

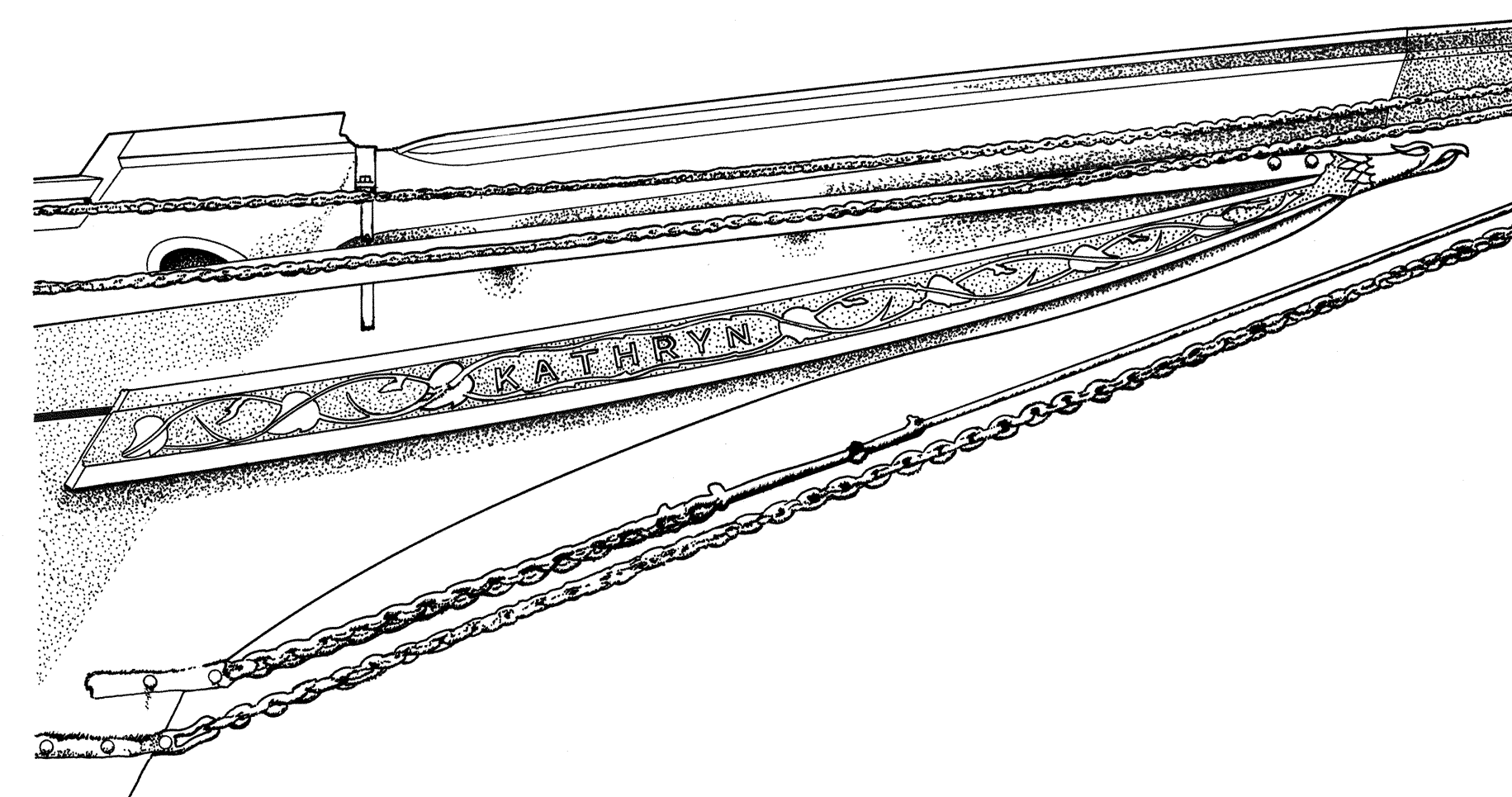
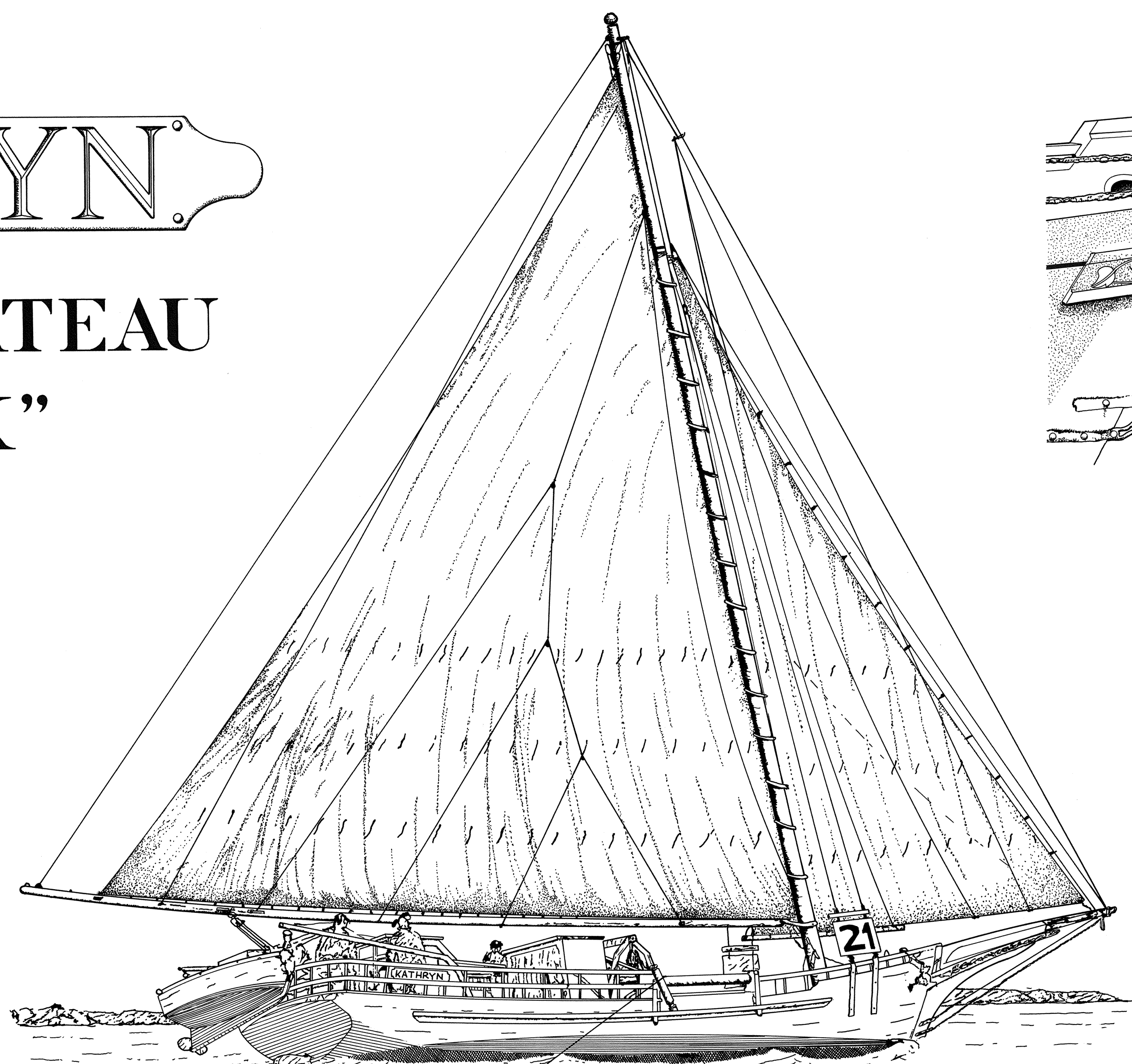
KATHRYN

TWO-SAIL BATEAU "SKIPJACK" 1901

KATHRYN is an early example of the two-sail bateau, or "skipjack," an oyster dredging vessel that appeared in numbers on the Chesapeake Bay in the late 1890's. Skipjacks were cheaper and easier to build than the pungies, bugeyes, and sloops that were previously built for dredging oysters on the Chesapeake. In the twentieth century, skipjacks became the dominant vessel type in the Maryland oyster fishery. Maryland law restricted the use of power vessels for oyster dredging, which has kept skipjacks active in the fishery to the present day. The Maryland skipjacks are today the only fleet of commercial fishing vessels still working under sail. The presence of oyster diseases, particularly MSX (Multinucleate Sphere Unknown) and the fungus Dermo, have wiped out many of the once abundant oyster beds on the Chesapeake Bay. These diseases are threatening the entire oyster fishery and may force the few remaining skipjacks out of the industry.

KATHRYN is not typical of the skipjacks in her construction. Most skipjacks were cross-planked and built principally of pine. KATHRYN's bottom is planked fore-and-aft, and most of her original structural members and her bottom planks are oak. This construction technique allowed the builders to round the chine much more than is found on cross-planked skipjacks. KATHRYN is the only skipjack known to have fore-and-aft planking and a rounded chine.

KATHRYN was built in Crisfield, Maryland, in 1901. Her builder is not precisely known but credited to James E. and George L. Dougherty. First owned by William E. Dougherty, she was named after his youngest daughter of two years. As a bank officer and owner of a hardware company, William Dougherty sold his small investment in 1907. KATHRYN has since served several different owners, working the waters of Chesapeake Bay in both Virginia and Maryland. From Crisfield, she went to Reedville, Virginia, then to Fairport. By 1921, she was back in Crisfield. Other home ports in Maryland include Cambridge, Baltimore, and Tilghman. In 1954, she was extensively rebuilt in the Krentz shipyard in Harryhogan, Virginia, but maintained her original form and many of her original oak timbers. Since 1981, she has been owned by Herman Russell Dize of Tilghman. KATHRYN continues to dredge the bay during the oyster season. As under former owners, she continues to compete in and often win the annual skipjack races.



