

Month	Min	Max	1906	max	min	Ramp
Jan	25.38	25.53	3060	24.63	329.031	27 me
Feb	.40	.55	07	.60	.53	107 Abs.
Mar	.35	.52	08	.68	.38	1.30 94d
April	.38	.50	09	.59	.36	1.23 1.77
May	.39	.50	10	.77	.38	1.39 1.74
June	.40	.44	11	.67	.37	1.30 4 39.
July	.46	.53	12	.75	.45	1.30 3 30
Aug	.46	.53	13	.71	.54	1.17 13
Sept.	.45	.51				.52 1.80
Oct	.48	.57				24.63 77
Nov	.46	.59				24.87 30
Dec	.44	.61				26.04 1.47


24.63
 24.87
 26.04

 1.47
 1.4
 26.04
 26.02
 24.63

 1.39

Jan 1913
 1.0000
 2.7
 3 40 1.39

 4 35



5 years

35

 .26

1.60

Max pressures at
Reno

$$\begin{array}{r}
 254 \overline{) 2524} \\
 \underline{254} \\
 10160 \\
 \underline{254} \\
 35560
 \end{array}$$

$$\begin{array}{r}
 15 \overline{) 4360} \\
 \underline{3} \\
 375
 \end{array}$$

$$\begin{array}{r}
 4 \overline{) 375} \\
 \underline{3} \\
 480
 \end{array}$$

$$\begin{array}{r}
 3 \overline{) 125} \\
 \underline{254} \\
 5000 \\
 \underline{50} \text{ mm} \\
 5
 \end{array}$$

$$\begin{array}{r}
 500 \overline{) 250} \\
 \underline{9}
 \end{array}$$

$$\begin{array}{r}
 98 \overline{) 25000} \\
 \underline{2286} \\
 2140
 \end{array}$$

$$\begin{array}{r}
 10 \text{ inches} \overline{) 2140} \\
 \underline{2000} \\
 140
 \end{array}$$

$$\begin{array}{r}
 254 \overline{) 2605} \\
 \underline{2000} \\
 140
 \end{array}$$

10.5
allowed
range

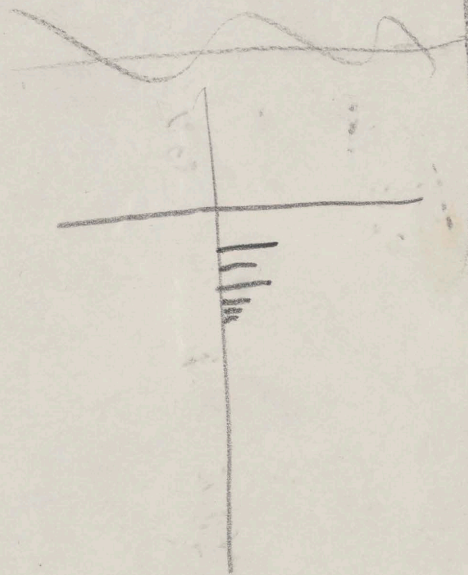
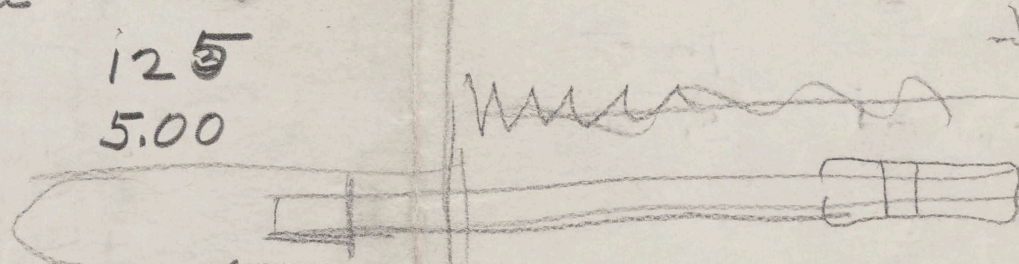
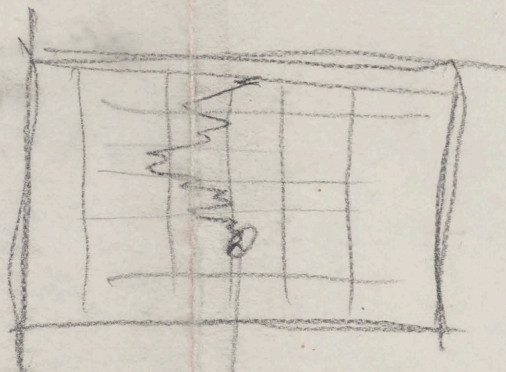
$$\begin{array}{r}
 1.45'' \\
 \underline{2.524} \\
 580 \\
 725 \\
 \underline{290} \\
 36.830 \\
 \underline{4375} \text{ mm} \\
 3
 \end{array}$$

$$\begin{array}{r}
 125 \\
 \underline{5.00}
 \end{array}$$

$$\begin{array}{r}
 50. \text{ mm} \\
 250 \text{ mm}
 \end{array}$$

$$\begin{array}{r}
 10'' \\
 \underline{1.4} \\
 8.6
 \end{array}$$

$$\begin{array}{r}
 254 \overline{) 2}
 \end{array}$$



UNIVERSITY OF NEVADA

RENO, NEVADA

OFFICE OF COMPTROLLER

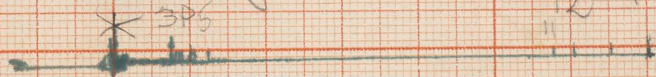
Extremes of Pressure
Reno, 18 years

Rating 60 day clock
for Mt. Rose.

12 M 3d January 1912 12 M 4th
2 P.M.

12 M Wed
3 P.M.

12 M
11



Scale Correct

12 2 4 6 8 10 12

$$\begin{array}{r} 31 \\ 28 \\ 3 \\ \hline 62 = \\ - 2 \\ \hline 60d \end{array}$$

Computation of
Evaporating pan
— 1913 —

J.P.V. —

(valuable)

Evaporating Pans for
Snow — 1913.

Diameter of sampler-cutter = 1.5 inches

Area " " " = 1.7662 "

X 100 = = 176.62

Area of pan to measure 100

to 1 = 14.99 inches

(Make pan + cutter 15 inches
inside diameter)

one inch depth

Weight of $(176.62 \text{ cubic inches})$ water = 6.4 lbs

" " Six inches 38.4 "

Assuming Snow = $\frac{1}{3}$ water this = 12.8 "

Hence, if new pans are

15 inches diameter and 6" deep

they will give results in direct
ratio to snow sampler of
100 to 1.

J. P. F.

(Pans heretofore used are in
ratio of 48.7 to 1)

320

A°

C°

F°

310

100

90

-30

300

80

-25

70

-20

290

60

-15

50

-10

280

40

-5

-0

30

270

20

-10

10

260

0

-20

250

10

-25

20

-30

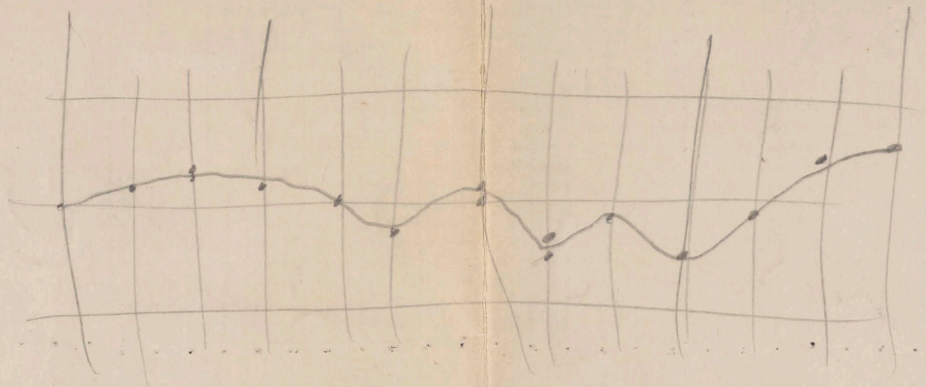
240

10

115
/ 38

10.0

12 634
13



Dimensions of Brass tubes useful as

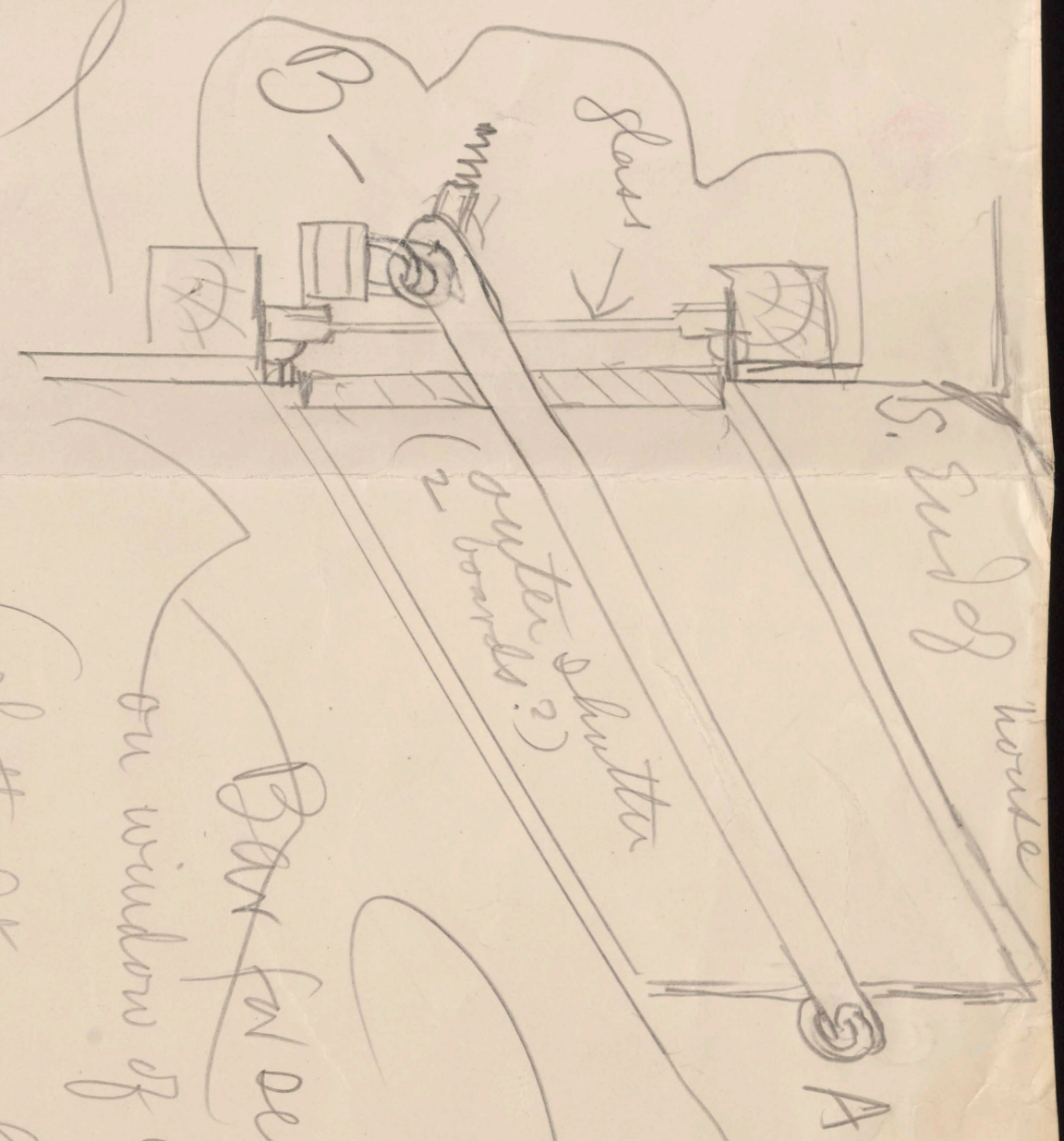
O. Diam.

