

## 6: Analysis of Vessel Remains

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### INTRODUCTION

The VDOT is constructing a new bridge-tunnel west of and parallel to the existing Hampton Roads I-64 Bridge-Tunnel (HRBT) facilities. Initial onsite work included dredging operations to remove obstructions in the project corridor. In December 2020, that activity resulted in the discovery of previously unknown vessel remains west of the north island on the HRBT. In addition to tons of granite that represented cargo, clearing the site resulted in the discovery of historic vessel remains. Subsequently identified as Site 44HT0125, the site and recovered vessel structure were ultimately determined to be historically significant.

In December 2020 and January 2021, a Goodwin archaeologist conducted an assessment of Site 44HT0125 and recommended it eligible for the NRHP based on Criteria A, C, and D. The VDHR agreed that the site is eligible for the NRHP under Criterion D but indicated that there was insufficient information to determine the site's NRHP eligibility under Criteria A and C (Holma 2021). The mitigation of adverse effects to the site called for the completion of data recovery investigations guided by an Archaeological Treatment Plan (ATP). A response by W&MCAR to the request for a consultant proposal to address mitigation issues was accepted. The W&MCAR contracted with Tidewater Atlantic Research, Inc. (TAR) of Washington, North Carolina to address sections of their ATP. Elements of the ATP focused on by TAR included reviewing information about the site and assessment of a

previous report on documenting and interpreting recovered elements of vessel structure. That review was followed by a detailed examination and documentation of recovered elements of the vessel. The elements examined and documented by TAR included 12 floor timbers, two sections of keel, three sections of keelson, one futtock, one possible carling, five sections of plank, and a complex timber identified by TAR as a forefoot knee.

Based on those data, an assessment of the design and construction of the Site 44HT0125 vessel was developed. Although limited, recovered elements of the 44HT0125 vessel structure indicate they likely represent the remains of a sloop or possibly a schooner or brig. The associated granite indicates that it was possibly lost at the end of a voyage delivering a cargo of stone for construction at Fort Calhoun [Rip Raps] and/or Fort Monroe. Historical research confirms the loss of a number of those types of vessels involved in delivering stone for construction of the subject fortifications and/or the adjacent shoreline stabilization. Although the vessel type cannot be specifically identified based on the current available data, recovered structural elements do suggest an early nineteenth-century construction date. In addition, elements of the surviving structure provide insight into design and construction features rarely documented.

### WRECK DISCOVERY AND PREVIOUS ANALYSIS

Remains of the Site 44HT0125 vessel were located 170 feet west of the North Island of the

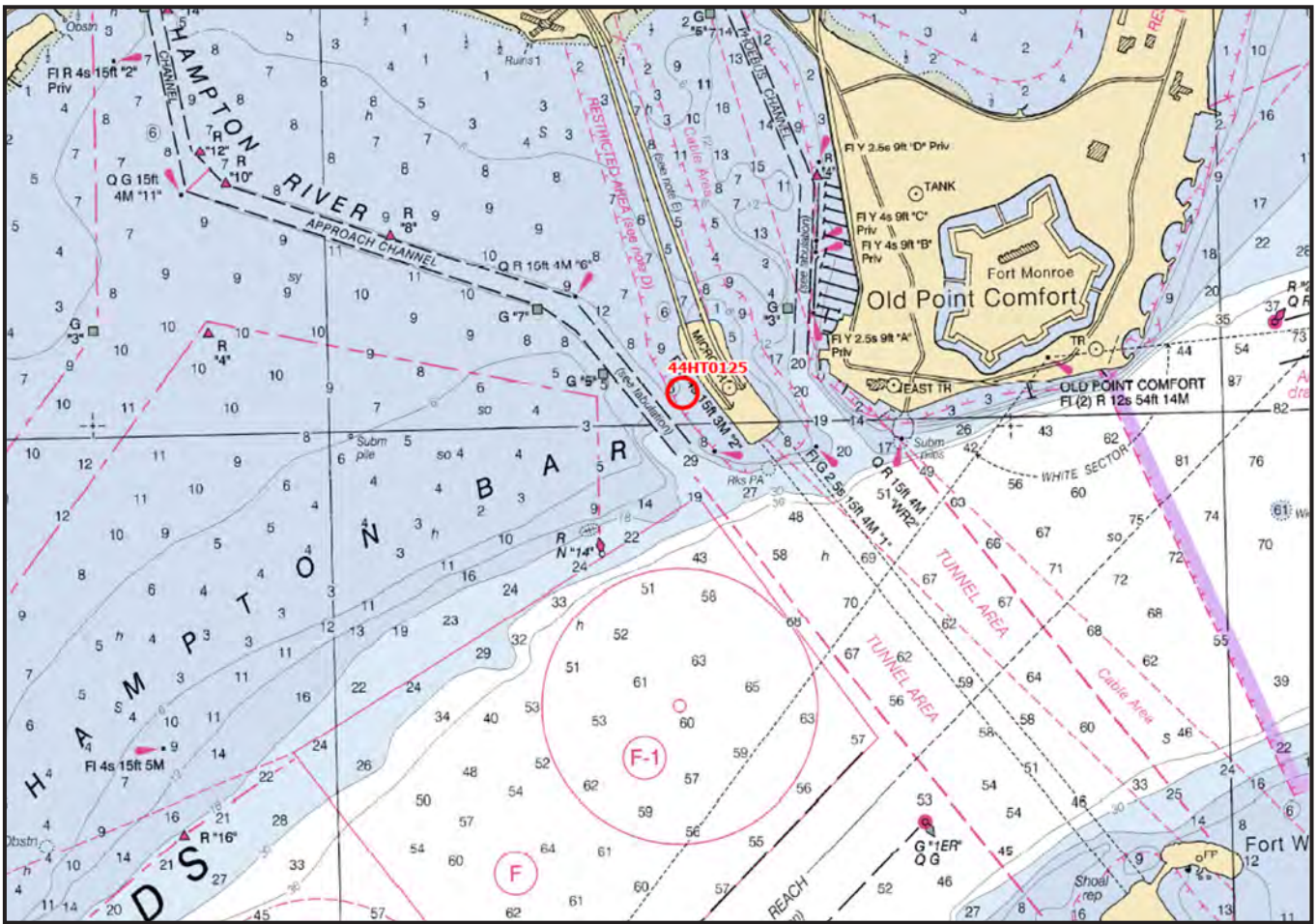


Figure 6.1. Location of the 44HT0125 wreck site (detail of image presented in Figure XX612?. AgiSoft 3D image of the forefoot knee.

HRBT (Figure 6.1). Previous submerged cultural resource surveys were carried out in 1998 (Cox 1999) and in 2017 (AECOM 2017). Overlays of the survey areas indicate that Site 44HT0125 was located immediately to the east and outside the limits of the 1998 survey (Figure 6.2). Magnetic data collected from the 2017 AECOM survey also identified anomalies in the vicinity of the I-64 North Island (Figure 6.3). However, none of the anomalies located during 2017 corresponded with either the anomalies located in 1998 or those associated with Site 44HT0125.

In November 2020 dredging off the western side of the I-64 North Island resulted in the discovery and recovery of elements of the historic vessel structure under consideration (Figure 6.4)

and tons of granite that apparently represented associated cargo (Figure 6.5).

In December 2020, Whitman, Requardt & Associates of Richmond, Virginia contracted with Goodwin of Frederick, Maryland to carry out a preliminary examination of the subject shipwreck timbers and to prepare recommendations related to potential NRHP eligibility. That initial task was followed by additional documentation and analysis of the recovered vessel structure by Goodwin. Under the supervision of Owen Wright, Goodwin described the recovered vessel structure as “20 large oak timber frame fragments, 2 large oak pit-sawn ceiling planks, 1 oak stern post fragment, 1 section of wooden keel, 41 splintered wood strake and plank fragments” and



Figure 6.2. Anomalies in vicinity of the I-64 north island identified during 1998 (detail of image presented in Cox 1999).



Figure 6.3. Anomalies in vicinity of the I-64 north island identified during 2017 (detail of image presented in AECOM 2017).



Figure 6.4. Vessel structure recovered from Site 44HT0125 (presented in: Wright 2021).



Figure 6.5. Granite cargo recovered from Site 44HT0125 (Presented in: Wright 2021).

recommended that Site 44HT0125 was “likely eligible for NRHP under Criteria A, C, and D” (Wright 2021).

#### IDENTIFICATION AND ASSESSMENT OF THE RECOVERED 44HT0125 WRECK STRUCTURE

The TAR analysis of the 44HT0125 wreck remains differs significantly from the interpretation submitted by Goodwin (Wright 2021). The structural remains examined and documented by TAR included 12 floor timbers, one futtock, one possible carling, two sections of keel, three sections of keelson, five sections of plank, and a heavy timber identified by TAR as a forefoot knee (See Glossary, pp. vi-viii). Structural elements were loaded with assistance from VDOT (Figure 6.6) and transported to the North Carolina TAR facility for comprehensive documentation and assessment (Figure 6.7). A trailer designed with a frame and grid for documentation was used to record elements of the vessel structure (Figure 6.8). Each

recovered component of the wreck structure was photographed (Figure 6.9) for detail and recorded in scale drawings (Figure 6.10). Elements of the wreck structure (i.e. lengthy sections of the keel and keelson) which precluded safe transportation to North Carolina via trailer were documented at the VDOT Chesapeake facility (Figure 6.11).

In addition to making scale drawings of the each of the wreck elements and photographing any relevant details, a Russian software program AgiSoft was used in an effort to record each structural element in three dimensions. Using a 35-mm camera, each element of the wreck structure was recorded in a series of overlapping photographs. Those photographs were pieced together to create a three dimensional image in AgiSoft. A few of the generated images provided 3D data on the one side and the upper and lower surfaces. One of those was the forefoot knee (Figure 6.12). The majority of the AgiSoft images lacked acceptable surface definition and some were extremely distorted (Figure 6.13). None of the 3D images included all sides. Perhaps under



*Figure 6.6. VDOT personnel loading floors for transport to TAR facility.*



*Figure 6.7. Unloading floors for documentation at TAR.*



*Figure 6.8. Documenting floors on the trailer grid.*



*Figure 6.9. Photographic recording of the forefoot knee.*



*Figure 6.10. Creating scale drawings of each element of structure.*



*Figure 6.11. Documenting keel and keelson timbers at the VDOT facility.*





*Figure 6.12. AgiSoft 3D image of the forefoot knee.*



*Figure 6.13. AgiSoft 3D distorted image of the floor TAR #10.*

different circumstances and with much less deteriorated structural features, the final products might be as ideal as initially conceived.

Analysis of the surviving elements of the 44HT0125 wreck structure provides insight into the design and construction of the vessel. However, diagnostic elements of the wreck are unfortunately limited. Virtually all appear to be associated with the lower hull well below the turn of the bilge from the proximity of the stem to somewhere forward of midships. Due to possibly as much as two centuries underneath the tons of

stone (carried as cargo), damage and distortion has occurred. That damage has been compounded by the techniques employed in removing the cargo and recovering the surviving elements of vessel structure. In addition, the recovered structural elements have suffered from post recovery periodic wetting and drying. As a consequence, surface features and details such as tool marks have all but disappeared. In spite of those limitations, the surviving elements of vessel structure preserve interesting features associated with design and construction features.

## RECOVERED ELEMENTS OF THE SITE 44HT0125 VESSEL STRUCTURE

The elements available for documentation and analysis included 12 floor timbers, two sections of keel, three sections of keelson, one futtock, one possible carling, five sections of plank, and a complex timber identified by TAR as a forefoot knee. Documentation included both scale drawings and mosaic photography that record diagnostic design and construction details.

Drawings and photographs of the keel sections documented the length, scarfs, stopwaters, molded and sided dimensions, the rabbets, and bolt pattern. Drawings and photographs of the floors were designed to document construction features such as the overall length, keel flat, fastener bolts, degree of deadrise, surviving timber molded and sided dimensions, limbers, hull and ceiling plank fastener pattern, and surviving construction tool marks. Drawings and photographs of the keelson sections documented the overall length, scarfs, molded and sided dimensions, rabbets for floors, and the bolt pattern. The single futtock or cant frame drawings and photographs recorded the length, molded and sided dimensions, angle of attachment, fastener pattern, and hull and ceiling plank attachment pattern.

The single unidentified timber drawings and photographs recorded the length, molded and sided dimensions, configuration and angle of attachment, fastener pattern, and hull and plank attachment pattern. That timber could represent a carling. Drawings and photographs of the five examples of plank recorded the overall length, width, thickness, and fastener pattern. Due to the deteriorated condition of salvaged parts, the only tool marks that were recorded are associated with saw cuts made by the master shipwright to identify the location of floor timber centers, the keel flat, and limber offsets.

### *Site 44HT0125 Keel Structure*

Two sections of keel structure were recovered from the 44HT0125 wreck site. Sections of the keel are distinctive due to the rabbet cut into the upper sides for seating the garboard strakes. The unique pattern of bolts that secured floors to the keel are also diagnostic. Sections of the keel also contained evidence of distinctive scarfs, stopwaters, and fish plates.

#### *KEEL SECTION KL-1*

The largest section of keel structure (KL-1) measured 22 feet, 9 ½ inches in overall length (Figures 6.14 and 6.15). The height measured 18 inches aft of the scarf and the width varied from 8¾ inches aft to 7 ½ inches forward approaching the stem. This section of keel was degraded and split from the bottom butt of a scarf. The split is possibly a consequence of destruction of the bow and perhaps contributes to the rise apparent in the timber.

The forward end of the section terminated in a diagonal scarf 3 feet, 9 inches in length (Figure 6.16). The forward end of the scarf contained half of a 1-inch round horizontal recess for a stop water (Figure 6.17). A pattern inside the feature indicates that the stopwater dowel was fabric wrapped. A second stopwater was located in the face of the scarf approximately 9 inches from that end.

A 6-inch long recess for an iron fishplate was located three feet aft of the forward end (Figure 6.18). The top of the keel was cut to fashion a shallow rabbet for the garboard strake (Figure 6.19).

Remains of a square bolt in a drilled hole confirms they were used to attach floors (Figure 6.20). The bolt pattern on the top of this section of keel indicates that every other floor was bolted to the keel. According to Goodwin (Wright 2021:8), this section of keel was fashioned from chestnut. That identification was not confirmed by TAR and both sections of keel appear to have been fashioned from oak.

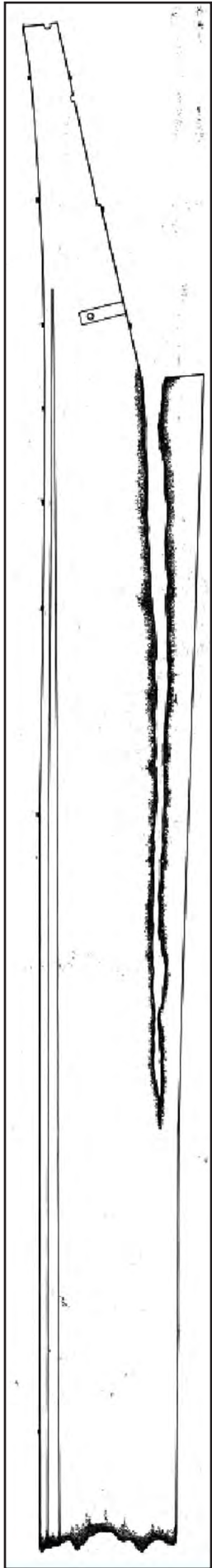


Figure 6.14. Keel section KL-1 inked drawing (forward to right).

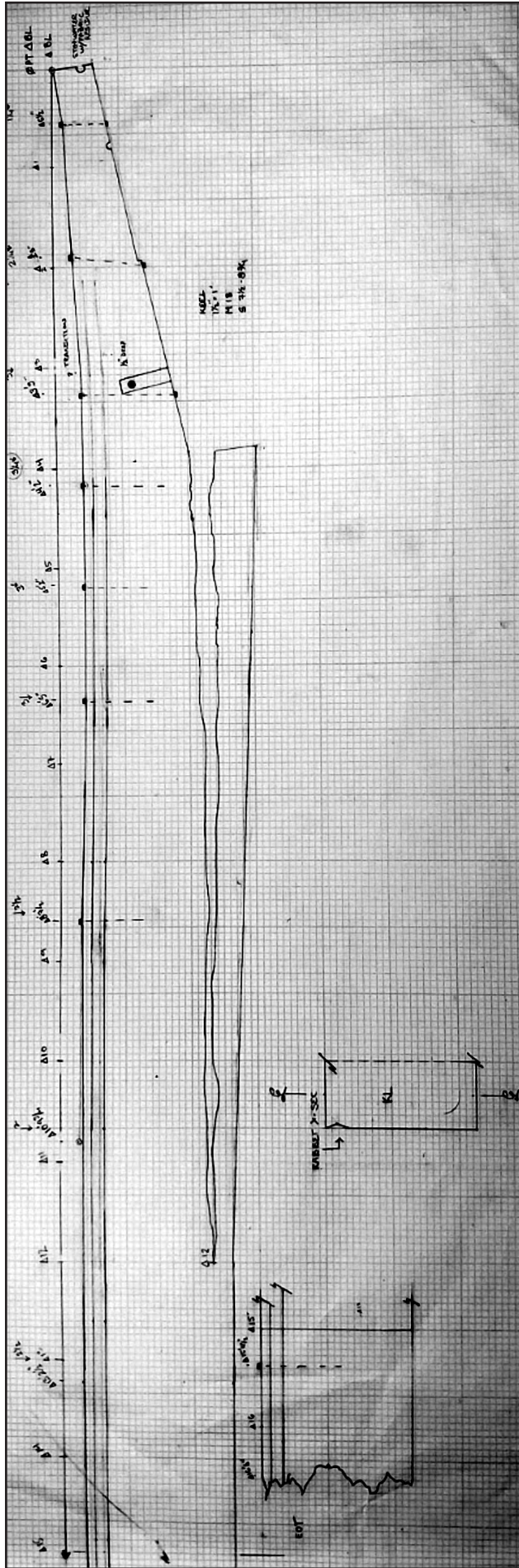


Figure 6.15. Keel section KL-1 scale drawings (forward to right).



*Figure 6.16. Keel scarf looking aft.*



*Figure 6.17. Stopwater recess in the forward end of the keel scarf.*



*Figure 6.18. Recess for the keel scarf fishplate.*



*Figure 6.19. Shallow rabbet in top of K-1 section.*



*Figure 6.20. Remains of a square bolt driven through a round hole drilled into the keel.*

### *KEEL SECTION KL-2*

The smaller, and likely aft, section of keel structure was heavily damaged and deteriorated. It measured 9 feet, 4 inches in overall length. The height remaining measured 10 inches beyond the remains of a scarf and the width varied from 8 inches to 7 5/8 inches. The section terminates on one end in a diagonal scarf of undetermined length (Figures 6.21–6. 23).

Recesses on either side of KL-2 identify the location of fishplates that reinforced the scarf are present (Figure 6.24). The opposite end is too badly damaged to reliably characterize. The shallow rabbet, identical to the other section of keel, is present where the top surface survives (Figure 6.25). The bolt pattern on the top of this keel section also confirms that every floor was not bolted to the keel. This section of keel was fashioned from oak.

### *Site 44HT0125 Forefoot Knee*

The most unusual element of the 44HT0125 vessel structure is a large knee. For lack of current documentation of a similar feature, it will be referred to as the “forefoot knee” as the component was clearly designed to form the forefoot of the hull (Figures 6.26 and 6.27). The overall maximum length of the forefoot knee is 12 feet, 8 ½ inches (Figures 6.28 and 6.29).

The forefoot knee is V-shaped in both vertical and horizontal planes (Figure 6.30). The vertical planes narrow at the base to a width that likely mated with the top of the keel possibly forming a made rabbet. The horizontal planes narrowed forward and mated with the stem. The aft face of the stem may have been cut to a width that formed a made rabbet for the hull plank butts. Near the base at the stem facet and the forward end of the keel facet, the forefoot knee “V” was the narrowest in shape both vertically and horizontally. Moving aft the V shape of the knee widened. Moving up the stem facet the shape of the V also widened (Figure 6.31).

Underneath the forward section of the knee, a fillet piece is obviously missing. That piece likely extended the forefoot down to mate with the keel. The aft end of the knee is also deeply mortised to accept futtocks (Figure 6.32). Additional futtocks appear to have been attached to the knee approximately 1 foot, 8 inches further forward (Figure 6.33). The vertical face of the forefoot knee also contains fastener patterns that suggest the location of cant frame attachment or the possible presence of breast hooks (Figure 6.34).

Both sides of the forefoot knee contain spike pattern evidence of the direct attachment of hull planking (Figure 6.35).

### *Site 44HT0125 Floor Timbers*

A total of 12 floor timbers were recovered from Site 44HT0125. Floor timbers are distinctive due to the flat that rested upon the keel, remains of bolts that attached the floor timbers to the keel or keelson, and limbers cut outboard of the keel flat for bilge water passage to the pumps. Varying degrees of deadrise also provide insight into their fore and aft position within the hull. All recovered floors were fashioned from oak.

#### *FLOOR TIMBER FL-1*

FL-1 was fashioned from oak and measured 5 feet, 5 inches in horizontal length (Figures 6.36 and 6.37). The most accurate sided dimension was 7 inches and the most accurate molded dimension was 9¼ inches. Deadrise of the floor measured 44 degrees. The base flat that rested on the keel measured 7¾ inches in width and the remains of a ¾-inch- square bolt driven into a drilled round hole identified the method of attachment. Limbers were cut 3 inches outboard of the keel flat and measured 3 inches wide and approximately 1 inch deep. Deterioration eliminated evidence of tool marks on the timber surfaces. There is no evidence of any futtock attachment.

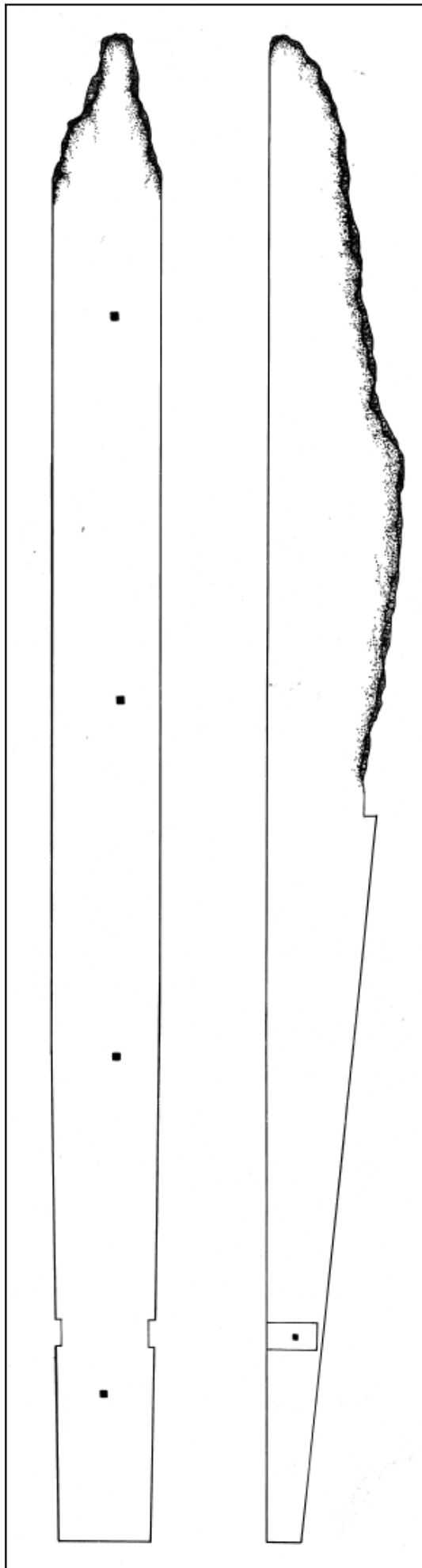


Figure 6.21. Keel section KL-2 inked drawing (top and side).

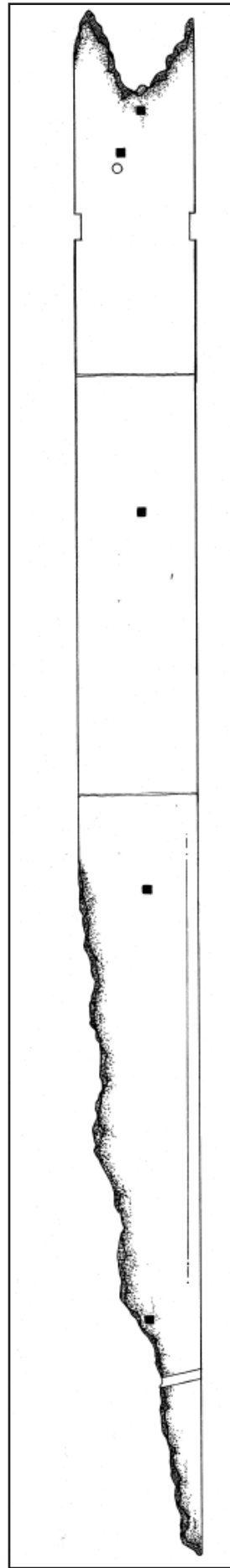


Figure 6.22. Keel section KL-2 inked drawing (bottom).



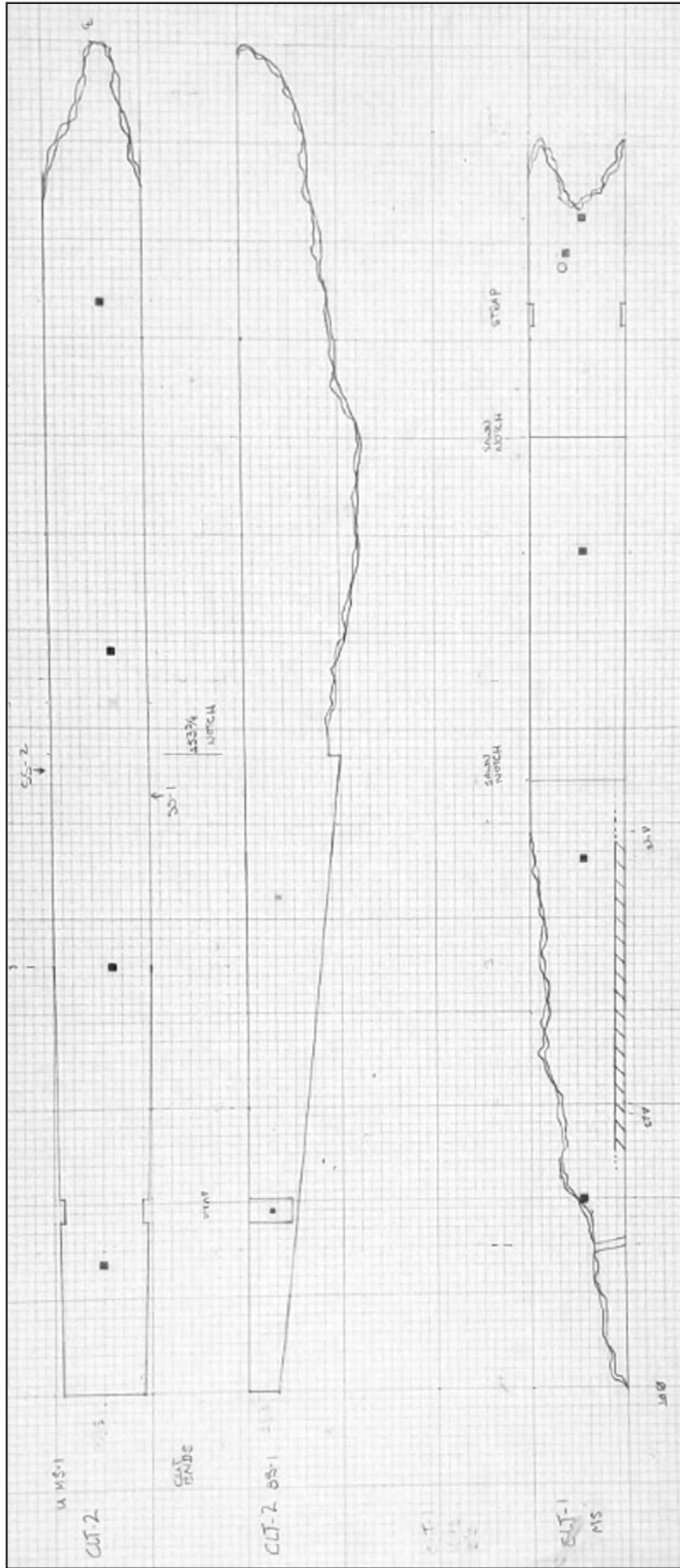


Figure 6.23 Keel section KL-2 scale drawing (all views).



