FED ROAD DIST NO.	STATE	COUNTY			TOTAL SHEETS
14	S.C.	CHARLESTON	10.264	703	1	24

INDEX OF SHEETS

SHEET No. 1 TITLE PAGE
" " 2-3 ROAD PLAN-PROFILE
" " 4 BRIDGE PLAN-PROFILE
" " 5-8 DETAILS 226 FT. SPAN
9-14 SWING SPAN & CONTROL HOUSE
15-16 AUTO STOP BARRIER
17 HIGHWAY GUARDIAN BARRIER
18 WELDING SHEET
19-24 SUBSTRUCTURE DETAILS, constructed under separate contract.

SOUTH CAROLINA
STATE HIGHWAY DEPARTMENT
COLUMBIA

PLAN AND PROFILE OF PROPOSED STATE HIGHWAY

DOCKET NO. 10.264
DA-WR3-A(2)
CONTRACT NO. 2

CHARLESTON COUNTY

BRIDGE OVER INTRACOASTAL WATERWAY AT COVE INLET

SCALES: PLAN AND PROFILE 1 INCH = 100 FEET HORIZONTAL; 1 INCH = 10 FEET VERTICAL.

STATE ROUTE NO. 703

SUMMARY OF ESTIMATED QUANTITIES

STATION	SHEET NO.	ITEM	CONCRETE CLASS "A" CU. YDS.	CONCRETE CLASS "B" CU. YDS.	REINF. STEEL POUNDS	STRUCT. EXCAV. CU. YDS.	PILES LINEAR FEET TREATED	PILES LINEAR FEET UNTREATED	RIP RAP
							LIN. FT.	LIN. FT.	

TOTAL PIPE FOR CULVERTS

DIAM.	REINF. CONCRETE LINEAR FEET	
15"		
18"		
24"		
30"		
36"		

DIAM.	RELAID PIPE LINEAR FEET	SALVAGED PIP LINEAR FEET
15"		
18"		
24"		
30"		
36"		

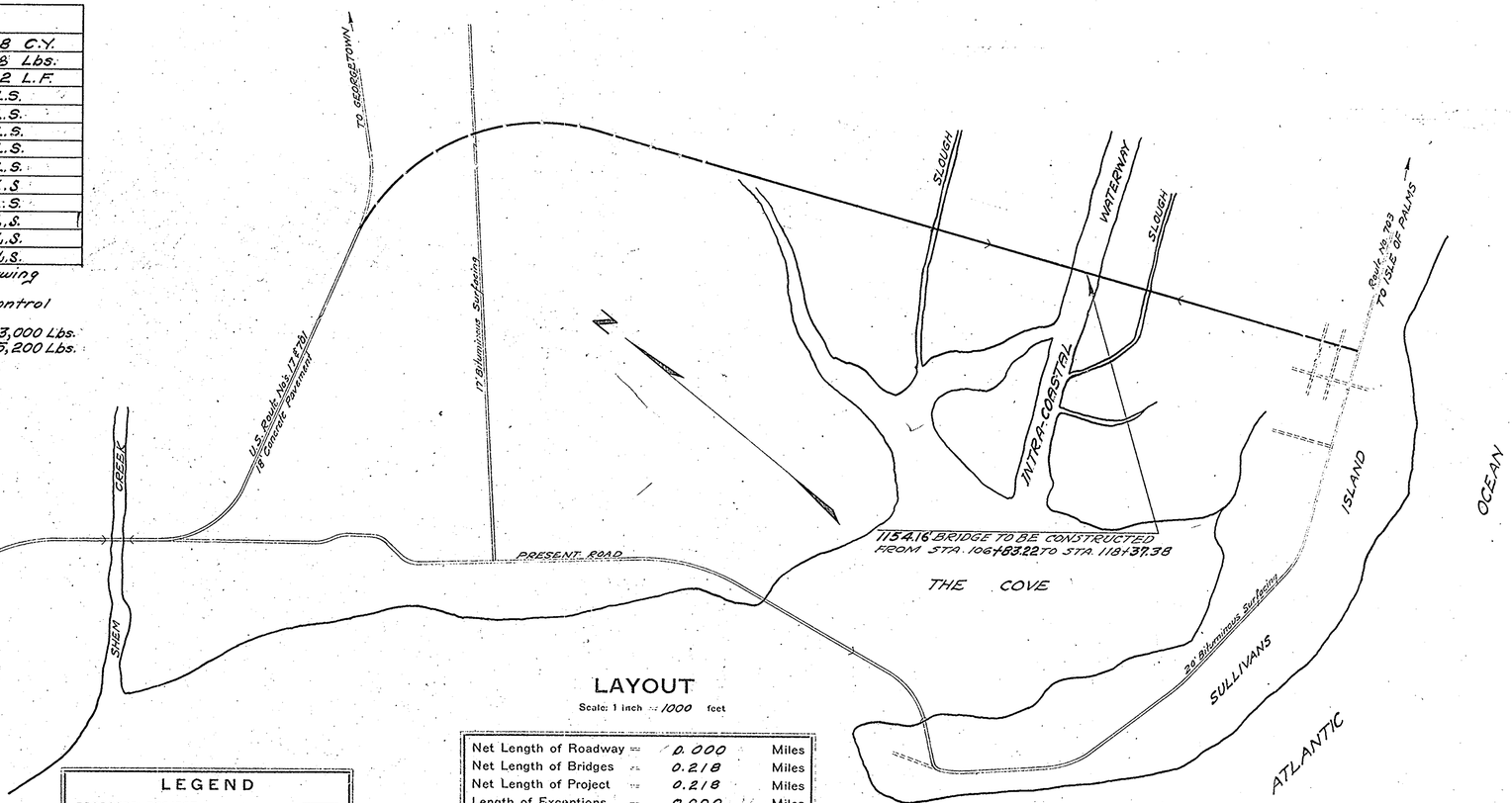
TOTALS

TOTAL REMOVAL OF UNSTABLE MATERIAL ____ 79,043 CU YDS.
TOTAL EMBANKMENT IN PLACE ____ 167,255 CU YDS.

SUMMARY OF QUANTITIES

*Class "A" Concrete	617.78 C.Y.
+Reinforcing Steel	115,418 Lbs.
Handrail	2302 L.F.
Swing Span Steel Superstructure	ϕ L.S.
Swing Span Floor and Sidewalk	L.S.
Fixed Span Steel Superstructures	x L.S.
Control House	L.S.
Machinery	L.S.
Electrical Equipment for Operation of Swing Span	L.S.
Lights, Gates, and Warning Signals	L.S.
Final Rub on Piers	L.S.
Alt. No 1. Two Evans Auto Stop Barriers	L.S.
Alt No 2. Two Highway Gardian Type Barriers	L.S.

*Does not include concrete in handrail posts, swing span floor, or control house floor.
+Does not include steel in swing span floor or control house floor.
ϕApproximate weight of Structural Steel 453,000 Lbs.
xApproximate weight of Structural Steel 925,200 Lbs.



LAYOUT

Scale: 1 inch = 1000 feet

Net Length of Roadway	0.000	Miles
Net Length of Bridges	0.218	Miles
Net Length of Project	0.218	Miles
Length of Exceptions	0.000	Miles
Gross Length of Project	0.218	Miles

Equalities In Stationing
None

LEGEND

PROPOSED PROJECT
OTHER ROADS

CONVENTIONAL SIGNS

State Line
County Line
City or Town Limits
Property Line
Fence
Retaining Wall
Existing Road
℄ and R.O.W. Lines of
Proposed Road
Railroad
Levee or Embankment
Guard Rail
Point of Intersection (P. I.)
Trolley Poles
Power Poles
Telephone or Telegraph Poles
Marsh
Trees
Brush
Stumps
Buildings
Bridge
Concrete Box Culvert
Pipe Culvert
Drop Inlet and Culvert
Hub on Center Line

Note: All workmanship and material on this project to conform with South Carolina State Highway Department Standard Specifications for Highway Construction dated March 15th, 1939, as approved by the Administrator, Federal Works Agency.

APPROVED
T. R. McMillan
STATE HIGHWAY ENGINEER
DATE 6-24-47

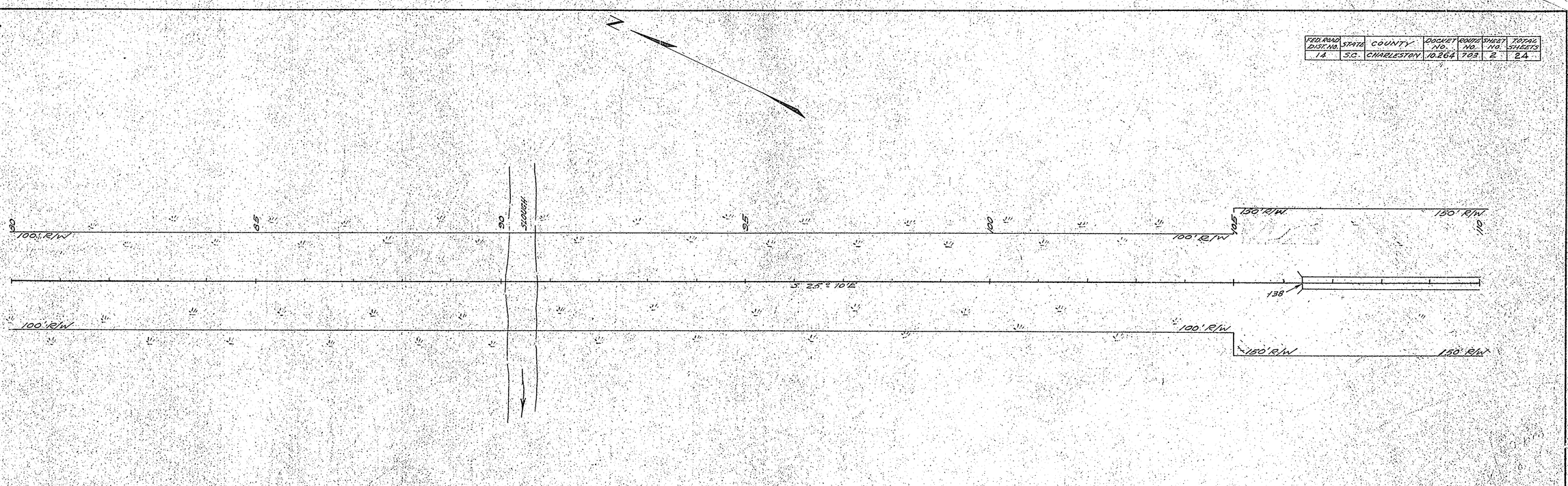
RECOMMENDED FOR APPROVAL
DISTRICT ENGINEER
PUBLIC ROADS ADMINISTRATION
FEDERAL WORKS AGENCY

APPROVED
COMMISSIONER
PUBLIC ROADS ADMINISTRATION
FEDERAL WORKS AGENCY

FED. ROAD DIST. NO.	STATE	COUNTY	DOCKET NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
14	S.C.	CHARLESTON	10.264	703	2	24

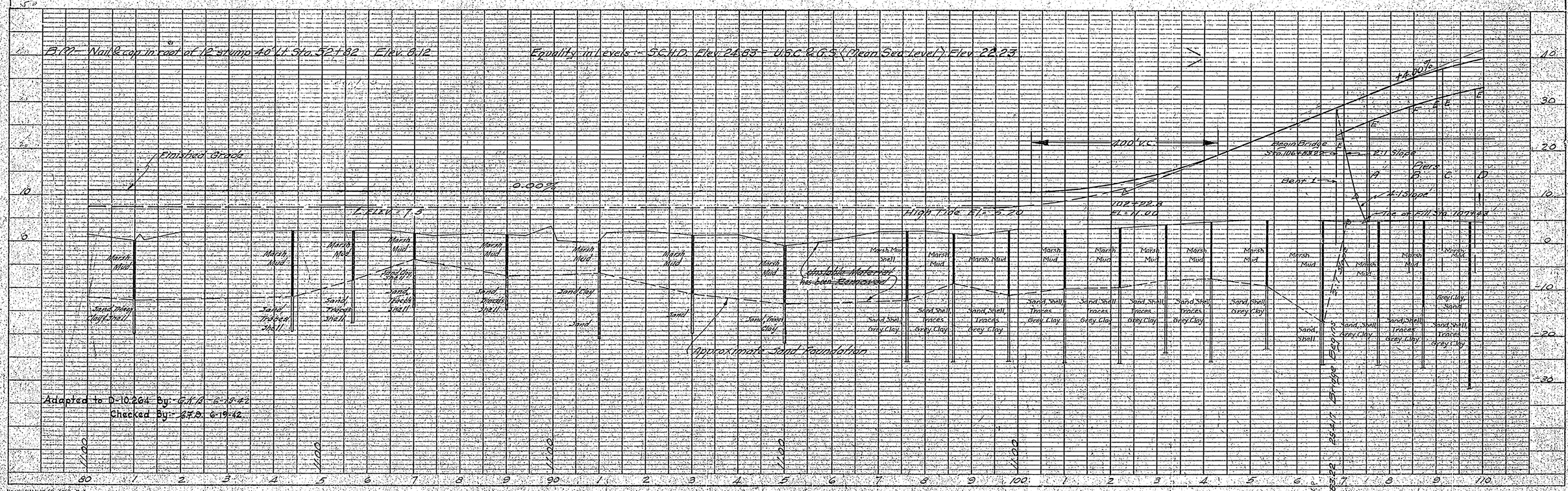
PLAN
SURVEYED
NOTE BOOK
PLOTTED
ALIGNMENT CHECKED
BY OFFICE CHECKED
NO.
DATE

PROFILE
SURVEYED
NOTE BOOK
PLOTTED
R.M.S. NOTED
STRUCTURES NOTED
NO.
DATE



B.M.- Nail & cap in root of 12" stump 40' Lt. Sta. 52+82 Elev. 6.12

Equality in Levels :- S.C.H.D. Elev. 24.63 = U.S.C. & G.S. (Mean Sea Level) Elev. 22.23


Finished Grade
0.00%
E. ELEV. = 7.5
High Tide El. = 5.20
Unstable Material has been Removed
Approximate Sand Foundation
Marsh Mud
Sand, Trace Shell
Sand, Shell
Sand, Shell Traces Grey Clay
Sand, Trace Clay
Sand, Trace Shell
Sand, Trace Clay
Sand
Sand, Trace Clay
Sand, Shell Grey Clay
Sand, Shell Traces Grey Clay
Grey Clay Sand
100' V.C.
Begin Bridge Sta. 106+83.22
2:1 Slope
Bent 1
4:1 Slope
Toe of Fill Sta. 107+83
102+72.8
El. = 11.00
+4.00%
-2.00%
11.00
11.00
11.00

FED. ROAD DIST. NO.	STATE	COUNTY	PROJECT NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
14	S.C.	CHARLESTON	10264	703	3	24

PLAN

SURVEYED
PLOTTED
NOTE BOOK
No.

DATE | BY | CHECKED | CHECKED

PROFILE

SURVEYED
PLOTTED
NOTE BOOK
No.

DATE | BY | CHECKED | CHECKED

Base Line Intracoastal Waterway

E. Intracoastal Waterway

INTRACOASTAL WATERWAY

110 +345 — 320' R/W — 91°17' — 150' R/W

+946

115

120 — 150' R/W — 100' R/W

SLOUGH

125

130

135

140 — 100' R/W

S 25°10' E

100' R/W

150' R/W

1154.16' Bridge to be constructed from Sta. 106+83.22 to Sta. 118+37.38

Back of Bridge Sta. 118+60.3 El.=52.50

Back of Abut. Sta. 107+00

2% Slope

100' V.C.

Finished Grade

2:1 Slope

Face of Piles Sta. 117+17

2:1 Slope

129+76.46 El.=11.85

High Tide El.=5.2

M.H.T. El.=5.1

M.L.T. El.=0.0

-0.10%

Soft gray Clay Traces sand & Shell

Marsh Mud

Sand, Shell Traces Grey Clay

Sand, Shell Traces Grey Clay

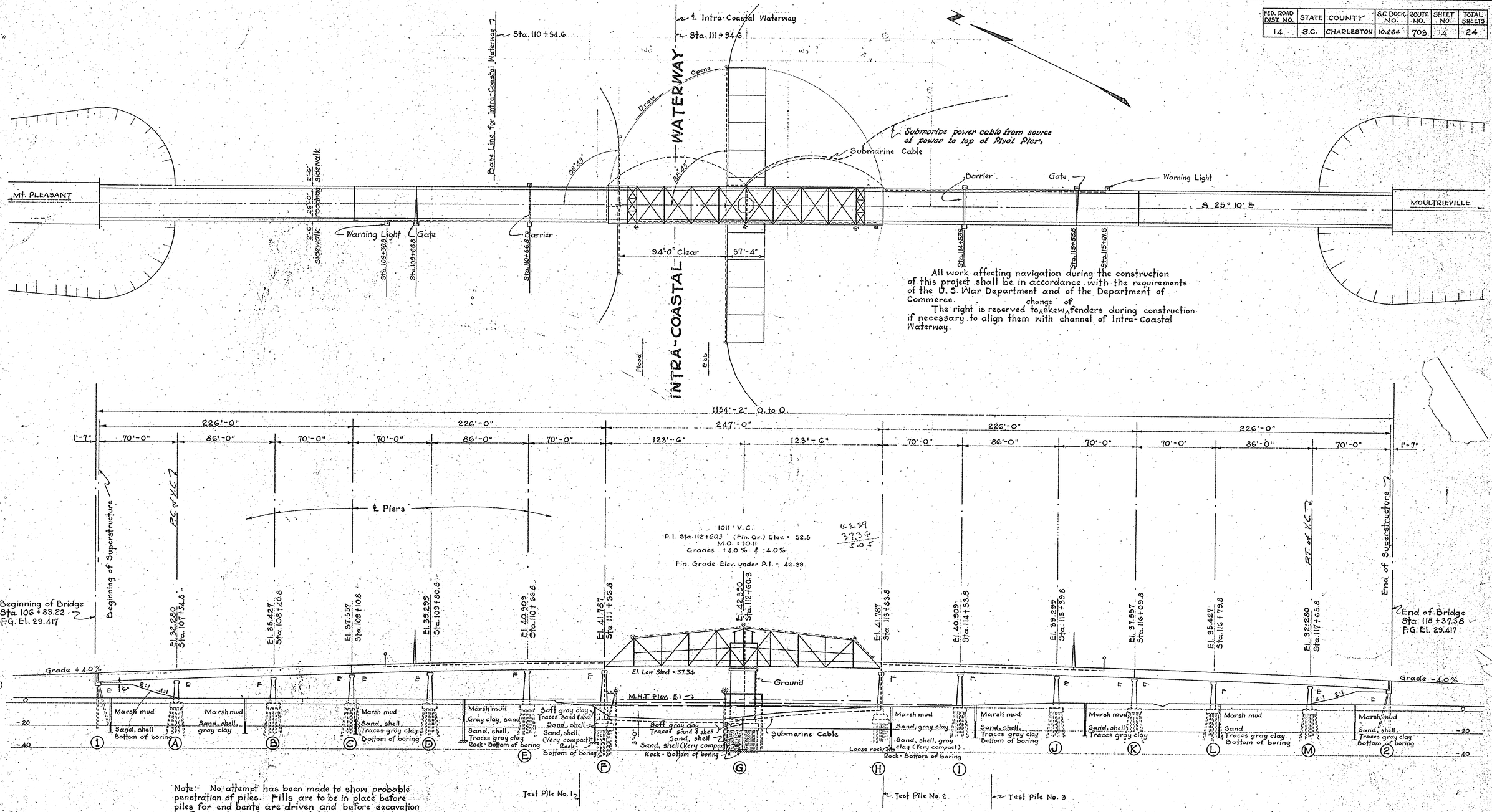
Sand, Grey Clay

Sand, Shell Traces Grey Clay

Sand, Shell Traces Grey Clay

Sand, Shell Traces

FED. ROAD DIST. NO.	STATE	COUNTY	S.C. DOCK. NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
14	S.C.	CHARLESTON	10.264	703	4	24



Note:- No attempt has been made to show probable penetration of piles. Fills are to be in place before piles for end bents are driven and before excavation for Piers A & M is begun. End fills under bridge to be removed 6" below top of End Bent cap for a distance of 17'-6" each side of ℄ Roadway by Contractor for Contract No. 1.

Note:- The rock shown in the borings above is a thin stratum of soft rock which was penetrated by test piling.

All work affecting navigation during the construction of this project shall be in accordance with the requirements of the U. S. War Department and of the Department of Commerce.

The right is reserved to change of skew fenders during construction if necessary to align them with channel of Intra-Coastal Waterway.

Drawn & Traced by: C.F.D.
Checked by: W.G.A. 12-22-41

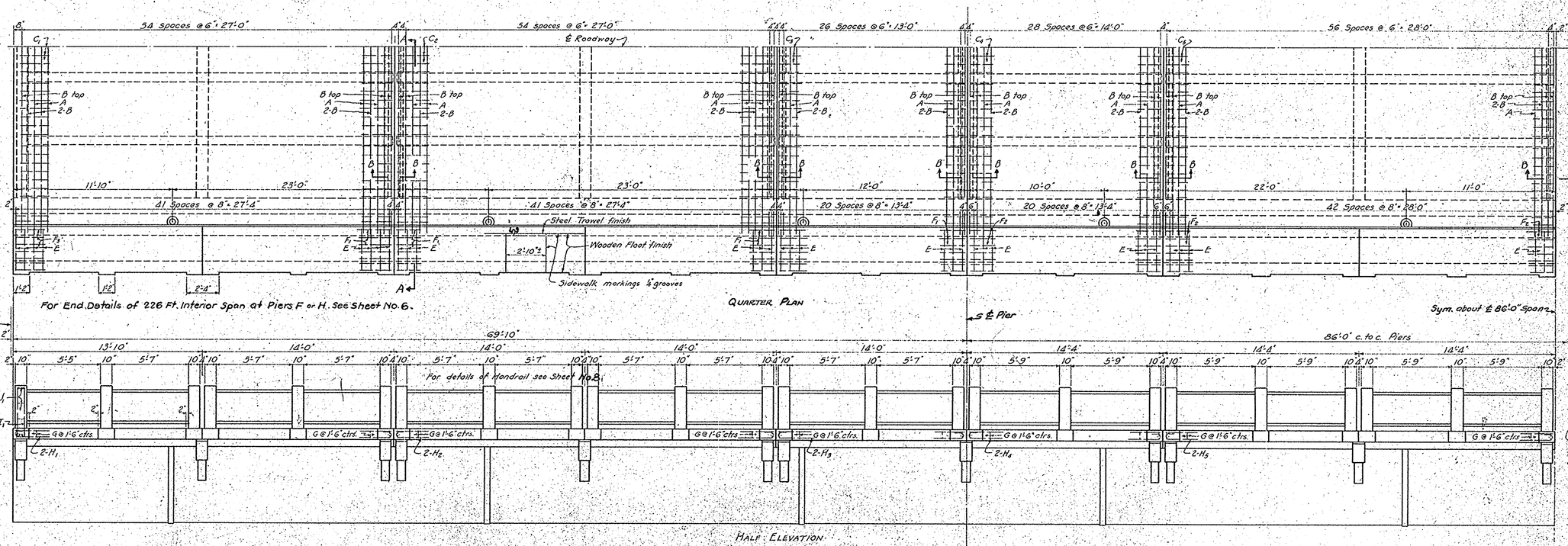
Adapted to D-10.264 By:- G.K.B. 6-19-42
Checked By:- C.F.D. 6-19-42

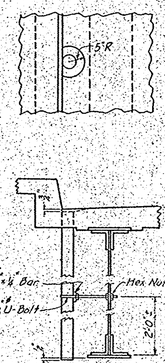
S.C. STATE HIGHWAY DEPARTMENT
COLUMBIA, S.C.

