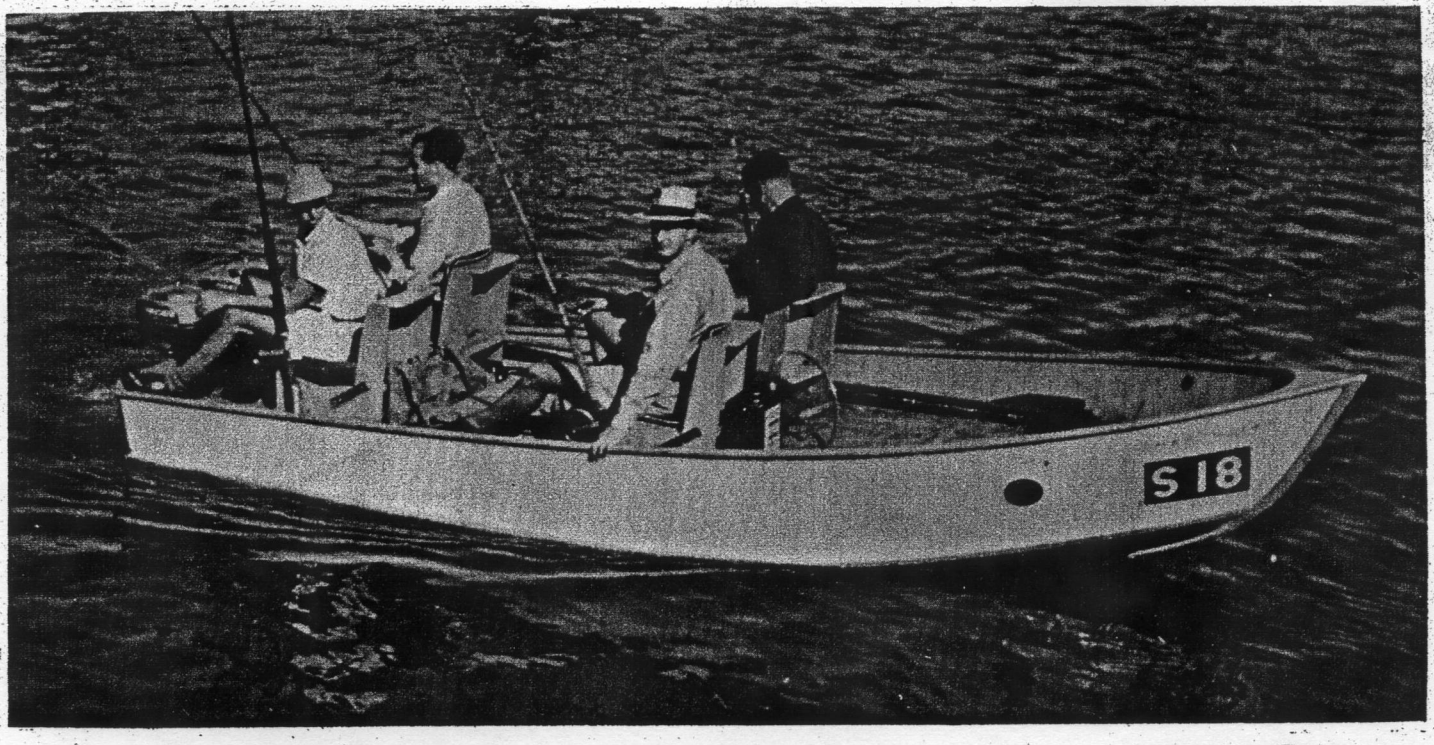
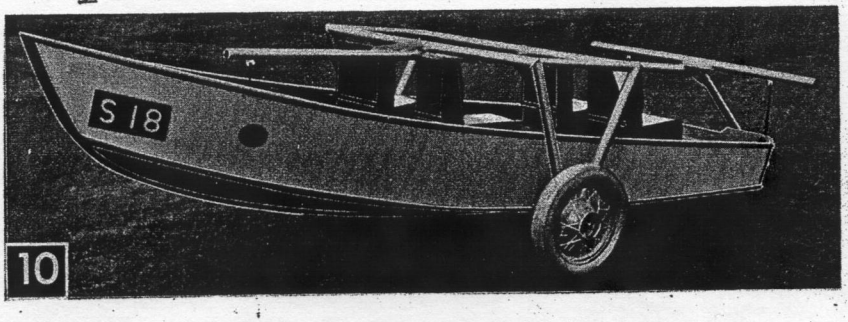



# SEA KING

16½' + about 6½' + shallow.




Completed ski boat mounted on a suspension-type trailer which permits easy entry into the water.

## OTHER BOATS YOU CAN BUILD

| | | |
|---|---|---|
| #77 | White Duck, 14′ Flat-Bottomed Rowboat | .50 |
| #112 | Victory, 12′, 14′ or 16′ Outboard Runabouts | .50 |
| #113 | Jazz Baby, 12′ Multi-Purpose Outboard | .50 |
| #138 | Sea Scout, 13½′ Inboard Runabout | .50 |
| #157 | Skeeter, 8′ Outboard Racing Hydroplane | .50 |
| #170 | Surf-Sail-Ice Boat, Convertible Fun Boat | .50 |
| #174 | Blitzen, 11′ Utility or Racing Sportabout | .50 |
| #175 | Eager Eve, 18′ Outboard Cabin Cruiser | $1.00 |
| #179 | Dolly Varden, 13′-15½′ Low-Cost Utility Outboard (Lap-Strake Construction) | .50 |
| #182 | Breeze Baby, 12′ Sailboat-Rowboat-Utility | 1.00 |
| #185 | Blue Streak, 11′ Class B Racer | .50 |
| #188 | Star Lite, 27½′ Auxiliary Sailer-Cruiser | 2.00 |
| #192 | Jump-N-Jack, 9½′ Fold-Up Utility Boat | 1.00 |
| #199 | Swift Swoose, 10′ Catamaran Racer | .50 |
| #201 | Playboy, 14′ Sports and Racing Runabout | 1.00 |
| #203 | Aquaplanes and Surfboards | .50 |
| #206 | Tern, 12′ Speedy-Type Sailer | 1.00 |
| #210 | Sea Babe, 15′ Outboard Cabin Cruiser | 1.00 |
| #216 | Dragonfly II, 10′ Racing Hydroplane | 1.00 |
| #219 | Topper, 9½′ Runabout Car Top | 1.00 |
| #221 | Pedal Cat, Water Cruising Bicycle Catamaran (Also Takes Motor) | 1.00 |
| #223 | Tailor-Made Boat Trailers for Large and Small Boats | .50 |

For plans to build over 30 different boats, write for Boat Builder's Handbook, enclosing 50c with your order.

50

# CRAFT PRINT 209

10/54

# Construction Procedure

BUILT for salt-water fishing five to seven miles off-shore, *Sea King* is a prime example of the African ski boat. Originally designed from the lines of the paddle skis used by life-saving patrols and African anglers who used to paddle out past the breakers to fishing shoals, the ski boats took their name because they ski down the breakers when coming in.

*Sea King* includes many features designed to take as much risk as possible out of an ocean-going small craft— (1) Flat deck with self-bailing scuppers. (2) Provisions for dual outboards, and it carries paddles in case both engines fail simultaneously. Dual outboards also permit using full power getting to and back from the fishing grounds in a hurry and trolling with one motor at reduced speeds. (3) Water-tight compartments make the ski boat practically unsinkable and keep it from being swamped in a breaking sea. (4) Wide-beam design adds to stability on the water. On the west coast of Africa around Durban and Natal, the ski-boat has become a distinct class boat and sports a number of ski-boat clubs organized for fishing and boat-building.

For a sea-going boat, *Sea King* is surprisingly easy to build because there are few difficult joints, fewer places to leak and the plywood deck and planking covers the simple frames with a minimum of work. Best of all for fishermen, the flat deck allows freedom of action that is commonly necessary in playing the big billfish that lurk in the ocean several miles off-shore. While primarily designed for the ocean or gulf, *Sea King* makes an excellent fishing boat for the great lakes or any of the other inland lakes where the fishing is good.