Inches

Record cylinders

Circumferences

2.0	9.426.28	737.3
2.25		
2.5	10.9957.85	179.6
3.0	9.420	239.3
3.5	10.995	279.1
4.0	12.566	319.3
4.5	14.14	359.3
4.75	14.91	378.7
5.00	15.71	399.0
5.75	18.06	458.7
6.00	18.85	478.8

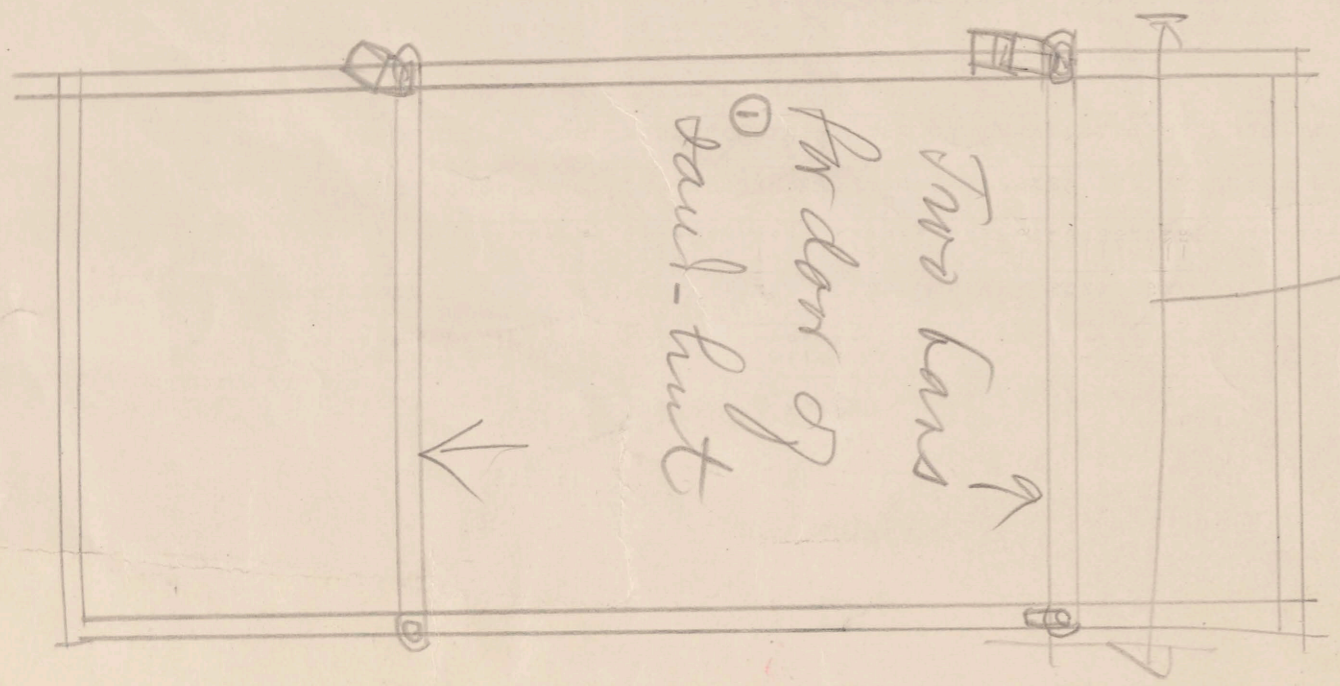


Bar for securing outside shutter on window of Ohry house

Shutter fits snugly into window frame and one glass and splay needs to be secured against swinging outward.

Material: One bar, flat or $\frac{5}{8}$ " round ^{iron} with eye at each end, one end fitting into larger screw-eye or eye-bolt A; other end to fit over eye at B; and be secured with padlock (same fastening as ^{used for} instant shutter)

N.B. Length of these bars will depend on width of doors. I have no data for this.



Dimensions

Matched - Enough on hand for refs. ✓

= Saw - ?

= Screws for Socket of Night-latch lock.

Paint brush - {tulle and
brush at contact ^{to Kalsmin?}

Front Door - Observatory

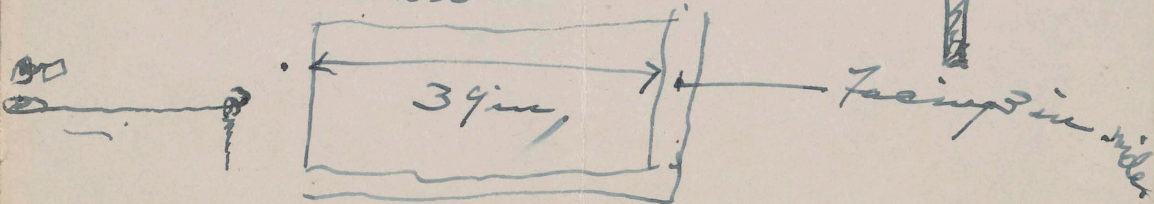
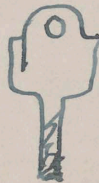
Width, $23 \frac{3}{5}$ in. between facings.

Facings $2 \frac{8}{11}$ in. wide each.

Depth $3 \frac{15}{100}$ in. (from face of door to
outer face of facing)

Thickness of door $1 \frac{4}{5}$ in.

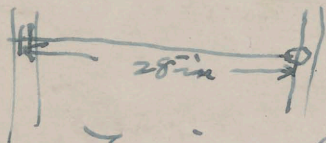
Back window.



Depth of window 2 in + $2 \frac{8}{10}$ in thru
2x3 backing it. So lag screws 4 in. long,
a few more to lag into at Contact ^{to}

1 Cutler for ✓
large soap pan
Pan 15 in. x 6 in.

Shop for Shuttle
at Contact Pan.



Facings $1\frac{1}{4}$ in.
Make hook on end
right angled

Window panes ✓

$15\frac{1}{4}$ in x $32\frac{3}{8}$ in

Snow Sash
Contact Pan
5 ft.

Washers for
 $\frac{3}{8}$ lag screw +
 $\frac{1}{2}$ in. holes

Eyes for strap on
door $1\frac{1}{2}$ in x $\frac{1}{2}$ in.

Wire for roof guys

Putty

Note book -

3 Padlocks

Evaporating pan 10.5" diam, 86 sq in area

1" depth = 86 cu. in = 49.5 oz (all scale).

5 oz loss by evaporation = 0.1 inch depth
of water

Ratio of Smart Sampler to Small Pan 1:48.92

U. S. DEPARTMENT OF AGRICULTURE

WEATHER BUREAU

OFFICE OF SPECIAL METEOROLOGICAL OBSERVER

Caulking boats

5 # White lead } Mix together
5 # Whiting } so as to work
lead into putty.

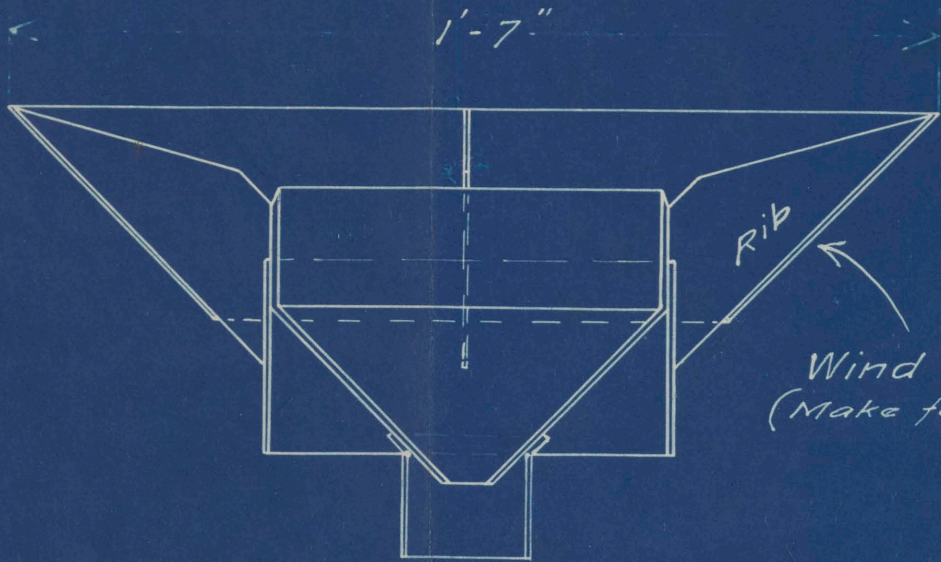
4 # Red lead (1# on hand)

2 Lbs. boiled oil. (No driers).

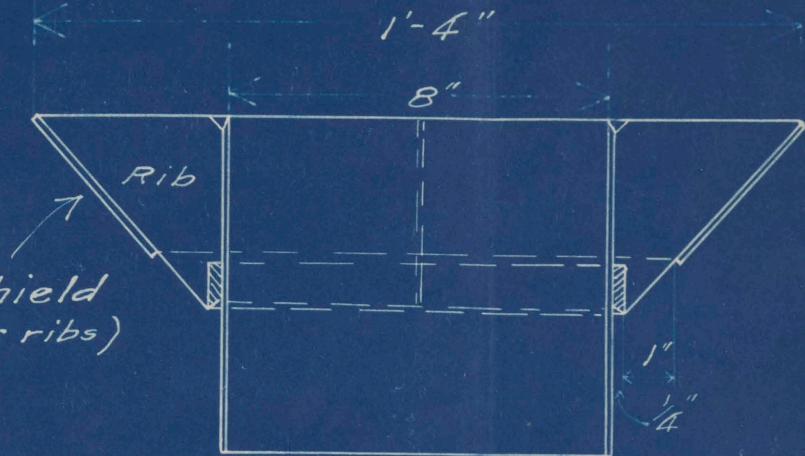
(120# total on hand)

