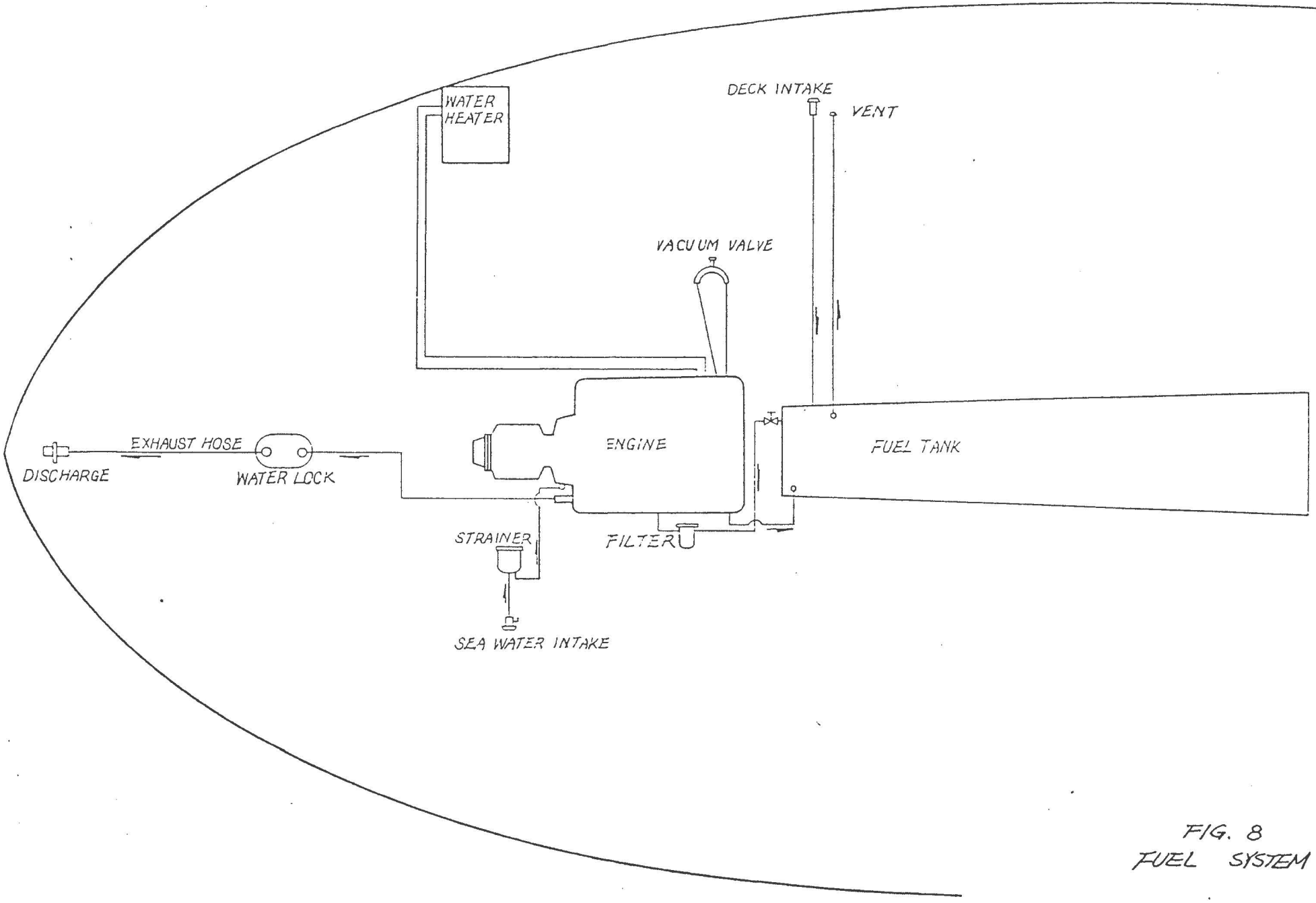


FIG. 8
FUEL SYSTEM

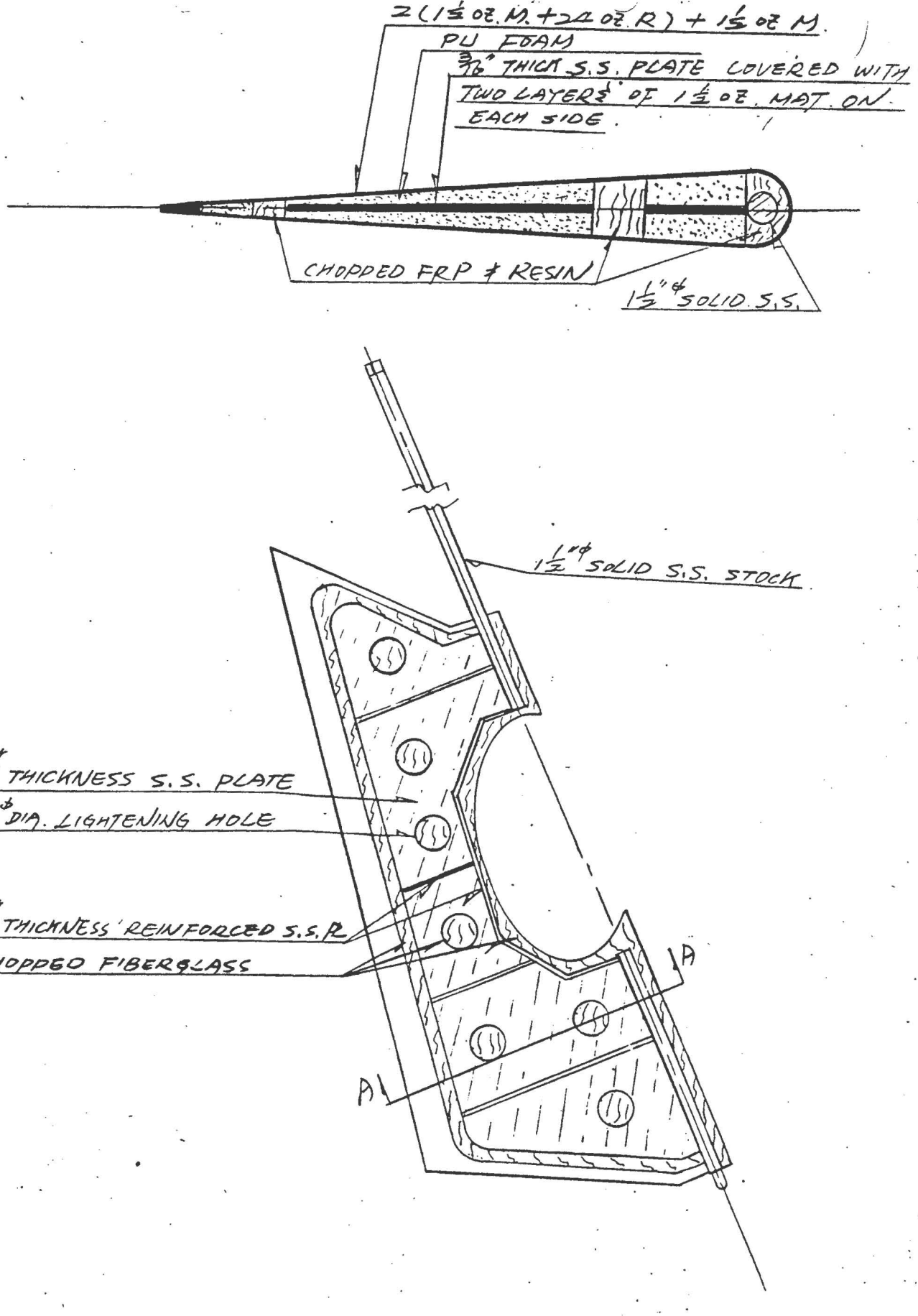


FIG. 3

RUDDER CONSTRUCTION DETAIL

