37-1A

LONG BEACH TURNPIKE

HILLIARD'S TO BARNEGAT CITY JUNCTION

OCEAN COUNTY

NEW JERSEY

DETAIL'S OF CONSTRUCTION

WM H. FORD, C. E.
PHILADELPHIA

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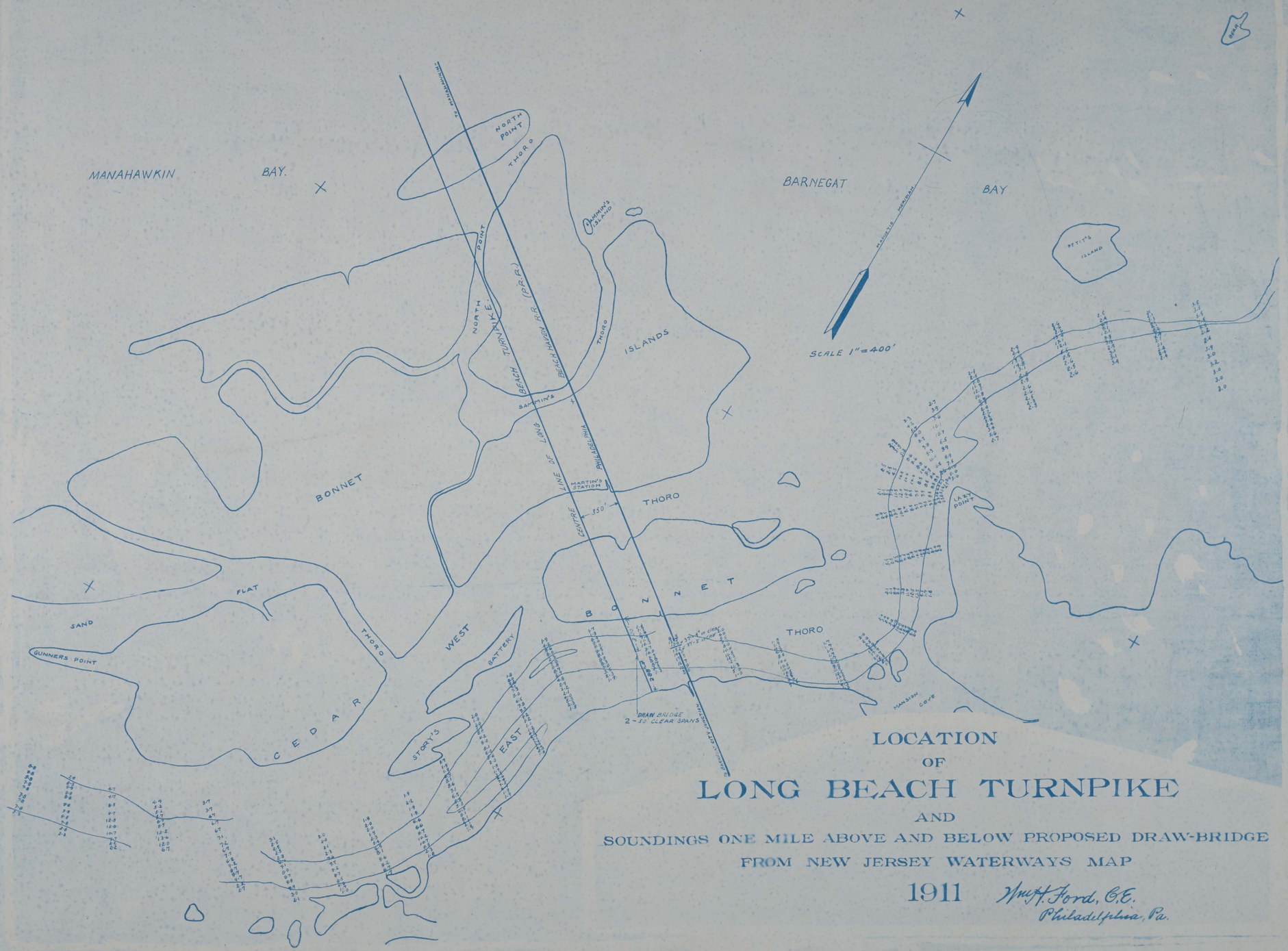
#34

SHEET 1



LOCATION
OF
LONG BEACH TURNPIKE
AND
SOUNDINGS ONE MILE ABOVE AND BELOW PROPOSED DRAW-BRIDGE
FROM NEW JERSEY WATERWAYS MAP

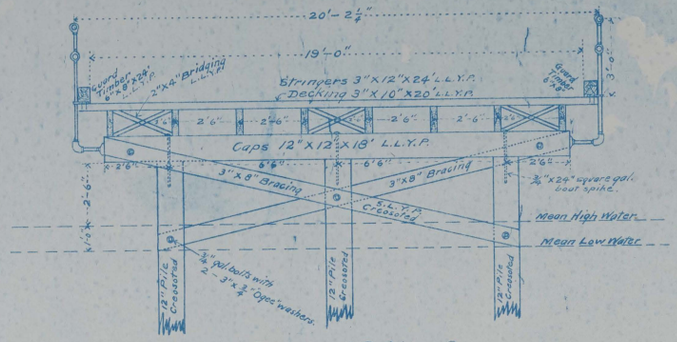
1911 Wm. H. Ford, C.E.
Philadelphia, Pa.

PLAN OF TRESTLE BRIDGES AND FILLS ALONG LONG BEACH TURNPIKE

1912.

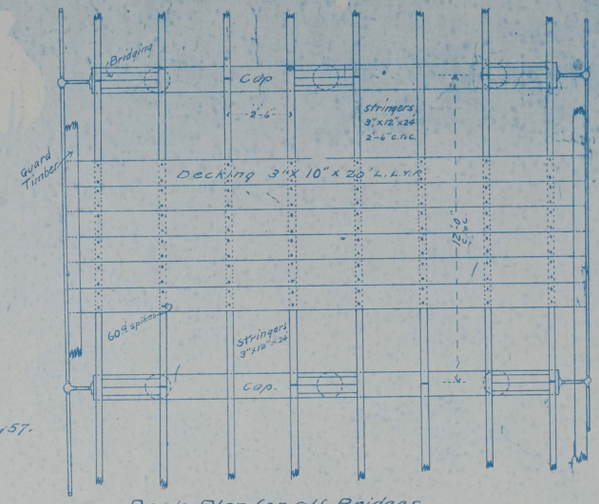
Wm. H. Ford, C.E.
Arcade Building
Philadelphia.