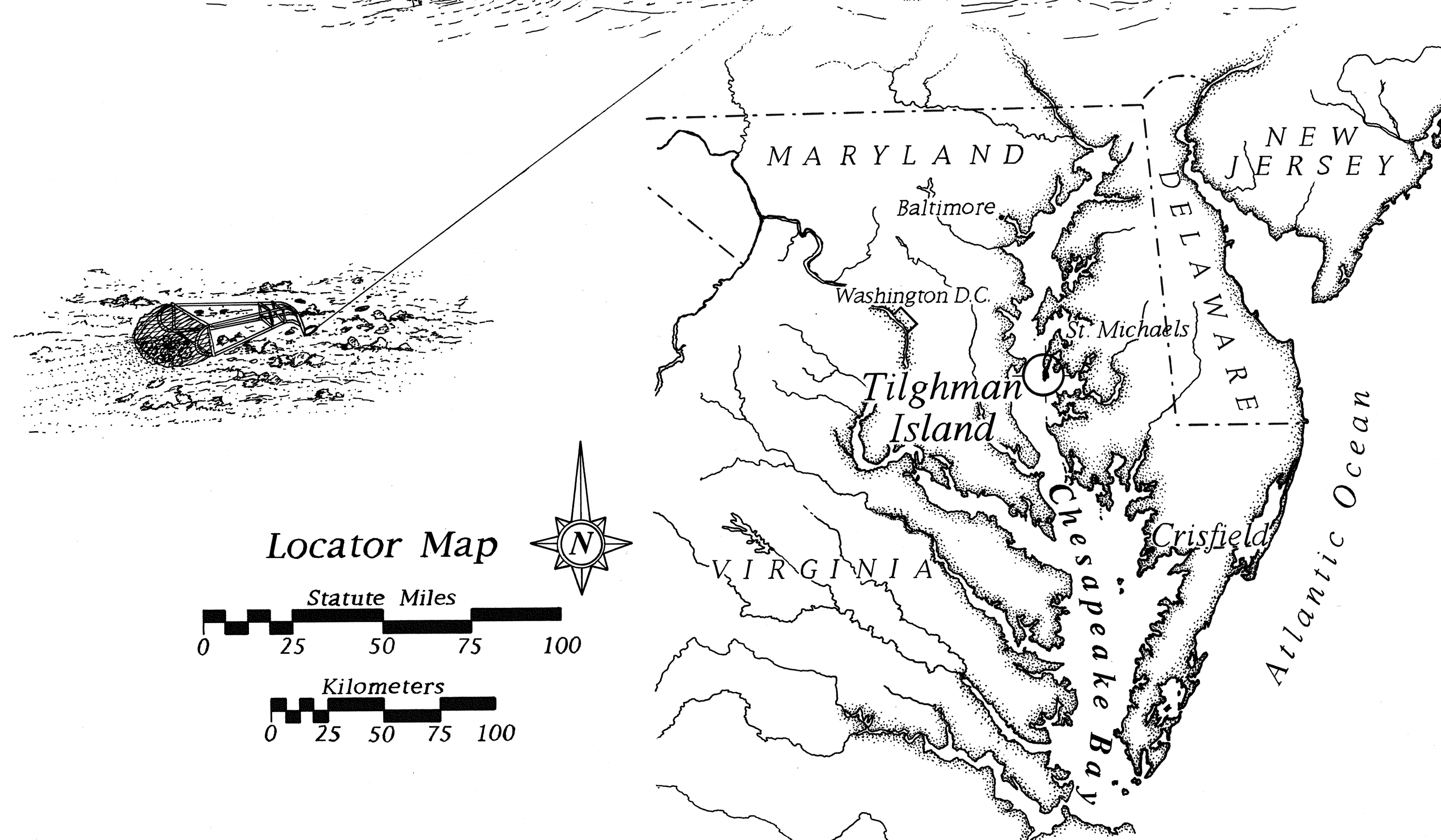
In May 1985, KATHRYN was nominated to the National Register of Historic Places as part of a group of 22 dredgeboats. Since then she has also become a National Historic Landmark. She is the oldest of the true "skipjacks," or of the two-sail bateau built expressly for the oyster trade. KATHRYN is the second vessel of this fleet to be completely documented for the Historic American Engineering Record. The first was E. C. COLLIER, a skipjack of more standard construction built in 1910.

This recording project was undertaken by the Historic American Engineering Record (HAER), Robert J. Kapsch, Chief. HAER is a division of the National Park Service, which is committed to the documentation of America's engineering, industrial and maritime heritage. The project was co-sponsored by the Chesapeake Bay Maritime Museum (CBMM), John R. Valliant, Executive Director. Funding was managed by the Maryland Historical Trust and the Council of American Maritime Museums with a non-capital grant from the Sally Kress Tomkins Maritime Internship.

The project leader was Todd Croteau (HAER Maritime Program Coordinator). The field team consisted of Martin Peebles, supervisor (East Carolina University), Shawn Brennan (Norwich University) and Brian Kimura (Miami University). Historic research was prepared by Pete Leshner (CBMM staff writer) and Norman Plummer (volunteer). Invaluable technical assistance and expertise was contributed throughout the project by Tom Howell and Richard Scofield (CBMM Boatshop staff), Josef Leiner (volunteer) and Russell Dize (KATHRYN's owner). Formal photography by Jet Lowe (HAER).

OFFICIAL DESCRIPTION

Official No. 161189
Built: Crisfield, Maryland
Length: 50.0'
Beam: 16.8'
Depth: 4.2'
Gross Tonnage: 12
Net Tonnage: 12
Rig: Sloop (Skipjack)



DELINEATED BY: BRIAN KIMURA, 1995

KATHRYN RECORDING PROJECT
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

TILGHMAN VICINITY

KATHRYN - Two Sail Bateau "Skipjack"
DOGWOOD HARBOR
TALBOT COUNTY

MARYLAND

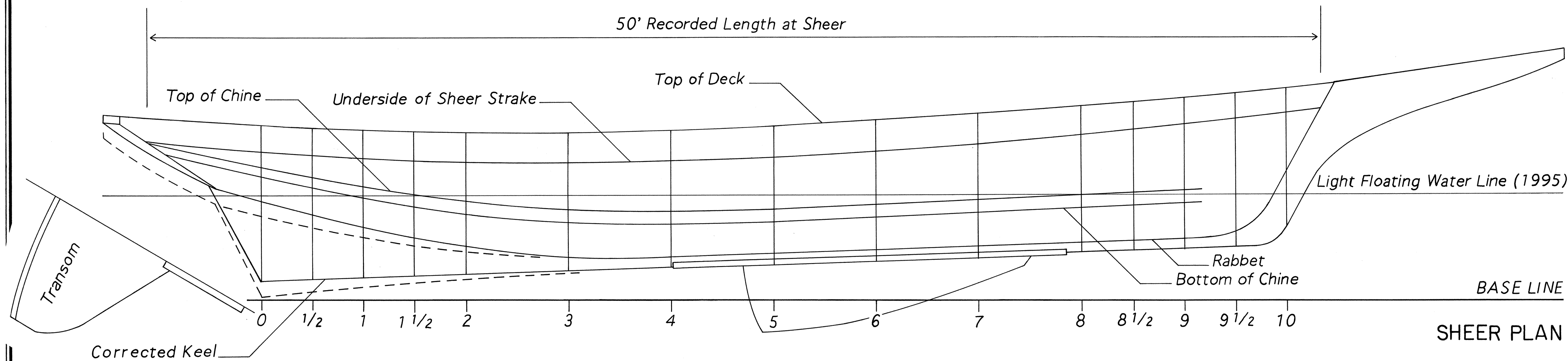
SHEET
1 of 8

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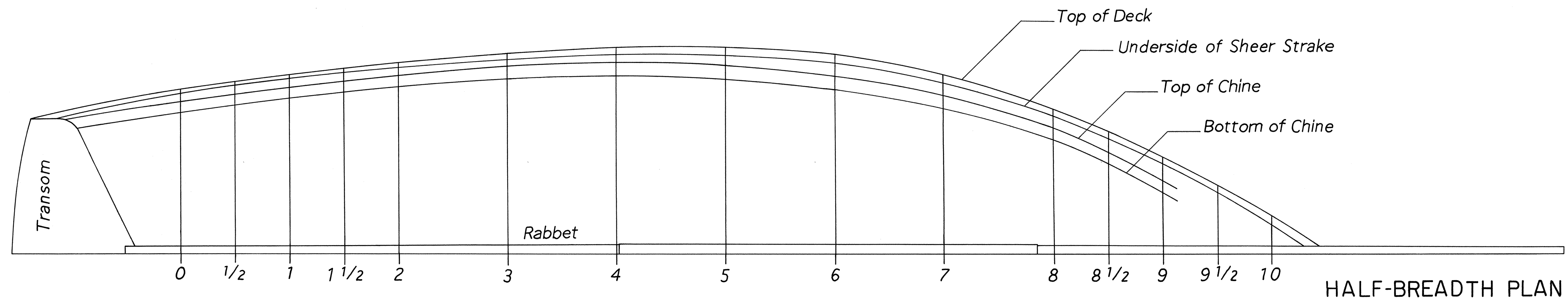
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TRIM LINE

LINES PLANS



SHEER PLAN

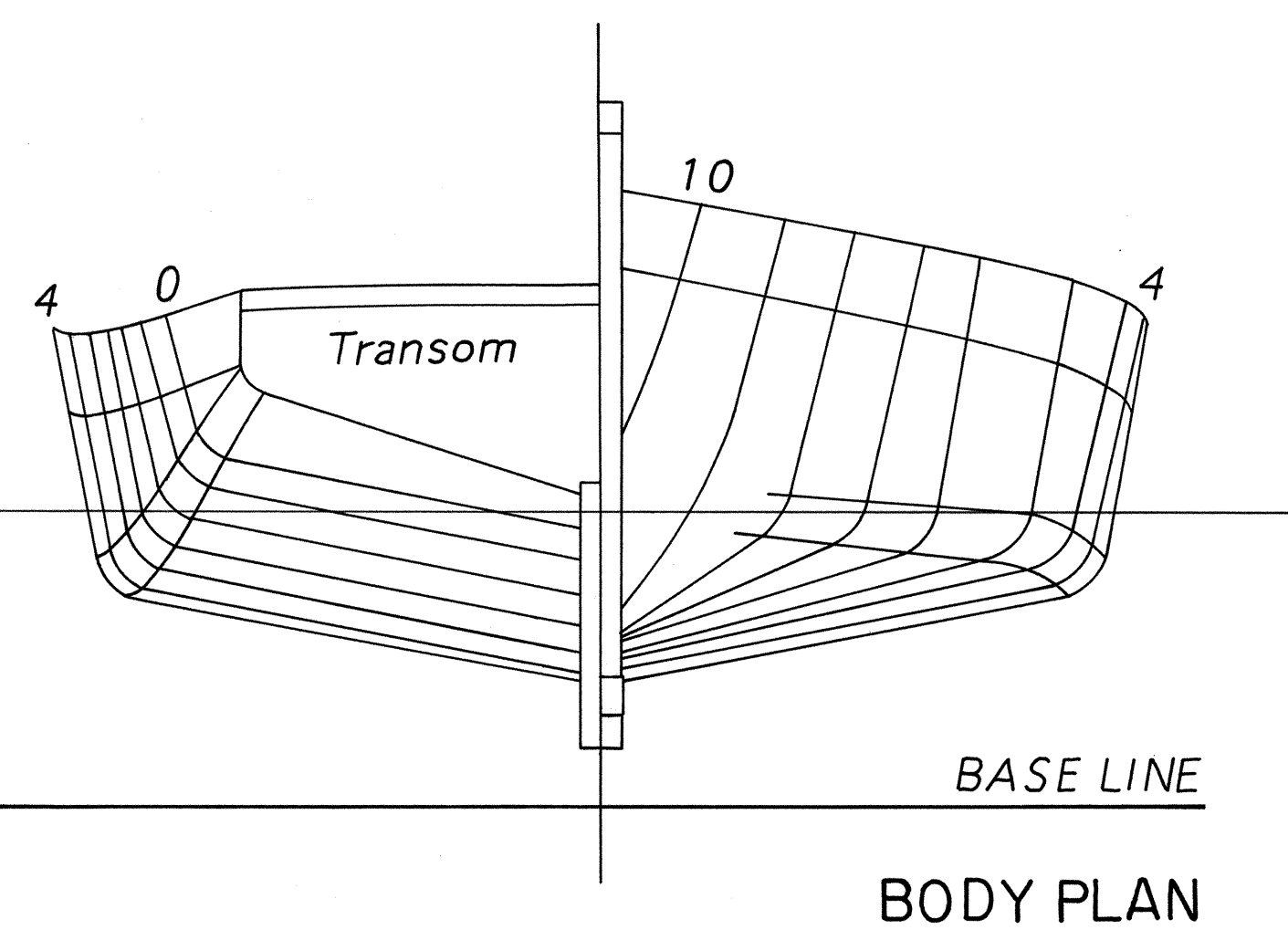


HALF-BREADTH PLAN

KATHRYN's lines were lifted on the inclined marine railway at the Chesapeake Bay Maritime Museum, St. Michael's, Maryland. Due to railway obstructions, recording stations could not be established at regular intervals. 17 stations were set up between the rail blocks, and set closer together toward the bow and stern to better record hull shape. The bottom centerline of the keel served as the primary datum for the section stations. Each section station consisted of a horizontal rule set perpendicular to the vessel's centerline. A plumb bob was hung from a tape measure to record the vertical position of points along the horizontal rule. Another line level and tape measure were run under the length of the vessel to serve as a secondary or check datum. A plumb measure was used to record the stern and stern profiles as well as distortion or "hogging" along the keel.