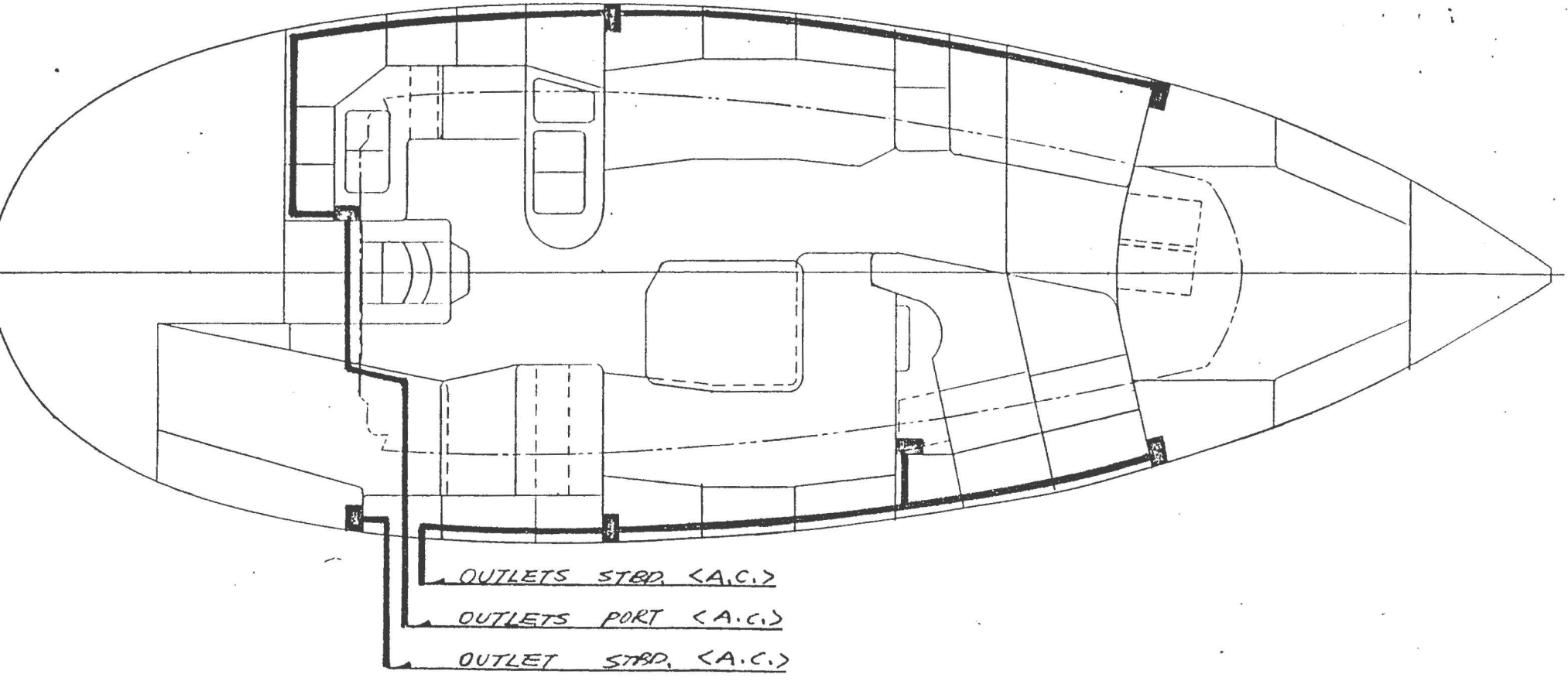
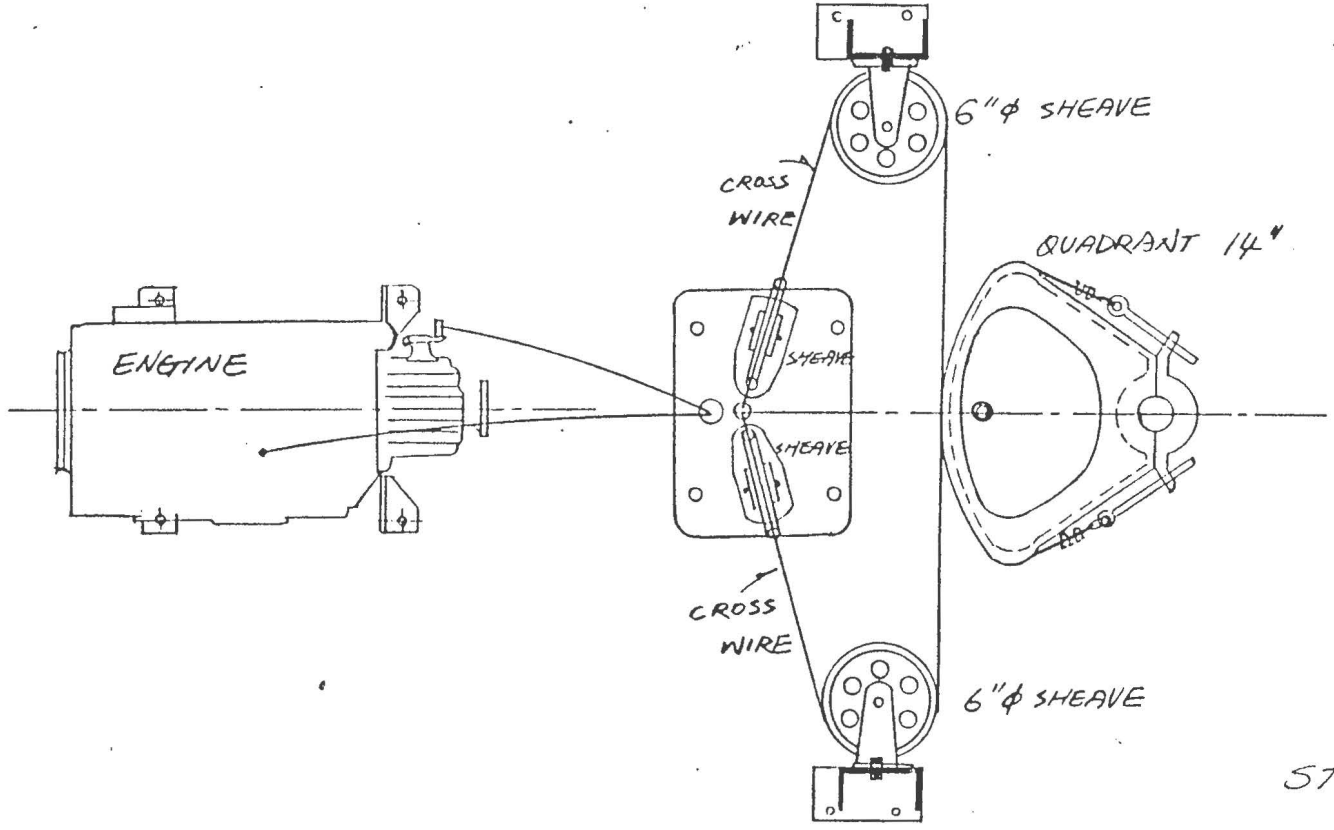


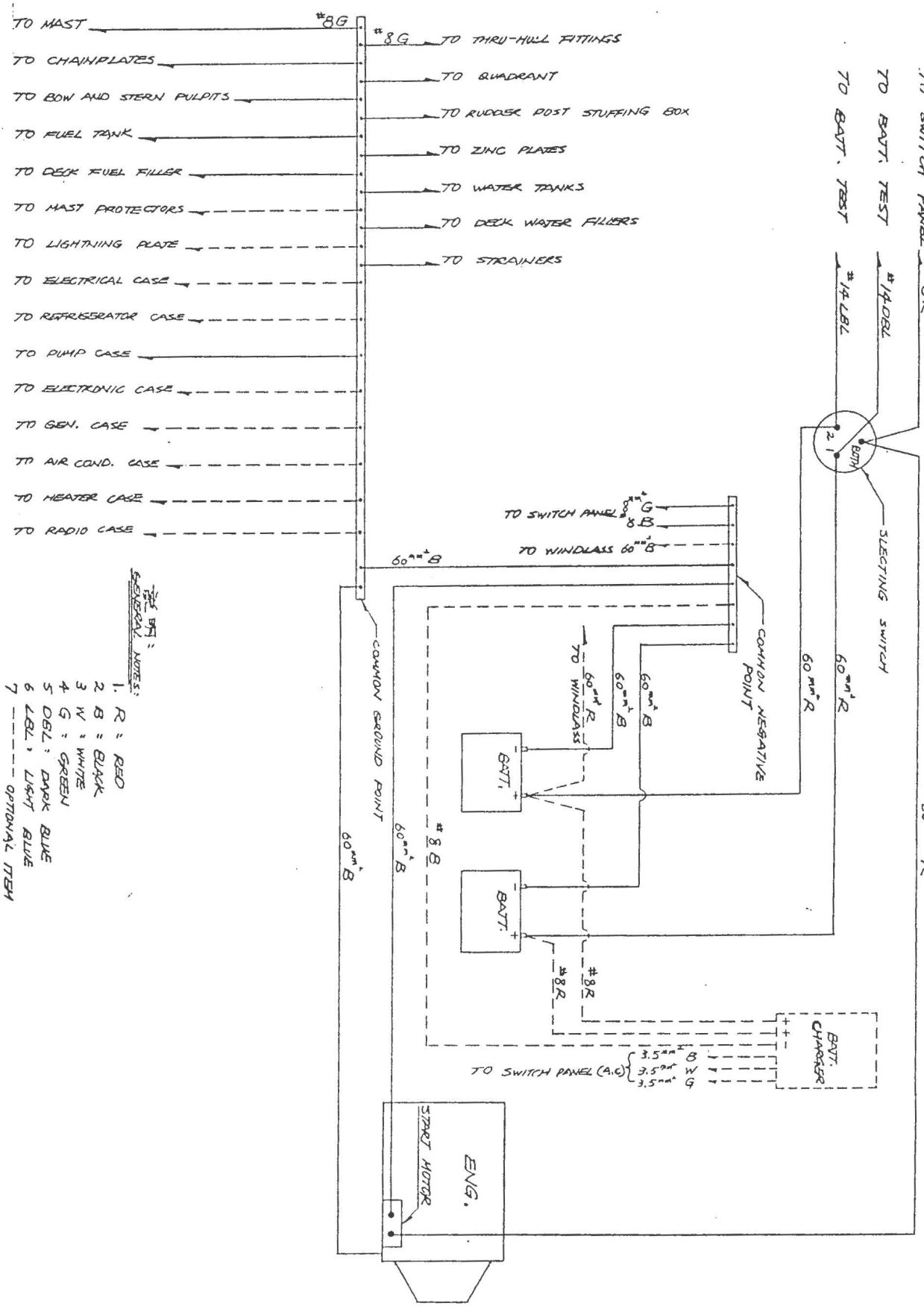
FIG. 15

OUTLET WIRING DIAGRAM

TB36.