To get started on construction, first lay out the contour for the keel and stem on red rosin paper (available from your lumber dealer). Locate the station points along one edge, then erect perpendicular lines up from a straight base line. Lay out the bottom points by measuring up from the base line according to offset measurements from Fig. 4. Using a long, straight piece of molding, bend it around until it contacts each of the points like a curved spline. Mark along this line as the bottom of the keel.

To draw the upper keel line, measure up from the bottom line about 4 in. from Sta. 8 forward to Sta. 2. At Sta. 2 the keel joins the stem and the stem widens as it reaches toward the bow. Mark bulkhead locations on the layout. To get the angle for attaching the transom, draw a line 5° off vertical aft from the point indicated in Fig. 4. Trace this keel outline on the keel plank by darkening the back side of the layout paper with soft lead pencil or using a piece of roll carbon paper between layout and keel plank and tracing over the lines. Cut out the keel and plane smooth to the bottom keel line.

Lay out the bulkhead frames according to Table A directly on 5-ply, ⅝-in., exterior grade fir plywood. Cut out the bulkheads, keeping sides straight and bottom evenly curved. You'll need to cut the 1 x 4 braces that fit around the keel at each bulkhead too.

Before you can assemble the frame for *Sea King*, you'll need a scaffolding setup similar to that shown in Fig. 1. The two side members of the scaffold that support the bulkheads must be shimmed and braced to remain flat and level. Otherwise, you may have trouble assembling the parts or there will be a twist in the framing. Measure off the station points for locating the bulkheads and run a string line down the center. Make sure that location marks for bulkheads on both sides of the centerline are square with the string line.

When mounting bulkheads bottomside up on scaffold, set the deck edge on space blocks to obtain the correct deck and bottom lines (Fig. 1). Vertical blocks on both sides of the scaffold and space blocks hold the bulkheads in position. Place the keel over the centerline and mark along sides for cutouts in bulkheads.

Remove the bulkheads and make the cutouts for both keel and chines before replacing them in position. Fit the keel into slots, deepening any that may be shallow for a true alignment of the bottom. Screw and glue center braces to keel with *Elmer's* Waterproof Glue or *Weldwood*, then screw and glue braces to face of bulkheads. See Screw Schedule, Table B for screw sizes and spacing.

Chines are next. Starting with the stem, fit both together, springing them around to fit in the bulkhead notches at the same time to prevent warping the frames out of shape. Chine notches should fit snugly. At bulkheads #2 and #3, you'll need to fit chines carefully in order to have enough material left after fairing to secure bottom and side planking. Starting at bulkhead #4, move the chine a bit higher and closer to the keel, cutting a notch at natural fairing angle to which edges of bulkheads #2 and #3 will be trimmed. This not only leaves more chine material for gripping screws, but saves on fairing before planking. Before final gluing and screwing chine in position, clamp it in position and run your eye along it to pick off any high spots. Make any adjustments necessary in the chine notches of bulkheads to get a smooth flowing chine. When you're satisfied, glue and screw it to the bulkheads. Chamfer the keel to fair in with slope of bottom and the chines to fair with bottom and sides.

On each side of the centerline on bottom of bulkheads, locate parallel lines at 6-in. centers. These lines will be center lines of bilge battens. Notch out for each of the battens and for the clamp at the outboard end of each bulkhead. Before final fitting of the bottom or bilge battens, install the brass drain plugs in the bottom of each bulkhead next to the keel. When deck with hatch covers are in place, and the drains closed, each space between the bulkheads becomes a separate water-tight compartment. Even if a rock were to puncture the bottom and flood one of the compartments, there would still be more than sufficient buoyancy to keep *Sea King* afloat until you could reach shore. At the forward end, bevel the bilge battens to fit against the chine where they intersect. Screw and glue battens in place.

Before planking, fair bottom and side surfaces so plywood will lie flat on all contact surfaces. This is the time to finish beveling or planing the keel, chines and bulkheads to get a smooth line. Nick the bottom of each bilge batten between each bulkhead so water will drain to keel. Fit the outer transom; glue and screw it to inner transom. Fair this outer transom so bottom and side planking will lie

flat and cover edges completely.

Simplest and best bottom planking requires 16-ft sheets of 3/16-in. exterior grade plywood but sheets this long are not generally available except by special order from plywood suppliers. If you cannot find 16-ft lengths of plywood, use the common 8 ft lengths of plywood or Masonite's Concrete Form *Presdwood* and begin planking from the transom. Clamp one piece with edge along center of keel. Using a 1/4-in. block behind your pencil as a gage, mark along side of the chine, including the point where joints change at Sta. #2 (Fig. 8). Remove bottom plank and saw outside the line about 1/8 in. for later planing to exact size. Mark another piece for the opposite side the same way.

Mark the side planking before fastening in the bottom planking. Clamp the planking in place and mark along the chine and deck riser. Mark the spot where joints change at Sta. #2 and allow 3/16 in. extra material forward of Sta. #2 to make mitered butt joint. (Fig. 8). At each bulkhead, measure up from the chine on the side planking to the top of the gunwale Table A. Remove the side planking and saw to within 1/16 in. of the chine line and to within 1/8 in. of the gunwale line.

Before doing any further planking, paint all of the bulkheads and interior framework with three prime coats of white *Firzite* followed by two coats of a high quality marine enamel. Color is unimportant because it will all be hidden. However, once you get the bottom, side and deck planking on, you won't be able to get at these spaces.

Turn the boat over and secure it to scaffolding. Use a level and square to check alignment of bulkheads and make sure they were not twisted out of position during the turnover operation.

Set in the center deck batten and the other battens to both sides of the center parallel with the bilge battens. Bevel the forward ends where the deck battens meet the deck riser. Glue and screw them in notches let into the bulkheads. Frame the hatches according to Fig. 4. Fair the deck, planing clamp, bulkheads and battens where necessary to get a smooth fit for the deck planking at all contact surfaces.

For decking you can use 16-ft lengths of plywood to advantage, eliminating the necessity for making a joint between two 8-ft lengths. Lay the plywood with one edge along the centerline marked on the center batten. Mark along the deck riser and saw out directly on the line, since you won't be able to plane this after the side decks are in place. Mark and saw a similar piece for the opposite side. Lay out the locations for the two hatches and cut a small, workable size hole about 2 x 6 in. out of each side of the deck planking in the middle of the hatch area. Prime and paint all framework not previously painted.

If you should have to use shorter than 16-ft lengths of plywood for planking, locate joints for deck, sides and bottom between different bulkheads to keep from building in a weak joint. For example, use two 8-ft lengths for side planking plus about 18 in. spliced on aft, a 10- or 12-ft length starting from the stern for bottom planking followed by a shorter piece near the bow. For the deck start with a long piece from the bow running aft with a short piece on the rear deck. Back up each joint with butt-blocks (Fig. 4), fitted between battens along joint for bottom and deck and between chine and deck riser at the sides. Glue and screw butt-blocks in position, then fair in contact surface before applying planking.

Turn the framework bottom side up again preparatory to planking. Start with the side decking first. Apply liberal coats of Kuhl's *Bedlast* to contact surfaces and clamp one side in position. Screw sides to chine, deck riser and bulkheads. Scrape off excess bedding compound and plane bottom edge flush with chine except from Sta. #2 forward. In the stem area leave side planking loose until bottom planking is in place to allow for fitting bevel forward of Sta. #2. Bevel the joint to meet bottom planking.

Apply bottom planking, beveling joint forward of Sta. #2 (Fig. 8). Coat contact surfaces first with Kuhl's *Bedlast*. Insert screws along contact surfaces according to schedule in Table B. Scrape off excess bedding compound and plane chine edges flush with sides.