All of KATHRYN's line drawings are based on a corrected or straight keel. The keel's existing form is represented in the Sheer Plan with a dashed line. In addition to a stern sag of about eight inches, some hollow deadrise was also evident at midship between the keel and the chine on both sides. This distortion measured about three inches in the port side and two inches in the starboard side. These distortions were left out of the line drawings to preserve clarity.

Accuracy of field notes is $\pm 1/8$ inch. The lines were plotted and corrected according to the original 17 stations. The stations were replotted into 10 section format for easier comprehension.

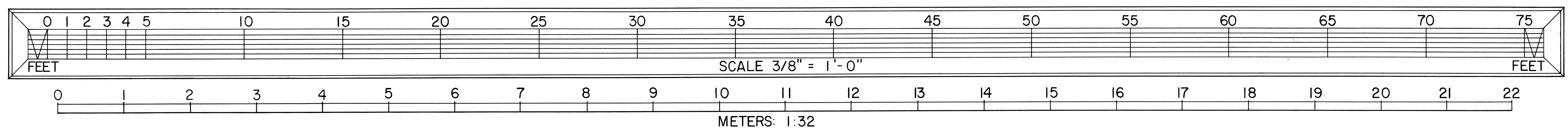


BODY PLAN

TABLE OF OFFSETS

All dimensions given in feet, inches and eighths of an inch.

	STATION	0	1/2	1	1 1/2	2	3	4	5	6	7	8	8 1/2	9	9 1/2	10
Heights Above Base	Sheer	6-4-4	6-2-2	6-0-4	6-0-0	6-0-0	6-0-0	5-9-7	6-1-4	6-4-0	6-7-6	7-0-2	7-3-2	7-6-0	7-8-4	8-0-0
	Chine Top	5-9-4	5-3-6	4-11-6	4-7-0	4-3-4	3-11-5	3-10-0	4-0-0	4-2-0	4-5-4	4-8-0	4-9-0	4-10-0		
	Chine Bottom	5-4-0	4-11-4	4-5-4	4-0-2	3-8-3	3-4-0	3-2-5	3-4-4	3-7-4	3-10-0	4-0-0	4-1-0	4-2-6		
	Rabbit	4-3-2	3-8-7	3-2-2	2-8-6	2-4-0	1-11-4	1-10-6	2-0-4	2-2-4	2-4-0	2-6-4	2-7-1	2-8-0	3-0-0	5-8-0
Half Breadths	Sheer	6-4-0	6-8-6	7-0-0	7-3-0	7-6-0	7-10-0	8-1-0	7-11-4	7-7-2	6-10-2	5-8-0	4-8-4	3-7-4	2-6-4	1-3-0
	Chine Top	6-1-0	6-4-2	6-8-2	6-10-0	7-1-0	7-5-4	7-7-4	7-5-4	7-1-0	6-4-4	5-1-4	4-1-4	2-11-4		
	Chine Bottom	5-9-6	5-11-6	6-2-0	6-5-0	6-8-2	7-0-2	7-1-2	7-0-0	6-6-2	5-11-0	4-9-0	2-7-4	2-6-0		
	Rabbit	0-3-4	0-3-4	0-3-4	0-3-4	0-3-4	0-3-4	0-3-4	0-3-4	0-3-4	0-3-4	0-3-4	0-3-4	0-3-4	0-3-4	0-3-4



HULL HISTORY

The KATHRYN was recorded as she existed during the summer of 1995. The overall dimensions conform to the official documentation papers of 1902, registered one year after construction. The vessel was completely overhauled in 1954, which involved some extensive repairs to the hull and the complete rebuilding of the main deck. Age has caused some distortion of the original lines but the presence of older timbers suggests that the vessel retained its original form of hull construction. (See Sheets 5 & 6) The effects of hogging are represented in the sheer plan (Sheet 2) but left out of the other drawings for clarity.

MATERIALS: Woods referred to throughout the drawings are white oak, pine and fir. The distinction between loblolly and long-leaf pine is not made due to their similar appearance, although the regional abundance of loblolly would suggest its predominant use.

The hull was constructed principally of oak. All frames observed by the recording team are oak. Hull strakes at and below the chine are mostly oak with a few pine replacement timbers. Hull strakes above the chine are pine.

The deck is constructed of various materials. Deck beams are mostly pine with a few oak timbers under the winders and at the stern (See Sheet 5, note 7). Deck planks are mostly fir with some pine replacements. The waterways and rails are also oak.

MODIFICATIONS: Changes to KATHRYN's outward appearance include the construction of the raised doghouse or companionway above the main cabin by the present owner.

The forepeak hatch was also replaced by one of lower profile. Changes to the interior may have occurred during the 1954 reconstruction or at some later date. These included the removal of the chain locker and the construction of another bulkhead to form another berthing area in the forepeak.

The KATHRYN also exhibits several modernizations of the contemporary oyster fishery. These include diesel powered winders, electric davit winches and remote throttles for controlling the yawl boat. Her stainless steel rudder and hydraulic steering system are not typical. The hull is also covered with fiber-glass above and around the chine. Other modifications are noted in the drawings.

RIGGING

1. Bob Stay

2. Head Stay

3. Hounds

4. Jack Stays
5. Jib Stay

6. Lazy Jacks

7. Shrouds
8. Mast Cleats: Port (a); starboard (b).

9. Pin Rails: Port (a); starboard (b).

10. Reefing or Cheek Blocks.

RUNNING RIGGING

11. Jib Downhaul: fixed to sail head, runs through cheek block at end of bowsprit, back to cleat (See Sheet 4, "cleats").

12. Jib Halyard: to port mast cleat (8a).

13. Jib Sheet: up to hounds, down to port pin rail (9a).

14. Main Halyard: starboard mast cleat (8b).

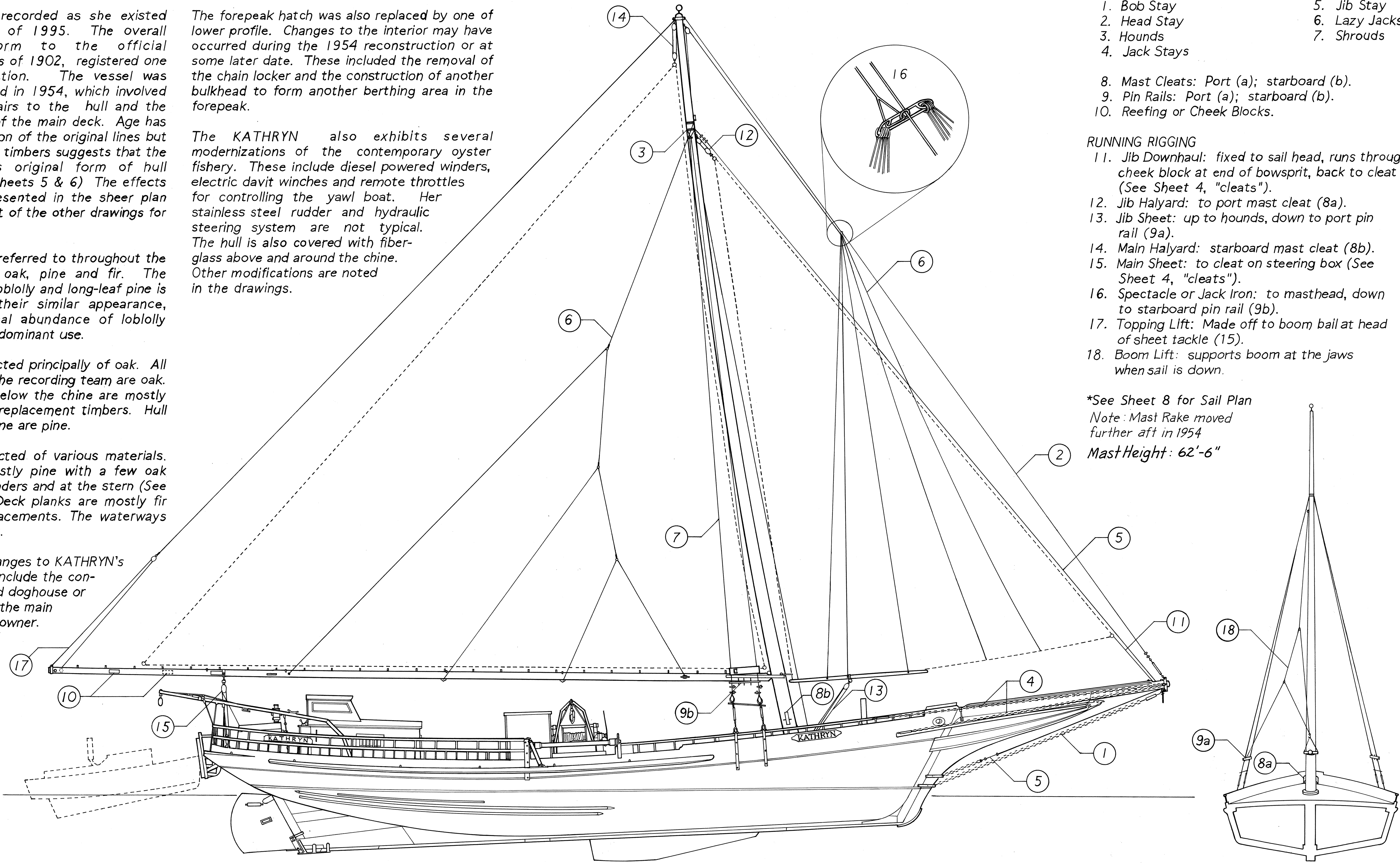
15. Main Sheet: to cleat on steering box (See Sheet 4, "cleats").

16. Spectacle or Jack Iron: to masthead, down to starboard pin rail (9b).

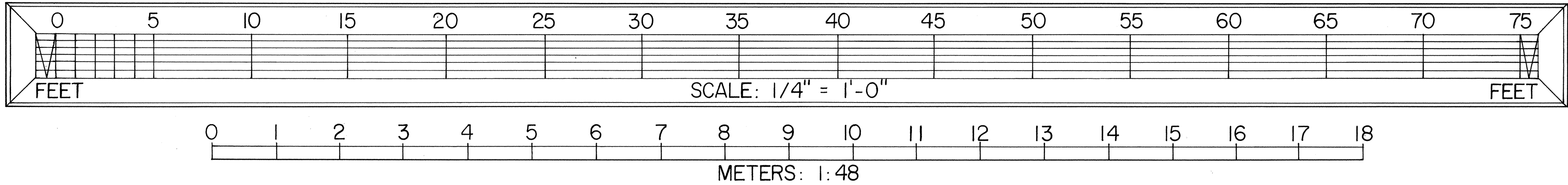
17. Topping Lift: Made off to boom bail at head of sheet tackle (15).