FIG·14
STEERING SYSTEM



GENERAL NOTES:

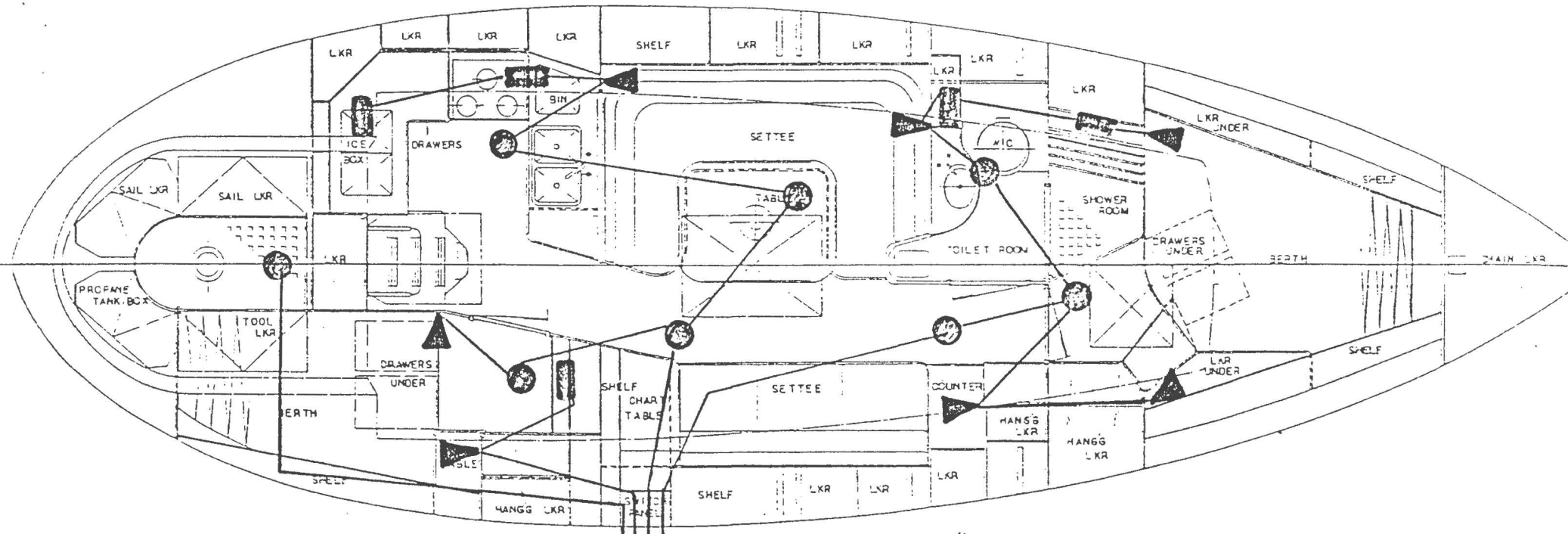
1. R = RED
2. B = BLACK
3. W = WHITE
4. G = GREEN
5. OBL = DARK BLUE
6. LBL = LIGHT BLUE
7. ----- OPTIONAL ITEM

FIG. 15.

DOME LITE

FLUORECENT LITE

BHD LITE.



FWD. CABIN LITE 12# DK. BL.

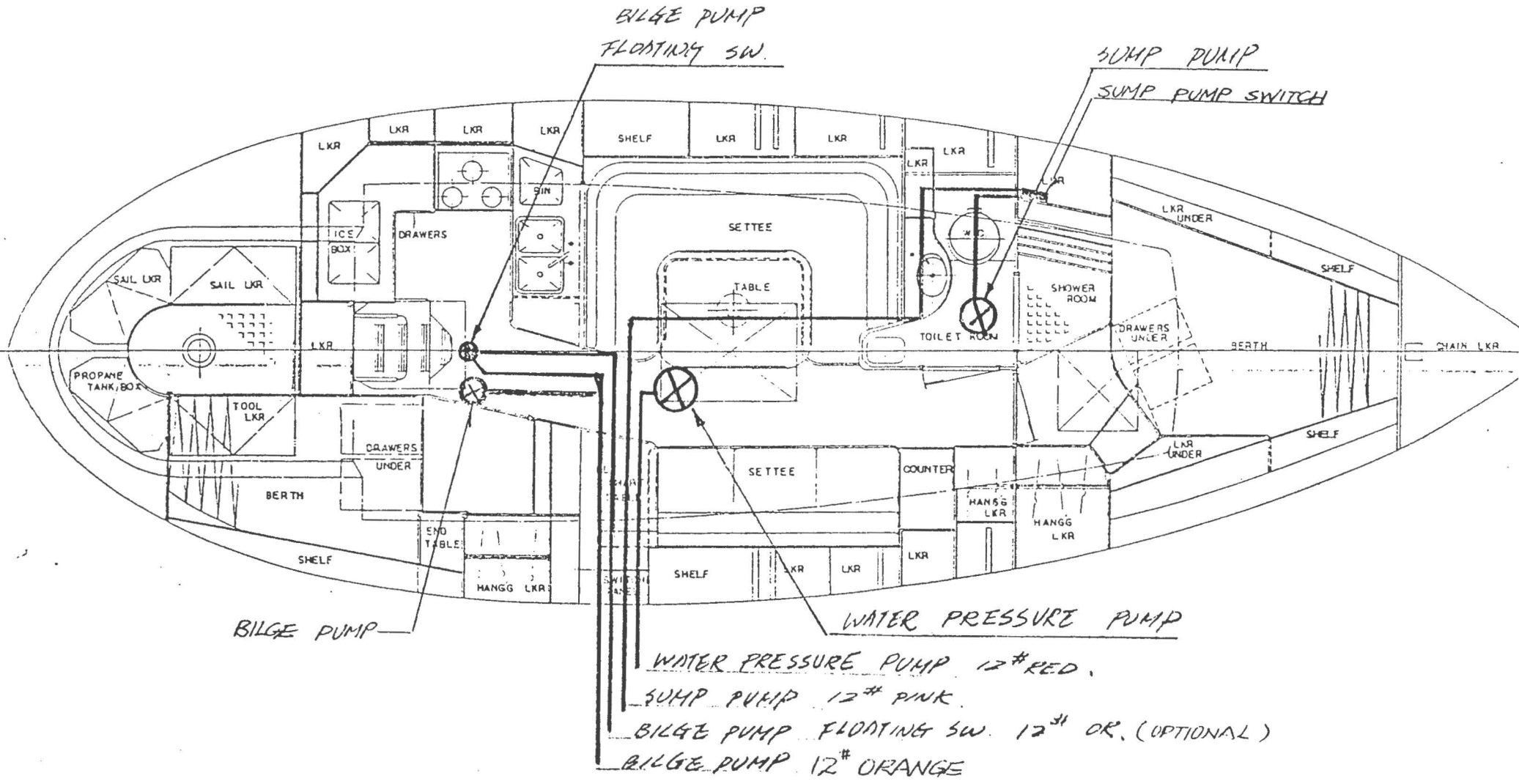
AFT CABIN LITE 12# LT. BL.

AFT CABIN LITE 12# LT. BL.

ENG. ROOM LITE 14# DK. BL.

CABIN LITES WIRING DIAGRAM

FIG. 15.