PLAN AND PROFILE
FOR BRIDGE OVER
INTRA-COASTAL WATERWAY
AT COVE INLET

S.C. Docket No. 10.264 Charleston County
S.C. Route No. 703 November 1941
Scale 1" = 40'

FED. RD. DIST. NO.	STATE	COUNTY	S.C. DOCK NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
14	S.C.	CHARLESTON	10.264	703	5	24

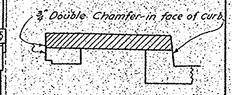




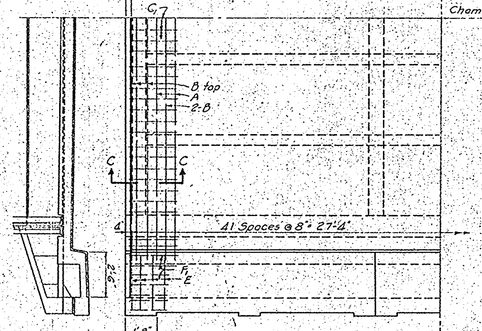
DRAIN DETAIL

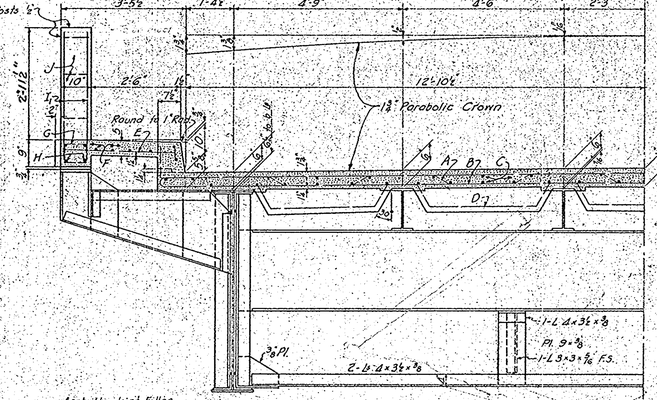
4" Transite Pipe or approved equal.

Drains to be set vertical and rigid.



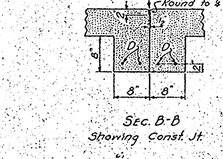
At all double posts, except at constr. joints, break continuity of sidewalk as shown. Use ½" piece of greased metal about ½" thick, removing after concrete has hardened.





HALF SEC. A-A

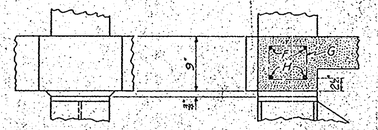
Showing typical strut details of interior floor beams.



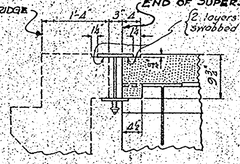
SEC. B-B

Showing Const. Jt.

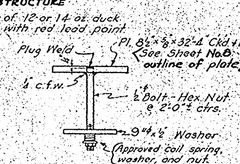
Section showing construction joint in slab and curb.



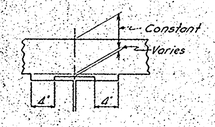
DETAILS OF BUILDDOWN ON BRACKET



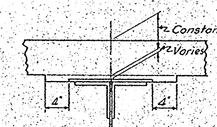
SEC. C-C AT END BENT 1 & 2



DETAIL OF EXPANSION PLATE AT END BENTS 1 & 2



DETAIL OF BUILDDOWN OVER STRINGER



DETAIL OF BUILDDOWN OVER GIRDER

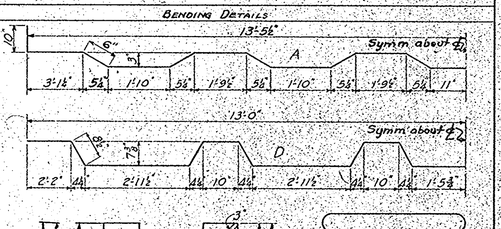
Variations in Camber to be adjusted at the Contractors expense.

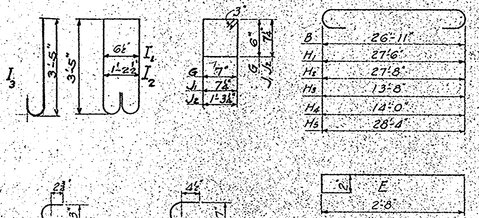
ESTIMATED QUANTITIES	
ITEM	END SPAN
HANDRAIL	452 L.F.
CLASS 'A' CONCRETE	154.71 C.Y.
REINFORCING STEEL	28,658 LBS.
STRUCTURAL STEEL	231,000 LBS.

STEEL TABLE - ONE 226' END SPAN

Mark	No.	Size.	Length	
A	212	5/8"ϕ	29'-3"	B
B	450	1"ϕ	27'-11"	B
C_1	92	1"ϕ	27'-6"	S
$_2$	92	1"ϕ	27'-8"	S
$_3$	92	1"ϕ	13'-8"	S
$_4$	92	1"ϕ	14'-0"	S
$_5$	92	1"ϕ	28'-4"	S
D	36	¾"ϕ	29'-7"	B
E	676	¾"ϕ	2'-10"	B
F_1	144	¾"ϕ	13'-8"	S
$_2$	96	¾"ϕ	14'-0"	S
$_3$	16	¾"ϕ	13'-6"	S
G	320	⅝ Wire	2'-8"	B
H_1	4	⅞"ϕ	29'-6"	B
$_2$	12	⅞"ϕ	29'-8"	B
$_3$	8	⅞"ϕ	15'-8"	B
$_4$	8	⅞"ϕ	16'-0"	B
$_5$	8	⅞"ϕ	30'-4"	B
J_1	188	⅝"ϕ	8'-8"	B
J_1	282	⅝ Wire	2'-11"	B
J_2	6	⅝ Wire	4'-3"	B
I_2	4	1"ϕ	9'-0"	B
I_3	4	½"ϕ	3'-11"	B

BENDING DETAILS





Hook DETAILS.

For ½" Bars add 6" per hook

For ⅝" Bars add 1'-0" per hook



All reinforcing steel, except Wire, to be deformed bars.

The weight of reinforcing steel in handrail posts is included in the quantity of reinforcing steel. The concrete in posts is not included in the quantity of class A concrete. All costs of concrete in posts are to be included in the unit price bid per lin ft. of handrail. Reinforcing steel in posts is to be paid for at the unit price bid for reinforcing steel.

For General Notes see Sheet No. 8

Revised to eliminate ½" □ bars - 11-3-43 - H.B.G.
Checked - M.D.M. - 11-4-43

Drawn by: W.F. Lewis Jr. Aug. 29, 1941.
Checked by: [illegible]
Changed for Docket 10.264 - Eng. - 9-1-42
Checked by: A.F.D. - 9-17-42

S. C. STATE HIGHWAY DEPARTMENT
COLUMBIA, S. C.

DETAILS 226' SPAN CONT

FOR BRIDGE OVER

INTRA-COASTAL WATERWAY

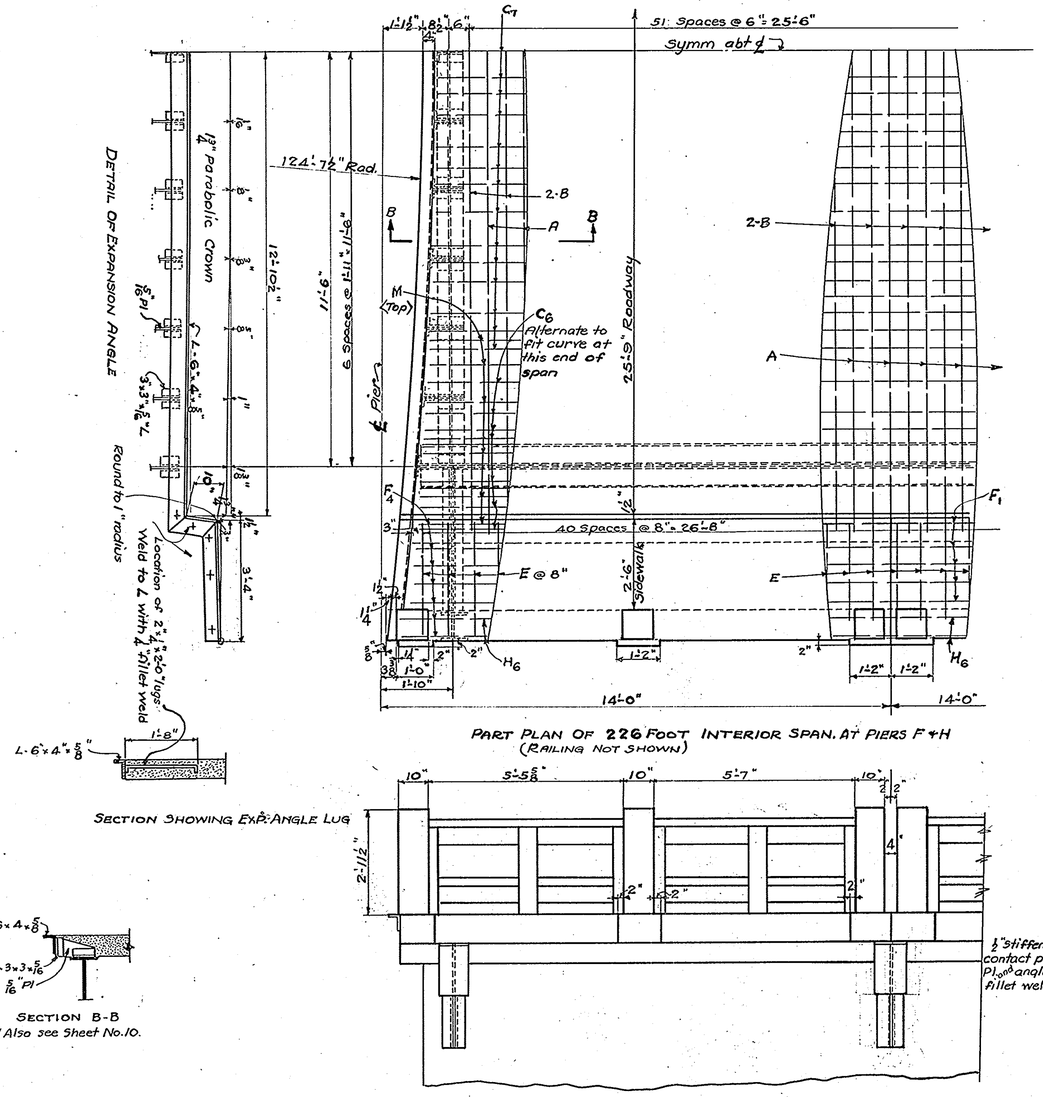
AT COVE INLET

S.C. DOCKET NO. 10.264 CHARLESTON COUNTY

ROUTE NO. 703 MAY 1942

SCALES 1", 2", ¾", ½" = 1'-0"

FED. ROAD DIST. NO.	STATE	COUNTY	S.C. DOCK NO.	ROUTE No.	SHEET No.	TOTAL SHEETS
14	S.C.	CHARLESTON	10.264	703	6	24



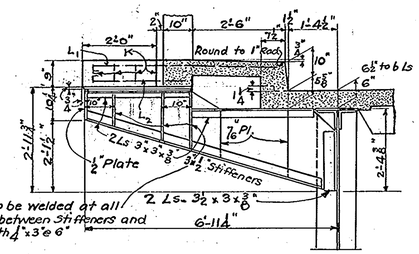
PART PLAN OF 226 FOOT INTERIOR SPAN AT PIERS F+H
(RAILING NOT SHOWN)

DETAIL OF EXPANSION ANGLE

SECTION SHOWING EXP. ANGLE LUG

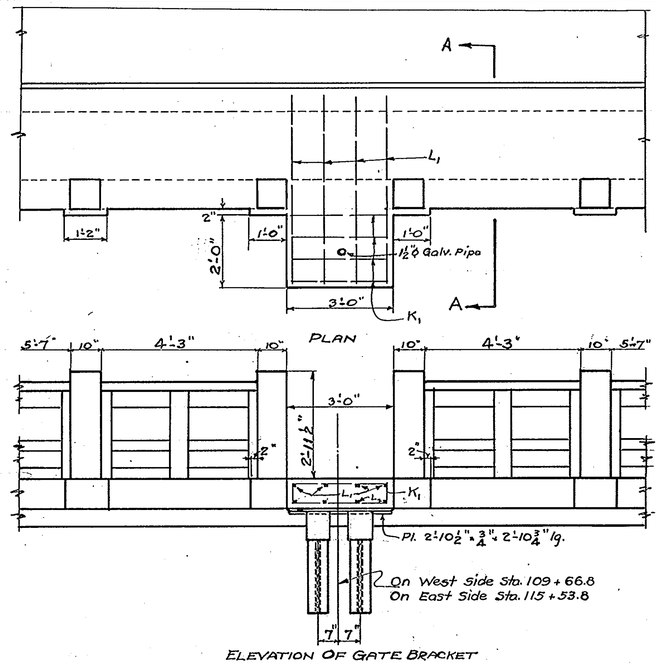
SECTION B-B
(Also see Sheet No.10.

PART ELEVATION - INTERIOR SPAN AT PIERS F+H.
(See Sheet No.5 for Lay-out of Interior Span.)

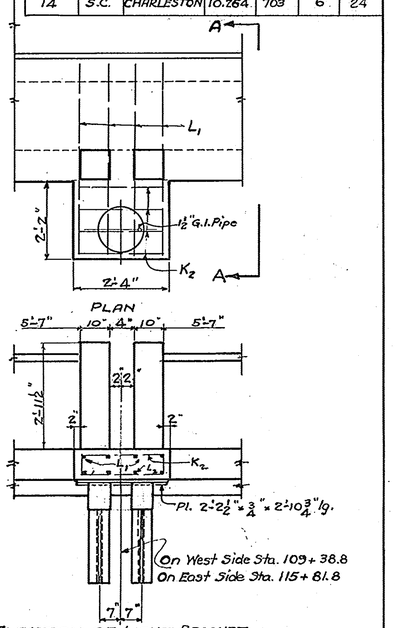


½" Stiffeners to be welded at all contact points between Stiffeners and Pl. and angles with ¼"x3"@ 6" fillet welds

SECTION AT A-A
(SIDEWALK STEEL NOT SHOWN)



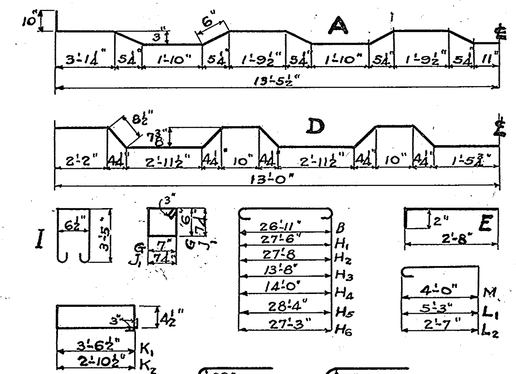
ELEVATION OF GATE BRACKET



ELEVATION OF LIGHT BRACKET

STEEL TABLE - ONE - 226 FT. INT. SPAN				
MARK	No.	SIZE	LENGTH	DET.
A	211	⅝"ϕ	29'-3"	B
B	447	½"ϕ	27'-11"	B
C_1	46	½"ϕ	27'-6"	S
2	92	½"ϕ	27'-8"	S
3	92	½"ϕ	13'-8"	S
4	92	½"ϕ	14'-0"	S
5	92	½"ϕ	28'-4"	S
6	16	½"ϕ	26'-7"	S
D	36	¾"ϕ	29'-7"	B
E	674	⅝"ϕ	2'-10"	B
F_1	128	⅝"ϕ	13'-8"	S
2	96	⅝"ϕ	14'-0"	S
3	16	⅝"ϕ	13'-6"	S
G	320	#4 Wire	2'-8"	B
H_1	4	⅞"ϕ	29'-6"	B
2	8	⅞"ϕ	29'-8"	B
3	8	⅞"ϕ	15'-8"	B
4	8	⅞"ϕ	16'-0"	B
5	8	⅞"ϕ	30'-4"	B
I	192	½"ϕ	8'-4"	B
J_1	288	#4 Wire	2'-11"	B
K_1	4	½"ϕ	8'-4"	B
K_2	4	½"ϕ	7'-0"	B
L_1	8	½"ϕ	5'-9"	B
L_2	8	½"ϕ	3'-1"	B
M	12	½"ϕ	4'-6"	B
C_7	30	½"ϕ	26'-3"	S
F_4	16	⅜"ϕ	12'-11"	S
H_6	4	⅞"ϕ	29'-3"	S

BENDING DETAILS



HOOK DETAILS

ESTIMATED QUANTITIES - ONE INT. SPAN		
CLASS "A" CONCRETE	154.18	C.Y.
REINF. STEEL	28,638	LBS.
STRUCT. STEEL	231,600	LBS.
HANDRAIL	452	L.F.

For General Notes See Sheet No. 8
For Other notes see Sheet No.5

Drawn by EWG. MAY-9-1942.
Checked by: C.F.P. 6-17-42

Revised to eliminate 2"□ bars - H.B.G. 11-3-43
Checked - M.D.M. 11-4-43

S. C. STATE HIGHWAY DEPARTMENT
COLUMBIA, S. C.

DETAILS - 226 FT SPAN CONT.
FOR
BRIDGE OVER COVE INLET

S.C. DOCKET NO. 10.264 CHARLESTON COUNTY
ROUTE NO. 703 MAY 1942.
SCALE ½" = 1'-0"

FED. RD DIST. No	STATE	COUNTY	S.C. DOCK No.	ROUTE NO.	SHEET No.	TOTAL SHEETS
14	S.C.	CHARLESTON	10.264	703	7	24

℄ Cap End Bent 1 or 2 — ℄ Pier C or K — ℄ Pier

70'-0" to Piers A or M. — 69'-10" — 18'-8"

℄ Bearing

Pl. 14" × ½" Full Length

2-L 6×6×½ — Web 66×⅜ — 2-L 6×6×½

L 4×3½×⅜ — 27 WF 98 — 27 WF 91 — 27 WF 98 — Pl. 54"×⅜ — 2-L 5½"×5½"×⅝ — 27 WF 91 — 27 WF 98

5'-6½" — 4'-6"

Pl. 14"×½" Full Length

Pl. 14"×⅜ — Web + Flange splice Mill Flanges — Pl. 14"×½" Top + Bottom — 8'-0"

Reaction	Kips
D.L.	50.37
L.L.	56.64
I	14.21
S.W.L.L.	4.72
Total	126.14

Moment	Kip-Ft.
D.L.	635.00
L.L.	724.50
I	181.12
S.W.L.L.	73.08
Total	1613.70

Shear	Kips
D.L.	87.10
L.L.	65.20
I	16.30
S.W.L.L.	6.78
Total	175.38

Reaction	Kips
D.L.	172.46
L.L.	94.03
I	23.51
S.W.L.L.	13.93
Total	303.93

Max. rivet spacing — 4" — 5" — 23" min. — 4½" — 3½" — 3½" — 2½" min.

1'-10" — 12'-2" — 1'-0" — ℄ Bearing — 2L 4×3½×⅜ — ℄ Pier — 12 L 5×3½×½

SECTION AT PIERS F & H

PART SECTION THRU GIRDER SHOWING BOTTOM FLANGES.

5/16 Pl.

Laterals 1-L 3½×3½×5/16 Plates 5/16

Note:-
Webs may be spliced horizontally if 66" plates cannot be secured. Details of splice to meet the approval of the Engineer. All costs of materials and labor necessary for splice to be included in Lump Sum bid for "Fixed Span Steel Superstructure."

℄ Pier — 86'-0" c. to c. Piers — Sym. about ℄ 86'-0" span except as shown.

14'-4" — 18'-9" — 14'-4" — 14'-4" — 14'-4"

27 WF 91 — 27 WF 98 — 27 WF 91

8'-0" — Web + Flange splice — 2½" min. — 5" — 3½" — 4½" — 5"

Moment	Kip-Ft.
D.L.	1211.70
L.L.	683.78
I	170.79
S.W.L.L.	109.65
Total	2235.92

Shear	Kips
D.L.	85.36
L.L.	66.64
I	16.66
S.W.L.L.	7.15
Total	175.81

Moment	Kip-Ft.
D.L.	564.00
L.L.	730.86
I	192.71
S.W.L.L.	75.24
Total	1552.81

℄ Roadway — C.F.G. ℄ — 11'-6" — 11'-6"

24 WF 74 — Stringers 14 WF 30" — 27 WF 98

6'-2⅞" — 6'-3⅜" — 1'-5⅞"

2-L 4×3½×⅜ Pls. 7/16 — 1-L 3×3×5/16 F.S. — L-4×3½×⅜ — Pl. 9×⅜ — 2-L 4×3½×⅜ — Pl. ⅜

Sec. C-C — Top of Pier except at high side of C+K.

Sec. B-B — Top of Pier

Details of Stringer Connections to Int. Floor Beams

⅞" bolts in upper flange — 2-⅞" Bolts — 27 WF 98 — 27 WF 91

Details of Lateral Connection to Strut

℄ Floor Beam — ⅜ Pl. — ⅜ Pl.

Details of Hanger

L 6×4×⅜ — ⅝" Bolt — ⅝" Rod Hex. Nuts

Details of Bracket

¼" Fillet Weld — Pl. 10×⅜×10 — 2-L 3×3×⅜ — Pl 9 (7/16) — 2-L 3×3×⅜ — 2-L 3½×3×⅜ for double brackets. — 4'-10" — 1-L 5×3½×⅜ N.S.- stiffener F.S. for single brackets, except at piers A, B, D, E, I, J, L, M.

All brackets are similar, except for connections to girder, except for brackets as noted on sheet No. 6

Notes:
All stiffeners 2-L 5×3½×⅜ with fills, except as noted.
For General Notes see Sheet No. 6.
Ends of Girders to be vertical.
All stiffeners to be normal to grade.

S. C. STATE HIGHWAY DEPARTMENT
COLUMBIA, S. C.

DETAILS 226' CONT. GIRDERS

FOR BRIDGE OVER

INTRA-COASTAL WATERWAY

AT COVE INLET

S.C. DOCKET NO. 10.264 CHARLESTON COUNTY

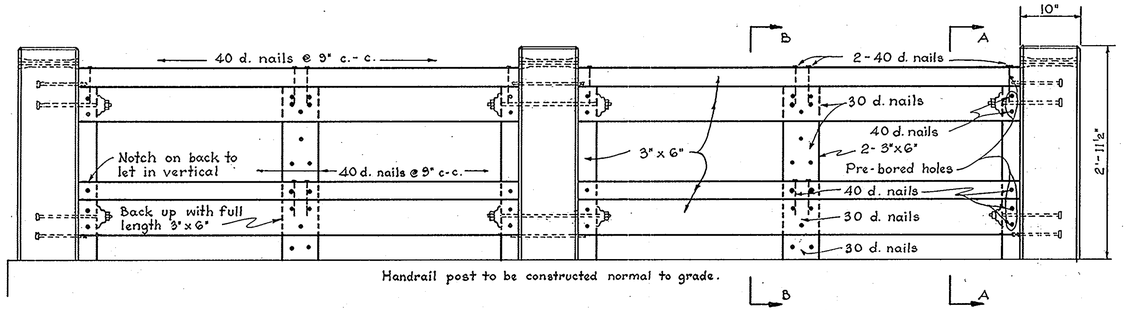
ROUTE NO. 703 MAY 1942

SCALES 1" = ½" + ½" = 1'-0"

Des. Dr. + Tr. by: W.F. Lanier, Jr. Aug. 15, 1941.
Ckd by:- W.G. Larsen

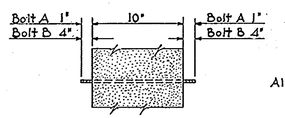
Adopted for Docket 10.264 by BWH.
Checked by C.F.D. 6-18-42

FED. ROAD DIST. NO.	STATE	COUNTY	DOCKET NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
14	S.C.	CHARLESTON	10.264	703	8	24



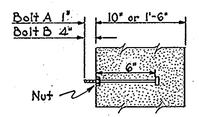
ELEVATION OF HANDRAIL

Scale 1" = 1'-0"



INTERIOR POST

Thread bolts to ¼" of concrete.

