

MOTOR VESSEL *ESMERALDA II*
Grand Canyon Boats
Grand Canyon National Park
Grand Canyon Village
Coconino County
Arizona

HAER AZ-79
HAER AZ-79

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

REDUCED COPIES OF MEASURED DRAWINGS

FIELD RECORDS

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
U.S. Department of the Interior
1849 C Street NW
Washington, DC 20240

HISTORIC AMERICAN ENGINEERING RECORD

MOTOR VESSEL *ESMERALDA II*

HAER No. AZ-79

Location:	Grand Canyon National Park, Grand Canyon vicinity, Coconino County, Arizona Motor Vessel <i>Esmeralda II</i> is located at latitude: 36.050189, longitude: -112.132891. The point represents the building housing the Grand Canyon National Park Museum Collection. It was obtained from Google Earth on April 22, 2021, and there is no restriction on its release to the public.
Date of Construction:	1947
Builder:	Egbert Andrew "Ed" Hudson of Paso Robles, California, in consultation with Otis "Dock" Marston developed an idea for a boat suitable for running the Colorado River upstream through the Grand Canyon. He reportedly had a Seattle-based marine architect complete the design for this boat in accordance with his ideas, and then he and his son built the boat in 1947.
Original Owner:	Ed Hudson
Present Owner:	National Park Service
Significance:	Motor Vessel <i>Esmeralda II</i> is significant as the first power boat to run downriver through the Grand Canyon, a feat completed in five days in 1949. The first powered uprun of the Colorado River through the Grand Canyon was also attempted in <i>Esmeralda II</i> but failed.
Description:	Motor Vessel <i>Esmeralda II</i> is a wooden power boat with an inboard 125-horsepower (hp) Gray Marine Motor Company engine with shaft and propeller. ¹ The boat is 19'-4 ⁵ / ₈ " long with a 6'-1 ¹ / ₈ " beam. It features a modified V spoonbill bow and an inverted V stern and is constructed of an oak and spruce frame and marine plywood; the bulkheads are ¹ / ₄ " plywood. The bottom of the boat consists of a double layer of ¹ / ₄ " laminated plywood while the sides are ³ / ₈ " plywood. The boat was painted green, white, and red. It is equipped with motion camera mounts fore and aft and a canvas splash shield.
History:	Ed Shockley, best friends with Egbert's son Edward, recalled watching the Hudsons build the boat in 1947. Shockley vividly remembered, in

¹ Motor Vessel *Esmeralda II* has been accessioned as Catalog Number GRCA 13727.

particular, the thickness of the boat's bottom.² The resulting motor vessel, named *Esmeralda II*, was constructed with a special hull and inboard propeller protected by a skeg, which Hudson hoped would make it less susceptible to damage from rocks.

In 1948, Hudson attempted his first upriver run in *Esmeralda II* with Dock Marston, Wilson Taylor, and his 16-year-old son. The boat was powered by a 4-cylinder, 75-hp motor. The upriver attempt halted at mile 217, after the boat either crashed into a tree or ran out of gas (accounts differ).

The next attempt occurred the following year with the same crew plus Bestor Robinson. This time Marston added a canvas shield to protect the engine from waves breaking over the bow and installed a 125-hp engine. This time the group made the downriver trip first with the intention of studying the river on the way down as well as caching gas at various spots for use during the upriver trip. As Marston stated in a 1950 *Popular Mechanics* article, "what we need in the canyon for a motorboat are a few well-spaced gas stations."³ The group left Lees Ferry on June 12, 1949. Upon reaching Pearce Ferry, they were the first motor run down the Grand Canyon, arriving five days later. Their traverse of the Grand Canyon was "the first time the descent of the treacherous Colorado River has been mastered by a power-driven boat," setting a new record for the 290-mile trip and showing that "motorboats were practicable for negotiating the world's deepest gorge."⁴ On the way upstream, however, they could not make it past the strong currents at Diamond Creek.

Undeterred, they tried again in 1950. This time they added another boat, a Chris-Craft speedster piloted by Dock, and more crew. On the downriver run, *Esmeralda II* crashed in the Tuna Creek Rapid. Hudson thought the damage was beyond repair and set the boat free to float downstream to a watery grave. Unable to carry all seven people downstream in the Chris-Craft, Hudson and his son stayed behind and were individually flown out by helicopter. Ed Hudson's helicopter crashed on the flight out of the canyon but both Ed and the pilot survived.

Esmeralda II was discovered by another group making the downriver trip about a month later. One of the boatmen, Jim Rigg, was able to ingeniously repair the boat enough to get it downstream to Lake Mead. A dispute arose between Hudson and Rigg as to the ownership of the boat,

² Tom Martin, interview with Ed Shockley and Greg Shockley, August 27, 2018, transcribed by Grayson Kelmer, December 25, 2020, Grand Canyon Historical Society. Available online at http://grandcanyonhistory.org/uploads/3/4/4/2/34422134/ed_shockley_interview_transcript_october_27_2018.pdf, accessed April 2021.

³ Gene Segerblom, "Shooting the Grand Canyon in a Power Boat," *Popular Mechanics* (April 1950), 145.

⁴ Segerblom, quote from 144-147, quote from p. 144.

and it was eventually turned over to the National Park Service to add to its boat display at the South Rim Visitor Center courtyard. The boat remained on display there until June 2004 when it was moved to the Science Center Warehouse for conservation. Western Archeological and Conservation Center (WACC) conservator Brynn Bender and members of the boating community assisted during the move as part of the “Save Our Boats” historic boat conservation project. Between June 2004 and October 2008, the boat was in storage at the Science Center Warehouse and then at the Maintenance Warehouse until December 2013. In June 2010, WACC conservator Brynn Bender removed the original duck cloth splash guard for conservation. The splash guard was replaced with a replica, sewn in the same fashion, and the original was placed in storage. The Grand Canyon historic boats were then moved again to a new storage area in the Powell Building in December 2013.