*Figure 6.24. Rebate for fishplate at the scarf on KL-2.*



*Figure 6.25. Shallow rabbet in top of KL-2 section.*

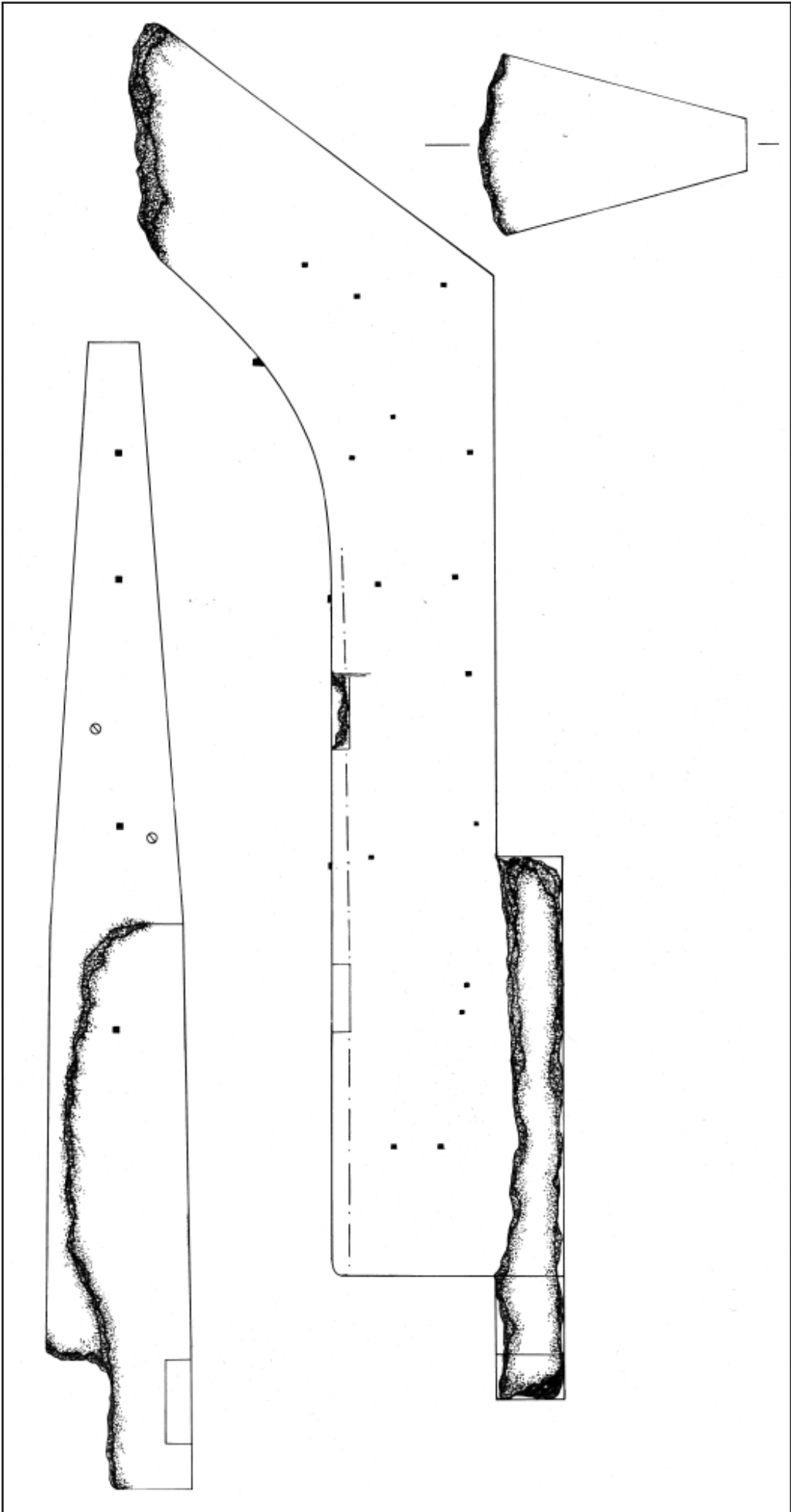


Figure 6.26. Forefoot knee (bottom, side, and section [lower right]) inked drawing

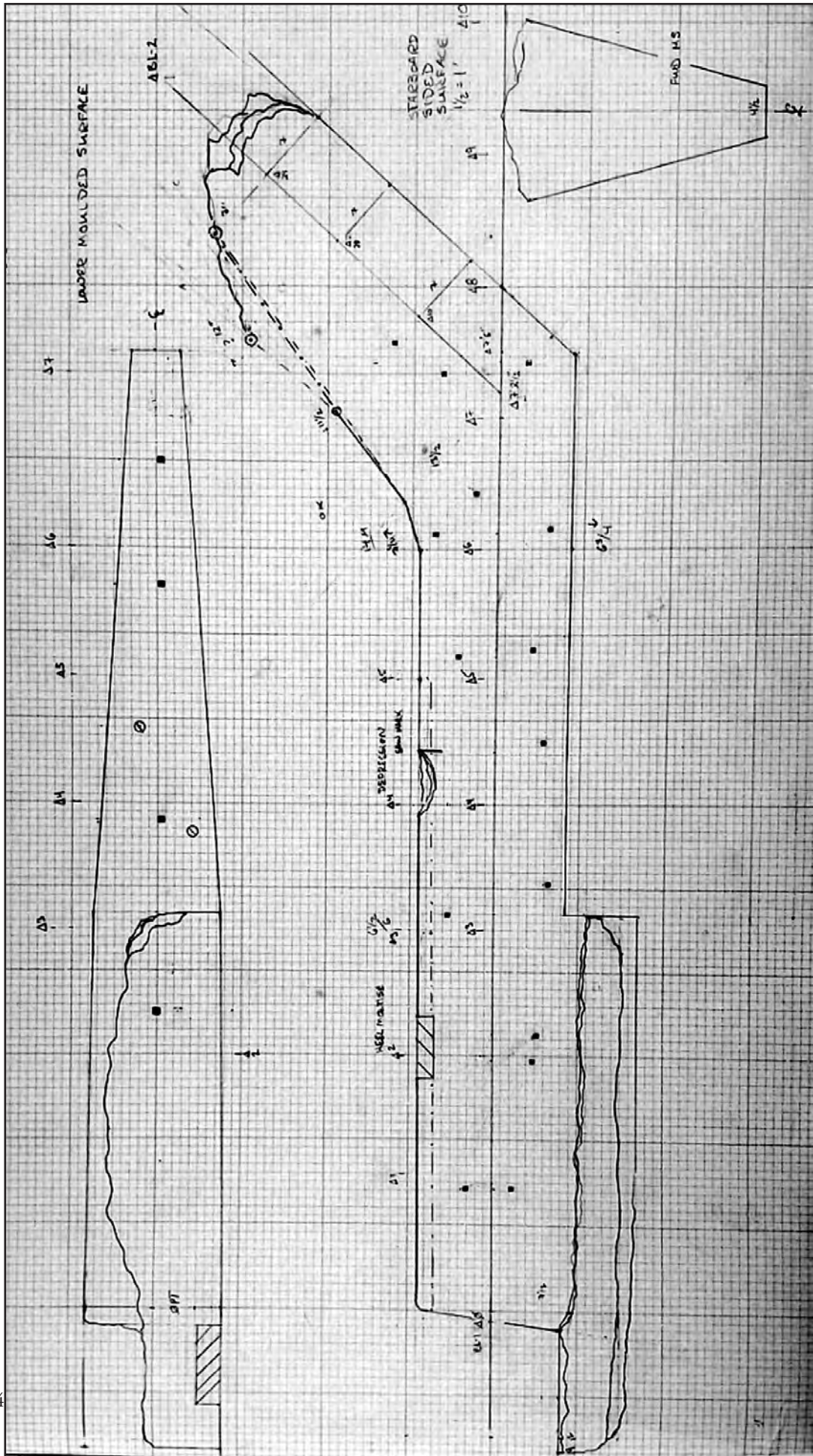


Figure 6.27. Forefoot knee (bottom, side, and section [lower right]) scale drawing

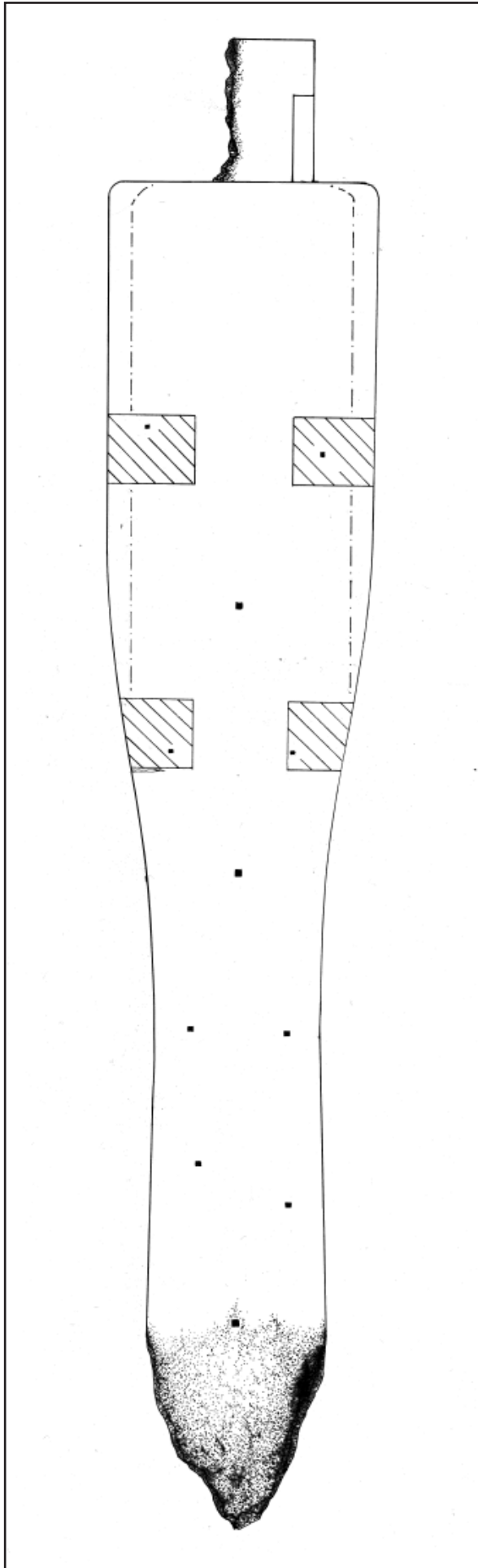


Figure 6.28. Forefoot knee (top) inked drawing.

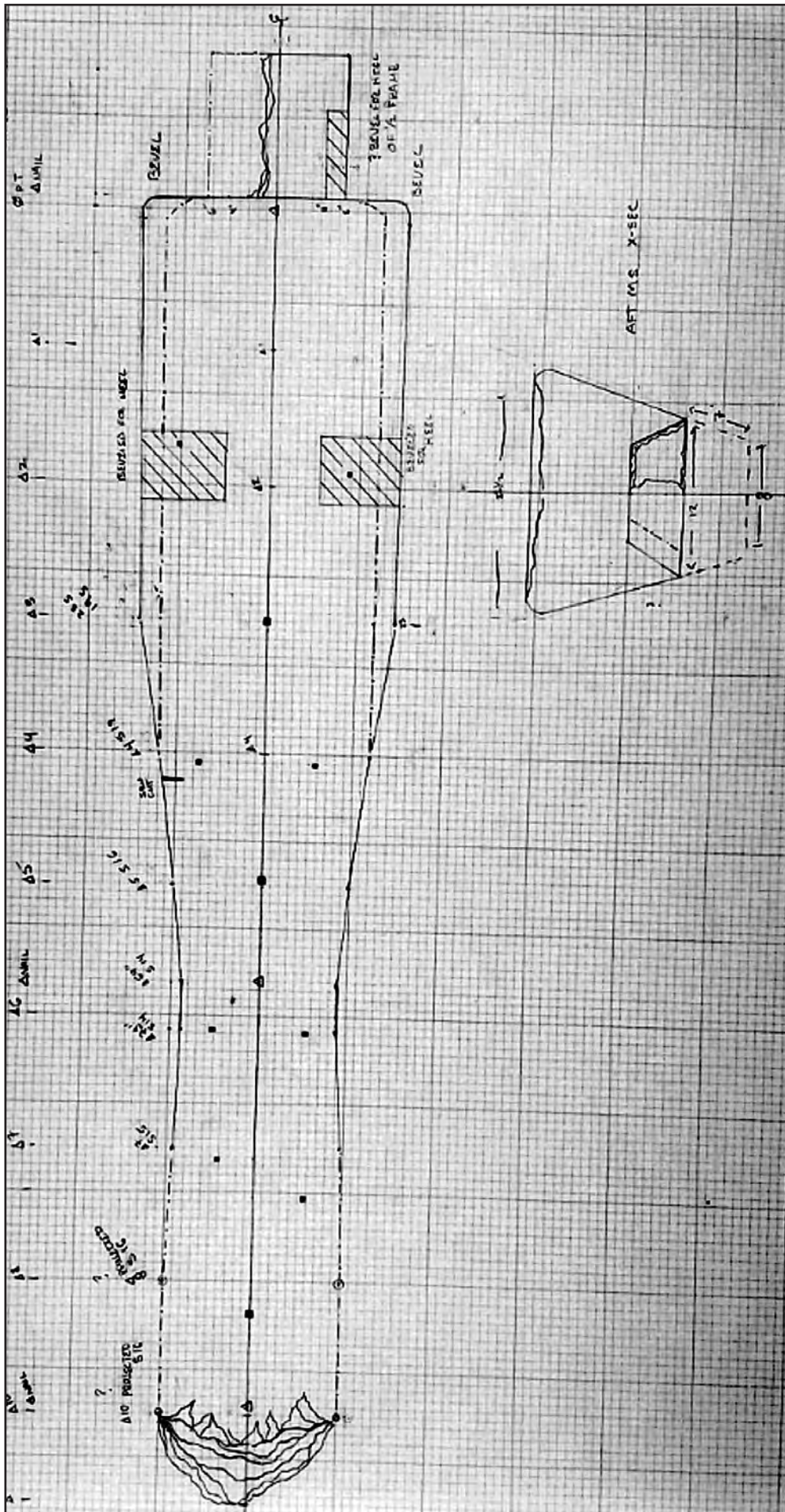


Figure 6.29. Forefoot knee (top and aft end) scale drawing.



*Figure 6.30. Forefoot knee starboard side looking aft.*



*Figure 6.31. Top view of the forefoot knee.*



*Figure 6.32. Aft end view of the forefoot knee.*



*Figure 6.33. Top view of the forefoot knee showing rebates for futtocks.*





*Figure 6.34. Fastener pattern suggesting possible presence of cant frames or breast hooks.*



*Figure 6.35. Spike pattern associated with hull plank attachment.*

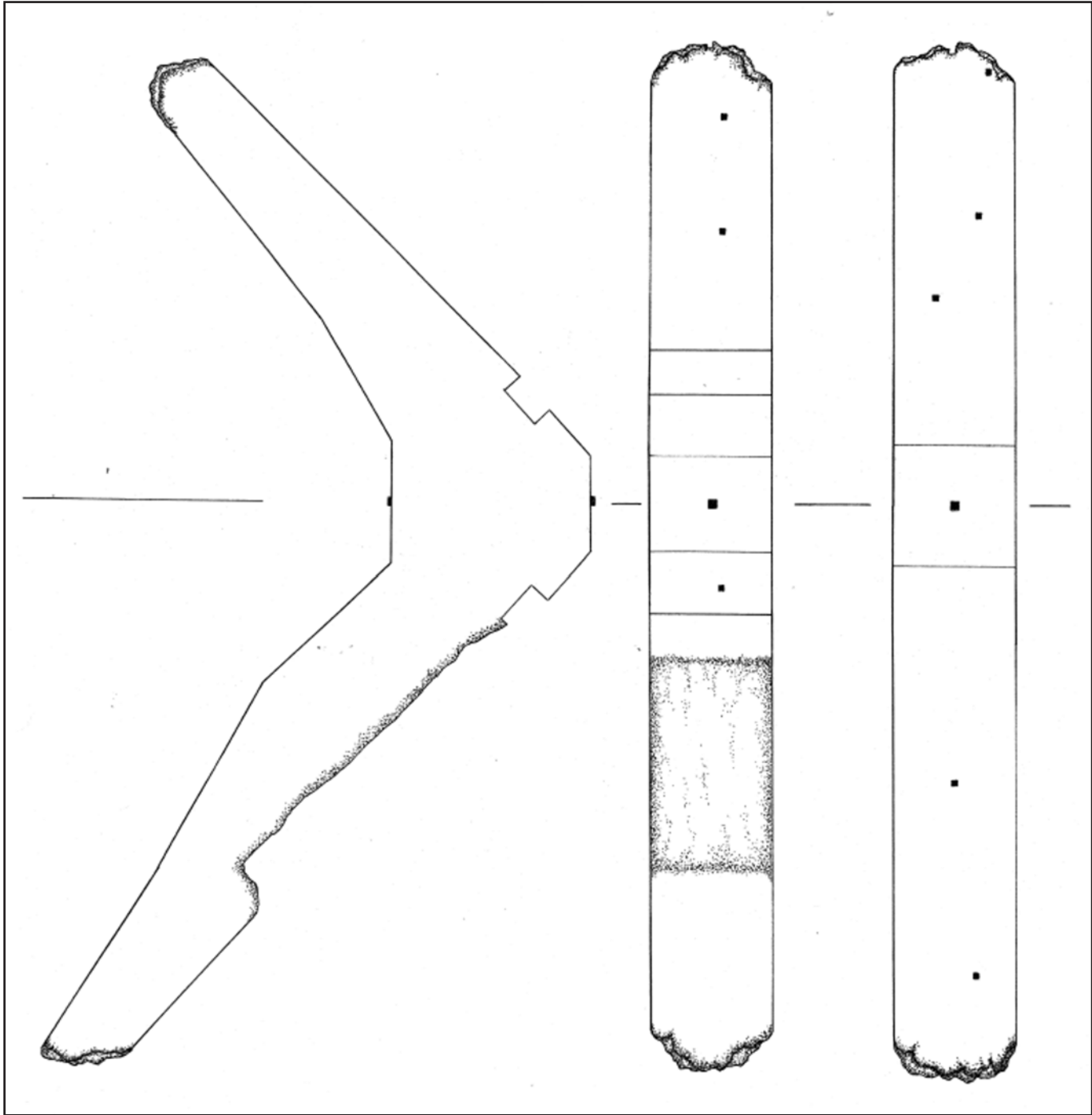


Figure 6.36. Floor timber FL-1 inked drawing.

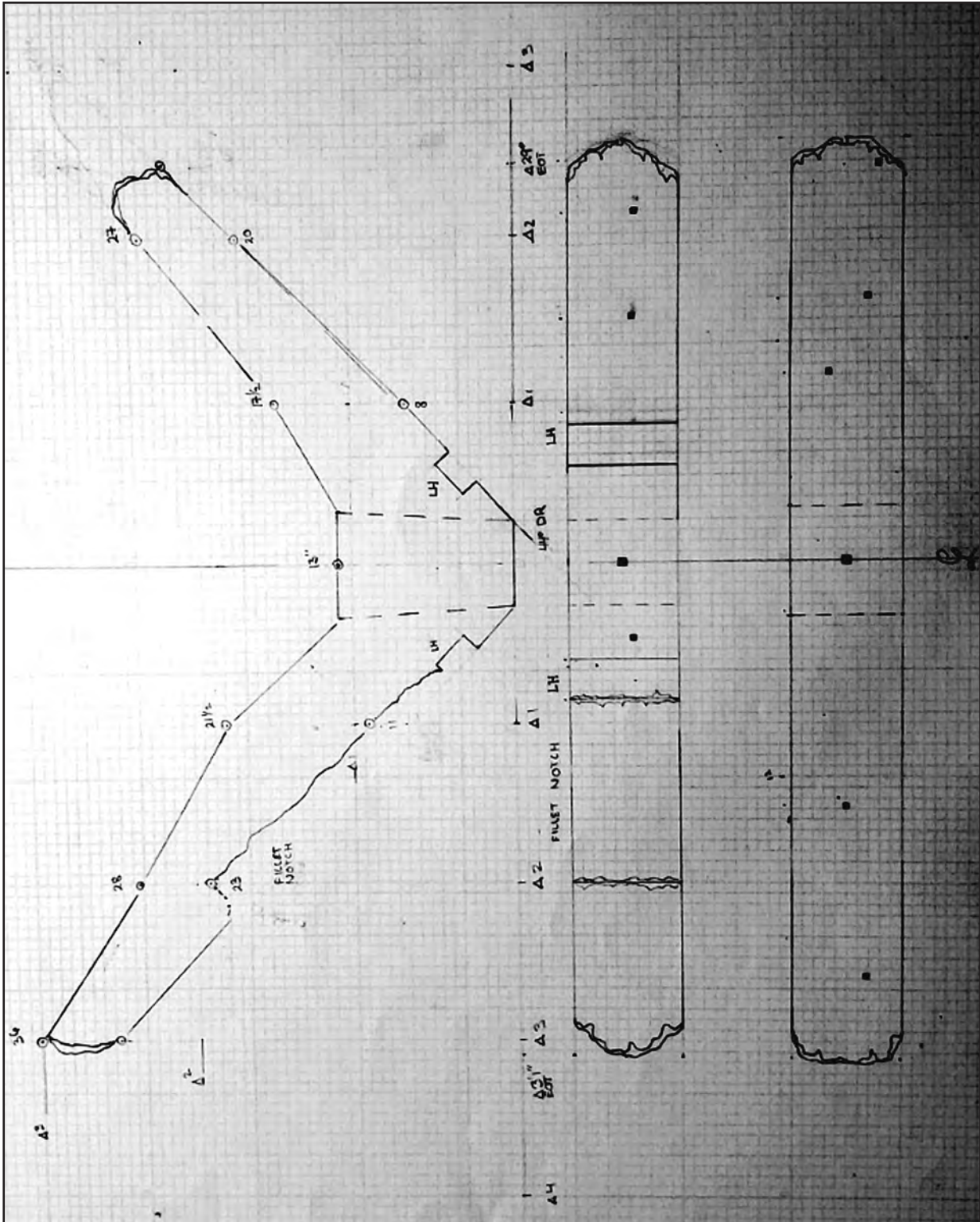


Figure 6.37. Floor timber FL-1 scale drawing.

### *FLOOR TIMBER FL-2*

FL-2 was fashioned from oak and measured 7 feet, 6 inches in horizontal length (Figure 6.38 and 6.39). The most accurate sided dimension was 8 inches and the most accurate molded dimension was  $8\frac{3}{4}$  inches. Deadrise of the floor measured 29.5 degrees on the left side as illustrated and 31 degrees on the right side as illustrated. The base flat that rested on the keel measured 8 inches in width and the remains of a  $\frac{3}{4}$ -inch-square bolt driven into a drilled round hole identified the method of attachment. That bolt was offset 2 inches from the centerline and  $2\frac{1}{2}$  inches from the face of the floor as illustrated. Limbers were cut 3 inches outboard of the keel flat and measured 3 inches wide and approximately  $1\frac{1}{4}$  inch deep. Deterioration eliminated evidence of tool marks on the timber surfaces. There is no evidence of a futtock attachment.

### *FLOOR TIMBER FL-3*

FL-3 was fashioned from oak and measured 7 feet, 5 inches in horizontal length (Figures 6.40 and 6.41). The most accurate sided dimension was  $7\frac{7}{8}$  inches and the most accurate molded dimension was  $8\frac{3}{4}$  inches. Deadrise of the floor measured 31 degrees on the left side as illustrated and 41 degrees on the right side as illustrated. The base flat that rested on the keel measured 8 inches in width and the remains of a  $\frac{3}{4}$ -inch-square bolt driven into a drilled round hole identified the method of attachment. That bolt was on the centerline and 3 inches from the face of the floor as illustrated. The surviving limber was cut 3 inches outboard of the keel flat and measured 3 inches wide and  $1\frac{1}{2}$  inch deep. Deterioration eliminated evidence of tool marks on the timber surfaces. There is no evidence of a futtock attachment.

### *FLOOR TIMBER FL-4*

FL-4 was fashioned from oak and measured 8 feet 1 inch in horizontal length (Figures 6.42 and 6.43). The most accurate sided dimension was 7

inches and the most accurate molded dimension at the centerline was  $9\frac{1}{4}$  inches. Deadrise of the floor measured 31 degrees. The base flat that rested on the keel measured 8 inches in width and the remains of a  $\frac{3}{4}$ -inch-square bolt driven into a drilled round hole identified the method of attachment. Limbers were cut 3 inches outboard of the keel flat and measured 3 inches wide and 1 inch deep. A saw cut marked the centerline of the floor and one side of the keel face flat. Evidence of a fillet piece notch was apparent on the bottom of one side of the floor 3 feet 8 inches off the keel flat. With the exception of the saw cuts that identified the floor center and one edge of the keel flat, deterioration eliminated evidence of tool marks on the timber surfaces. There is no evidence of a futtock attachment.

### *FLOOR TIMBER FL-5*

FL-5 was fashioned from oak and measured 7 feet 2 inches in horizontal length (Figures 6.44 and 6.45). The most accurate sided dimension was  $9\frac{1}{2}$  inches and the most accurate molded dimension at the centerline was 11 inches. Deadrise of the floor roughly measured 36 degrees on the long side and roughly 40 degrees on the short side of the keel. The base flat that rested on the keel measured 8 inches in width and the remains of a  $\frac{3}{4}$ -inch-square bolt driven into a drilled round hole identified the method of attachment. Limbers were cut 3 inches outboard of the keel flat and measured 3 inches wide and 1 inch deep. The hull planking fastener pattern on the long side of the floor suggests that the strakes above the garboard were replaced or refastened. Deterioration eliminated evidence of tool marks on the timber surfaces. There is no evidence of a futtock attachment.

### *FLOOR TIMBER FL-6*

FL-6 was fashioned from oak and measured 7 feet  $4\frac{1}{2}$  inches in horizontal length (Figures 6.46 and 6.47). The most accurate sided dimension was 9 inches and the most accurate molded dimension

at the centerline was also 9 inches. Deadrise of the floor roughly measured 26 degrees. The base flat that rested on the keel measured 8 inches in width and the remains of a  $\frac{3}{4}$ -inch-square bolt driven into a drilled round hole identified the method of attachment. Limbers were cut 3 inches outboard of the keel flat and measured 3 inches wide and 1 inch deep. Deterioration eliminated evidence of tool marks on the timber surfaces. There is no evidence of a futtock attachment.

#### *FLOOR TIMBER FL-7*

FL-7 was fashioned from oak and measured 6 feet 3 inches in horizontal length (Figures 6.48 and 6.49). The most accurate sided dimension was 9 inches and the most accurate molded dimension at the centerline was 10 inches. Deadrise of the floor roughly measured 16 degrees. The base flat that rested on the keel measured 8 inches in width and the remains of a  $\frac{3}{4}$ -inch-square bolt driven into a drilled round hole identified the method of attachment. Limbers were cut 3 inches outboard of the keel flat and measured 3 inches wide and 1 inch deep. With the exception of a saw cut on the bottom of the floor that appears to possibly identify the location of a ribband, deterioration eliminated evidence of tool marks on the timber surfaces. There is no evidence of a futtock attachment.

#### *FLOOR TIMBER FL-8*

FL-8 was fashioned from oak and measured 8 feet 10  $\frac{1}{2}$  inches in horizontal length (Figures 6.50 and 6.51). The most accurate sided dimension was 9 inches and the most accurate molded dimension at the centerline was 10 inches. Deadrise of the floor roughly measured 25 degrees. The base flat that rested on the keel measured 8 inches in width and the remains of a  $\frac{3}{4}$ -inch-square bolt driven into a drilled round hole identified the method of attachment. Limbers were cut 3 inches outboard of the keel flat and measured 3 inches wide and 1 inch deep. Saw marks identified the

centerline of the floor and the inboard location of the limbers. Another vertical saw mark was located on the sided surface of the short side of the floor 16 inches outboard of the center line. That mark possibly identifies the outboard edge of the garboard strake. With the exception of saw cuts, deterioration eliminated evidence of tool marks on the timber surfaces. There is no evidence of a futtock attachment.

#### *FLOOR TIMBER FL-9*

FL-9 was fashioned from oak and measured 9 feet 2 $\frac{3}{4}$  inches in horizontal length (Figures 6.52 and 6.53). The most accurate sided dimension was 10 inches and the most accurate molded dimension at the centerline was 9 inches. Deadrise of the floor roughly measured 17 degrees. The base flat that rested on the keel measured 8 inches in width and the remains of a  $\frac{3}{4}$ -inch-square bolt driven into a drilled round hole identified the method of attachment. Limbers were cut 3 inches outboard of the keel flat and measured 3 inches wide and 1 inch deep. Saw marks identified the centerline of the floor and the outboard location of one side of the keel flat. The hull planking fastener pattern on the side of the floor opposite the outboard keel cut mark suggests that one or more strakes above the garboard were replaced or refastened at some point in the vessel's service career. With the exception of saw cuts marking the centerline and outboard edge of the keel, deterioration eliminated evidence of tool marks on the timber surfaces. There is no evidence of a futtock attachment.

#### *FLOOR TIMBER FL-10*

FL-10 was fashioned from oak and measured 8 feet, 11 inches in horizontal length (Figures 6.54 and 6.55). The most accurate surviving sided dimension was 8  $\frac{1}{2}$  inches and the most accurate preserved molded dimension at the centerline was 9 $\frac{1}{4}$  inches. Deadrise of the floor roughly measured 24 degrees. The base flat that rested on the keel

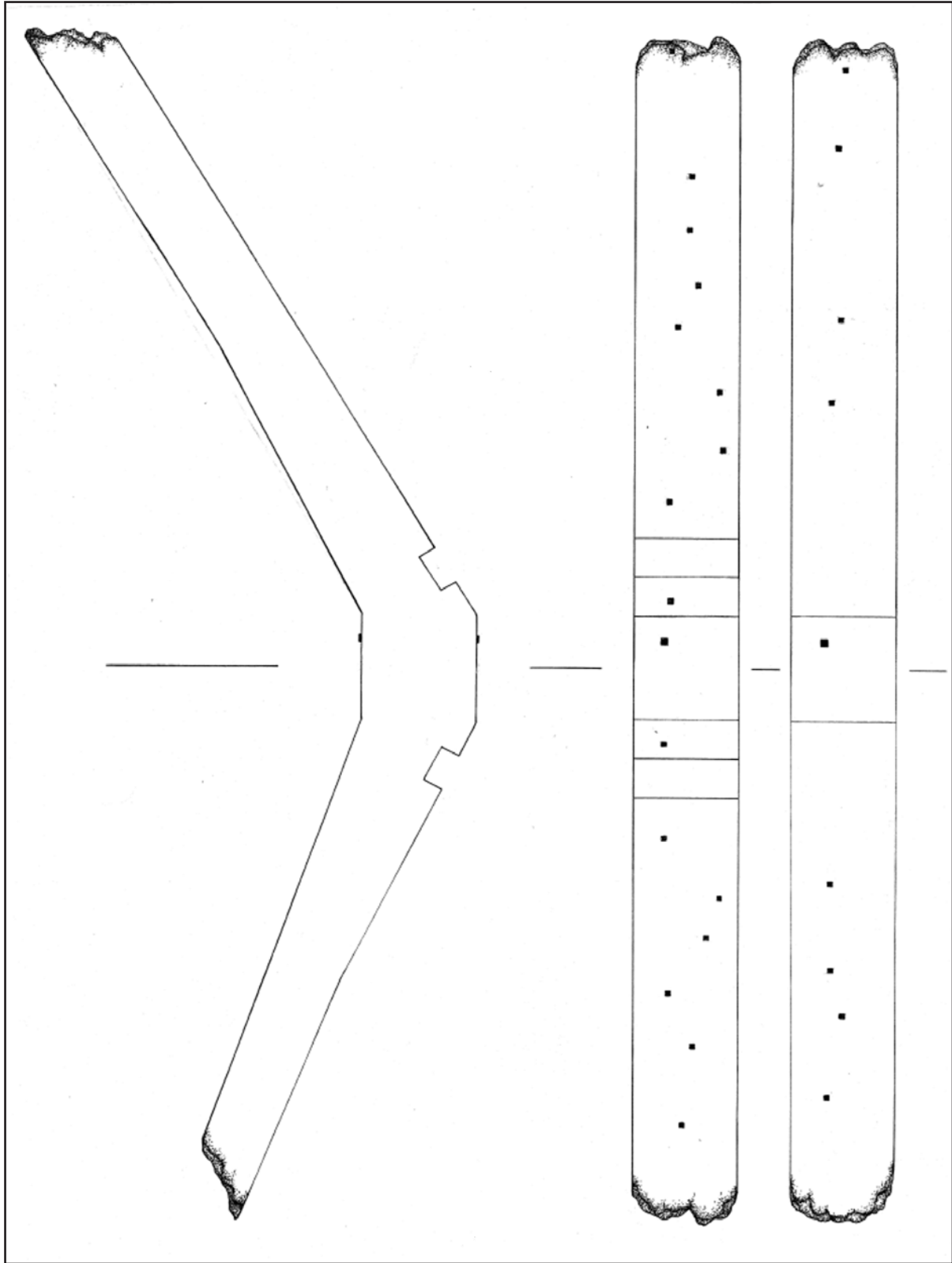


Figure 6.38. Floor timber FL-2 inked drawing.