SHEET 2

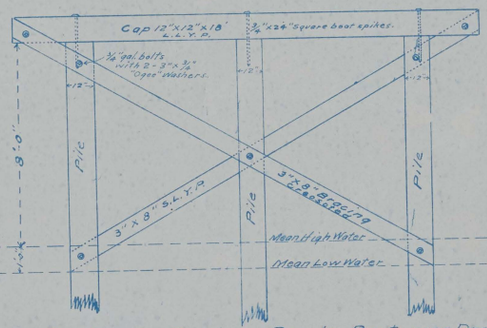


Section of Deck for all Bridges and Bracing for Bridges No. 1 to No. 4
Scale ⅜" = 1'

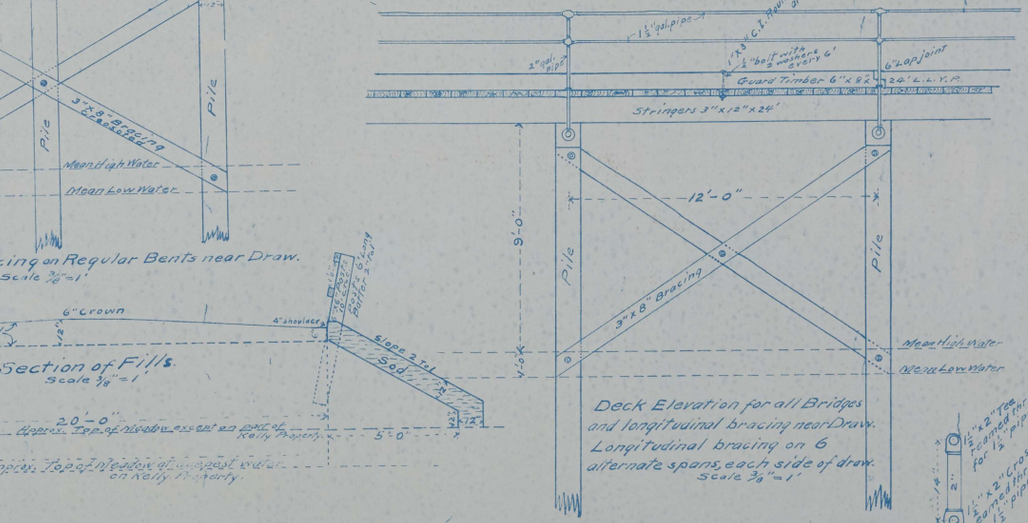
Bracing on Bridges No. 1,* No. 2 & No. 3, every 5th Bent, only.
Bracing on Bridge No. 4 on bents No. 3, 6 to 28 (inc.), 31 & 34.
Bracing on Bridge No. 5 on bents No. 2, 6, 10, 13, 15 to 38 (inc.) 40, 43, 47, 52 and 57.
* See Revised Plan of Manahawkin Bay Bridge.



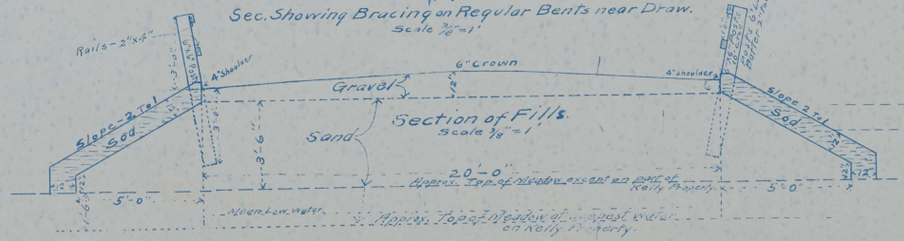
Deck Plan for all Bridges.
Scale ⅜" = 1'

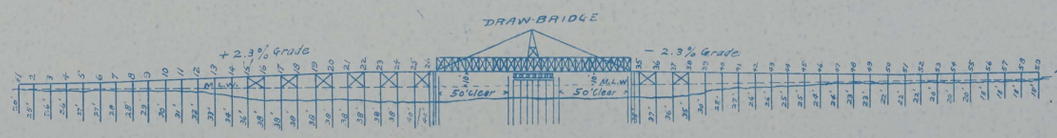


Sec. Showing Bracing on Regular Bents near Draw.
Scale ⅜" = 1'

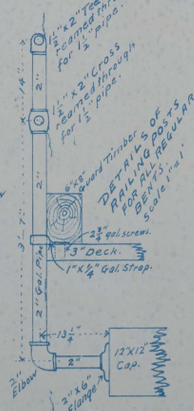


Deck Elevation for all Bridges and longitudinal bracing near Draw.
Longitudinal bracing on 6 alternate spans, each side of draw.
Scale ⅜" = 1'





Elevation of Bridge No. 5.
Scale 1" = 50'



DETAILS OF RAILING POSTS FOR ALL REGULAR BENTS.
Scale 1" = 1'

SHEET 4

PROFILE OF LONG BEACH TURNPIKE

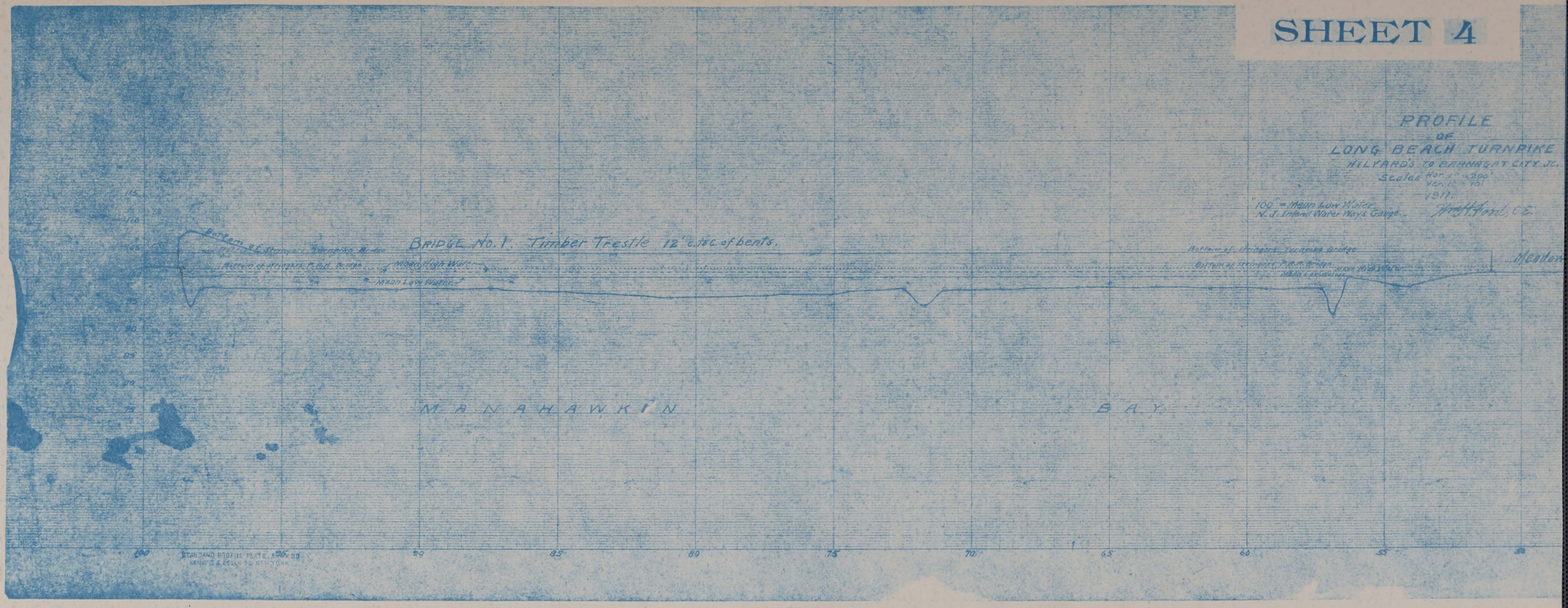
HILYARD'S TO BARNEGAT CITY, JC.