Sources:

The report is based on information from the Grand Canyon Museum Collection and the following additional sources.

“Esmeralda: A Kodachrome Travelogue of Canyon Adventure.” Moving Image, 1950. Colorado Plateau Digital Collections, Northern Arizona University. Available online at <http://archive.library.nau.edu/digital/collection/cpa/id/21118>, accessed April 2021.

Martin, Tom. Interview with Ed Shockley and Greg Shockley, August 27, 2018. Transcribed by Grayson Kelmer, December 25, 2020. Grand Canyon Historical Society. Available online at http://grandcanyonhistory.org/uploads/3/4/4/2/34422134/ed_shockley_interview_transcript_october_27_2018.pdf, accessed April 2021.

Segerblom, Gene. “Shooting the Grand Canyon in a Power Boat.” *Popular Mechanics*. April 1950, 144-147.

Project**Information:**

Motor Vessel *Esmeralda II* was documented as part of the Historic American Engineering Record’s Maritime Recording Program. The Historic American Engineering Record (HAER) is part of Heritage Documentation Programs, a division of the National Park Service. Todd Croteau, HAER Architect, served as project manager. Ryan Pierce produced the measured drawings in 2012. Grand Canyon National Park staff provided the written information for the historical report, which was formatted by Justine Christianson, HAER Historian, 2021.

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Photos taken in the storage warehouse.

INDEX TO BLACK AND WHITE PHOTOGRAPHS

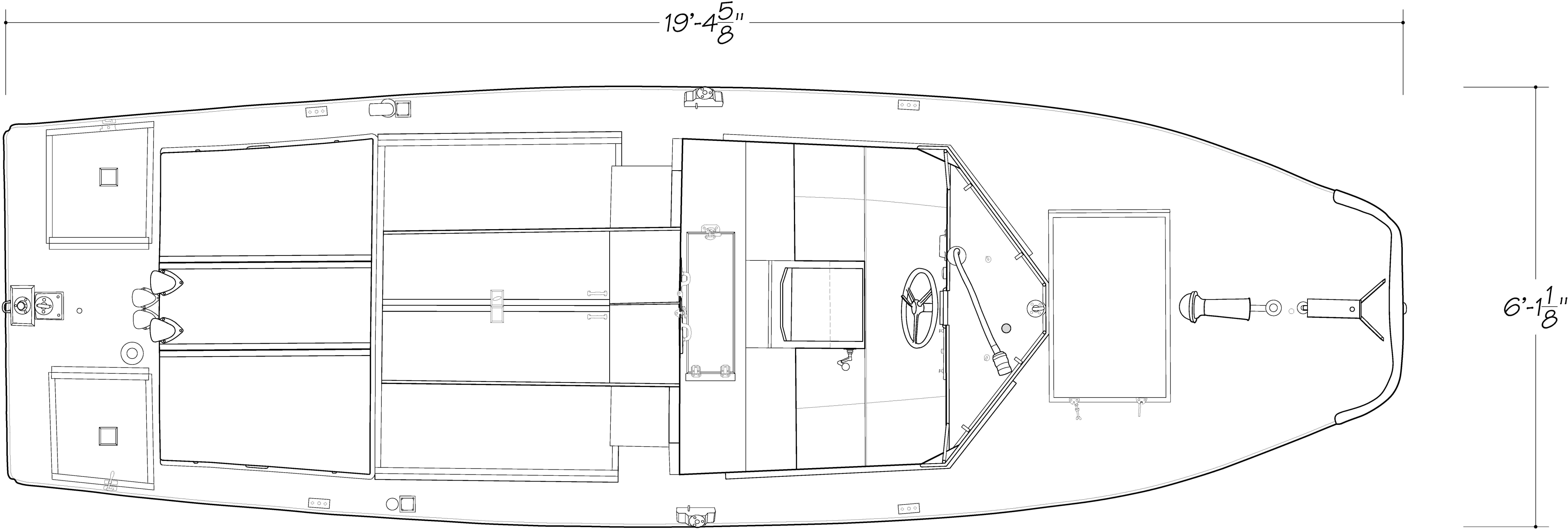
Michael C Quinn, photographer, 2012

AZ-79-1	Starboard side elevation.
AZ-79-2	Port side elevation.
AZ-79-3	3/4 view from astern looking forward along the starboard side with name on transom.
AZ-79-4	View from the bow looking aft.
AZ-79-5	Detail of cockpit and helm station.