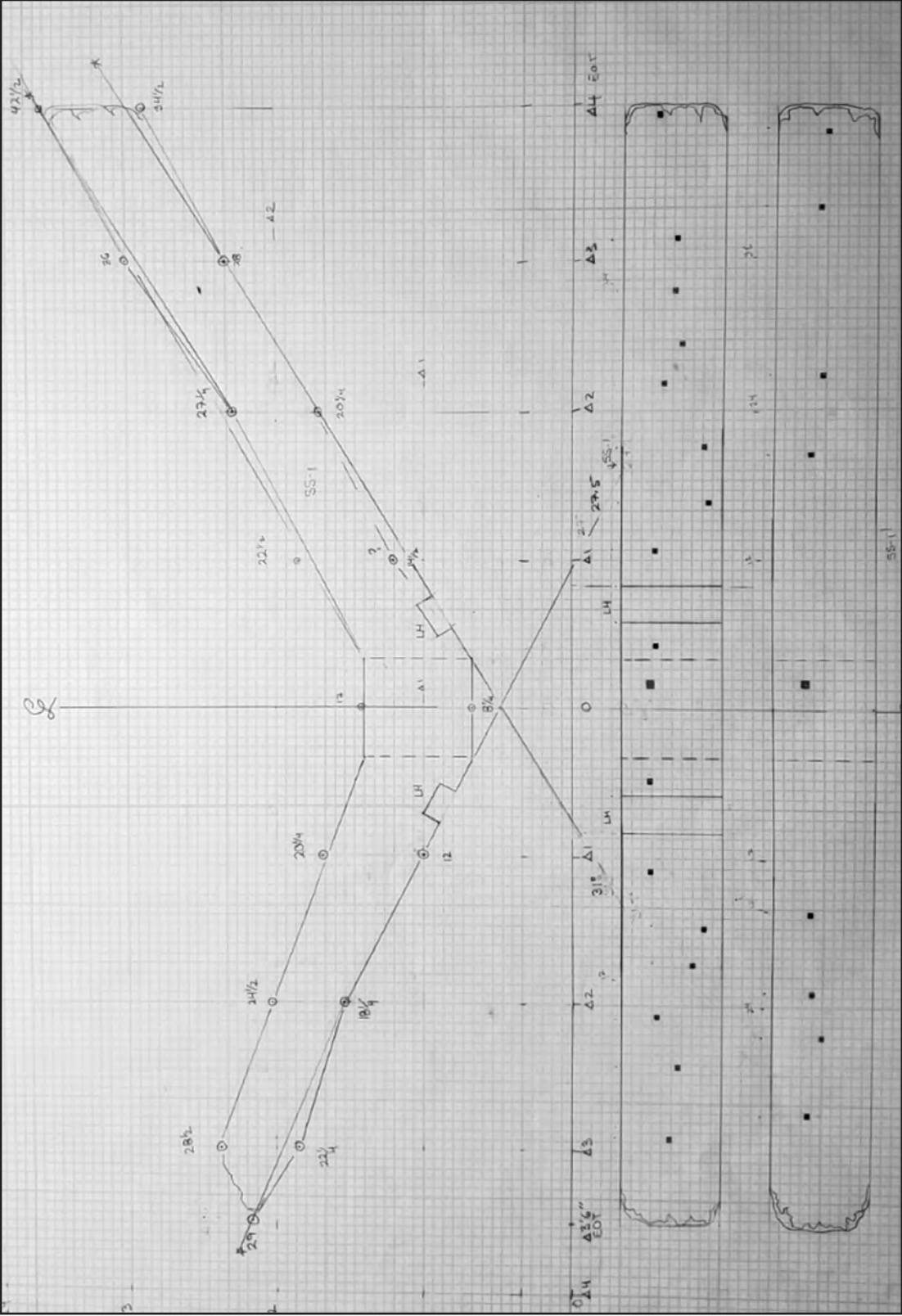


Figure 6.39. Floor timber FL-2 scale drawing.

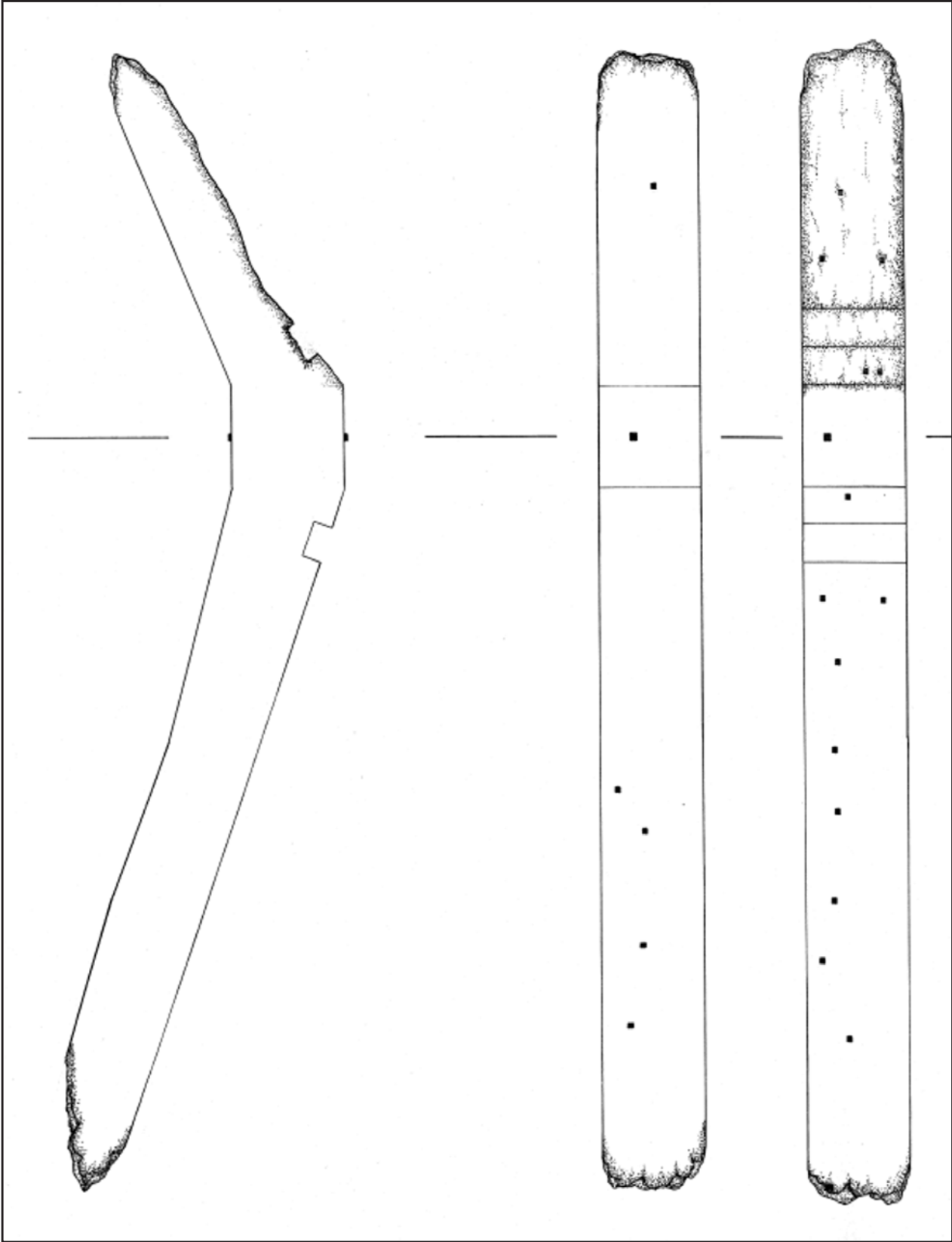


Figure 6.40. Floor timber FL-3 inked drawing.



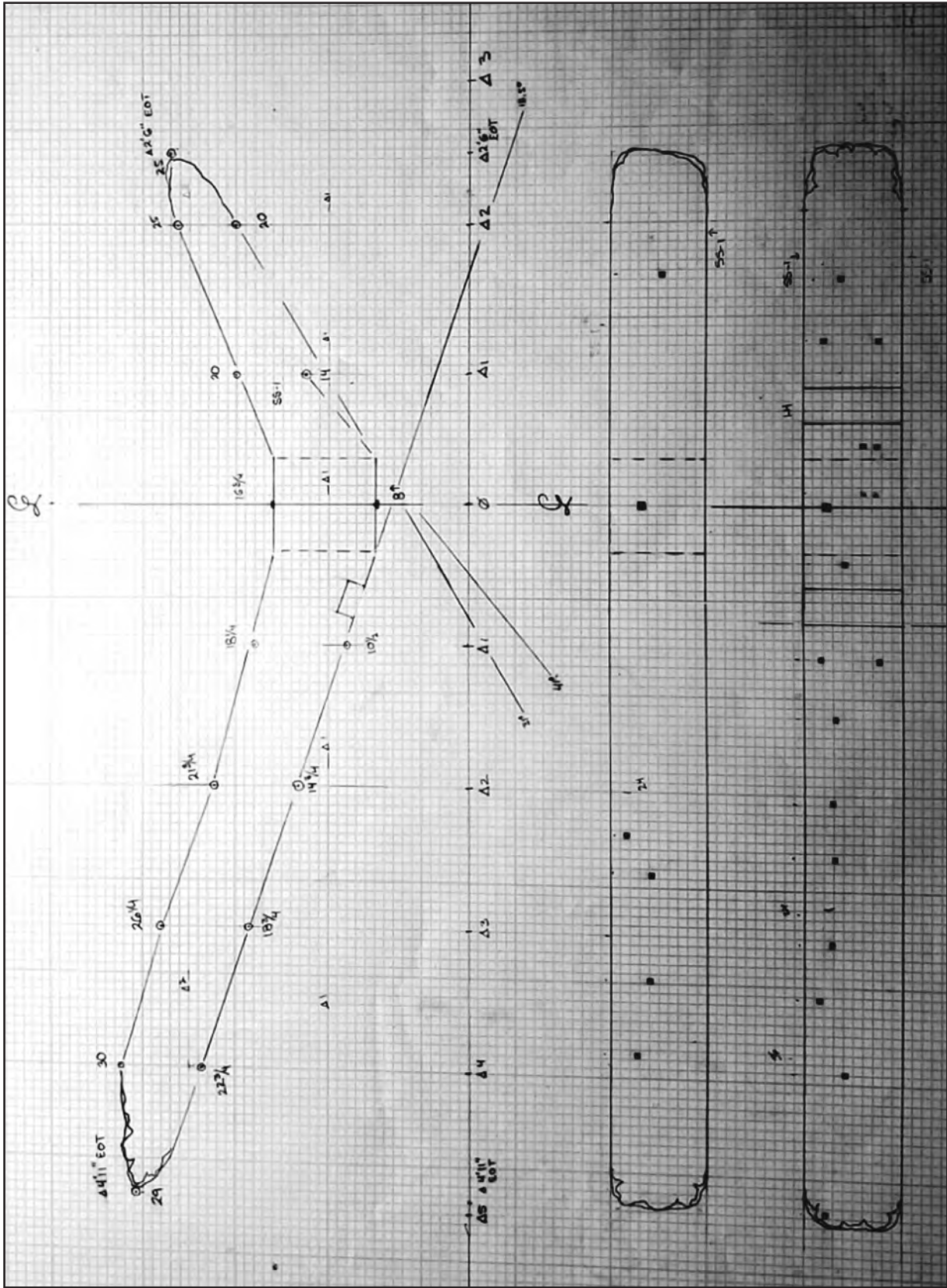


Figure 6.41. Floor timber FL-3 scale drawing.

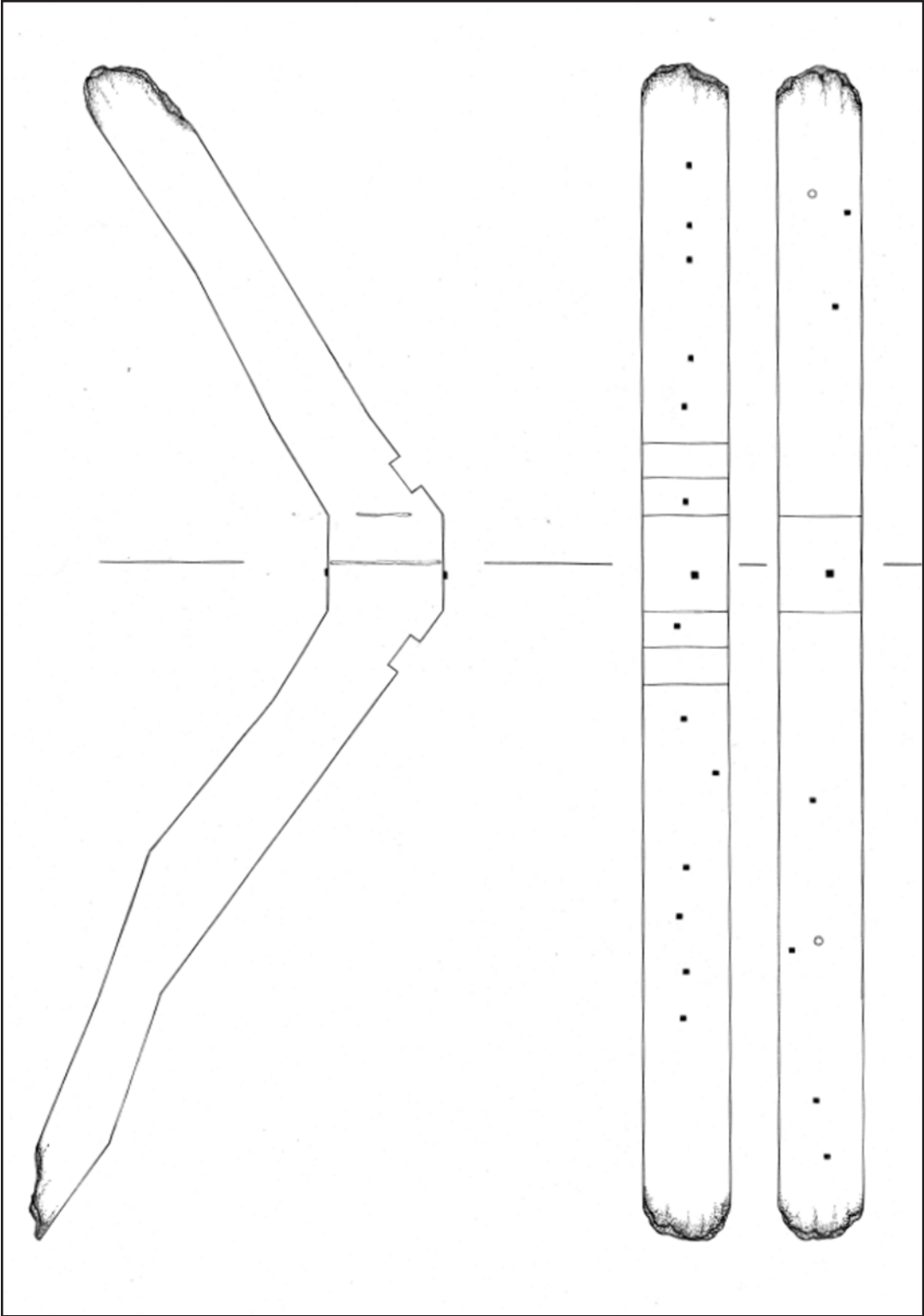


Figure 6.42. Floor timber FL-4 inked drawing.

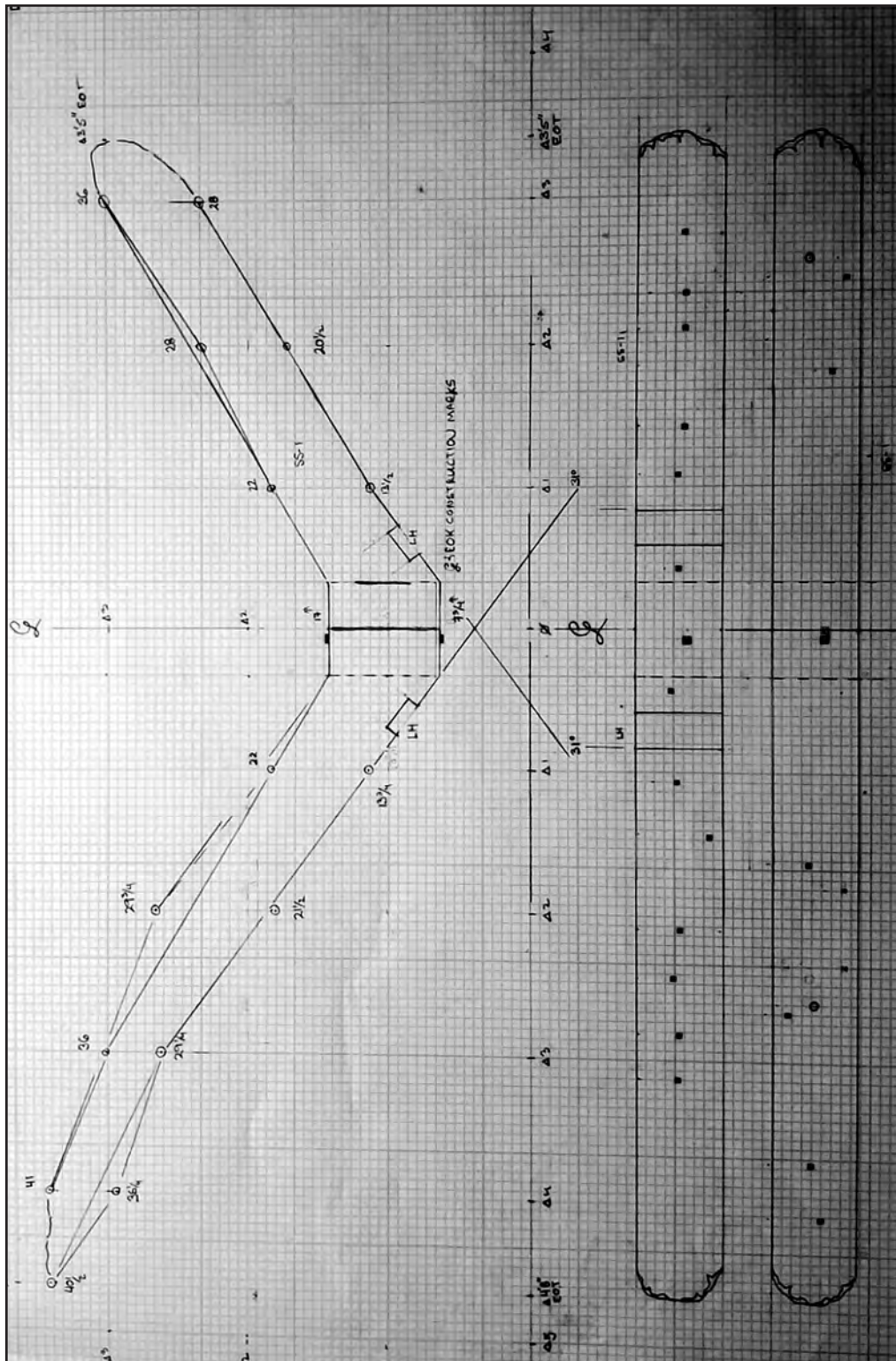


Figure 6.43. Floor timber FL-4 scale drawing.

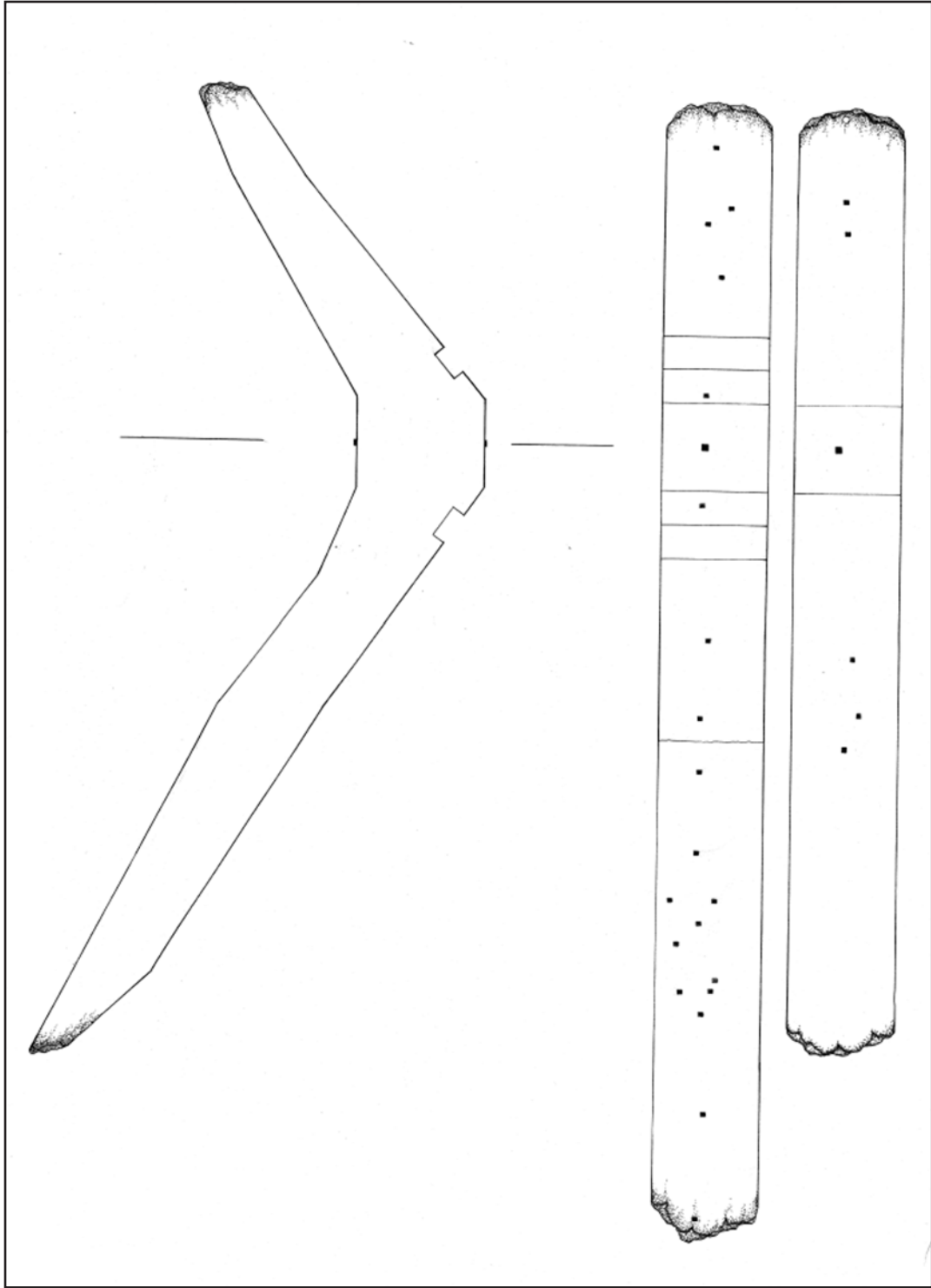


Figure 6.44. Floor timber FL-5 inked drawing.

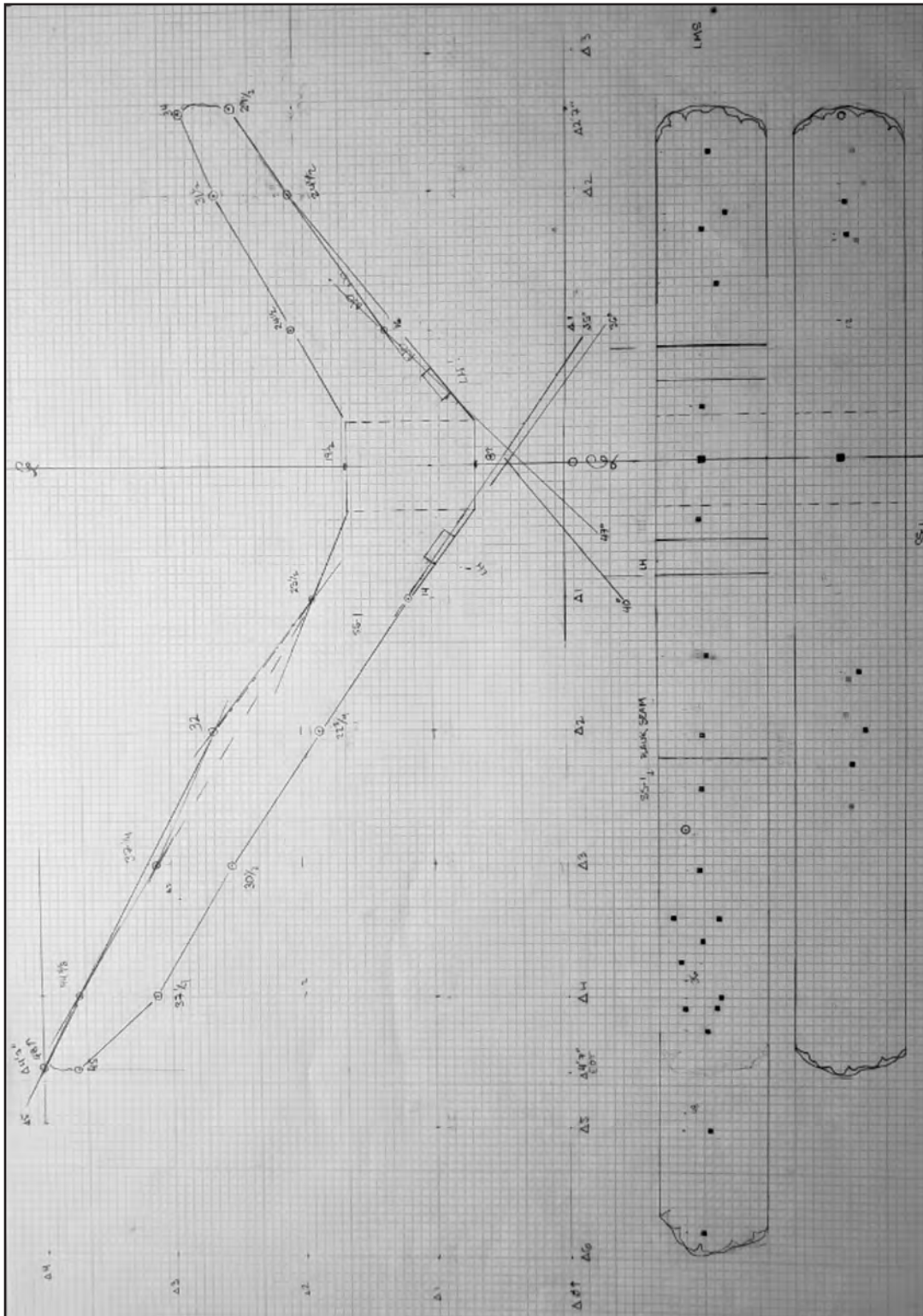


Figure 6.45. Floor timber FL-5 scale drawing.

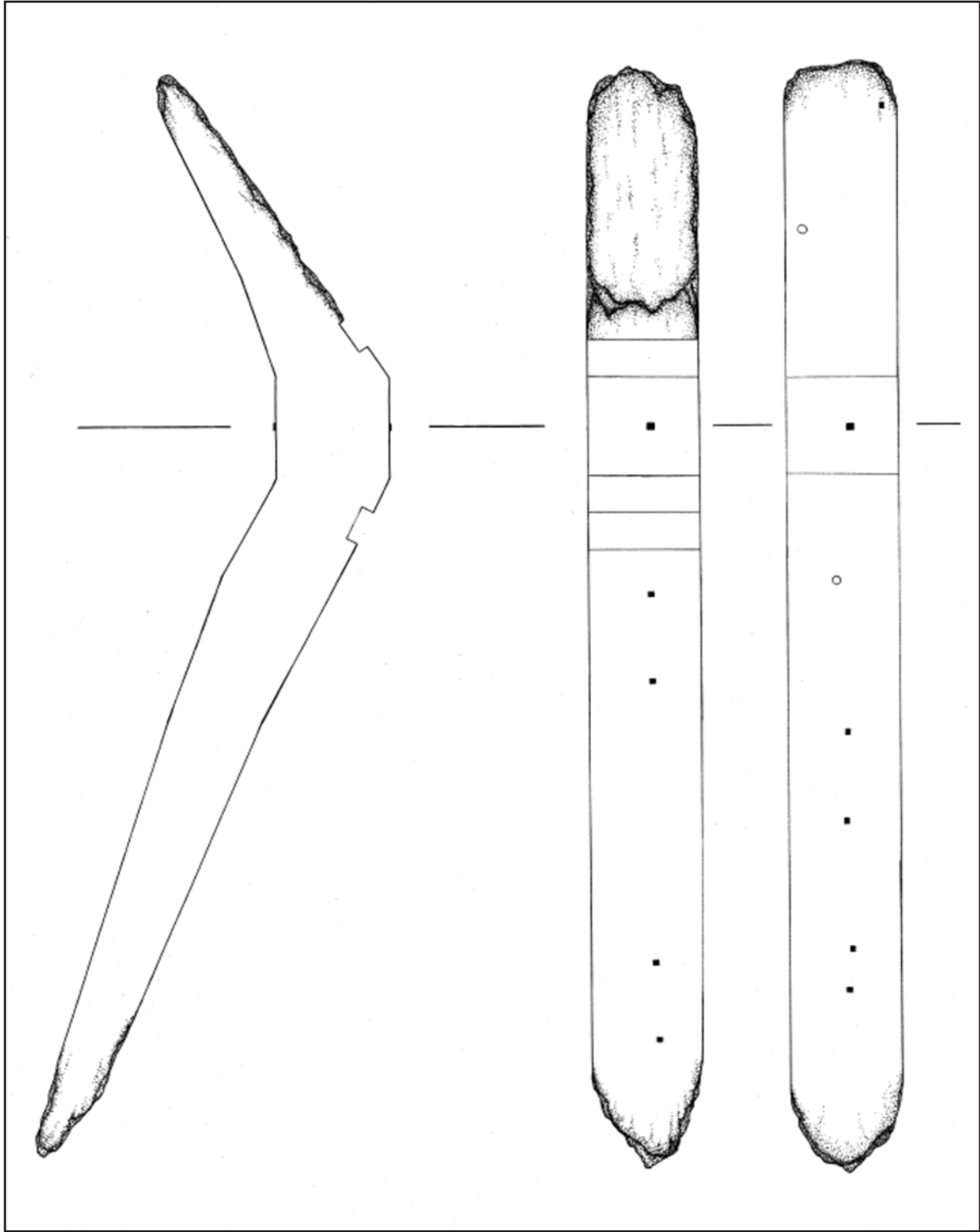


Figure 6.46. Floor timber FL-6 inked drawing.