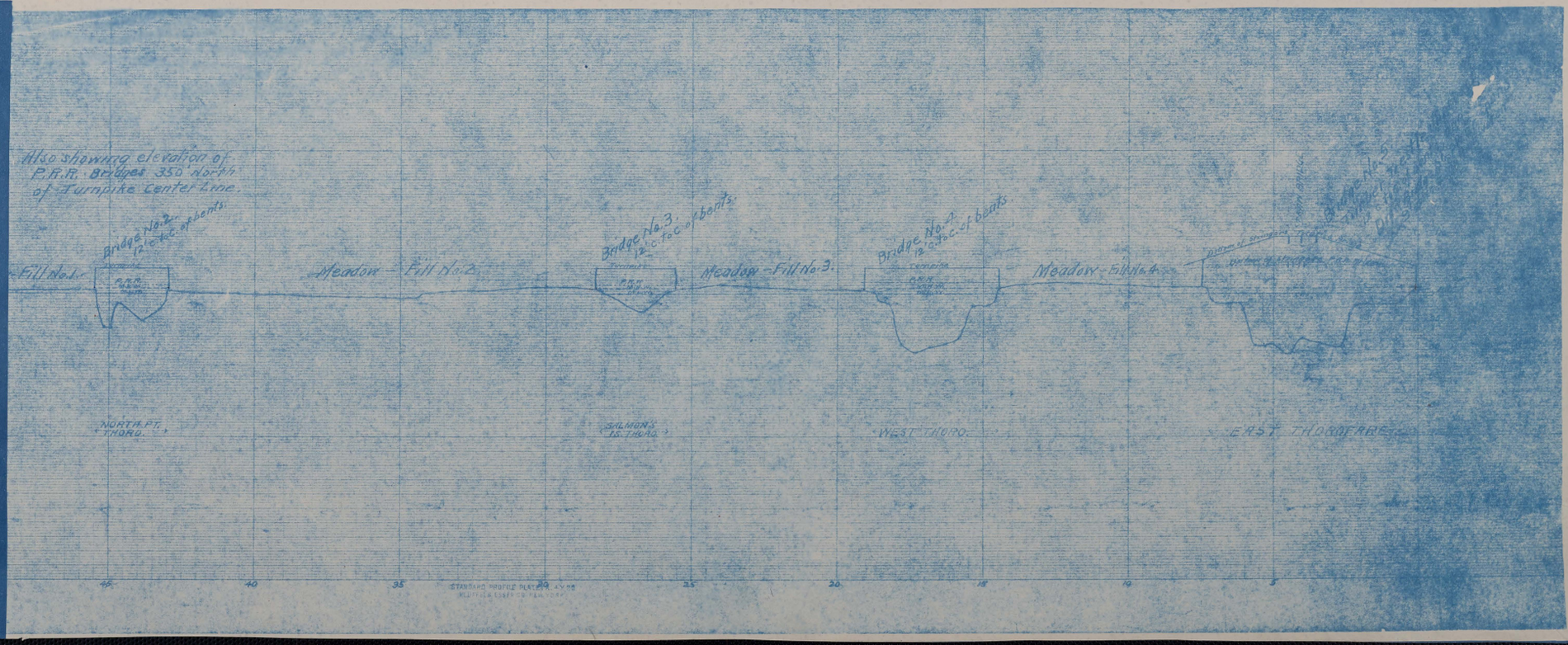
Scales Hor. 1" = 200'
Vert. 10'

1917.

100' = Mean Low Water
N. J. Inland Water Ways Gauge.

Wm. H. Ford, C.E.





SPECIFICATIONS FOR THE CONSTRUCTION OF LONG BEACH TURNPIKE

Wm. H. Ford, C.E.
Arcade Building,
Philadelphia, Pa.

GENERAL: The work under consideration consists of 4 timber trestle highway bridges, the trestle approaches to the draw span in Bridge No. 5; and the sod walls, sand fills, gravel tops and fences for 4 fills, as shown on attached plans. All material used and work done will be in accordance with these specifications and plans and will be subject to the approval of the Engineer.

BIDS will be received, in the form of one lump sum for the entire work, by the Engineer until noon on Jan. 15th, 1912 at 1124 Arcade Building, Philadelphia, Pa., and later on the same day they will all be presented at a meeting of the Board of Directors of the Long Beach Turnpike Co. for their consideration and immediate action.

The right is reserved to reject any or all bids.

BOND: The Contractor shall furnish a bond, with satisfactory surety thereon, in the sum of $10,000.00 (ten thousand dollars) for the faithful performance and completion of the contract.

DATE of COMPLETION: The earliest possible date for completion is desired, and will be one of the elements considered in awarding the contract.

ORDER in which construction will proceed: The first bridge work will be the east approach to the lift span and bents No. 25 and 26 of the west approach of Bridge No. 5, after which the work will commence at the west end of Bridge No. 1 and proceed toward the east.

PAYMENTS: At the end of each month the Engineer will make an estimate of the value of material delivered and work completed and on or before the 15th day of the following month the Company will pay to the Contractor 80% of this amount.

The final payment, together with all retained percentages, will be made to the Contractor within 30 days after the completion and acceptance of the work.

PILE DRIVING: A jet may be used on the east approach to Bridge No. 5, if considered necessary by the Contractor, but if used, the piles shall not be "jetted" to less than 3 feet from grade and a hammer shall be used to complete the driving. Piles shall be pulled into correct line for caps before being sawed off.

All temporary bracing, sawing strips, etc. shall be furnished by the Contractor.

CAPS and decking shall be sawed to lines given by the Engineer, after having been fastened in place.

THE SOD WALLS shall be carefully made of salt meadow sod. No sod will be allowed to be cut from within the Turnpike right of way limits, which extend 25' each side of the center line.

Sod walls of the same section as shown for the sides of the fills shall be made across the the ends of each fill. Sand shall be used to make the fills between the walls, to the elevation shown on the plan.

GRAVEL of a first class quality for road making shall be used for the top and shall be rolled until thoroughly compacted.

THE FENCES along the fills shall be made up of 6" x 6" x 6' posts placed 10' c. to c. with 2 rails of 2" x 4" stuff. Material to be short leaf yellow pine. Fences to be painted 2 coats with a good white oil paint.

BRIDGE MATERIAL:

PILES shall be of pine, straight and sound, and shall be not less than 12" in diameter at a distance of 2' from the butt, and shall have all bark peeled off. They shall be treated by the injection of not less than 12 pounds (retained) of Creosote per cu. ft. of material.

BRACING shall be Short Leaf Southern Yellow Pine of the grade known as "Sound and square edges", and shall have a 12 pound Creosote treatment.

CAPS, stringers, bridging, decking and guard timbers shall be of Long Leaf Southern Yellow Pine of the grade known as "Merchantable" by the Lumber Association Rules of 1905.