18. Boom Lift: supports boom at the jaws when sail is down.

*See Sheet 8 for Sail Plan
Note: Mast Rake moved further aft in 1954
Mast Height: 62'-6"



HULL PROFILE & RIGGING



TILGHMAN, MD.
Port Trailboard (3/4" = 1.0')

PORT RAIL PROFILE

INBOARD PROFILE

DECK PLAN

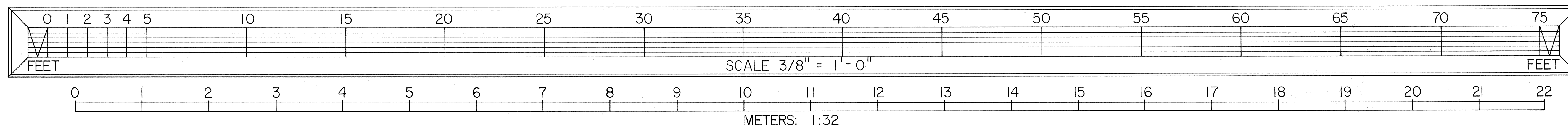
Cabin Profile - Aft

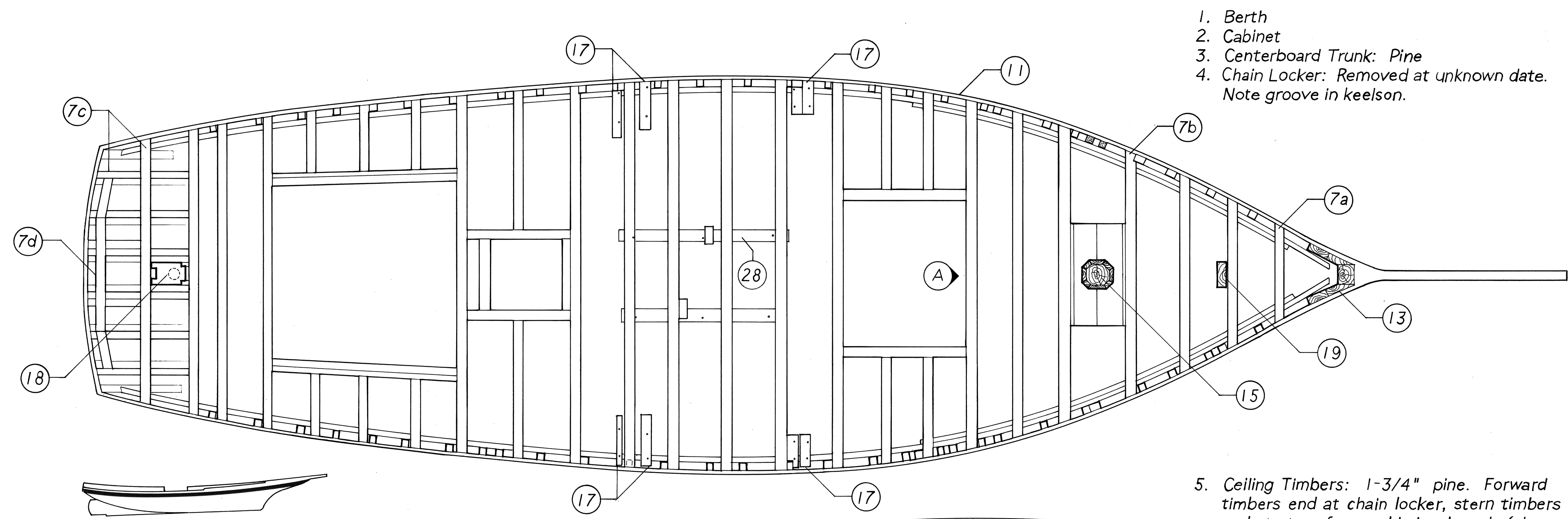
1. *Bowsprit: Walking boards fitted by present owner.
2. *Boom: Laminated Douglas Fir.
3. Centerboard Hauling Line
4. Cleats: Jib downhaul (a), Jib Halyard (b), Main Halyard (c), Main Sheet (d). (See Sheet 3 for other running lines.)
5. *Davits: Iron with stainless steel struts.
6. Deck: Heavily painted. Construction is visible below decks. (See description, Sheet 5, note 8; Sheets 6 & 7, Cross - Sections)
7. *Doghouse or Teepee
8. *Dredge Cable Rollers: Rebuilt.

9. *Electric Winch
10. *Forepeak Hatch: Replaced.
11. Headrail
12. *Helm: Capilano helm unit; Hynautic hydraulic system, Teleflex model 50 uni-flo valve.
13. Jib Club: Cedar
14. Jib Sheet Traveler
15. Keel
16. Kingplanks
17. Lowest point in bilge: Clear under keelson for location of sump pump.
18. Main Sheet Traveler
19. Mast: Pine
20. *Pushboat Throttles
21. Rabbet
22. Rails: Oak with iron stanchions. (Sheets 6 & 7)
23. *Rudder: Stainless Steel.

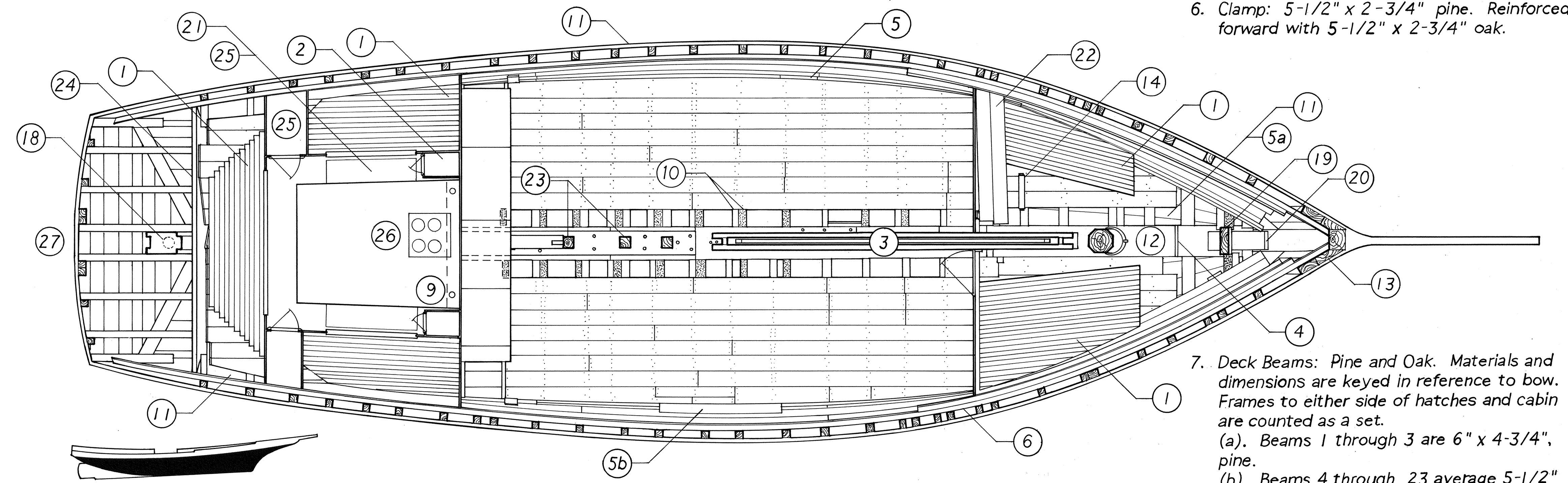
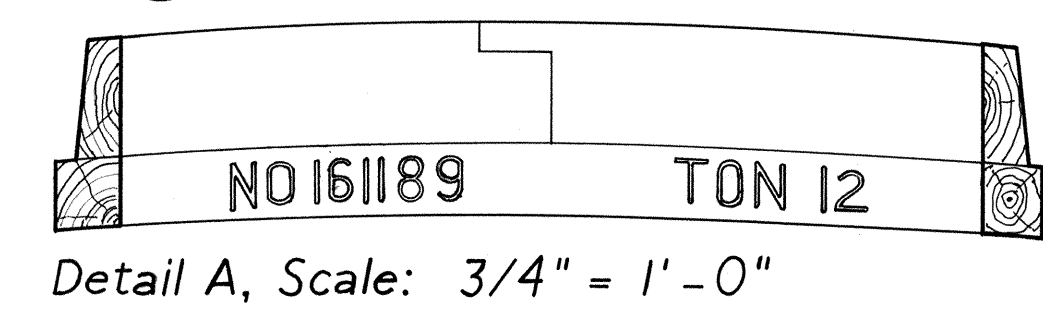
24. *Samson Post: Windlass removed by present owner.
25. *Speaker
26. Strongback
27. *Winders: Rebuilt
28. *Winder Engine: V-6 Buick

*Modifications made by present owner.