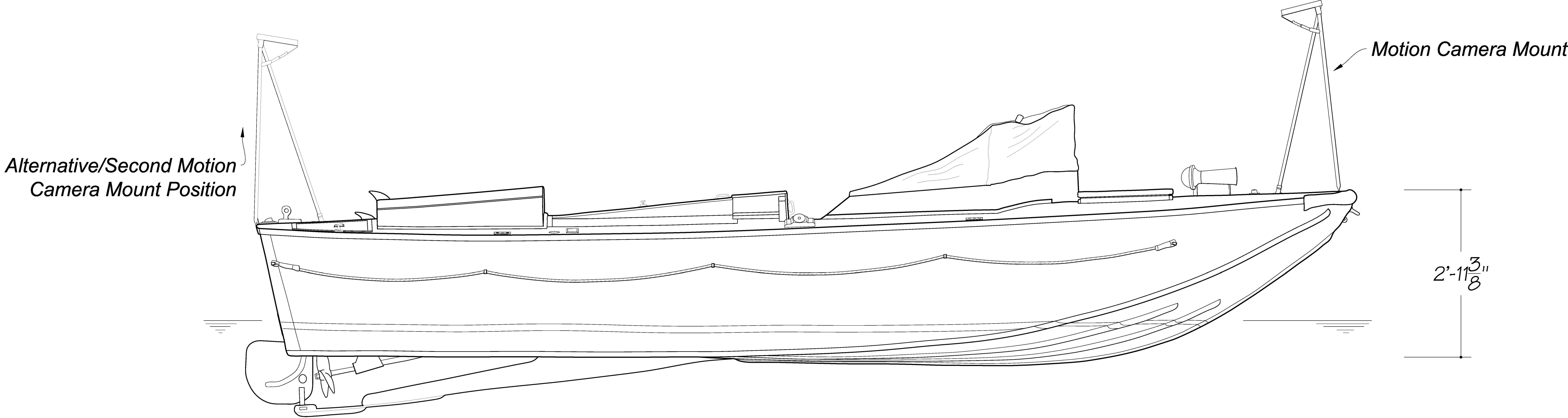
M/V *Esmeralda II*

Colorado River Boat

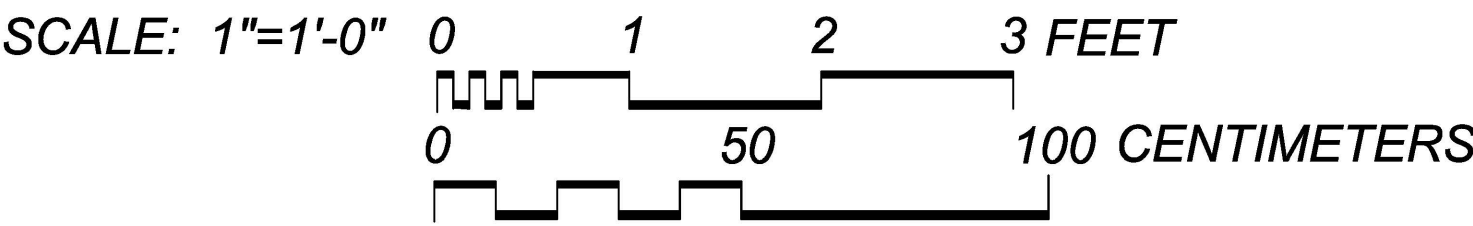
Plan/Profile



Plan



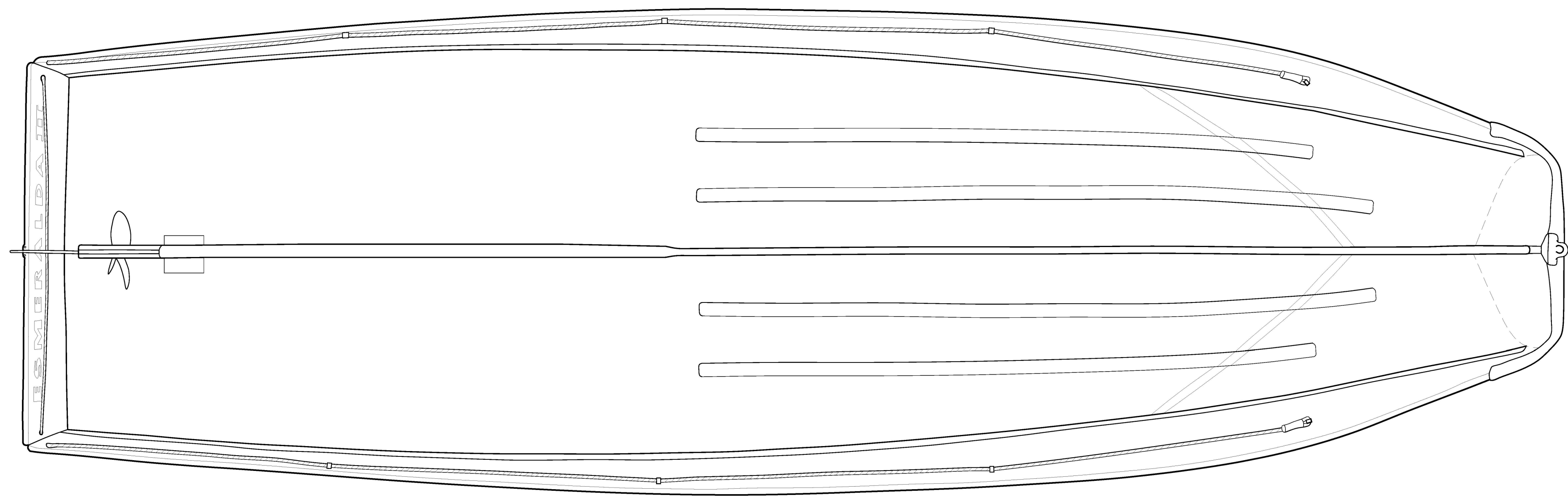
Starboard Elevation



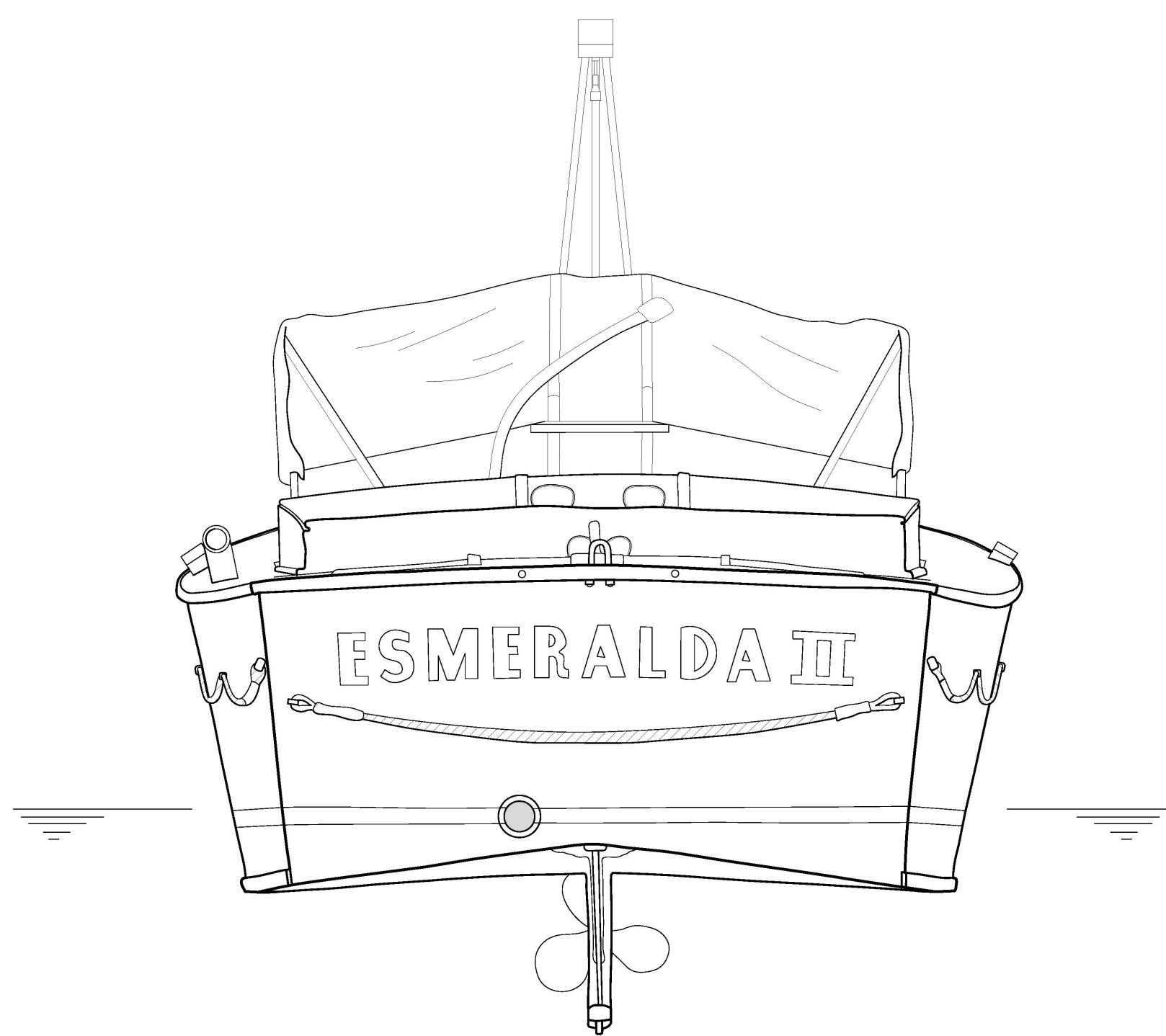
M/V *Esmeralda II*

Colorado River Boat

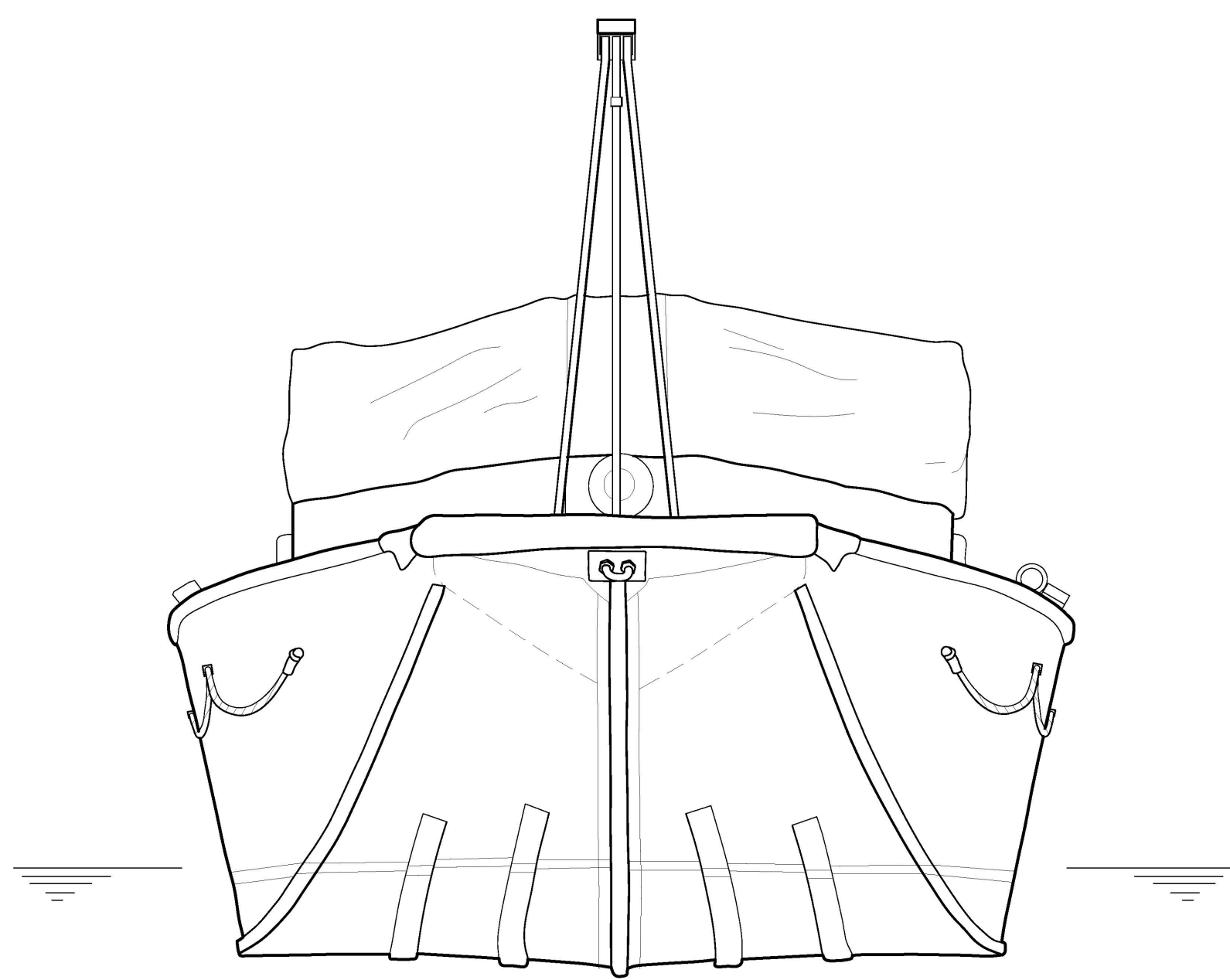
Bottom/Elevations



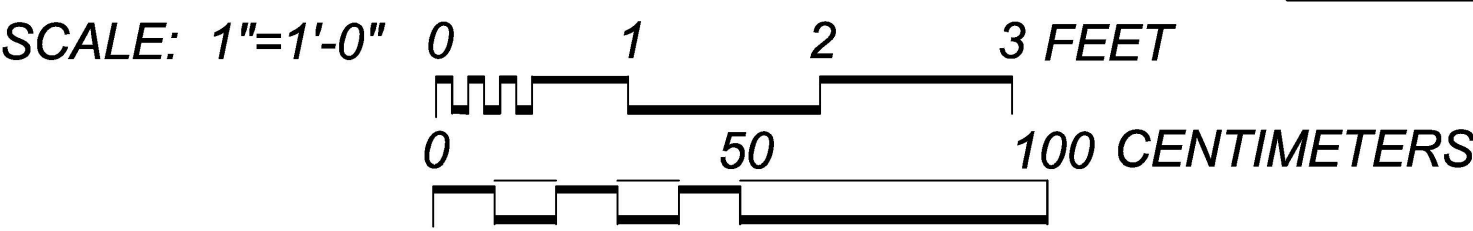
Bottom



Stern Elevation



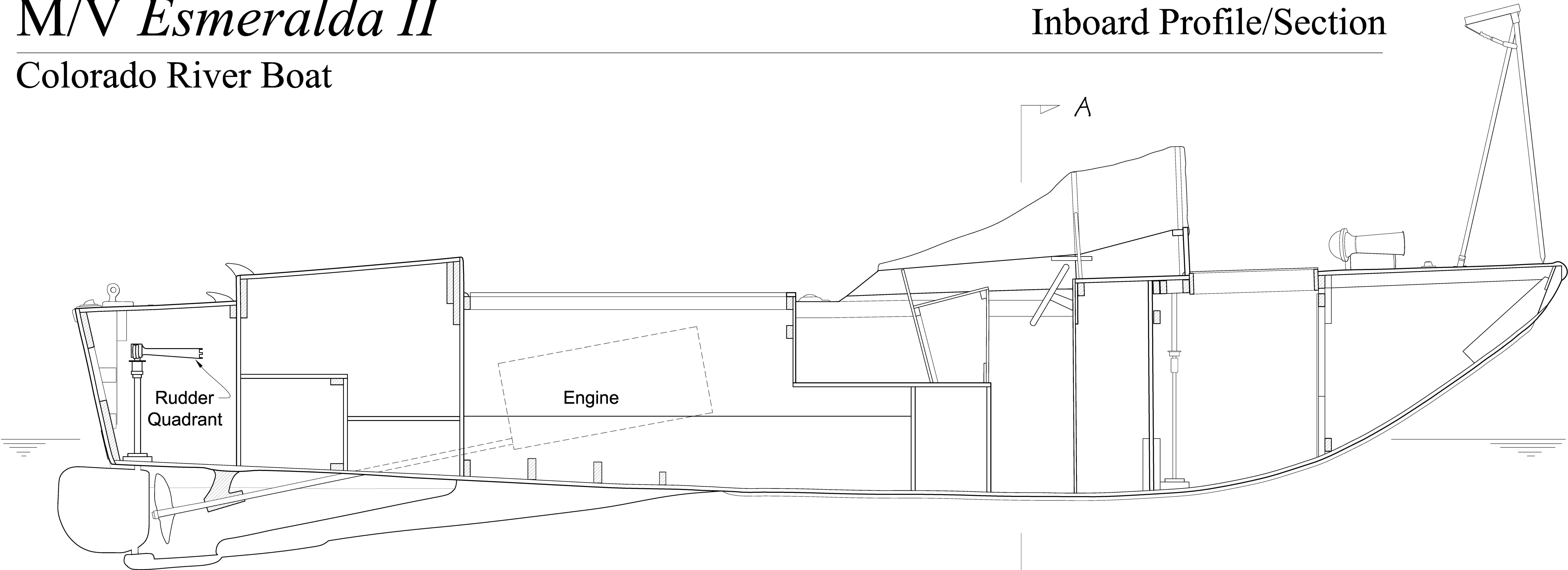
Bow Elevation