Carving cotton
putty knife

Whiting



Receiver for rain gage

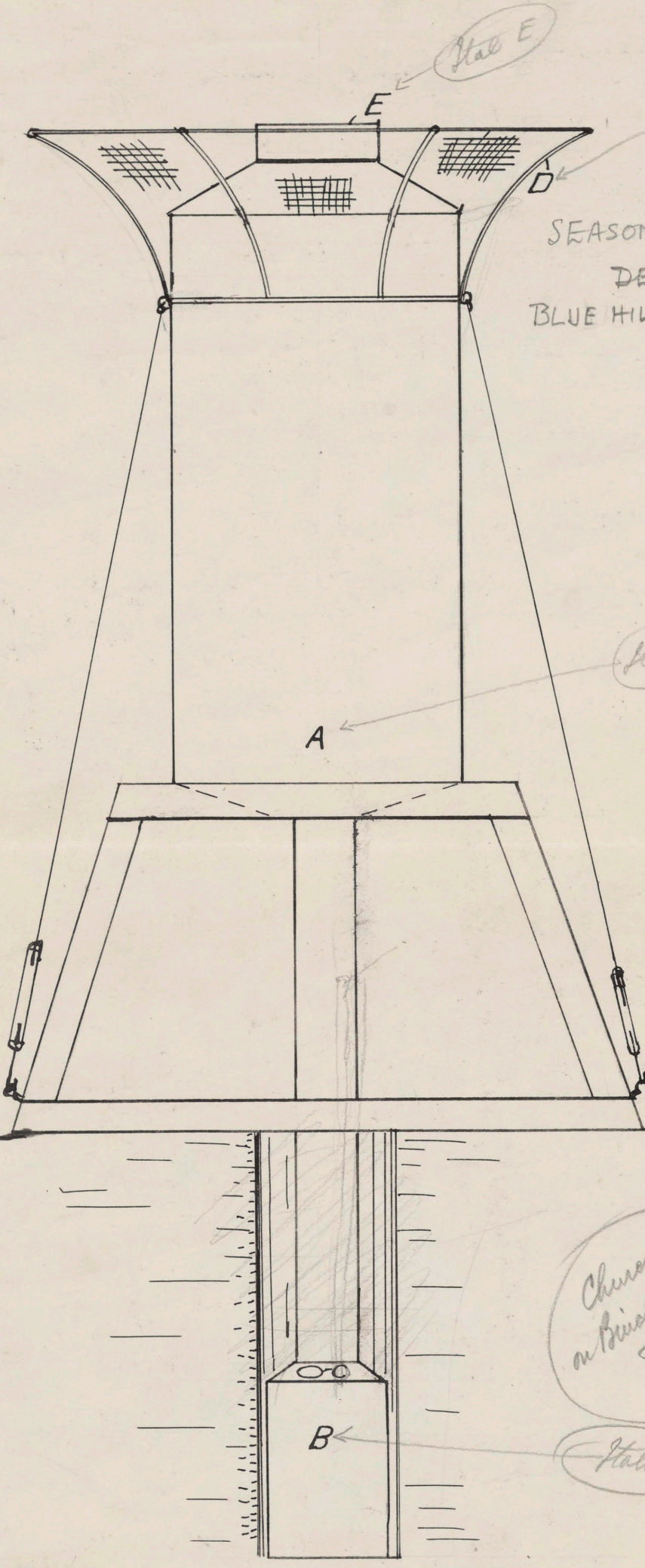


Receiver for combination
rain or snow gage

See next page

Ariz. Agr. Exp. Sta.
Tucson

9-23-10



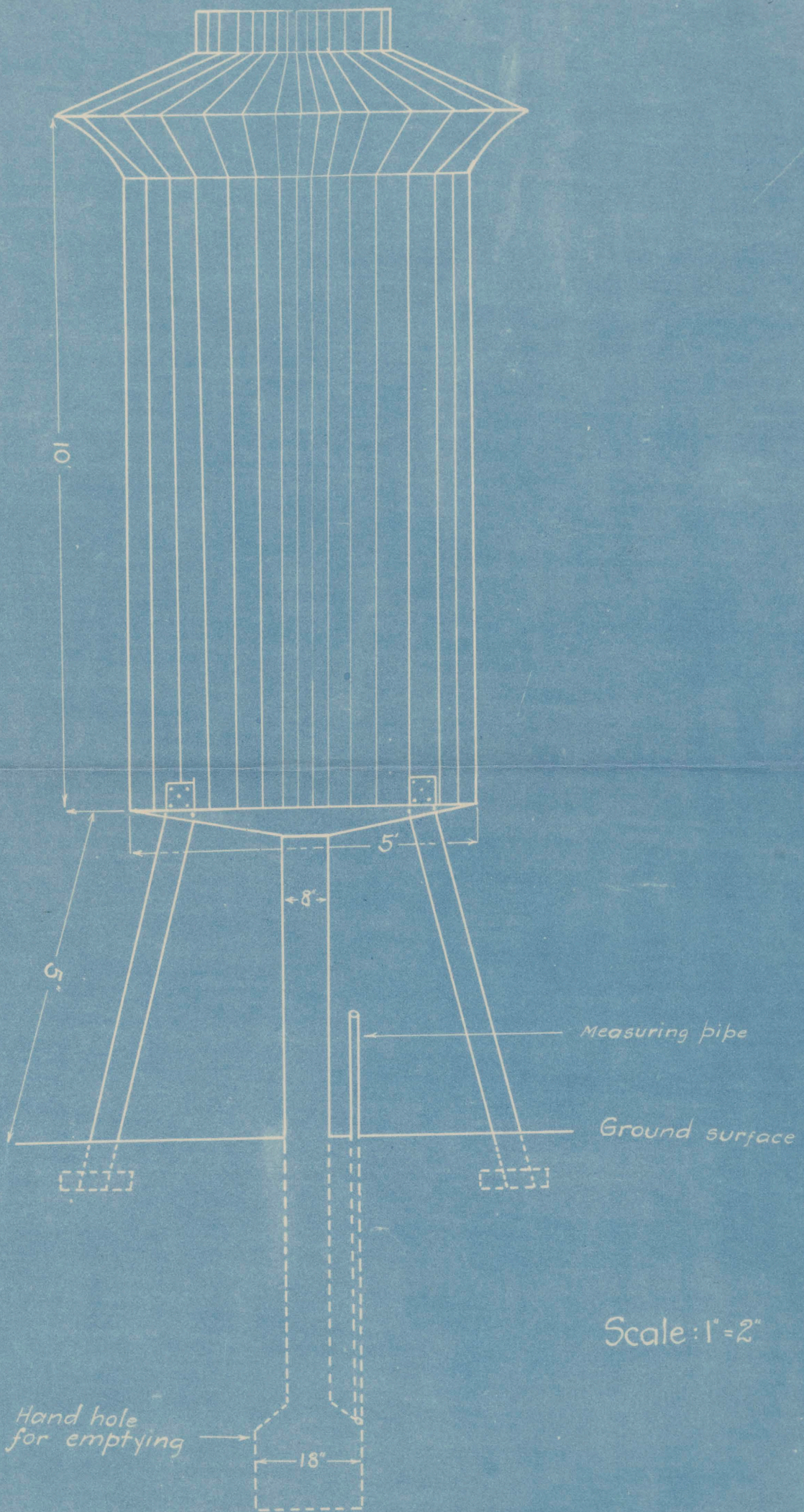
Stage E
 Stage 19
 PROPOSED
 SEASONAL SNOW GAUGE
 DESIGNED AFTER
 BLUE HILL AND McADIE PATTERNS.

Stage A

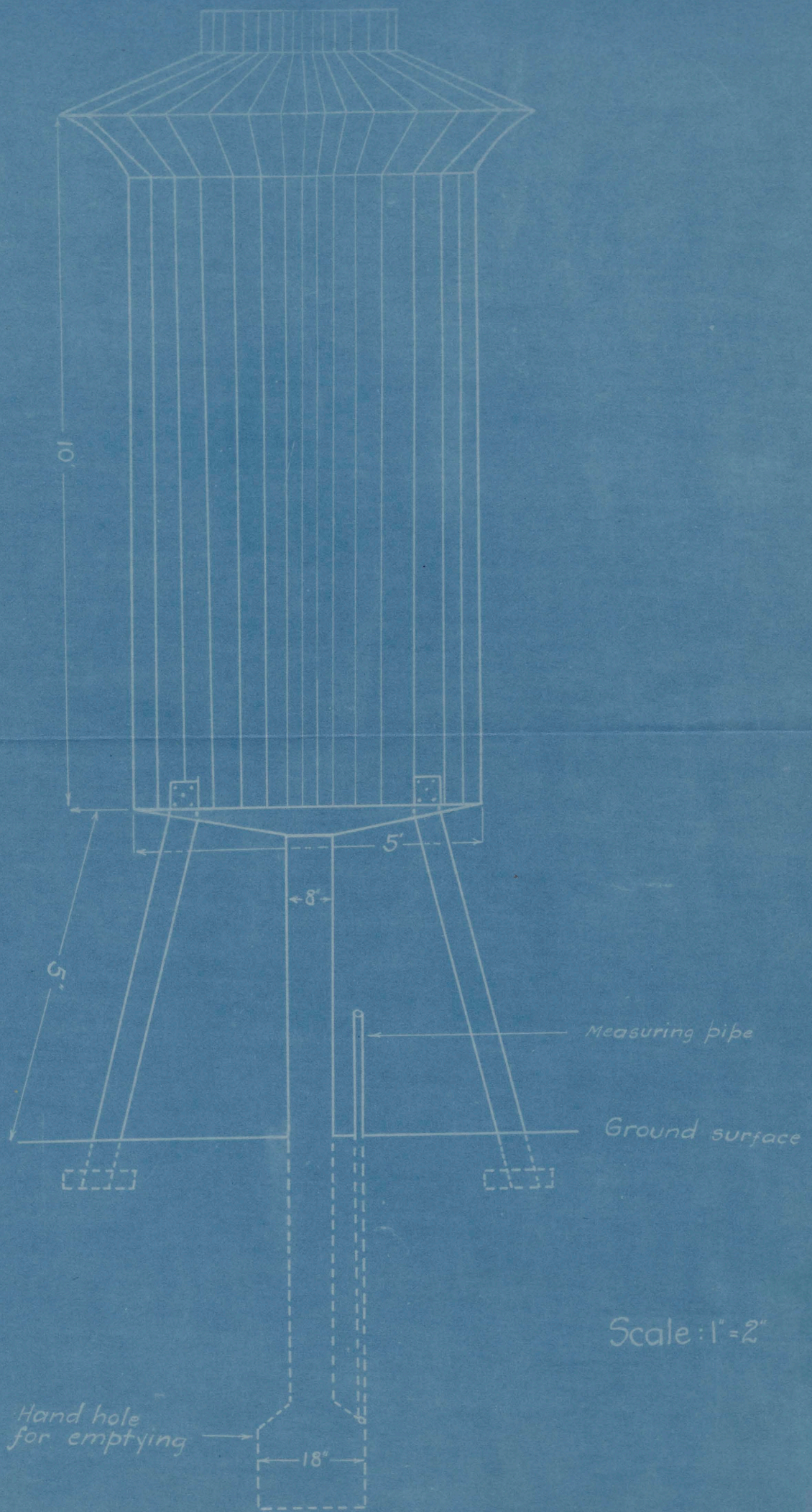
Church
 on Brinkley The
 Fis

Stage B

Proposed Seasonal Snow Gauge
 Designed after Blue Hill and McAdie Patterns.



SNOW BIN AND TANK



SEASONAL SNOW BIN AND TANK

Plate III.

Prof. Church

Qty. Stages New
1 Cfg. Snow Pan

9 pos 1x6-7⁶ ship lap

3 " 2x4-7⁰

1 sq 2 ply Roofing

2 lts 15x32

Put 4 Points }

25 lin ft 34" Blk screen
tar

2 lts 8d nails com

Wicks for lantern.

Blanket for bed - 10x12 ft.

" " saddle platform, 3ft 6 in x 3ft. + 2-3ft high.

Coal-oil - Ranch 2 gals. (1 gal. on hand).
Refuge 0

Alcorno. 2 gals. (4 gals on hand).

Alcohol - 1 qt. (1 qt on hand at Alc.)

Paints - Brush (1 at ranch) } Better take brushes up.
 but only
White Paint 2 (1/2 gal tin).

Shells - 1 Can (fat?) white.
 1 " " orange.

Chisel & cut
metthead & screw

Saddles - 1. Strap to hold breast straps.

1. Hand strap on saddle needs to be riveted.

Smokers -

Windows at Ranch. size of glass. 15" x 32"

15" x 31 3/4"

Frame 33 3/4" x 68 3/4" (inside)

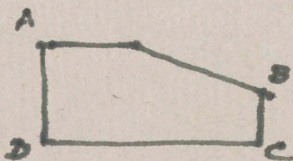
Wood is 1 3/4" thick.

Drain
Zinc blower
Zinc
Rope
Oil

Sand Hut - Side walls 7ft 6 in. long.

Rear height 70 in, front 81 in.

Tool-box.



A to B 2ft 8 in.

length 6ft 2 in.

A to D 2ft 8 in.

B to C 15 in.

C to D ?

Rear of box (exposed part) 1ft 11 in x 6ft 2 in.

Use fly wire.

24ft 6 in.
9ft
33ft 6 in.

Cabin - ^{Waltbird} 5 ft 6 in long + 3 ft wide. An roof.
4 ft x 1 ft 6 in. (On east side). ∴
Amount for nohala.

Seaming - for canvas jacket

Oil + ink - sheets.