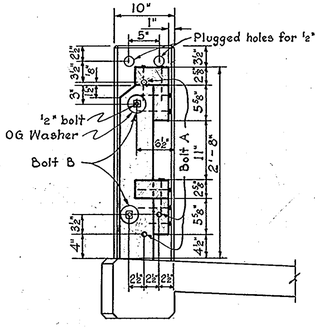


END POST

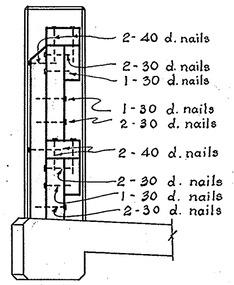
Thread bolts to ¾" inside concrete.

SECTION SHOWING BOLTS IN POSTS

See sheet No 8A for details of Metal Handrail.



SECTION A-A



SECTION B-B

All handrail lumber to be S 4 S.

Notes for Plugged Holes:-

Pipe sleeves - ½" standard pipe 7" long for 10" posts and 1'-3" long for 1'-6" posts (based on 1½" washers).

Metal Cone washers to be placed at each end of pipe sleeves before concrete is poured and removed when the forms are removed. Each end of the holes to be plugged with grout and the surface to be finished smooth.

Notes:-

Design Data: A.A.S.H.O. Specifications 1941, fc=1000, fs=18000 (for reinforcing & structural steel) n=10, H 15-S12 loading.

All exposed edges of concrete to be chamfered ¾" unless noted.

All concrete to be Class 'A'.

All rivets ⅞"ϕ except as noted.

All holes 1⅛"ϕ except as noted

No deck concrete to be poured until after superstructure falsework has been struck.

All costs of furnishing and placing shoes and rockers shall be included in the lump sum bid for structural steel.

See special provisions for paint specifications.

Rockers to be cast steel.

Bearing Plates to be rolled steel or cast steel.

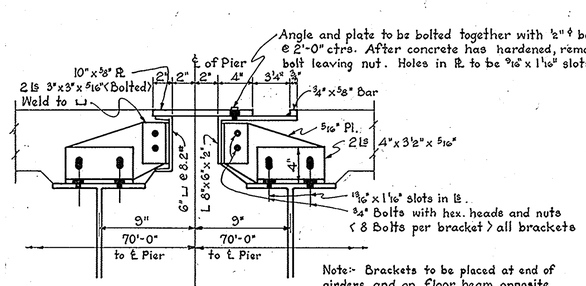
Rivet holes in all main member splices shall be sub-punched, the connecting members shop assembled in proper position, and the holes reamed full size while assembled.

Floorbeams and stringer connections, both shop and field shall be reamed to a metal template.

Notes for Bolts "A":-

These bolts to be set in concrete for future use in connecting a metal rail. The ends shall be cut square and smooth. If timber forms are used bolts may be longer than shown provided they are cut off after forms are removed to the proper length. The timber rails are to be bored on one end and notched on the other end, where necessary, in order to place the rails in proper position.

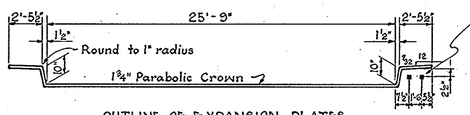
See Special Provisions for paint on Handrail and bolts.



EXPANSION DETAIL AT PIERS C & K

Scale 1½" = 1'-0"

Note:- Brackets to be placed at end of girders and on floor beam opposite and between each stringer.



OUTLINE OF EXPANSION PLATES

(Not to scale)

Material and Notes for Expansion Joints at Piers C or K

8- ½"ϕ x 2'-0" bolts

1- 6" ⊔ 8.2# x 32'-4". Cut and welded to fit exp. plate.

1- Pl. ¾" x 5⅝" x 32'-4" bent

1- Pl. 10" x ⅝" x 32'-4" checkered and bent.

1 - L 8" x 6" x ½" x 32'-4" cut and welded to fit exp. plate.

Weld ¾" x ⅝" Pl. to 8" x 6" x ½" L with ¼" x 3" bead @ 6" centers on face toward concrete.

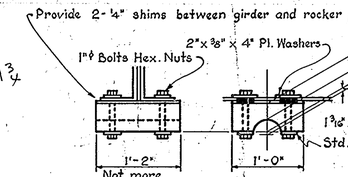
Weld ¾" x ⅝" Pl. to 8" x 6" x ½" L with ¼" c.f.w. on face toward checkered plate.

Weld 10" x ⅝" Pl. to 6" ⊔ with ¼" x 3" bead @ 6" centers at edge of plate.

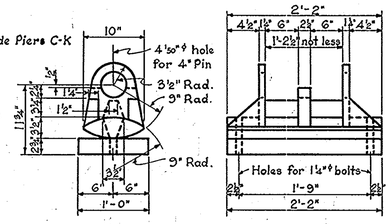
Weld 10" x ⅝" Pl. to 6" ⊔ with ¼" c.f.w. at top of web of channel.

Plates, angle and channel to be bent to conform to outline of expansion plates.

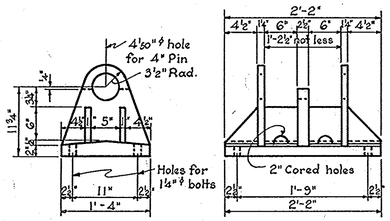
Weld two ½" nuts to span side of 6" ⊔ and 8" x 6" x ½" L on both ends for ½" x 2'-0" bolts. Bolts to extend into sidewalk slab.



DETAIL OF TOP PLATES FOR ROCKERS AND SHOES

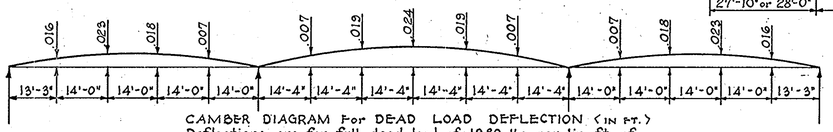


DETAIL OF EXPANSION ROCKER



DETAIL OF CAST STEEL FIXED SHOE

Scale 1" = 1'-0"



CAMBER DIAGRAM For DEAD LOAD DEFLECTION (IN FT.)

Deflections are for full dead load of 1980 lbs. per lin. ft. of girder, including weight of girder (492 lbs. per lin. ft).

Ⓓ	Ⓐ	Ⓖ	Ⓘ	Ⓒ	Ⓕ	Ⓗ	Ⓙ	Ⓑ	Ⓔ
27'-10" or 28'-0"	28'-0"	14'-0"	14'-4"	28'-8"	28'-8"	14'-4"	14'-0"	28'-0"	28'-0"

℄ Pier ... ℄ Pier

DIAGRAM OF SLAB CASTING PROCEDURE

Order of slab casting:-

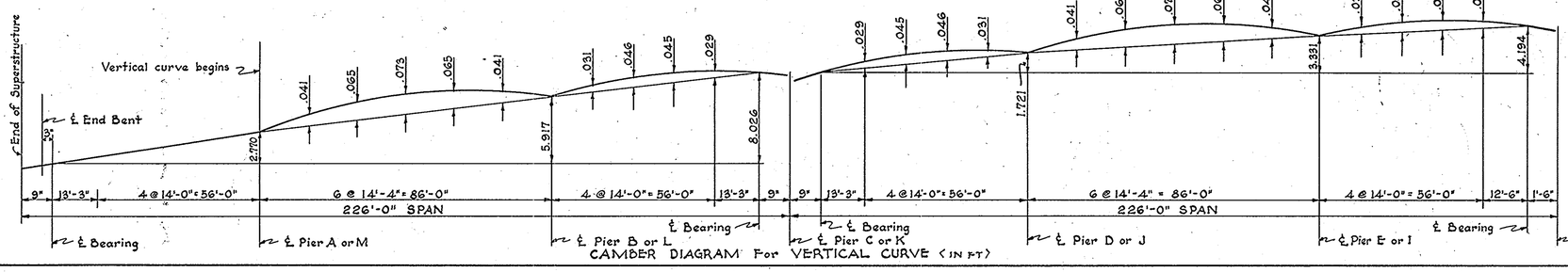
Pourings to be made in the alphabetical order shown.

There shall be an interval of at least 48 hours between castings.

Sidewalk slabs will not be required to be poured in the same order as the roadway slabs.

Construction joints in sidewalk slab shall be opposite those in roadway slab.

Girders to be cambered for dead load deflection and vertical curve. Variations from theoretical grades shall be adjusted in a manner satisfactory to the Engineer and at the Contractor's expense.



CAMBER DIAGRAM For VERTICAL CURVE (IN FT)

Drawn by:- C.F.D. 5-9-42.
Checked by:- E.W.G. 6-17-42

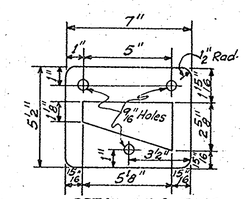
S.C. STATE HIGHWAY DEPARTMENT
COLUMBIA, S.C.

DETAILS FOR 226' SPAN CONTINUOUS FOR BRIDGE OVER INTRA-COASTAL WATERWAY AT COVE INLET,

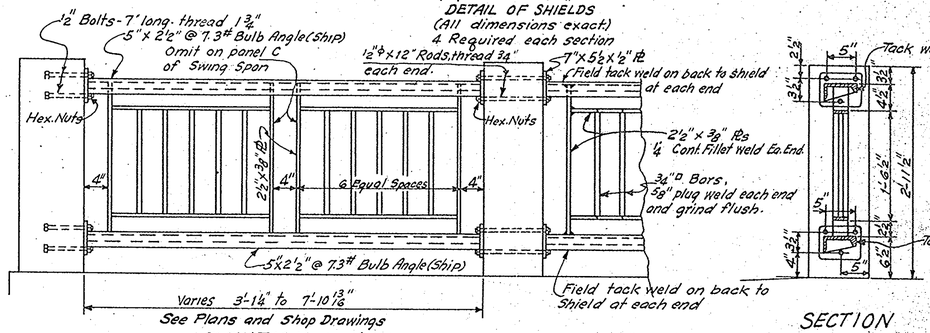
S.C. Docket No. 10.264
S.C. Route No. 703

Charleston County
May 1942.

FED. ROAD DIST. NO	STATE	COUNTY	DOCKET NO.	ROUTE NO	SHEET NO	TOTAL SHEETS
14	S.C	CHARLESTON	10.264	703	8 A	24



DETAIL OF SHIELDS
(All dimensions exact)
4 Required each section



ELEVATION

SECTION

NOTE:
All posts normal to grade.
Framing bars and spindles normal to bulb angles.
Rail to be painted same as structural steel (See paragraph 901 of the Special Provisions.)
Bolts to be painted as specified in paragraph 16.01 of the Special Provisions
Bolts to extend one (1) inch beyond edge of concrete.

NOTE:
Metal railing detailed on this sheet to be constructed in place of the timber railing on plans as originally drawn.
Panel lengths, location and size of posts, and other details not shown on this sheet same as shown on original plans.

S.C. STATE HIGHWAY DEPT.
COLUMBIA, S.C.

DETAIL OF METAL HANDRAIL

COVE INLET BRIDGE Route 703
DOCKET 10.264 CHARLESTON Co.
JULY 1944

Drawn by: MEDM 7-44
Checked by J.V. Dunbar 8-44

To accompany Supplemental Agreement with Contractor, dated August 8, 1944

FED. ROAD DIST. NO.	STATE	COUNTY	S.C. DOCK NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
14	S.C.	CHARLESTON	10.264	703	9	24

34'-0" c.c. Trusses
All Members 2-L's 4×3×5/16 S.L. 2½×5/16

PORTAL AT L_5U_1

10" WF @ 35#
All Members 2-L's 5×3½×5/16 S.L. 2½×5/16

PORTAL AT U_4-L_5

34'-0" c.c. Trusses
10WF33
15WF58 at U_5
2-L's 4×3×5/16

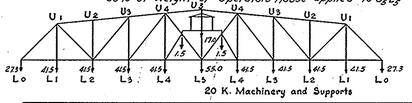
SWAY FRAME AT U_2 & U_3
AND STRUT AND KNEE BRACE AT U_5

11 × 5/16 Pls.
½ Splice Pl.
Mill
5/8 Pls.
2-10 ⌓ 30
2-Pls. 9½×7/16
1-Pl. 18×½
Diaphragm Pc. 10WF33
Top Laterals 2-L's 4×3×½ S.L. 2½×5/16
Top Struts 10WF33
5/16 Lateral Plates
S.L. 2½×5/16
Pl. 9×5/16
DETAIL OF TOP LATERAL
1-Pl. 17×½
2-10 ⌓ 15.3
1-Pl. 17×5/16
S.L. 2½×7/16
Notch Bot. Lateral Pl. around U_4L_5
1-Pl. 17×5/16
4-Pls. 8×5/16
2-10 ⌓ 20
1-Pl. 17×7/16
2-15 ⌓ 40
S.L. 2½×½
Set Webs of Struts Vertical and Bend Flanges at ends to Fit.
Omit strut this panel where it fouls stairs to control house. Make adjacent struts 2-L's 6×4×½.
2-10 ⌓ 15.3
1-Pl. 17×5/16
S.L. 2½×7/16
5/16 Pls.
2-L's 5×3½×5/16 S.L. 2½×5/16
Struts shall not be riveted until after span is swung.
36"WF@160#
Pl. 17×5/16
2-L's 3×3×5/16
Notch flanges around struts
Wedge to be operated by a bell crank or segmental gear.
L 4×3×5/16
3/8 Pls.
150'-0" Min. Vertical Clear.
F.G.@℄
10WF33
2'-2½"
3'-1½"
L_0
Top of Masonry
L_1
2-12 ⌓ 20.7 S.L. 2½×7/16
L_2
2-12 ⌓ 25 S.L. 2½×7/16
L_3
2-12 ⌓ 30 2-Pls. 9×⅜ S.L. 2½×7/16
L_4
L_5
10WF41
13'-6"
Diaphragm Pc. 10WF41
⅝" Gussets ⅞" Rivets
1-Plate outside
2-Plates inside milled to bear on web of girder.
L 3×3×5/16
35'-0"
15'-0" Min. Vertical Clearance
7'-0½" B.B.U.
9"
245'-0" c.c. End Wedges
5 Panels @ 24'-6" = 122'-6"
3/8 Pl.
1-L 3½×3½×5/16
1-L 3½×3½×⅜
All Bot. Laterals suspended at center
All Lateral Pls. 5/16"
2-L's 3½×3½×⅜
5/16" Pls.
L 3½×3½×5/16

DEAD LOAD DIAGRAM - ONE TRUSS

Gross D.L. Pivot Reaction	481.6
Machinery and supports, and center panel	75.0
Net D.L. center reaction on truss	406.6

Approx. wt. structural steel = 453,000 Lbs.
85% of weight of Operator's House applied to U_4L_5



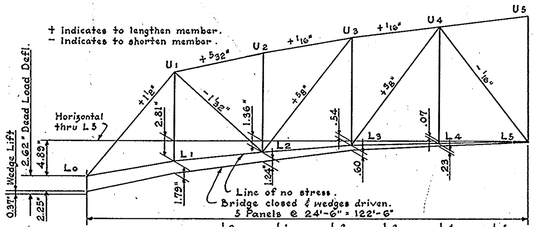
Wind stresses are for panel load and should be divided 1/3 to top and ⅔ to bottom chord or lateral. Condition "D" comprises with Case I (D+W) and Case II (D+W) or (D+½W)

		Wind Stresses in Kips									
		Stress in Lateral						Stress in Chord			
Condition	Wind Load	L_0L_1	L_1L_2	L_2L_3	L_3L_4	L_4L_5		L_0L_1	L_1L_2	L_2L_3	L_3L_4	L_4L_5
Wedges "A" Driven Cont. Span	30#/s² on 1½ Exp. Area. Panel Load = 14.2 k.	+30.8	+12.7	+10.8	+29.0	+47.0		-18.0	-25.4 +18.0	-25.4 +22.2	-22.2 + 8.5	- 8.5 +31.8
Wedges "B" Driven Cont. Span	30#/s² on 1½ Exp. Area plus L.L. Panel Load+13%	+28.7	+11.8	+10.0	+27.0	+43.9		-16.8	-23.7 +16.8	-23.7 +20.7	-20.7 + 7.9	- 7.9 +29.6
Wedges Free "C"	15#/s² on 1½ Exp. Area. Panel Load = 4.4 Kips	+ 2.7	+ 8.1	+ 13.6	+ 19.0	+24.4		- 1.6	- 9.3 + 1.6	- 14.3 + 6.3	- 25.4 + 14.9	- 39.6 + 25.4
Wedges Free "D"	30#/s² on 1½ Exp. Area plus L.L. Panel Load+13%	+ 8.4	+25.2	+42.3	+59.2	+76.0		- 5.0	- 19.6 + 5.0	- 44.4 + 19.6	- 79.0 + 44.4	- 123.4 + 79.0

Stresses in Kips. (-Indicates Compression, +Tension)

Member	Dead Load		Live Load			Combined					
	Case I Wedges Free	Case II Bridge Closed	Case III One Arm Simple Sp.	Case IV Cont. Span	Case V Cont. Sp. No. Neg. R.	Case I +20%	Case I+III	Case I+V	Case II+IV	Case II+V	Max.	Min.
L_0L_2	- 26.8	-15.3	+66.2	+ 58.6 - 9.1	+ 55.5	- 32.2	+ 47.4	+ 36.7	+ 47.9 - 24.4	+ 44.8	+ 47.9	- 32.2
L_2L_3	-168.5	-140.8	+ 78.9	+ 53.9 - 22.8	+ 53.5 - 20.0	- 202.2	- 89.6	-188.5	-163.6	-160.8	-202.2	
L_3L_5	-270.0	-238.4	+ 50.7	+ 23.4 - 28.0	+ 20.0 - 28.0	-324.0	-219.3	-298.0	-266.0	-266.4	-324.0	
L_0U_1	+ 38.2	+ 22.4	-103.0	+ 92.5 - 92.5	- 86.5	+ 45.8	- 76.3	- 59.8	+ 38.2 - 76.8	- 70.8	- 76.8	+ 45.8
U_1U_3	+ 85.9	+ 66.7	- 87.5	+ 14.6 - 74.5	+ 12.9 - 71.3	+103.0	- 27.4	+ 97.9	+ 83.3 - 27.8	+ 78.7 - 25.8	+103.0	- 27.8
U_3U_4	+169.5	+141.7	- 79.3	+ 22.9 - 90.4	+ 20.5 - 84.9	+203.5	+ 90.2	+189.8	+164.6	+162.0	+203.5	
U_4U_5	+ 390.0	+350.1	0	+ 51.4	+ 51.4	+468.0	+390.0	+341.5	+401.5	+401.5	+468.0	
U_1L_2	- 84.4	- 71.4	+ 58.1	+ 50.0 - 32.3	+ 45.2 - 30.6	-101.2	- 26.3	-115.0	-104.7	-102.0	-115.0	
L_2U_3	+131.0	+119.1	+ 51.7 - 36.6	+ 61.0 - 22.7	+ 61.0 - 20.0	+157.2	+182.7	+192.0	+180.1	+180.1	+192.0	
L_3U_4	+168.5	+157.9	+ 75.1	+ 89.5	+ 87.8	+202.2	+243.6	+256.3	+247.4	+245.7	+256.3	
U_4L_5	-192.5	-183.4	- 93.0	-105.3	-102.7	-231.0	-285.5	-295.2	- 288.7	- 286.1	-295.2	
U_1L_1 U_4L_4	+ 41.5	+ 41.5	+ 62.5	+ 62.5	+ 62.5	+ 49.8	+104.0	+104.0	+104.0	+104.0	+104.0	
U_3L_3	- 93.3	- 84.8	+ 23.3 - 37.0	+ 17.2 - 43.3	+ 13.0 - 42.9	-112.0	-130.3	-136.2	-128.1	-127.7	-136.2	
U_5L_5	- 96.5	- 88.4	0	- 10.5	- 10.4	-115.8	- 96.5	-106.9	- 98.9	- 98.8	-115.8	
End R.	0	11.3	91.0	84.0	84.0	0	91.0	84.0	95.3	95.3	95.3	
Mid. R.	406.6	395.3	91.0	173.0	173.0	487.9	497.6	579.6	568.3	568.3	579.6	
			Temperature Reaction		Top Chord 20° warmer than Bottom Chord						11.4	

70% D.L. Stress used to offset L.L. Stress.



	Lo	L1	L2	L3	L4	L5
Camber. No Stress (Below Hor.)	- 4.89"	- 2.81"	- 1.36"	- .54"	- .07"	
D.L. Deflection:- Struct. Steel.	- 1.25'	- .97"	- .66"	- .31"	- .12"	
" " Floor:- Conc. & Steel	- 1.37"	- 1.07"	- .72"	- .35"	- .13"	
" " Total	- 2.62"	- 2.04"	- 1.38"	- .66"	- .25"	
Wedge Lift (11.3 kips)	+ .37"	+ .25'	+ .14"	+ .06"	+ .02"	
Net deflection. Bridge Closed	- 2.25'	- 1.79"	- 1.24'	- .60"	- .23"	

Elev. & Roadway						
Bridge closed & Camber	41.796	42.010	42.176	42.295	42.366	42.390
Normal Elev.	41.795	42.007	42.173	42.295	42.365	42.390
Camber:- Bridge Closed	.001	.003	.003		.001	

Notes:-

Design Data: A.A.S.H.O. Specifications 1941, fc = 1000, fs = 18,000 (for reinforcing & structural steel), n = 10, H 15-S 12 Loading

Rivets ¾" ϕ, holes 13/16" ϕ except in pivot girder.

Rivets ⅞" ϕ, holes 15/16" ϕ in pivot girder and connections.

Rivet holes in all main member splices shall be sub-punched, the connecting members shop assembled in proper position, and the holes reamed full size while assembled.

Floor beam and stringer connections, both shop and field, shall be reamed to a metal template.

S. C. STATE HIGHWAY DEPARTMENT
COLUMBIA, S.C.

DETAILS OF TRUSS FOR 245 FT. SWING SPAN FOR BRIDGE OVER INTRA-COASTAL WATERWAY AT COVE INLET

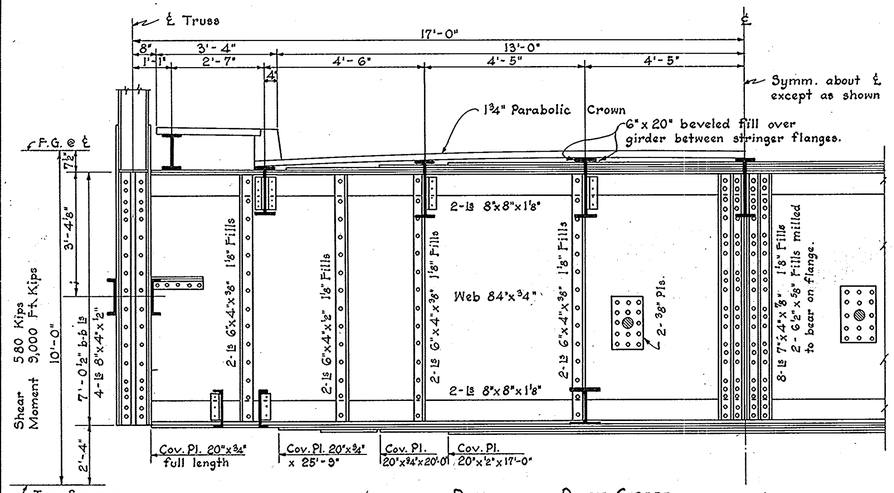
S.C. Docket No. 10.264
S.C. Route No. 703

Charleston County
June 1942.