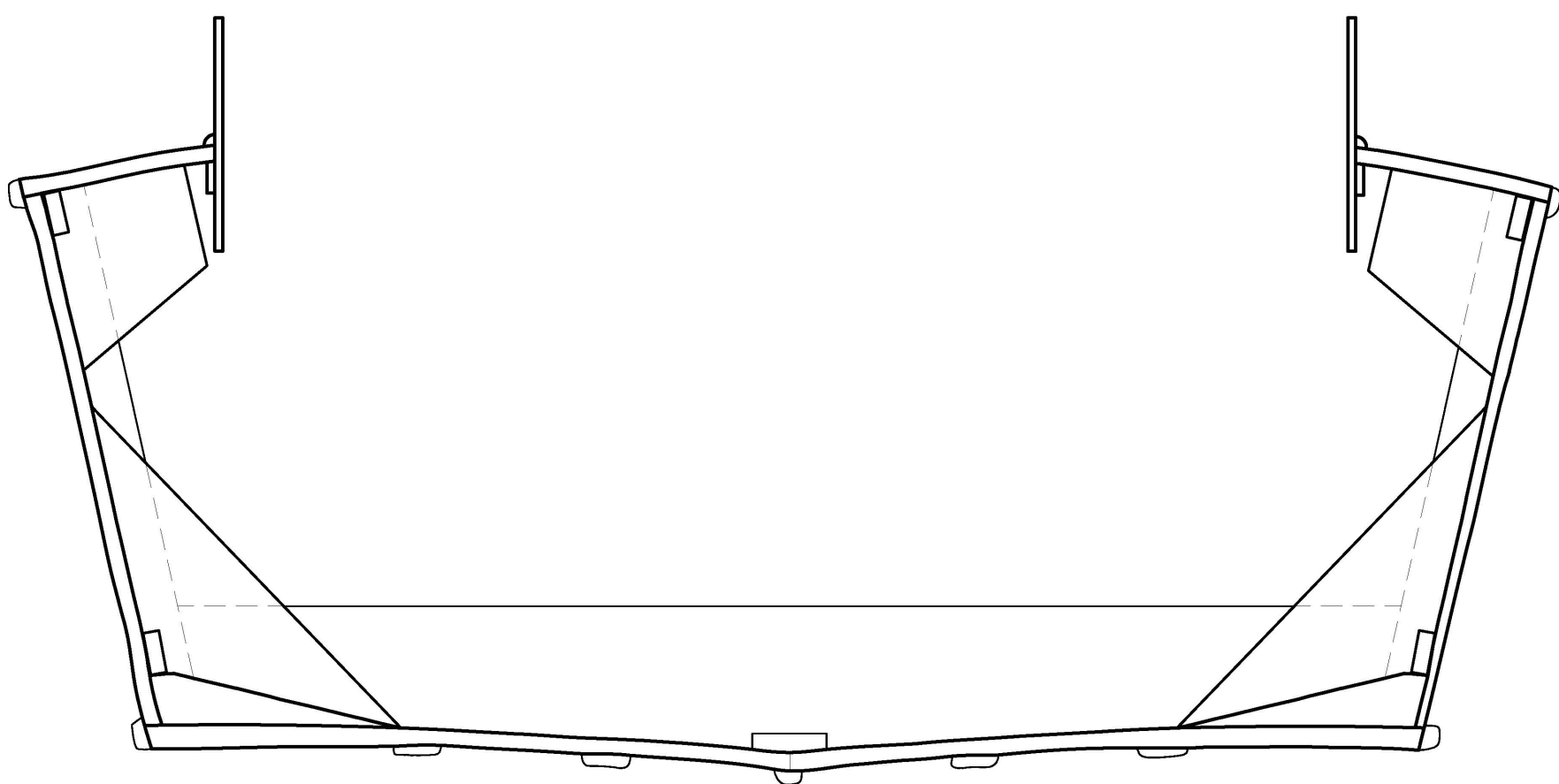
M/V *Esmeralda II*

Colorado River Boat

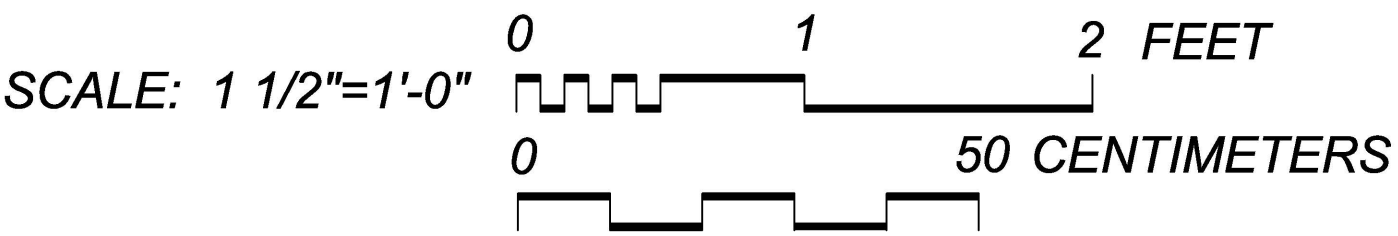
Inboard Profile/Section



Inboard Profile



Section A-A



M/V Esmeralda II

Colorado River Boat

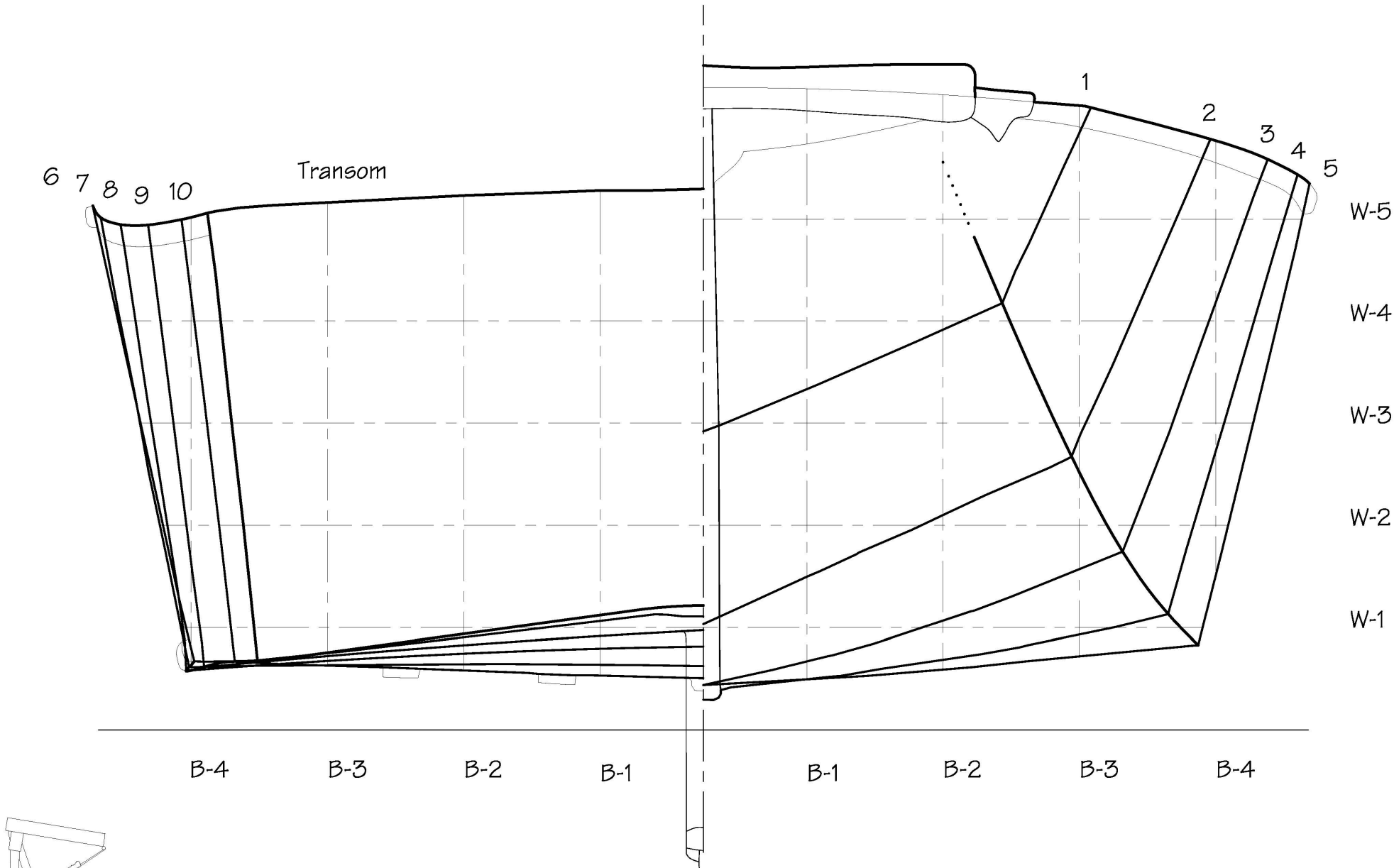
Lines

Table of Offsets

Offsets in Feet Inches Eights Offsets are to outside of skin

Stations		0.000	1.000	2.000	3.000	4.000	5.000	6.000	7.000	8.000	9.000	10.000
X-Positions			1- 9-3	3- 6-4	5- 3-5	7- 0-6	8- 9-7	10- 7-0	12- 4-1	14- 1-2	5- 10-3	17- 7-4