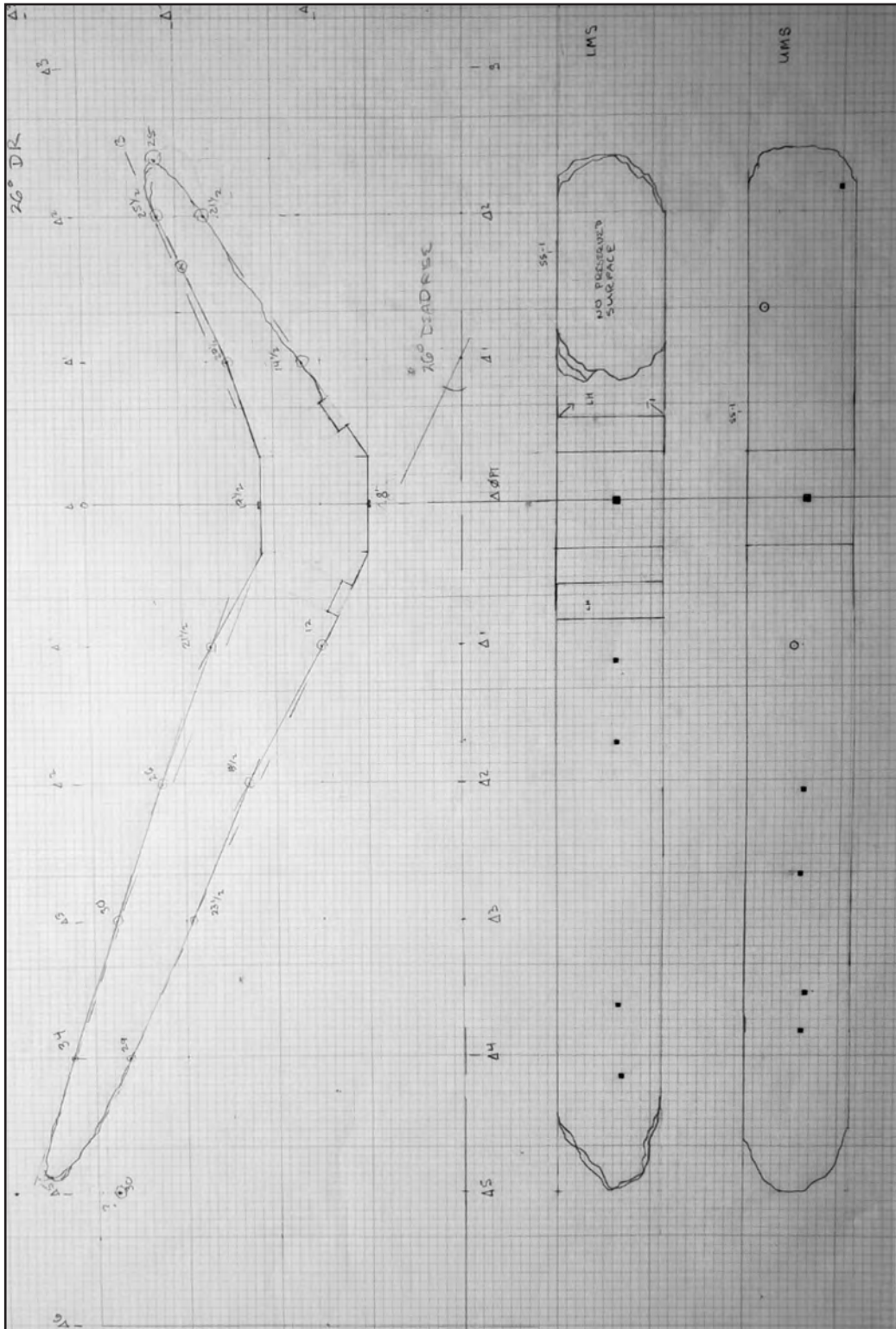


Figure 6.47. Floor timber FL-6 scale drawing.

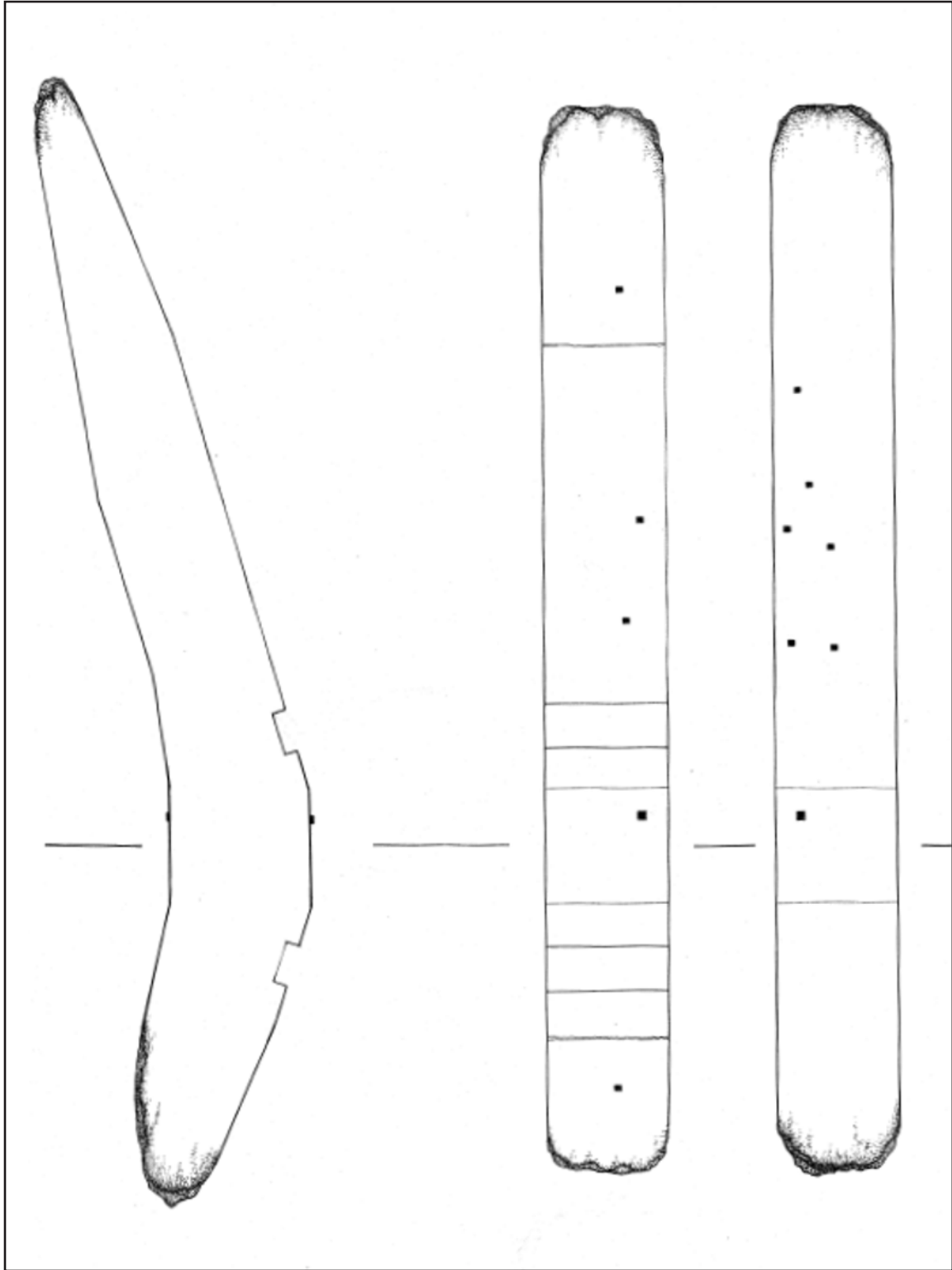


Figure 6.48. Floor timber FL-7 inked drawing.



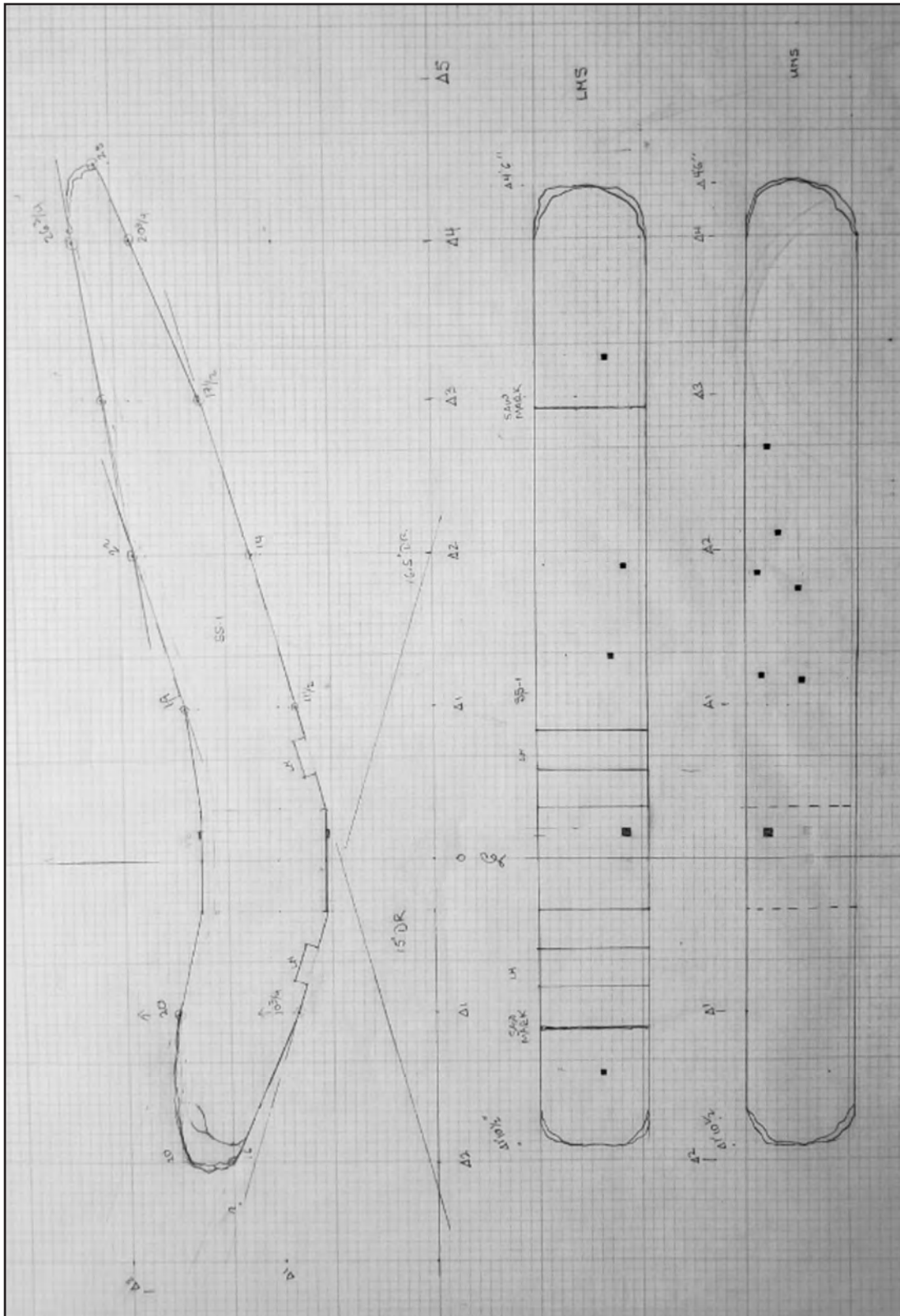


Figure 6.49. Floor timber FL-7 scale drawing.

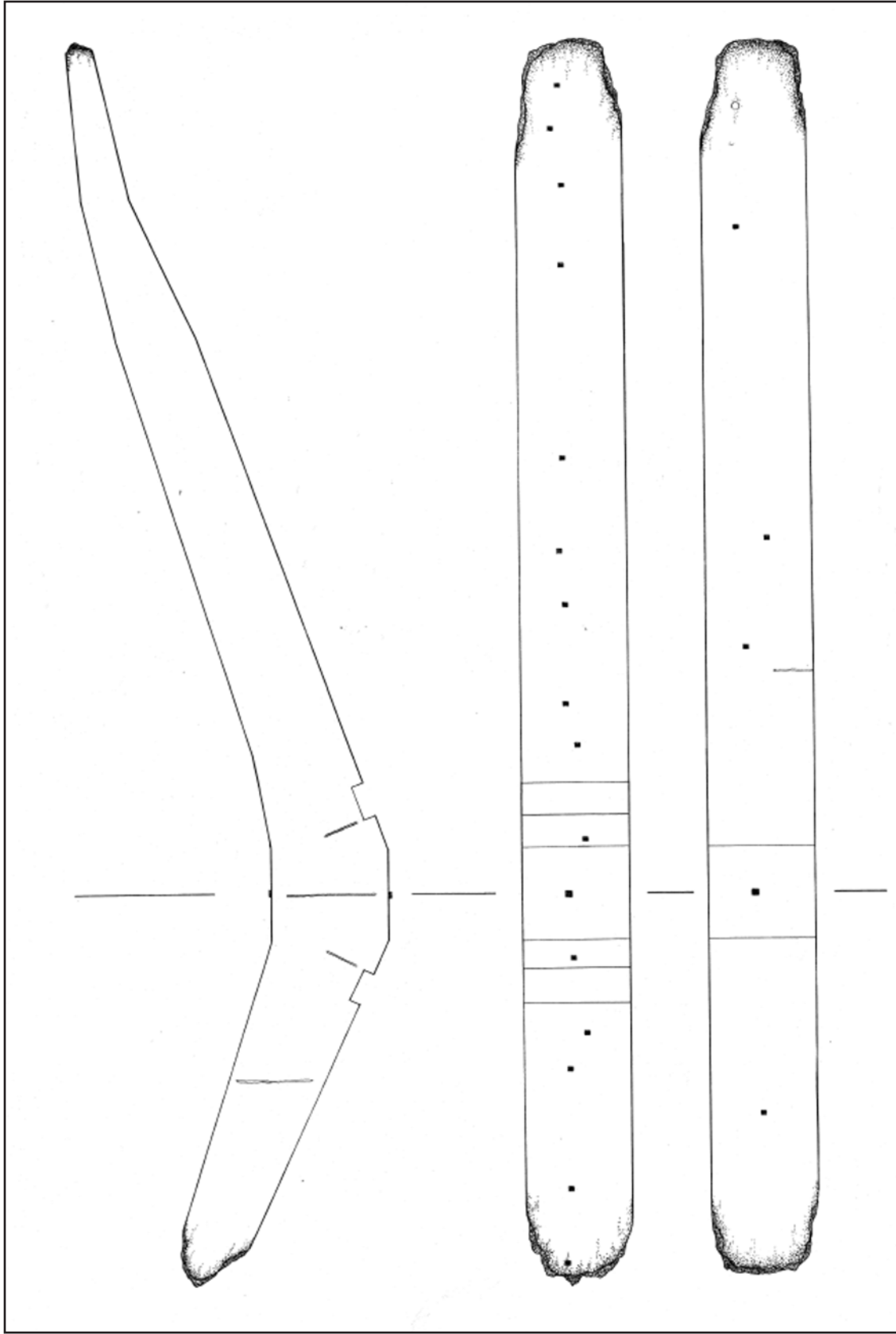


Figure 6.50. Floor timber FL-8 scale drawing.

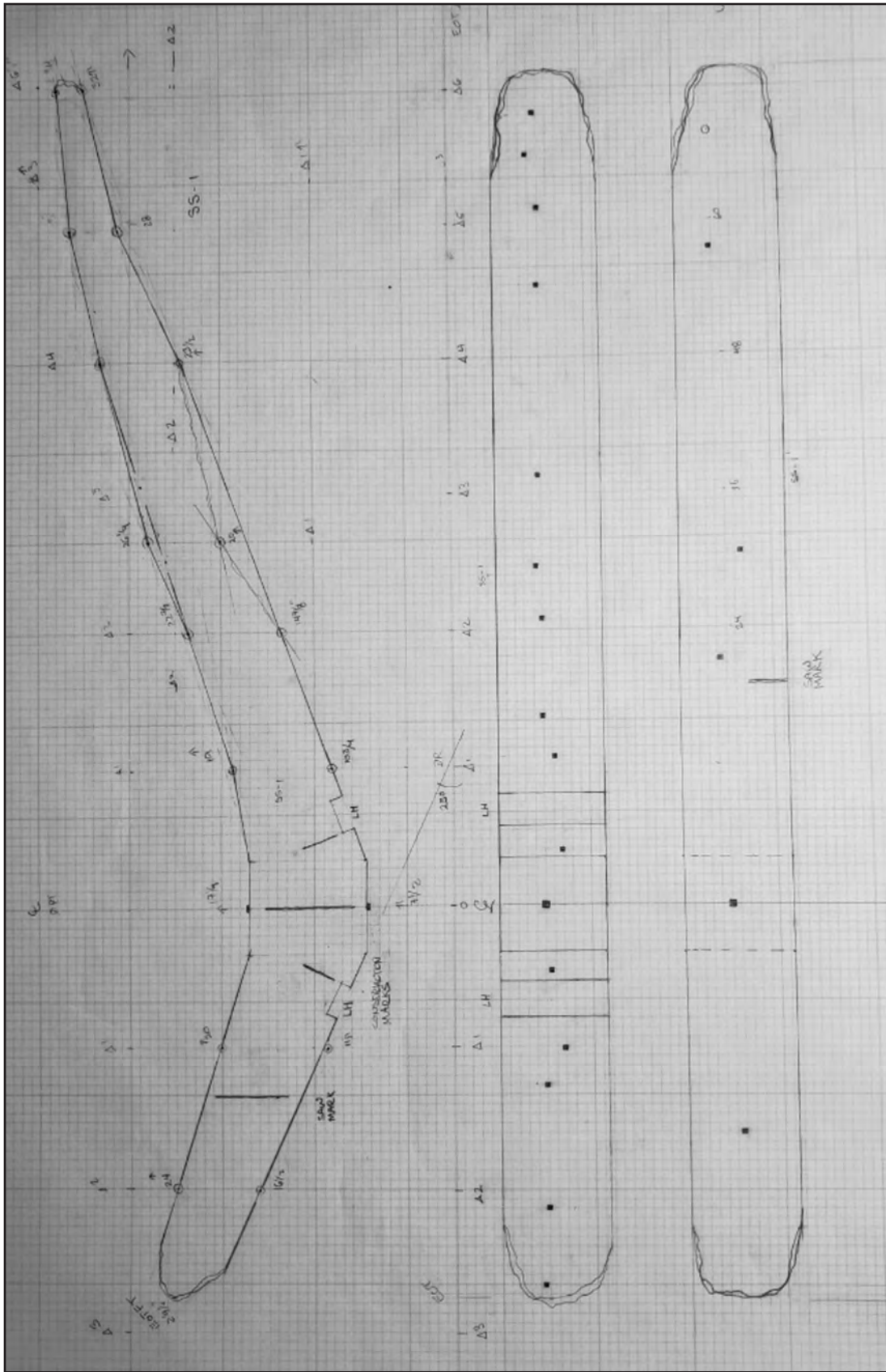


Figure 6.5.1. Floor timber FL-8 scale drawing.

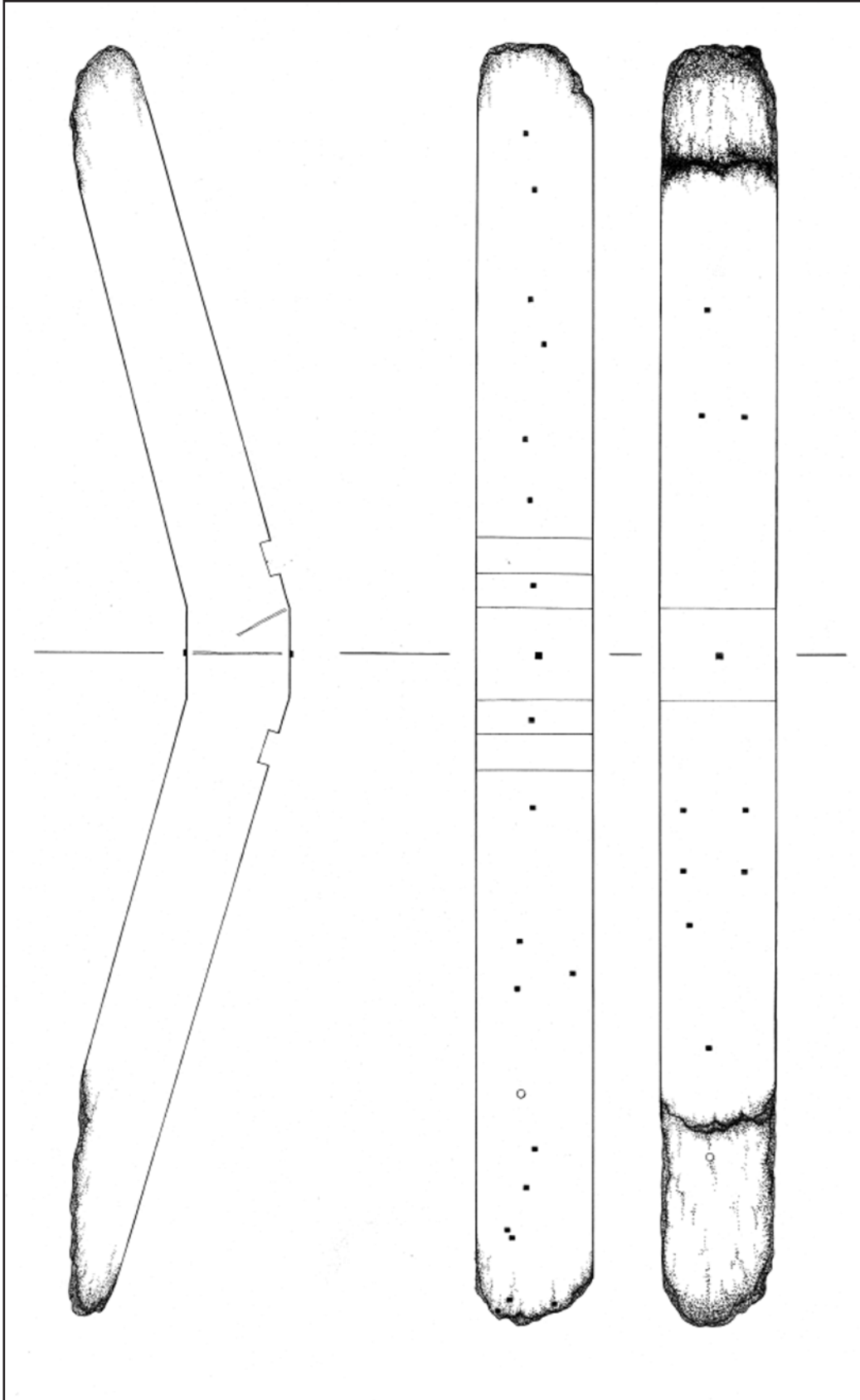


Figure 6.52. Floor timber FL-9 inked drawing.

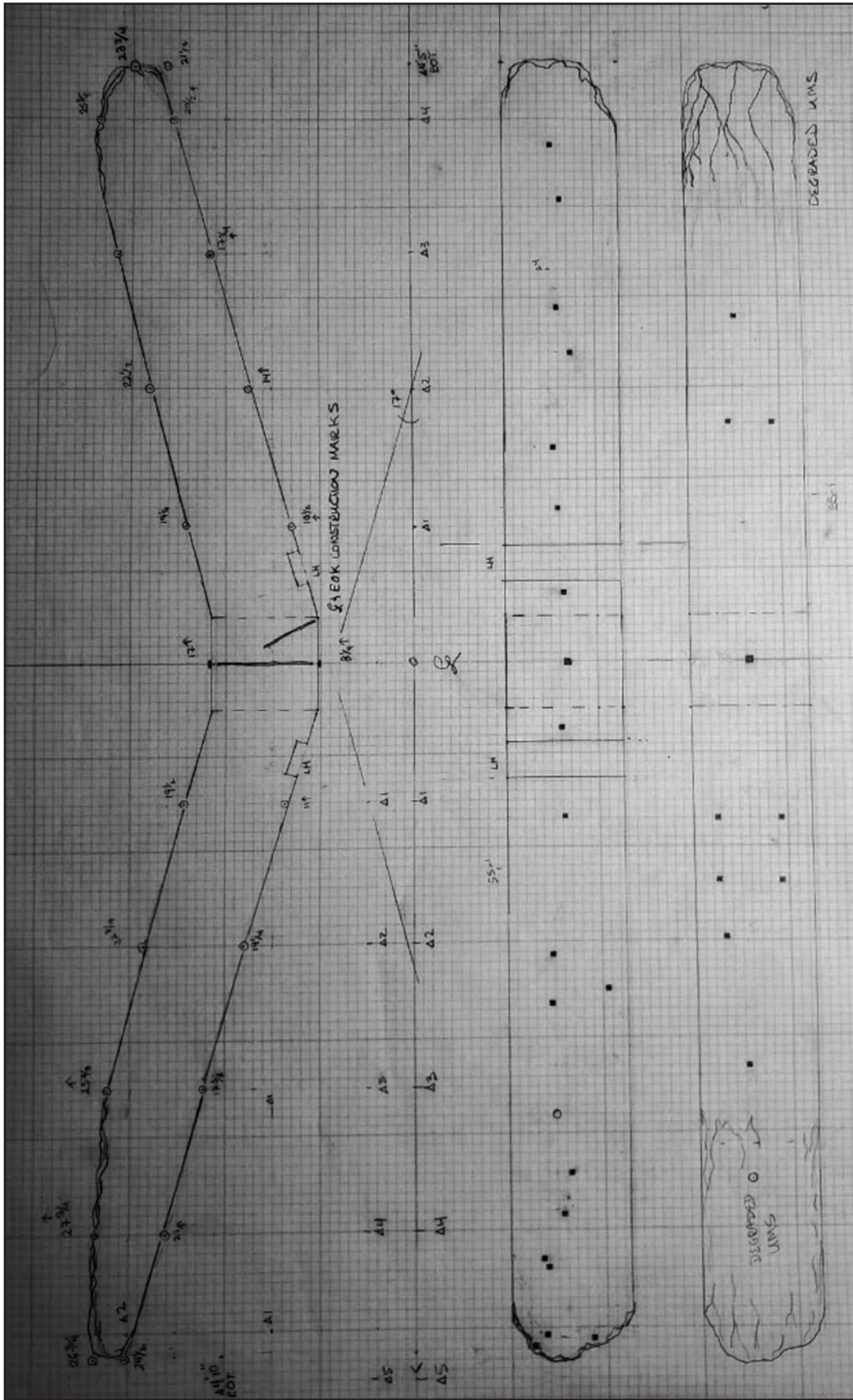


Figure 6.53. Floor timber FL-9 scale drawing.

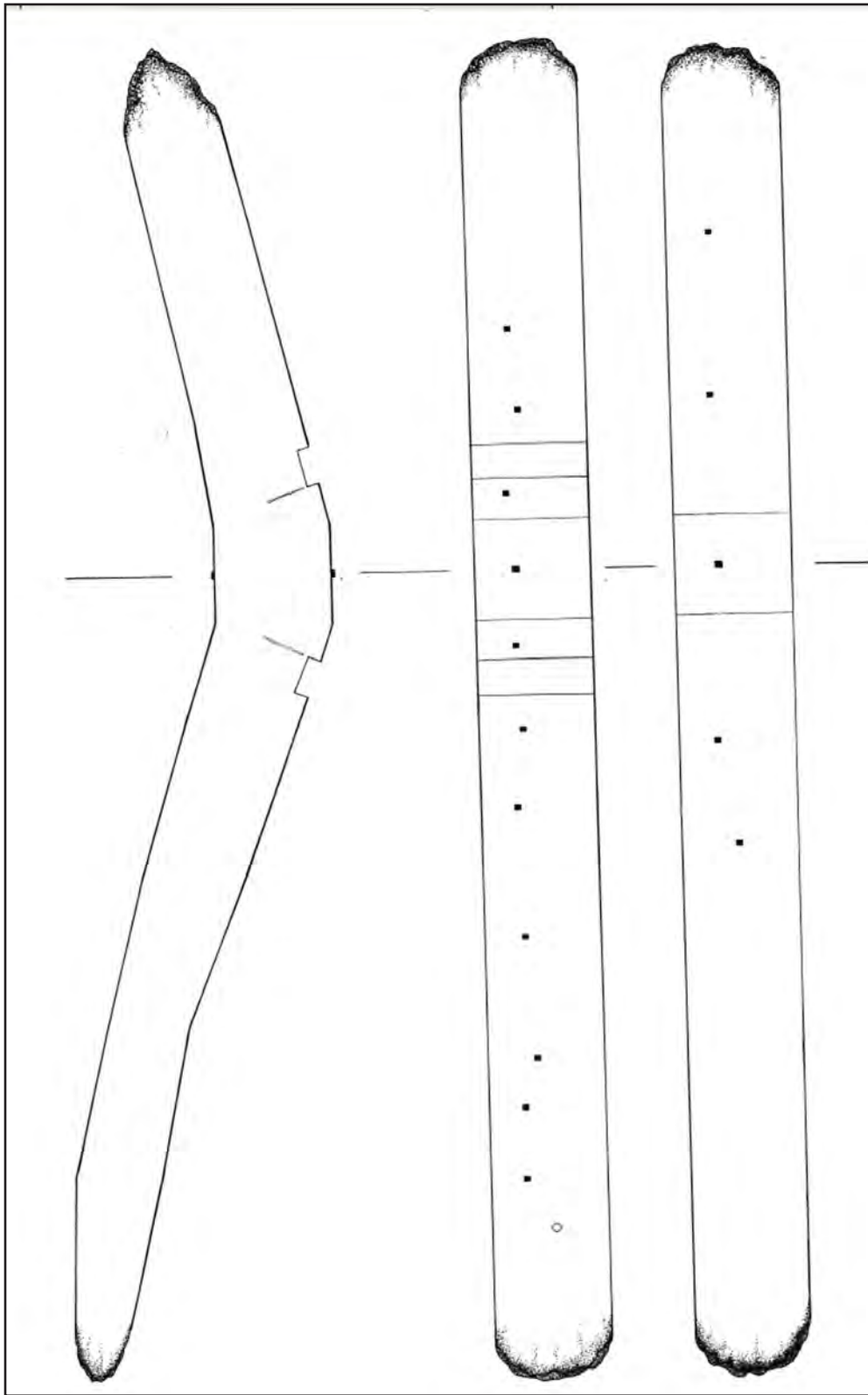


Figure 6.54. Floor timber FL-10 inked drawing.