PUMP WIRING DIAGRAM

FIG. 15

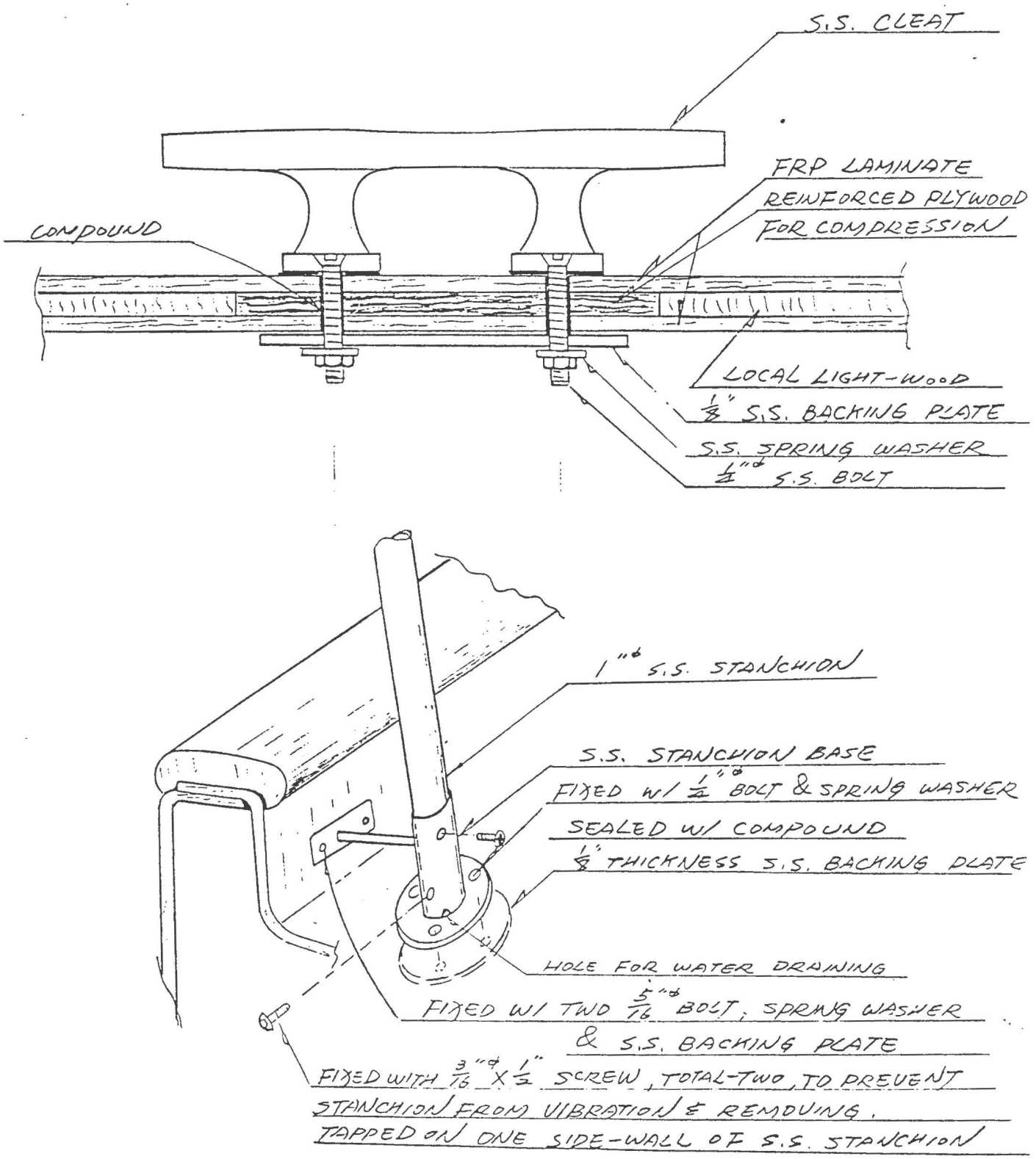


FIG. 6

DECK HARDWARE INSTALLATION

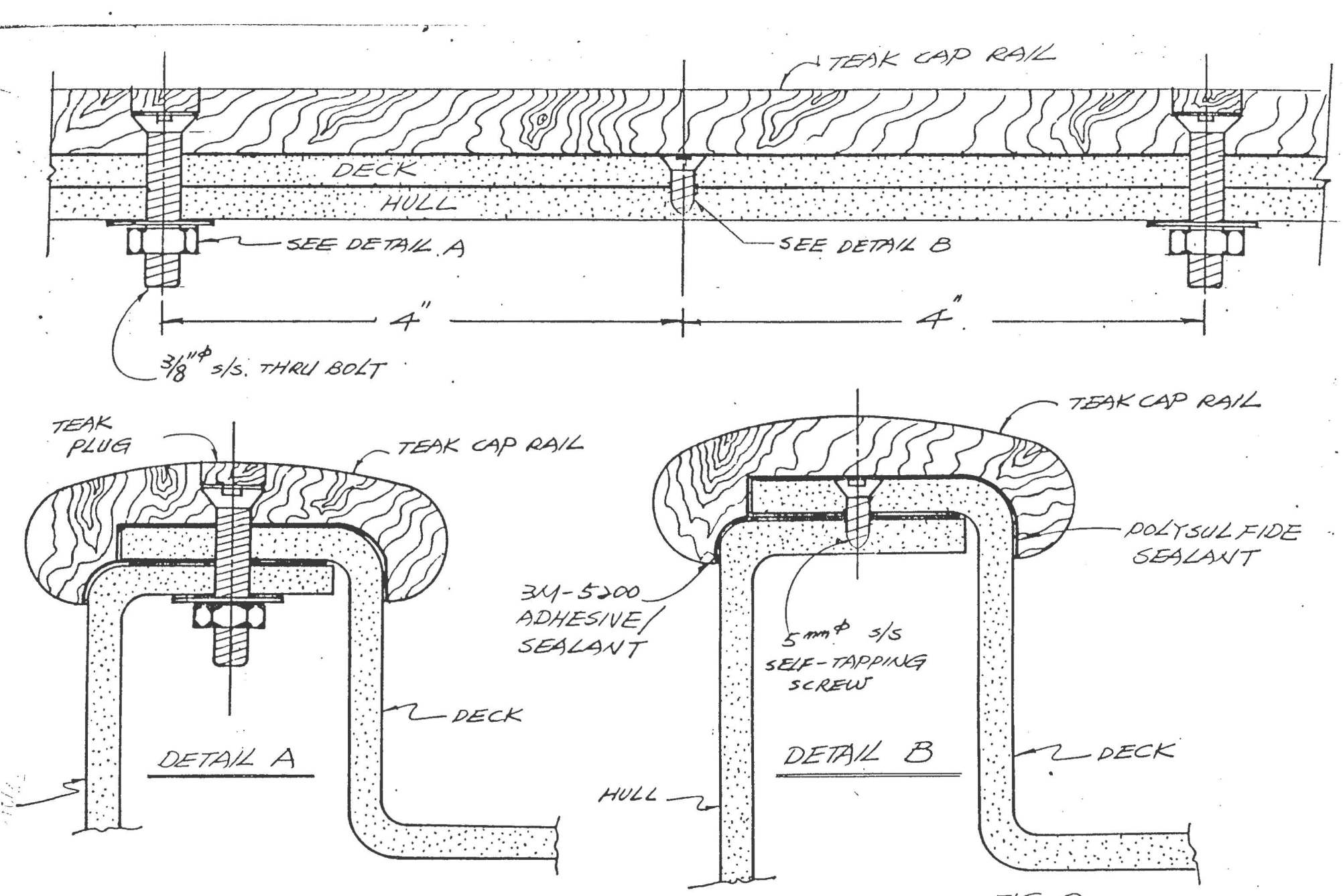


FIG. 2
HULL/DECK JOINT

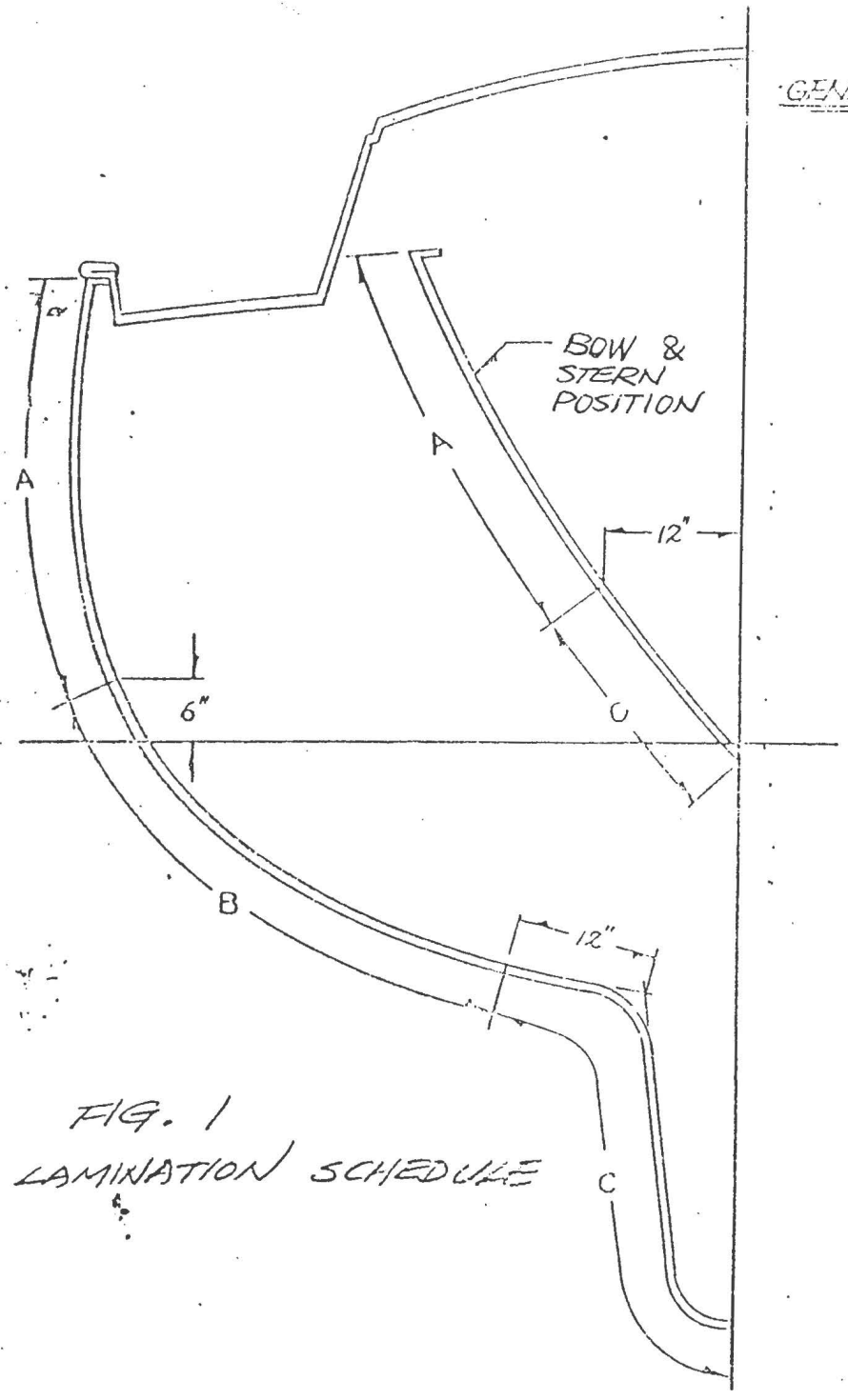


FIG. 1
LAMINATION SCHEDULE

GENERAL NOTES :

1. C = 200 g/m² CLOTH
2. M' = 300 g/m² MAT
3. M = 450 g/m² MAT
4. R' = 600 g/m² WOVEN ROVING
5. R = 800 g/m² WOVEN ROVING

TB31 :

SECTION "A"	G + 30 g/m² M + 3M' + R' + 2(M' + R)
= "B"	G + 30 g/m² M + M' + 4(M' + R)
= "C"	G + 30 g/m² M + M' + 4(M' + R) + M + R
DECK AND CABIN TOP	G + 2M' + R + M + CORE + M' + R
CABIN SIDE	G + M' + M + M' + R' + M + CORE + M' + R

TB36 :

SECTION "A"	G + 30 g/m² M + 2M' + M + R' + 3(M' + R)
= "B"	G + 30 g/m² M + 2M' + R + 3(M + R) + M' + R
= "C"	G + 30 g/m² M + 2M' + R + 4(M + R) + M' + R
DECK AND CABIN TOP	G + 2M' + R + M + CORE + M' + R
CABIN SIDE	G + M' + M + M' + R' + M + CORE + M' + R

TB40 :

SECTION "A"	G + 30 g/m² M + M' + M + C + M + R' + 2(M + R)
= "B"	G + 30 g/m² M + M' + 5(M + R)
= "C"	G + 30 g/m² M + M' + 10(M + R)
DECK AND CABIN TOP	G + 2M' + R + M' + R + M + CORE + M + R + M
CABIN SIDE	G + M' + M + M' + R' + M' + R + M + CORE + M + R + M