Before fitting and attaching any of the molding, prime and paint bottom and sides. Trim outer keel and fit it over the joint along the bottom (Fig. 7). Prime outer keel with three coats of *Firzite*, coat planking joint and contact surfaces on outer keel with *Bedlast* and screw in place. Screw on brass rub rail along bottom after painting with marine enamel. Fit chine cover strip, prime, paint, coat with *Bedlast* and screw on.

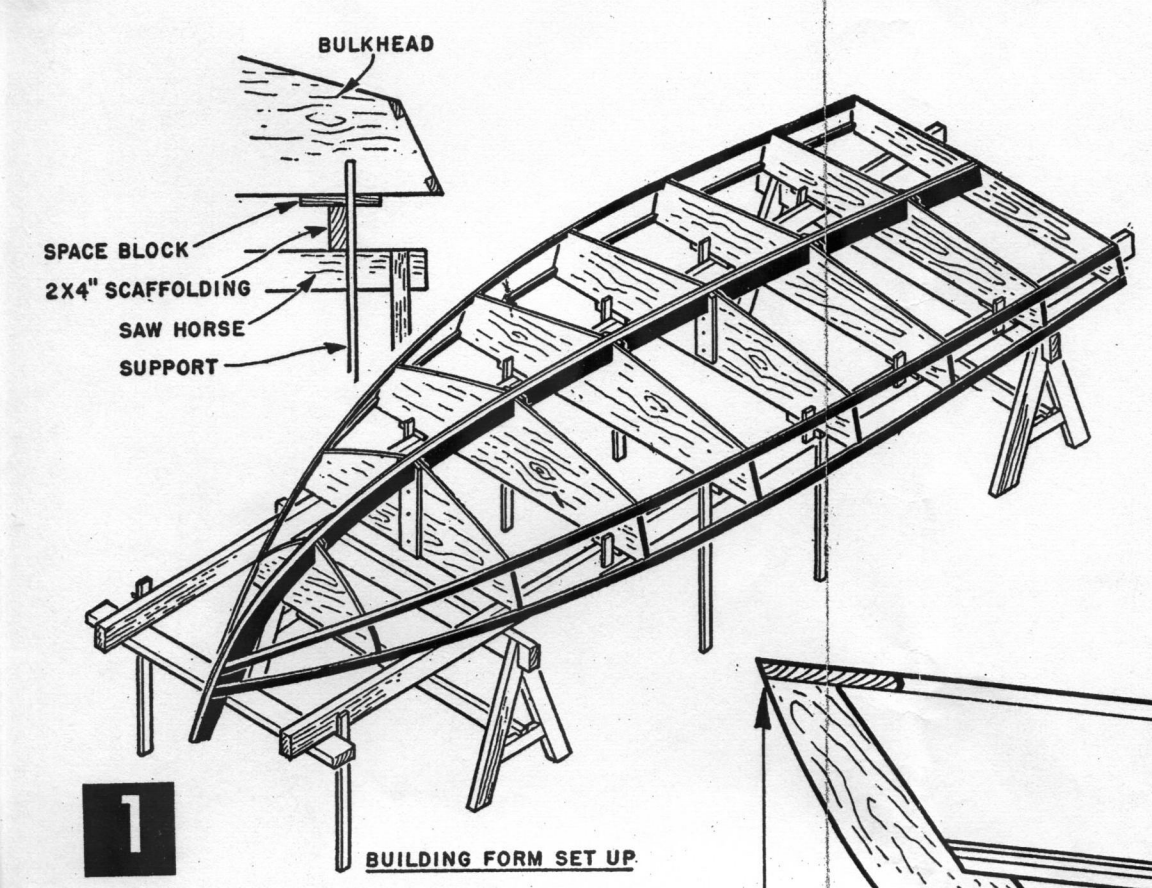
Turn the boat right side up again and complete the deck. Apply *Bedlast* to all contact surfaces and screw deck to frame. Cover the center joint with rounded cover strip. Where the deck meets the sides, plane a quarter-round to a more obtuse angle to fit into the joint, coat the contact surfaces with *Bedlast* and screw in place. Prime the deck with *Firzite* and apply two coats of marine enamel. While first coat is still sticky, sprinkle evenly with fine sand. Cover with second coat of enamel after first coat dries.

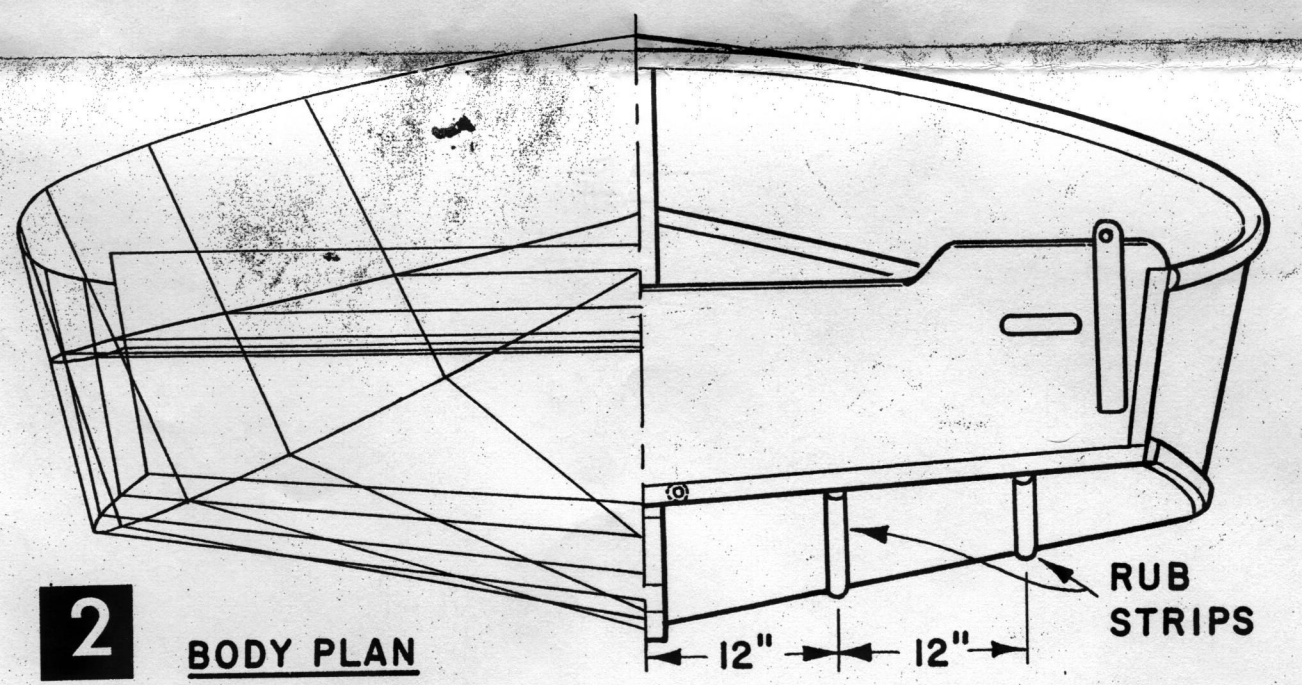
Trim the top edge of the sides to the faired line from points plotted at each station and by eye. Cut out the breasthook to fit over the bow. Fit the half-round moldings along both sides of the top edge, but prime and paint before screwing them in place. Trim out the scupper holes in the transom, prime and paint with marine enamel. Build up the hatches and the hatch covers.

Seats (Fig. 9) have been designed to fold back for use with an overhead trailer. They also include a shelf at the back for storage.