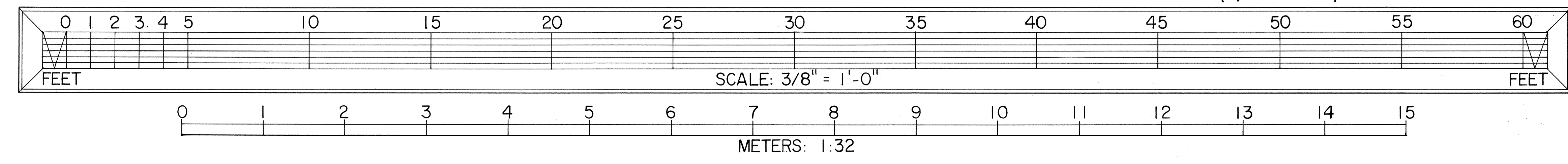




MAIN DECK STRUCTURAL PLAN

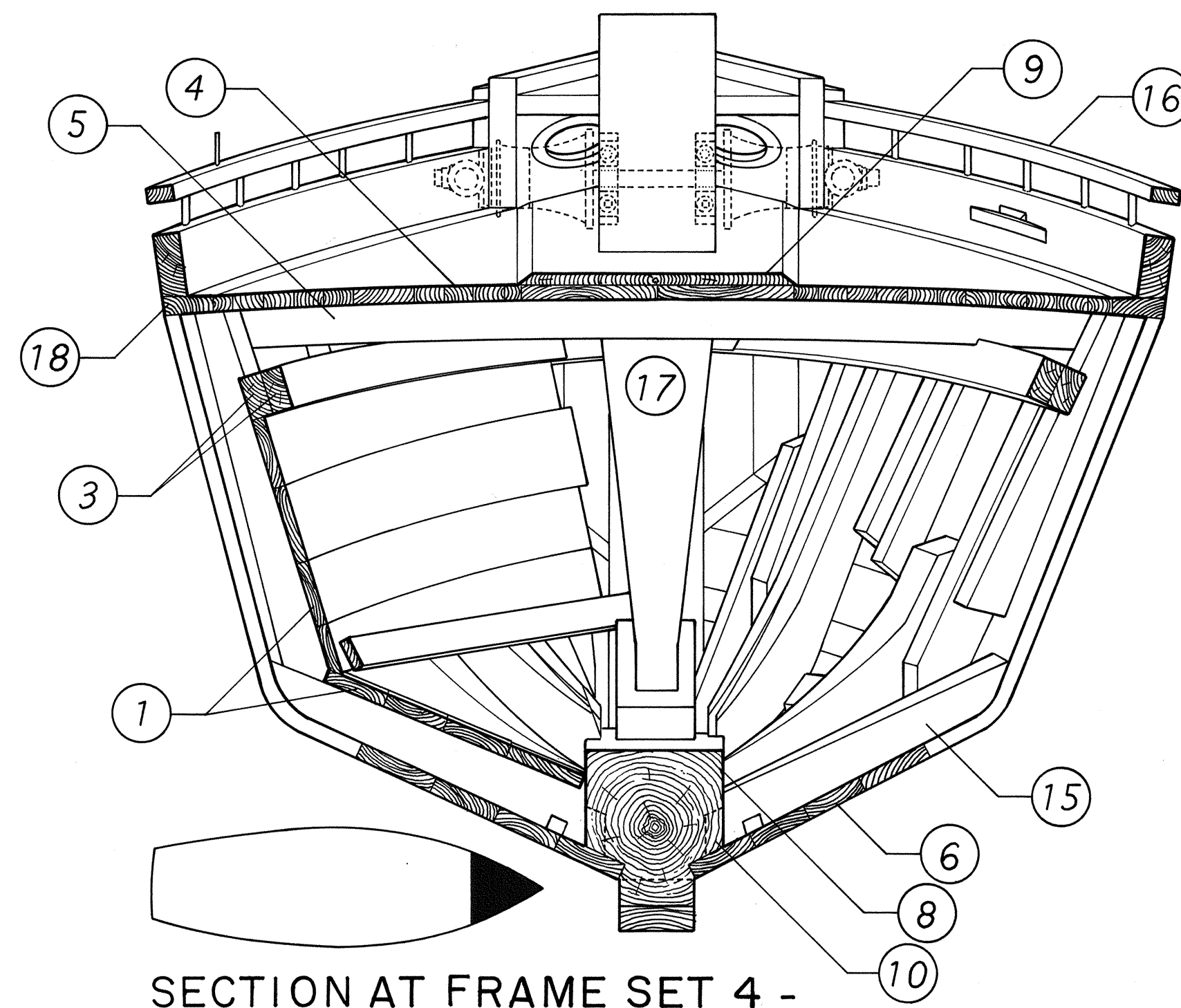


HOLD PLAN

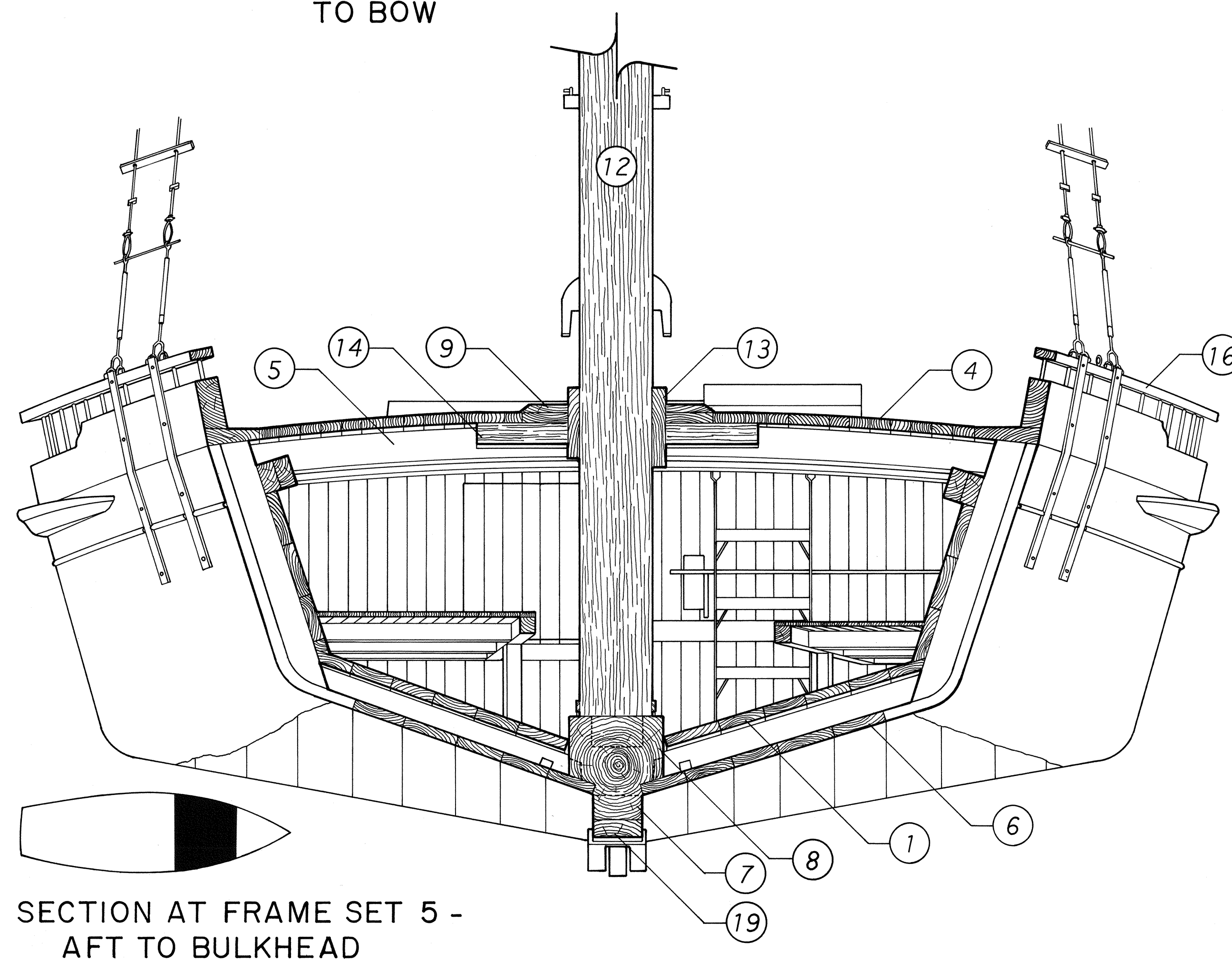


1. Berth
2. Cabinet
3. Centerboard Trunk: Pine
4. Chain Locker: Removed at unknown date. Note groove in keelson.
5. Ceiling Timbers: 1-3/4" pine. Forward timbers end at chain locker, stern timbers end at stern frame. Limber boards (along keelson) not present in main hold. Ceiling timbers were removed by the recording team to inspect frame members along the keelson (a) and at the chine (b).
6. Clamp: 5-1/2" x 2-3/4" pine. Reinforced forward with 5-1/2" x 2-3/4" oak.
7. Deck Beams: Pine and Oak. Materials and dimensions are keyed in reference to bow. Frames to either side of hatches and cabin are counted as a set.
 - (a). Beams 1 through 3 are 6" x 4-3/4", pine.
 - (b). Beams 4 through 23 average 5-1/2" square ($\pm 1/2$), all pine except for 12 - 15, oak (under winders).
 - (c). Stern timbers (aft of rudder box) are 4" x 3-1/2", oak, except for "d".
 - (d). 6" x 3", pine.
8. Deck Planks (not shown): Mostly fir with some pine replacements. Construction is parallel to the centerline, ends tapered to the waterway. Timbers are 1-3/4" thick. Widths average 3-1/2" to 4", with some inboard timbers measuring 5" to 7". (See cross-sections in sheets 6 and 7.)
9. Drain.
10. Frames: Oak. Dimensions and pairing are highly irregular due to use of new and old timbers (See Sheet 6). 20 sets exposed from bow (inaccessible under main cabin), two more exposed aft of main cabin. First set fitted against stern knee. Sets 2 through 18 mortised into keelson. Sets 19 and 20 pass under keelson. Older timbers are designated (see note 16).
11. Hull Strakes: Predominately oak at and below chine. Pine replacement noted under ceiling, aft of main cabin. Strakes above chine are pine.
12. Keelson: Oak. (Aft section inaccessible.) The keelson forward of the main cabin was formed in two sections, scarfed between frame sets 15 and 20. The aft section was 1'-2" wide. The forward section is 1'-4" wide x 10-1/2" at the garboard strake, tapered at the bow.
13. Knight Heads: 11" x 4" oak.
14. Ladder: Iron.
15. Mast: 1'-1-1/2" Pine.
16. Older timbers (original?): Only a few timbers could be positively identified as older as determined by their worn appearance and structural characteristics. (See Sheet 6). These include the forward section of the keelson and several frames, mostly below the chine. Designated (see note 16).
17. Roll Bar Mounts
18. Rudder Box: Interior inaccessible. Composite oak (front) and pine.
19. Sampson Post: Oak, 1'-2" x 5", tapered to 5" x 5" at foot. Mortised into stem knee. Replaced by current owner, 1995.
20. Stem Knee: Oak
21. Settee.
22. Shelf.
23. Stanchions: Oak, 5-1/2" square.
24. Strong Back: Pine, composite construction. Top piece is 5" square. Bottom piece is 1'-3" at center, tapered to sheer and beam. (See Sheet 4, Side Section.)
25. Storage: Aft of side berths, under settee.
26. Stove
27. Transom: All timbers are oak. Fore and aft frames average 3-3/4" sided (See Sheet 4, Side Section, for molded). Diagonal braces are 6-3/4" x 2". Side molding is 8" x 6", rounded at chine.
28. Winder mount

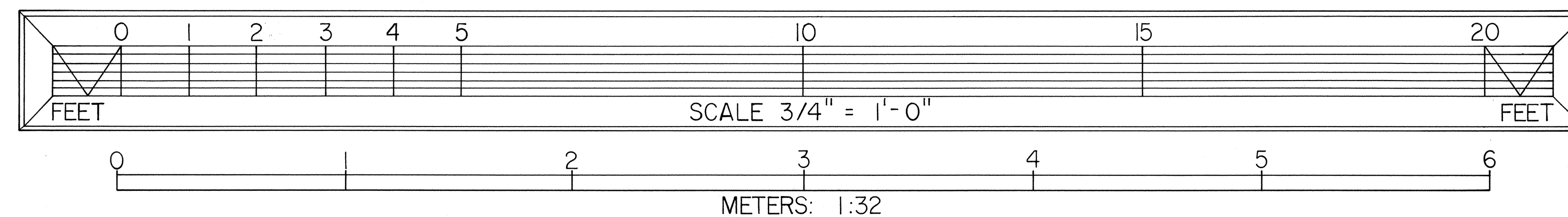
Woods referred to are white oak, pine and fir. (See Sheet 3, "Hull History" for overview of wood types and reconstruction.) The keel sections are fastened with drift pins. All other hull fastenings observed by the HAER team were nails.