2 White alcohol

Saddle Soap

Alcohol

Hammer

Nails

Leaves

Paraffin

Shears

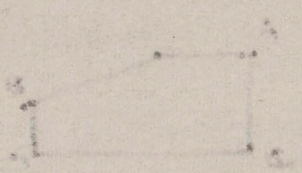
1st Alcohol

Oil

Rope

Theodolite

Water



CAST STEEL SCREWDRIVERS

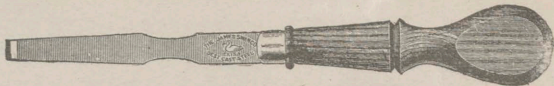


Fig. 1054

Inches,	2	3	4	5	6	7	8	10	12
Per dozen,	\$1.00	1.25	1.50	2.00	2.50	3.00	3.50	5.00	6.00

"TUCK" SCREWDRIVERS

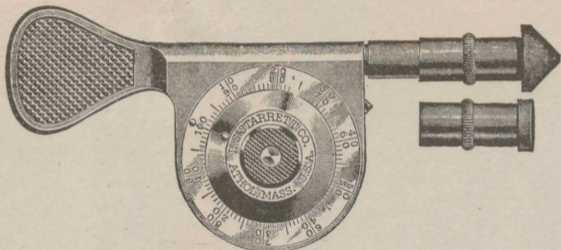
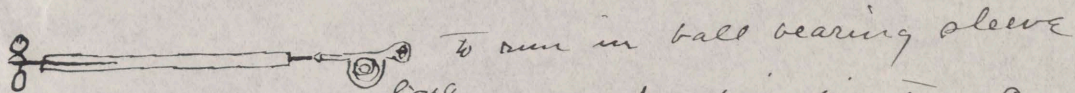
HIGH SPEED INDICATOR

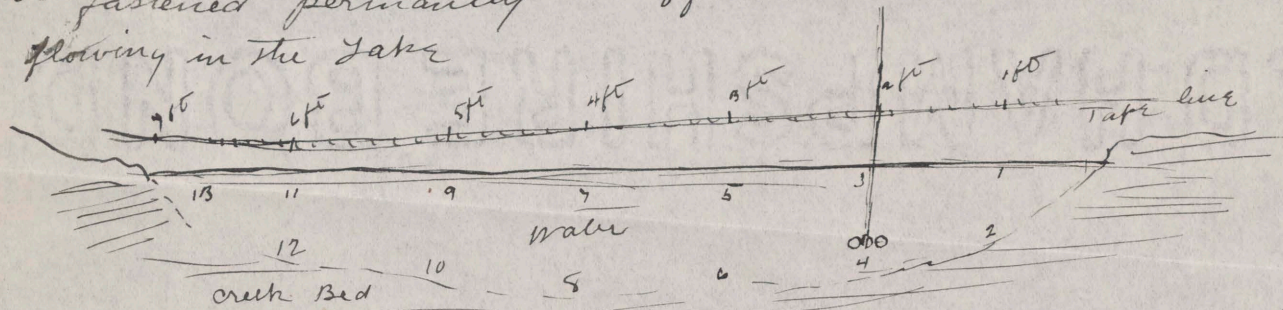
Fig. 1058

No. 104	Rubber Tips	:	:	:	:	:	:	:	:	\$1.00
" 104	" "	in Leatherette Case	:	:	:	:	:	:	:	1.50

ENGLISH STANDARD WIRE GAUGES



could be made about 8ft ^{long} and speed indicator could be fastened permanently 8ft would measure any stream flowing in the lake



on small streams shows how can get the second feet of flow — numbers are order of measurements surface and bottom 1ft apart can get the no of revolutions per minute with an a speed indicator as per cut and sending

Wire Gage

$$\text{No. 16} = \frac{1}{16} \text{ full } [.063]$$

$$\text{" 17} = .054$$

$$\text{" 18} = .047$$

$$\text{" 19} = .041$$

$$\text{" 20} = \frac{1}{32} \text{ full } [.035]$$

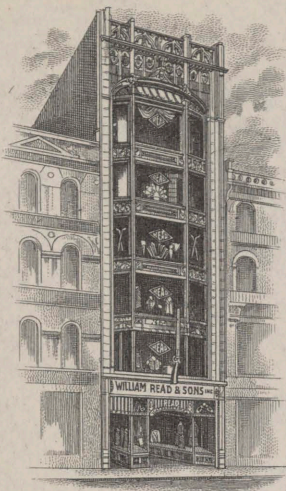
$$\text{" 21} = .032$$

$$\text{" 22} = .028$$

$$\text{" 23} = .025$$

$$\text{" 24} = .023$$

DE COUNTY BANK
ENO, NEVADA.



"THE GREAT OUTDOORS STORE"

J. B. READ,
PRESIDENT



P. D. HAUGHTON
VICE PRES'T

William Read & Sons, Inc.

ESTABLISHED 1826

INCORPORATED 1916

364 Washington Street
BOSTON 8, MASS.

Jan. 24, 1921

Mr. J. E. Church Jr.
Mt. Rose Observatory
Reno, Nevada

Dear Sir:

Yours of January 15th at hand. We are sending catalog of Tubbs Snow Shoes, this will show styles, and can furnish any pattern you select. All Men's Shoes except the long 60 inch shoes are \$13.50 pair. Klondike or 60 inch shoes are \$14.00.

The standard Kenwood Sleeping Bags, four and a half pounds, \$15.00 then the heavier bag six pounds, \$17.50. The waterproof cover is \$14.00.

I have written the Factory to see if there will be any charge for the better on sleeping bags, and will let you know later what they say. The eiderdown bags, we do not have. One of our last year's catalogs will show the packs. The Read Special Nessmuk and Appalachian Packs are the best seller. The Appalachian is made like a duffle bag with a long throat piece inside reinforced with leather and strong slings #1---12 inch diameter by 20 deep \$6.00; #2 15 inch diameter by 24 deep, \$7.35. Where roomy packs are wanted, these are good.

In regard to the Gloves, we have a few pair now in Special Sale \$8.50 gloves at \$6.25. These are black wool lined, specially prepared leather that will not get hard and made divided, that is for two fingers in each part.

Hoping to receive your order, we are

Yours very truly,

WILLIAM READ & SONS, INC.

BY *W. B. Stimpson*

CAMPING DEPT.

GHS/M
Enc.

Error

Test of Spring Balance

sent to Flagstaff, Arizona
to G.A. Pearson, U.S. Forest
Service

1			
2			
3			
4			
5			
7			
10			
9			
10			

4-15 1/2 or -

- 1/2 g.

8-15 1/2 - - 1/2 g.

-10. - - - 0

Req. spg. bal. at 10 lbs as this is
leveling point in sampling (because of
net wt of sampler).

12			
14			
15			
17			
19			
20			

0

+ 1/2 g.

+ 1/2 g.

0

0

+ 1/2

24 - - - 24

- - - 0

~~30~~

Snow Samplers.
The Mount Rose Snow Sampler.

Purpose of Snow Measurements. Measurements of the depth and density of snow covering large areas in the Western United States and in Europe are made in order to determine the amount of water available for irrigation and power. The usual procedure followed is to mark out definite courses, by means of stakes or "blazes" on trees, along which measurements are made at certain times, usually near the end of winter. The courses are long enough to include 20 to 40 measuring points each, and are accurately measured by a tape-line.

Instruments and Methods. The Mount Rose Apparatus described is used by the Nevada and California State Co-operative Snow Surveys, the Washington (State) Water Power Company, the Canadian Meteorological Service, the Swiss Glacier Commission, etc.

The purpose of the several devices employed is clearly illustrated on the preceding page. The scale is of the same general construction as the best commercial spring balances of which the index makes three rotations while registering a maximum load; but greater accuracy is obtained by the use of an engine-divided dial, a ruled index instead of the usual pointer, and means for adjusting the index to zero; also, by the use of aluminium for certain parts, the weight has been reduced to one-half that of ordinary scales of the same quality. The index is set so that when carrying an empty sampler tube it will read between 125 and 145 inches; the remainder of the adjustment (through a range of about one rotation) is accomplished by means of the milled-head screw in the upper part of the case. If another adjustment is desired (as for example, if it is desired that the scale read zero without carrying a load) the rack can be drawn out of mesh with the pinion, which, then, is turned the desired distance and the rack slid back into mesh again. This operation should be attempted only after removing the case-cover bearing the dials and its cover.

When a measurement is to be made, the staff supporting the scale is driven firmly into the snow (or ground) and the index carefully adjusted to read zero while carrying the empty sampler-tube; then, the tube is driven into the snow until the ground below is reached, withdrawn, and reweighed; the reading of the scale then should equal the amount of water in the sample, the length of which and the actual depth of the snow are read from the scale on the sampler-tube. After these data are recorded the tube is inverted and the sample shaken out, when all is ready for the next measurement.

Care of Scale. At all times, the scale should be handled carefully as any other delicate instrument, and kept free from dirt, snow, moisture, etc.. When carried in the field the dial should be protected by the loose-fitting separable cover to prevent accidental breaking of the glass.

Do not remove the upper (or outer) bearing of the pinion-holder unless this becomes necessary for cleaning the parts; and if, at any time this does become necessary, replace the parts carefully and see that the pinion moves freely and easily, without friction, before replacing the rack and other parts.

Do not stand the scale on end so that its weight rests on the projecting end of the spring-holder.

Do not stretch the springs beyond three turns of the index; this may injure the springs and the rack may come out of mesh with the pinion, necessitating removal of the case and cover before the parts can be restored to their former relative positions.

SNOW-SAMPLERS
For Measuring the Water Content of Snow on the Ground.

The Mount Rose Snow-Sampler.

(Illustration)

Revised Copy

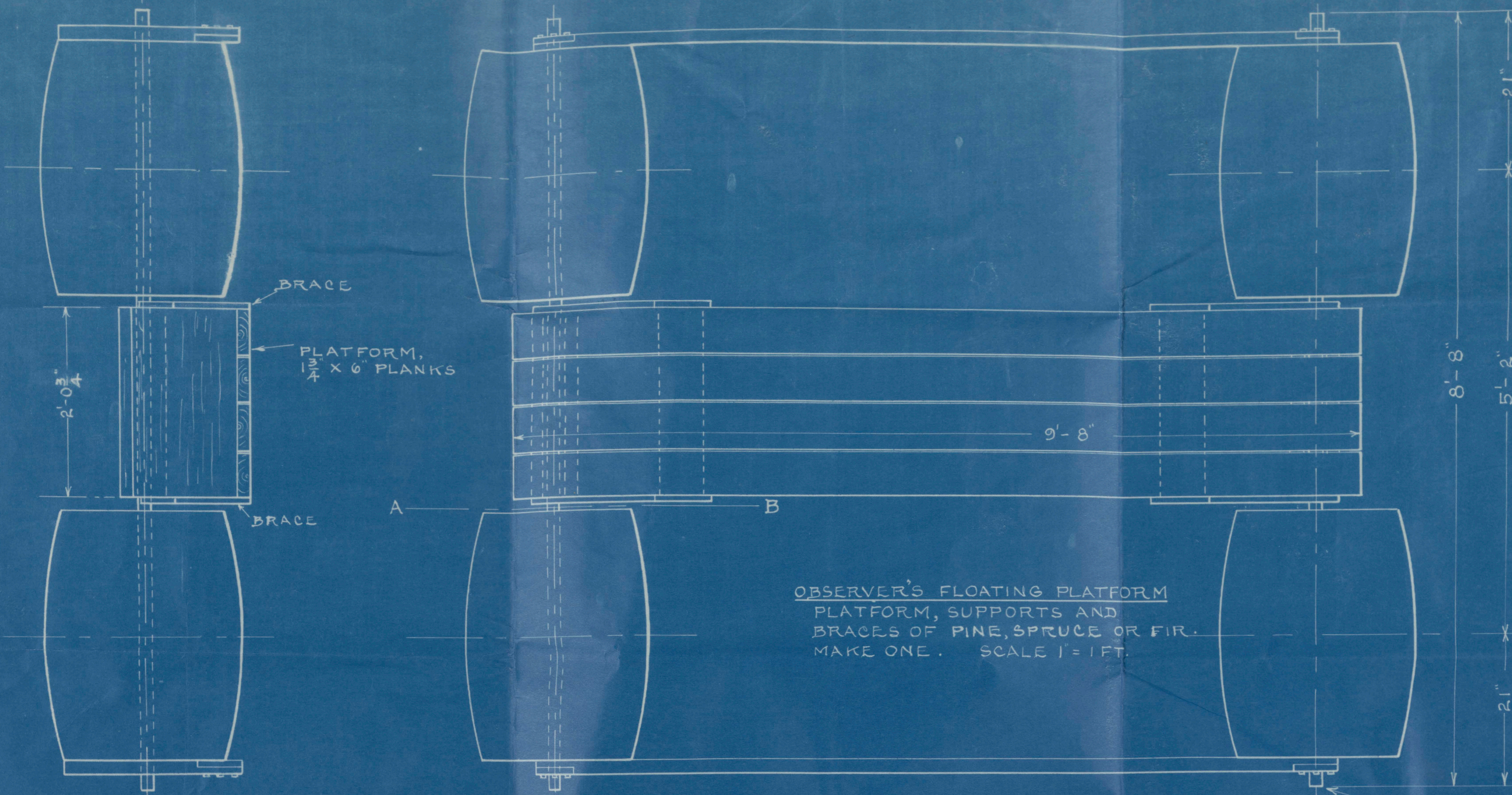
This apparatus was designed by Dr. J. E. Church and his associates of the University of Nevada for the measurement of snow in the Sierras. It is of particularly strong, rugged construction, suitable for heavy duty and hard usage in the field. The sampler proper is a steel tube (A) in one or more sections as desired, 6 to 10 feet in length, each, united by screw-couplings. (B) is a wrench necessary to drive the sampler-tube when the depth of snow exceeds 10 feet, and the tool (C) is used to clean the tube. The scale (D) is used to determine the water-content of the sample, and during the process of weighing is suspended from the staff (E) which may be converted into a ski-pole for convenience in traveling, by securing the removable button (F) over its point.