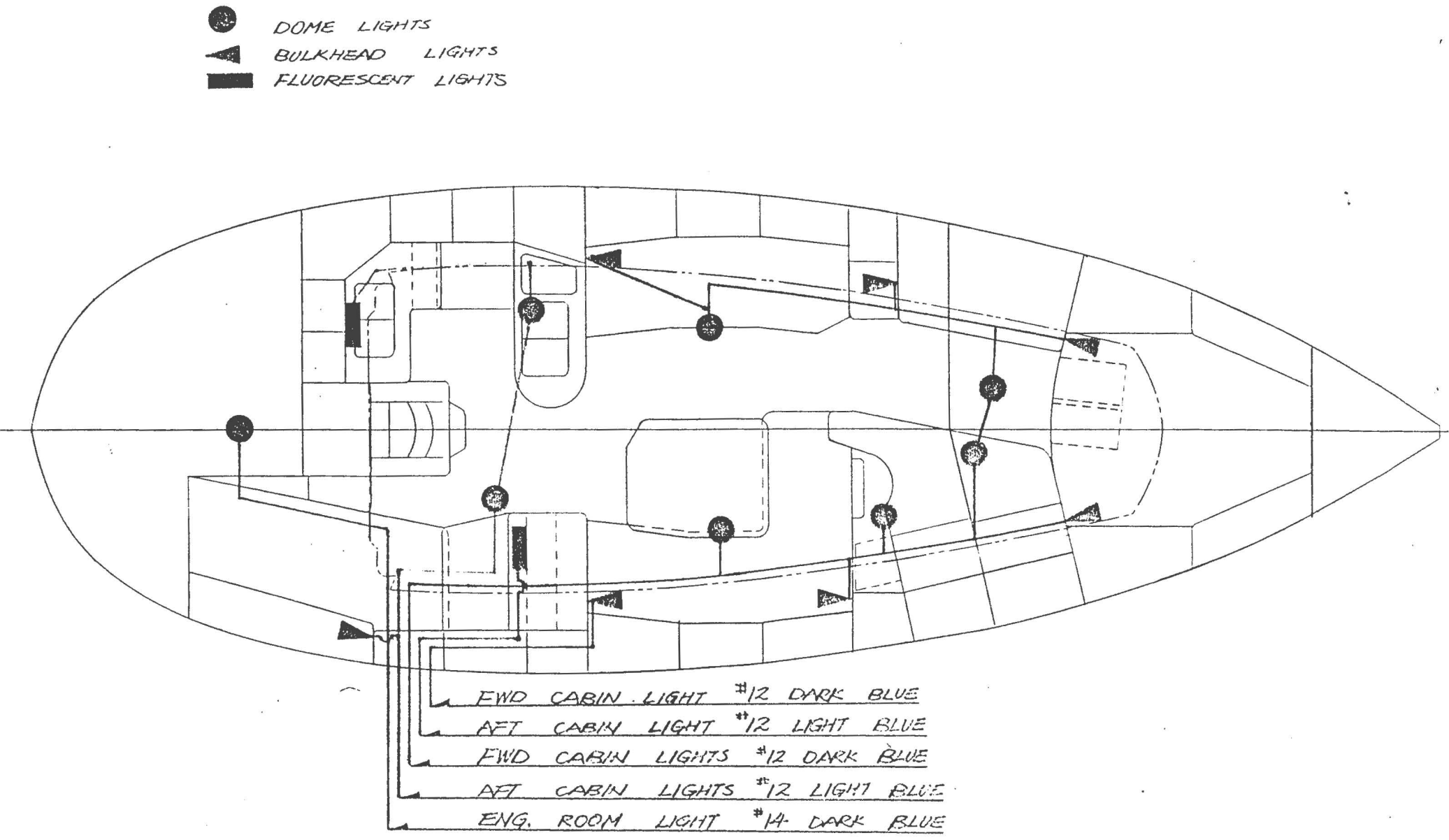


FIG. 15

CABIN LIGHTS WIRING DIAGRAM

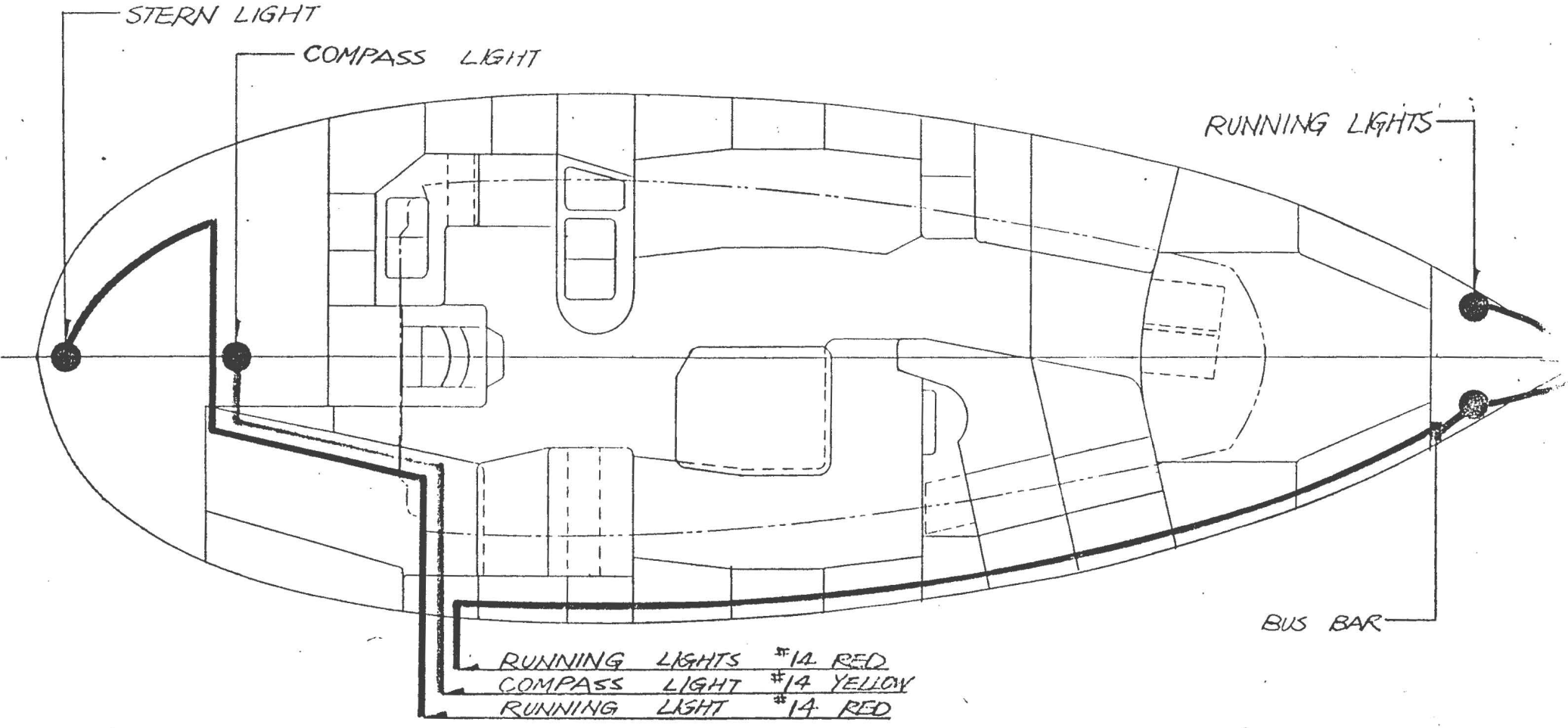


FIG. 15

RUNNING LIGHT WIRING DIAGRAM

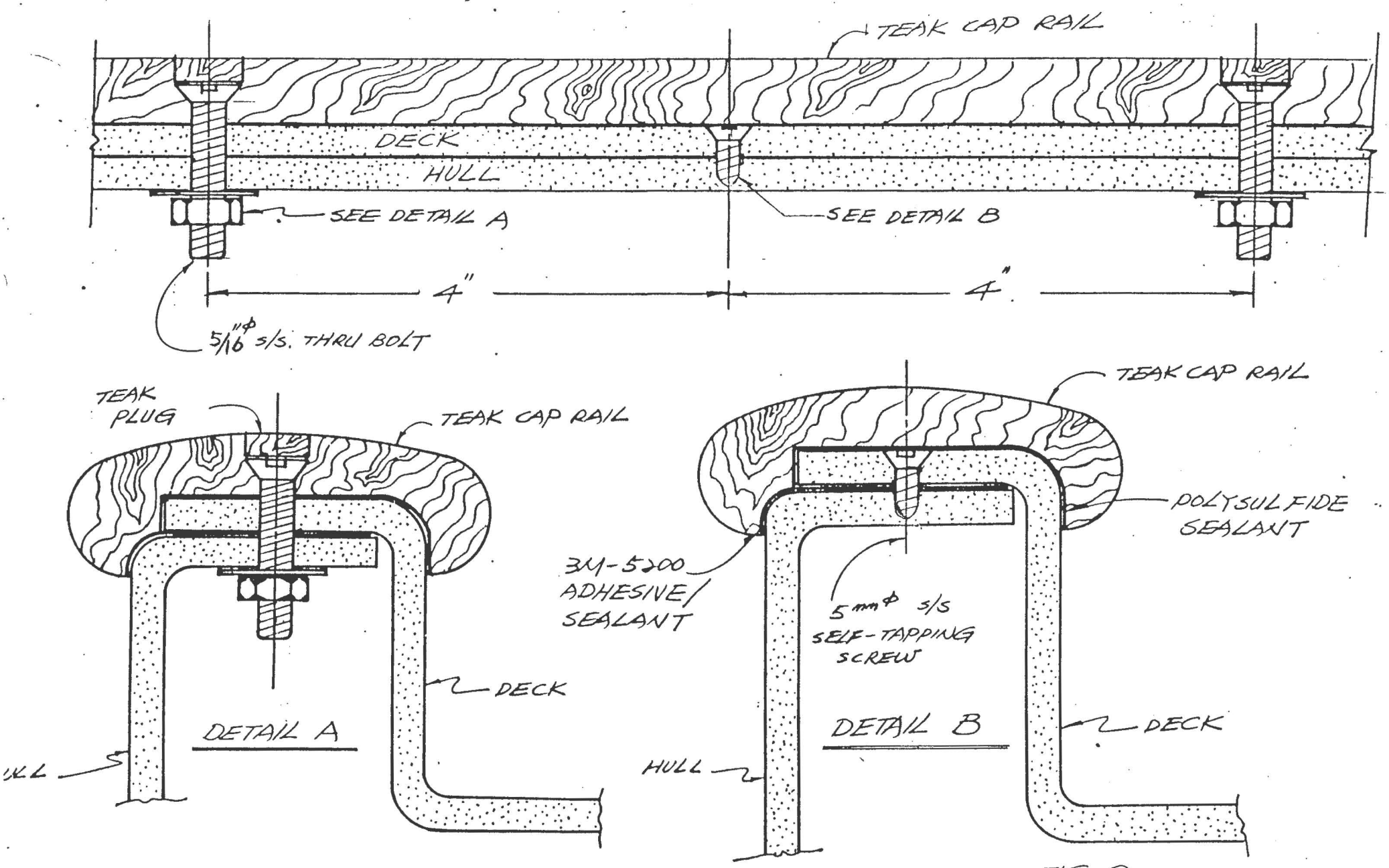