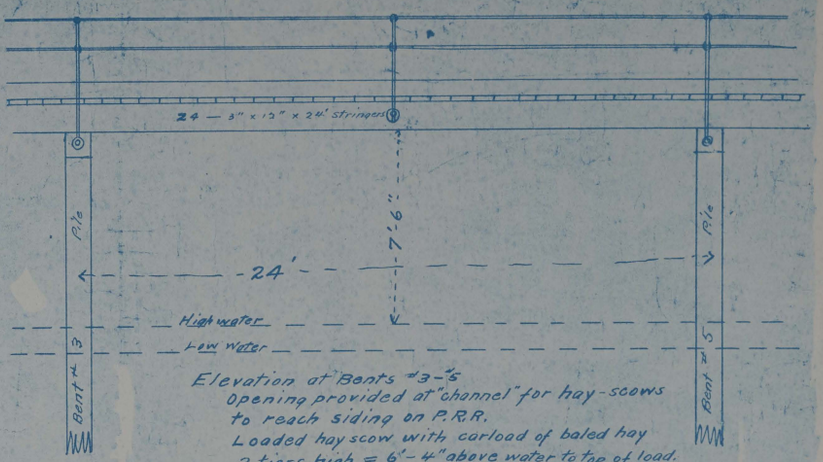
ALL HARDWARE, pipe and fittings shown on plans shall be first class and of standard weight, thickness etc.

CREOSOTE: All pile tops, after having been sawed to grade, all points of contact of uncreosoted timber, and parts disturbed by the saw shall receive one application of hot creosote.

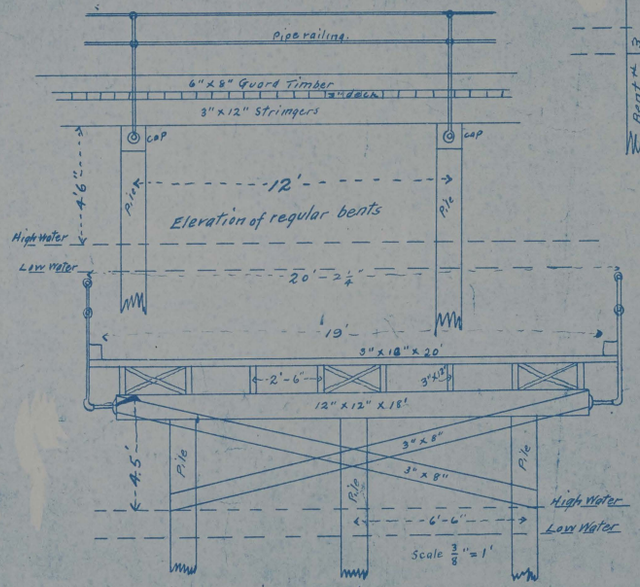
Any points not covered by the plans and specifications will be as ordered by the Engineer.

Any extra work ordered by the Engineer shall be done by the Contractor for cost plus 10%.

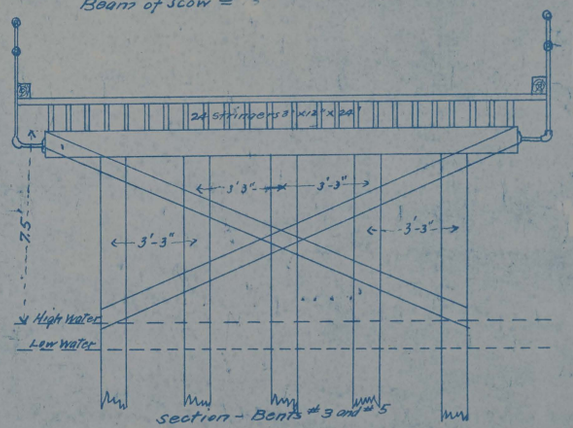
LONG BEACH TURNPIKE
Revised Plan of
Trestle across
Manahawkin Bay.
Providing opening for Hay Scows
to reach Hilliard's Siding on P.R.R.
Wm. H. Ford, C.E.



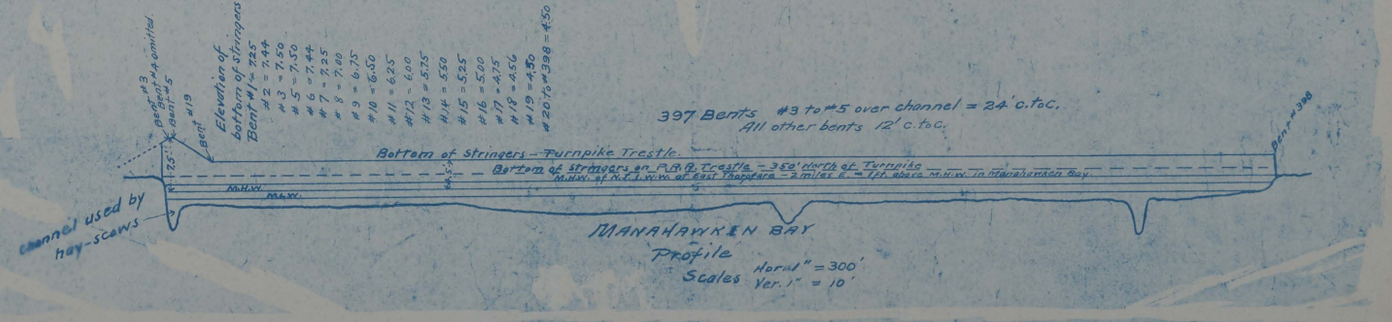
Elevation at Bents #3–5
Opening provided at "channel" for hay-scows
to reach siding on P.R.R.
Loaded hay scow with carload of baled hay
2 tiers high = 6'-4" above water to top of load.
Beam of scow = 5'



Section of Deck
Bents #19 to #398
Bracing every 5th Bent.