By reason of its small diameter and sectional construction this sampler is adapted for both shallow and deep snow, and has been used successfully in snow of 50% density 20 feet deep. A milled cutter designed originally for glaciers facilitates cutting thick crusts and ice, without loss of accuracy or care in driving.

A complete sampling outfit comprises, with the parts described, one extra plain cutter, two wrenches, one half-round file, one 50 foot metallic tape, $\frac{1}{2}$ pint shellac, one field-book for recording measurements, one set carrying straps and a knapsack for tools; also, a wooden packing-case is necessary for transportation by train or wagon.

See description and directions for use on next page.

Spencer, during embank



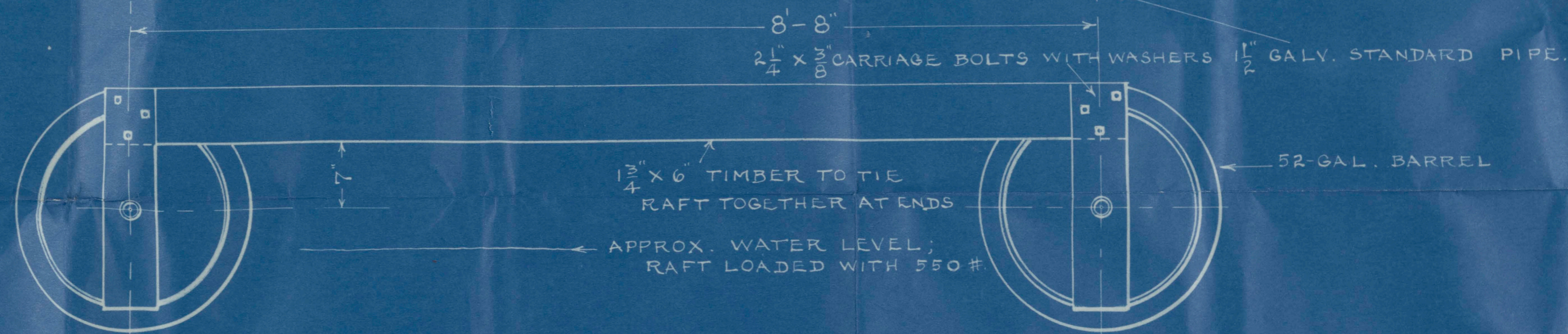
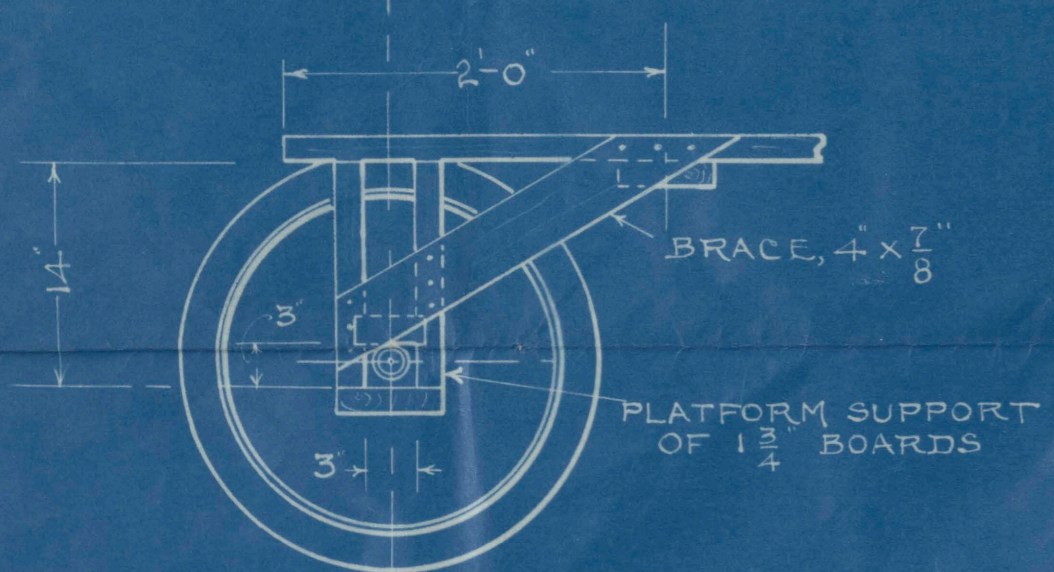
PAN RAFT
 4-FT. EVAPORATION PAN
 OBSERVER'S
 FLOATING PLATFORM

OBSERVER'S FLOATING PLATFORM
 PLATFORM, SUPPORTS AND
 BRACES OF PINE, SPRUCE OR FIR.
 MAKE ONE. SCALE 1" = 1 FT.

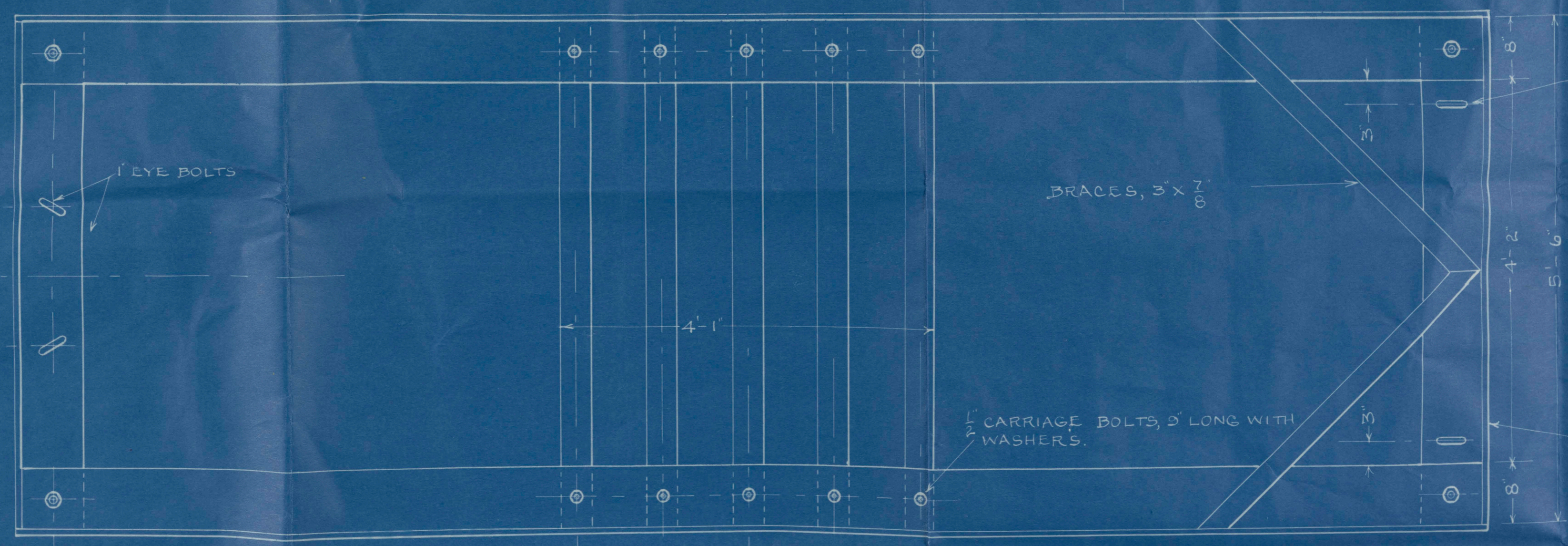
PLAN SHOWING
 RAFTS IN POSITION
 FOR READING HOOK GAGE.

SCALE 1/4" = 1 FT.

DUMMY RAFT FOR
 MOORING PLATFORM.



SECTION A-B.



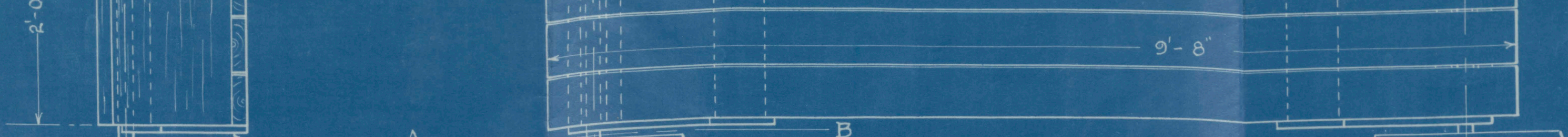
1" EYE BOLTS

BRACES, 3 x 7/8"

1" CARRIAGE BOLTS, 9" LONG WITH
 WASHERS.

BREAKWATER OF
 6" X 12" BOARD.