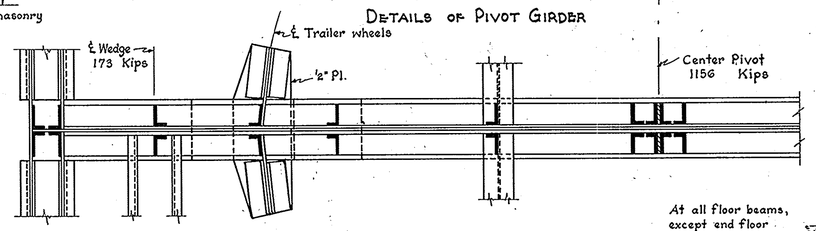
Scales ½" = 1'-0"

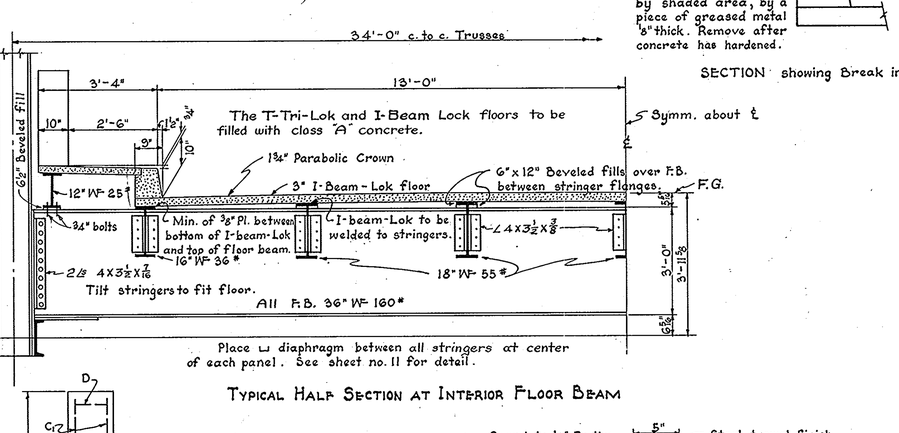
Des. Dr. & Tr. by: W. E. Simmons 4-15-42.
Des. & Dr. Chd. by: W. E. Simmons 6-42

PED. ROAD DIST. NO.	STATE	COUNTY	S.C. DOCK NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
14	S.C.	CHARLESTON	10.264	703	10	24

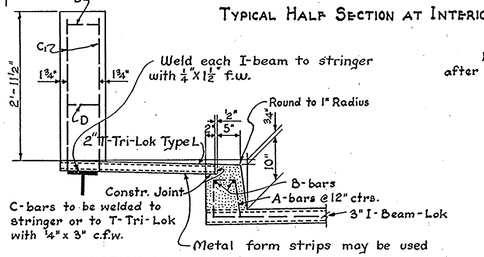


Details of Pivot Girder

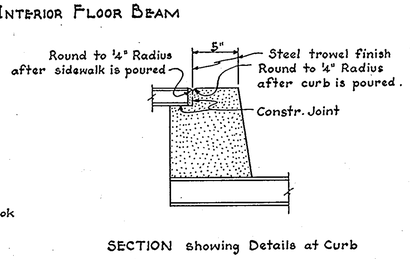




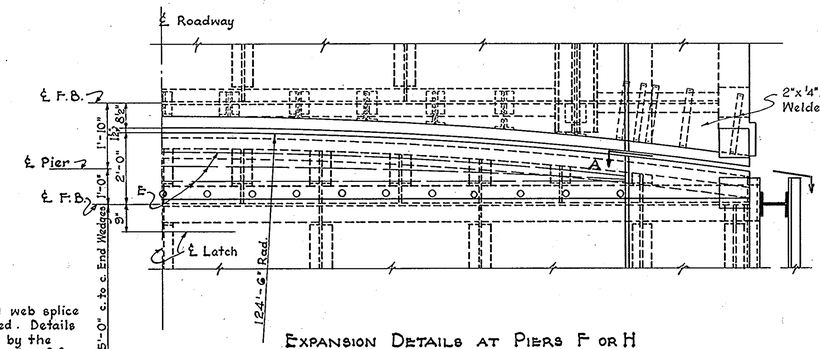
Typical Half Section at Interior Floor Beam



SECTION Thru Curb & Sidewalk

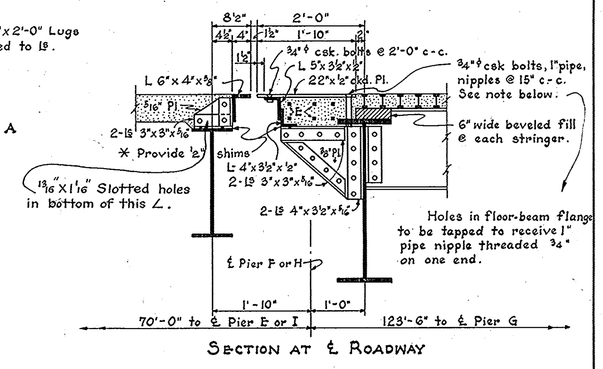


SECTION showing Details at Curb

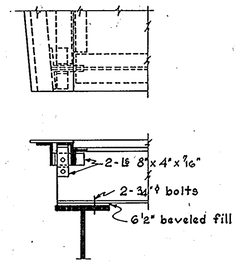


Note:-
Horizontal web splice will be permitted. Details to be approved by the Engineer. All costs of furnishing splice material and making splice to be included in the lump sum bid for "Swing Span Steel Superstructure."

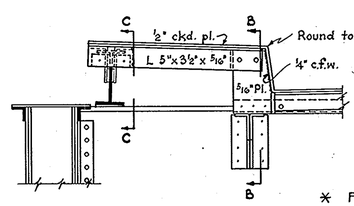
Expansion Details at Piers F or H



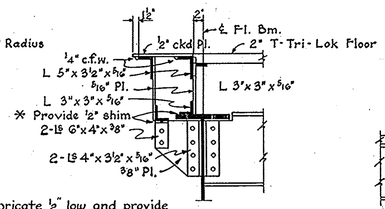
Section at ℄ Roadway



SECTION C-C

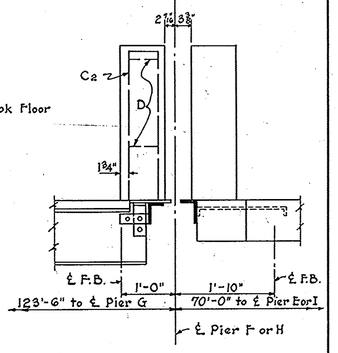


ELEVATION A-A



* Fabricate ½" low and provide one ¼" and two ⅛" shims.

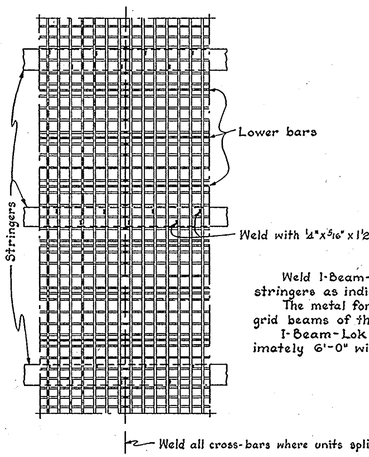
SECTION B-B



Elevation showing Post

2"ϕ Extra Heavy C. I. Drain Pipe 1'-6" long. Drains to be placed at ¼ & ¾ points of each panel.

Detail of Drain

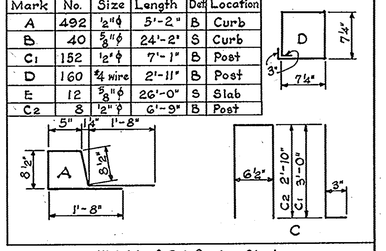


Weld I-Beam-Lok to alternate stringers as indicated.
The metal form strips between grid beams of the floor may be used.
I-Beam-Lok units to be approximately 6'-0" wide and 27'-3" long.

Part Plan I-Beam-Lok Floor.

List of Reinforcing Steel for Swing Span

Mark	No.	Size	Length	Def.	Location
A	492	½"ϕ	5'-2"	B	Curb
B	40	⅝"ϕ	24'-2"	S	Curb
C1	152	½"ϕ	7'-1"	B	Post
D	160	¾ wire	2'-11"	B	Post
E	12	⅝"ϕ	26'-0"	S	Slab
C2	8	½"ϕ	6'-9"	B	Post



Weight of Reinforcing Steel
Posts .826 Lbs.
Curb & Slab 3032 Lbs.

S.C. STATE HIGHWAY DEPARTMENT
COLUMBIA, S. C.

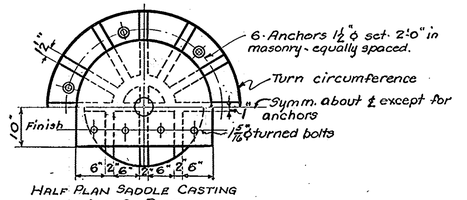
DETAILS OF FLOOR FOR 245 FT. SWING SPAN FOR BRIDGE OVER INTRA-COASTAL WATERWAY AT COVE INLET

S.C. Docket No. 10.264 Charleston County
S.C. Route No. 703 May 1942

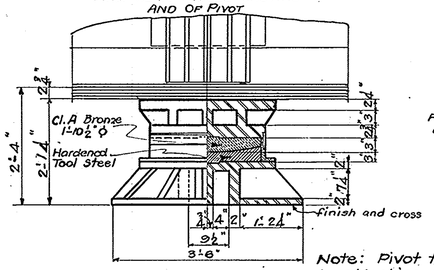
Drawn by:- W.F.L. 5-1-42.
Traced by:- C.F.D. 5-18-42.
Checked by:- [illegible]

Revised to eliminate ½"ϕ bars - H.B.G. 11-3-43
Checked - M.D.M. 11-4-43

FED. ROAD DIST. NO.	STATE	COUNTY	S.C. DOCK NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
14	S.C.	CHARLESTON	10.264	703	11	24

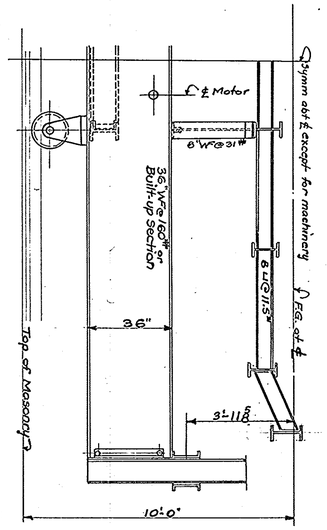


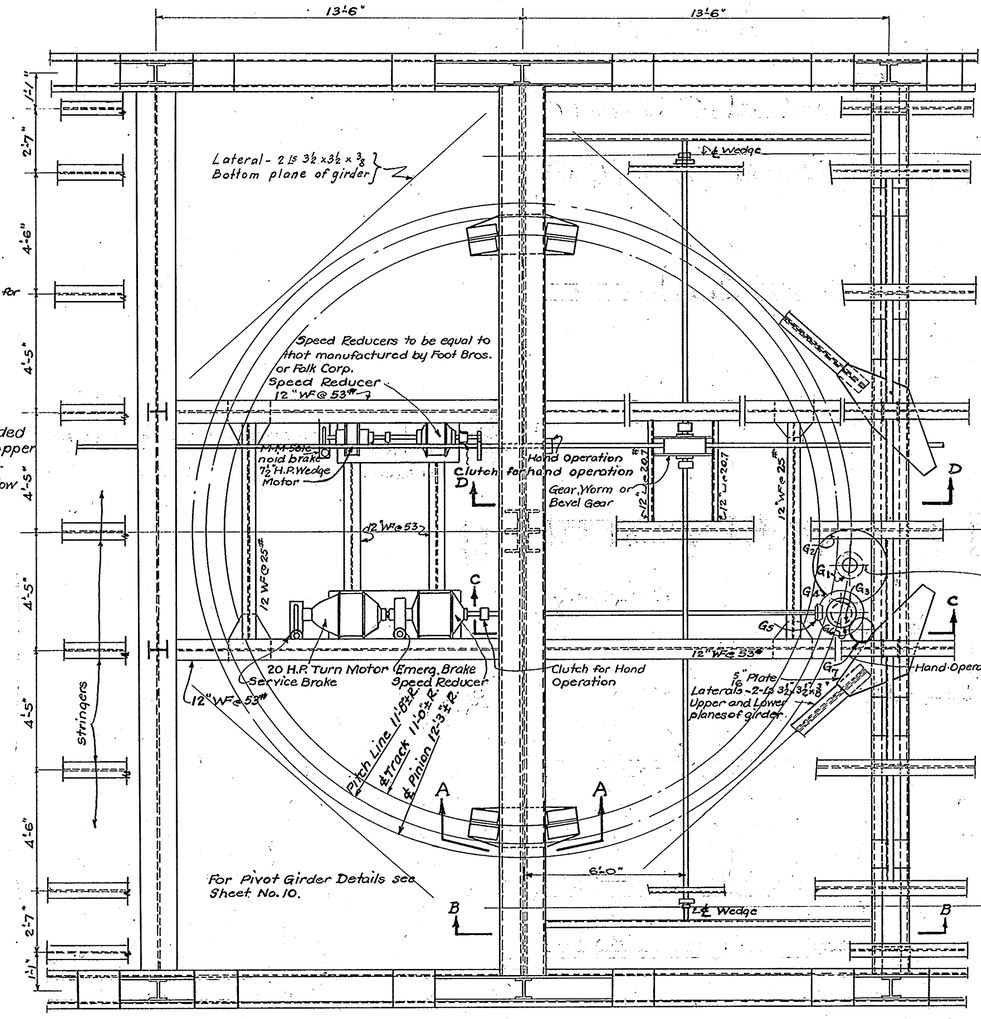
HALF PLAN SADDLE CASTING AND OF PIVOT

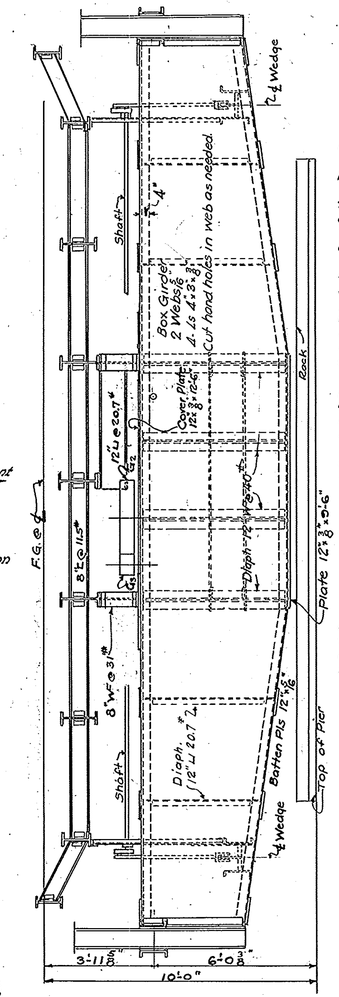


SECTION OF PIVOT BEARING

Note: Pivot to be grounded by attaching stranded copper wire of ample size, and extending wire to two feet below ground line.







Notes -

Specifications - A.A.S.H.O. for Movable Highway Bridges, 1938.

Machinery details have been omitted in order that manufacturers may bid on their standard equipment.

Machinery and supports shall be made of adequate stiffness as well as strength.

Where shafts cut thru webs of members, or connect to flanges, the members shall be reinforced or increased.

The minimum thickness of material in machinery supports shall be ⅜". All detail drawings shall be submitted for approval. No unchecked drawings will be accepted. All calculations incident to stresses in machinery shall be submitted.

Hand-levers at roadway level shall be provided for disengaging the clutches to wedge motor and turning motor in case it is desired to turn the bridge by man power. Suitable locks for these hand-levers shall be provided.

Provide turning levers for Hand-operation and suitable rack for storing and locking in place.

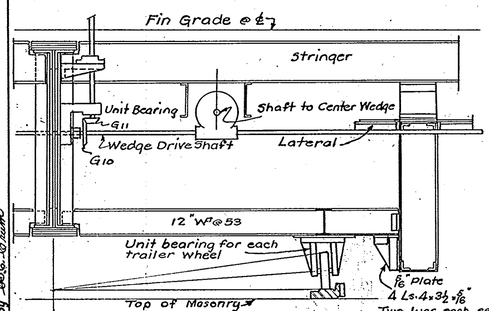
Provide full circle track and 200 degree rack.

See Special Provisions for maximum time for turning span.

Webs may be spliced horizontally if full depth plates cannot be secured. Details of splice to meet approval of Engineer. All costs of materials and labor necessary for splice to be included in Lump Sum bid for "Swing Span Steel Superstructure."

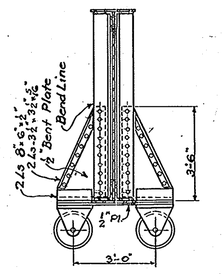
The Contractor for this contract shall furnish and set all necessary anchor bolts which are not required to be set by the Contractor for contract No. 1. as shown on attached plans for the substructure.

See sheet No 22 for locations of recesses for lugs under rack.



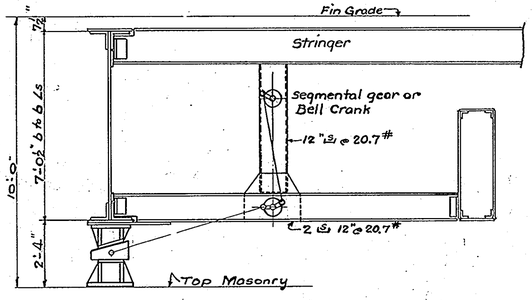
SECTION D-D

Note - Elevation of balance wheel and section of rock shown normal to radius

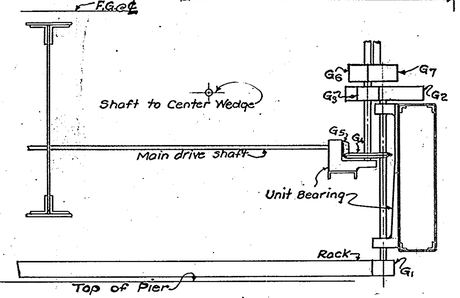


Load per Roller 30,000 Lbs

SECTION A-A



SECTION B-B



SECTION C-C

S. C. HIGHWAY DEPARTMENT
COLUMBIA, S.C.

LAY-OUT OF MACHINERY FOR 245'-0" DRAW SPAN

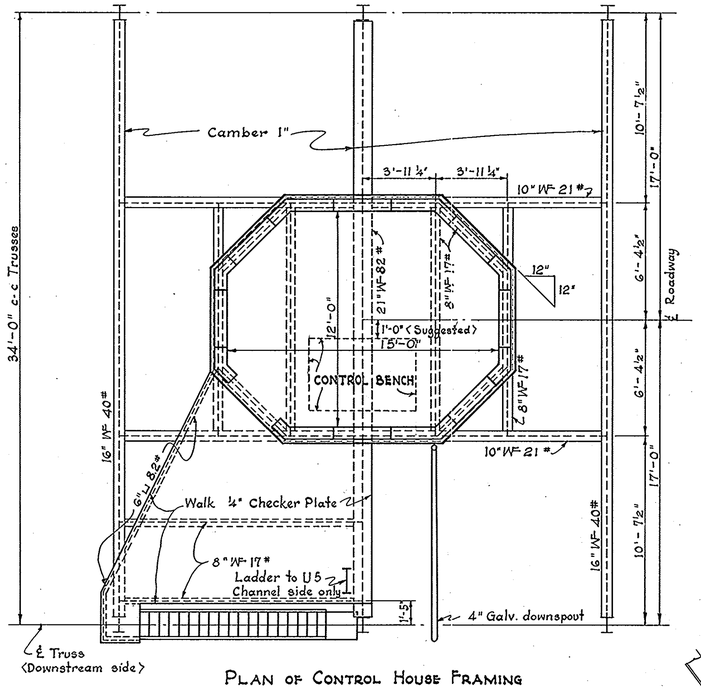
BRIDGE OVER COVE INLET

NEAR MT. PLEASANT

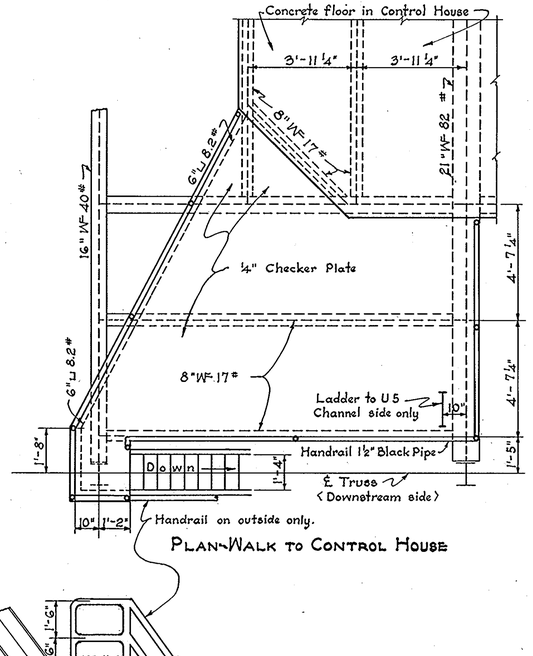
S.C. DOCKET No. 10.264 CHARLESTON COUNTY
ROUTE No. 703 MAY 1942.