**TABLE B—SCREW SCHEDULE**
**Note: All Screws Are Brass with Flat Head**

| | | |
|---|---|---|
| Deck onto outer deck battens | 7/8" #7 | 3-4" cent. |
| Deck generally | 7/8" #7 | 9-12" cent. |
| Sides onto outer deck battens and chine battens | 7/8" #7 | 3-4" cent. |
| Bottom of chine batten | 7/8" #7 | 2" centers |
| Bottom of keel | 7/8" #7 | 3 1/2" centers |
| Bulkhead and brace onto keel | 1 1/2" #8 | |
| Chine batten and outer deck batten onto bulkhead | 1 1/2" #8 | |
| Battens onto bulkheads | 1 1/2" #8 | |
| Securing chine cover strip, quarter and half round | 1" #7 | |
| Hatch framing | 2" #8 | |
| Keel cover strip to keel | 1 3/4" #10 | |
| Onto keel | 3" #12 | |
| Hardboard onto seats | 3/4" #7 | |
| Seat framing | 1" #7 | |

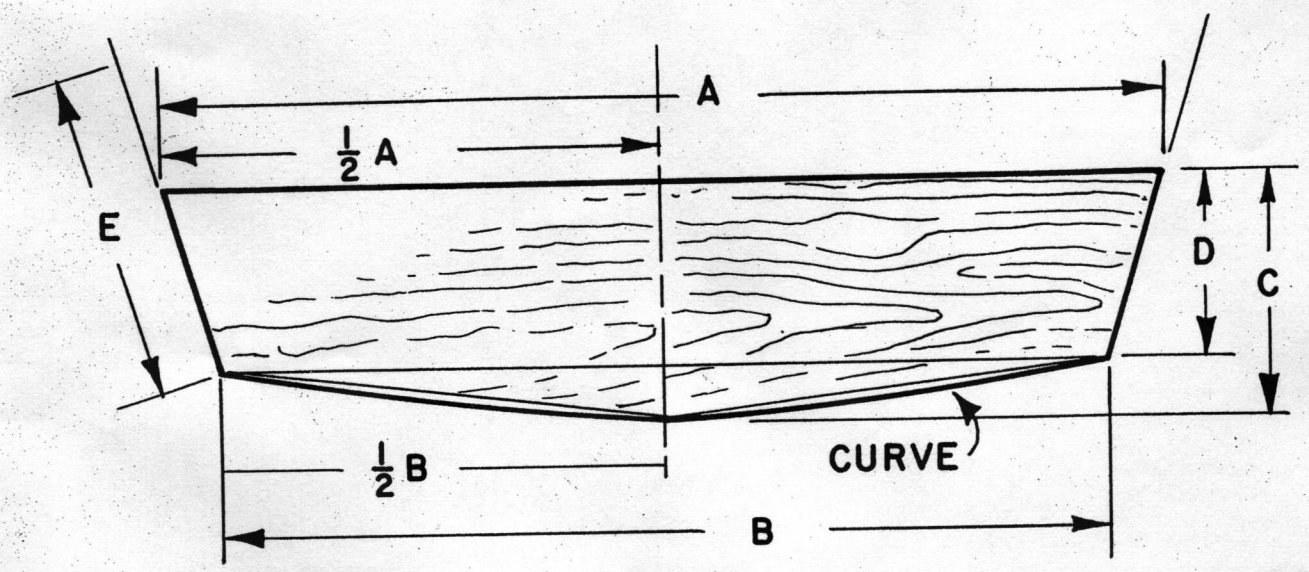

BULKHEAD
SPACE BLOCK
2X4" SCAFFOLDING