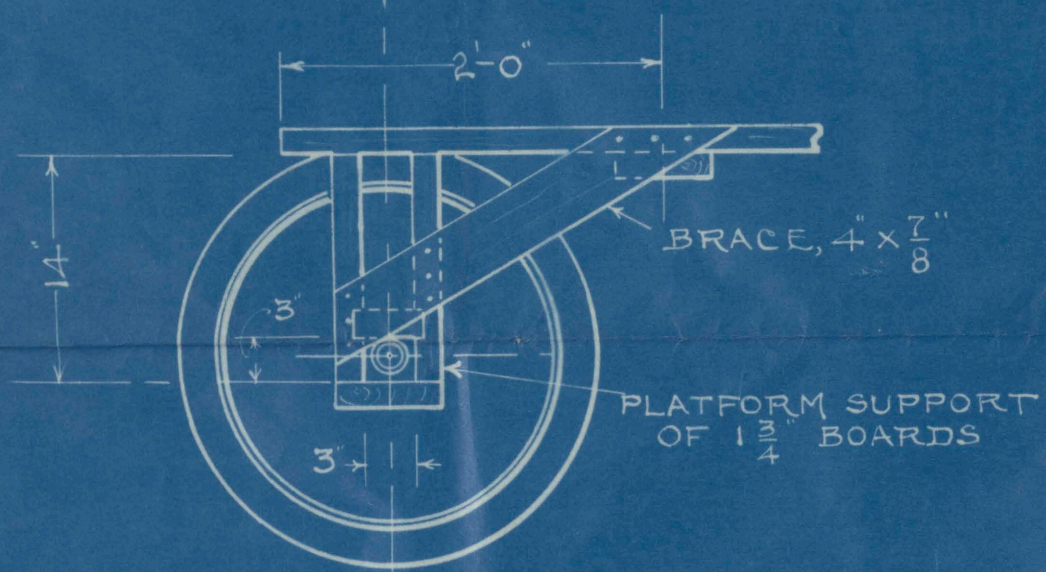
PLATFORM
 $1\frac{3}{4}$ X 6" PLANKS



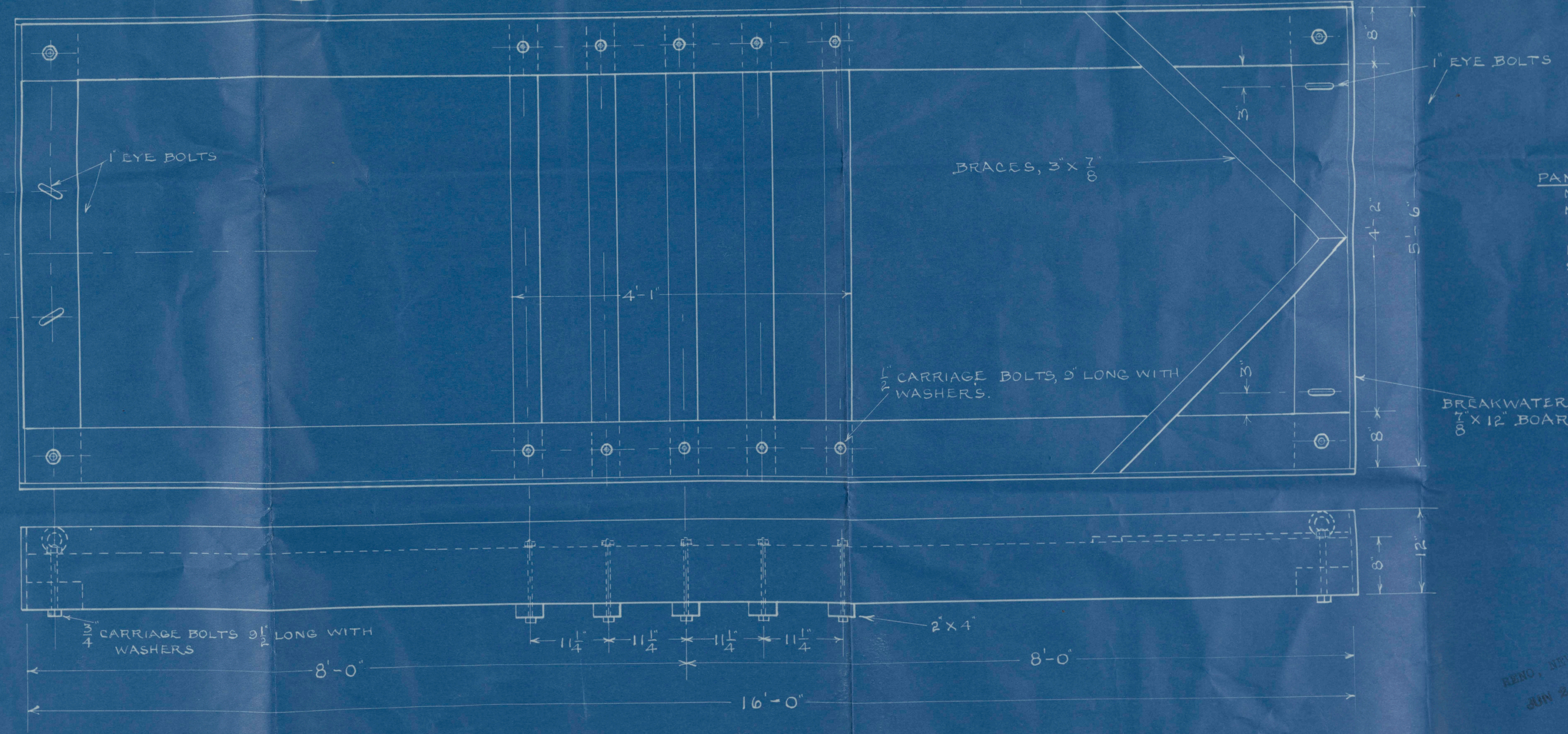
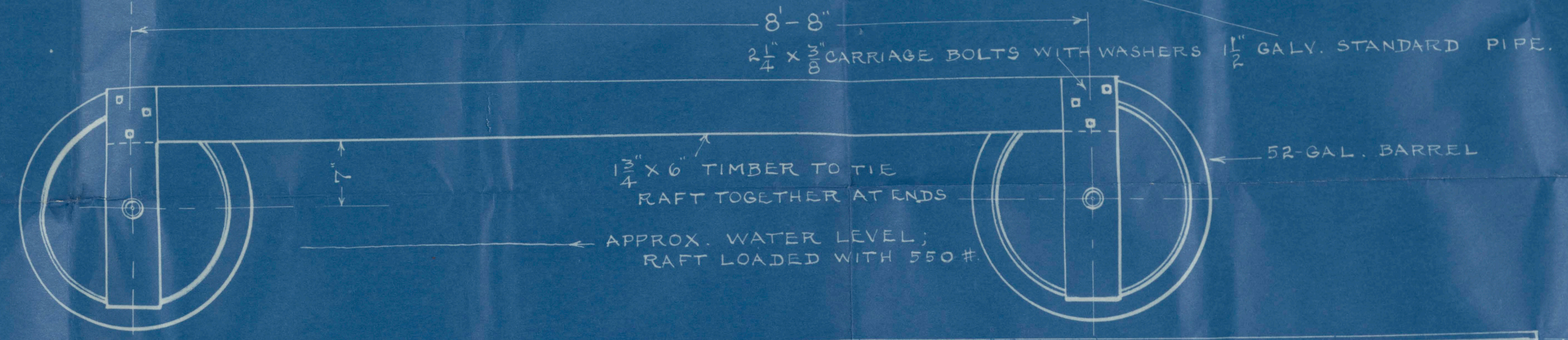
OBSERVER'S FLOATING PLATFORM
PLATFORM, SUPPORTS AND
BRACES OF PINE, SPRUCE OR FIR.
MAKE ONE. SCALE 1" = 1 FT.

PLAN SHOWING
RAFTS IN POSITION
FOR READING HOOK GAGE.
SCALE $\frac{1}{4}$ " = 1 FT.

DUMMY RAFT FOR
MOORING PLATFORM.

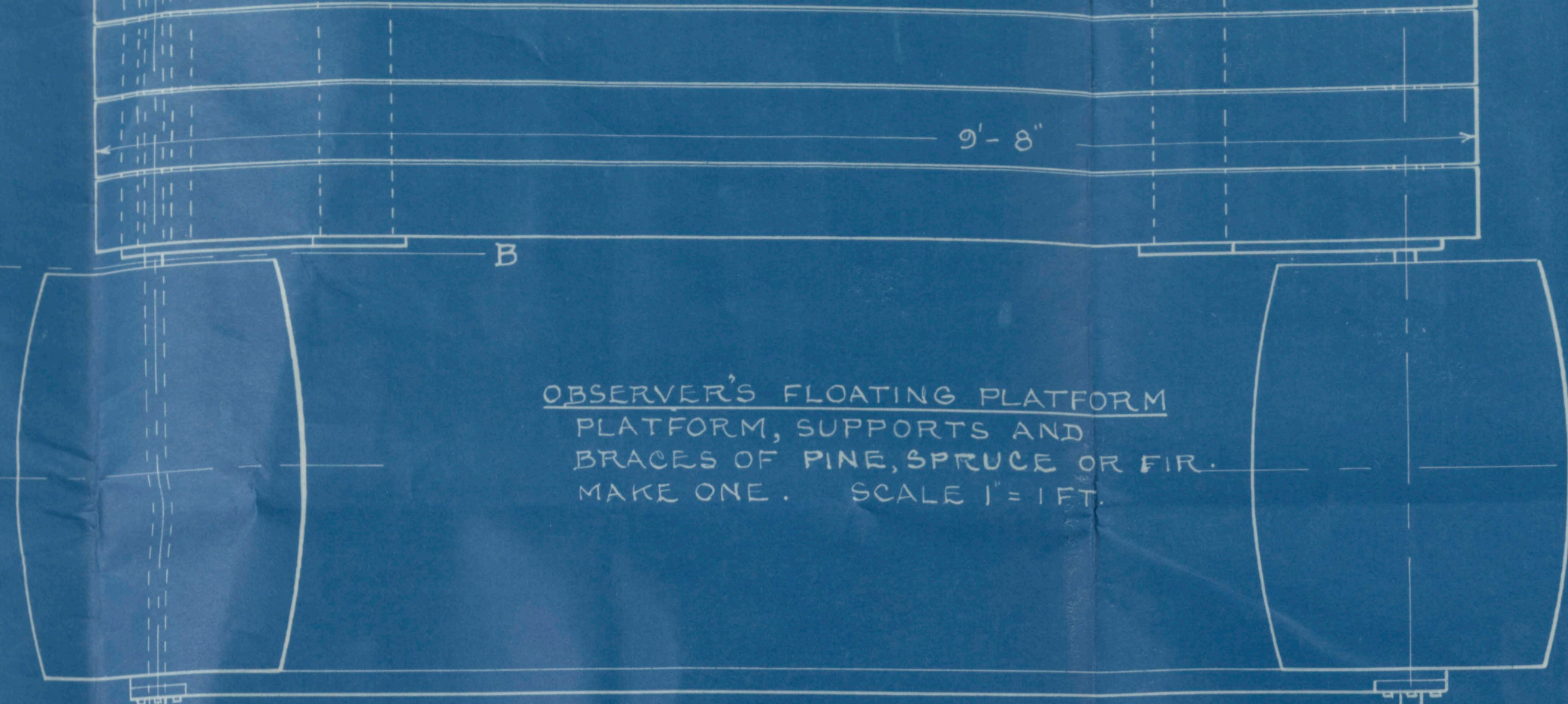


SECTION A-B.



RENO, NEVADA
JUN 24

ANKS

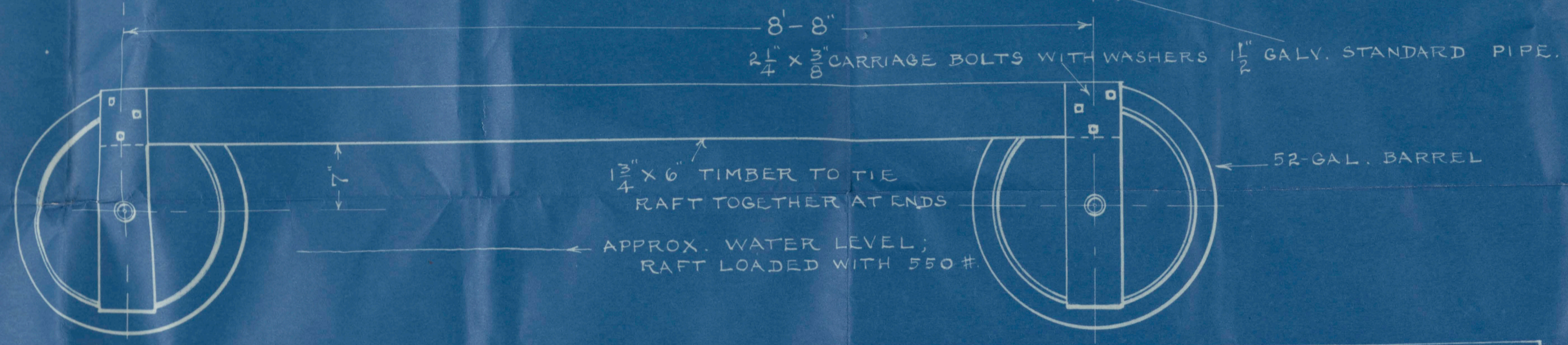
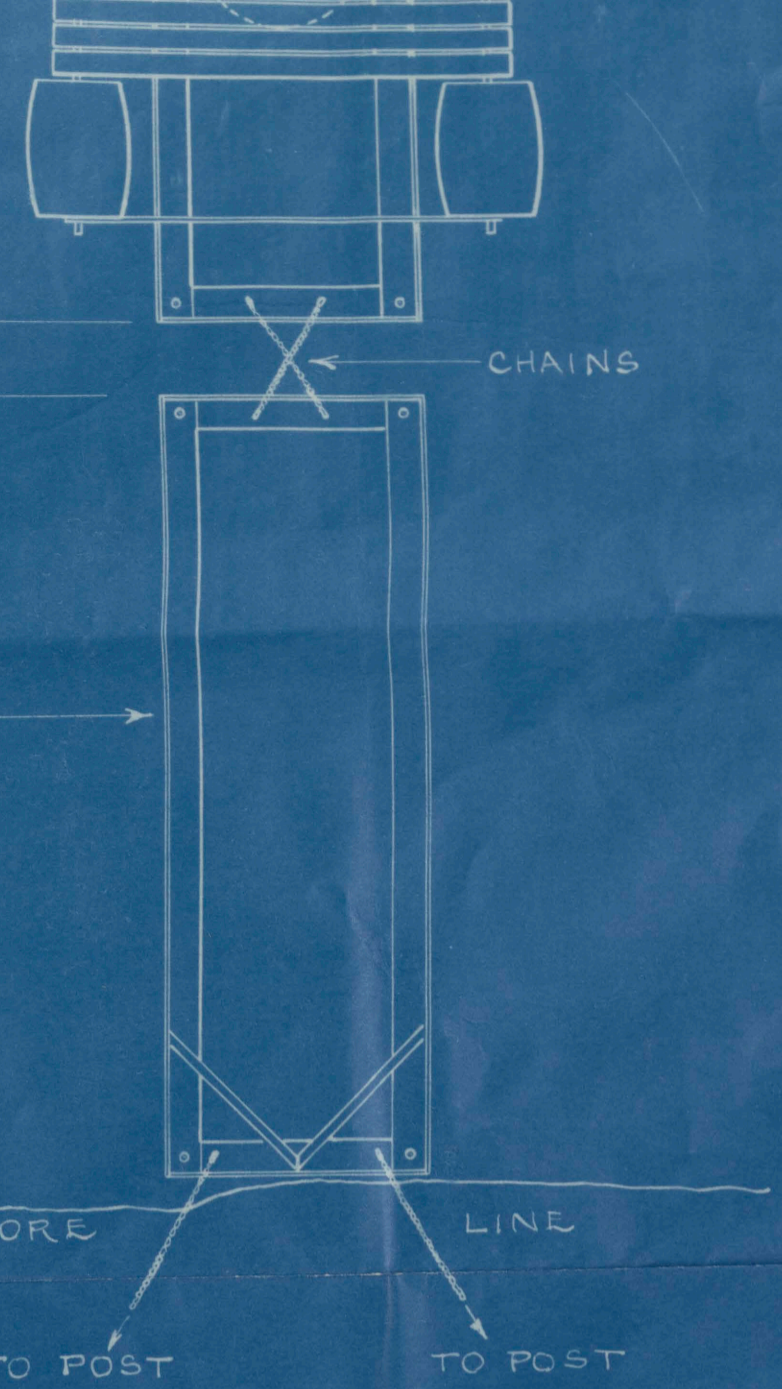


OBSERVER'S FLOATING PLATFORM
 PLATFORM, SUPPORTS AND
 BRACES OF PINE, SPRUCE OR FIR.
 MAKE ONE. SCALE 1" = 1 FT.