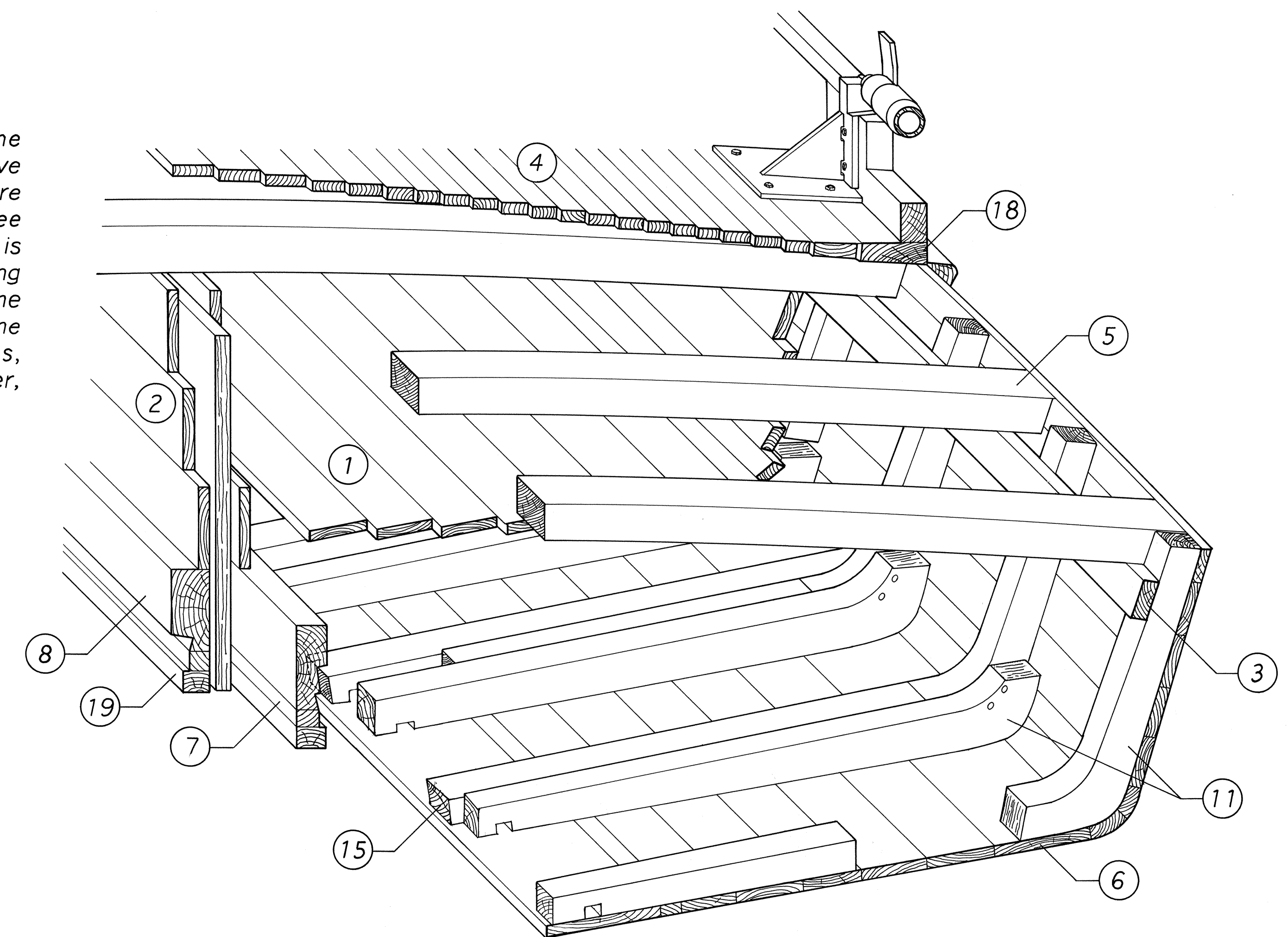
SECTION AT FRAME SET 4 -
TO BOW



SECTION AT FRAME SET 5 -
AFT TO BULKHEAD



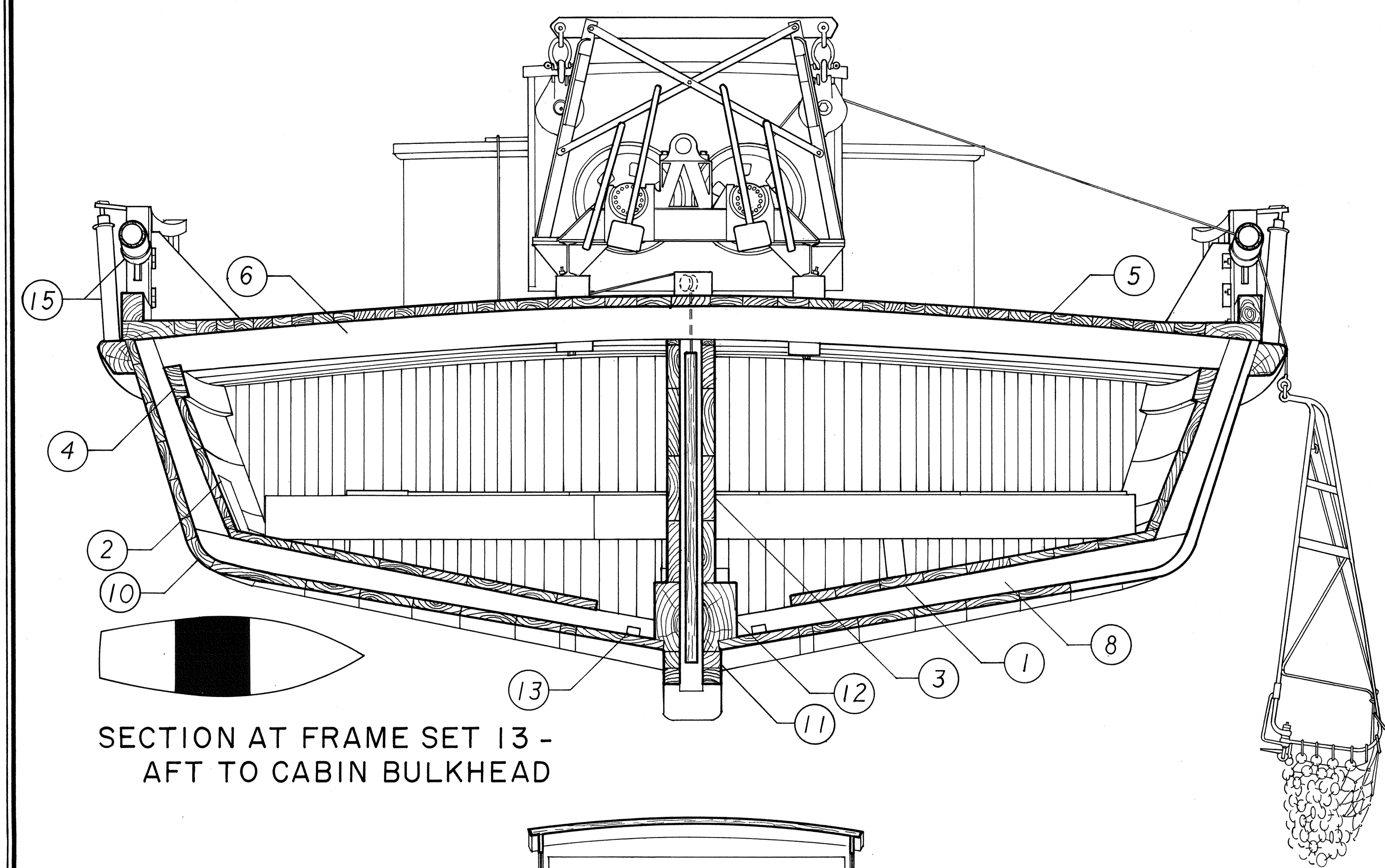
NOTES: Fiberglass prevented the measurement of the hull strakes above and around the chine except where ceiling timbers were removed (See Sheet 5). The Structural Conception is based on the partial removal of ceiling timbers, measured probing and the study of nail patterns. Note also the difference between new frames, replaced in 1954 (11) and older, possibly original frames (15).



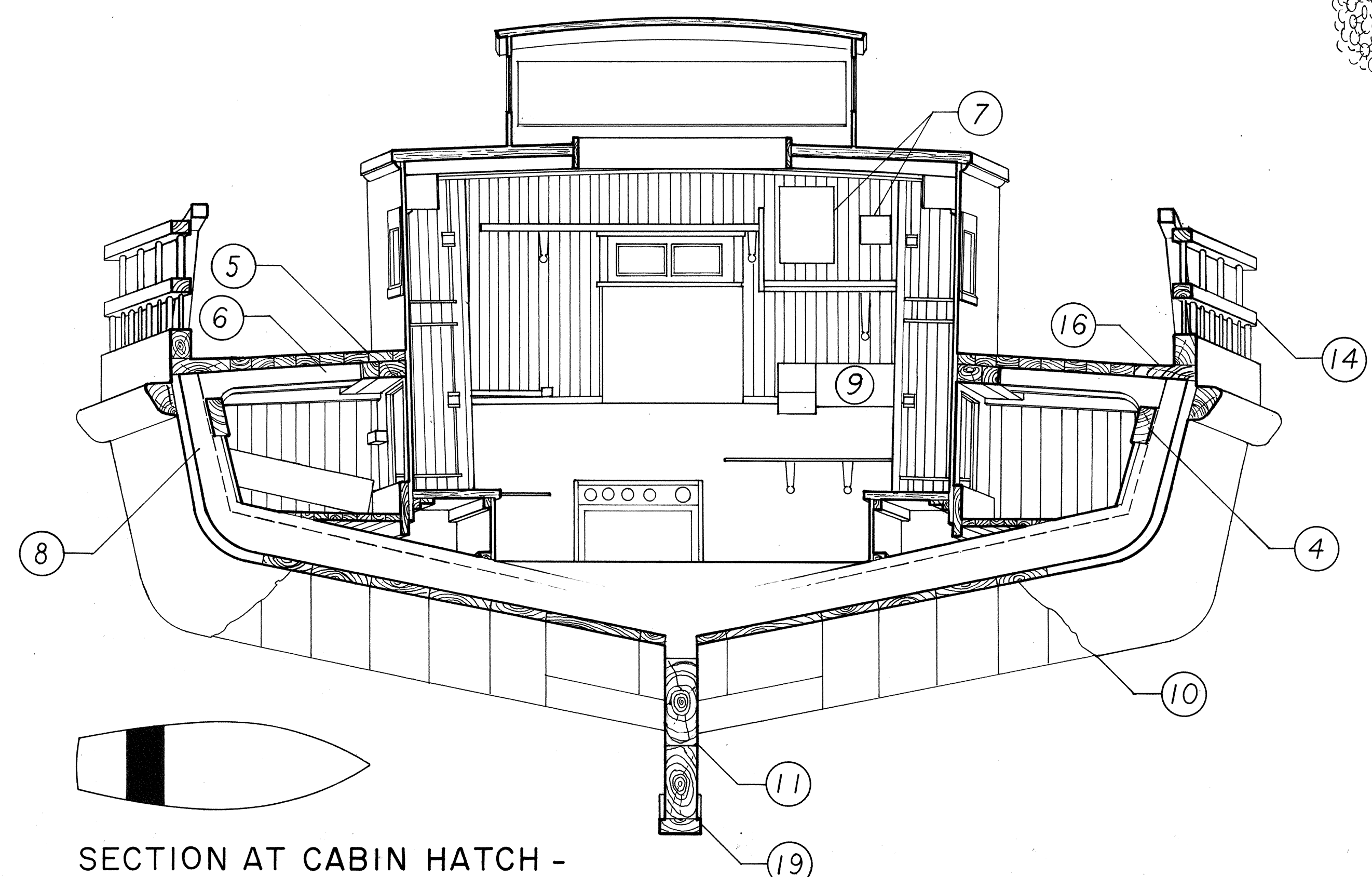
STRUCTURAL CONCEPTION
FRAME SETS 13 - 16, STARBOARD

1. Ceiling: 1-3/4" pine. Width = approximately 9" \pm 1". Timbers not shown in "Bow Section" to expose forward frames.
2. Centerboard Trunk: Pine. (See Sheet 7)
3. Clamp: 5-1/2" x 2-3/4" pine. Reinforced toward bow with 5-1/2" x 2-3/4" oak.
4. Deck: Mostly fir with some pine replacements. 1 3/4" thick, widths average 3-1/2" to 4", with some inboard timbers measuring 5" to 7".
5. Deck Beams: mostly pine, average 5 1/2" square (\pm 1"). Beams shown in "Construction Detail" are oak. (See Sheet 5)
6. Hull Strakes: Thickness estimated 2", widths are highly irregular. Mostly Oak below the chine with some pine replacements noted (See Sheet 5, note 11). Chine also fashioned of oak. Timbers examined above the chine are pine.
7. Keel: Oak. Average width = 8" (\pm 1). Traditionally separate from the keelson, the dotted line indicates the

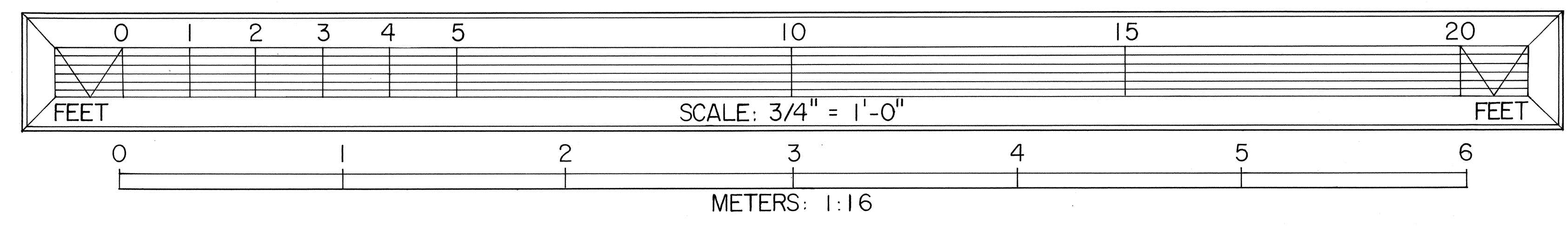
- probable seam below the rabbet for more watertight construction.
8. Keelson: Oak. Averages 1'-4" wide x 10-1/2" at the garboard strake. (See Sheet 5, note 12)
9. Kingplank: wood type not determined due to heavy coat of paint.
10. Limber Holes
11. New Frames: Oak. Not mortised into the keelson. Knees are rounded, not grown, at the chine. Dimensions are highly irregular, generally molded 1/2" larger than older frames (15).
12. Mast: 1'-1-1/2" Pine. Iron hoop at foot, traditionally mortised into keelson (dimensions not determined). Sides at and below deck are faceted for insertion of mast chocks (See Sheets 4 & 5).
13. Mast Chocks: 2" thick pine, faceted between mast, deck and partners.
14. Mast Partners: 3-1/2" x 11" oak. (See Sheet 5)
15. Old Frames: Oak. Mortised into the keelson. Tapered at the chine. Dimensions are highly irregular.
16. Rails: 3-1/2" x 1-3/4" oak, fastened with iron stanchions.
17. Samson Post: Oak. 1'-2" x 5" at the head, tapered to 5" x 5" at the foot, mortised into stem knee.
18. Waterway: Oak
19. Worm Shoe: Traditionally Pine. Average 3" x 8" (\pm 1"), except at centerboard, maximum width = 10".