Drawn W.T.S. May 1942 Rev. by: W.C.H. June 1944
Checked by [illegible]

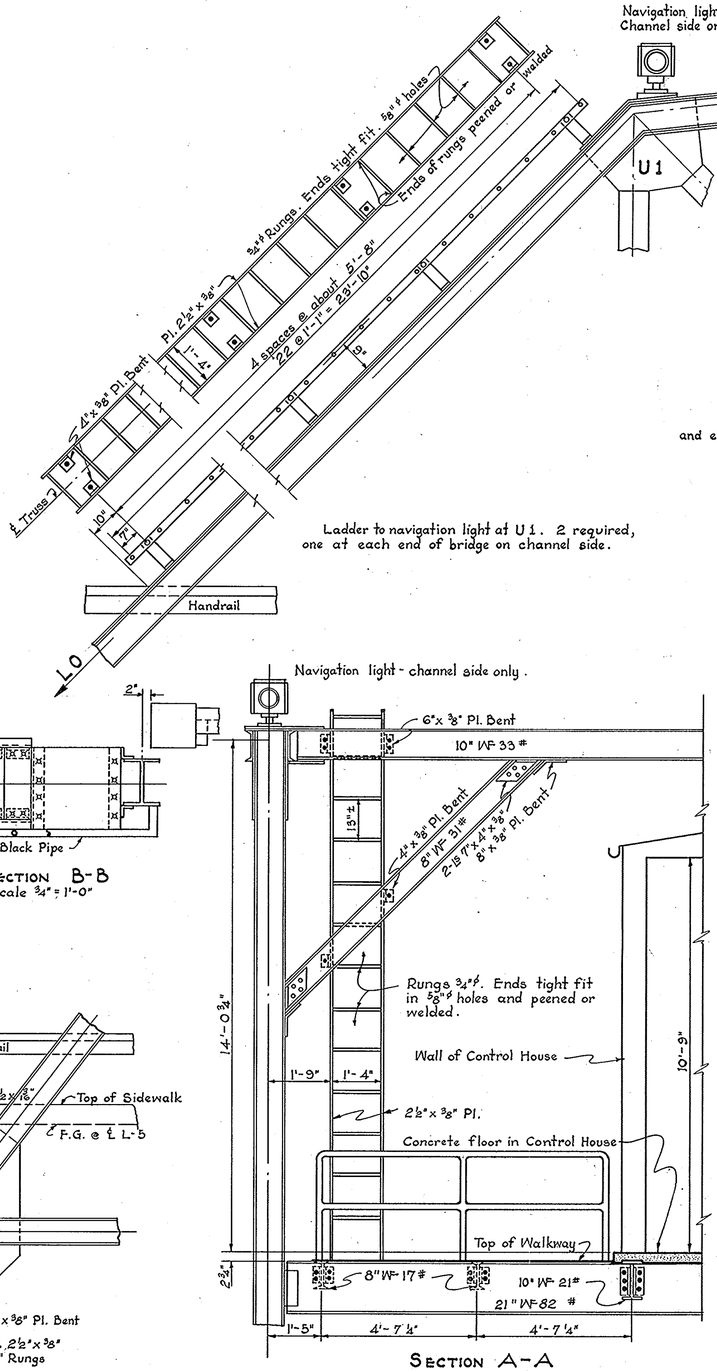
FED. ROAD DIST. NO.	STATE	COUNTY	DOCKET NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
14	S.C.	CHARLESTON	10.264	703	12	24

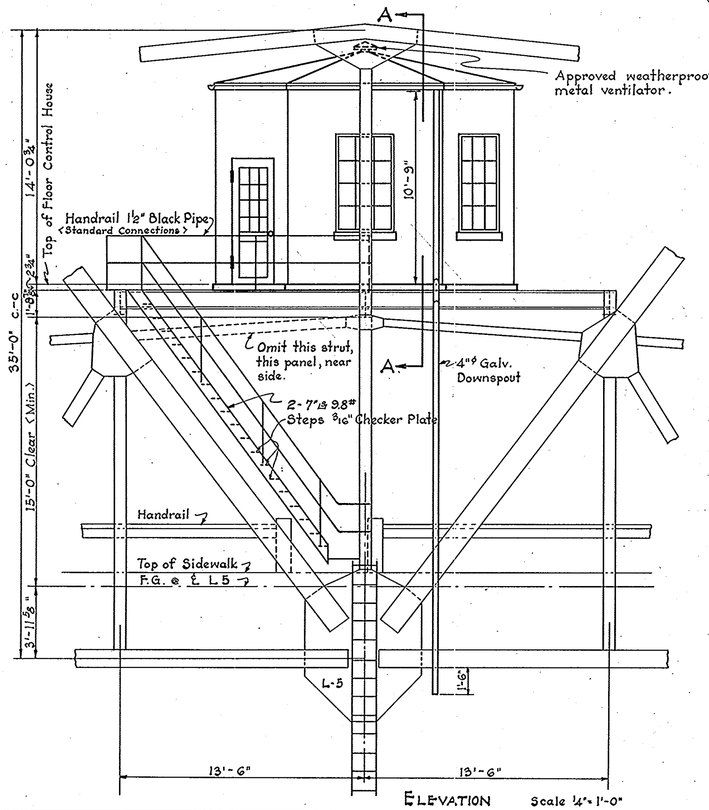


PLAN OF CONTROL HOUSE FRAMING

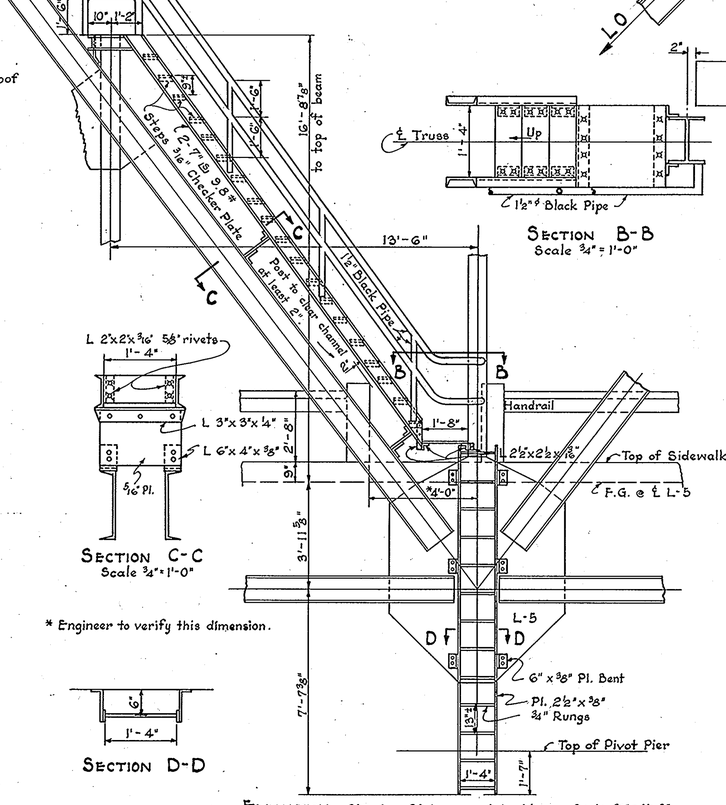


PLAN-WALK TO CONTROL HOUSE

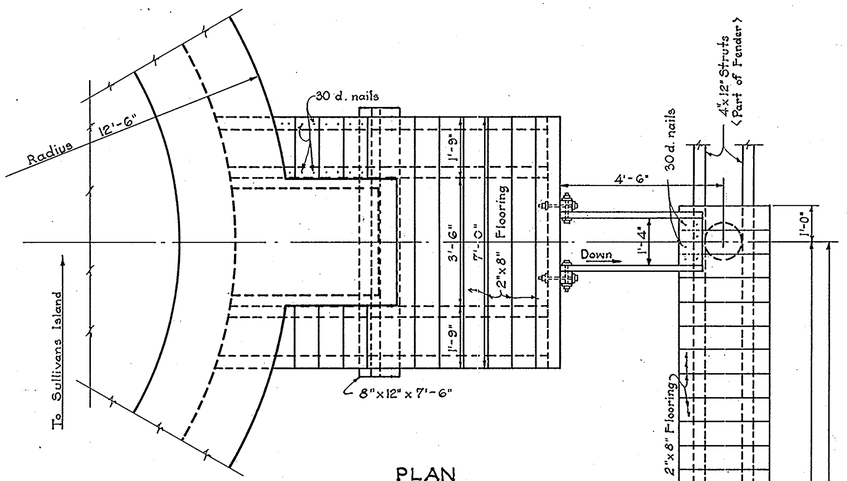




ELEVATION Scale ¼"= 1'-0"

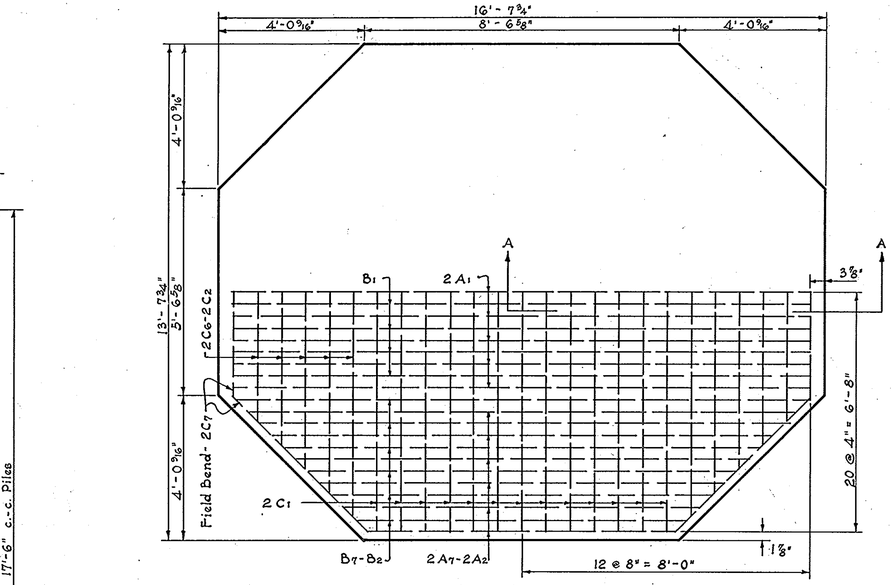

16'-8⅞" to top of beam
Steps ⅜" Checker Plate
2'-6"
2'-6"
2'-6"

FED. ROAD DIST. No.	STATE	COUNTY	DOCKET NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
14	S.C.	CHARLESTON	10.264	703	13	24



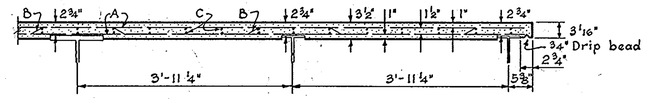
PLAN

Access Platform and Ladder



PLAN OF FLOOR SLAB

Scale ½" = 1'-0"



SECTION A-A

Scale ¾" = 1'-0"

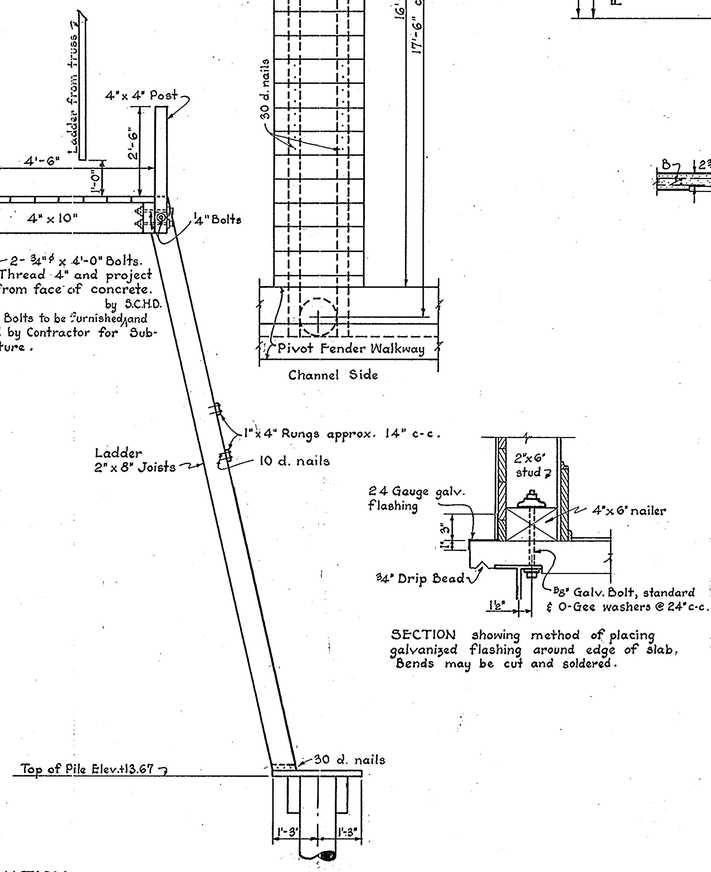
STEEL SCHEDULE FOR FLOOR SLAB

STEEL TABLE		
Mark	No.	Length
A1	18	17'- 4"
A2	4	16'- 8"
A3	4	14'-11"
A4	4	13'- 7"
A5	4	12'- 3"
A6	4	10'- 11"
A7	4	9'- 7"
B1	8	16'- 8"
B2	2	16'- 0"
B3	2	14'- 9"
B4	2	13'- 5"
B5	2	12'- 1"
B6	2	10'- 7"
B7	2	9'- 3"
C1	26	13'- 4"
C2	4	12'- 5"
C3	4	10'- 11"
C4	4	9'- 7"
C5	4	8'- 3"
C6	4	6'- 11"
C7	4	16'- 4"

BENDING DETAILS

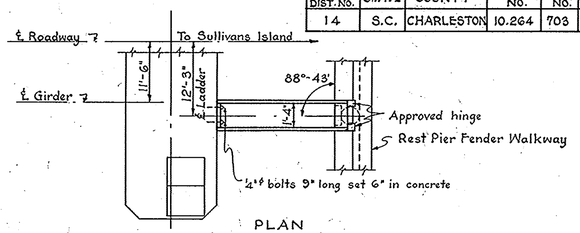
QUANTITIES For FLOOR SLAB		
Class "A" Concrete	1.98	Cu. Yds
Reinf. Steel	252	Lbs.

All bars ¼" ϕ.
C- bars are straight.

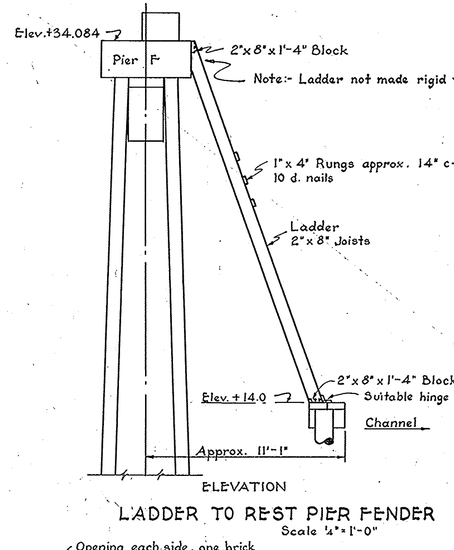


ELEVATION

SECTION showing method of placing galvanized flashing around edge of slab. Bends may be cut and soldered.



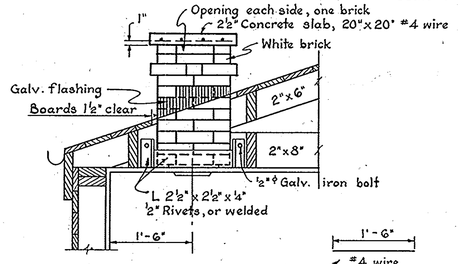
PLAN



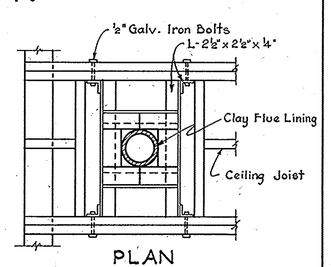
ELEVATION

LADDER TO REST PIER FENDER

Scale ¼" = 1'-0"



ELEVATION



PLAN

DETAIL OF CHIMNEY

Scale ¾" = 1'-0"

Drawn by:- C.F.D. 4-28-42
Checked by:- G.H.B. 4-30-42

S.C. STATE HIGHWAY DEPARTMENT
COLUMBIA, S.C.

DETAILS OF ACCESS PLATFORM & LADDER AND CONTROL HOUSE FLOOR SLAB & CHIMNEY

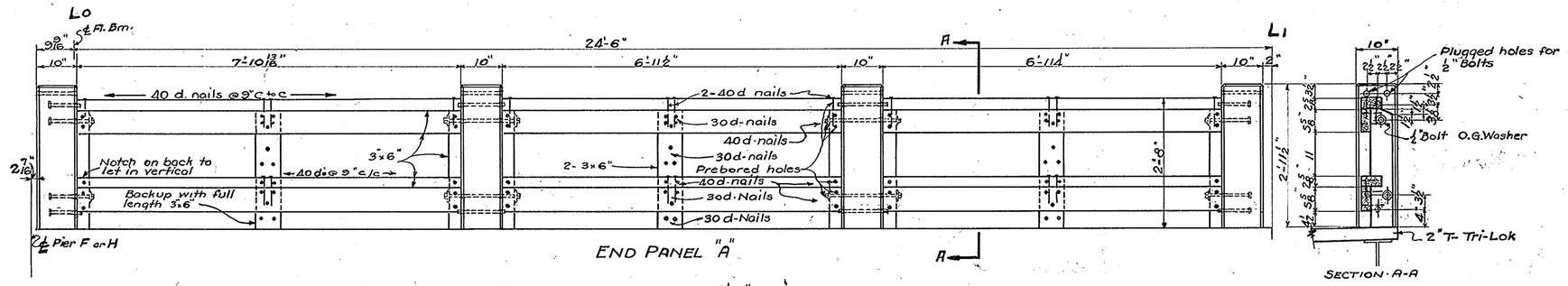
FOR BRIDGE OVER

INTRA-COASTAL WATERWAY

AT COVE INLET

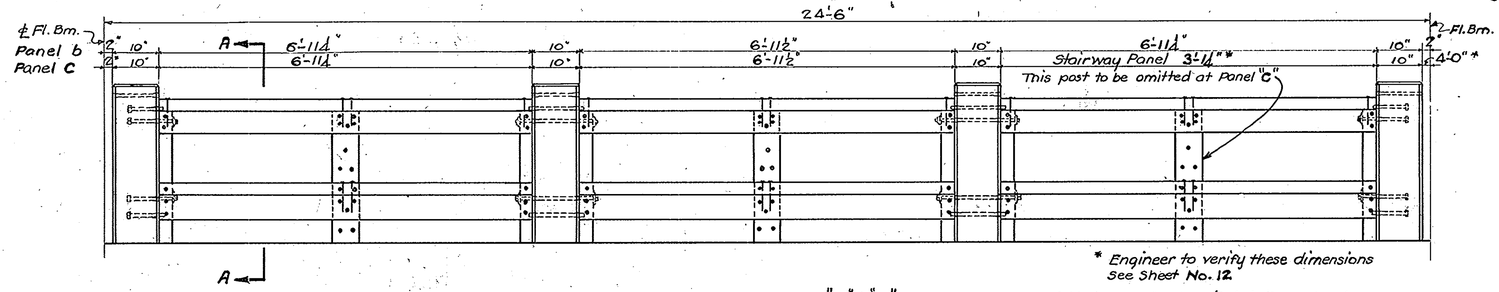
S.C. Docket No. 10.264 — Charleston County
S.C. Route No. 703 — April 1942.
Scales ¼", ½", ¾" = 1'-0"

FED. ROAD DIST. NO.	STATE	COUNTY	S.C. DOCK NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
14	S.C.	CHARLESTON	10.264	703	14	24



END PANEL "A"

SECTION A-A



* Engineer to verify these dimensions see Sheet No. 12.

INTERIOR PANELS "B" & "C"

See Sheet No. 8 for other Rail details, and notes.

RAIL DETAILS

SCALE ¾" = 1 Ft.

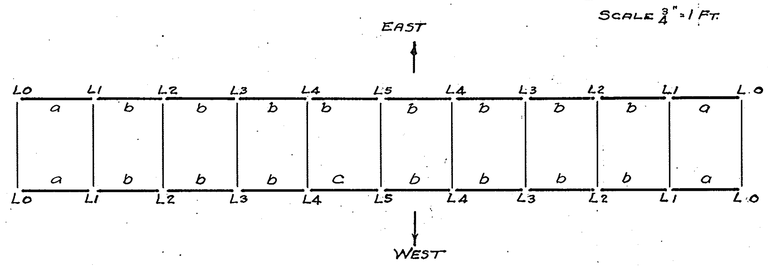
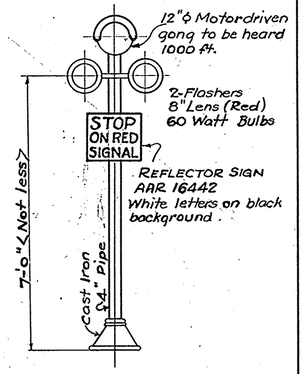


DIAGRAM SHOWING LOCATION-RAIL PANELS ON TRUSSES.

See Sheet No 8A for details of Metal Handrail



WARNING LIGHT DETAILS

See Sheet No. 8 for notes not shown on this sheet.

Dr. & Traced Bully. 6-1-42
Checked by:- E.F.D. 6-18-42.

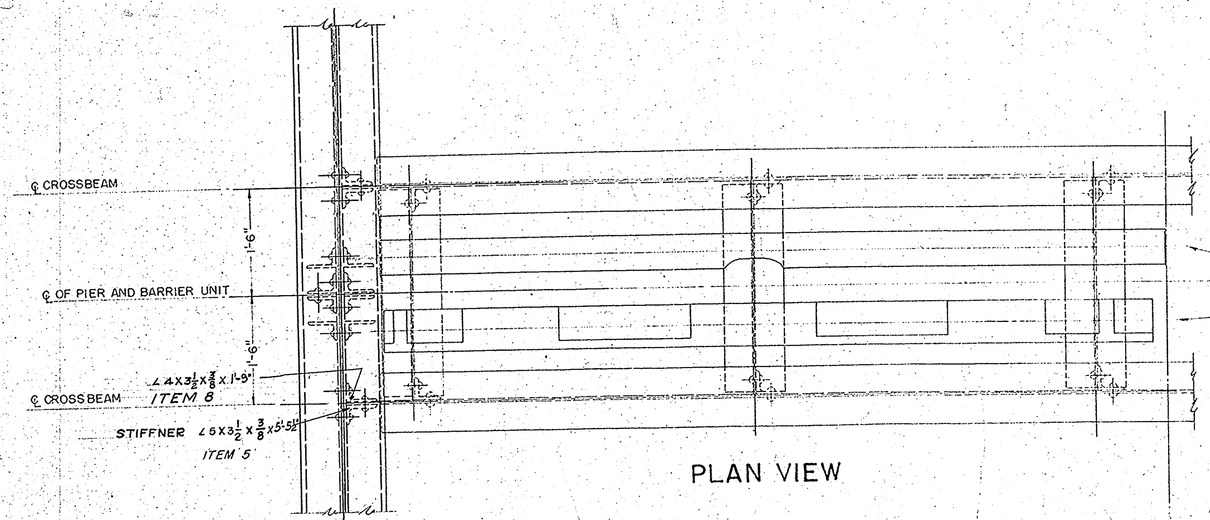
S. C. STATE HIGHWAY DEPARTMENT
COLUMBIA, S.C.

TRUSS RAIL DETAILS FOR BRIDGE OVER

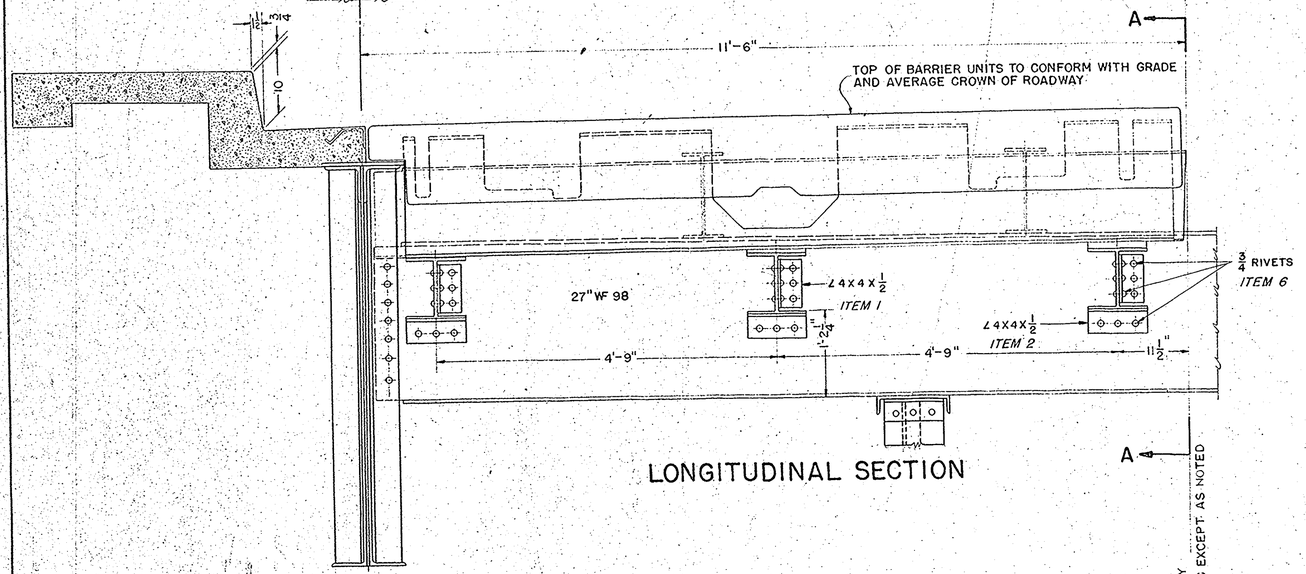
INTRA-COASTAL WATERWAY
AT COVE INLET

S.C. DOCKET No. 10.264 CHARLESTON Co.
ROUTE No. 703 JUNE 1942
SCALE AS SHOWN

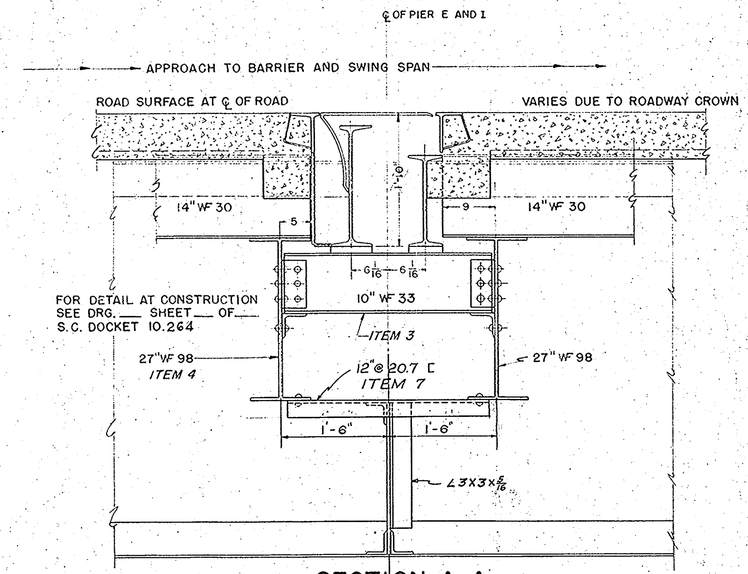
Fed Road Dist No.	State	County	Docket No.	Route No.	Sheet No.	Total Sheets
14	S.C.	CHARLESTON	10.264	703	15	24



PLAN VIEW



LONGITUDINAL SECTION

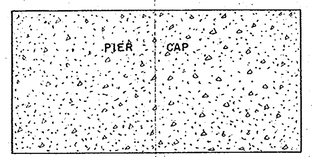


SECTION A-A

ITEM	DESCRIPTION	REQD
1	∠ 4X4X½X8	24
2	∠ 4X4X½X10	24
3	10WF33X2'-10½"	12
4	27WF98X22'-6"	2
5	∠5X3½X⅜X5'-5½"	8
6	¾ RIVET HEADS	125 LB
7	12"@20.7 ℄ X2'-10"	4
8	∠4X3½X⅜X1'-3"	8

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL STRUCTURAL SHAPES AS LISTED.