SAW HORSE
SUPPORT
1
BUILDING FORM SET UP

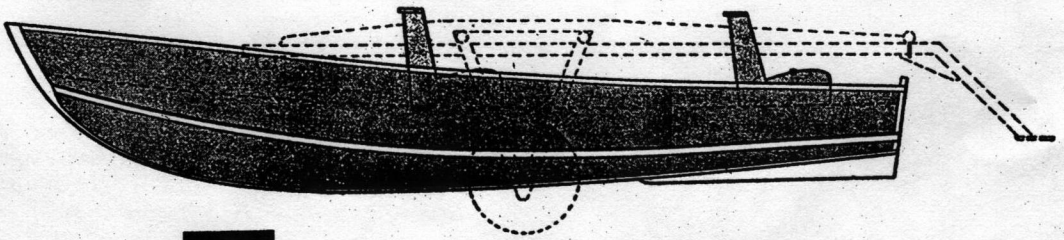



**2** **BODY PLAN**

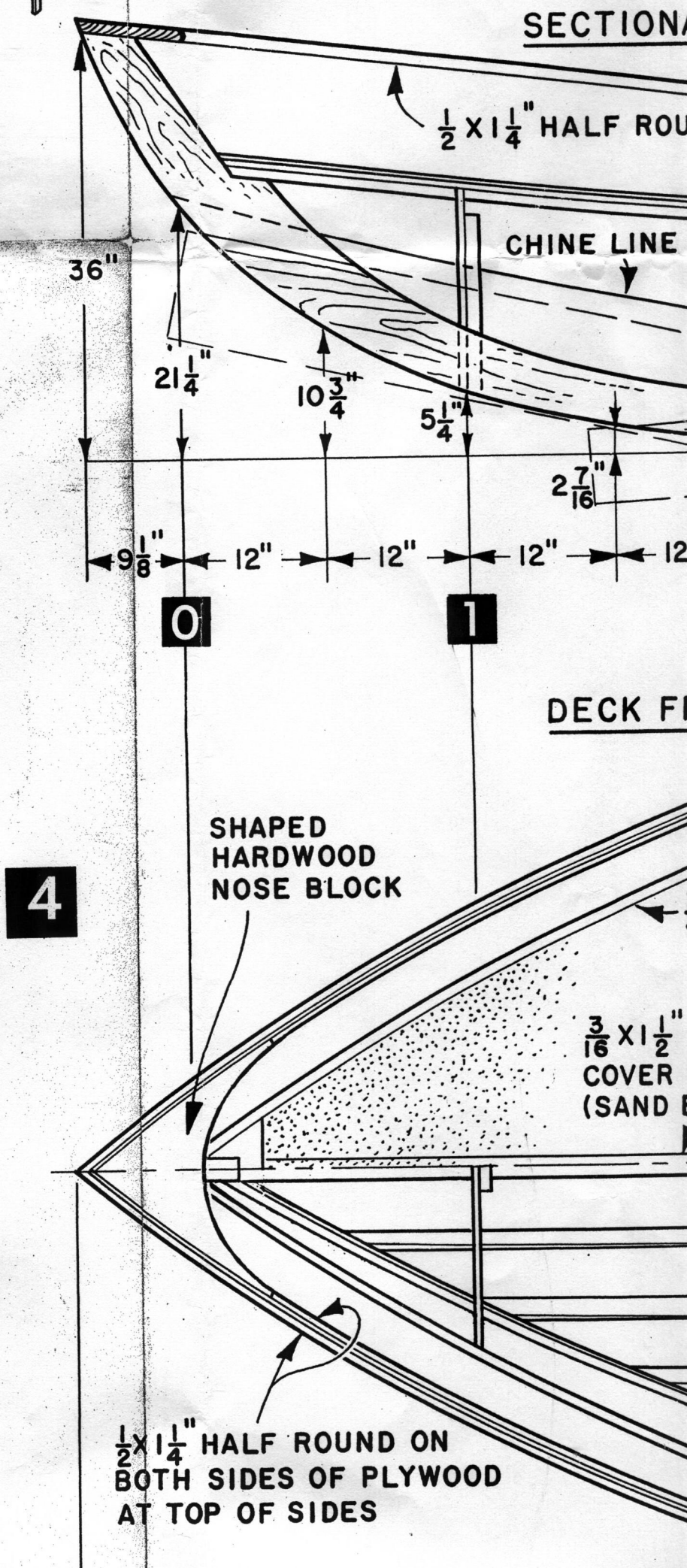
**TABLE A—BULKHEAD MEASUREMENTS**

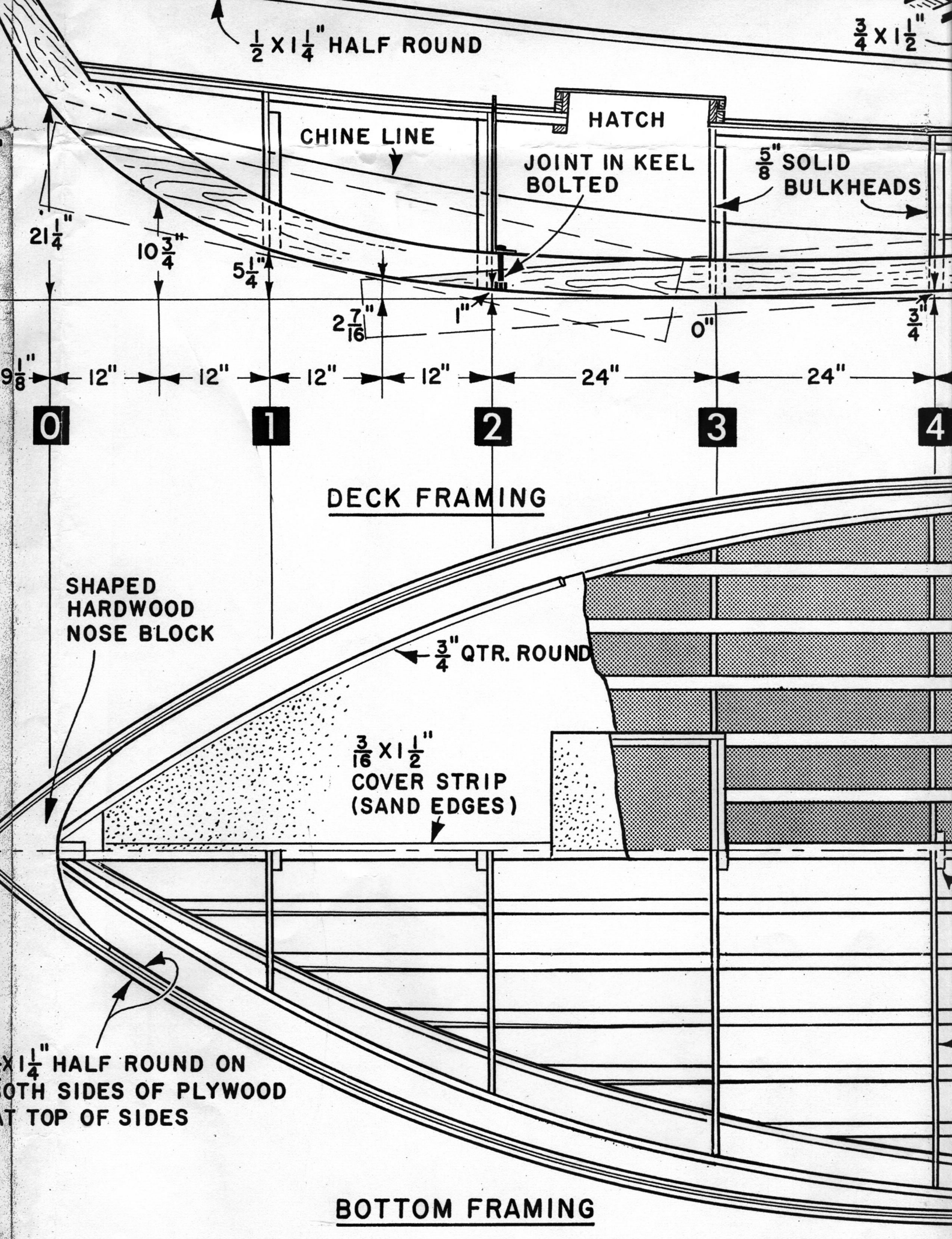
| No. | a | ½a | b | ½b | c | d | e | curve |
|---|---|---|---|---|---|---|---|---|
| 1 | 30⅞" | 15⅞" | 24¾" | 12⅜" | 17" | 6¼" | 19¾" | ⅜" |
| 2 | 52½" | 28¼" | 44¾" | 22⅜" | 19" | 8⅛" | 21½" | 15/16" |
| 3 | 66⅝" | 33⅝" | 58" | 29" | 18⅜" | 10⅜" | 21½" | 13/16" |
| 4 | 73⅝" | 38¹¹/₁₆" | 66" | 33" | 16⅞" | 10⅞" | 20" | 9/16" |
| 5 | 74¾" | 37⅜" | 69½" | 34¾" | 15 5/16" | 10¾" | 18¼" | 5/16" |
| 6 | 72⅜" | 36⅛" | 68¾" | 34⅜" | 13½" | 9⅝" | 16" | 3/16" |
| 7 | 69⅛" | 34⅝" | 65⅝" | 32¹³/₁₆" | 11¹¹/₁₆" | 8⅞" | 14" | 1/8" |
| 8 | 65¼" | 32⅝" | 63" | 31½" | 10/16" | 8¼" | 12½" | 1/16" |