Heights Above Baseline	Buttock 0- 0-0	3- 1-5										
	Buttock 0- 6-1		1- 8-0	0- 9-0	0- 4-0	0- 3-0	0- 3-0	0- 3-2	0- 3-7	0- 4-6	0- 5-4	0- 6-3
	Buttock 1- 2-0		1- 11-4	1- 0-5	0- 6-3	0- 4-1	0- 3-4	0- 3-4	0- 3-7	0- 4-4	0- 5-0	0- 5-3
	Buttock 1- 10-0		2- 11-0	1- 5-1	0- 9-3	0- 5-5	0- 4-3	0- 3-6	0- 3-6	0- 4-0	0- 4-3	0- 4-4
	Buttock 2- 6-0				2- 1-1	1- 4-3	0- 9-1	0- 4-7	0- 3-5	0- 3-4	0- 9-7	2- 1-5
	Sheer		3- 0-4	2- 10-5	2- 9-4	2- 8-5	2- 8-0	2- 6-6	2- 6-0	2- 5-5	2- 5-5	2- 6-0
	Chine		2- 1-0	1- 4-0	0- 10-4	0- 6-6	0- 5-0	0- 4-0	0- 3-5	0- 3-4	0- 3-6	0- 4-0
	Rabbit		1- 5-7	0- 6-5	0- 2-6	0- 2-6	0- 2-3	0- 2-3				
	Keel	0- 1-6										
	Sheer at Stem Rabbit	4- 5-2										
Halfbreadths From Centerline	Chine at Transom	0- 4-0	Sheer at Transom		2- 6-3							
	Centerline of Transom at Top	2- 7-6	Centerline of Transom at Bottom		0- 7-2							
	WL 0- 0-0	0- 0-0										
	WL 0- 6-0				1- 7-8	2- 0-0	2- 5-2	2- 6-3	2- 6-5	2- 6-4	2- 5-5	2- 3-6
	WL 1- 0-0			1- 0-6	2- 1-2	2- 4-6	2- 6-6	2- 7-6	2- 7-7	2- 7-4	2- 6-3	2- 4-3
	WL 1- 6-0		0- 1-2	1- 10-4	2- 3-4	2- 6-5	2- 8-2	2- 9-1	2- 9-1	2- 8-3	2- 7-1	2- 5-1
	WL 2- 0-0		1- 3-2	2- 1-1	2- 5-6	2- 8-3	2- 9-6	2- 10-3	2- 10-2	2- 9-3	2- 7-7	2- 5-7
	WL 2- 6-0		1- 7-6	2- 3-6	2- 7-7	2- 10-1	2- 11-1					
	Sheer		1- 10-6	2- 5-6	2- 9-1	2- 10-7	2- 11-5	2- 11-7	2- 11-3	2- 10-2	2- 8-5	2- 6-5
	Chine		1- 5-4	1- 9-5	2- 0-5	2- 3-2	2- 5-0	2- 5-7	2- 6-2	2- 6-3	2- 5-2	2- 3-4
	Chine at Transom	2- 2-1										
	Sheer at Transom	2- 5-1										