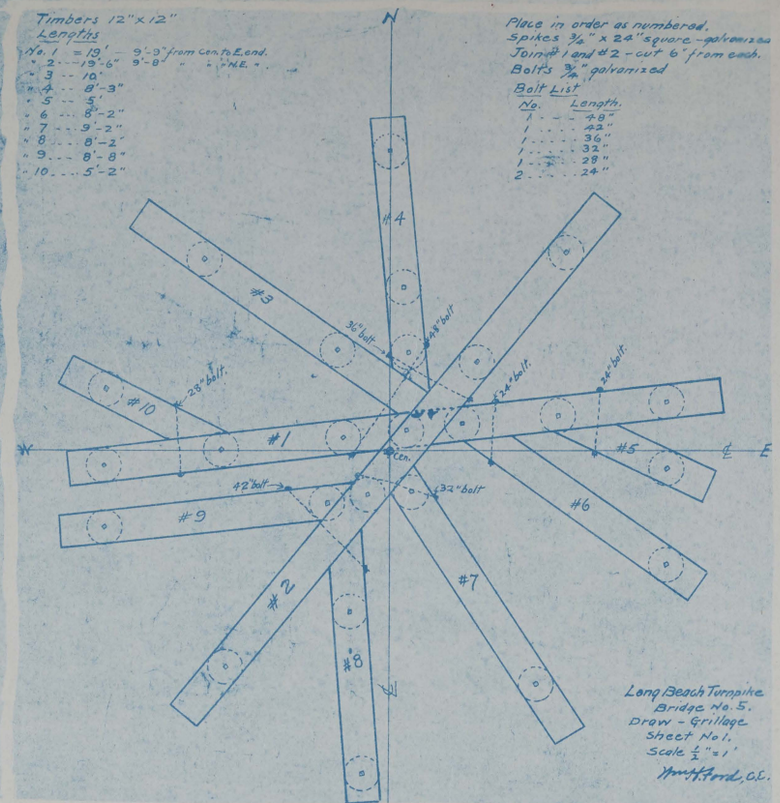
Section – Bents #3 and #5

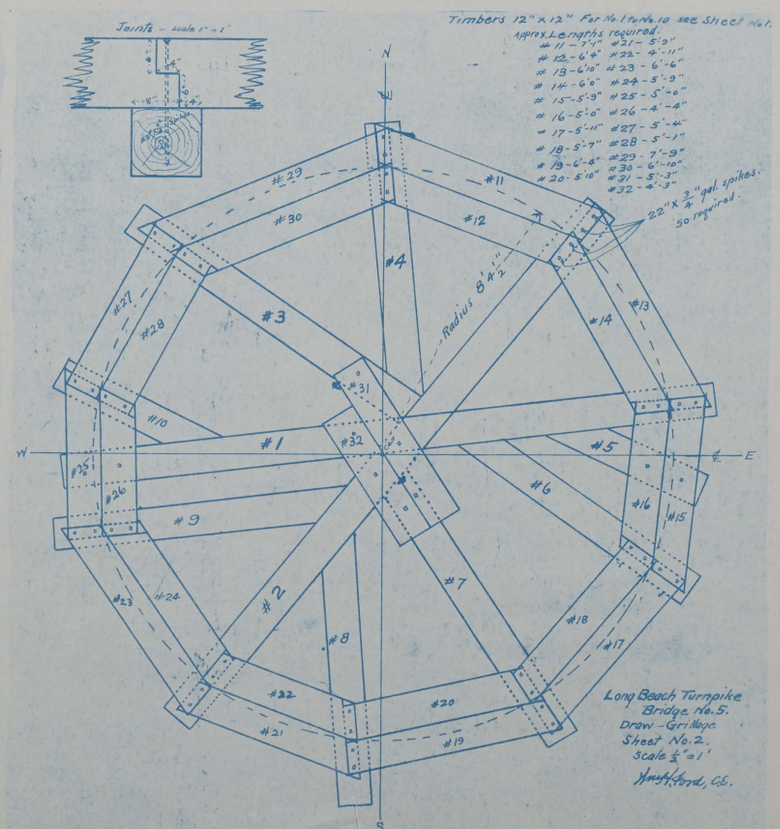


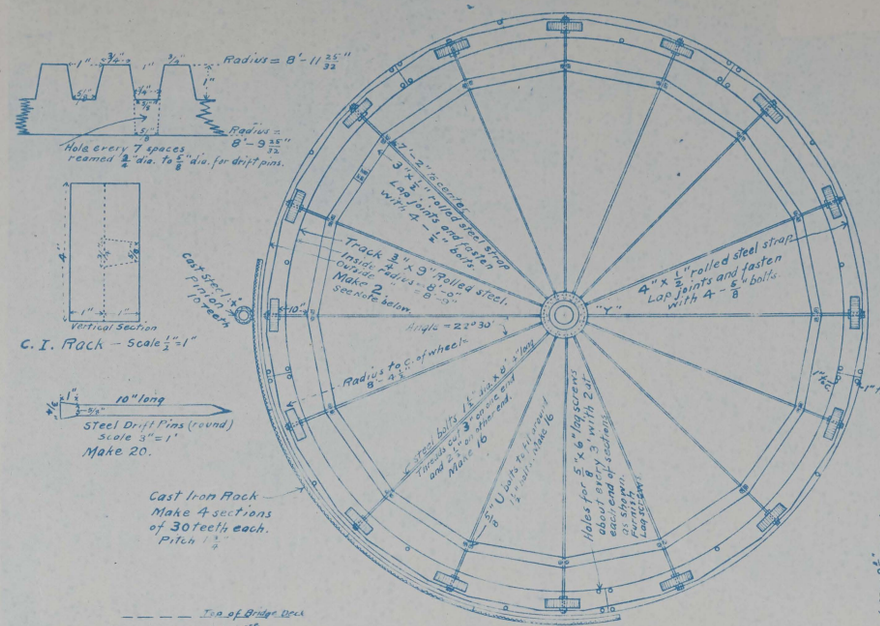
Profile
Scales Horiz. 1" = 300'
Vert. 1" = 10'

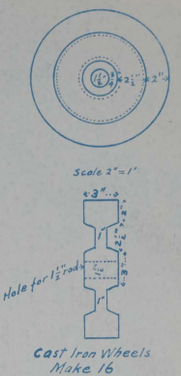
397 Bents #3 to #5 over channel = 24' c. to c.
All other bents 12' c. to c.

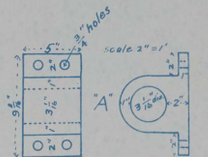
SHEET 6

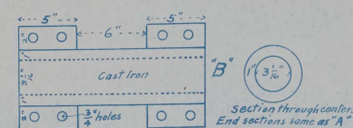




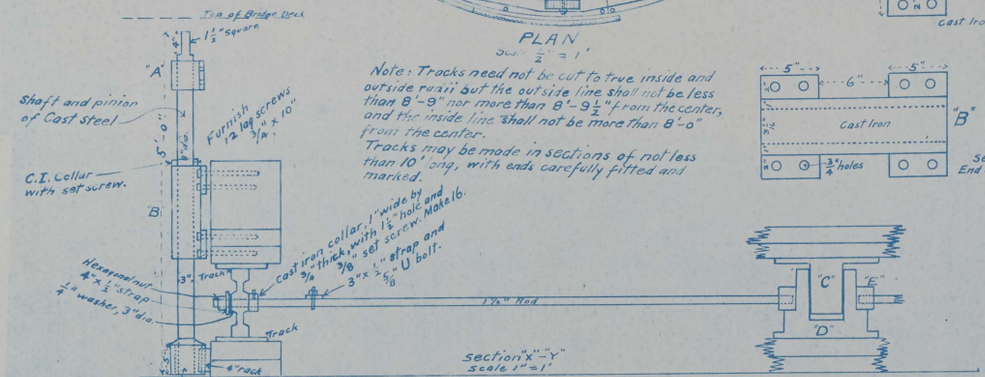


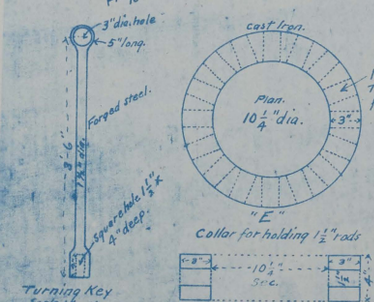


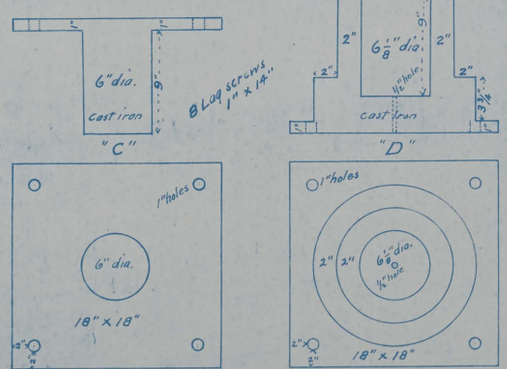




Note: Tracks need not be cut to true inside and outside radii but the outside line shall not be less than 8'-9" nor more than 8'-9 1/2" from the center, and the inside line shall not be more than 8'-0" from the center.
Tracks may be made in sections of not less than 10' long, with ends carefully fitted and marked.