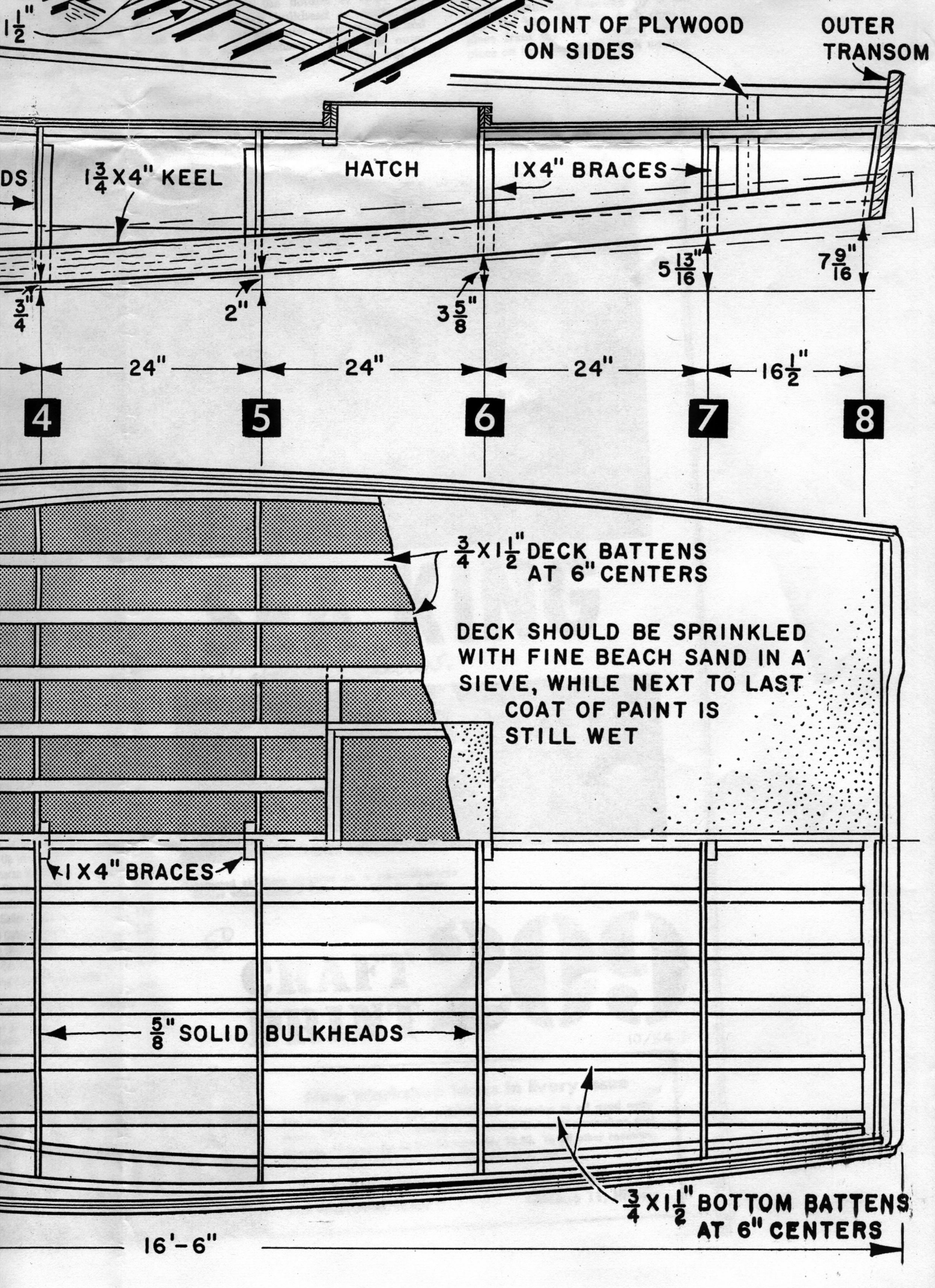


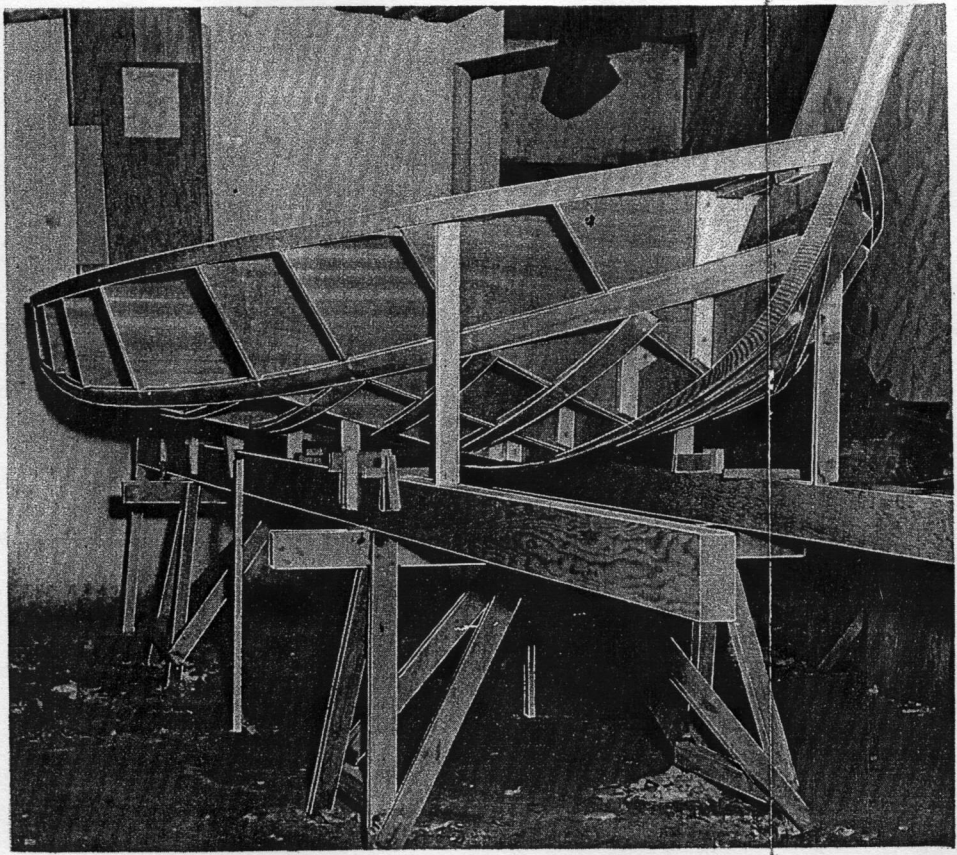



3 SIDE ELEVATION


SECTIONA
½ X 1 ¼" HALF ROU
CHINE LINE
36"
21 ¼"
10 ¾"
5 ¼"
2 7/16"
9 ⅛"
12"
12"
12"
12
0
1
DECK FI
SHAPED
HARDWOOD
NOSE BLOCK
4
3/16 X 1 ½"
COVER
(SAND
½ X 1 ¼" HALF ROUND ON
BOTH SIDES OF PLYWOOD
AT TOP OF SIDES


$\frac{1}{2}$ X 1 $\frac{1}{4}$" HALF ROUND
$\frac{3}{4}$ X 1 $\frac{1}{2}$"
HATCH
CHINE LINE
JOINT IN KEEL BOLTED
$\frac{5}{8}$" SOLID BULKHEADS
21 $\frac{1}{4}$"
10 $\frac{3}{4}$"
5 $\frac{1}{4}$"
2 $\frac{7}{16}$"
1"
0"
$\frac{3}{4}$"
9 $\frac{1}{8}$"
12"
12"
12"
12"
24"
24"
0
1
2
3
4
DECK FRAMING
SHAPED HARDWOOD NOSE BLOCK
$\frac{3}{4}$" QTR. ROUND
$\frac{3}{16}$ X 1 $\frac{1}{2}$" COVER STRIP (SAND EDGES)
X 1 $\frac{1}{4}$" HALF ROUND ON
OTH SIDES OF PLYWOOD
T TOP OF SIDES
BOTTOM FRAMING


1½"
JOINT OF PLYWOOD ON SIDES
OUTER TRANSOM
DS
1¾X4" KEEL
HATCH
1X4" BRACES
5 13/16"
7 9/16"
¾"
2"
3 5/8"
24"
24"
24"
16½"
4
5
6
7
8
¾X1½" DECK BATTENS AT 6" CENTERS
DECK SHOULD BE SPRINKLED WITH FINE BEACH SAND IN A SIEVE, WHILE NEXT TO LAST COAT OF PAINT IS STILL WET
1X4" BRACES
⅝" SOLID BULKHEADS
¾X1½" BOTTOM BATTENS AT 6" CENTERS
16'-6"