PLAN SHOWING
 RAFTS IN POSITION
 FOR READING HOOK GAGE.

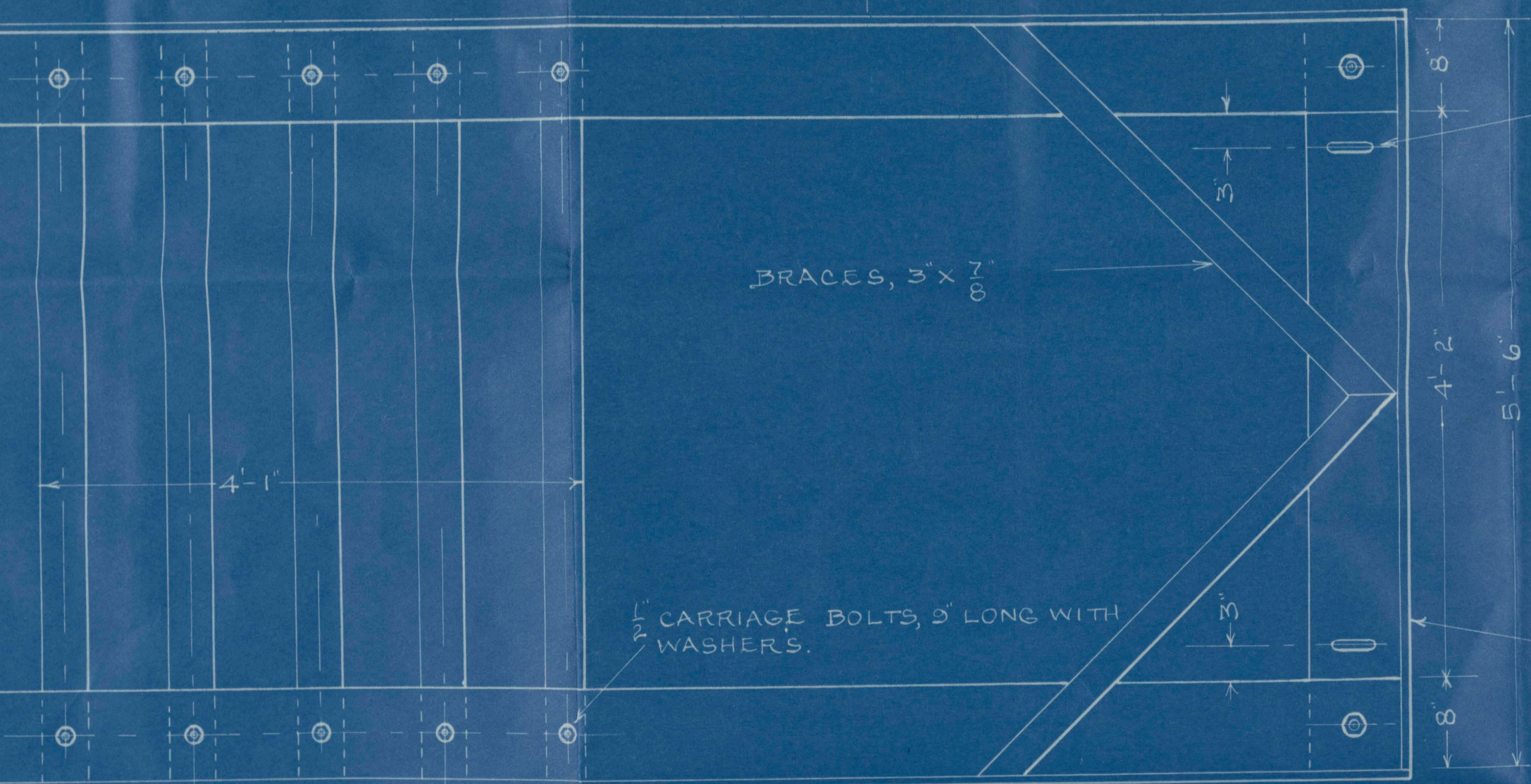
SCALE $\frac{1}{4}$ " = 1 FT.

DUMMY RAFT FOR
 MOORING PLATFORM.



PORT DS

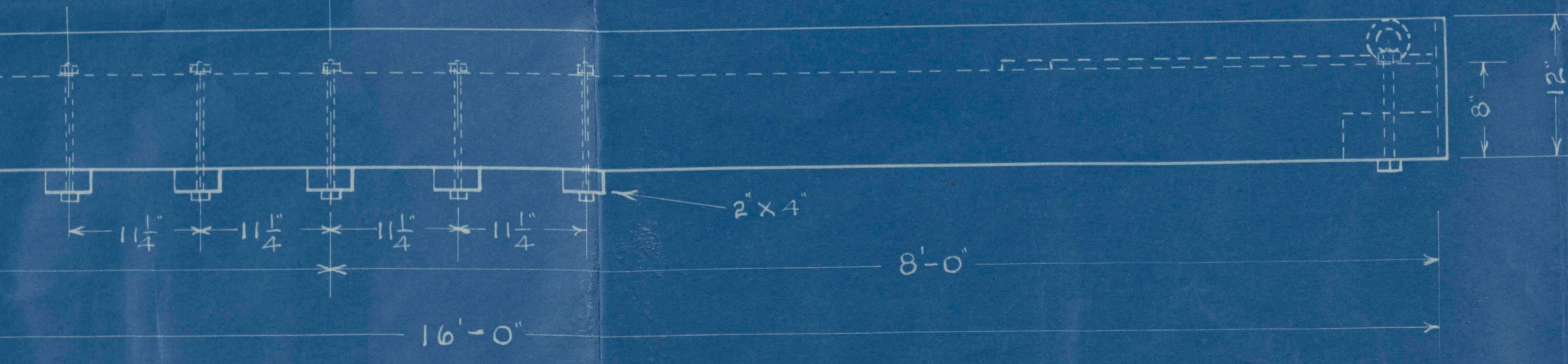
BOLTS



PAN RAFT -
 MATERIAL, PINE, SPRUCE OR FIR.
 MAKE ONE. SCALE 1" = 1 FT.
 MAKE A SECOND DUMMY RAFT WITH
 SUPPORT FOR PAN OMITTED.
 ALL BOLTS TO BE GALVANIZED
 WHEN POSSIBLE.