Note:- See sheet no. 16 for Materials in Walkway.



Address: Product Company
Evans
Fullerton at Greenfield
Detroit, Michigan

S.C. STATE HIGHWAY DEPARTMENT
COLUMBIA, S.C.

INTRA-COASTAL WATERWAY AT COVE INLET

S.C. DOCKET NO. 10.264
S.C ROUTE NO. 703
CHARLESTON COUNTY

LET	WAS	DATE	CK

EVANS PRODUCTS CO.
DETROIT MICHIGAN U.S.A.

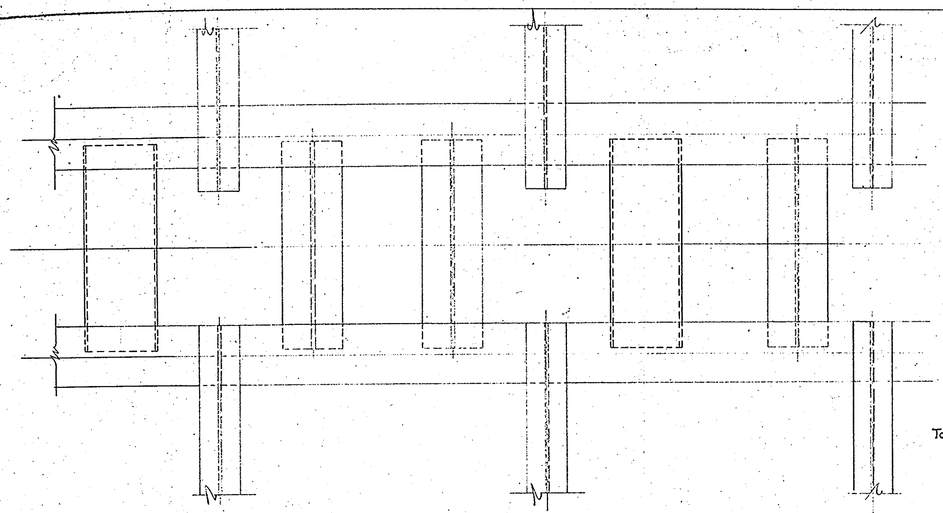
SCALE 1"-1'-0"

DRN J. MIDDLETON | CKD | APVD | DATE MAY 7-1942

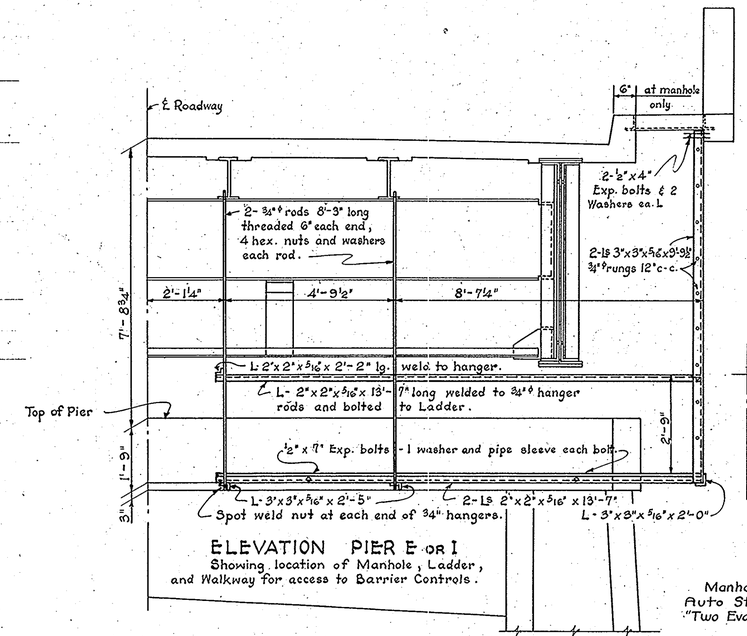
NAME BARRIER INSTALLATION | NO. F-4048

Revised by:- G.K.B. 7-2-42
Checked by:- C.F.B.- 7-2-42.

FED. ROAD DIST. NO.	STATE	COUNTY	DOCKET NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
14	S. C.	CHARLESTON	10.264	703	16	24

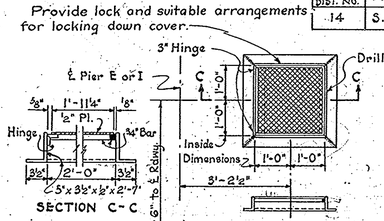


PLAN VIEW



ELEVATION PIER E OR I

Showing location of Manhole, Ladder, and Walkway for access to Barrier Controls.



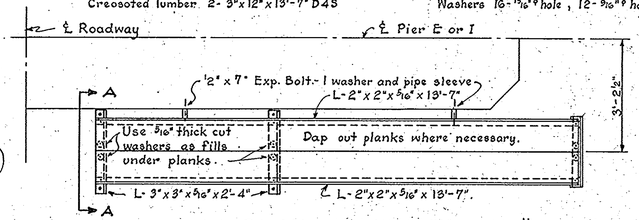
MANHOLE FRAME AND COVER

MATERIALS AND NOTES

Manhole :-
4 Ls - 5"x3½"x ½"x 2'-7" mitered and welded at corners with ¼" welds.
3- ¾"x ¾"x 1'-11" bars welded to vertical leg of angle. ¼" c.f. weld at bottom.
2- ½" hinges 3" long welded to vertical leg of angle and plate.
Cover plate - 1'-5" ckd. pl. 1'-11¼"x 1'-11¾".
Walkway and Ladder :-
Angles 2Ls - 3"x 3"x 5/16" x 9'-9½",
3Ls - 2"x 2"x 5/16" x 13'-7", 2Ls - 3"x 3"x 5/16" x 2'-5"
1L - 3"x 3"x 5/16" x 2'-0", 1L - 2"x 2"x 5/16" x 2'-2".
Bolts 12 - ½"ϕ x 3¾" csk., 1 - ½"ϕ x 1"
Expansion bolts 4 - ½"ϕ x 4", 2 - ½"ϕ x 7"
Nuts 16 - ¾" ; 19 - ½"
Washers 16 - 13/16"ϕ hole ; 12 - 9/16"ϕ hole x 5/16" thick

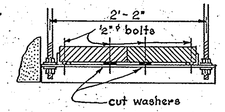
MATERIALS AND NOTES (cont'd)

Rungs for ladder 9 - ¾"ϕ x 2'-0¾"
Hanger rods 4 - ¾"ϕ x 8'-3"
Creosoted lumber 2- 3"x 12" x 13'-7" D4S

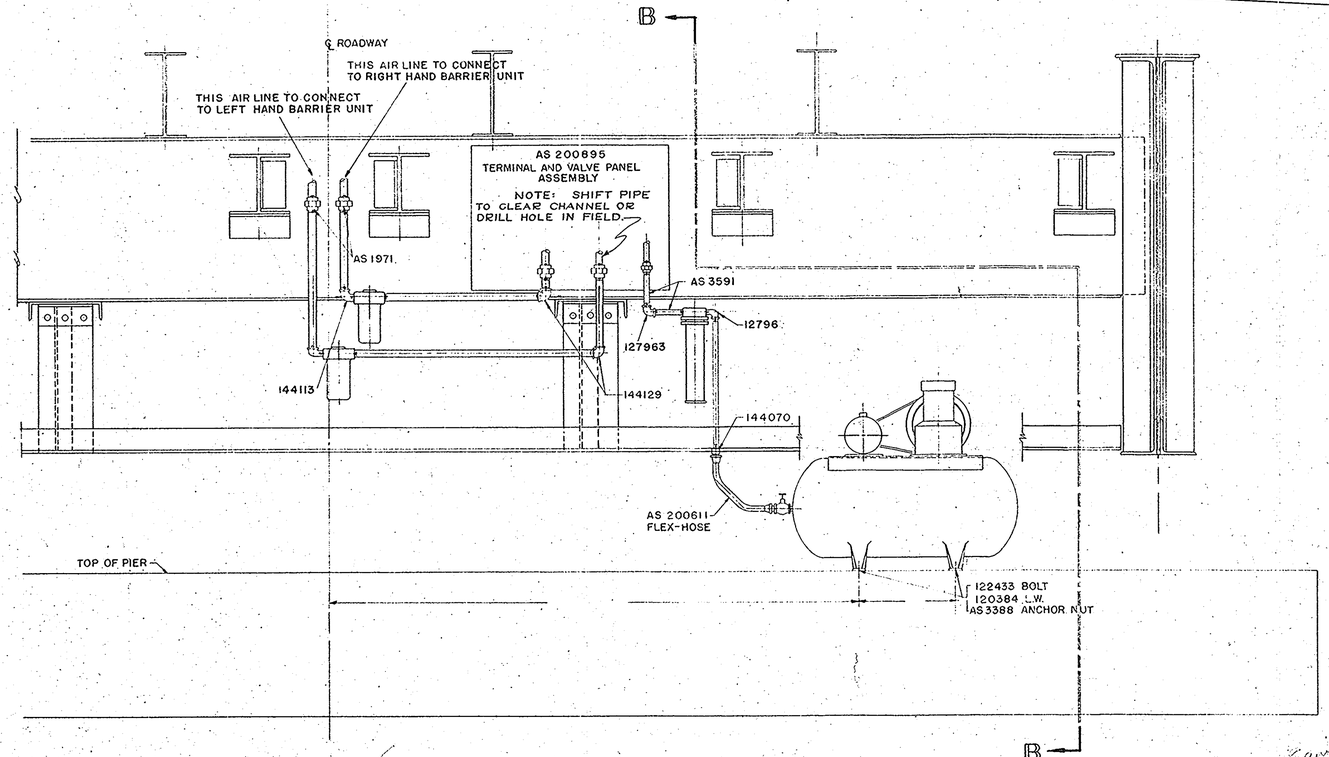


PLAN OF WALKWAY

Manhole and Walkway required at Piers E and I for Evans Auto Stop. All costs to be included in Lump Sum Bid for "Two Evans Auto Stop Type Barriers."

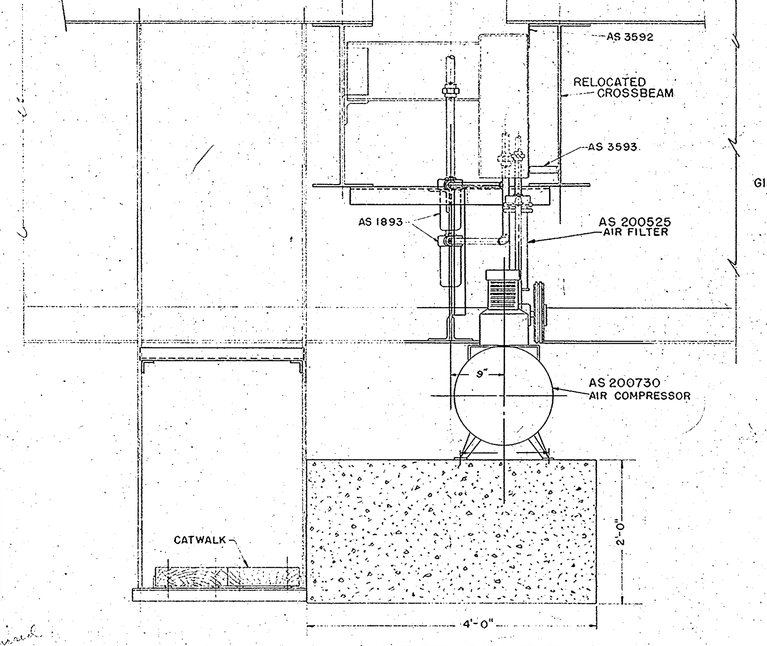


SECTION A-A



LONGITUDINAL SECTION

VIEW TAKEN ABOUT ℄ OF PIER E AND I



SECTION B-B

ALL OPERATING EQUIPMENT, PIPE, PIPE FITTINGS AND FASTENINGS SHOWN WILL BE FURNISHED BY THE MANUFACTURER, WITH THE BARRIER UNITS. THE CONTRACTOR SHALL CUT AND FIT ALL PIPE REQUIRED TO CONNECT THE COMPRESSOR TO THE VALVE PANEL AND THE VALVE PANEL TO THE BARRIER UNITS. ALL INTERIORS OF PIPE SHALL BE FREE OF SCALE AND LOOSE PARTICLES. ALL JOINTS SHALL WITHSTAND 125 L.B. W.P. AND BE FREE FROM LEAKAGE.

WALKWAY DRAWN BY C.F.D. 6-15-42.
CHECKED BY. [illegible] 6-19-42

EVANS PRODUCTS CO. DETROIT MICHIGAN U.S.A.			SCALE 1"=1'-0"
DSN. J. HIDDLETON	CK'D.	APV'D.	DATE MAY 7-1940
PART NAME OPERATING EQUIPMENT AND PIPING DIAGRAM			DWG. NO. F-5017
MAT'L	ANALYSIS	PROCESS	

FED ROAD DIST. No.	STATE	COUNTY	DOCKET NO.	ROUTE No.	SHEET NO.	TOTAL SHEETS
14	S.C.	CHARLESTON	10.264	703	17	24

SECTION "G" "G"

SECTION "A" "A"

SECTION "C" "C"

SECTION "F" "F"

SECTION "B" "B"

SECTION "D" "D"

SECTION "E" "E"

STEEL CASTINGS BOLTED TO BEAMS FOR SNUBBER BRACKETS

2" T TRILOK TYPE "L" OR EQUAL CONCRETE FILLED

STEEL CASTING BOLTED TO BEAMS FOR PEDESTAL BASE

PLATE TO ENGAGE 10 7/8" RIVETS IN BOTTOM FLANGE OF BEAM

PLATE TO ENGAGE 18 7/8" RIVETS IN 2 L 8

BOTTOM PLATE TO ENGAGE 16 7/8" RIVETS IN BOTTOM FLANGE OF BEAM

END T TRI-LOK HERE

ROAD ARM 35' 3 3/16" C

℄ PIER

86 FEET CENTER OF PIERS

70' C TO C PIERS

S. C. STATE HIGHWAY DEPARTMENT
COLUMBIA S. C.

MODIFICATION FOR HIGHWAY GUARDIAN
FOR BRIDGE OVER
INTRA-COASTAL WATERWAY
AT COVE INLET

CHARLESTON COUNTY
MAY 1942
SCALE 1/2" = ONE FOOT

Address:
Southern Highway Guardian Corp.
3211 Bull Street,
Savannah, Ga.

FED ROAD DIST. NO.	STATE	COUNTY	S.C. DOCK NO.	ROUTE NO	SHEET NO.	TOTAL SHEETS
14	S.C.	CHARLESTON	10.264	703	18	24

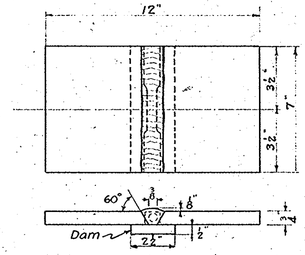


Diagram showing method of making specimen

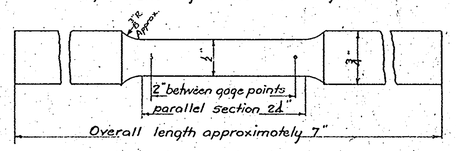
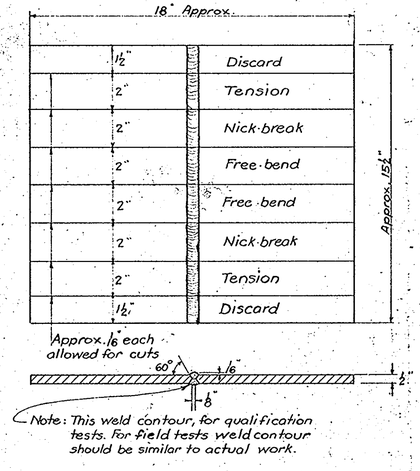


Diagram showing completed specimen (full scale)

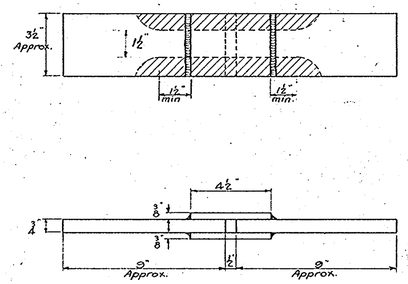
Notes: Parallel section to be machined exact and given a smooth finish. Ends may be finished ¾" round or square rough or may be threaded ¾" to fit holder. Length of ends immaterial. Ends to be machined concentric with parallel section. Dam to be of same material as plates.

FIGURE I
Weld Metal Test Specimen



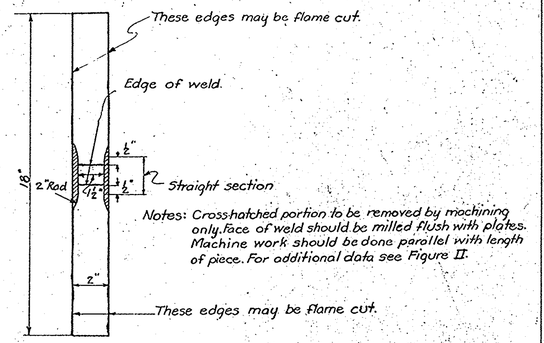
Note: This weld contour, for qualification tests. For field tests weld contour should be similar to actual work.

FIGURE II
Butt Weld Specimen



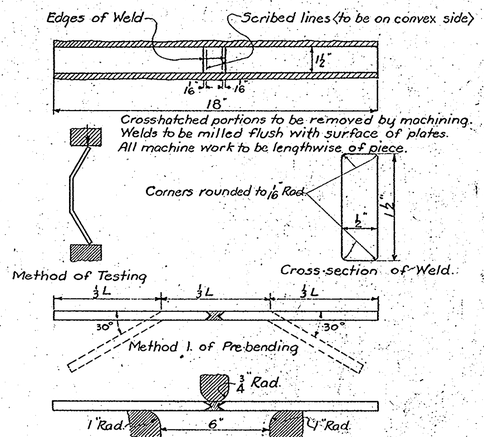
Notes: Welds to be ¼" Fillet. Crosshatched portion to be removed for test, final cut to be made by machine. Weld to be gaged before testing.

FIGURE III
Transverse Fillet Weld Test Specimen



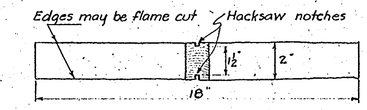
Notes: Crosshatched portion to be removed by machining only. face of weld should be milled flush with plates. Machine work should be done parallel with length of piece. For additional data see Figure II.

FIGURE IV
Reduced Section Tension Test Piece.



Showing die for pre-forming. Test piece to be bent 90° in die. Remainder of bend to be made free.

FIGURE V
Free Bend Test Piece



Note: No machining required. For other data see Fig. 2.

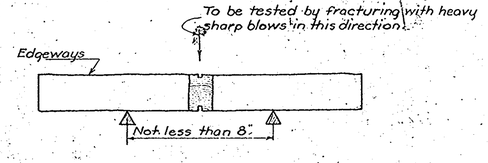
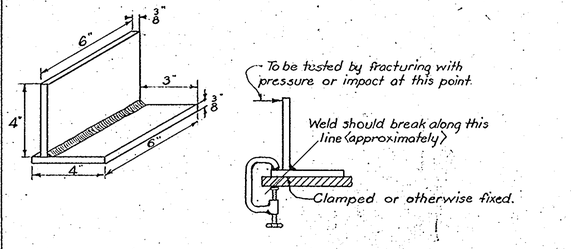
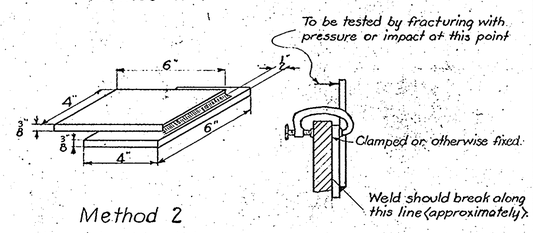


Diagram showing method of testing

FIGURE VI
Nick-break Test Piece



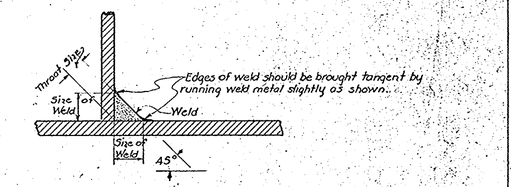
Method 1.



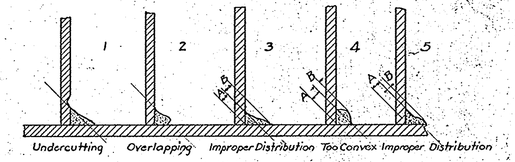
Method 2

Notes:- Size of weld to be same as size on work. If plates on work are ¾" or more in thickness, test plates should be same thickness as those on work. Method of making test should be one most similar to work.

FIGURE VII
Fillet Weld "Hinge Test"



Desirable Fillet Weld Contour



Undesirable Fillet Weld Contours.

1 and 2 are not permitted. 3, 4 and 5 permitted if ratio ⅛/⅛ is not over 40% (Convexity ratio) and dimensions are within tolerances allowed herein.