FIG. 2

HULL/DECK JOINT

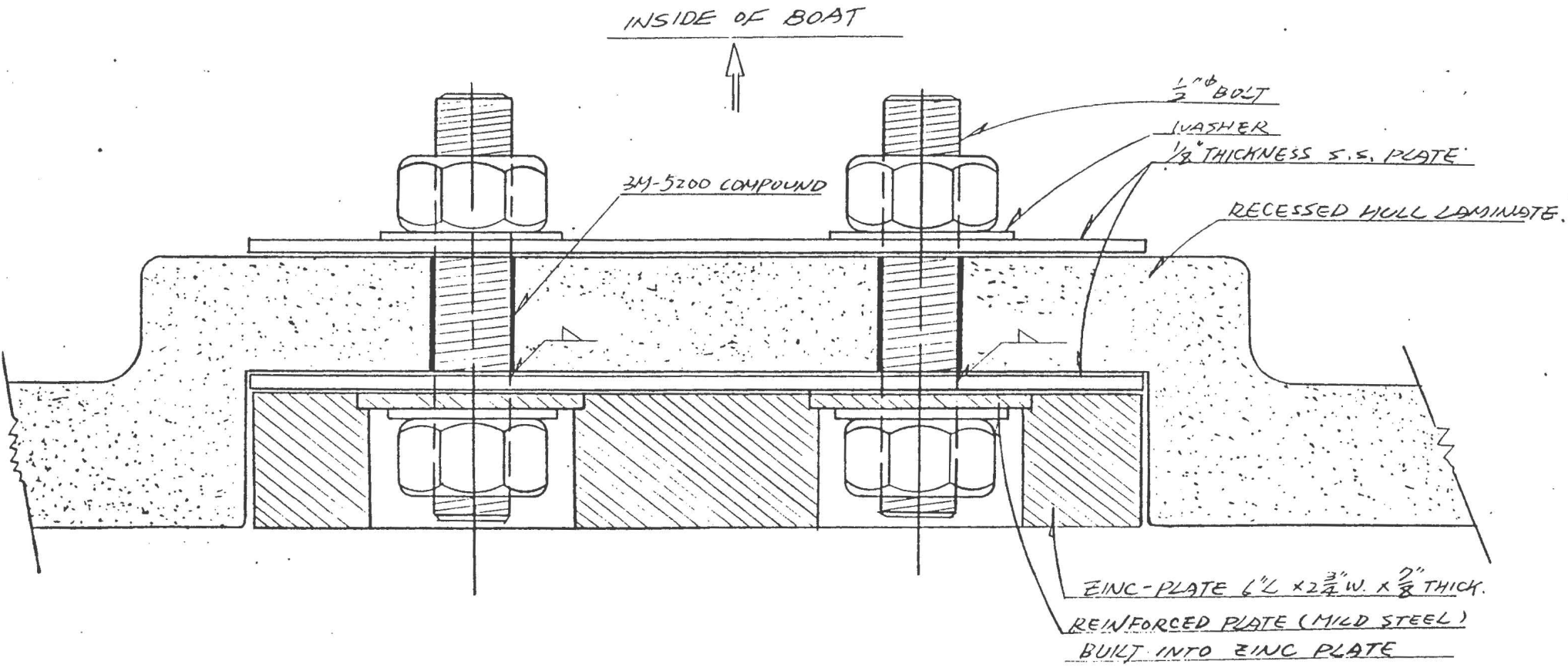


FIG. 16
ZINC-PLATE DETAIL

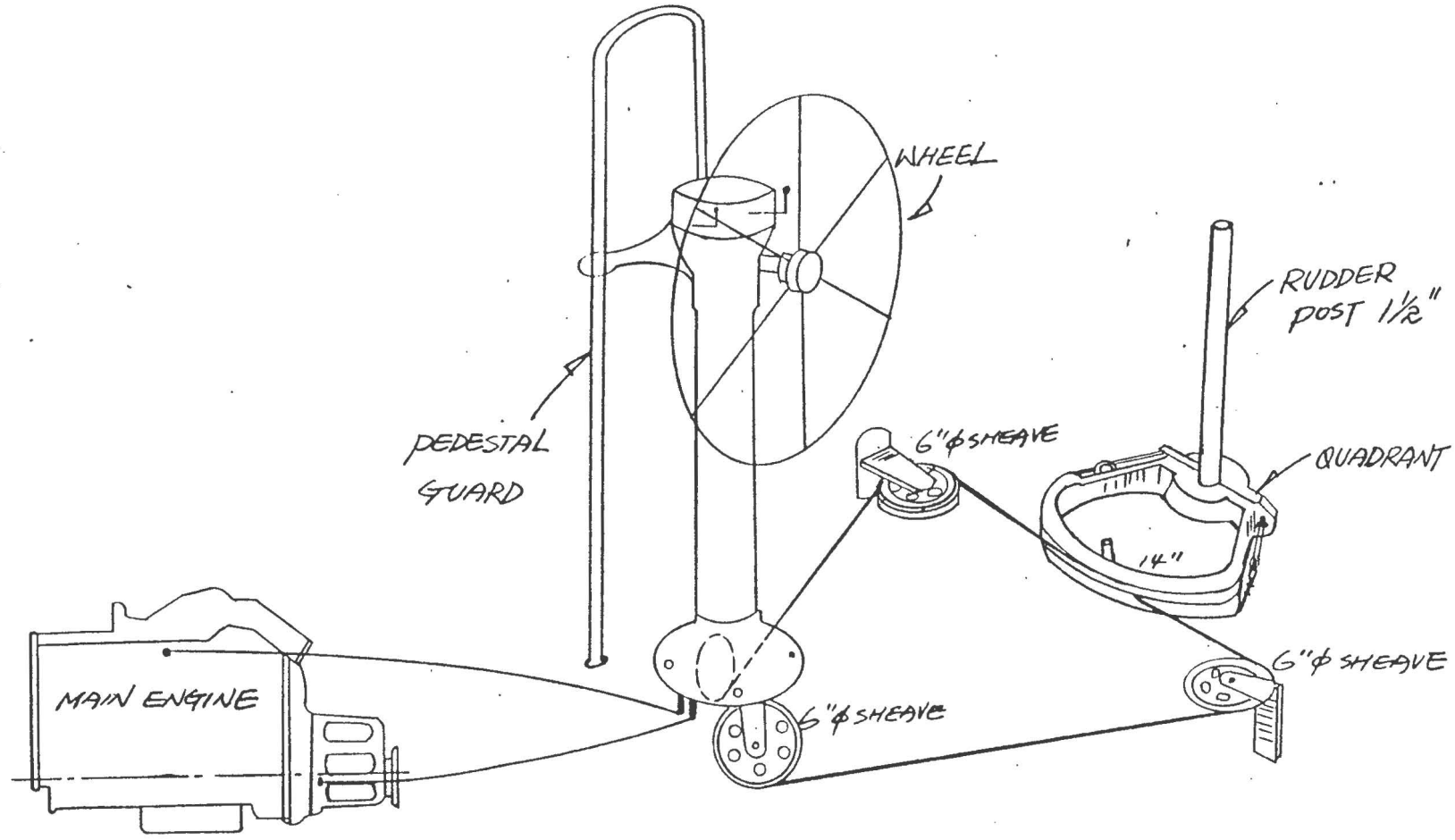
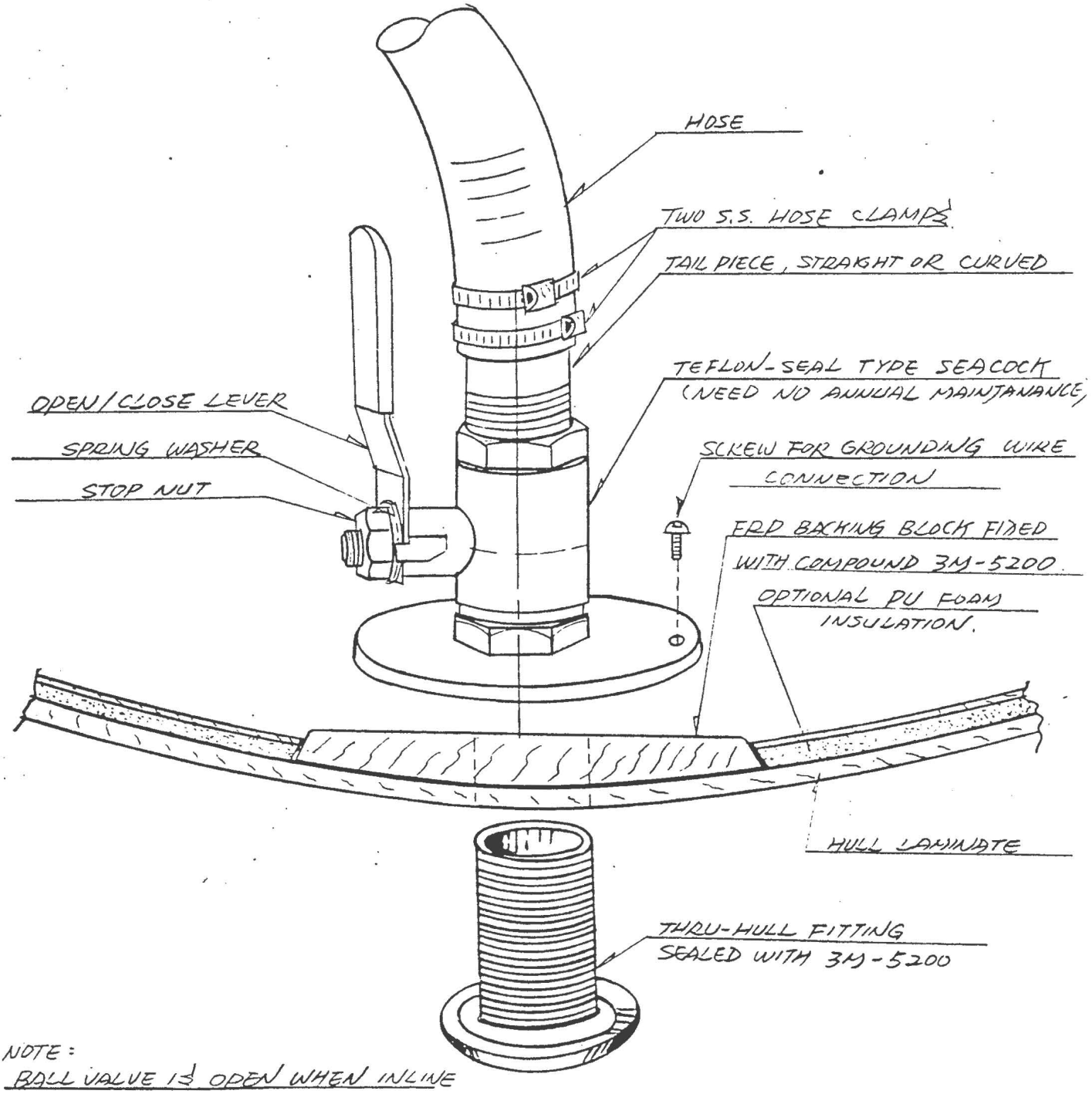