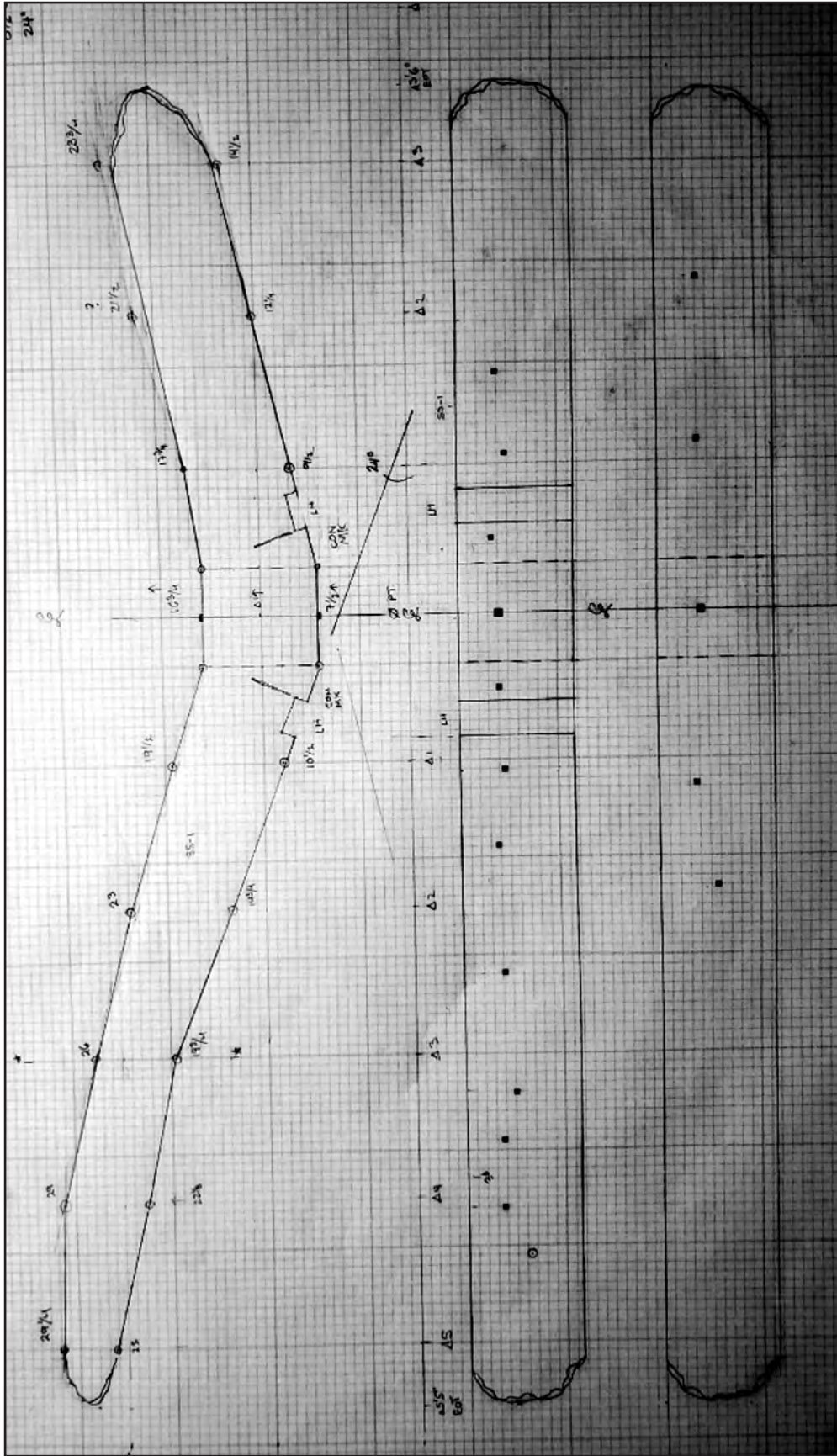


Figure 6.55. Floor timber FL-10 scale drawing.

measured 8 inches in width and the remains of a  $\frac{3}{4}$ -inch-square bolt driven into a drilled round hole identified the method of attachment of the floor to the keel. Limbers were cut 3 inches outboard of the keel flat and measured 3 inches wide and 1 inch deep. Saw marks identified the inboard location of both limbers. With the exception of saw cuts marking the inboard location of the limbers, deterioration eliminated evidence of tool marks on the timber surfaces. There is no evidence of a futtock attachment.

#### *FLOOR TIMBER FL-11*

FL-11 was fashioned from oak and measured 8 feet, 4 inches in horizontal length (Figures 6.56 and 6.57). The most accurate preserved sided dimension was 11½ inches. The most accurate molded dimension at the centerline was 10 ½ inches. Deadrise of the floor measured roughly 20 degrees. The base flat that rested on the keel measured 8 inches in width and the remains of a  $\frac{3}{4}$ -inch-square bolt driven into a drilled round hole identified the method of attachment to the keel. Limbers were cut 3 inches outboard of the keel flat and measured 3 inches wide and 1 inch deep. Saw marks identified the inboard location of both limbers. With the exception of saw cuts, deterioration eliminated evidence of tool marks on the timber surfaces. There is no evidence of a futtock attachment.

#### *FLOOR TIMBER FL-12*

FL-12 was fashioned from oak and measured 6 feet 7 ½ inches in horizontal length (Figures 6.58 and 6.59). The most accurate sided dimension was 9 inches and the most accurate molded dimension at the centerline was 9 ½ inches. Deadrise of the floor roughly measured 12 degrees. The base flat that rested on the keel measured 8 inches in width and the remains of a  $\frac{3}{4}$ -inch-square bolt driven into a drilled round hole identified the method of attachment. Limbers were cut 3 inches outboard of the keel flat and measured 3

inches wide and 1 inch deep. A 1 ½-inch-wide, 4-inch-long wood block was located on the bottom of the long side of the floor outboard of the limber. While it could have been installed to act as a shim, it is also possible (perhaps more likely) that it was associated with providing access to the underside of the floor to determine its condition. Deterioration eliminated evidence of tool marks on the timber surfaces. There is no evidence of futtock attachment.

#### *Futtock Timber FK-1*

One possible example of a futtock (designated as FK-1) was recovered from Site 44HT0125 (Figures 6.60 and 6.61). That timber measured 4 feet 8 inches in overall length. It was sided 5¼ inches and had a maximum molded dimension of 8 inches. The pattern of spikes on the top and bottom of the timber confirmed attachment to both planking and ceiling. However, there was no evidence of attachment to an adjacent floor or futtock. It is possible that the timber represents a half frame with a beveled heel that was faced directly into a mortise like those on the forefoot knee. However, there is no evidence that the timber was far enough forward to represent a cant frame. Deterioration eliminated evidence of tool marks on the timber surfaces. There was no evidence of futtock attachment.

#### *Unidentified Timber UT-1*

One timber recovered from Site 44HT0125 (designated as UT-1) proved to be difficult to associate with the vessel structure (Figure 6.62 and 6.63). That timber was 6 feet 6 inches in overall length. One intact end of the timber was cut diagonally and the larger side of the cut removed. The other end was damaged but appeared to have been similarly fashioned but on the opposite side. No fasteners were associated with the diagonally cut features. One side of the timber contained a spike fastener pattern that suggests hull, ceiling, deck, or bulkhead planks had been attached. The opposite



side of the timber contained evidence of three spikes and a single trunnel. A possible identification could be a carling. Deterioration eliminated evidence of tool marks on the timber surfaces. There was no evidence of a futtock attachment.

### *Keelson Sections*

Three sections of keelson were recovered from Site 44HT0125. It appears that the three sections were contiguous within the structure. By utilizing the fastener pattern and matching the damage on the broken ends, they can be reconstructed with an acceptable degree of reliability. KNS-1 represents the forward section followed aft by KSN-2; and finally KSN-C. The three sections together represent 39 feet of keelson.

#### *KEELSON SECTION KSN-1*

The short section of KSN-1 measured 6 feet 1 inch in length (Figures 6.64 and 6.65). The sided dimension measured 8  $\frac{3}{8}$  inches and the maximum molded dimension measured 8  $\frac{1}{4}$  inches. The upper face was flat and contained evidence of two 1-inch-square bolts. This timber appears to represent the forward end of the keelson. The aft end of this section is broken but contains evidence of a third one-inch-square bolt that corresponds with the forward end of section KSN-2. The bottom surface of the short section of keelson was diagonally notched 1-inch deep in three places to fit on top of three floors. The base of the center and only intact notch measured 12  $\frac{1}{2}$  inches in length. The broken end of the keelson timber contained the remains of a second diagonally cut notch that the remaining base measured 8 inches in length. A 1-inch-square bolt hole was located at the broken end of the timber. That bolt hole was 4 feet 4  $\frac{1}{2}$  inches from the closest bolt on the opposite end. At the opposite (intact) end of the timber, evidence of a third notch was present. That notch extended from the cut end of the keelson 1 foot 6  $\frac{3}{4}$  inches into the base of the diagonal cut. Two 1-inch-square bolts extended through that notch and into the floor (or floors)

below. Deterioration eliminated evidence of tool marks on the timber surfaces.

#### *KEELSON SECTION KSN-2*

The longest section of KSN-2 measured 13 feet 8 inches in length (Figures 6.66 and 6.67). The maximum sided dimension measured 12 inches on the top opposite the end that could match with KSN-1 and the bottom narrowed to 8  $\frac{1}{2}$  inches at the where it could match with the broken end of KSN-1. The maximum molded dimension measured 8  $\frac{1}{2}$  inches. The upper face was flat and contained evidence of two 1-inch-square bolts located 4 feet 9 inches apart. The narrow sided broken end preserved evidence of a floor notch and a third 1-inch-square bolt located 4 feet 8  $\frac{1}{2}$  inches from the closest associated bolt. That end is associated with the broken end of KSN-1. The bottom surface of the short section of keelson was diagonally notched 1 inch deep in three places to fit on top of three floors. The base of the center and only intact notch measured 12  $\frac{1}{2}$  inches. The broken end of the keelson timber contained the remains of a second diagonally cut notch that measured 8 inches in length. A 1-inch-square bolt hole was located at the broken end of the timber. At the opposite and intact end of the timber, evidence of a third notch was present. That notch extended from the cut end of the keelson 1 foot 6  $\frac{3}{4}$  inches into the base of the diagonal cut. Two 1-inch-square bolts extended through that notch and into the floor (or floors) below. Deterioration eliminated evidence of tool marks on the timber surfaces.

#### *KEELSON SECTION KSN-3*

The long section of KSN-3 measured 13 feet 2 inches in length (Figures 6.68 and 6.69). The maximum sided dimension measured 12 inches and the molded dimension measured 8  $\frac{1}{2}$  inches. The upper face was flat and contained evidence of three 1-inch-square bolts. The first was located 1 inch from one end and the second bolt was located

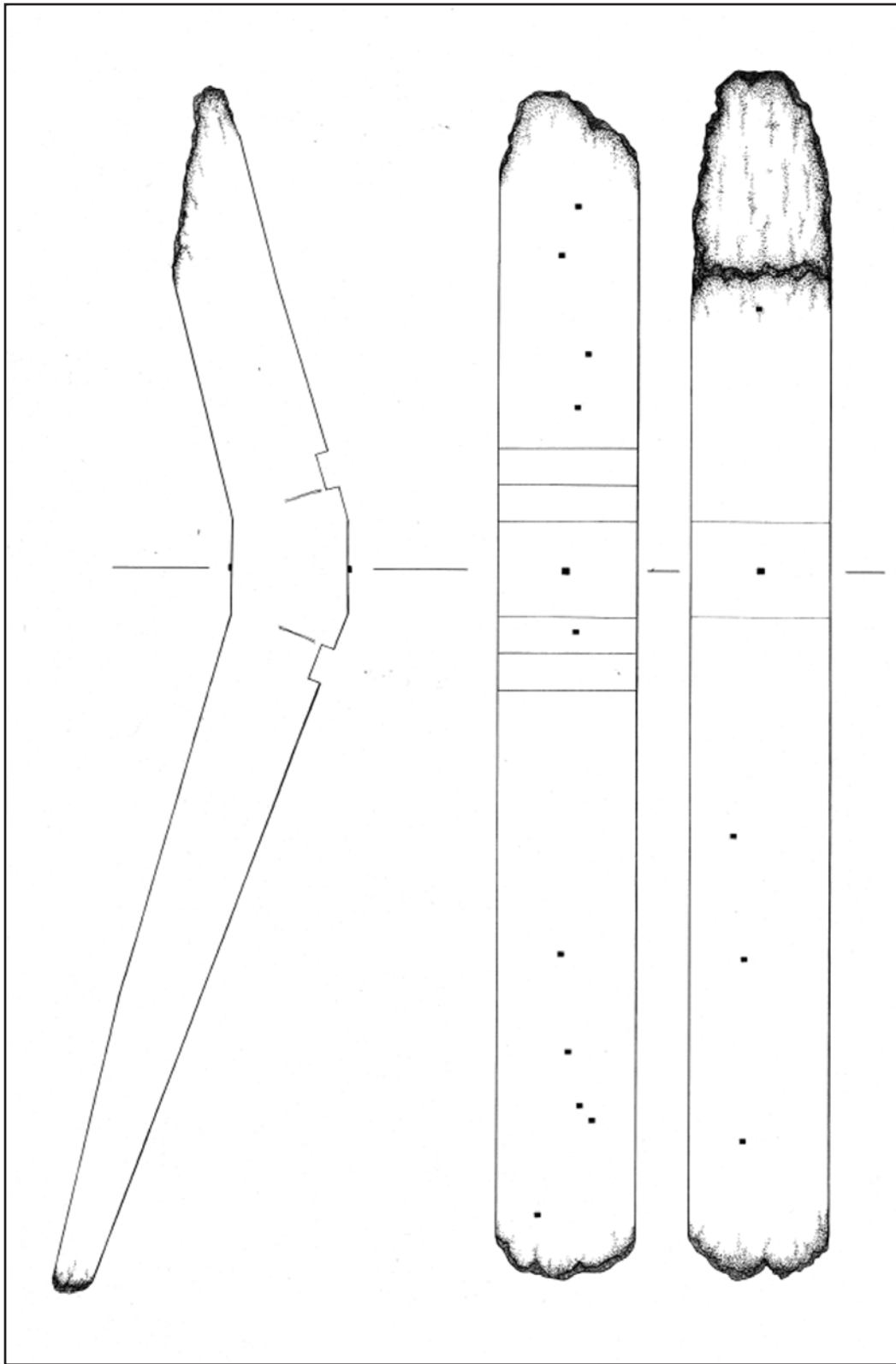


Figure 6.56. Floor timber FL-11 inked drawing.

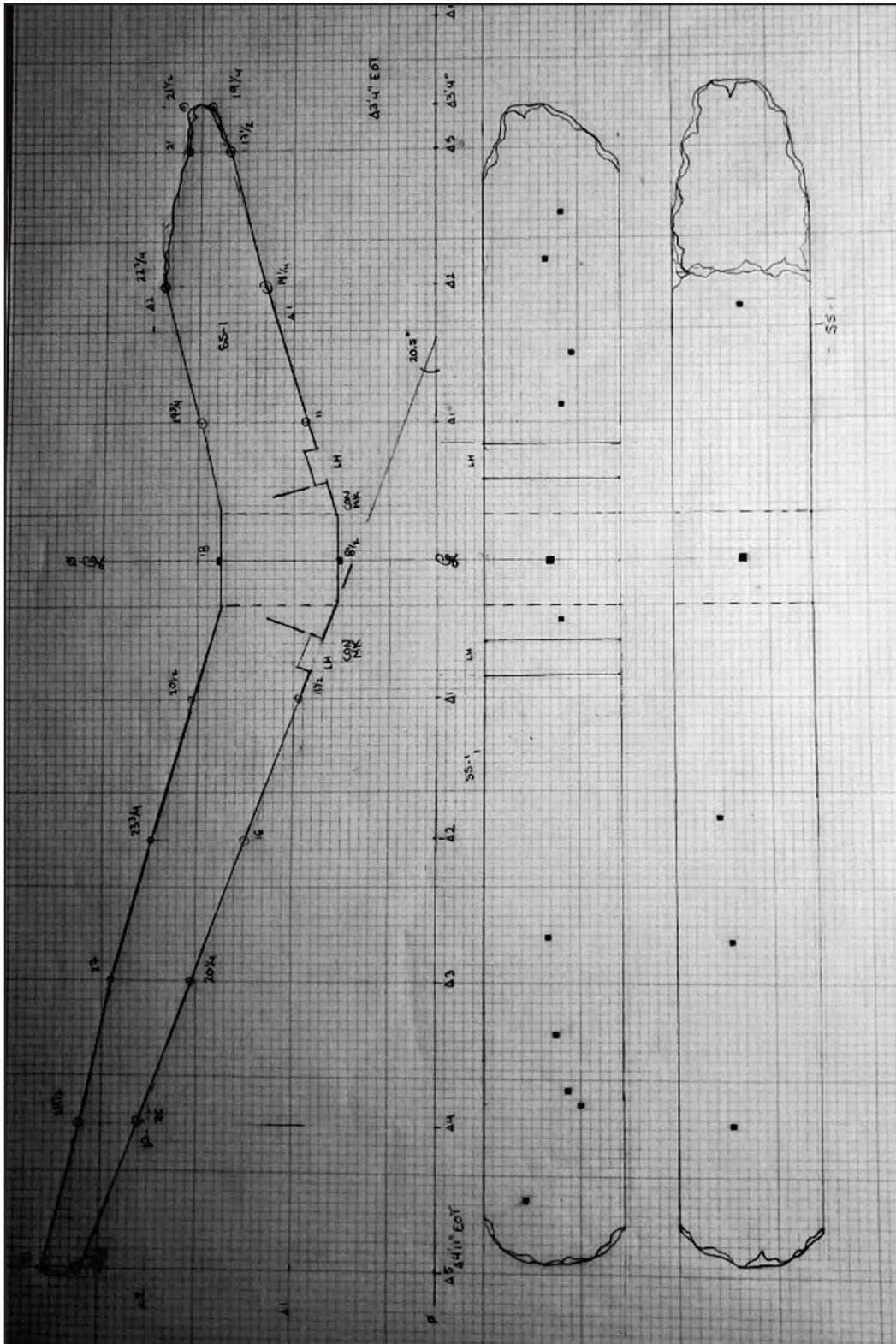


Figure 6.57. Floor timber FL-11 scale drawing.

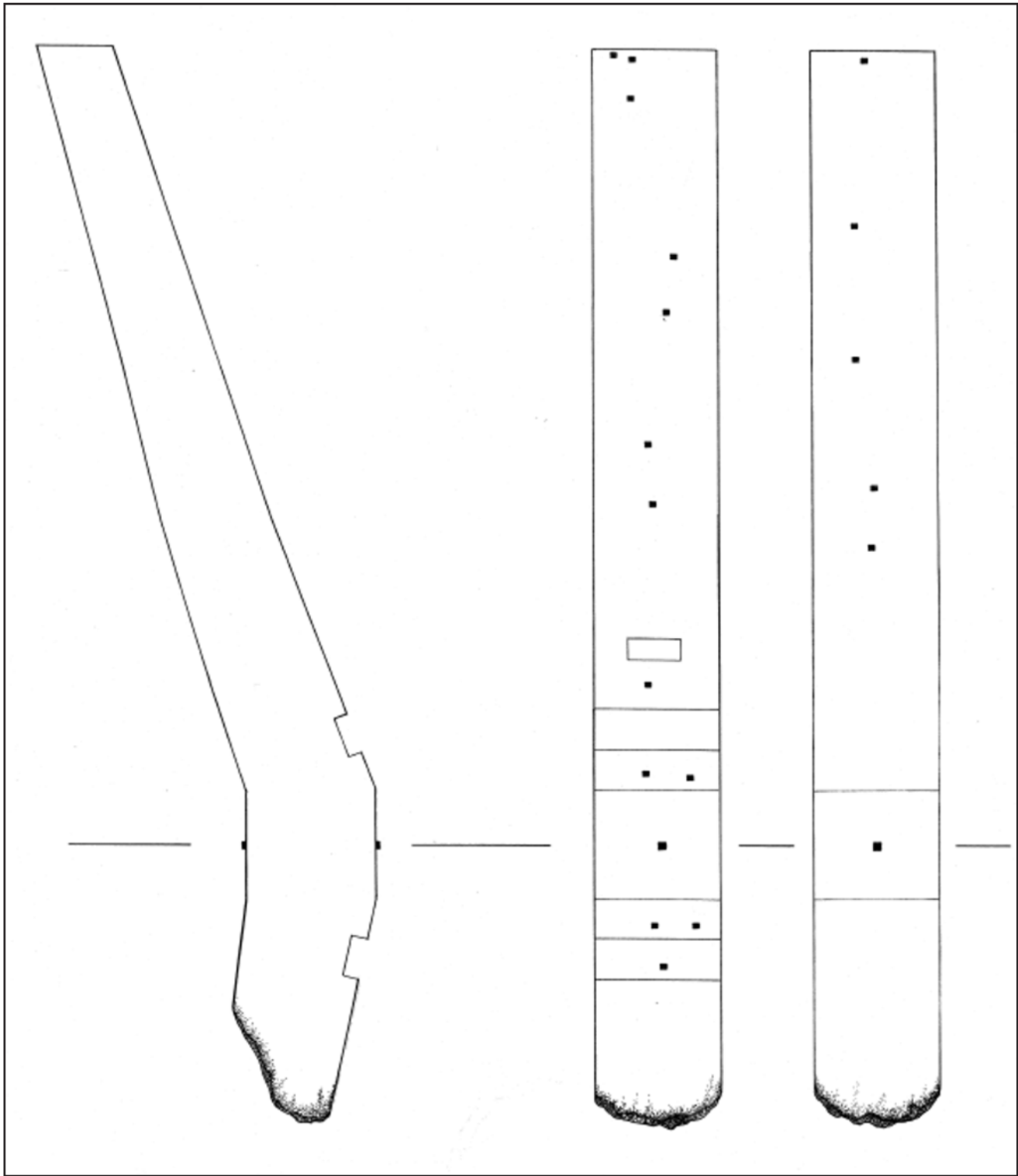


Figure 6.58. Floor timber FL-12 inked drawing.

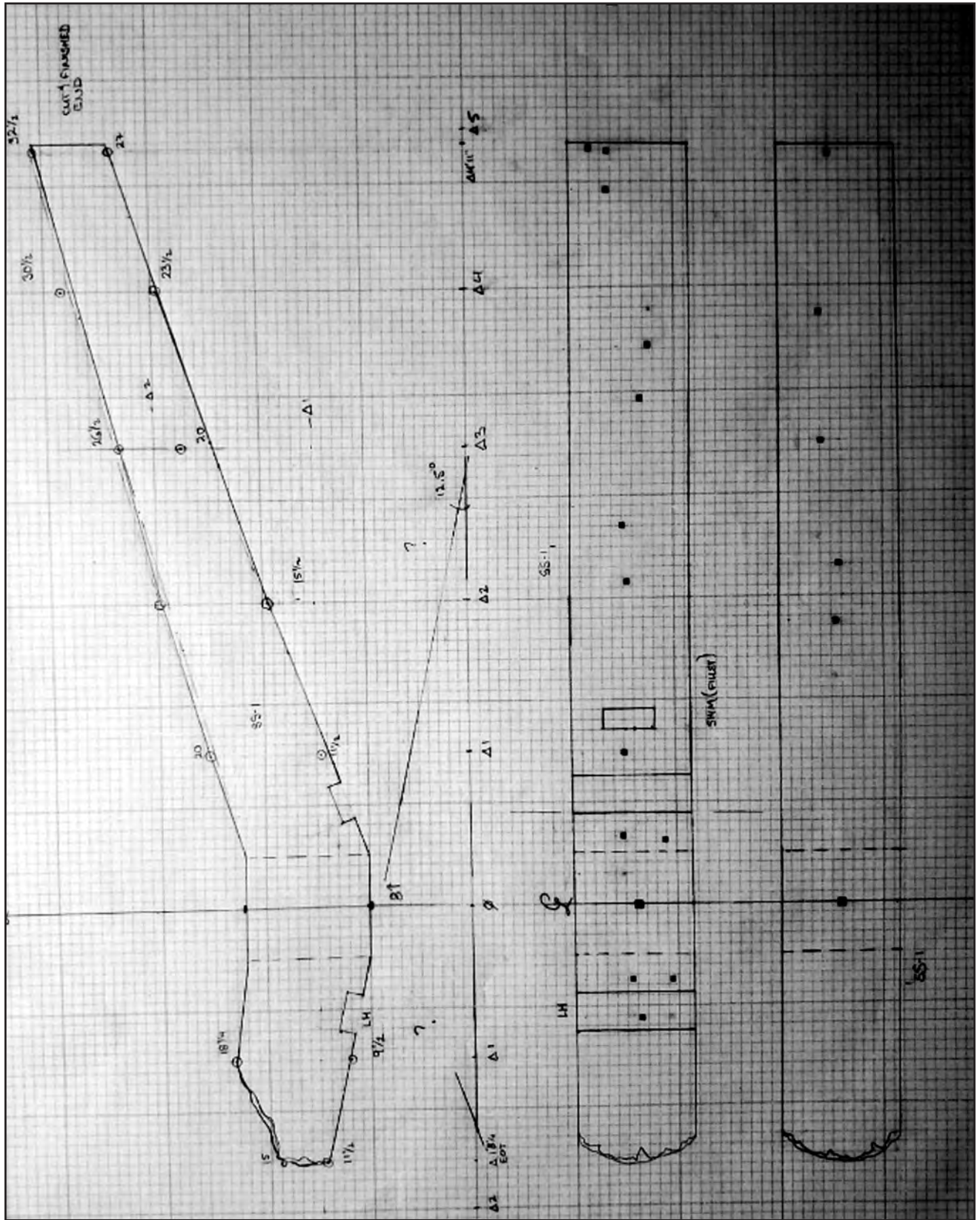


Figure 6.59. Floor timber FL-12 scale drawing.

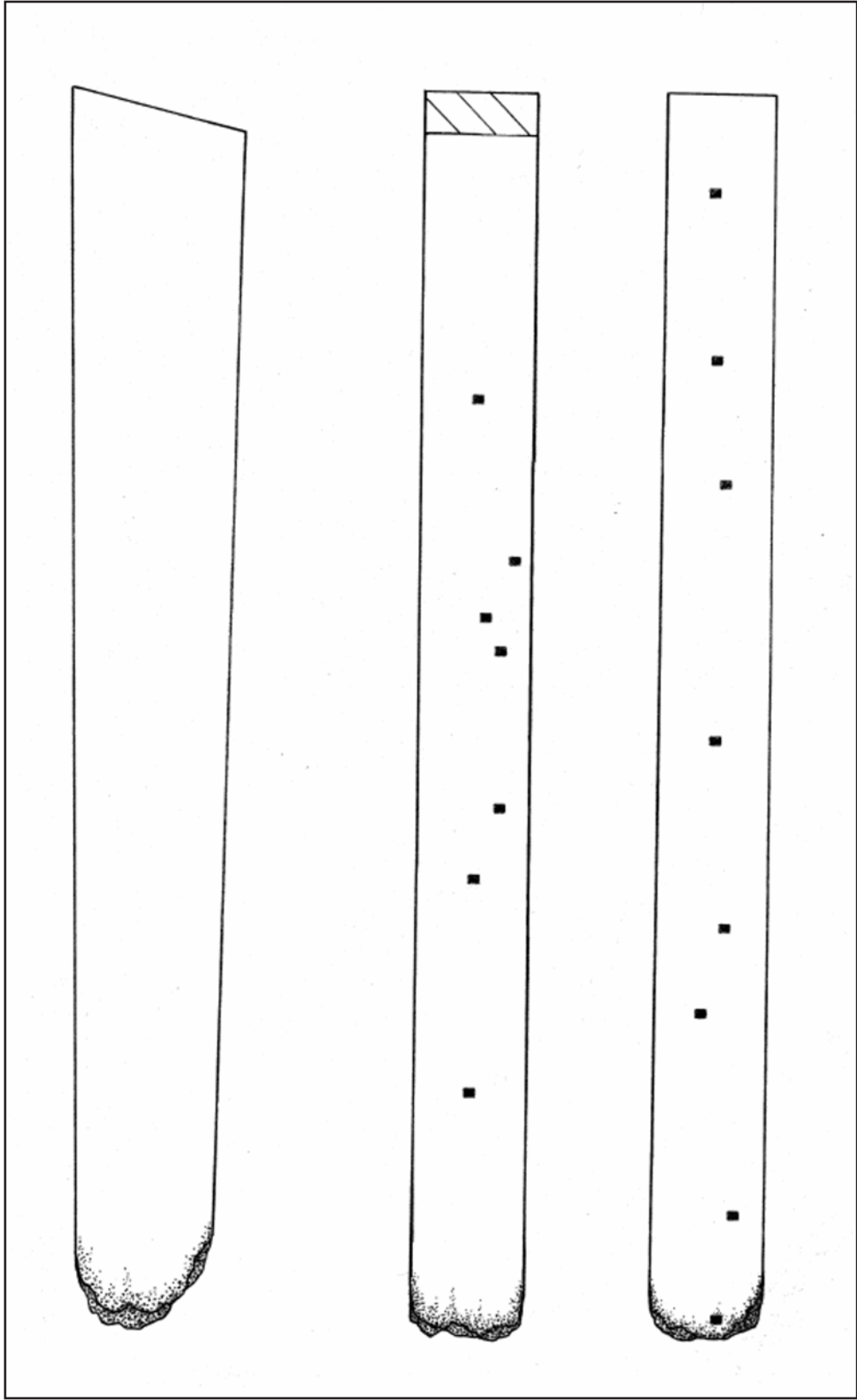


Figure 6.60. Futtock timber FK-1 inked drawing.

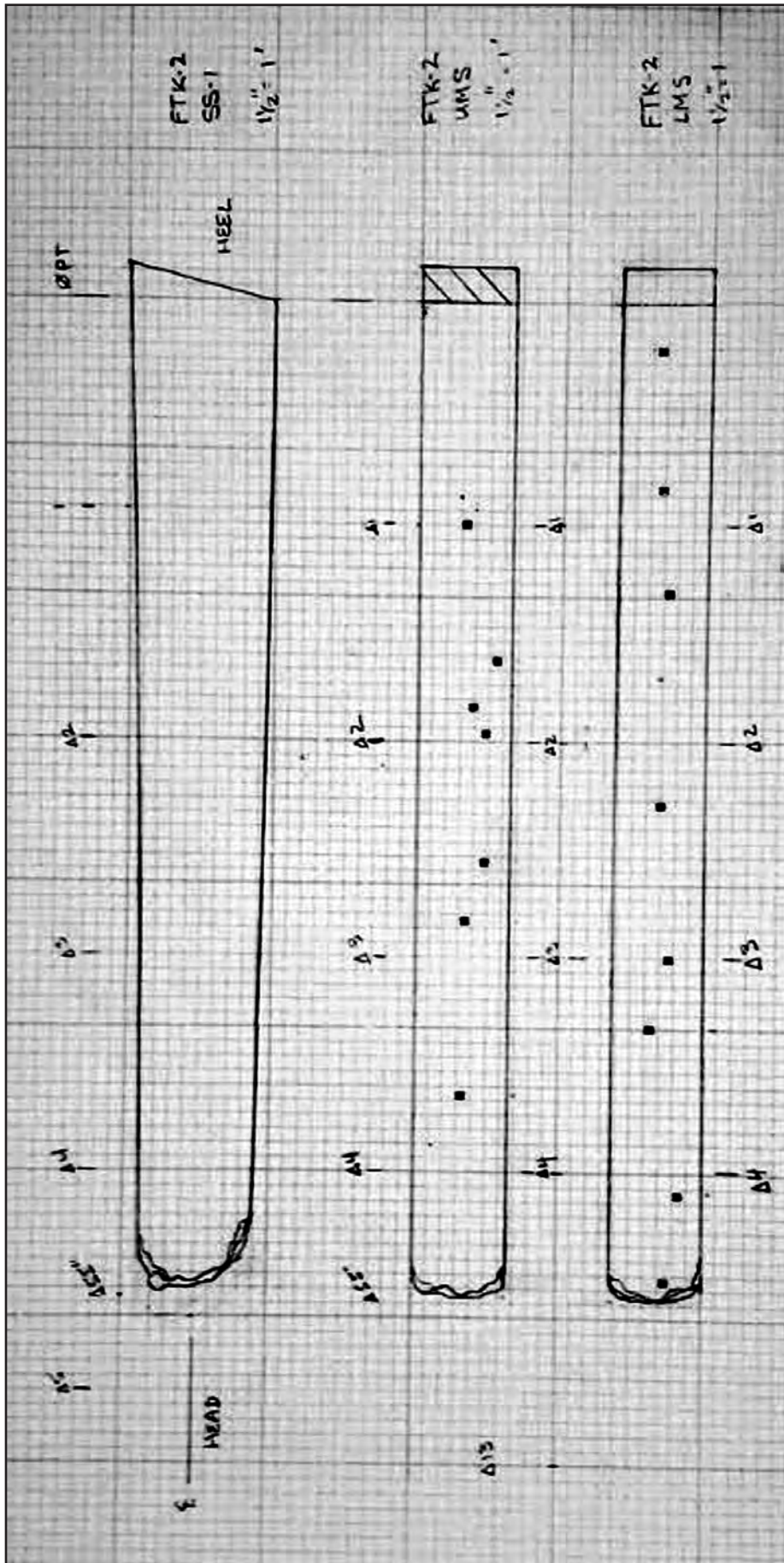


Figure 6.61. Futtock timber FK-1 scale drawing.