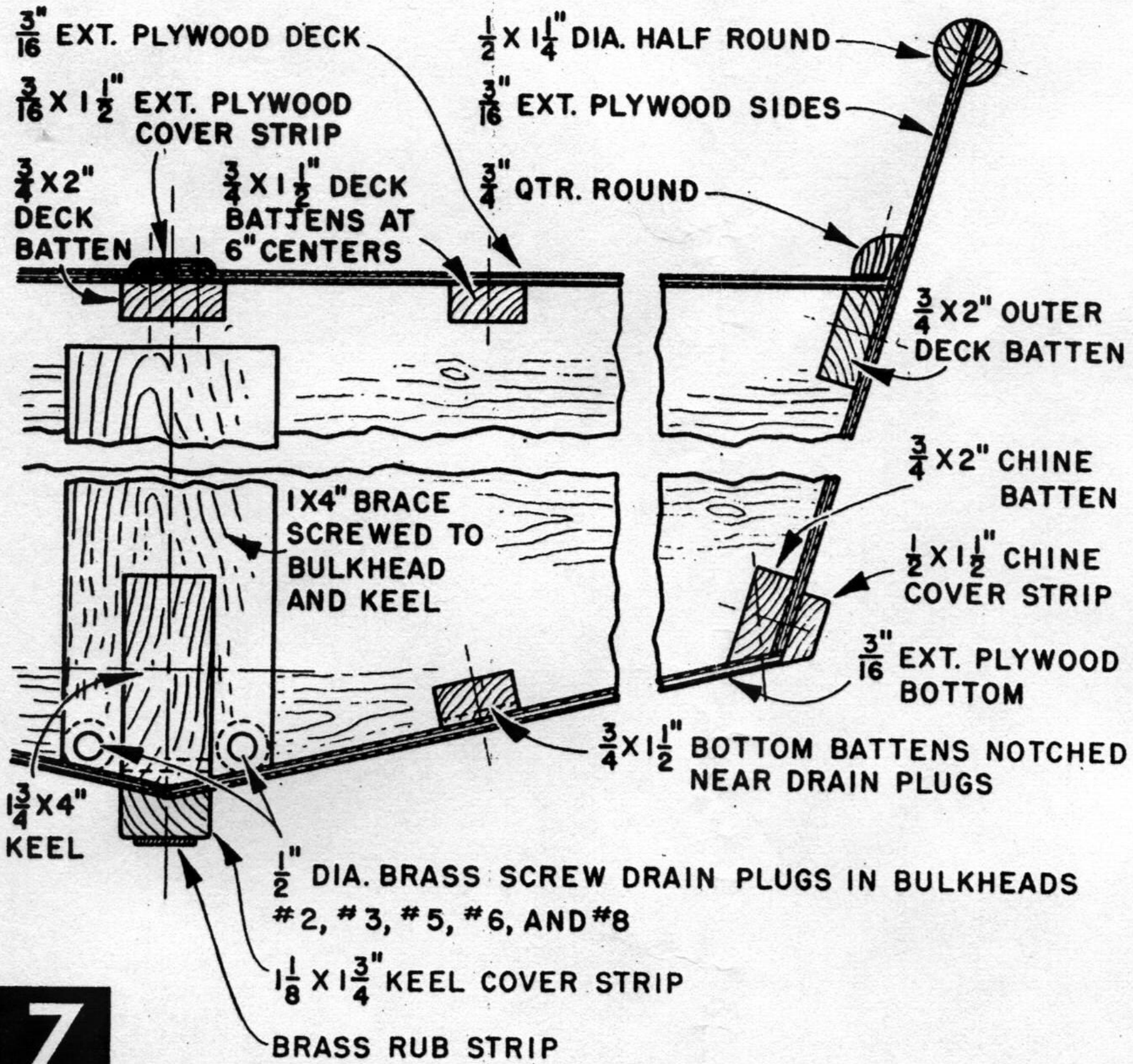
5

**Underneath view showing frame of the ski boat complete and ready for the side planking.**

6

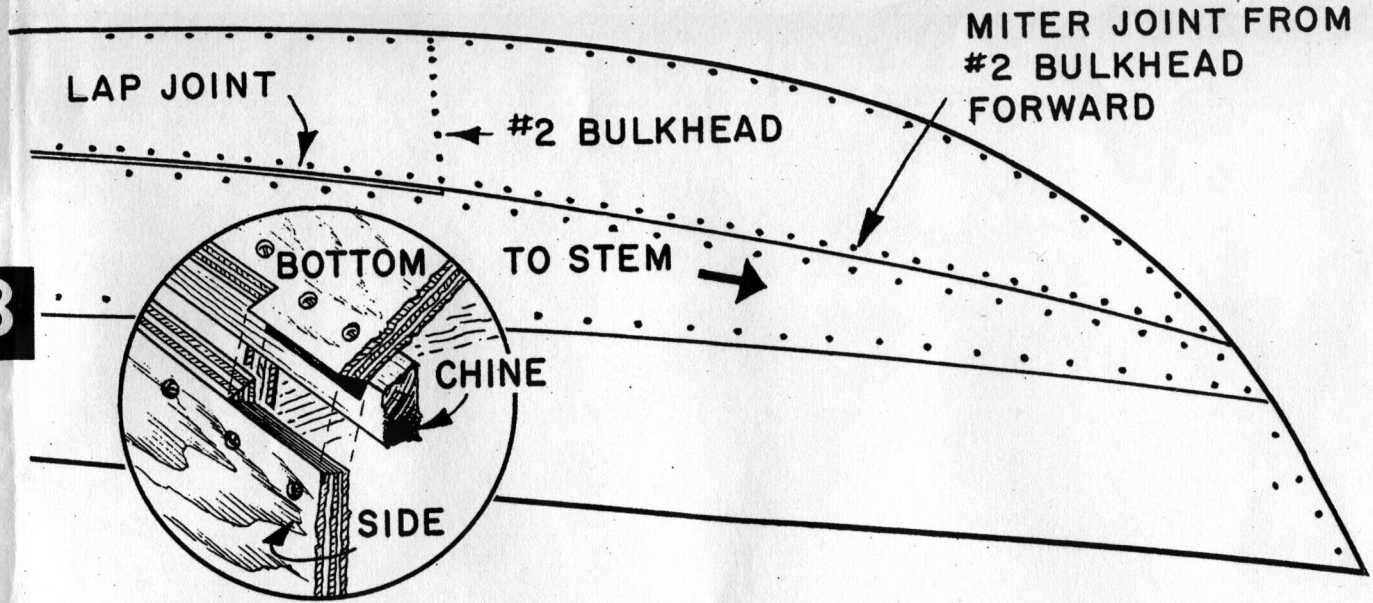
**Top view showing the ski boat with deck battens in place ready for the decking.**