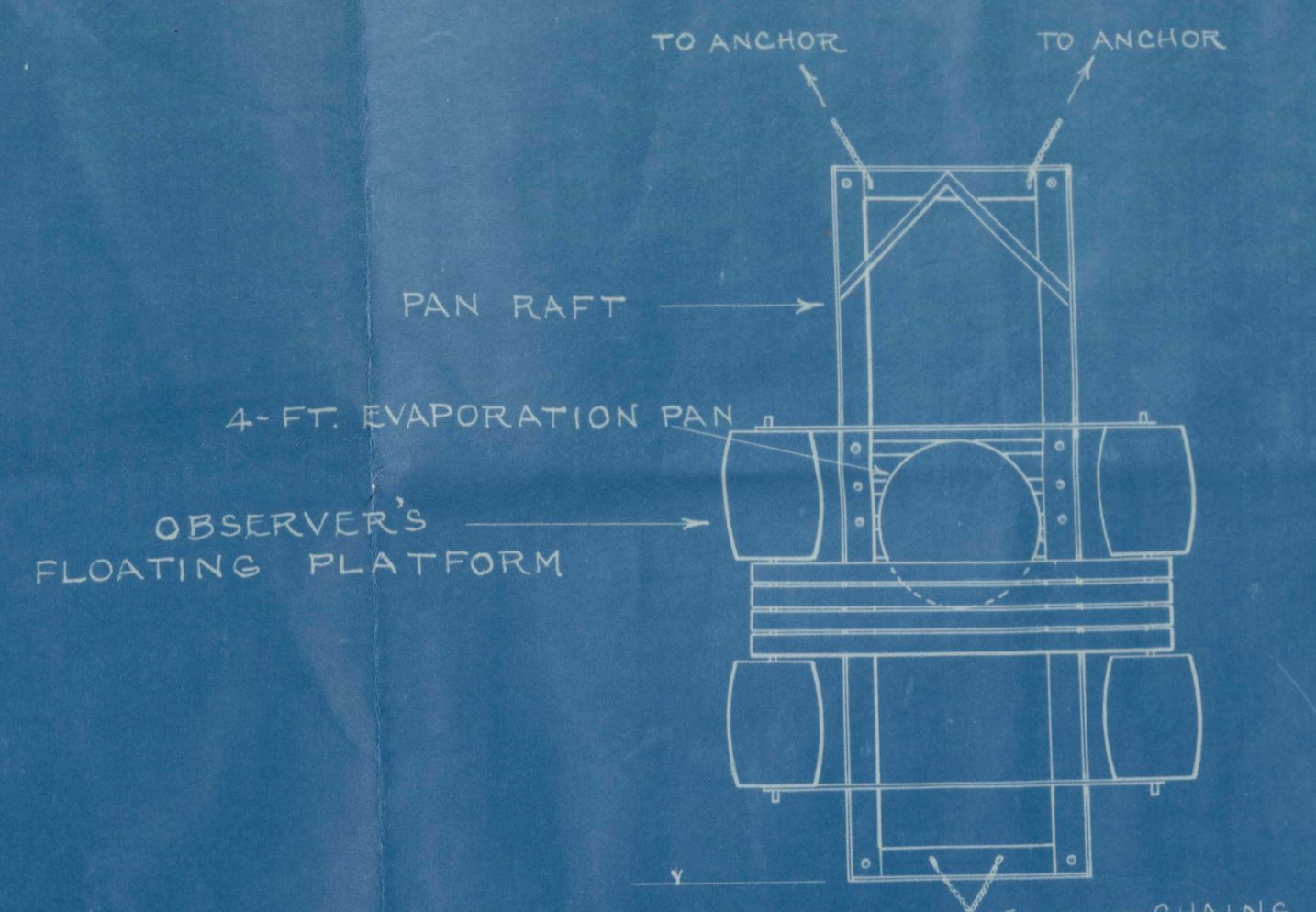
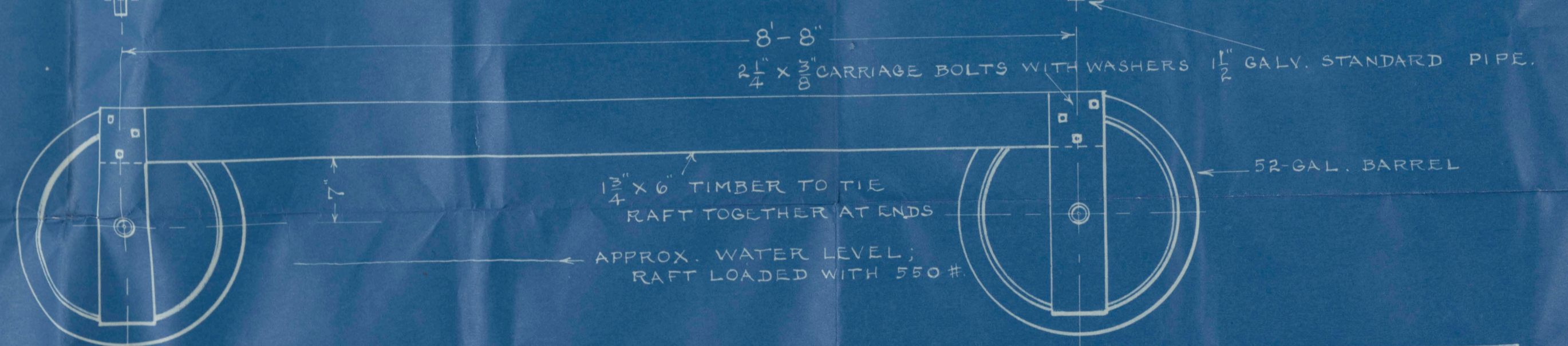
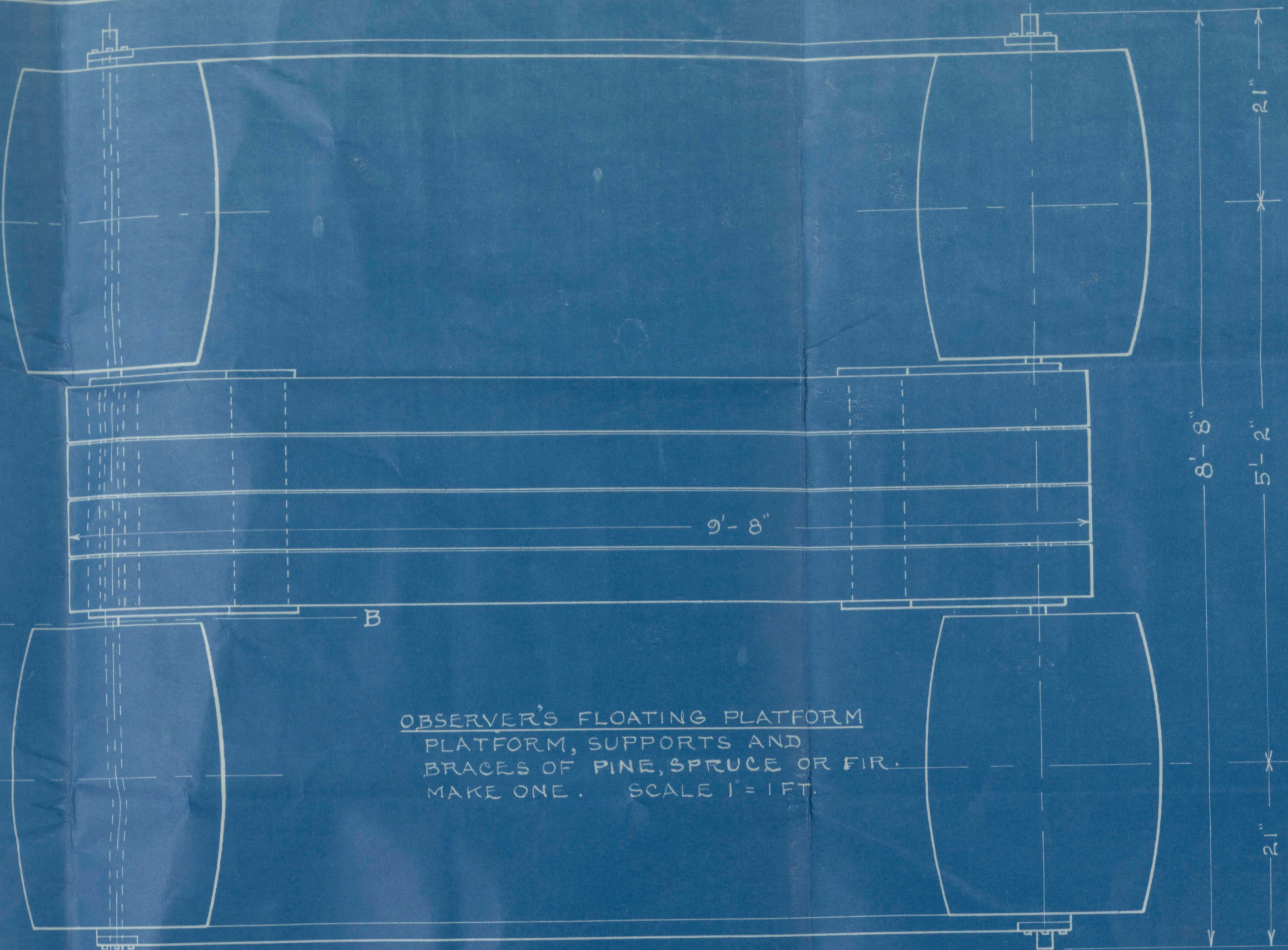
BREAKWATER OF
 8" x 12" BOARD.

AGE BOLTS 9 1/2" LONG WITH
 WHERS



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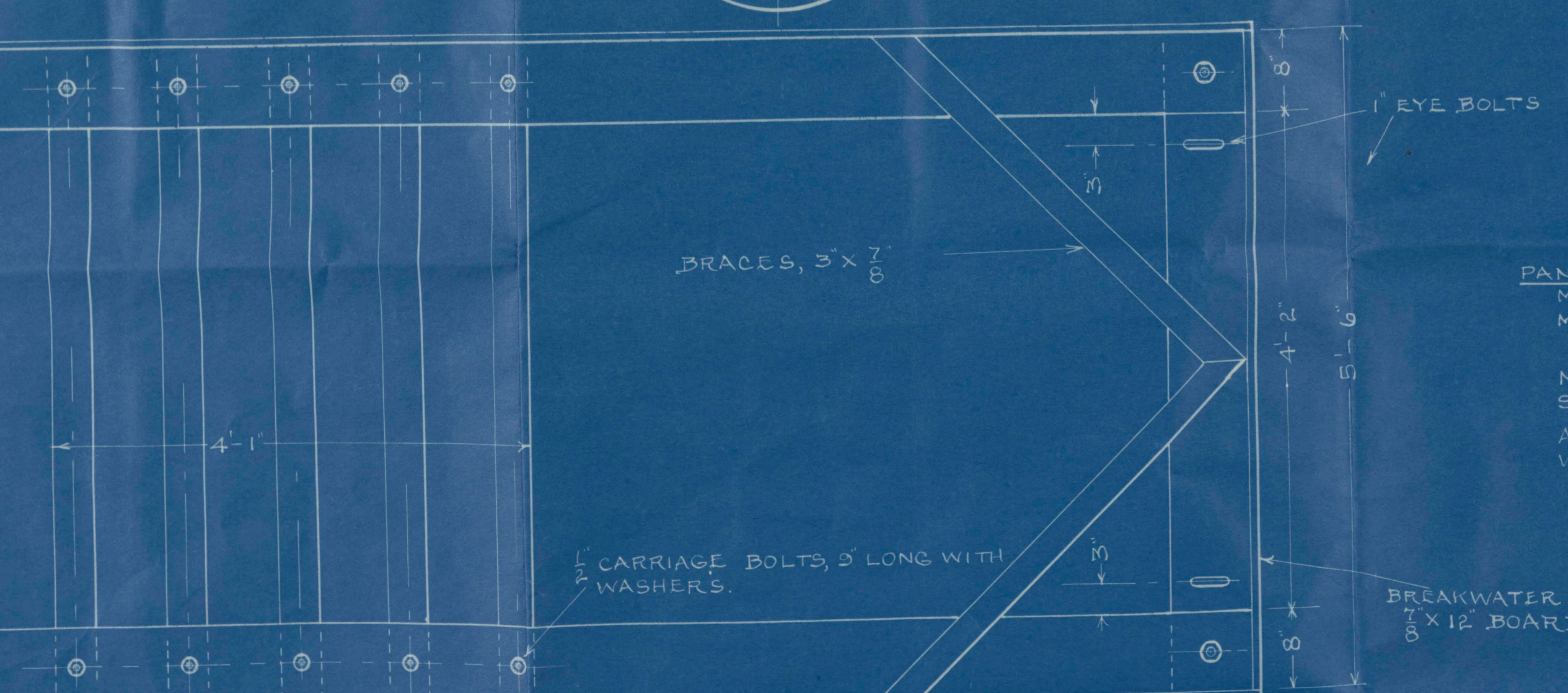
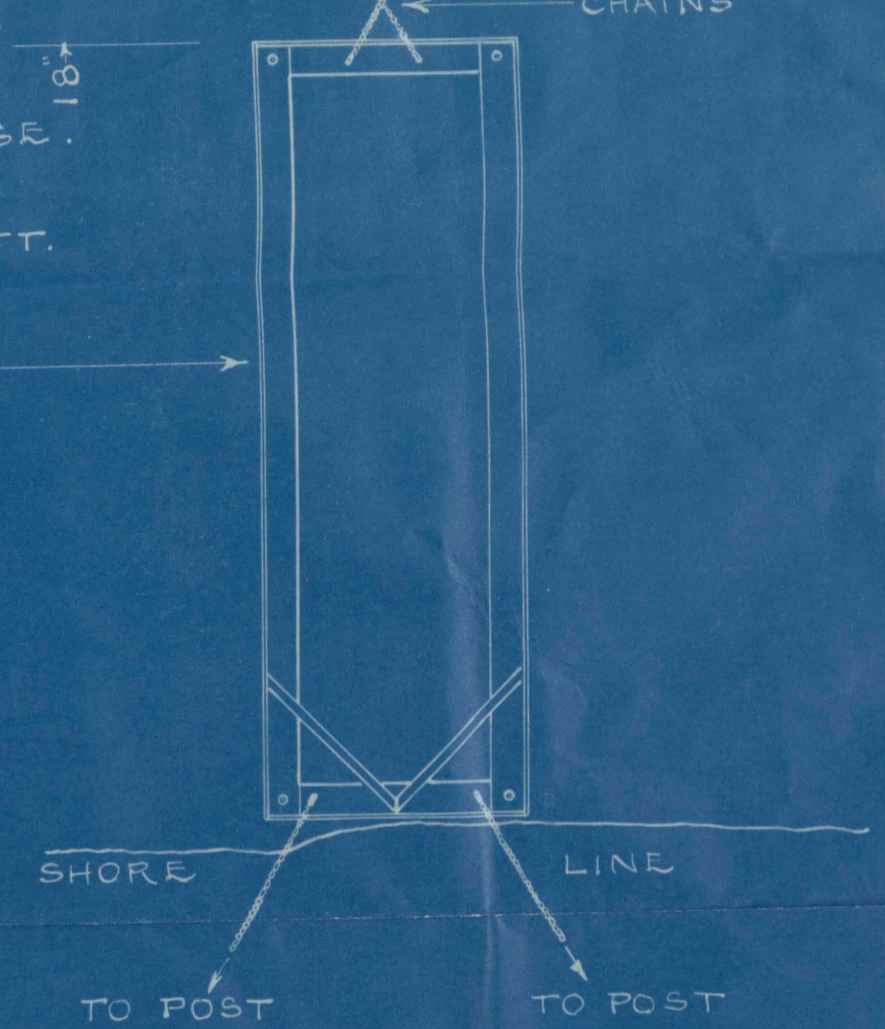
U.S. WEATHER BUREAU,
 INSTRUMENT DIVISION,
 RAFTS FOR USE IN MEASUR-
 ING EVAPORATION IN LAKES
 AND RESERVOIRS.
 SCALES AS NOTED.
 #191. JUN. 15/16.



PLAN SHOWING RAFTS IN POSITION FOR READING HOOK GAGE.

SCALE $\frac{1}{4}$ " = 1 FT.

DUMMY RAFT FOR MOORING PLATFORM.



PAN RAFT - MATERIAL, PINE, SPRUCE OR FIR. MAKE ONE. SCALE 1" = 1 FT.

MAKE A SECOND DUMMY RAFT WITH SUPPORT FOR PAN OMITTED.

ALL BOLTS TO BE GALVANIZED WHEN POSSIBLE.

BREAKWATER OF $\frac{7}{8}$ " x 12" BOARD.