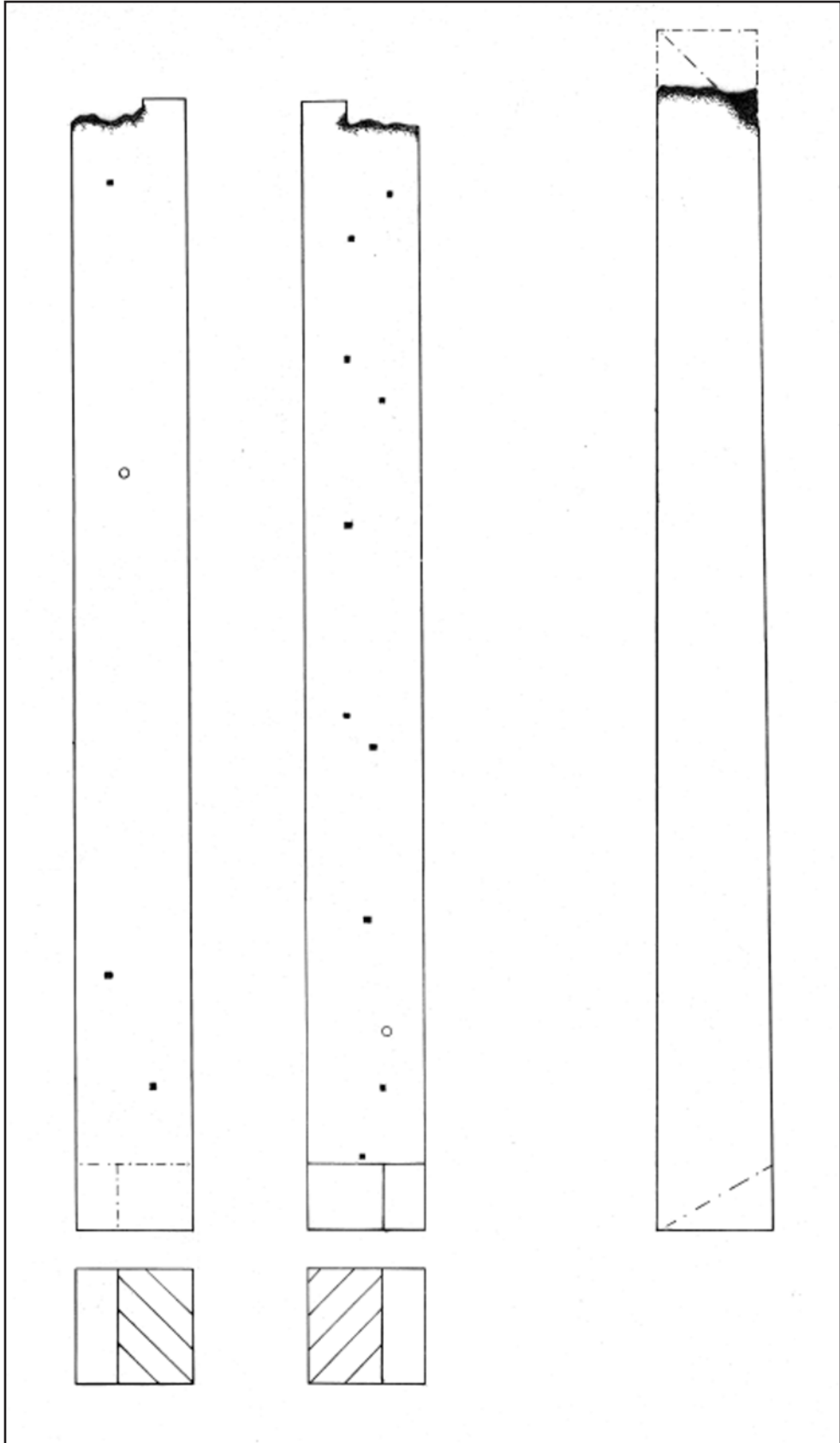


Figure 6.62. Unidentified timber UK-1 inked drawing.



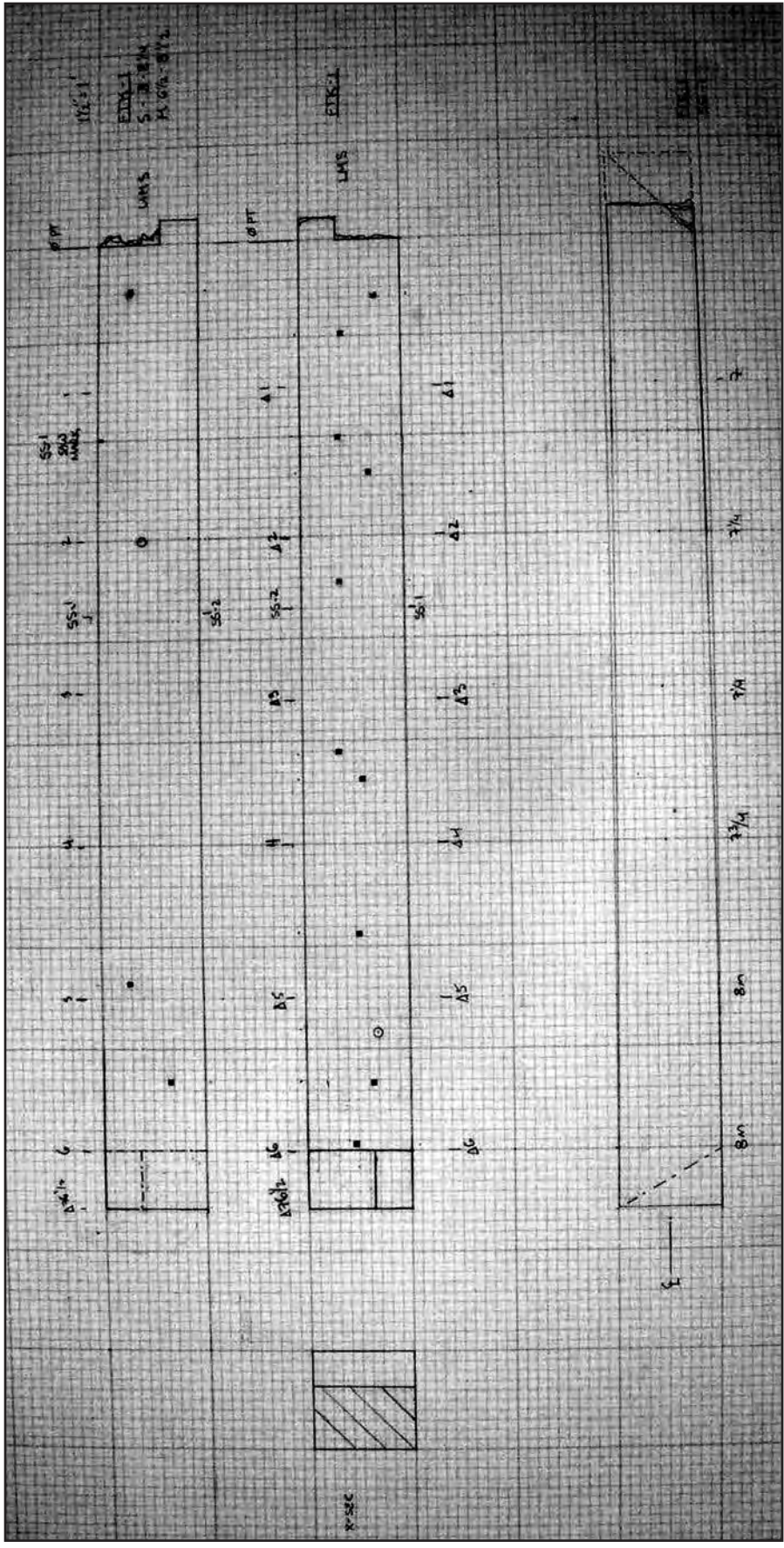


Figure 6.63. Unidentified timber UK-1 scale drawing.

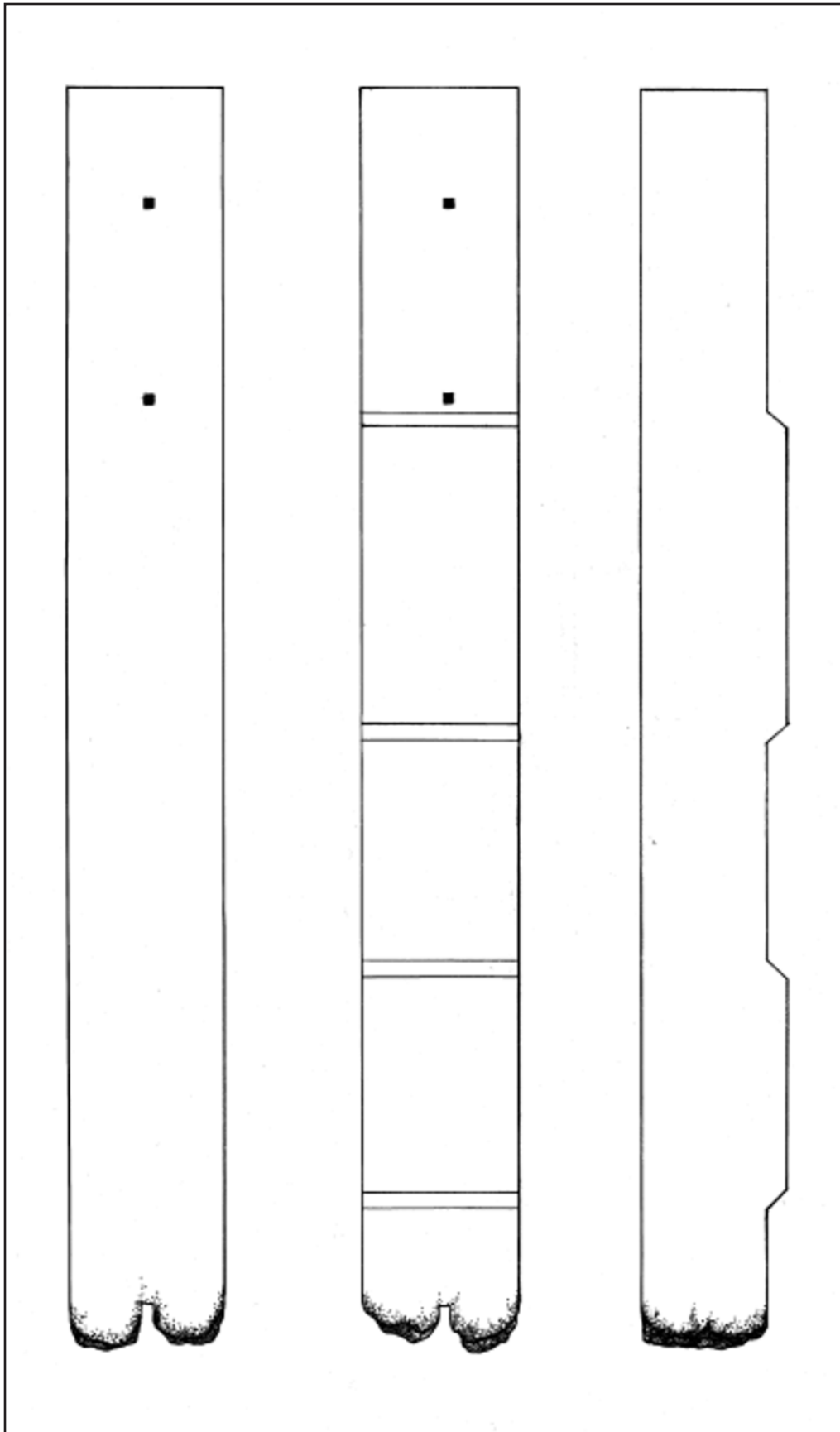


Figure 6.64. Keelson section KSN-1 inked drawing.

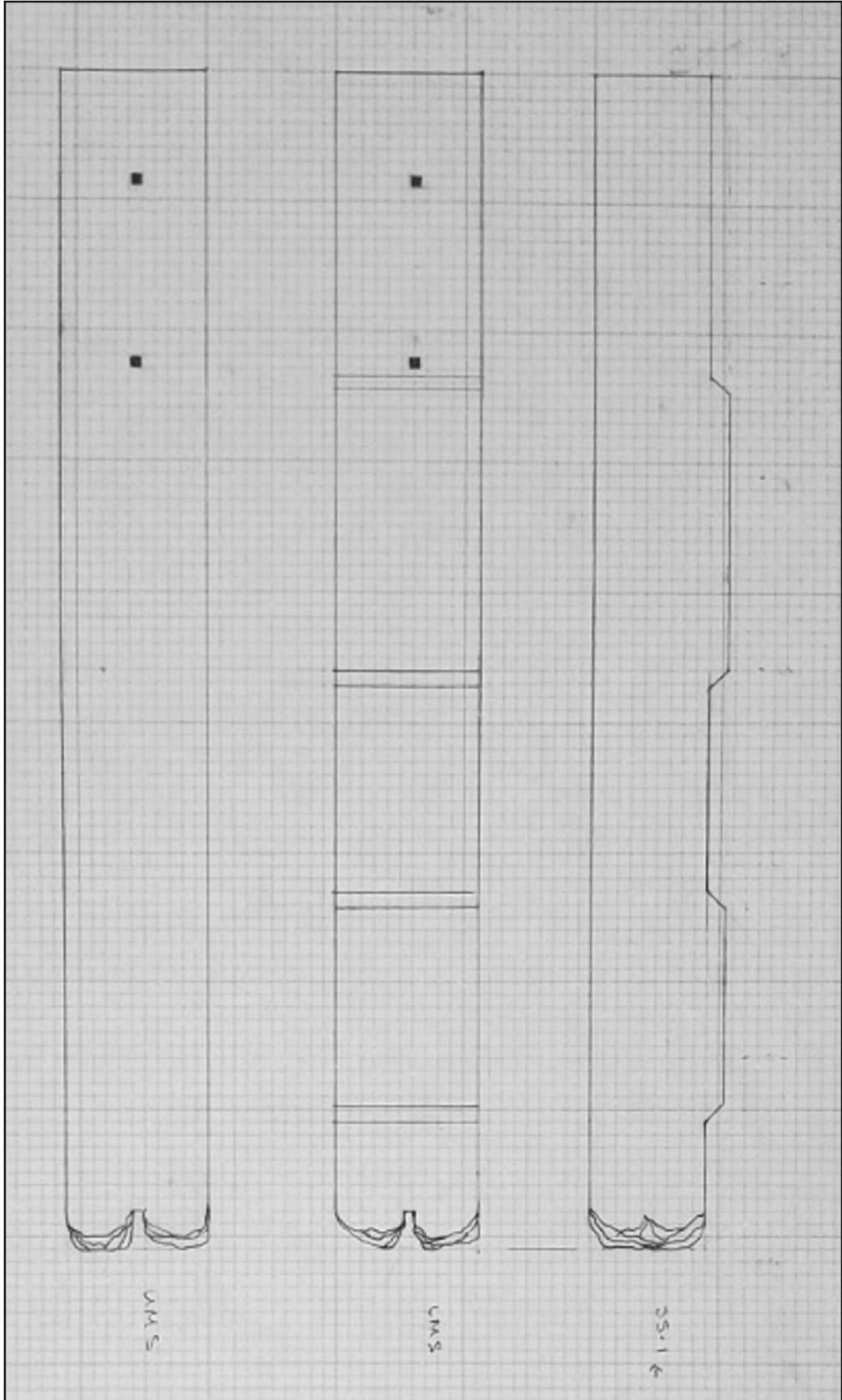


Figure 6.65. Keelson section KSN-1 scale drawing.

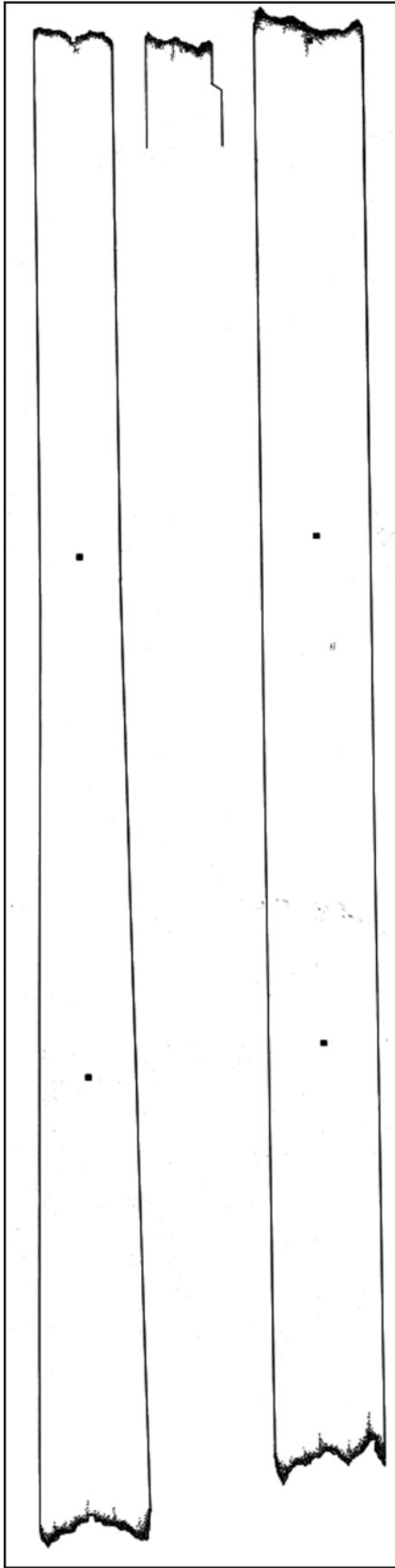


Figure 6.66. Keelson section KSN-2 inked drawing.

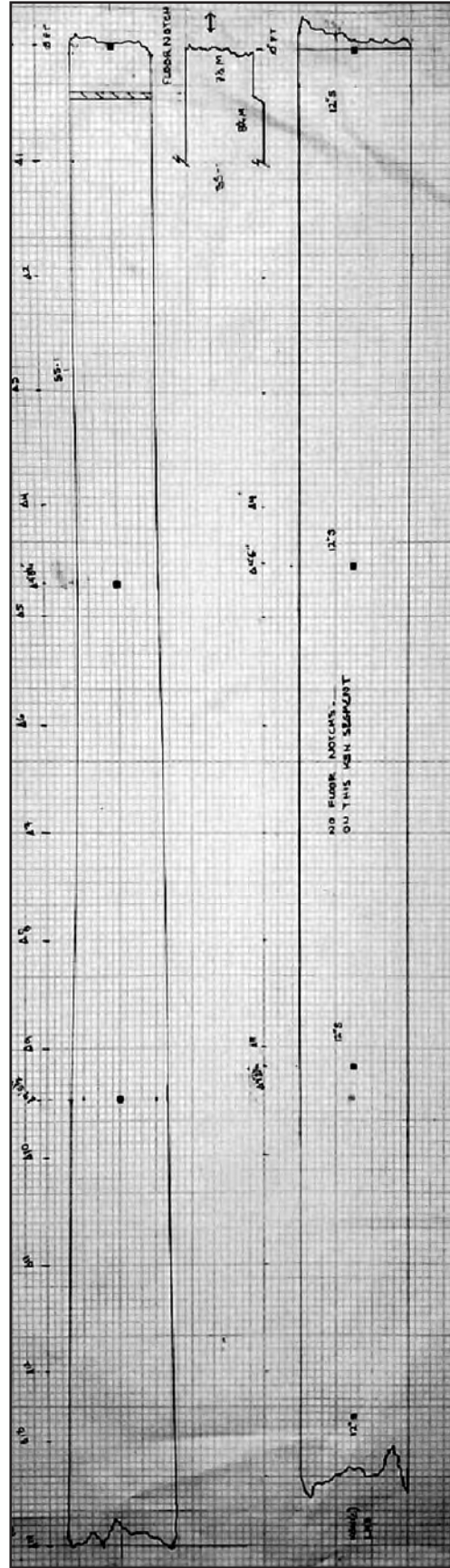


Figure 6.67. Keelson section KSN-2 scale drawing.

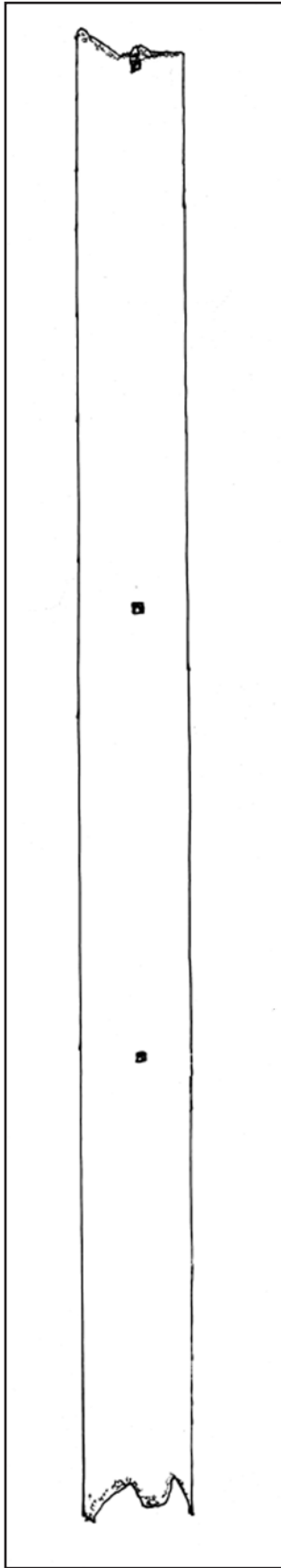


Figure 6.68. Keelson section KSN-3 inked drawing.

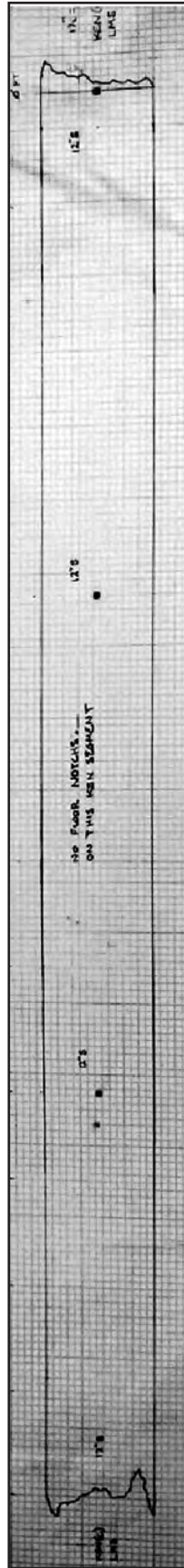


Figure 6.69. Keelson section KSN-3 scale drawing.

4 feet 6 ½ inches farther down the timber from the first. A third bolt was located 4 feet 7 ¾ inches farther down the timber from the second. There were no additional diagnostic features associated with KSN-3. Deterioration eliminated evidence of tool marks on the timber surfaces.

### *Hull And/Or Ceiling Planking*

A total of six examples of plank were found to be sizeable enough to be diagnostic. All were documented with scale drawings. All six appear to represent hull or possibly ceiling planking.

#### *PLANK EXAMPLE PL-1*

PL-1 was fashioned of oak and measured 5 feet 7¼ inches in length, 12 inches in width, and 2 inches in thickness (Figures 6.70 and 6.71). The remains of scarfs on one side may suggest that it was a short section fitted in to repair damage or deterioration. Half-inch-square iron spikes were used to attach the section to floors or futtocks. Spikes were located from 2 to 3 inches inboard of the plank edges and sets were separated from 12 ½ to 16 inches. Deterioration eliminated evidence of tool marks on the plank surfaces.

#### *PLANK EXAMPLE PL-2*

PL-2 was fashioned of oak and measured 5 feet 7 ¼ inches in length, 12 inches in width, and 2 inches in thickness (Figure 6.72 and 6.73). The remains of scarfs on one side of both ends may suggest that it was a short section fitted in to repair damage or deterioration. Half-inch-square iron spikes were used to attach the section to floors or futtocks. Spikes were located from 2 to 3 ¼ inches inboard of the plank edges and sets were separated from 13 ½ to 14 ½ inches. Deterioration eliminated evidence of tool marks on the plank surfaces.

#### *PLANK EXAMPLE PL-3*

PL-3 was crafted of oak and measured 10 feet 9 inches in length, 13 inches in width, and 2 inches

in thickness (Figures 6.74 and 6.75). One end was square cut for a butt joint. Half-inch-square iron spikes were used to attach the section to floors or futtocks. Spikes were located from 1 ½ to 2 ¾ inches inboard of the plank edges and sets were separated from 11 ½ to 15 inches. Only one spike was apparently used to fasten the butt and one trunnel was used in place of a spike on one set near the butt end of the plank. Deterioration eliminated evidence of tool marks on the plank surfaces.

#### *PLANK EXAMPLE PL-4*

PL-4 was fashioned of oak and measured 7 feet 10 inches in length, 12 inches in width, and 2 inches in thickness (Figures 6.76 and 6.77). One end was square cut for a butt joint. Half-inch-square iron spikes were used to attach the section to floors or futtocks. Spikes were located from 1 to 2 ¾ inches inboard of the plank edges and sets were separated from 11 to 16 inches. Three spikes were used to fasten the butt and a 5/8-inch-diameter trunnel was used in conjunction with two spikes on one set near the butt end of the plank. A second trunnel measuring 1 ¼ inch in diameter was used in conjunction with a second set of spikes near the center of the plank. Deterioration eliminated evidence of tool marks on the plank surfaces.

#### *PLANK EXAMPLE PL-5*

PL-5 was crafted of oak and measured 6 feet 8 ¾ inches in length, 12 inches in width, and 2 inches in thickness (Figures 6.78 and 6.79). Both ends were square cut for butt joints. Half-inch-square iron spikes were used to attach the section to floors or futtocks. Spikes were located from 1 ¾ to 2 ½ inches inboard of the plank edges and sets were separated from 10 to 16 inches. Two spikes were apparently used to fasten the butt at one end. Deterioration eliminated evidence of tool marks on the plank surfaces.

### *PLANK EXAMPLE PL-6*

PL-6 was fashioned of oak and measured 13 feet 6¾ inches in length, 13 inches in maximum width, and 2 inches in thickness (Figures 6.80 and 6.81). Both ends were square cut for butt joints. Half-inch-square iron spikes were used to attach the section to floors or futtocks. Spikes were located from 1¼ to 2 inches inboard of the plank edges and sets were separated from 10 to 15 inches. Two spikes were apparently used to fasten the butt at one end while three were used at the other end. Two ½-inch-diameter trunnels were employed as fasteners roughly 14 inches inboard from the plank butts. Deterioration eliminated evidence of tool marks on the plank surfaces.

### DESIGN AND CONSTRUCTION ANALYSIS

Comprehensive analysis of the overall design and construction of the Site 44HT0125 vessel is not possible due to the limited structural evidence that is available. In addition, the physical condition of the timbers affected analysis. Damage that occurred in the recovery process and deterioration that followed was evident. Post-recovery deterioration also virtually eliminated construction tool marks. Those impacts minimized the quality and subsequent usefulness of photographic documentation (Figure 6.82).

Evidence available for the current study consists of elements of the lower hull from the forefoot aft to a point likely forward of midships. Although that limited evidence precludes positive identification of the specific vessel type and rig, it does provide insight into construction features. Those features appear to reflect both traditional and perhaps relatively unique aspects in the shipwreck archaeological record.

Historical research to date indicates that schooners were the predominant vessel type employed in delivering stone for Fort Monroe and Fort Calhoun. However, many sloops and some brigs were also engaged in that trade (Appendix A). Unfortunately, no evidence of mast steps is avail-

able to support an identification of the Hampton Bar vessel's rig. The most relevant diagnostic difference between sloops and schooners in the historical data appears to be cargo capacity. Sloops tended to transport 50 tons or less while schooners and brigs in the trade could deliver three times that amount. At this point, a schooner is perhaps more likely, but a small brig cannot be ruled out based on the evidence at hand. While the vessel type may never be resolved, analysis of the available structure does provide insight into some relatively unique and interesting design and construction features of the Site 44HT0125 wreck.

Remains of the 18-inch high keel suggests a vessel designed and rigged to sail close on the wind as well as with the wind on the beam or abaft. The shallow rabbet at the top of the keel timbers suggests that the garboard strakes were equal to and not slightly thicker than the two-inch thick planks recovered at the wreck site (Figure 6.83). It is possible that one or more of the recovered planks could be bilge ceiling as floor timbers confirm planking outboard of the unfastened limber plank. However, the lack of damage that might well be associated with the cargo of stone or perhaps dunnage placed underneath is nowhere apparent on any of the recovered planks.

With a few exceptions, the recovered planks were all attached with iron spikes. The exceptions were represented by a few trunnels of varying diameter and random location. On many vessels of the eighteenth and early nineteenth centuries, trunnels appear to be the predominant hull and ceiling fastener. This could suggest that iron was more readily available and/or perhaps less expensive than trunnels, as unlikely as that would appear.

The bolt pattern in the top of the keel confirms that not every floor was attached to the keel as might be considered traditional. That pattern suggests that moving aft from the bow every other floor or every fourth floor may have been bolted to the keel and possibly keelson (Figure 6.84). Those floors may represent loft masters employed

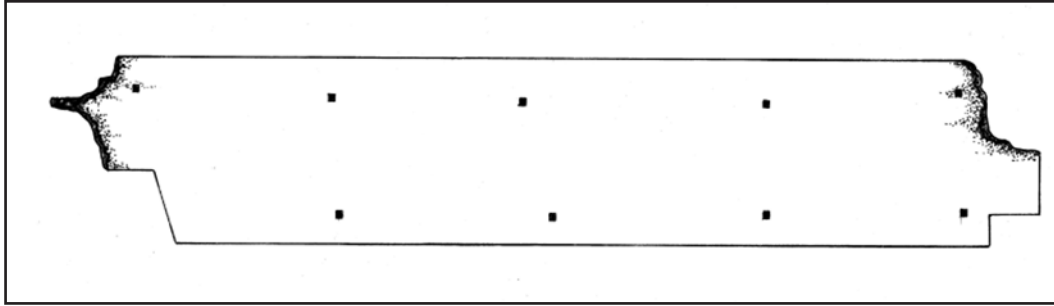


Figure 6.70. Plank example PL-1 inked drawing.