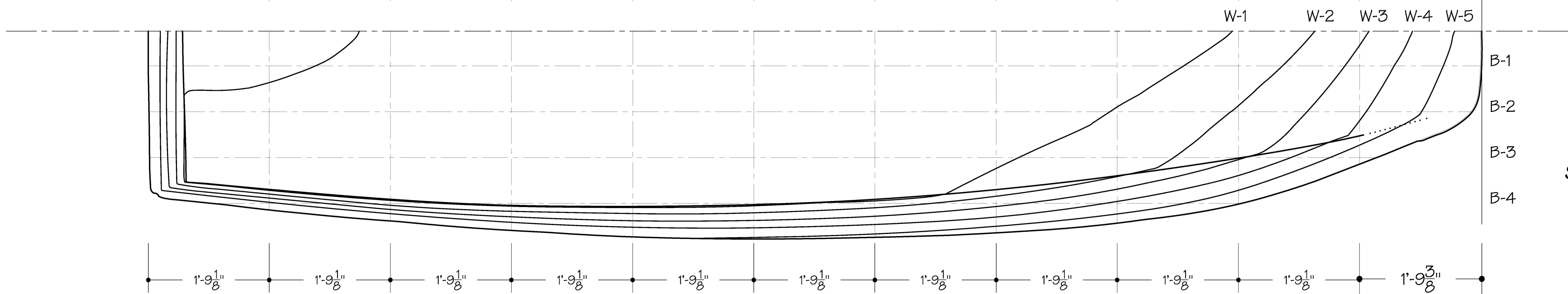
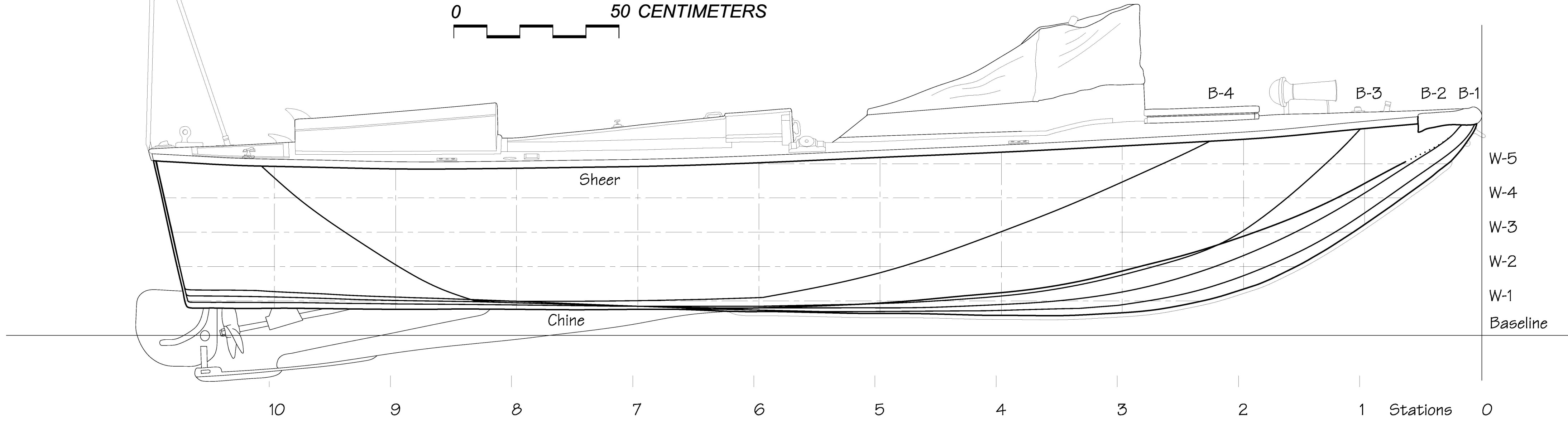
NOTES: Lines were taken from a LEICA ScanStation pointcloud. Lines were drawn "as is" with minimal or no fairing.
The vessel orientation is shown in situ in its storage cradle, actual waterline is unknown.



SCALE: 1 1/2"=1'-0"

0 1 2 FEET

0 50 CENTIMETERS



SCALE: 1"=1'-0"

0 1 2 3 FEET

0 50 100 CENTIMETERS

DELINEATED BY: RYAN PIERCE, 2012

HAER MARITIME

RECORDING PROGRAM

NATIONAL PARK SERVICE

UNITED STATES DEPARTMENT OF THE INTERIOR

GRAND CANYON VICINITY

COCONINO COUNTY

ARIZONA

M/V ESMERALDA II

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