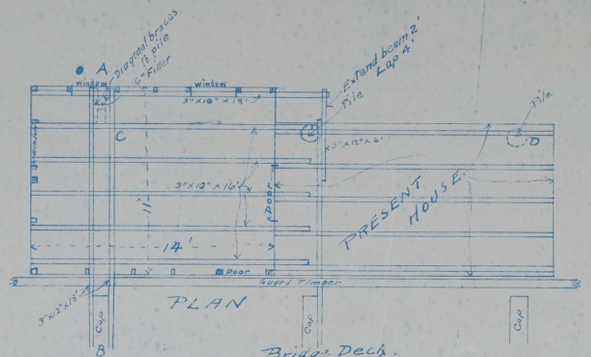


LONG BEACH TURNPIKE.
PIN BEARING TURNTABLE
FOR
BRIDGE No 5.
1912.
Wm. H. Ford, C.E.
Arcade Building,
Philadelphia.

SHEET 7

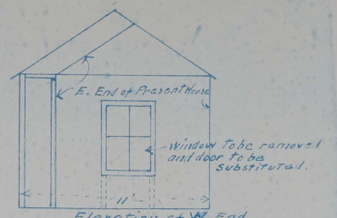
ADDITION TO BRIDGE TENDER'S HOUSE FOR LONG BEACH TURNPIKE CO.

Scale 1/4" = 1'

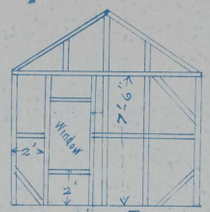


PLAN

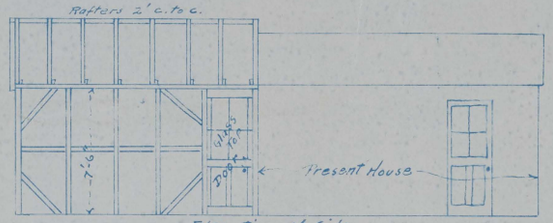
Bridge Deck.



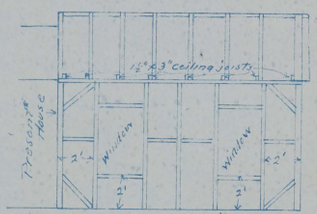
Elevation of W. End.



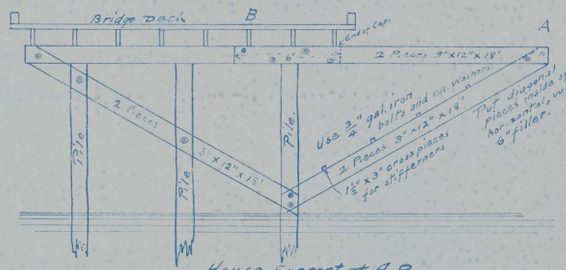
Elevation - E. End.



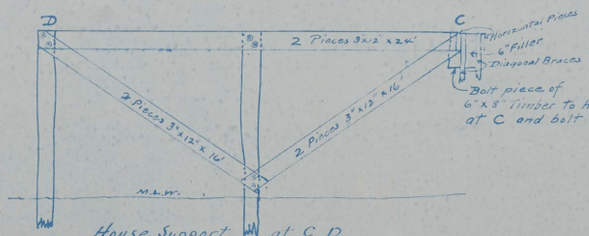
Elevation N. Side



Elevation - S. Side.



House Support at A.B.

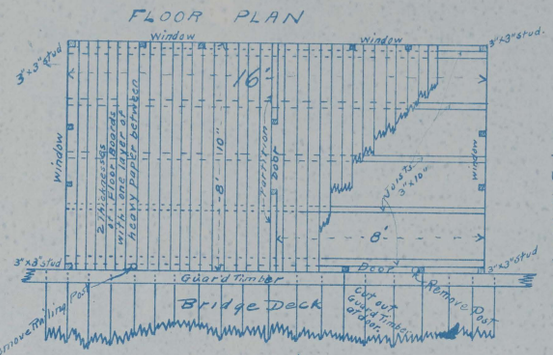


House Support at C. D.

Specifications:

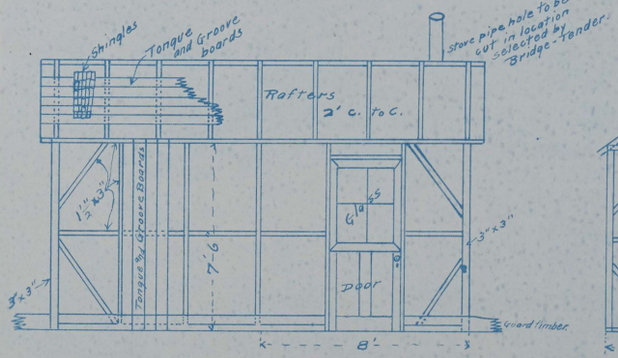
3" x 12" timber for supports at D-C and A-B to be of Long Leaf Yellow Pine, other lumber of Short Leaf Pine.
¾" Gal. bolts and washers will be furnished by the Turnpike Co.
For floor, sheathe under the joists using 1 thickness of heavy tarred building paper and ⅞" tongue and groove floor boards.
For sides — Fill spaces between joists with dry seaweed — Use ⅞" tongue and groove floor boards.
Use 1½" x 3" stuff for studding, rafters, braces etc. and 2 - 1½ x 3" pieces as per corner posts, and extending to bottom of joists.
Use 1½" x 3" stuff for studding, rafters, braces etc. and 1 - 3" x 3" piece for corner posts.
For outside sheathing use ⅞" tongue and groove stuff laid perpendicular with 1 thickness heavy tarred paper.
Sheathe inside and fill spaces between studs with dry seaweed
Windows - 4 light stock same size as present house. - Outside door same as present house.
Use galvanized nails for all outside work.
For roof use 1 thickness tar paper, tongue and groove boards and shingles.
Sheathe ceiling on under side of ceiling joists and make trap door through ceiling at west end of room.
All material to be first class and work to be done in accordance with standard practice.