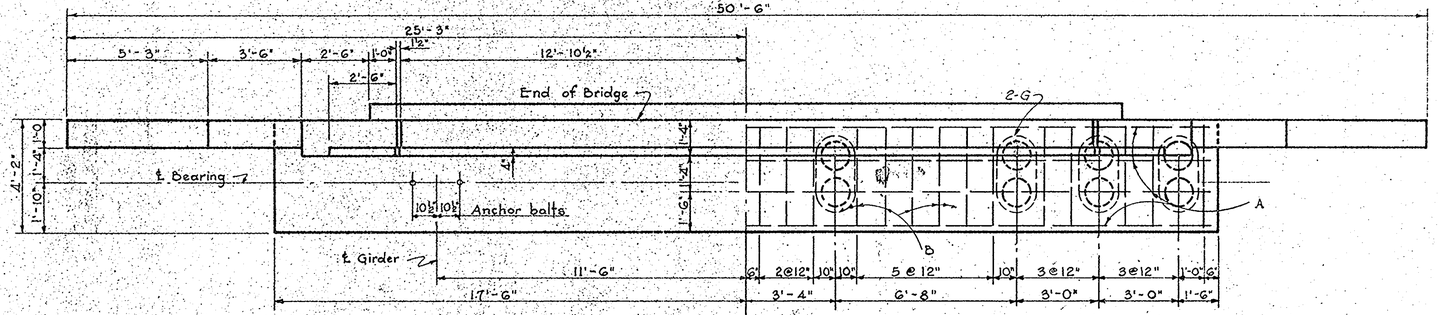
Note:-
The desirable fillet weld contour shown above shall be constructed unless the plans or special provisions call for a special contour.

FIGURE VIII

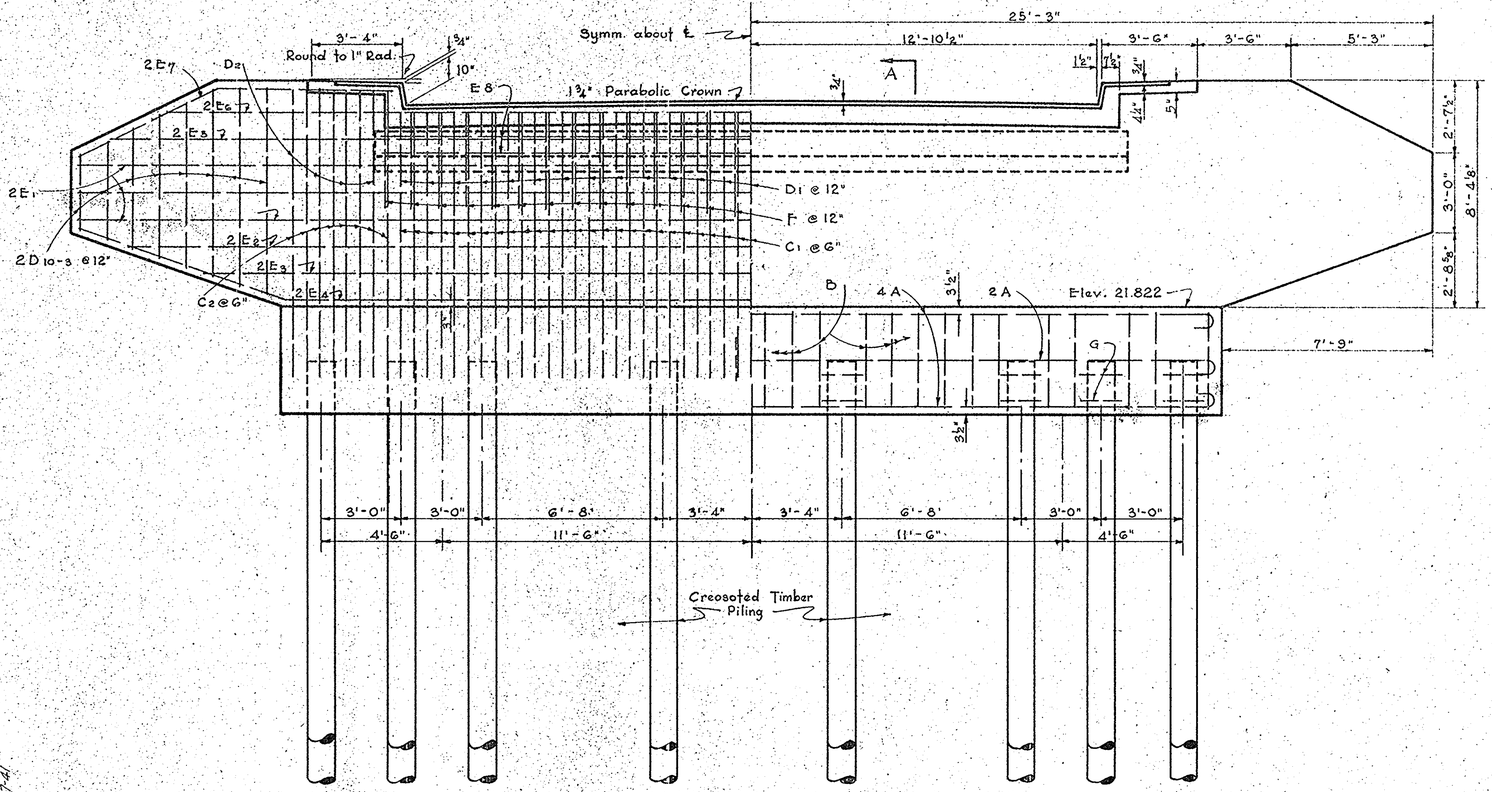
S.C. STATE HIGHWAY DEPARTMENT
COLUMBIA, S.C.

THIS FIGURE AND FIGURES I to VII ARE REFERRED TO IN THE SPECIAL PROVISIONS ON WELDING.

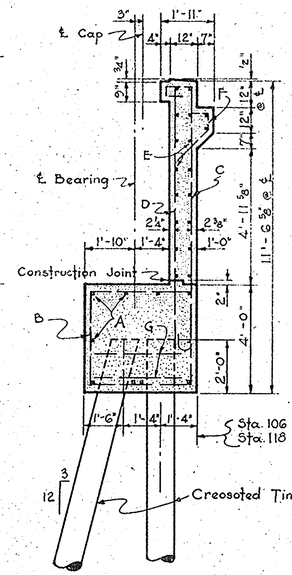
FED. ROAD DIST. NO.	STATE	COUNTY	DOCKET NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
14	S.C.	CHARLESTON	10.229	703	19	24



PLAN (Back wall steel not shown.)



ELEVATION



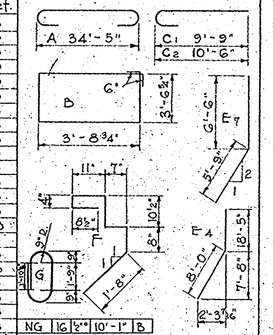
SECTION A-A

REINFORCING STEEL FOR END BENT 1.

SCHEDULE

Mark	No.	Size	Length	Det.
NA	10	1"ø	36'-5"	B
NB	28	½"ø	15'-7"	B
NC1	53	¾"ø	10'-5"	B
NC2	16	¾"ø	11'-2"	B
ND1	27	½"ø	9'-9"	S
ND2	8	½"ø	10'-6"	S
ND3	4	½"ø	7'-8"	S
ND4	4	½"ø	7'-4"	S
ND5	4	½"ø	6'-10"	S
ND6	4	½"ø	6'-0"	S
ND7	4	½"ø	5'-3"	S
NE1	12	½"ø	26'-0"	S
NE2	4	½"ø	23'-11"	S
NE3	4	½"ø	21'-1"	S
NE4	4	½"ø	26'-5"	B
NE5	4	½"ø	24'-9"	S
NE6	4	½"ø	22'-6"	S
NE7	4	½"ø	12'-3"	B
NE8	2	½"ø	27'-6"	S
NF	28	½"ø	5'-9"	B
ND8	4	½"ø	4'-5"	S
ND9	4	½"ø	3'-7"	S
ND10	4	½"ø	2'-10"	S

BENDING DETAILS



NG 16 ½" 10'-1" B See sheet no. 8 for Hook Details.

ESTIMATE OF QUANTITIES FOR END BENT 1

CLASS 'AA' CONCRETE		35.26	CU. YDS.
REINFORCING STEEL	*	4672	LBS.
WET AND DRY EXCAVATION		200	CU. YDS.
CREOSOTED TIMBER PILING		640	LIN. FT.

Estimate of quantities for Bent 2 same as for Bent 1. For Bent 2 prefix bars 0A, 0B, etc.

* Includes the weight of anchor bolts and sleeves. See sheet 6 for anchor bolt detail.

Notes :-

All concrete shall be Class 'AA'.
All exposed edges shall be chamfered ¾".
Fill is to be in place before piling is driven.
Anchor bolts and sleeves will be paid for as reinforcing steel.
All reinforcing steel to be deformed bars.

Piles to be driven to a minimum bearing value of 15 tons per pile.

CONSTRUCTED AS CONTRACT NO 1.

ALTERNATE "B"

S.C. STATE HIGHWAY DEPARTMENT
COLUMBIA, S.C.

DETAILS OF END BENTS 1 & 2

FOR BRIDGE OVER

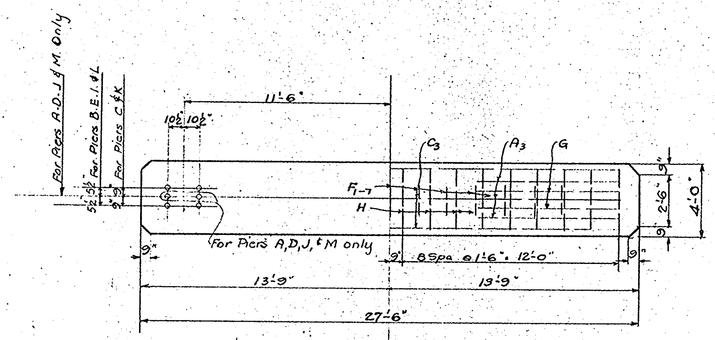
INTRA-COASTAL WATERWAY

AT COVE INLET

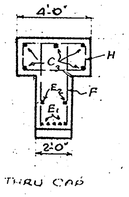
S.C. Docket No. 10.229 Charleston County
S.C. Route No. 703 December 1941
Scale ⅜" = 1'-0"

Drawn & Traced by :- C.F.D. 12-10-41
Checked by :- W.P. 12-17-41

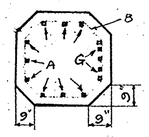
Fed Road Dist. No.	State	County	S.C. Dock No.	Route No.	Sheet No.	Total Sheets
14	S.C.	Charleston	10.229	703	20	24



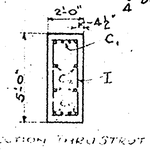
PLAN



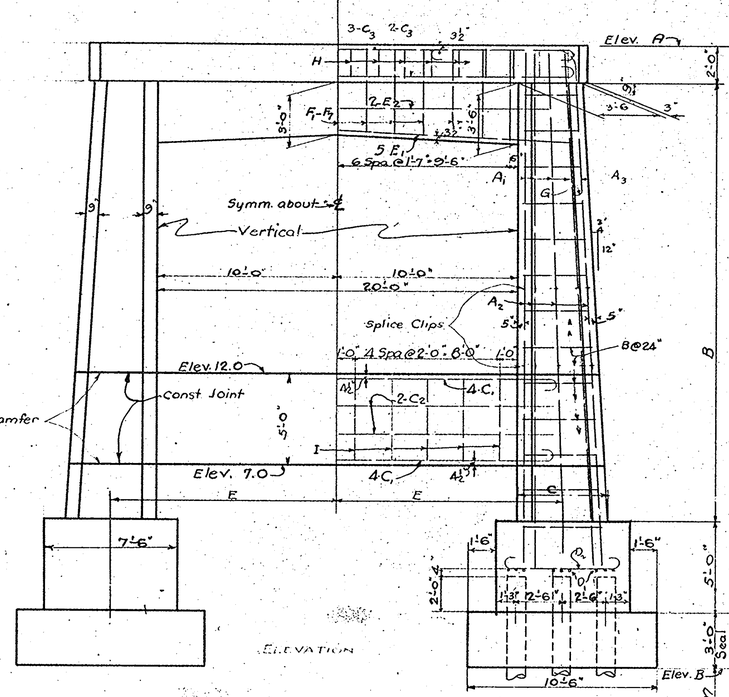
SECTION THRU CAP



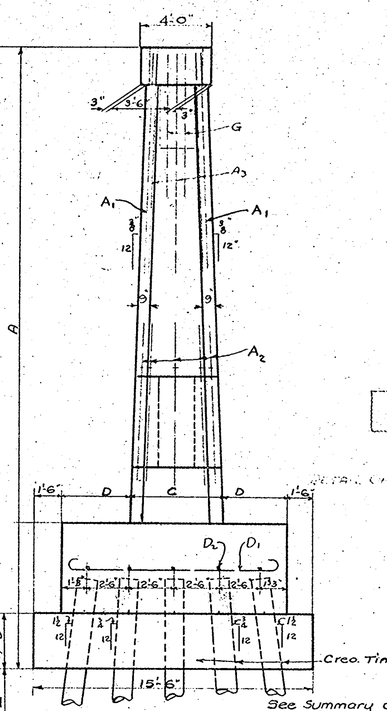
ARRANGEMENT OF STEEL IN COLUMNS



SECTION THRU STRUT



ELEVATION



Elev. A

Elev. B

Seal

Pier E

Piers A-D-J-M

Creo. Tim. Piling

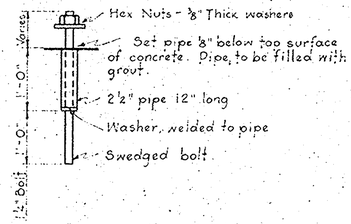


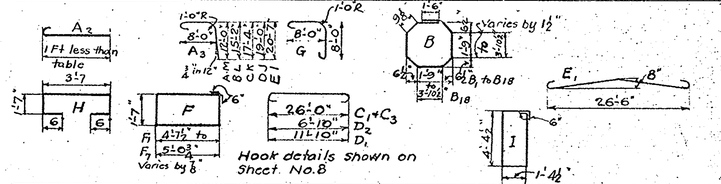
Table of Anchor Bolts			
	No.	Length	Wt. per Pier Bolts & Pipe (Lbs)
End Bents 1 or 2	4	2'-8½"	72
Piers A,D,J, or M	4	2'-8½"	72
Piers B,E,F,H, I or L	8	2'-4½"	136
Piers C or K	8	2'-8½"	144

DETAIL SHOWING METHOD OF PLACING ANCHOR BOLTS IN PIERS AND BENTS

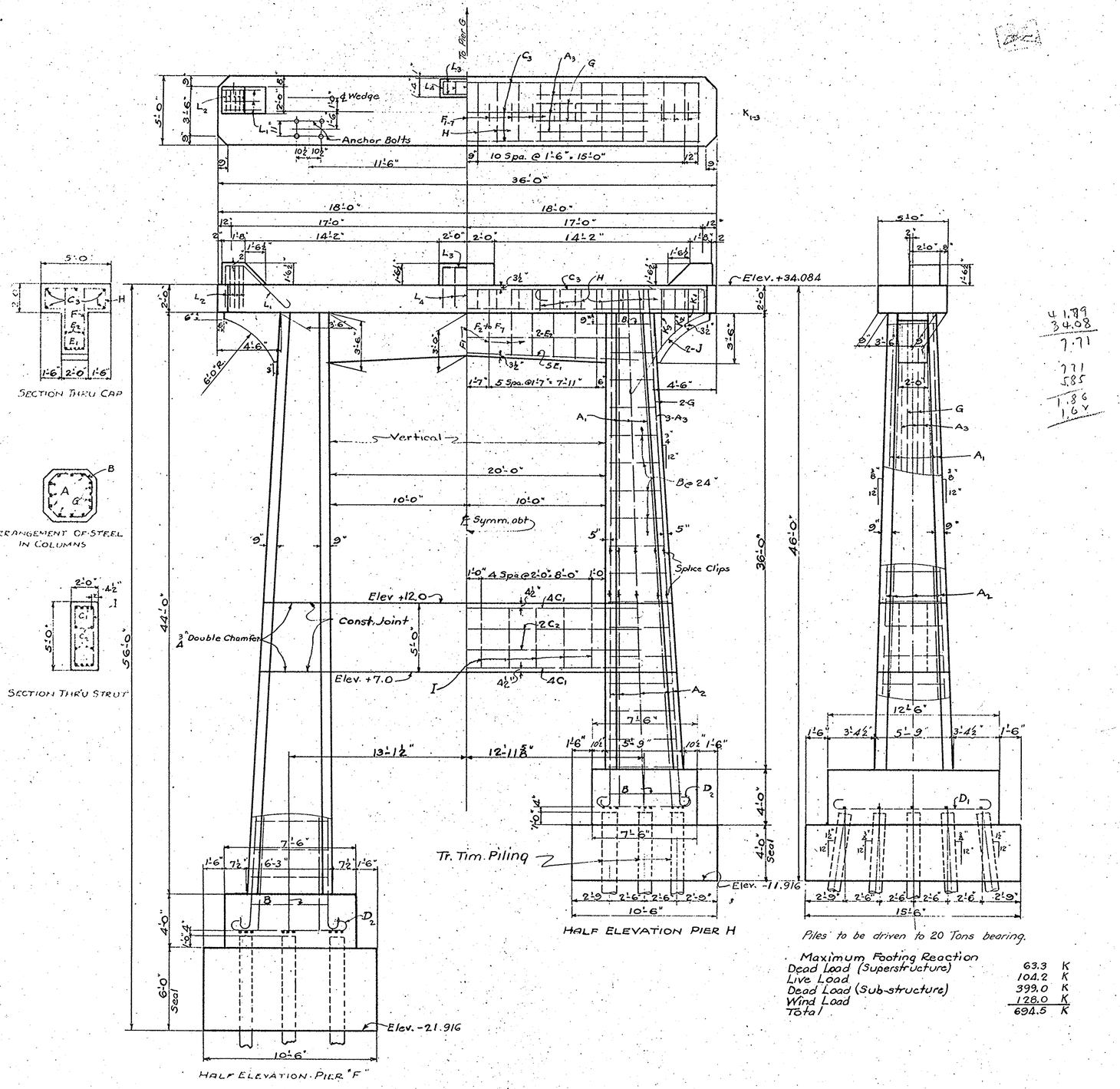
Above materials to be paid for at the unit price bid for reinforcing steel, and to be placed by sub-structure contractor. the cost of placing to be included in unit price bid for Class "AA" Concrete

† Includes Wt. of Anchor Bolts and Cable Clips.

PIER			A or M		B or L		C or K		D		E		I		J	
Mark	Size	Det	No	Length	No	Length	No	Length	No	Length	No	Length	No	Length	No	Length
A_1	18'-0"	S	18	12'-0"	18	15'-2"	18	17'-4"	18	19'-0"	18	20'-7"	18	20'-7"	18	19'-0"
A_2	18'-0"	B	24	18'-3"	24	18'-7"	24	18'-5"	24	18'-9"	24	23'-1"	24	18'-1"	24	18'-9"
A_3	18'-0"	B	6	20'-7"	6	23'-9"	6	25'-11"	6	27'-7"	6	29'-2"	6	29'-2"	6	27'-7"
B	8'-0"	B	2 Each Lgth	B 12 17'-1"	2 Each Lgth	B 13 17'-7"	2 Each Lgth	B 14 18'-1"	2 Each Lgth	B 15 18'-7"	2 Each Lgth	B 16 19'-1"	2 Each Lgth	B 16 19'-1"	2 Each Lgth	B 15 18'-7"
C_1	1"□	B	8	28'-0"	8	28'-0"	8	28'-0"	8	28'-0"	8	28'-0"	8	28'-0"	8	28'-0"
C_2	½"◇	S	4	25'-0"	4	25'-0"	4	25'-0"	4	25'-0"	4	25'-0"	4	25'-0"	4	25'-0"
C_3	1"□	B	5	28'-0"	5	28'-0"	5	28'-0"	5	28'-0"	5	28'-0"	5	28'-0"	5	28'-0"
D_1	1"◇	B	18 10	13'-10" 8'-10"	18 10	13'-10" 8'-10"	18 10	13'-10" 8'-10"	18 10	13'-10" 8'-10"	18 10	13'-10" 8'-10"	18 10	13'-10" 8'-10"	18 10	13'-10" 8'-10"
E_1	1"□	B	5	28'-6"	5	28'-6"	5	28'-6"	5	28'-6"	5	28'-6"	5	28'-6"	5	28'-6"
E_2	½"◇	S	2	24'-0"	2	24'-0"	2	24'-0"	2	24'-0"	2	24'-0"	2	24'-0"	2	24'-0"
F_1	½"◇	B	1	13'-5"	1	13'-5"	1	13'-5"	1	13'-5"	1	13'-5"	1	13'-5"	1	13'-5"
F_2 to F_7	½"◇	B	2 Each Lgth	13'-7" to 14'-4"	2 Each Lgth	13'-7" to 14'-4"	2 Each Lgth	13'-7" to 14'-4"	2 Each Lgth	13'-7" to 14'-4"	2 Each Lgth	13'-7" to 14'-4"	2 Each Lgth	13'-7" to 14'-4"	2 Each Lgth	13'-7" to 14'-4"
G	18'-0"	B	4	17'-7"	4	17'-7"	4	17'-7"	4	17'-7"	4	17'-7"	4	17'-7"	4	17'-7"
H	½"◇	B	18	7'-9"	18	7'-9"	18	7'-9"	18	7'-9"	18	7'-9"	18	7'-9"	18	7'-9"
Clips	4½" E_2		48		48		48		48		48		48		48	
I	½"◇	B	10	12'-6"	10	12'-6"	10	12'-6"	10	12'-6"	10	12'-6"	10	12'-6"	10	12'-6"
Dimension	A		31'-0"		34'-0"		36'-0"		38'-0"		45'-0"		39'-0"		38'-0"	
	B		21'-0"		24'-0"		26'-0"		28'-0"		34'-0"		29'-0"		28'-0"	
	C		4'-9¾"		5'-0"		5'-1⅛"		5'-3"		5'-7½"		5'-3¾"		5'-3"	
	D		3'-10⅝"		3'-9"		3'-8¼"		3'-7½"		3'-5¼"		3'-7⅛"		3'-7½"	
	E		12'-4⅝"		12'-6"		12'-6⅜"		12'-7½"		12'-9⅜"		12'-7⅛"		12'-7½"	
Conc. Cl. "AA"			78.61 C.Y.		83.71 C.Y.		87.34 C.Y.		91.16 C.Y.		103.80 C.Y.		93.14 C.Y.		91.16 C.Y.	
# Reinf. Steel			7394 Lbs.		7781 Lbs.		8009 Lbs.		8157 Lbs.		8876 Lbs.		8330 Lbs.		8157 Lbs.	
Wet & Dry Exc.			226 C.Y.		180 C.Y.		175 C.Y.		175 C.Y.		232 C.Y.		115 C.Y.		175 C.Y.	
Seal Conc. Cl. "AA"			33.55 C.Y.		33.55 C.Y.		33.55 C.Y.		33.55 C.Y.		44.73 C.Y.		33.55 C.Y.		33.55 C.Y.	