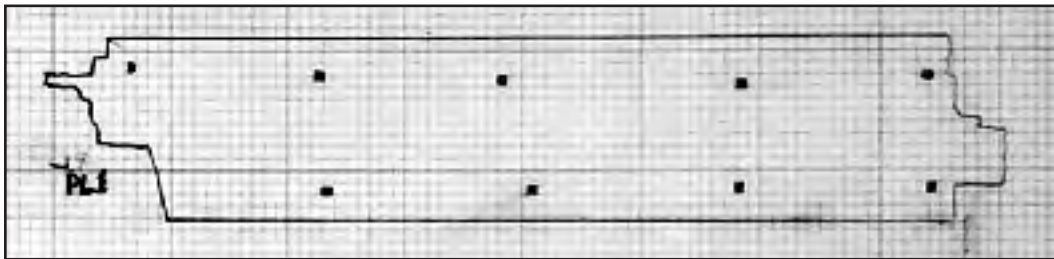


Figure 6.71. Plank example PL-1 scale drawing.

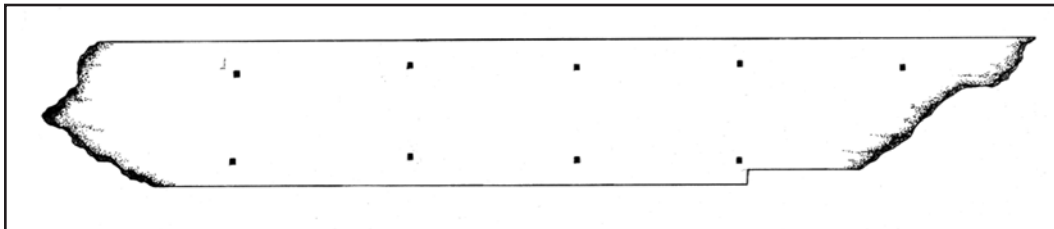


Figure 6.72. Plank example PL-2 inked drawing.

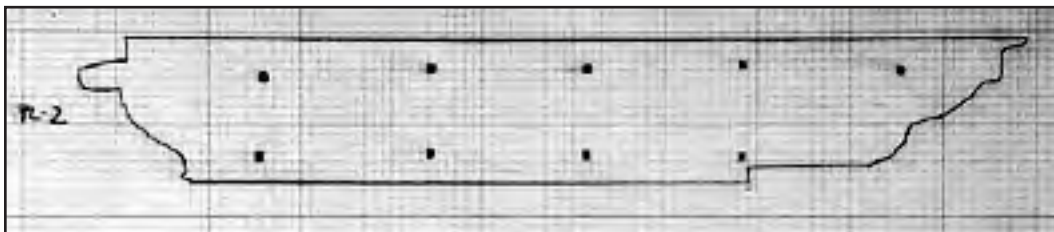


Figure 6.73. Plank example PL-2 scale drawing.



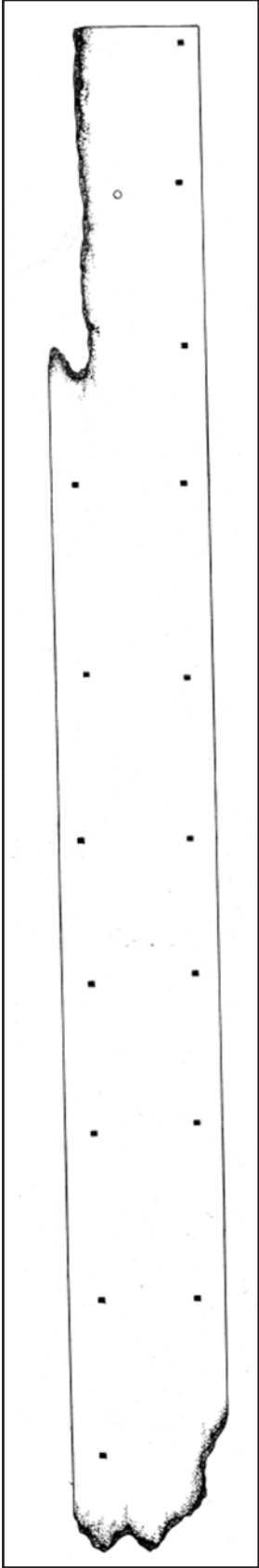


Figure 6.74. Plank example PL-3 inked drawing.

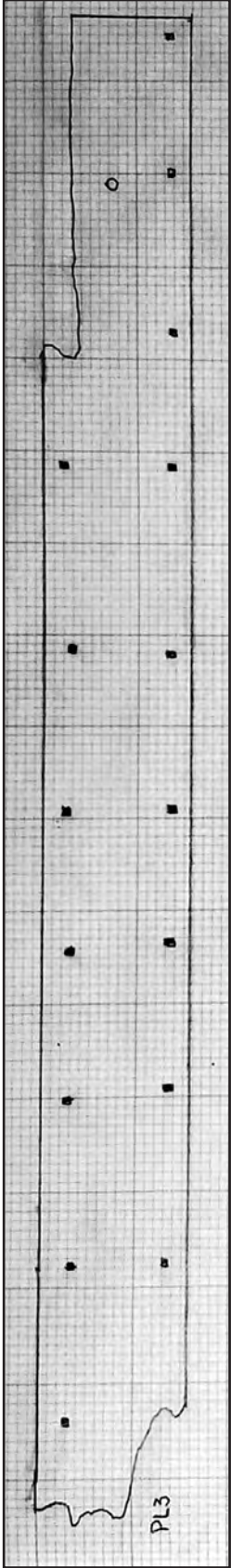


Figure 6.75. Plank example PL-3 scale drawing.

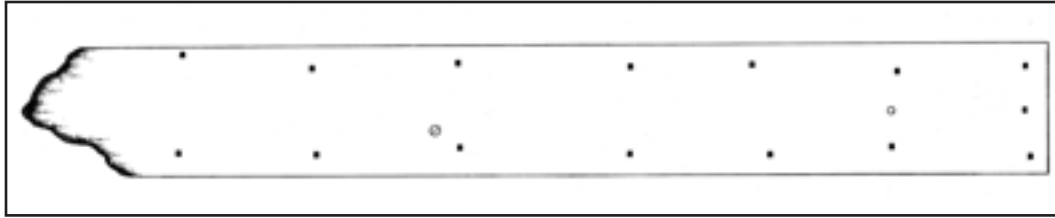


Figure 6.76. Plank example PL-4 inked drawing.

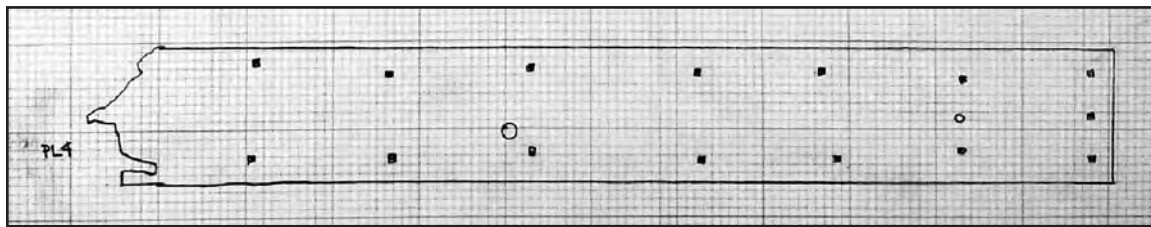


Figure 6.77. Plank example PL-4 scale drawing.

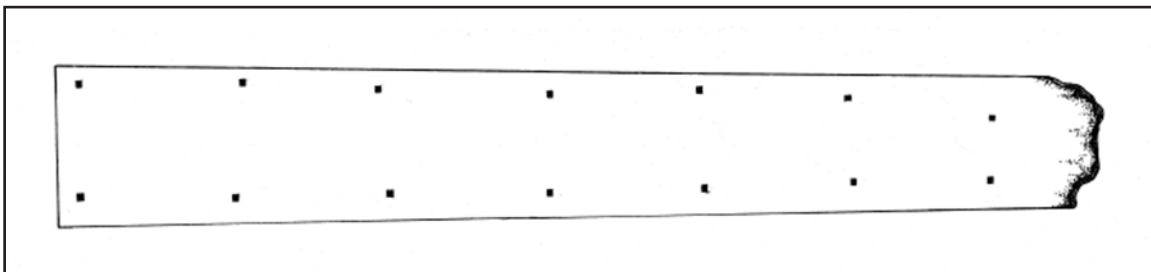


Figure 6.78. Plank example PL-5 inked drawing.

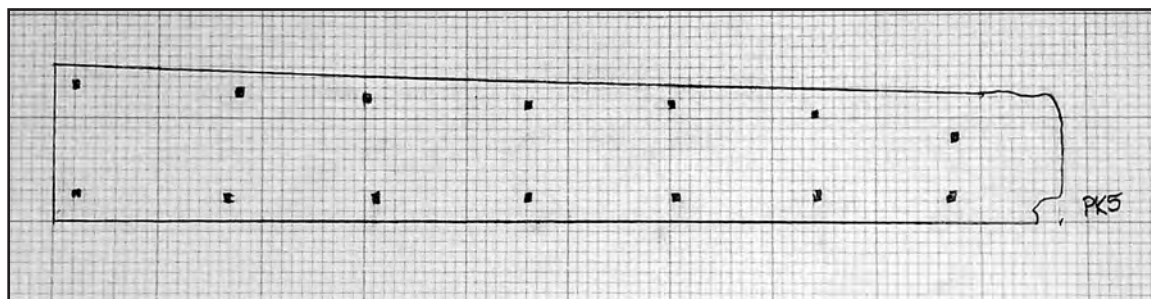


Figure 6.79. Plank example PL-5 scale drawing.

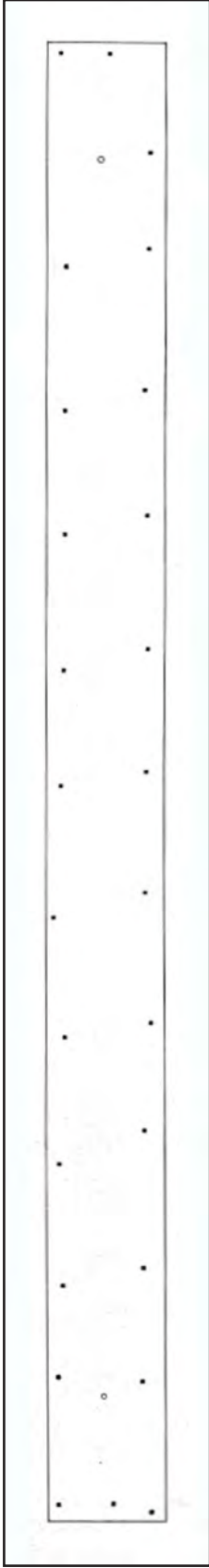


Figure 6.80. Plank example PL-6 inked drawing.

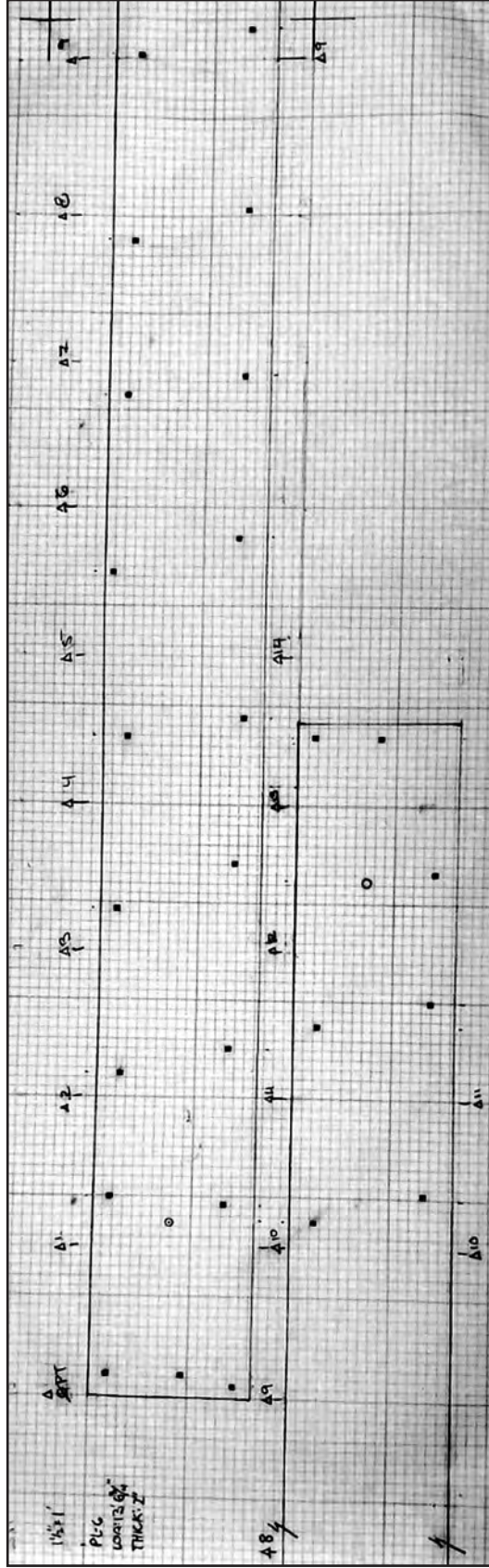


Figure 6.81. Plank example PL-6 scale drawing.

in whole molding construction. That technique could be suggested by small holes drilled into the outboard surface of floors to attach ribbands. Floor timbers placed between the loft masters would have been shaped to ribbands or planking. The interim floors appear to have been attached to the keelson and spaced approximately 56 inches on center. That pattern is not well documented but may not be uncommon.

A well-documented eighteenth-century wreck recorded off Town Point (Pensacola, Florida) contains a forefoot structure that parallels the Site 44HT0125 forefoot knee. Documentation of those remains (designated as Florida Site 8SR983) is presented in a report prepared for the Florida Bureau of Archaeology. An almost identical timber labeled as the “knee of the head” was found on that subject site (Franklin, Morris, and Smith 1991:119-122). Details from the Florida Site 8SR983 bow construction confirm the similarity with Site 44HT0125 bow construction (Figures 6.85 and 6.86).

The Town Point Wreck (Florida Site 8SR983) was identified in primary documents as a small, schooner-rigged shallop (built in Jamaica) and used as a tender for HMS Active. It was lost with HMS Florida during an operation transporting

British troops from Jamaica to Pensacola during the American Revolutionary War in 1778 (Franklin, Morris, and Smith 1992:119-122).

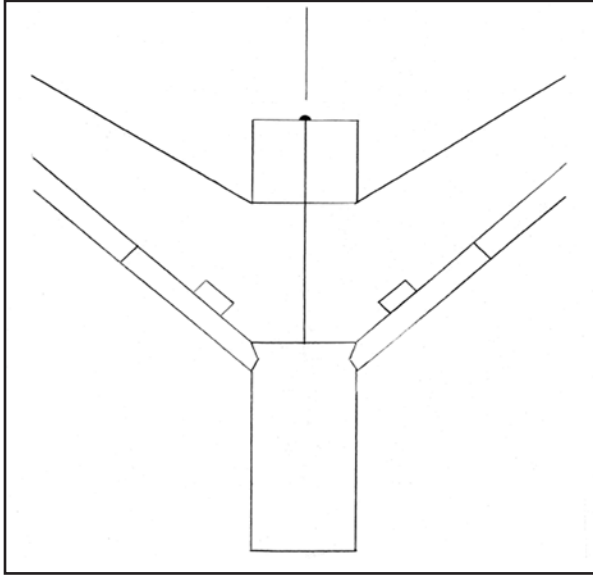
The interim floors of Site 44HT0125 do not appear to have been similarly attached and may have only been bolted to the keelson. The pattern of bolts in the sections of keelson appear to support that possibility. As none of the recovered floors were notched to fit over the keel, the notched keelson, keelson bolts, hull and ceiling spike patterns demonstrate that the hull planking and bilge ceiling strakes held those floors in place perpendicular to the keel and keelson. The spike pattern on the recovered hull planks confirms that there were floors in between those attached only to the keel and/or keelson.

None of the recovered floor timbers contained evidence of attachment to associated first futtocks. That pattern became more prevalent towards the beginning of the nineteenth century. The pattern of floors and unattached futtocks was found in the remains of the British sloop *Boscawen* (Figure 6.87).

*Boscawen* was constructed in 1759 at Fort Ticonderoga on Lake Champlain and sank at its mooring following the French and Indian War. The framing pattern was described as one with



Figure 6.82. Floor timber FL-1 photomosaic image.



*Figure 6.83. Reconstructed cross section of floor timber FL-1.*

“...no continuity to the frames; second futtocks were unconnected to the floor timbers, and first futtocks overlapped the two without being fastened to them” (Kevin Crisman quoted in: Steffy 1994:170-171).

The deadrise of the forefoot knee and the 12 floor timbers indicate that the Site 44HT0125 vessel was relatively sharp in the bow and not flat in the floor approaching or close to midships. The configuration of the forefoot knee suggests what might be considered to be a non-traditional approach to design and construction of the bow. Although the forward base of the forefoot knee is missing, it is apparent from the fastener pattern

and that timber’s shape that it was fitted to the top of the keel and attached aft of the inner stem. That timber likely contained the forward extremity of the keel rabbet. The stem or inner stem appears to have been cut to form a rabbet with the hull plank butts. The fastener pattern on both sides of the forefoot knee indicate that the lower hull planking was directly attached.

Judging from the deadrise, FL-1 was the most forward of the 12 floor timbers recovered. Dead rise on that floor timber measured approximately 44 degrees. That suggests it was located at a point on the keel aft of the forefoot knee where the deadrise was approximately 65 degrees. Deadrise of the remaining floor timbers decreases to 12 degrees at FL-12. Each of the recovered floor timbers was attached to the keelson with a 1-inch-square bolt driven through a 1-inch-diameter drilled hole. The wood block located on the bottom of FL-12 could be an indication that it filled an opening cut to inspect the condition of that timber (Figure 6.88). The hull plank fastener pattern on FL-9 may well be an indication that one or more strakes above the garboard had been replaced or refastened.

Finally, it appears that additional lower hull structure could possibly still be preserved at the wreck site. Because of the unique nature of the previously recovered elements of vessel structure, TAR recommends that additional on-site investigation be considered to determine if that is the case. If that is the case, additional onsite investigation and recovery of surviving remains should be given serious consideration.

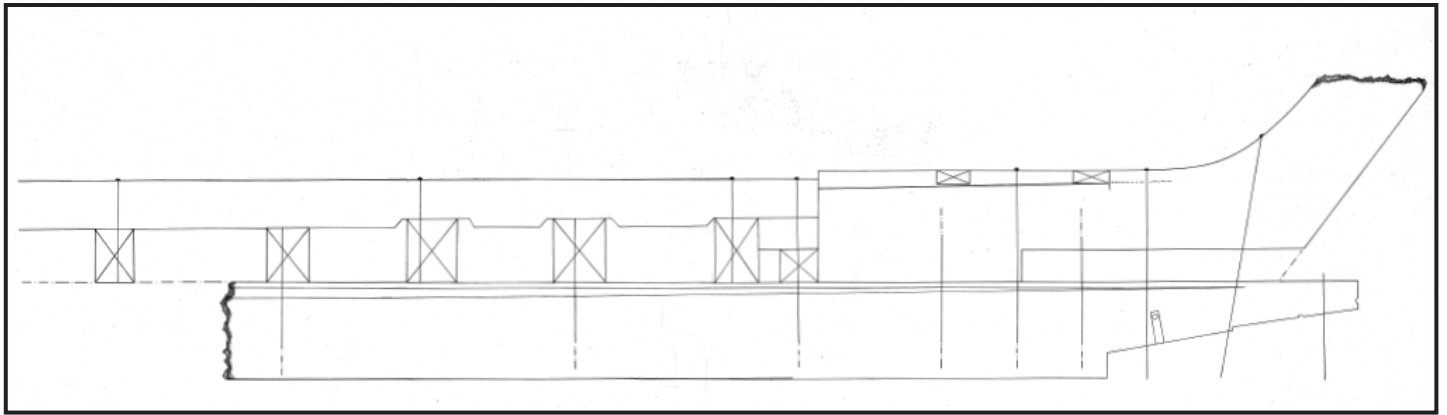


Figure 6.84. Reconstruction of Site 44HT0125 bow evidence.

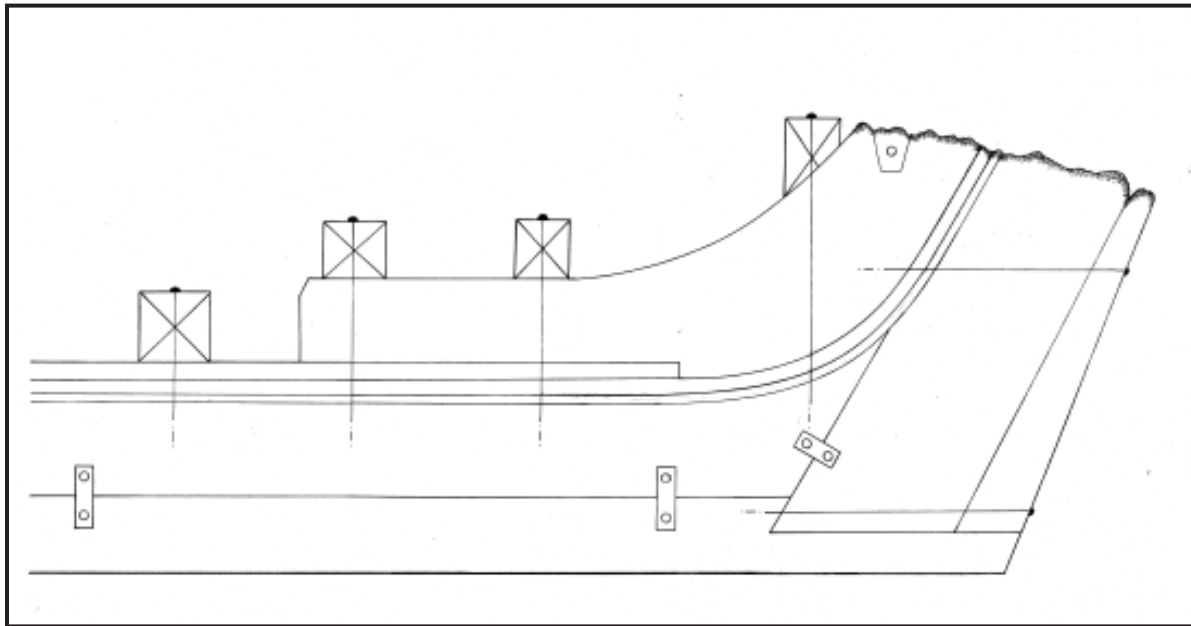


Figure 6.85. Inked image showing forefoot of Florida Site 8SR983 wreck.

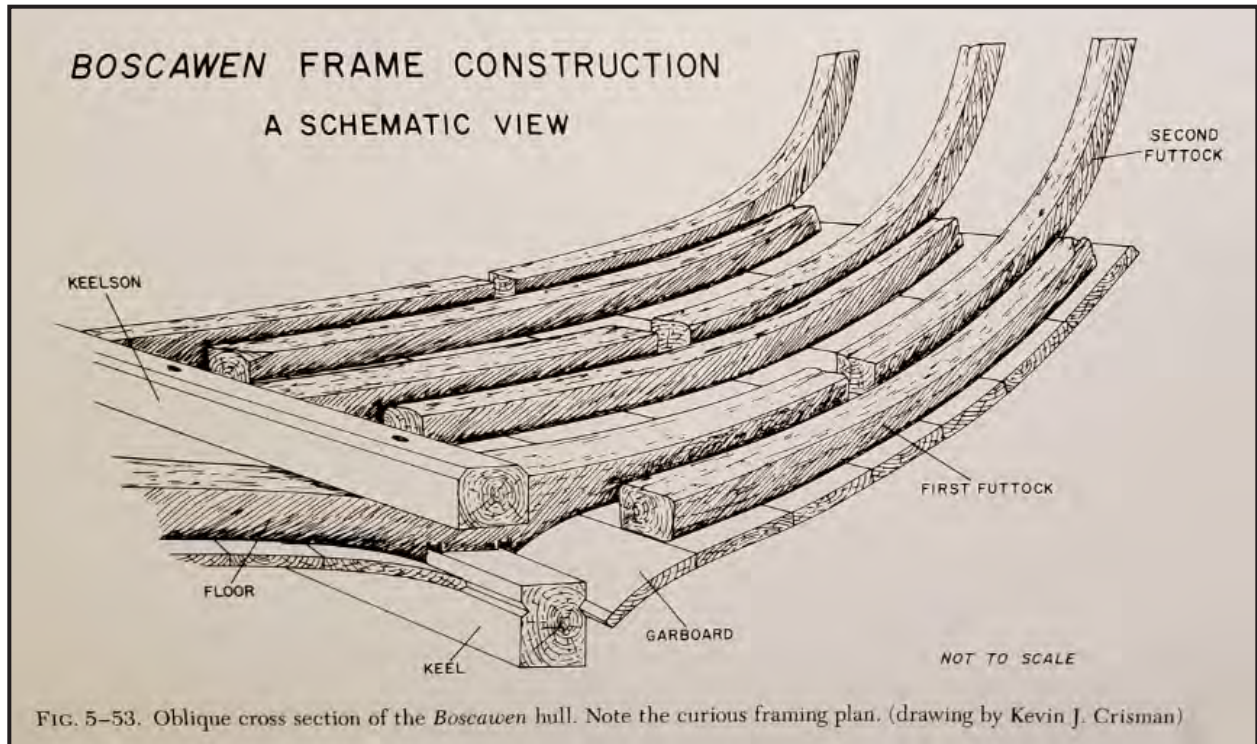


Figure 6.86. Framing pattern on *Boscawen* (courtesy of Kevin Crisman).



Figure 6.87. Block in the bottom of floor timber FL-12 and plank spike hole.





## 7: Research Summary

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Although it is difficult to draw reliable conclusions based on the limited amount of vessel structure, analysis of the timbers suggests a distinctive approach to construction. Perhaps the most unique element of the Site 44HT0125 vessel remains is what is referred to as the forefoot knee. The distinctive pattern of fastening the floor timbers to the keel and/or keelson also appears to be characteristic of a specific shipwright, shipyard, or geographical tradition.

The extremely limited use of trunnels and employment of iron fasteners could also provide additional clues to the geographical origin and date of construction. Analysis of the wood employed in construction of the vessel might also provide clues of the date and geographical location of construction. Finally, it is statistically likely that the Site 44HT0125 vessel was schooner rigged. As the evidence from the current project indicates, the previous interpretation by Goodwin that the wreck represents a barge is almost certainly incorrect.

While it is impossible to determine the type of vessel based on the structural evidence available, the source of the stone cargo recovered from the site and historical research support two credible possibilities. The tonnage recorded for sloops engaged in delivering stone for Fort Monroe and Fort Calhoun appears to be about 50 tons or less. Given evidence that portions of the shipwreck were removed during construction of the existing HRBT facilities in the 1950s and 1970s, the 33–41 tons of granite recovered during recent dredging activity and documented by the current study probably only represent a portion of the vessel's total cargo, which very likely exceeded the

50-ton capacity of a sloop and more consistent with typical tonnage for a schooner. According to the historical evidence from engineers' logs of deliveries, schooners were the most prevalent vessels carrying stone for construction of Fort Monroe and Fort Wool. Therefore, schooners are the most likely candidates for association with Site 44HT0125. Based on current findings, schooners also represent the highest percentage of vessels carrying stone to be lost in the Hampton Roads vicinity.

Geological analysis of stone cargo recovered from Site 44HT0125 resulted in identification of the material as Port Deposit gneiss, sourced to deposits along the lower Susquehanna River, either from quarries on the left (east bank) at Port Deposit or slightly downstream on the right (west bank) at Havre de Grace. Sampling of construction material at both Fort Monroe and Fort Wool and the material used to build up the artificial island for Fort Wool was useful in identifying the likely destination of the cargo associated with the Site 44HT0125 shipwreck. The size and shape of the cargo rock is also indicative.

Samples of building stone from Fort Monroe identify the construction material as Port Deposit gneiss, matching the cargo stone. In contrast, the building stone used for the partially completed fortification at Fort Wool consists mainly of Georgetown gabbrodiorite. Although the base of stone used to build up the island for Fort Wool on Rip Raps Shoal consists of Port Deposit gneiss, the massive blocks for that purpose are much larger than any of the cargo stone. Therefore, the cargo appears to have been destined for Fort Monroe, and in that case the wreck event would

date to sometime during the period of construction, 1818–1834.

With these details regarding the cargo stone taken into consideration, the shipwreck events on Hampton Bar (where Site 44HT0125 was located) reported in documentary sources (mainly newspaper reports) can be narrowed down so that the site could represent one of two possible reported wrecks.

The first likely possible candidate is the schooner *Handy*, which wrecked on November 25, 1819, while “loaded with stone for Old Point Comfort.” The second is an unnamed schooner that sank on Hampton Bar on April 5, 1823. Although one of these two vessels may represent

the Site 44HT0125 shipwreck, it is possible that other wrecks that match the criteria of cargo, destination, and time period may not have been reported or were reported in an edition of a newspaper that has not survived or has not been included in the databases of newspapers of the period. This interpretation is also consistent with findings of the dates for timbers analyzed by the dendrochronologist.

The research conducted for this project as reported here confirms the NRHP eligibility of Site 44HT0125 under Criteria A and C. In view of the successful completion of data recovery as specified in the treatment plan, no further work is recommended at Site 44HT0125.

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*Appendix A:*  
Summary Tables of Selected  
Documentary Source Material

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**TABLE A.1 (PART 1 OF 3)**  
**NINETEENTH-CENTURY TO EARLY TWENTIETH-CENTURY HAMPTON BAR MARINE CASUALTIES**

Date	Type <i>Name</i>	Cargo	Voyage	Shipwreck Notes
8/21/1808	Schooner <i>Laurel</i>	Crabs and bacon	Norfolk for Charleston	“The schooner Laurel, Hopkins, which sailed from this port [Norfolk] on Thursday morning for Charleston, (S.C.) sprung a-leak immediately on getting under weigh [ <i>sic</i> ], which continued to increase so rapidly, that the captain was compelled to run her ashore on Hampton Bar, where she is lost. Passengers, rigging and most of the cargo saved....The sch’r. Laurel, which lately foundered on Hampton bar, has been raised by captain Edward Herbert, of this port, and carried into Hampton....” ( <i>City Gazette</i> 1808; <i>Charleston Courier</i> 1808).
5/19/1809	Schooner <i>Seahorse</i>	Naval stores, lumber & cotton	Wilmington NC for Philadelphia	Under the command of Master Wheaton, the Philadelphia registered vessel...“ran on Hampton bar on Wednesday night, and bilged” ( <i>Federal Gazette</i> 1809).
Before 11/25/1819	Schooner <i>Handy</i>	Stone	Georgetown for Old Point Comfort [Fort Monroe]	[Wreck location in shallow water, possibly Hampton Bar] Sank “in an instant” in water shallow enough for Captain Thomas Kelly, a Mr. Greene, and one other person to cling to rigging for nine hours before their rescue and transport to Norfolk; four others aboard drowned ( <i>Alexandria Gazette &amp; Daily Advertiser</i> 1819).
1822	Schooner <i>Relief</i>	Stone	? for Rip Raps	[Wreck location not specified, possibly Hampton Bar.] “Sunk while employed by Federal government to transport stone to Rip Raps” (U.S. House of Representatives 1853). <b><i>See Source 1</i></b>
4/3/1823	Schooner, no name given	Stone		On its way from Baltimore to Edenton, North Carolina, the schooner Polly Ashbee stopped in at Norfolk after losing both of its anchors and its cable. The next morning, April 3, revealed an unnamed schooner, “laden with stone” aground on Hampton Bar with the “sea making a fair breach of her” ( <i>Baltimore Patriot &amp; Mercantile Advertiser</i> 4/5/1823).
4/2-3/1825	Brig <i>Thames</i>			“The brig Thames, on Hampton bar, has bilged and is nearly full of sand and water. To ease her yesterday during the gale, Capt. Talbot cut away her mainmast, (she having previously thumped away her rudder,) and to-day has succeeded in saving the principal part of her cargo and stores, which have been brought up to town [Norfolk] in lighters. The main rigging was lost with the spars. Capt. T. and his crew have come up” ( <i>Phenix Gazette</i> 1825a; <i>Constitutional Whig</i> 1825).