FLOOR PLAN

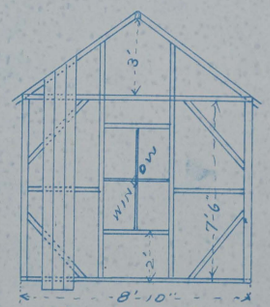


Remove Railing

LONG BEACH TURNPIKE
BRIDGE TENDER'S HOUSE
Scale ⅜" = 1'



FRONT ELEVATION
(NORTH SIDE)

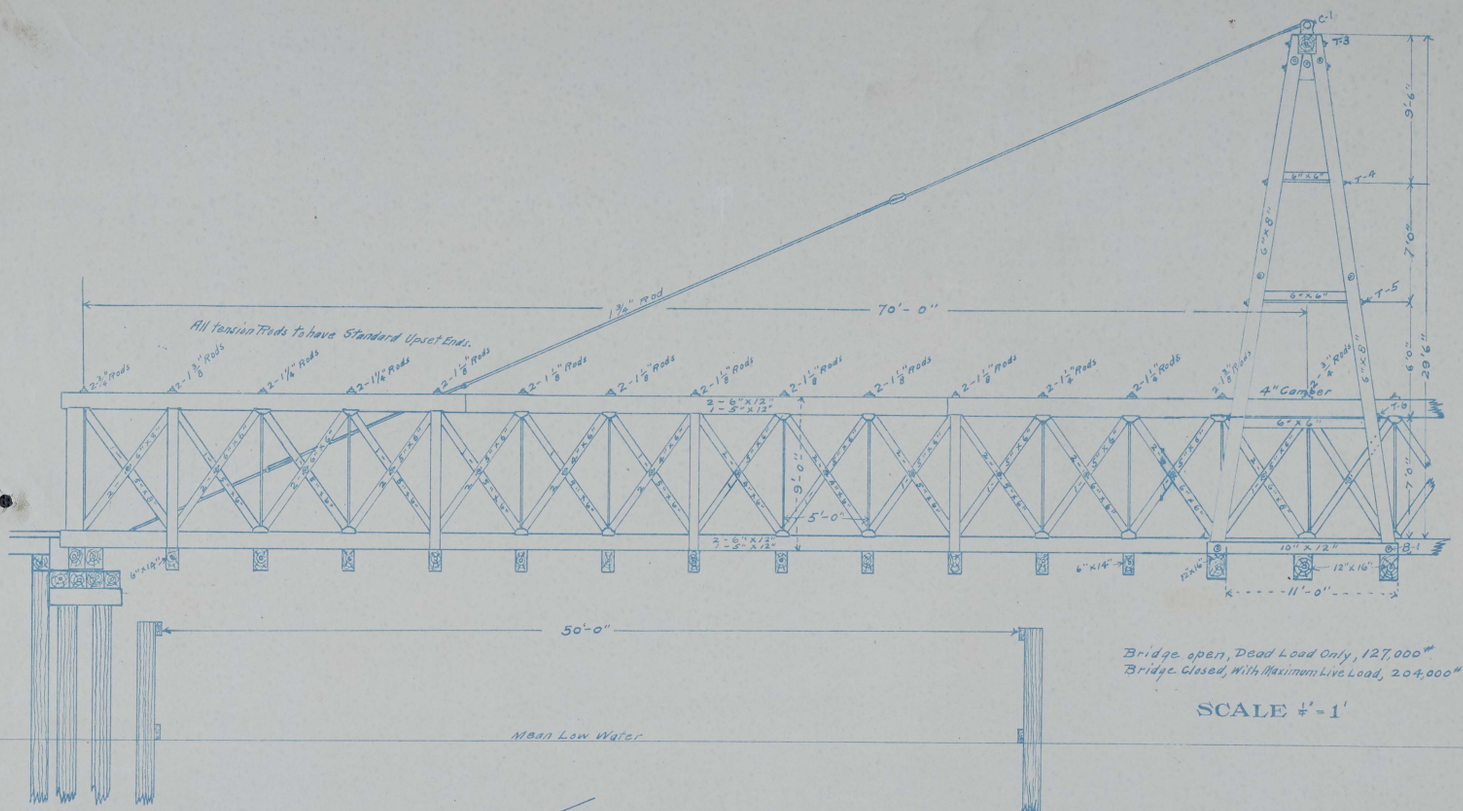


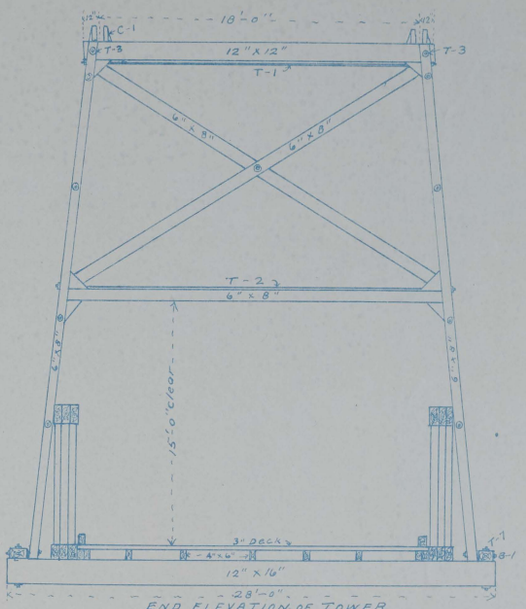
END ELEVATION

South side same construction except for a window in the middle of each room with sill 2' above floor.

LONG BEACH TURNPIKE
DRAW BRIDGE PLAN

WM H. FORD, C. E.
PHILADELPHIA

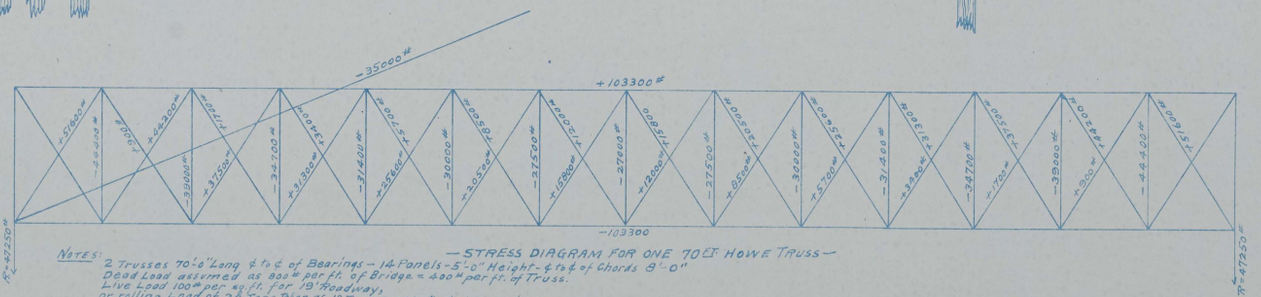




END ELEVATION OF TOWER

Bridge open, Dead Load Only, 127,000#
Bridge Closed, With Maximum Live Load, 204,000#

SCALE ¼" = 1'



—STRESS DIAGRAM FOR ONE 70 Ft. HOWE TRUSS—

NOTES: 2 Trusses 70'-0" Long ℄ to ℄ of Bearings — 14 Panels — 5'-0" Height - ℄ to ℄ of Chords 8'-0"
Dead Load assumed as 800# per ft. of Bridge = 400# per ft. of Truss.
Live Load 100# per sq. ft. for 19' Roadway,
or rolling Load of 20 Tons Taken as 10 Tons concentrated on each Truss.
Dead Load for Center Tower, Track, Drum, etc. 15000# assumed.