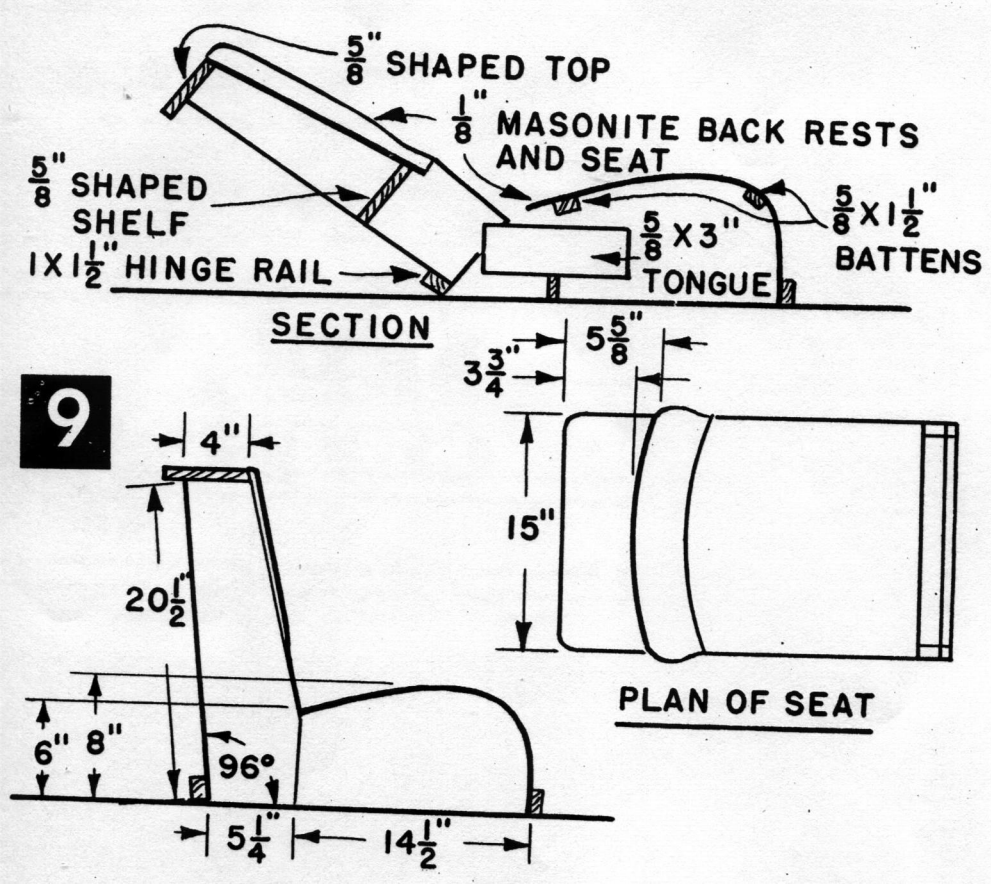
## MATERIALS LIST—SEA KING

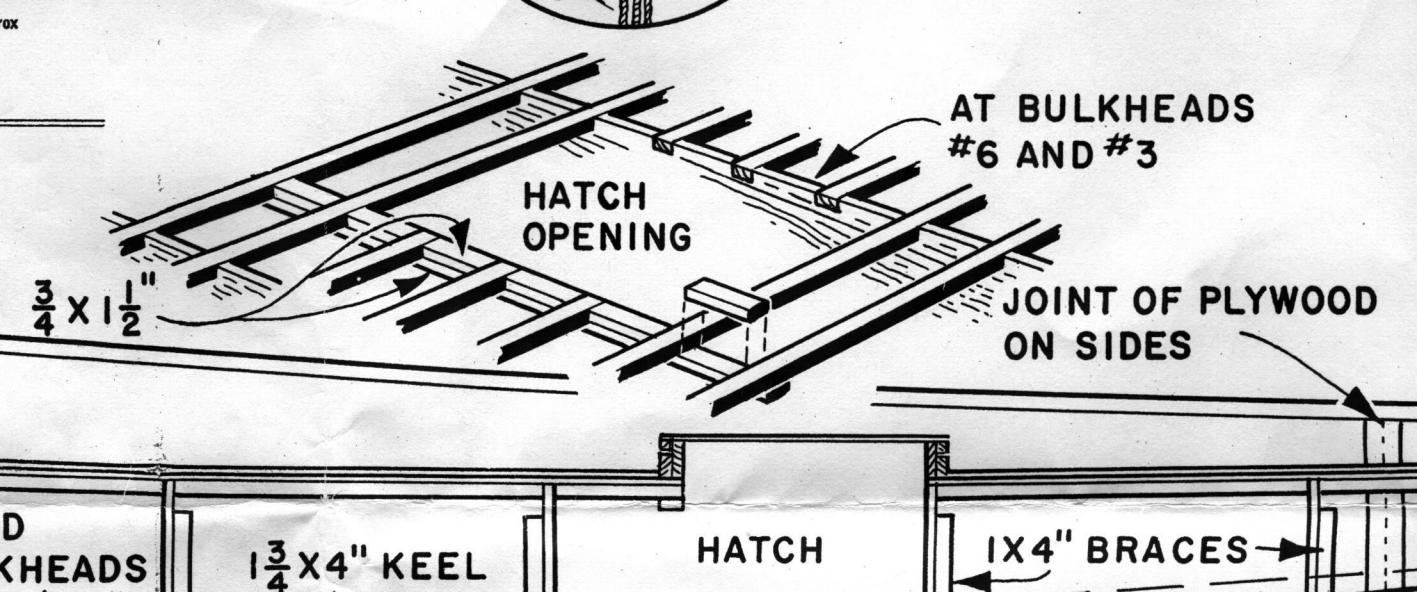



7

TYPICAL FRAMING DETAIL


LAP JOINT
#2 BULKHEAD
MITER JOINT FROM
#2 BULKHEAD
FORWARD
BOTTOM
TO STEM
CHINE
SIDE


5/8" SHAPED TOP
1/8" MASONITE BACK RESTS AND SEAT
5/8" SHAPED SHELF
1X1 1/2" HINGE RAIL
5/8 X 3" TONGUE
5/8 X 1 1/2" BATTENS
SECTION
9
5 5/8"
3 3/4"
15"
PLAN OF SEAT
4"
20 1/2"
6"
8"
96°
5 1/4"
14 1/2"


AT BULKHEADS
#6 AND #3
HATCH
OPENING
$\frac{3}{4}$ X $1\frac{1}{2}$"
JOINT OF PLYWOOD
ON SIDES
D
KHEADS
$1\frac{3}{4}$X4" KEEL
HATCH
1X4" BRACES


S 18

## MATERIALS LIST—SEA KING

| Amt. | Item | Type | Size |
|---|---|---|---|
| 2 | trestle | | approx. 2 x 4′ |
| 2 | scaffolding | | 2 x 4″ x 16′ |
| 4 | battens | | ¾ x 1½″ x 16′ |
| 1 | keel | oak or fir | 1¾ x 6″ x 13′ |
| 1 | | | 1¾ x 9″ x 8′ |
| 1 | #1 bulkhead | ext. graded fir plywood | ⅝ x 18″ x 3′ |
| 1 | #2 bulkhead | | ⅝ x 19″ x 4′9″ |
| 1 | #3 bulkhead | | ⅝ x 19″ x 5′9″ |
| 1 | #4 bulkhead | | ⅝ x 17″ x 6′3″ |
| 1 | #5 bulkhead | | ⅝ x 16″ x 6′3″ |
| 1 | #6 bulkhead | | ⅝ x 14″ x 6′3″ |
| 1 | #7 bulkhead | | ⅝ x 12″ x 6′ |
| 1 | #8 bulkhead | | ⅝ x 11″ x 5′7″ |
| 1 | transom (outer) | | 1¼ x 17″ x 5′7″ |
| 1 | braces | oak | 1 x 4″ x 10′ |
| 2 | deck battens | oak or fir | ¾ x 1½″ x 11′ |
| 2 | | | ¾ x 1½″ x 12′6″ |
| 2 | | | ¾ x 1½″ x 14′ |
| 2 | | | ¾ x 1½″ x 15′ |
| 2 | | | ¾ x 1½″ x 15′6″ |
| 1 | center deck batten | | ¾ x 2″ x 16′ |
| 2 | center deck batten | | ⅝ x 1½″ x 11′ |
| 2 | center deck batten | | ⅝ x 1½″ x 12′6″ |
| 2 | bottom battens | | ⅝ x 1½″ x 14′ |
| 2 | bottom battens | | ⅝ x 1½″ x 15′ |
| 2 | bottom battens | | ⅝ x 1½″ x 15′6″ |
| 4 | outer deck and chine battens | oak or fir | ¾ x 2″ x 17′6″ |
| 2 | outer chine cover strips | mahogany | ½ x 1½″ x 18′ |
| 1 | keel cover strip | oak or fir | 1⅛ x 1¾″ x 17′6″ |
| 1 | skeg to keel | oak or fir | 1¾ x 4½″ x 5′ |
| 4 | half round | mahogany | ½ x 1¼″ x 18′ |
| 2 | quadrant | mahogany | ¾″ x 18′ |
| 1 | | | ¾″ x 6′ |

| Amt. | Item | Type | Size |
|---|---|---|---|
| 2 | angle rounded rub strips | mahogany | ⅝ x 1½″ x 12′ |
| 2 | | | ⅝ x 1½″ x 13′ |
| 1 | hatch framing | ext. grade plywood | ¾ x 3″ x 14′ |
| 1 | | | ¾ x 1¾″ x 14′ |
| 1 | nose block | oak or fir | 1¼″ x 2′3″ x 18′ |
| 5 | planking | ext. grade plywood | 3/16 x 4″ x 16′ |

### Material for One Seat

| | | | |
|---|---|---|---|
| 2 | back rest and seat | ⅛″ tempered hard board | ⅛ x 15 x 16″ |
| 2 | seat sides | ext. grade plywood | ⅝ x 8 x 15″ |
| 4 | seat battens | ext. grade plywood | ⅝ x 1½ x 16″ |
| 2 | seat tongues | ext. grade plywood | ⅝ x 3 x 9″ |
| 2 | sides to back rest | ext. grade plywood | ⅝ x 6″ x 1′10″ |
| 1 | top of back rest | ext. grade plywood | ⅝ x 6 x 15″ |
| 1 | shelf on back rest | ext. grade plywood | ⅝ x 6 x 15″ |
| 1 | toe to shelf | ⅛″ tempered hard board | ⅛ x 1 x 16″ |
| 1 | hinge rail | mahogany | 1 x 1½ x 16″ |

### Miscellaneous

Kuhls' Bedlast bedding compound
Elmer's Waterproof glue or Weldwood glue for frame assembly
Firzite primer
5 ½″ dia. brass screw drain plugs (one per bkd. if keel is drilled)
12 2″ brass hinges for hatches and seats
2 brass latches for hatches
8 brass cabin hooks and eyes for securing seats in upright posit.
1 ⅜ x 1½ x 18″ brass tie into keel and bulkhead for for'ard cradle suspension
2 brass supports on transom for cradle suspension approx ⅜ x 1½ x 12″
2″ x 8′ 16-gage copper cover strip at transom
1 anchor cleat
14′ brass cover strip for keel
2 hardline cleats