**TABLE A.1 (PART 2 OF 3)**  
**NINETEENTH-CENTURY TO EARLY TWENTIETH-CENTURY HAMPTON BAR MARINE CASUALTIES**

Date	Type <i>Name</i>	Cargo	Voyage	Shipwreck Notes
12/13/1825	Sloop	Coffee and wood		“Saw a Baltimore schr. Clipper built, ashore on the N. side of Old Point Comfort, laden with coffee and logwood, had lost one man, and was bilged. Saw a sloop at anchor, or ashore, below Crump’s Hill, and a sloop ashore on Hampton bar” ( <i>Phoenix Gazette</i> 1825b).
4/5-6/1834	Schooner <i>Philadelphia</i>	Stone	“from Port Deposit...for the Rip Raps”	“The schooner Philadelphia, [Captain] Outten, from Port Deposit [ <i>sic</i> ]...was run foul of by an Egg Harbor schooner [ <i>Mark</i> ]...which struck her adrift, and she ran on Hampton Bar and sunk ( <i>Alexandria Gazette</i> 1834). “sp[ ]it open” (Lee 1834). <b>See Sources 2 and 3</b>
4/5-6/1834	Schooner <i>Mark</i>	Cast-iron pipes	Philadelphia for Petersburg	After colliding with the schooner <i>Philadelphia</i> , ran ashore on Hampton Bar; “She is full of water—crew saved” ( <i>Alexandria Gazette</i> 1834; “...lost at the head of the bar”, four survivors (Lee 1834). <b>See Sources 2 and 3</b>
4/5-6/1834	Schooner <i>James Eleanor</i>	Stone		“The schr. James Eleanor, [Capt.] James, is ashore on Hampton Bar—apprehensions are felt for her safety.” ( <i>Alexandria Gazette</i> 1834; Lee 1834). “...aground near mouth of [Mill] Creek deserted by the crew, got off last night” (Lee 1834). <b>See Sources 2 and 3</b>
4/22/1838	Schooner <i>Encera</i>		New Bern, NC for Alexandria	... “struck on Hampton Bar, 22d April, while rounding to, and soon after sunk” ( <i>The Sailor’s Magazine</i> 1838).
8/1839	Schooner <i>John &amp; William</i>	Coal	Richmond for Fredericksburg	...”was driven on Hampton Bar in the late gale and has gone to pieces, crew saved, &c, &c.” ( <i>Richmond Enquirer</i> 1839).
9/5-7/1839	“several vessels”			“We learn that several vessels were driven ashore on Hampton Bar, some of which were dismasted, and it is reported one or two of them foundered at their anchors” ( <i>Alexandria Gazette</i> 1839; <i>The Madisonian</i> 1839). <b>See Source 4</b>
4/17/1845	Schooner <i>Tarry Not</i>	Barrels of fish	Edenton NC for Baltimore MD	“Schr Tarry Not, Edmondson, from Edenton, N.C. for Baltimore, got ashore on Hampton bar in a heavy blow 17th inst. from the east, and was compelled to throw overboard a few barrels of fish.” ( <i>American Republican and Baltimore Daily Clipper</i> 1845).
5/1845	<i>Alert</i>			“The Alert, which had been on Hampton Bar several days, was gotten off last nigh [ <i>sic</i> ], and anchored under Seawell’s [ <i>sic</i> ] Point” ( <i>New York Herald</i> 1845).
7/11/1845 A-4	Schooner USS <i>Flirt</i>		For New Granada & Carthagen	Grounded on Hampton Bar with no damage ( <i>Weekly National Intelligencer</i> 1845).

**TABLE A.1 (PART 3 OF 3)**  
**NINETEENTH-CENTURY TO EARLY TWENTIETH-CENTURY HAMPTON BAR MARINE CASUALTIES**

Date	Type <i>Name</i>	Cargo	Voyage	Shipwreck Notes
10/13/1846	Brig <i>Francis</i>		Portland, ME for Richmond	Under command of Master Cobb, the <i>Francis</i> ...“went ashore” ( <i>New York Herald</i> 1846).
2/1849	Schooner <i>Nathaniel J. Knight</i>	Corn	Tappahannock for Boston	“...on Wednesday night last in attempting to make a harbor, got ashore on Hampton Bar, during the snow storm, at last advices the vessel was perfectly tight, and not being in a dangerous situation will be, gotten off without damage to vessel or cargo—aid has been despatched [ <i>sic</i> ] to her.” ( <i>New York Herald</i> 1849).
10/2/1852	Schooner <i>J. A. Stewart</i>	Lumber	Norfolk for Baltimore	“is ashore at Hampton bar”; under command of Captain Jones ( <i>New York Herald</i> 1852).
10/2/1852	Schooner <i>Susannah</i>			“where from or bound not known, is also sunk at the same place” [Hampton Bar] ( <i>New York Herald</i> 1852).
12/19/1859	Schooner			“A surveying schooner was run into by another vessel on Hampton bar, and had to slip her cables to get clear. She came off with the loss of both anchors and her jibboom. The collision occurred on Friday” ( <i>The Day Book</i> 1859).
12/3/1860	Schooner <i>Sallie</i>	Coal	Baltimore for New York?	Sprung a leak near Hampton Bar; vessel and cargo saved; registered at Milton, Delaware ( <i>Baltimore Wrecker</i> 1860; <i>The New York Times</i> 1860).
3/29/1862	Schooner <i>Chesapeake Trader</i>	8,100 24- lb. shot & gov’t stores	Washington DC Arsenal for Fortress Monroe	71 ft. x 22.6 ft. x 6.2 ft. / 83 <sup>94</sup> / <sub>95</sub> tons; grounded “on Hampton bar” (Committee on War Claims 1908). <b>See Source 5</b>
3/29/1862	Steamer USS <i>Eagle</i>		Towing <i>Chesapeake Trader</i>	Grounded during “thick and stormy” weather (Committee on War Claims 1908).
10/7/1875	Schooner			“Yesterday afternoon Messrs B&J Baker & Co received a telegram from Capt J W Thresher, informing them that his schooner (Name not given) was aground on Hampton Bar. They immediately dispatched the wrecking steamer resolute to her assistance” ( <i>New York Herald</i> 1875).
4/25/1902	Schooner <i>Addie</i>	Lumber	Bound for Old Point	“Two vessels were wrecked on Hampton bar last night. The schooner Addie, owend [ <i>sic</i> ] by Captain Cline, struck on the bar in the afternoon and sank. She was loaded with lumber and was bound for Old Point... The crews of the vessels experienced considerable hardship, owing to the high winds and rough weather. No casualties are reported” ( <i>Semi-Weekly Messenger</i> 1902).
4/25/1902	Pungy	Oysters	James River for Rappahannock	“An unknown pungy, loaded with oysters from James river for the Rappahannock, went on the bar and sunk until her hull was completely submerged” ( <i>Semi-Weekly Messenger</i> 1902).

**TABLE A.2 (PART 1 OF 2)**

**VESSELS UNDER CONTRACT TO CONVEY STONE TO OLD POINT COMFORT AND/OR FORT CALHOUN**

<b>Date</b>	<b>Type</b>	<b>Vessel Name [Captain]</b>	<b>Quantity</b>	<b>Destination</b>	<b>Notes</b>	<b>Citation</b>
1817	Unknown	Unknown		For Old Point Comfort	Georgetown Contractor Lloyd Pumphrey engaged in quarrying and shipping stone	U.S. House of Representatives 1822
1818	Unknown	Unknown		For Old Point Comfort	Georgetown Contractor Lloyd Pumphrey engaged in quarrying and shipping stone	
Summer 1818	Sloop	<i>Java</i> (1st trip)		For Old Point Comfort	Georgetown Contractor Joel Cruttenden; paid \$2 per perch	
Summer 1818	Sloop	<i>Java</i> (2nd trip)		For Old Point Comfort	Georgetown Contractor Joel Cruttenden; paid \$2 per perch	
1818	Sloop	<i>Flag</i> [Joel Skidmore]		For “Hampton Roads, at the Rip Raps”	Agreement between Captain Skidmore and Captain Elijah Mix for four months commencing 12 August 1818	
1818	Sloop	<i>Brilliant</i> [Harvey Bunce]		For “Hampton Roads, at the Rip Raps”	Agreement between Captain Bunce and Captain Elijah Mix for four months commencing 10 August 1818	
4/6/1819				Havre de Grace to Old Point Comfort	Advertisement to purchase vessels to transport stone. <b>See Source 6</b>	<i>Hartford Courant</i> 1819
1819	Sloop	<i>Slater</i>		For Rip Raps	<b>See Source 7</b>	Committee on the Judiciary 1973:572
1819	Sloop	<i>Halcyon</i>				
1819	Sloop	<i>Lincoln</i>				
1819	Sloop	<i>Manilla</i>				
1819	Sloop	<i>Borealis</i>				
1819	Schooner	<i>Marino</i>				
1819	Schooner	<i>Union</i>				
1819	Sloop	<i>Susanna</i> (1)				
1819	Sloop	<i>Susanna</i> (2)				
8/21/1819	27 diverse sail			For Rip Raps	“Our correspondent (Mr. Lyford) informs us, that, on the morning of the 21 <sup>st</sup> , ‘there were twenty-seven sail of vessels, of all denominations, on the Rip Raps, discharging their cargoes of stone, or waiting their turn; there have been at one time this summer forty sail’”.	<i>The Nashville Gazette</i> 1819
7/1820 & 8/1820	Numerous vessels	Identified	3,280 perches	For Rip Raps	H. Goldsborough & Co. on Elijah Mix account <b>See Source 7</b>	Committee on the Judiciary 1973:490

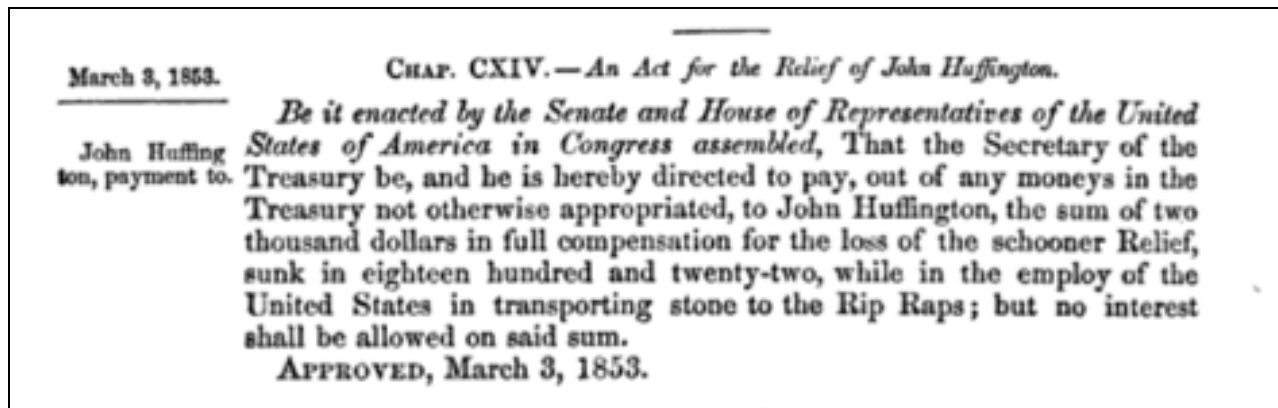
**TABLE A.2 (PART 2 OF 2)**

**VESSELS UNDER CONTRACT TO CONVEY STONE TO OLD POINT COMFORT AND/OR FORT CALHOUN**

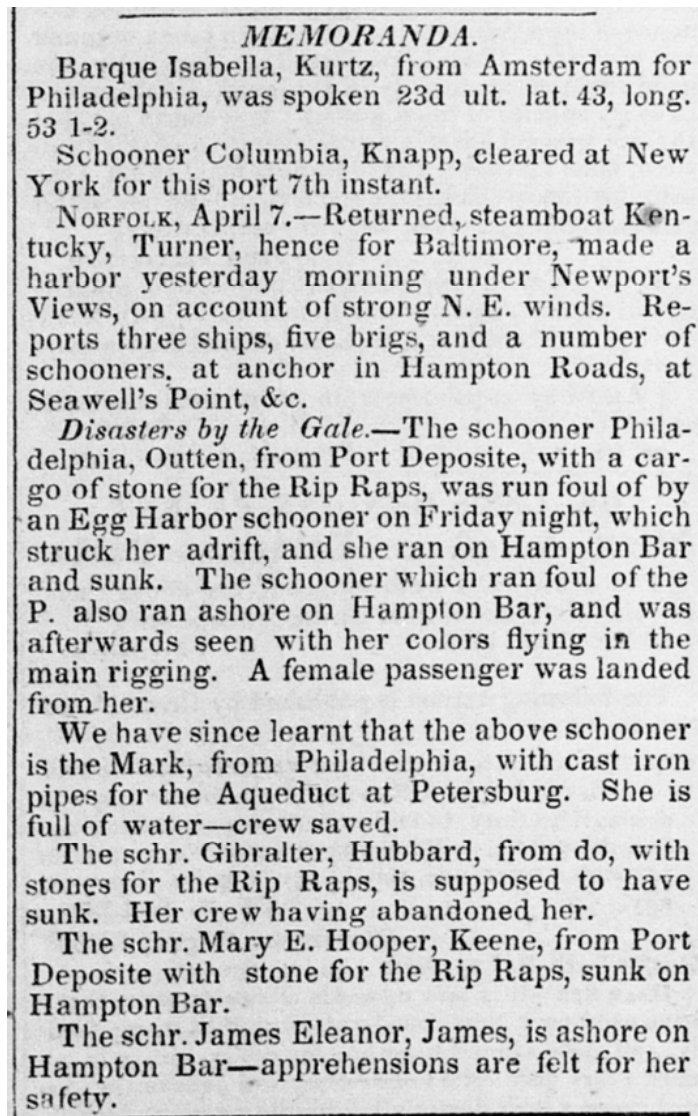
<b>Date</b>	<b>Type</b>	<b>Vessel Name [Captain]</b>	<b>Quantity</b>	<b>Destination</b>	<b>Notes</b>	<b>Citation</b>
1820	Sloop	<i>Slater</i>		For Rip Raps	<i>See Source 8</i>	Committee on the Judiciary 1973:572
1820	Sloop	<i>Halcyon</i>				
1820	Sloop	<i>Lincoln</i>				
1820	Sloop	<i>Manilla</i>				
1820	Sloop	<i>Borealis</i>				
1820	Schooner	<i>Marino</i>				
1820	Schooner	<i>Union</i>				
1820	Sloop	<i>Susanna</i> (1)				
1820	Sloop	<i>Susanna</i> (2)				
1821	Sloop	<i>Slater</i>				
1821	Sloop	<i>Halcyon</i>				
1821	Sloop	<i>Lincoln</i>				
1821	Sloop	<i>Manilla</i>				
1821	Sloop	<i>Borealis</i>				
1821	Schooner	<i>Marino</i>				
1821	Schooner	<i>Union</i>				
1821	Sloop	<i>Susanna</i>				
12/1822	Schooner	<i>Grand Superior</i> [Thomas Healy Montague]		Fort Calhoun	<i>See Source 9</i>	Montague 1894:165
7/4/1825	Sloop	<i>Good Friends</i> [Richards(?)]		For Rip Raps	"...got ashore on Craney Island....engaged in taking a load of stone for the Rip Raps"—fourth such vessel transporting stone "onshore there".	<i>National Gazette and Literary Register</i> 1825

## Transcriptions/Scans of Sources called out in Tables A.1 and A.2.

### Source 1:



### Source 2:





Source 3:

“There are 2 stone vessels — Hooper & Philadel — on the Bar[.] The 2nd sp[ill]it open. The 1st [now], [Bilged] &c. The James Eleanor & Gibraltar, stone vessels, were aground near the mouth of the Creek deserted by the crew, got off last night & it is not known where they are. Another large Schooner from Phila bound to Petersburg with iron pipes, lost at the head of the Bar, we took off of her 2 women, child & a man with his thigh broken Saturday, She was [then] [sinking].” (Lee 1834).

Source 4:

**THE GALE.**—During all Thursday night the gale continued. The wind blowing with extreme violence, attended with heavy showers of rain. Between three and four o'clock the wind blew with all the violence of a hurricane.

We have heard of some damage to the crops of *Morus Multicaulis*—some of them being prostrated to the ground

The brig Chatham, Davis, from Boston, bound to Baltimore, is ashore near the draw bridge, having lost her anchors on Thursday afternoon off Hampton Bar.

The Schr Essex, Shelton, from New York in ballast, bound to the Rappahannock, is ashore on Washington Point, with loss of anchors and chains, and another schr ashore a short distance from her.

The schr Dan was driven over to Portsmouth, and is ashore a short distance from the Ferry house.

We learn that several vessels were driven ashore on Hampton Bar, some of which were dismasted, and it is reported one or two of them foundered at their anchors.

A ship and brig unknown, drifted foul of each other off Seawell's Point, the brig lying directly athwart the ships bows.

The gale abated in the afternoon, but the weather continues cloudy. The Alabama left last evening for Baltimore. The Steamboats Thomas Jefferson, for Richmond, Star for East River, and Hampton, were prevented by the gale from leaving the wharf yesterday morning.

The Steamboat from Baltimore did not arrive yesterday. She was probably detained in consequence of the gale.—*Norfolk Beacon.*

Source 5:

"That on or about March 26, 1862, James M. Roberts, master and part owner, chartered said schooner to the United States Government to carry a cargo of government stores from the arsenal at Washington, D. C., to Fortress Monroe, Va.

"That on March 27, 1862, the said schooner having been laden with eight thousand one hundred 24-pound cannon shot, was taken in tow by the U. S. S. *Eagle*, Captain Bender in command.

"That while being towed on her voyage and at about 2 o'clock on the morning of March 29, 1862, said U. S. S. *Eagle*, with the schooner *Chesapeake Trader* in tow, arrived at Hampton Roads. The morning was dark, the weather thick and stormy, and the harbor was crowded with shipping, which made the entry both difficult and dangerous; but, regardless of these impediments and the protest of the captain of the schooner, the captain of the U. S. S. *Eagle* pressed on with her tow in the harbor and ran his own vessel and the schooner, which was compelled to follow, on Hampton bar, where they both grounded, without fault or negligence on the part of the owners of the said schooner, said schooner being entirely under the control of the officers of the United States.

"That between the hours of 7 and 8 a. m. of said day, and as soon as he could gain admittance to the fort, James M. Roberts, master of the said schooner, reported the facts in the case to Lieut. T. G. Baylor, the consignee of the cargo and commanding at Fortress Monroe, and to Capt. Green Talmaidge, assistant quartermaster, and stated what was necessary to be done in order to save the vessel and cargo, and expressed his apprehension that unless immediate action were taken the vessel would be lost; that he was assured by Lieutenant Baylor that he need not give himself any concern; that his vessel was in the hands of the Government, and if she should be lost he would be fully compensated therefor, and both of whom promised immediate assistance.

"That when the said schooner first grounded she lay easy and could have been relieved with great ease and convenience if an attempt to that end had been made; that during the day of the 29th of March the weather was mild and pleasant, and there was no wind and no sea from 4 a. m. until 4 p. m., but during all this time no assistance whatever was sent by the government officers to relieve the vessel; that during the night of the 29th the sea became very rough and the schooner began to work on the bar. About midnight of the 29th it was discovered that the vessel was leaking, but up to this time the said schooner was tight, was not taking any water, and gave no evidence of any injury.

Source 6:

TEN or fifteen vessels, suitable for the transportation of Building Stone in the Chesapeake Bay, at the distance of 240 mile from Havre de Grace to Old Point Comfort entrance of Hampton Roads. No vessel must draw over eight and one half feet of water when loaded, and she must be of the most burthensome kind and stoutly built. Any persons wishing to sell, are requested to send their proposals without loss of time to No. 12, Rector St. New-York, directed to JACOB LEWIS and Co. No vessel will be purchased less than 70 tons, and as many over as may be, providing she does not exceed the draft of water here mention: a second hand quality of vessels would be preferred, providing they are sound and strong. All vessels offered for freight may be of any size, proving the draft of water does not exceed the 8½. The persons offering for freight will understand that the proposal must be for a builders perch which is 24 9-12 measured cubic feet (*Hartford Courant* 1819:28).

Enclosure No. 18

**ENGINEER DEPARTMENT,**  
*Washington, 27th Sept. 1821.*

SIR: Upon examining the grievances complained of, by Messrs. J. Lewis & Co. in executing their contract for delivering stone at Old Point Comfort, it is deemed proper to grant them the following facilities and indulgences.

The delivery of stone of any description whatever at the Rip Raps, is an indulgence. The small stone therefore, which they may be permitted to deliver in the centre of the mole, and stone of such size as shall be required by the Engineer, to form that part of the mole, on which the foundation of the Fort is to rest, must be deposited according to the directions of the Engineer, and agreeably to the plan; and larger stones to form the breakwater in their proper places.

But the contractors will only be required, in the first instance, to deposit their cargoes on the top of the pile, and not obliged to fill up any inequalities or cavities, which were not occasioned by their own neglect or carelessness in making the deposit in the first instance, or which were occasioned by the gradual settling of the mole, or by any other accident. They are, however, to deposit their cargoes on the top of the mole and around it, in such places as the Engineer shall point out, and not where they may select.

The stone shall be measured as agreed upon, and specified in the 10th article of the arrangement, of the 19th of August, 1819.

Messrs. Lewis & Co. also complain that the perch is measured at 24 cubic feet, instead of  $24\frac{9}{12}$ . This measurement of the perch was fixed upon before they made the contract with the Engineer Department, and has been the customary measurement at all the public works on the Potomac and Hampton roads. The other contractors have made no complaints on this subject, and it is not deemed advisable to deviate from the established mode of measurement.

In order to enable the contractors to deliver their cargoes with facility, at the Rip Raps, you will allow them the use of the public buoys, anchors, and cables, purchased for the use of that service, provided they moor them, &c. at their own expense.

You will furnish to J. Lewis & Co. a copy of these instructions, as soon as convenient.

I have, &c.

ALEX. MACOMB, *Maj. Gen.*

Lt. Col. C. GRATIOT,  
*Corps of Engineers, Old Point Comfort.*

Tons	Name	1819	1820	1821	Perch	Minus
Sloop:						
70 46/100	Slater.....	69	67.5	55.4	14	
53 85/95	Halcyon.....	69	69.3	44	25	
88 16/95	Lincoln.....	78.16	74.18	40.12	38	One of the most burthensome vessels in the Chesapeake.
54	Manilla.....	44.4	45	45		
79 7/95	Borealis.....	52	55	50.10	2½	Do.
Schooner:						
174	Marino.....	111	116		(1)	Do.
99 65/95	Union.....	66.22	64	50.10	16	Do.
Sloop Susanna:						
81 65/100	1.....	61.15	124.16	67.5	35	Do.
	2.....	50.10	285			

<sup>1</sup> Not yet arrived.

Source 8:

Exhibit M, accompanying Elijah Mix's second Examination.

HAVRE DE GRACE, *October 31st, 1821.*

SIR: On an examination of Major Maurice's books, on the first day of April last, we find there remained of Rip Rap stone for us yet to deliver, (besides what we delivered last year on account of this,) seventeen thousand nine hundred and seventy perches of stone. It being our proportion at that time yet to deliver on the E. Mix's contract, agreeably to the orders of the Secretary of War, which quantity of stone we claim as our right, exclusive of all other deliveries made previous to that date, either by Major Cooper, or any other person for us.

We are, respectfully,

HOWES GOLDSBOROUGH & Co.

Colonel GRATIOT,  
*Fort Monroe, Virginia.*

A true copy.

C. GRATIOT.

ACCOUNT OF DELIVERIES OF STONE AT THE RIP RAPS, BY H. GOLDSBOROUGH & CO. ON ACCOUNT OF E. MIX'S CONTRACT, DURING THE MONTHS OF JULY AND AUGUST, 1820

When delivered	Vessels' names and masters	Quantity delivered		When delivered	Vessels' names and masters	Quantity delivered	
		Perches	Feet			Perches	Feet
July 10	Leander: H. Hayden.....	62	14	July 25	Harmony: Goodrich.....	68	22
12	Agnes: A. Whittlesey.....	70	6	21	Mary Elizabeth: S. Traverse...	45	15
	Sarah F. Hollingshead: John Ireland.....	56	17	28	Essex: H. Harrington.....	59	1
13	Sea Serpent: Samuel Ely.....	59	1		Six Sisters: James Clarridge.....	46	19
	Friendship, Jun'r: J. Johnson...	54	6	25	Friendship: Geo. Stinchcomb...	67	22
	Defiance: A. Shipman.....	77	0	31	Lady's Delight: J. Colfer.....	64	14
	Hope, Jun'r: S. Stratton.....	52	7	27	Edward and Margaret: W. Simmons.....	36	12
	Belvidevira: J. Paier.....	44	5	27	High Flyer: Thomas.....	32	22
14	Harmony: E. Sterling.....	68	22	28	Stranger: W. Jones.....	42	24
15	Victory: McCullum.....	70	19		Mary Ann Jane: James North...	54	10
17	Leander: H. Hayden.....	63	14	27	Harriet: William Jones.....	67	7
	Rambler: M. Anderson.....	85	6	22	Commerce: Trope.....	20	5
20	Independence: Rt. Hamilton.....	65	9	23	Mary: Thomas Handy.....	42	14
	Patty Washington: Job North...	58	16	22	Commerce: S. Phillips.....	22	18
	Commerce: John Brooks.....	66	16	Aug. 8	Mahala: S. Harrington.....	57	10
13	Harriet: White.....	50	20	3	Commerce: John Brooks.....	63	1
	Superior: Lord.....	10	0		Patty Washington: Job North...	61	19
	Paragon: R. Jones.....	10	12		George Washington: W. Tucker/	85	14
14	Louisa: E. Barlowe.....	70	0	4	Flight: Cullumber.....	34	22
22	Superb: Fisher.....	65	6		Independence: M. Navy.....	42	14
21	Hound: J. Williams.....	65	1	3	Leander: H. Hayden.....	62	4
	Boxer: Shaw.....	67	0	10	Mary and Eliza: Ab. Cater.....	45	1
24	Leander: H. Hayden.....	62	14	16	Defiance: A. Shipman.....	77	
25	Friendship, Jr.: Johnson.....	49	10		Victory: McCullum.....	76	
	Sea Seapent: Samuel Ely.....	59	1		Rambler: M. M. Anderson.....	35	5
	S. F. Hollingshead: J. Ireland..	56	17		Sea Serpent: Samuel Ely.....	59	1
26	Defiance: A. Shipman.....	77	0		George Washington: William Tacker.....	65	14
27	Victory: McCullum.....	61	13	21	Rebecca: C. Creighton.....	44	4
	Rambler: M. Anderson.....	85	6				
26	Hope, Jun'r: S. Stratton.....	49	13				
					Total.....	3,280	13

Source 9:

“[Thomas Healy Montague] resided in the Lower Church District, lower part of Middlesex. He was master of a schooner called ‘Grand Superior,’ owned by himself and Robert Healy. In this vessel he plied between Piankatank and Rappahannock rivers and Baltimore, carrying produce, and bringing such cargoes as he could obtain. Frequently he took in stone at fort Deposit, Md., for fort Calhoun which the Government was building at the entrance to Hampden Roads. While unloading stone on one of these trips, he broke a blood vessel, was taken to Norfolk for surgical aid, where he died, Dec., 1822, on board his schooner. His body was taken on his schooner to Middlesex and he was buried at Jonesville.”

**TABLE A.3  
COASTWISE SCHOONERS BUILT AT DISTRICT OF BATH, MAINE DURING 1818\*\***

<b>Name</b>	<b>Tons</b>	<b>Shipyard Location</b>	<b>Master</b>	<b>Owner</b>	<b>Hailing Port</b>	<b>Citation</b>
<i>Hero</i>	67	Vassalboro	Lewis Thatcher	Lewis Thatcher	Yarmouth	Barker 1879
<i>Franklin</i>	100	Hallowell	Benjamin Walker	Peter Norton	Hallowell	
<i>Ranger</i>	123	Pittston	John Agry Jr.	John Agry	Hallowell	
<i>Evergreen</i>	53	Georgetown	John Mercer	Benjamin Emmons	Georgetown	
<i>William Barker</i>	91	Gardiner	Warren Nye	William Bradstreet	Gardiner	
<i>Mexican</i>	106	Bath	John Mathews	Hezekiah Allen	Boston	
<i>Juno</i>	79/60	Phippsburg	G. Deunison Jr.	I.C. Whitmore	Bath	
<i>News</i>	100	Bowdoinham	Joseph Carr	Joseph Carr	Bath	
<i>Joshua</i>	42	Bath	Nathaniel Wheeler	Dwelly Turner	Bath	
<i>Henry</i>	52	Phippsburg	Jonathan Johnson	Parker McCobb	Phippsburg	
<i>Salmon</i>	62	Phippsburg	John Kelley	Mark L. Hill	Phippsburg	
<i>Independence</i>	65	Georgetown	John Pearcey	David Oliver Jr.	Georgetown	
<i>Two Brothers</i>	83	Gardiner	William Crawford	William B. Grant	Gardiner	
<i>Joshua</i>	100	Dresden	Joshua Alley	Joshua Alley	Dresden	
<i>Reindeer</i>	47/42	Harpwell	Jacob Blake	Jacob Blake	Augusta	
<i>Elizabeth</i>	84	Hallowell	Calvin Ballard	Peter Grant	Hallowell	
<i>Lucy Ann</i>	63	Pittston	Isaac Plisbury	N. Batchelder	Hallowell	
<i>Harmony</i>	71	Bath	James Church	James Church	Bath	
<i>Swan</i>	77	Dresden	H. Tallman	Peleg Tallman	Bath	

\*\*Average tonnage calculated at 77.105

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