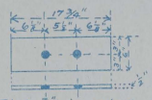
IRON DETAILS

DOWEL PINS

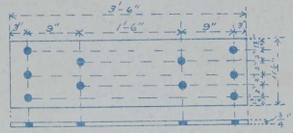
6" @ 3/4"

D-1 3/4" x 6" Make 224

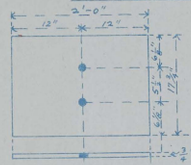
PLATES



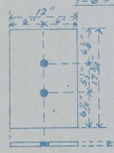
P1-2-7/8" holes-make 6
P2-2-1 1/8" " " 12
P3-2-1 3/8" " " 32
P4-2-1 1/2" " " 56



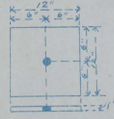
P-5-10-1 1/2" holes Make 96



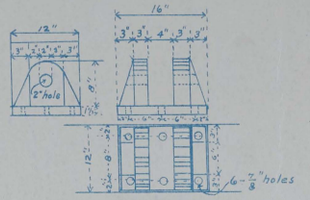
P-6-2 7/8" holes make 6



P-7-2-1 1/2" holes Make 4.

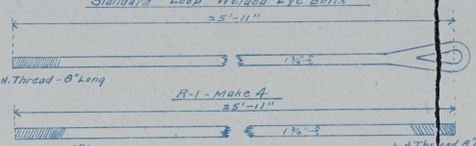


P-8-1-2" hole Make 4



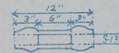
C-1 Make 2 Castings like this
2-2" Pins with Cotters to fit castings.

Standard Loop Welded Eye Bolts



R-1-Make 4

R-2 - Make 8
8-1 3/8" Nuts for above



T-1 Wrought Iron Turnbuckles-Make 8.

ALL IRON GALVANIZED

BOLTS

All Standard Screw Bolts-Square Head-1 Nut.

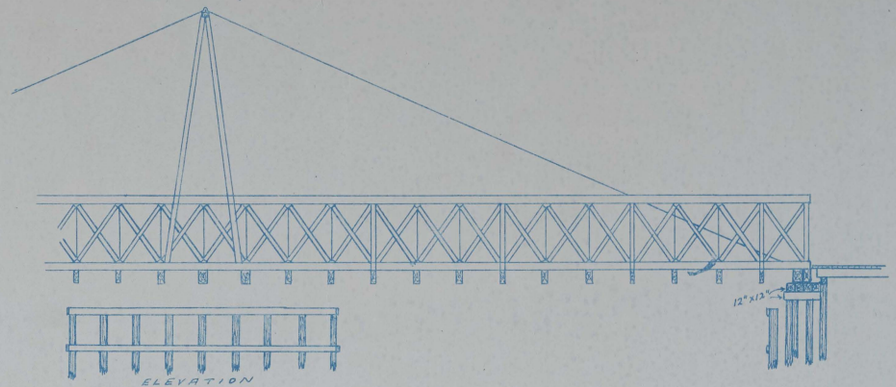
MARK	NO. REQUIRED	DIA.	LENGTH
B-1	272	3/4"	20 1/2"
B-2	56	3/4"	18 1/2"
B-3	12	3/4"	15"
B-4	112	3/4"	13 1/2"
B-5	8	3/4"	10'-5"
B-6	56	1 1/8"	10'-5"
B-7	32	1 1/4"	10'-5"
B-8	8	1 3/8"	10'-5"
B-9	480	1"	19 1/2"
B-10	3	1 3/8"	10'-7"
W	Cast Washers 500	3/4"	
B-11	4	3/4"	10-7"

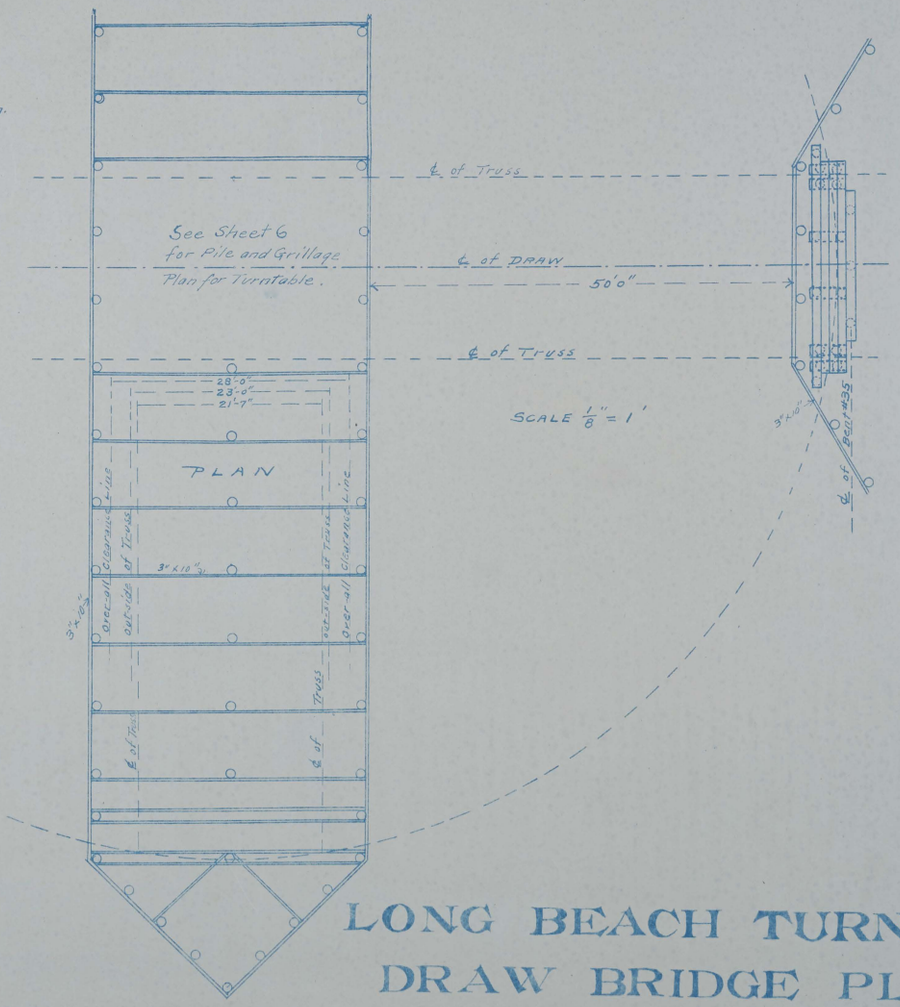
ROUND BARS

All-2 R.H. Screw Ends-2 NUTS.

MARK	NO. REQUIRED	DIA.	LENGTH
T-1	1	3/4"	20'-3"
T-2	2	3/4"	22'-0"
T-3	2	3/4"	21'-3"
T-4	2	3/4"	9'-7"
T-5	2	3/4"	9'-9"
T-6	2	3/4"	9'-11"
T-7	2	3/4"	2'-6"

FLAT IRON & PIERS





LONG BEACH TURNPIKE
DRAW BRIDGE PLAN

WM H. FORD, C.E.
PHILADELPHIA