SECTION AT FRAME SET 13 -
AFT TO CABIN BULKHEAD

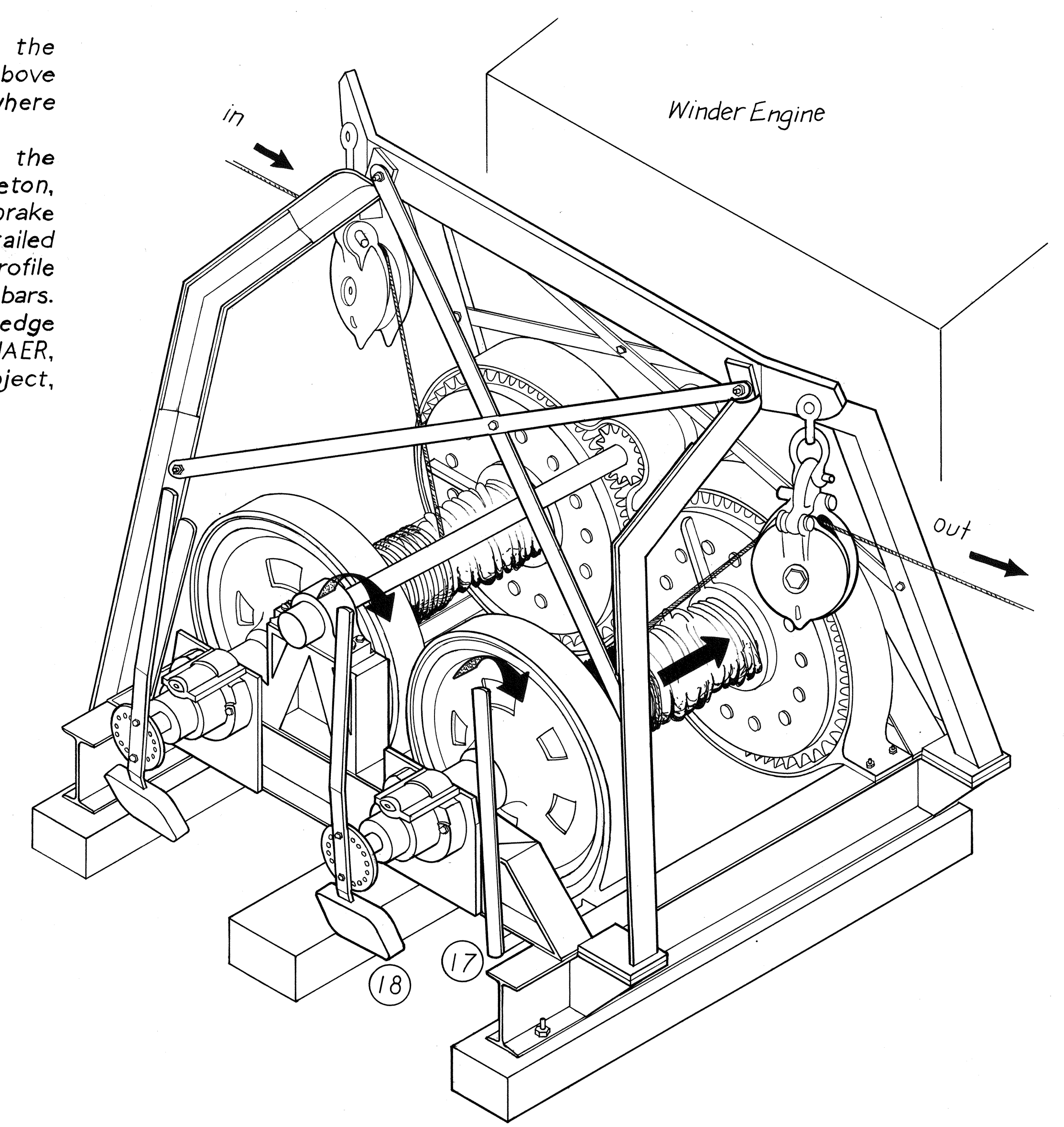


SECTION AT CABIN HATCH -
FORWARD TO CABIN BULKHEAD



NOTES: Fiberglass prevented the measurement of the hull strakes above and around the chine, except where ceiling timbers were removed (2). The winders were built by the Hettinger Engine Company in Bridgeton, New Jersey. Operation of the brake (17) and the clutch (18) are detailed below. The dredge is shown in profile as it would be hauled over the roll bars. For a more complete detail of dredge and winder operation, refer to HAER, MD-77, E.C. Collier Recording Project, Sheet 8 of 8.

Dredge Basket
Oysters stored on deck



WINDER DETAIL

1. Ceiling: 1-3/4" pine. Width = approximately 9" \pm 1". Timbers not shown in "Bow Section" to expose forward frames.
2. Ceiling timber removed by HAER team for access to frames and outer strakes.
3. Centerboard Trunk: Cuts through keel and keelson. Trunk walls are constructed of 2" x 11-1/2" pine.
4. Clamp: 5-1/2" x 2-3/4" pine.
5. Deck: Mostly fir with some pine replacements. 1 3/4" thick, widths average 3-1/2" to 4", with some inboard timbers measuring 5" to 7".
6. Deck Beams: mostly pine, average 5-1/2" square (\pm 1"). Beams under winders are oak. (See Sheet 5)
7. Electrical Boxes.
8. Frames: Oak. Sided dimensions are highly irregular. Molded dimensions average 3" at the keelson. Frames shown in section 13 are possibly original. (See Sheet 6 for comparison with new frames.)
9. Fuse Box.
10. Hull Strakes: Thickness estimated 2", widths are highly irregular. Mostly Oak below the chine with some pine replacements noted (See Sheet 5, note 11). Chine also fashioned of oak. Timbers examined above the chine are pine.
11. Keel: Oak. Average width = 8" (\pm 1). Traditionally separate from the keelson, the dotted line indicates the probable seam below the rabbet for more watertight construction.
12. Keelson: Oak. Averages 1'- 4" wide x 10-1/2" at the garboard strake. (See Sheet 5, note 12.)
13. Limber Holes.
14. Rails: 3-1/2" x 1-3/4" oak, fastened with iron stanchions.
15. Roller Bars.
16. Waterway: Oak.
17. Winder Brake: Used for controlling dredge payout. Outboard position pulls iron strap around forward wheel.
18. Winder Clutch: Used for hauling in dredge. Outboard position shifts cable barrel backward into gear. When handle is released, the weight at the bottom pulls winders out of gear.
19. Worm Shoe: Traditionally Pine. Average 3" x 8" (\pm 1"), except at centerboard, maximum width = 10".

DELINEATED BY: SHAWN BRENNAN, 1995
KATHRYN RECORDING PROJECT
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

KATHRYN - Two Sail Bateau "Skipjack"
DOGWOOD HARBOR
TALBOT COUNTY

HISTORIC AMERICAN
ENGINEERING RECORD
SHEET
7 of 8

MARYLAND

TILGHMAN VICINITY

MD - 117

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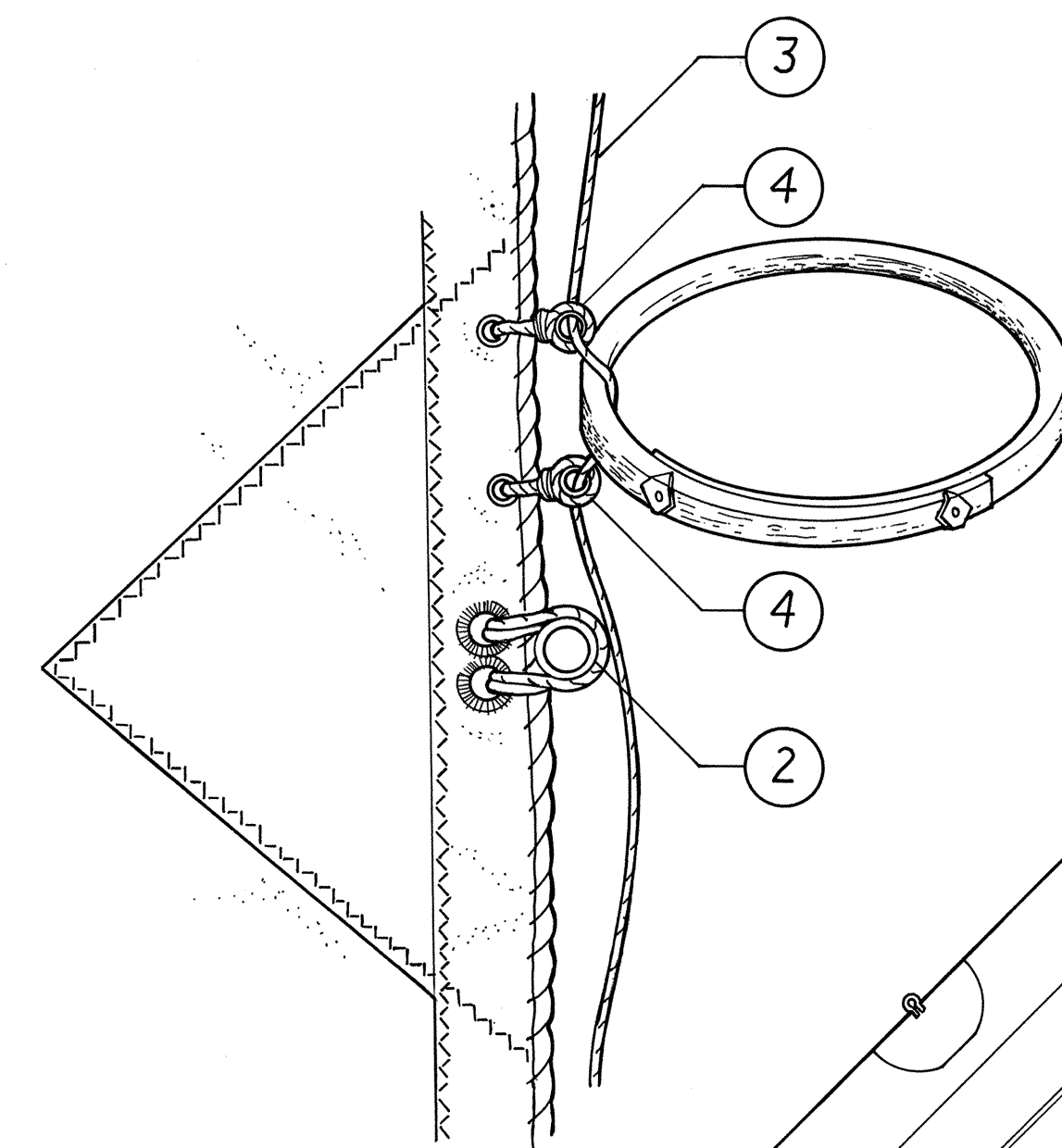
NOTES: Sails are made of dacron with nylon stitching. The jib had a built-in draft of about six inches at the foot. The main sail had no discernible draft. The mast hoops and jib hanks are not part of KATHRYN's sail rig. They are shown for demonstration only.