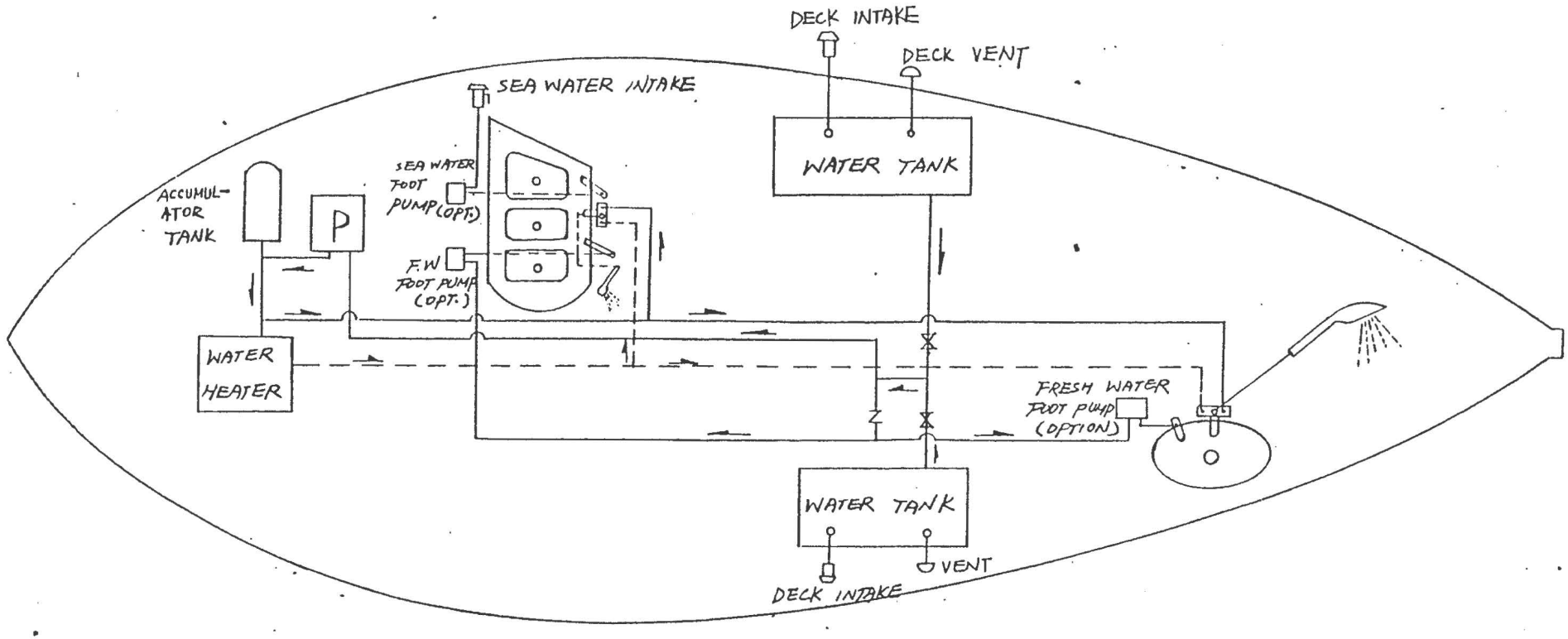
FIG. 13
STEERING SYSTEM



NOTE:
BALL VALVE IS OPEN WHEN INLINE
IT IS CLOSED WHEN IN 90°

FIG. 12

SEA-COCK DETAIL



P ——— PRESSURE PUMP

——— COOLING WATER

- - - - - - - - HOT WATE

——— DECK INTA

——— DECK VENT

——— BALL VALV

——— CHECK VAL

FIG. 9
FRESH WATER SYSTEM

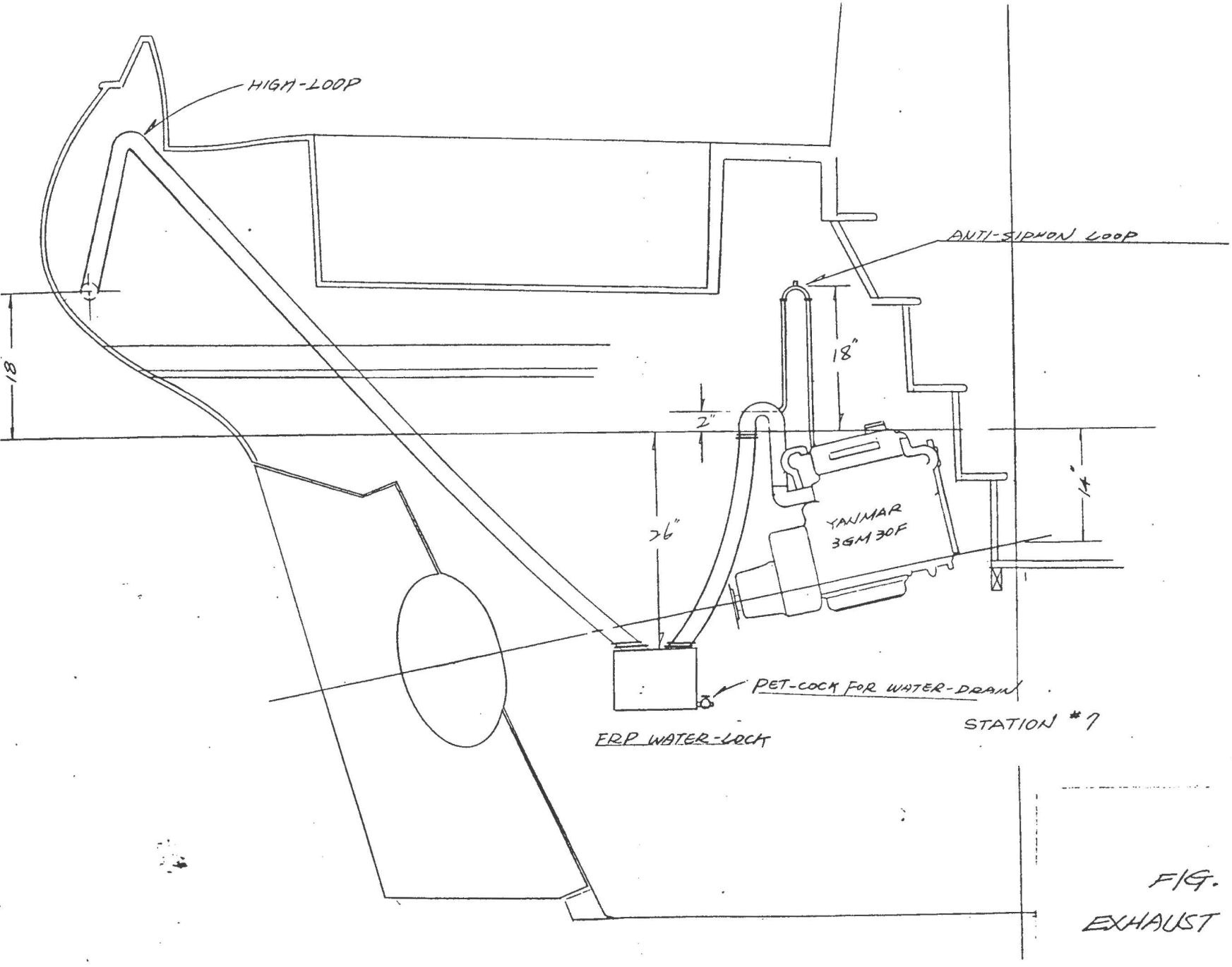


FIG. 7
EXHAUST SYSTEM

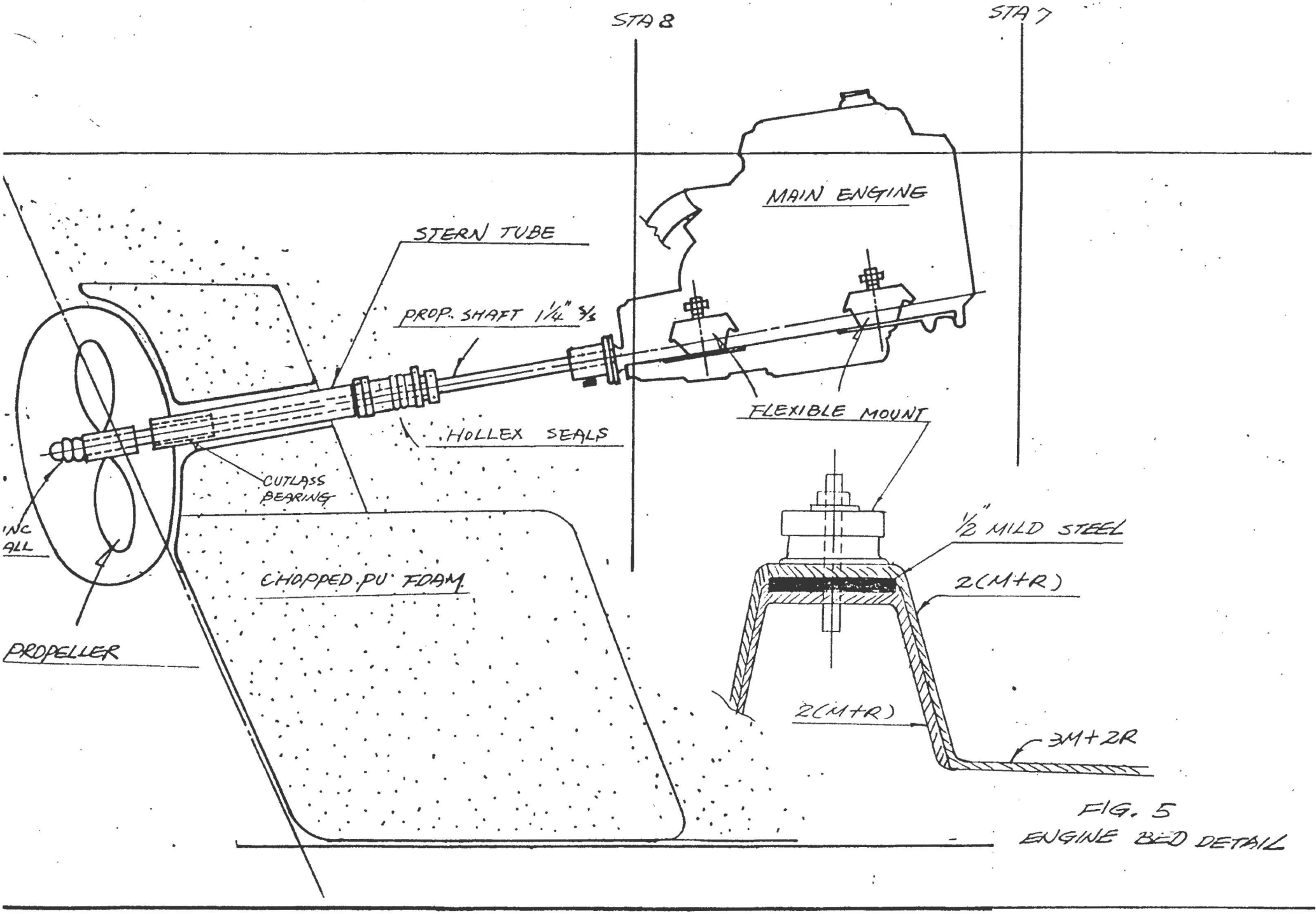
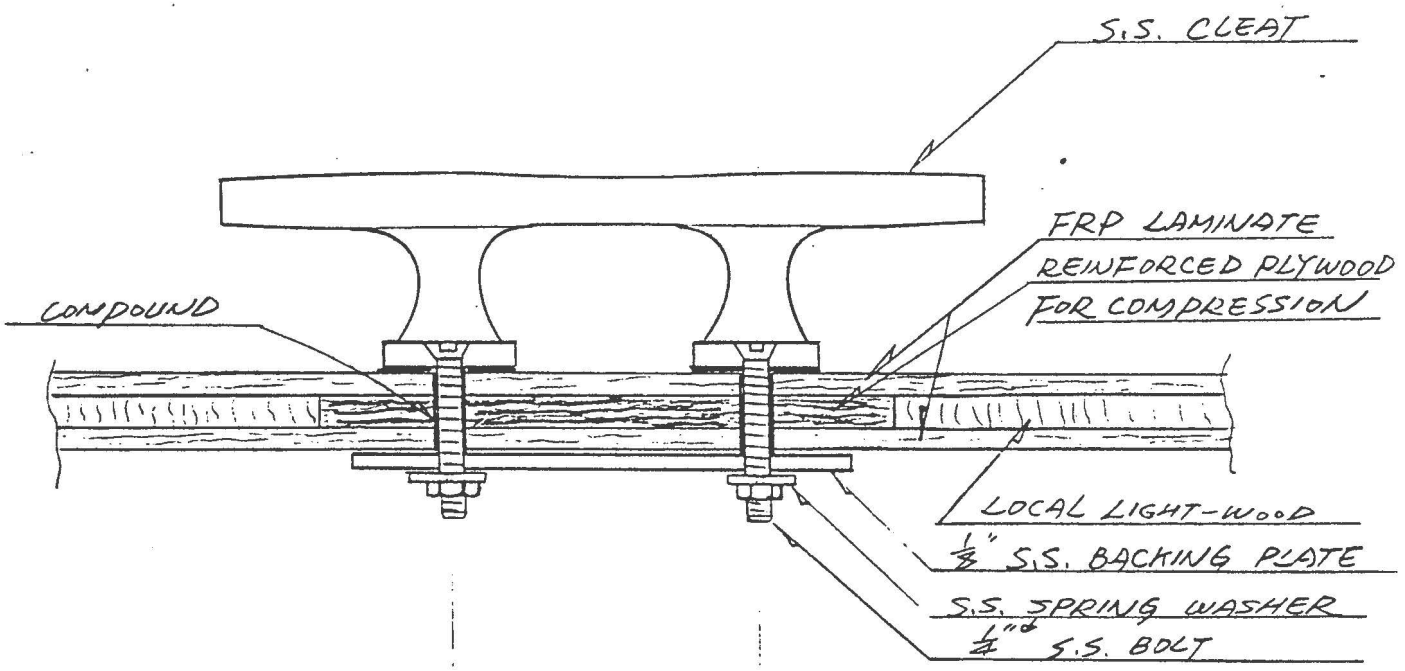


FIG. 5
ENGINE BED DETAIL



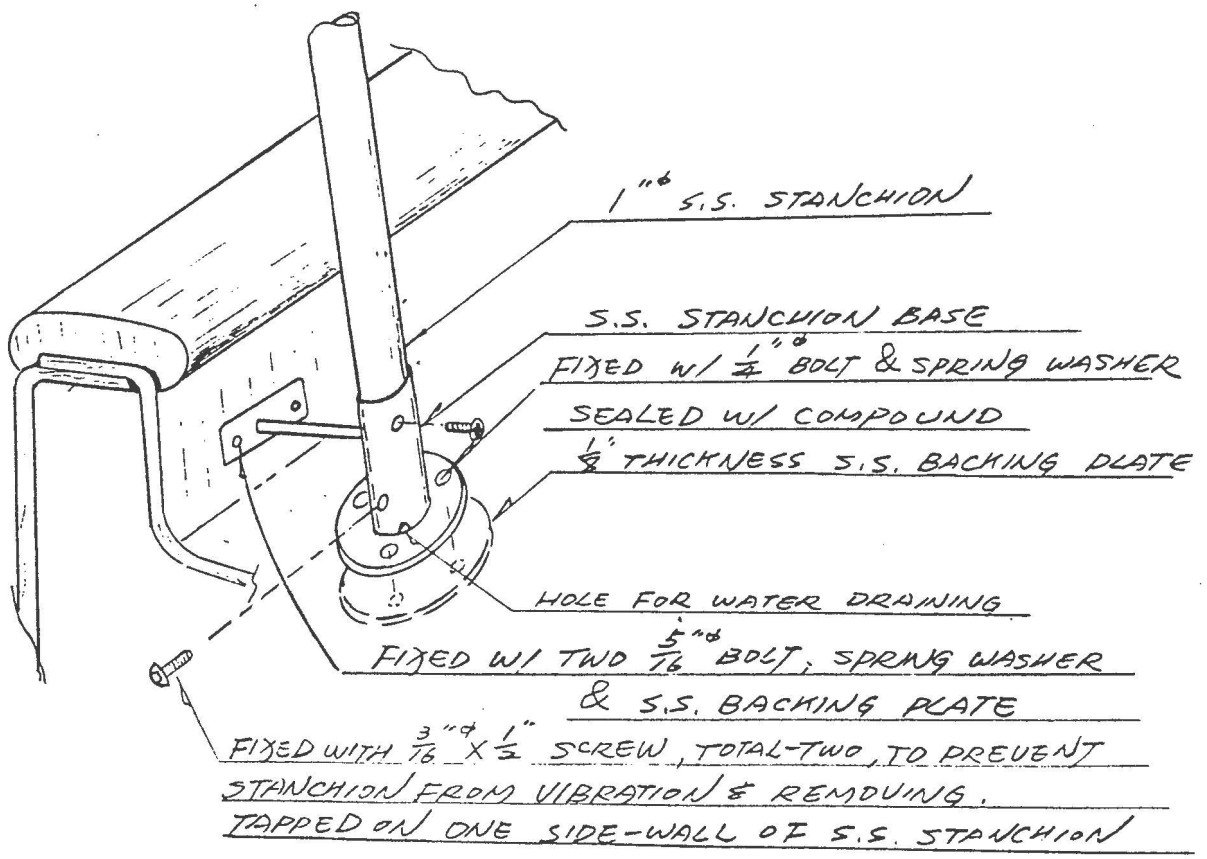


FIG. 6
DECK HARDWARE INSTALLATION