SAIL DIMENSIONS:

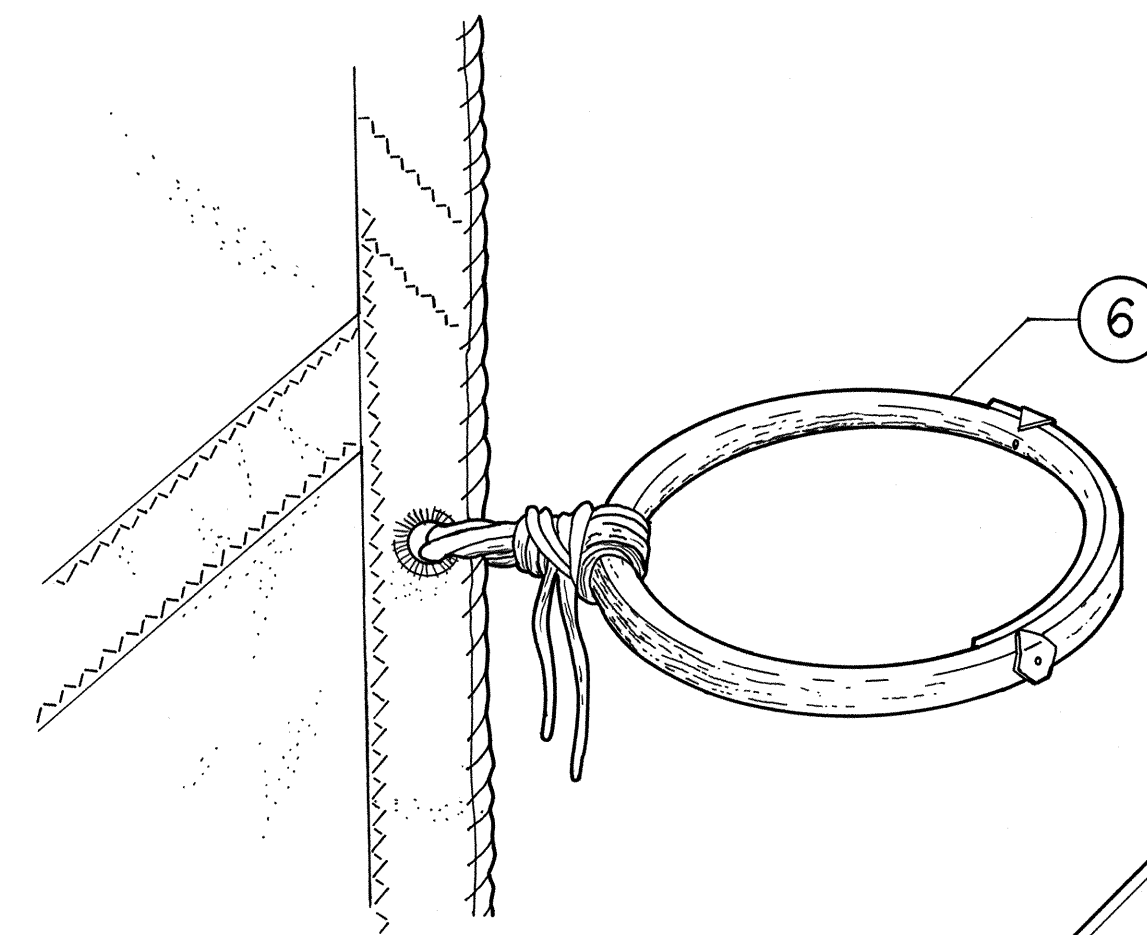
	Foot	Leech	Luff
Main:	49'-4"	68'-0"	45'-6"
Jib:	25'-8"	42'-0"	49'-6"

1. Reef Point.
2. Reefing Grommet: Grommets at the head, clew and tack are of similar construction.
3. Jackline: Passes through lower mast hoops and grommets, made off to the boom.
4. Jackline Grommets: Grommets at main foot are of similar construction.
5. Jib Hanks: Seized with tarred marlin.
6. Mast Hoops: Seized with tarred marlin above the jackline.

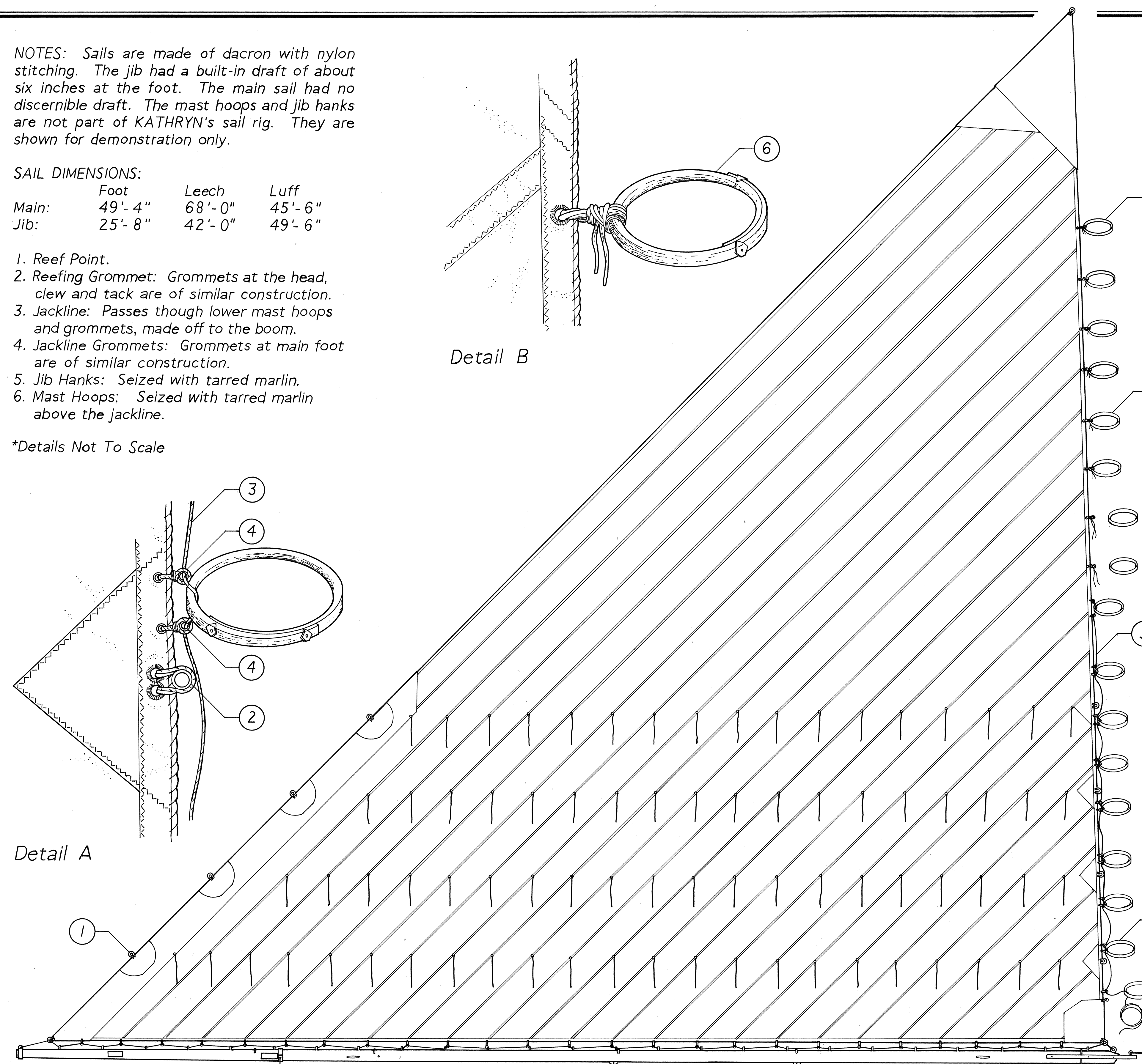
*Details Not To Scale



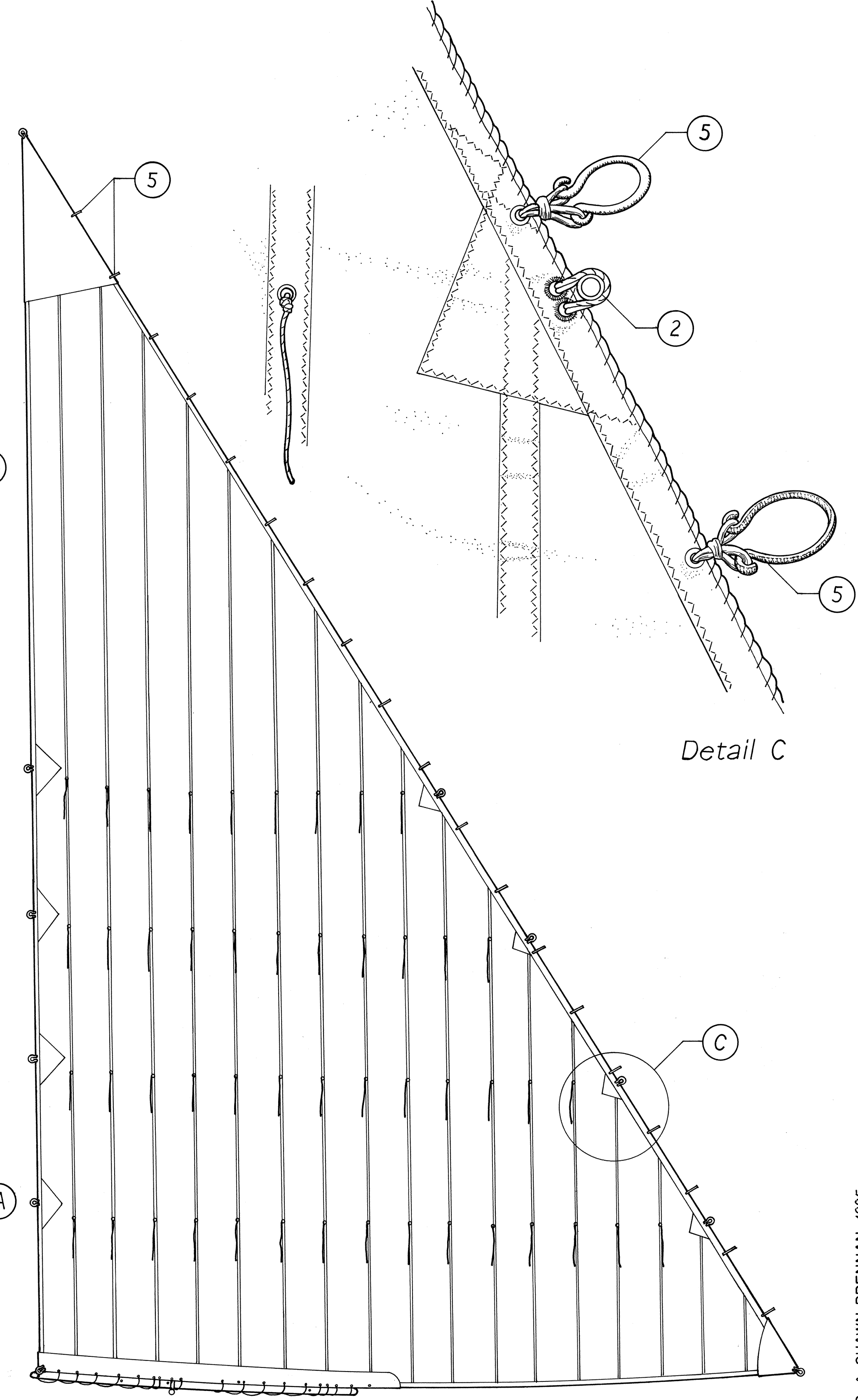
Detail A



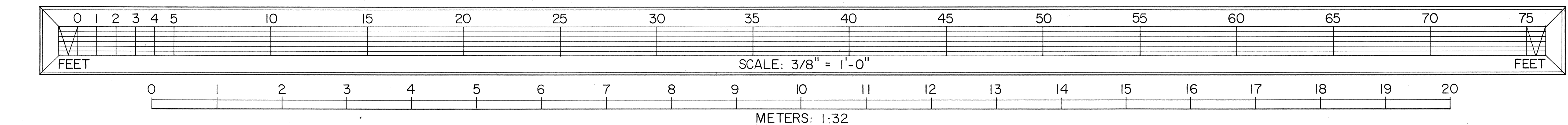
Detail B



MAIN SAIL



JIB SAIL



Detail C