A3
1 Ft less than table
3'-7
H
6
6
1'-7
1'-7
F
6"
F1
F7
4'-7½" to 5'-0¾"
Varies by ⅛"
1'-0"R
8'-0"
A3
A2
A1
A1
A2
A3
3/4 in 12"
8'-0"
G
1'-0"R
1'-6"
9½"
Varies by 1½"
B
B1 to B18
B18
2'-6"
2'-6"
2'-6"

SHEET	STATE	COUNTY	SHEET NO.	TOTAL SHEETS	PROJECT NO.	FED. AID PROJ. NO.
14	S.C.	CHARLESTON	S.C. 229	703	21	24



Maximum Footing Reaction

Dead Load (Superstructure)	63.3 K
Live Load	104.2 K
Dead Load (Sub-structure)	399.0 K
Wind Load	128.0 K
Total	694.5 K

Includes weight of cable clips and anchor bolts

STEEL TABLE

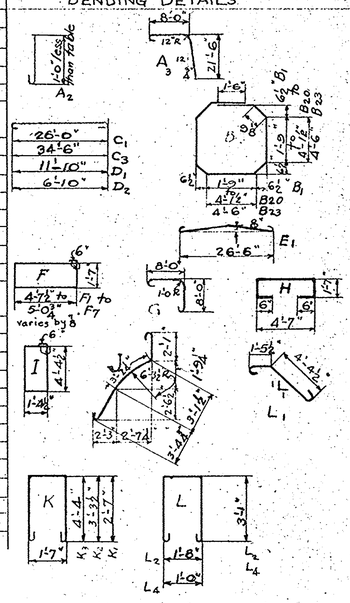
PIER		H		F		
MARK	SIZE	NO	LENGTH	NO	LENGTH	D
A_1	18"□	18	21'-6"	18	21'-6"	S
A_2	18"□	24	24'-2"	24	32'-2"	B
A_3	18"□	6	30'-1"	6	30'-1"	B
B	3/4"◇	2 Each Length	B_1 11'-7" to B_{20} 21'-1"	2 Each Length	B_1 11'-7" to B_{23} 22'-7"	B
C	1"□	8	28'-0"	8	28'-0"	B
C_2	½"□	4	25'-0"	4	25'-0"	S
C_3	1"□	5	36'-6"	5	36'-6"	B
D_1	1"◇	18	13'-10"	18	13'-10"	B
E_1	1"□	5	28'-6"	5	28'-6"	B
E_2	3/4"◇	2	24'-0"	2	24'-0"	S
Cable Clips	½"□ E_2	48		48		B
F_1	¾"◇	1	13'-5"	1	13'-5"	B
F_2 to F_7	¾"◇	2 Each Length	13'-7" to 12'-4"	2 Each Length	13'-7" to 12'-4"	B
G	18"□	4	17'-7"	4	17'-7"	B
H	½"□	24	8'-9"	24	8'-9"	B
I	½"□	10	12'-6"	10	12'-6"	B
J	1"◇	4	10'-8"	4	10'-8"	B
K_1	½"□	2	7'-9"	2	7'-9"	B
K_2	½"□	2	9'-2"	2	9'-2"	B
K_3	½"□	2	11'-3"	2	11'-3	B
L_1	½"□	6	6'-10	6	6'-10"	B
L_2	½"□	10	8'-10"	10	8'-10"	B
L_3	½"□	2	3'-8"	2	3'-8"	S
L_4	½"□	5	8'-2"	5	8'-2"	B
D_2	1"◇	10	8'-10"	10	8'-10"	B

SUMMARY OF QUANTITIES

	PIER H	PIER - F
Conc. Cl "AA"	109.42 C.Y.	130.10 C.Y.
Reinf. Steel	9631 Lbs	10508 Lbs
Dry & Wet Exc.	197 C.Y.	249 C.Y.
Conc. Cl "AA" (Seal)	44.73 C.Y.	67.10 C.Y.
Tr. Tim. Piling	1200 L.Ft.	1050 L.Ft.

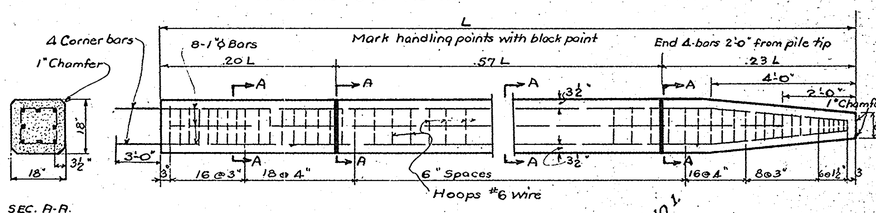
Anchor Bolts are detailed on Sheet No. 6

BENDING DETAILS



For Hook Details see Sheet No. 8

See Sheets Nos. 6 & 8 for Notes.



Note
Quantities for 35'-0" pile = 798 Lb Steel and 2.766 C.Y. Concrete. For quantities for lengths greater or less than 35 ft add or deduct 22.3 lbs of steel and 0.0833 C.Y. Concrete for each foot variation.

DETAIL OF 18" CONCRETE FOUNDATION PILES FOR END BENTS No. 1 & 2, AND PIERS A TO E & I TO M.
ALTERNATE "A" ONLY.

~~Note:- Footings on Pier F are to be raised. See 7B Special Provisions.~~

CONSTRUCTED AS CONTRACT NO 1

ALTERNATE "A" OR "B"

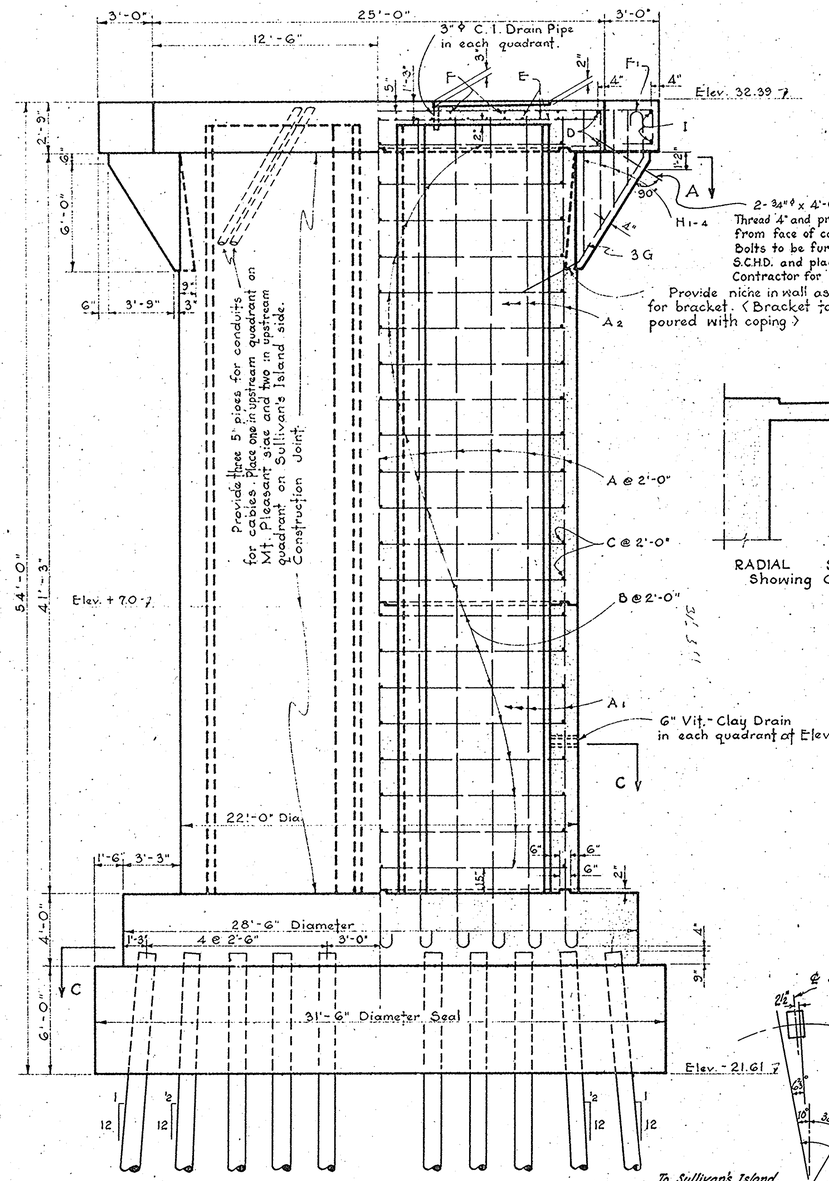
S. C. STATE HIGHWAY DEPARTMENT
COLUMBIA, S.C.

REST PIERS DETAILS FOR BRIDGE OVER INTRA-COASTAL WATERWAY AT COVE INLET

S C DOCKET NO 10.229 CHARLESTON COUNTY
S C ROUTE NO 703 NOVEMBER 1941.
SCALE ¼ INCH = 1 FT

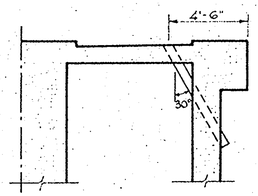
Dr & Tr by EWA 11-27-41 Checked by C.F.D. Pier H Revised by G.K.B. 3-23-42 Checked by EWA 3-24-42

FED ROAD DIST. NO	STATE	COUNTY	DOCKET NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
14	S.C.	CHARLESTON	10.229	703	22	24

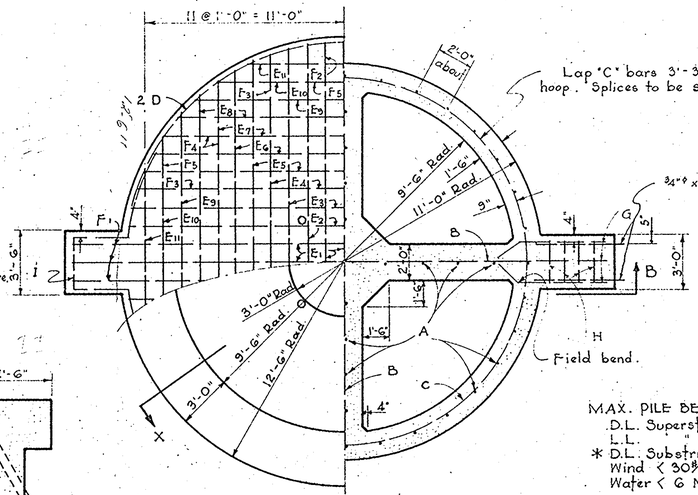


(Piling shown on Diameter)

HALF ELEVATION



RADIAL SECTION X
Showing Conduits



HALF PLAN

HALF SECTION A-A

℄ Roadway

MAX. PILE BEARING ON OUTSIDE PILE IN TONS

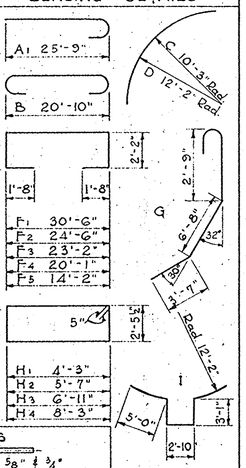
D.L. Superstructure	5.20
" L.L. "	1.34
* D.L. Substructure	10.10
Wind (30#/s.f. + 200#/s.f.)	5.37
Water (6 M.P.H.)	.44
	22.45

* Effect of buoyancy has been considered with water at elev. 0.0.

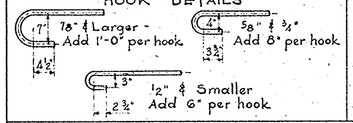
REINFORCING STEEL SCHEDULE

Mark	No	Size	Length	Det.
PA1	48	1" ϕ	26'-9"	B
PA2	48	1" ϕ	24'-0"	B
PB	42	⅞" ϕ	22'-10"	B
PC	63	⅞" ϕ	24'-9"	B
PD	4	⅞" ϕ	32'-0"	B
PE1	6	½" ϕ	24'-6"	S
PE2	4	½" ϕ	24'-1"	S
PE3	4	½" ϕ	23'-9"	S
PE4	4	½" ϕ	23'-2"	S
PE5	4	½" ϕ	22'-4"	S
PE6	4	½" ϕ	21'-4"	S
PE7	4	½" ϕ	20'-1"	S
PE8	4	½" ϕ	18'-7"	S
PE9	4	½" ϕ	16'-7"	S
PE10	4	½" ϕ	14'-2"	S
PE11	4	½" ϕ	10'-9"	S
PF1	3	⅞" ϕ	38'-2"	D
PF2	2	½" ϕ	32'-2"	D
PF3	4	½" ϕ	30'-10"	D
PF4	4	½" ϕ	27'-9"	D
PG	6	⅞" ϕ	14'-0"	D
PH1	2	¾" ϕ	14'-3"	D
PH2	2	¾" ϕ	16'-11"	D
PH3	2	¾" ϕ	19'-7"	D
P1	4	⅞" ϕ	19'-0"	D
PF5	4	½" ϕ	21'-10"	D
PH4	2	¾" ϕ	22'-3"	D

BENDING DETAILS

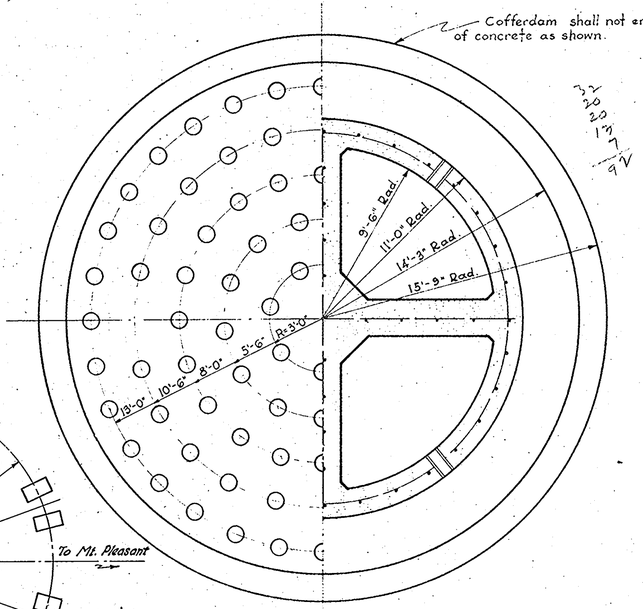


HOOK DETAILS

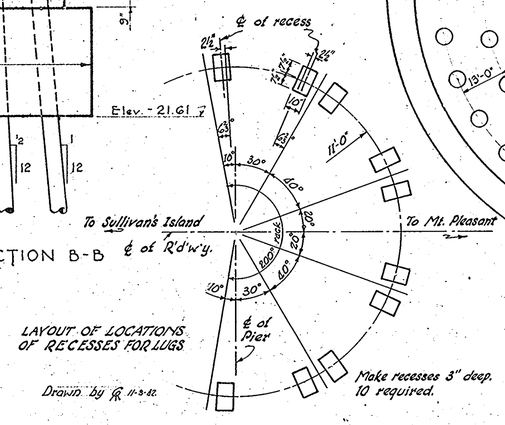


ESTIMATE OF QUANTITIES

CLASS "AA" CONCRETE	399.41	CU. YDS.
CLASS "AA" CONCRETE (SEAL)	157.12	CU. YDS.
REINFORCING STEEL	13,714	LBS.
CREOSOTED TIMBER PILING	3220	LIN. FT.
WET AND DRY EXCAVATION	335	CU. YDS.



SECTION C-C



LAYOUT OF LOCATIONS OF RECESSES FOR LUGS

Make recesses 3" deep. 10 required.

Notes:-

All concrete shall be Class "AA".
All reinforcing steel shall be deformed bars.
All exposed edges shall be chamfered ¾".
Drive piles to 20 Tons bearing.
No payment will be made for excavation or seal concrete outside neat line of foundation seal.

The Contractor for Contract No. 1 shall make any necessary changes in the pier caps to accomodate properly the superstructure. Quantities are to be adjusted accordingly.

Bearing areas under center pivot and track and rack are to be finished exactly level.

The Contractor will be required to construct recesses in pier top under the rack and track. The locations and dimensions of these recesses *are shown on this sheet*, and the cost of this work shall be included in the unit price bid for Class "AA" Concrete.

CONSTRUCTED AS CONTRACT NO. 1.

S.C. STATE HIGHWAY DEPARTMENT
COLUMBIA, S.C.

DETAILS OF PIVOT PIER "G"

FOR BRIDGE OVER

INTRA-COASTAL WATERWAY

AT COVE INLET

S.C. Docket No. 10.229 Charleston County
S.C. Route No. 703 December 1941.
Scale 1/4" = 1'-0"

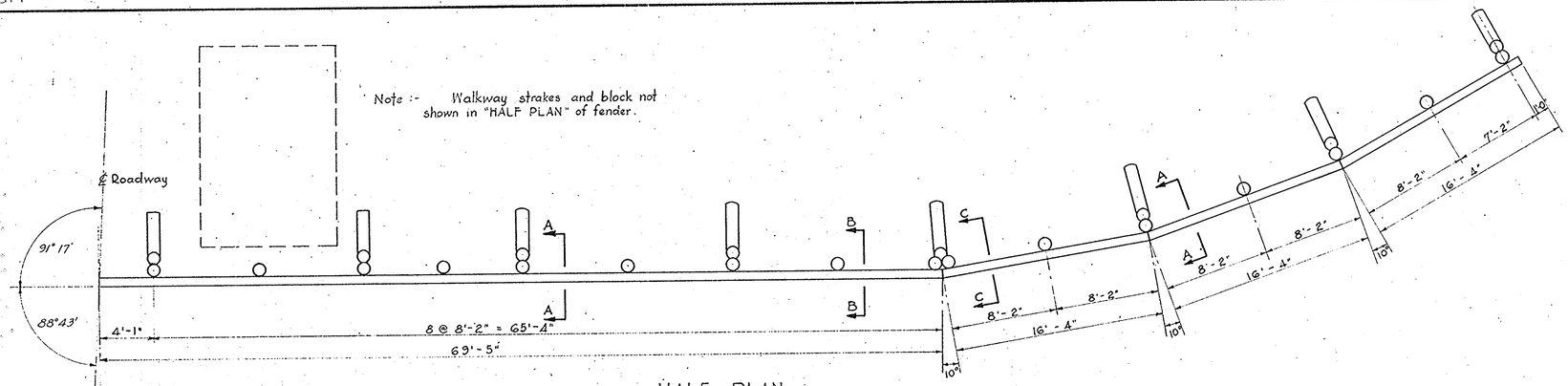
Pc + Tr. C.F.D. 12-4-41.
Ckd. by W.S.L. 12-20-41.

Revised by: C.P.D. 5-14-42.
Checked by: W.S.L. 5-14-42.

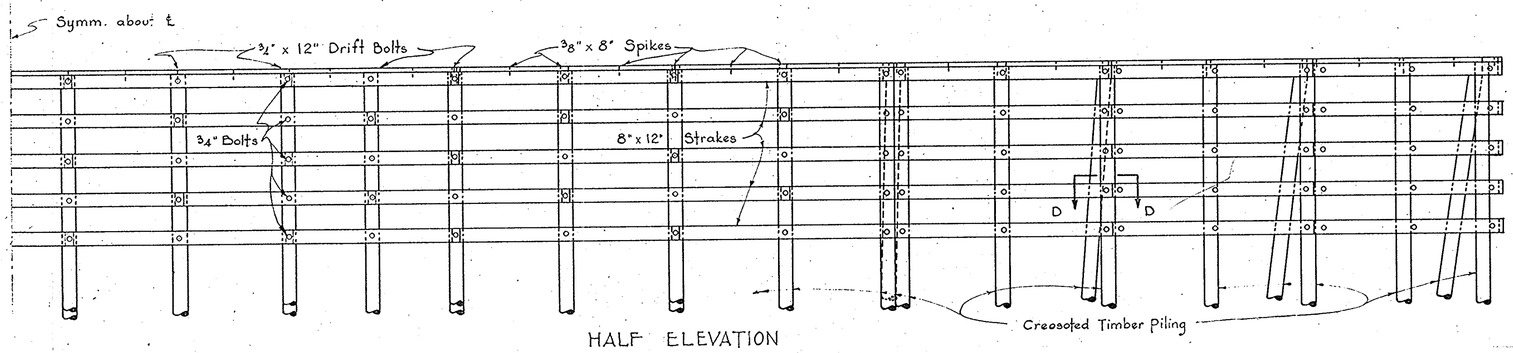
Drawn by R. 11-5-42.

FED. ROAD DIST. NO.	STATE	COUNTY	DOCKET NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
14	S.C.	CHARLESTON	10.229	703	23	24

Note :- Walkway strakes and block not shown in "HALF PLAN" of fender.



HALF PLAN



HALF ELEVATION

GENERAL NOTES :-

Creosoted timber blocking shall be placed between timber and piles wherever necessary to prevent bending of timber. Blocks shall be at least as wide as the timber and at least 2' long. All costs of necessary blocking shall be included in the unit price bid for treated structural timber.

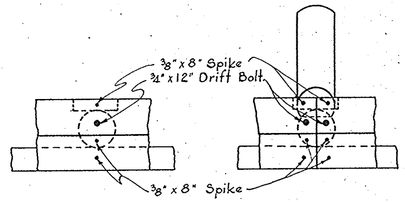
All bolts to be ¾" diameter, square heads and nuts, with ogee washers under heads and nuts, except as noted below.

The cost of furnishing and placing all hardware shall be included in the unit price bid for Creosoted Structural Timber.

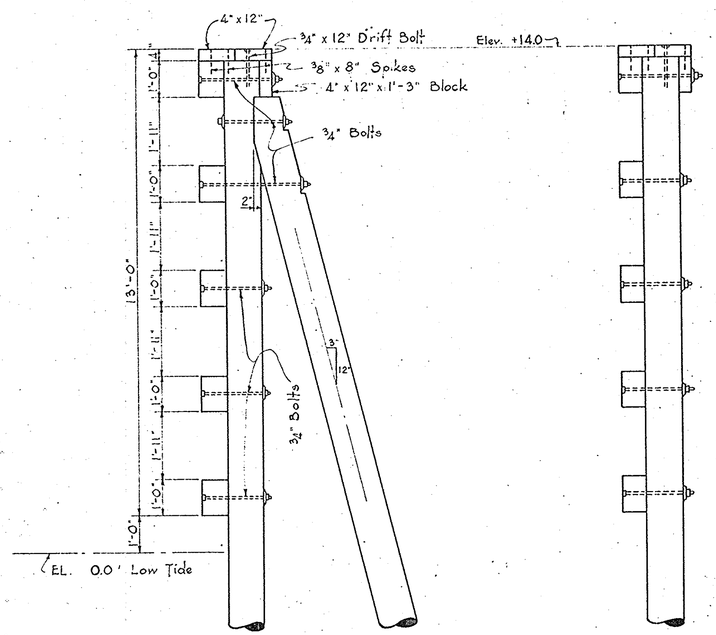
All hardware shall be heavily galvanized in accordance with A.S.T.M. Specifications for such material.

Drift bolts (no washers) shall be driven until top of head is flush with walkway strakes.

2 Cut washers instead of Ogee washer shall be used under heads of bolts fastening strakes to piles.

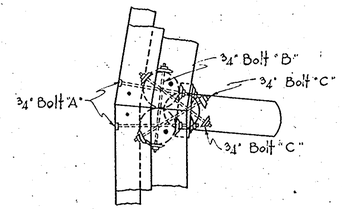


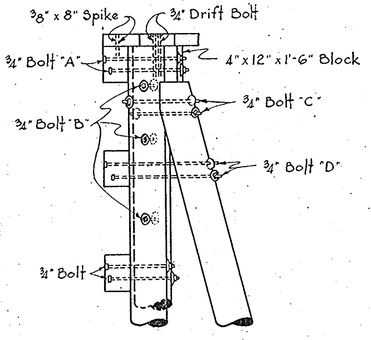
Part Plan - showing location of spikes and drift bolts.



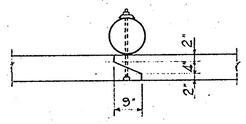
SECTION A-A

SECTION B-B

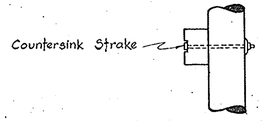




POST SECTION C-C

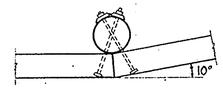


DETAIL AT STRAKE SPLICE



DETAIL FOR BOLTING STRAKE TO PILE

Hole to be thoroughly treated as required in Specifications for pile heads.



SECTION D-D

ESTIMATED QUANTITIES		
Total Treated Lumber	11.520	M.B.M.
Total Treated Piling	2350	LIN. FT.

CONSTRUCTED AS CONTRACT NO. 1

S.C. STATE HIGHWAY DEPARTMENT
COLUMBIA, S.C.

DETAIL of REST PIER FENDER

FOR BRIDGE OVER

INTRA-COASTAL WATERWAY

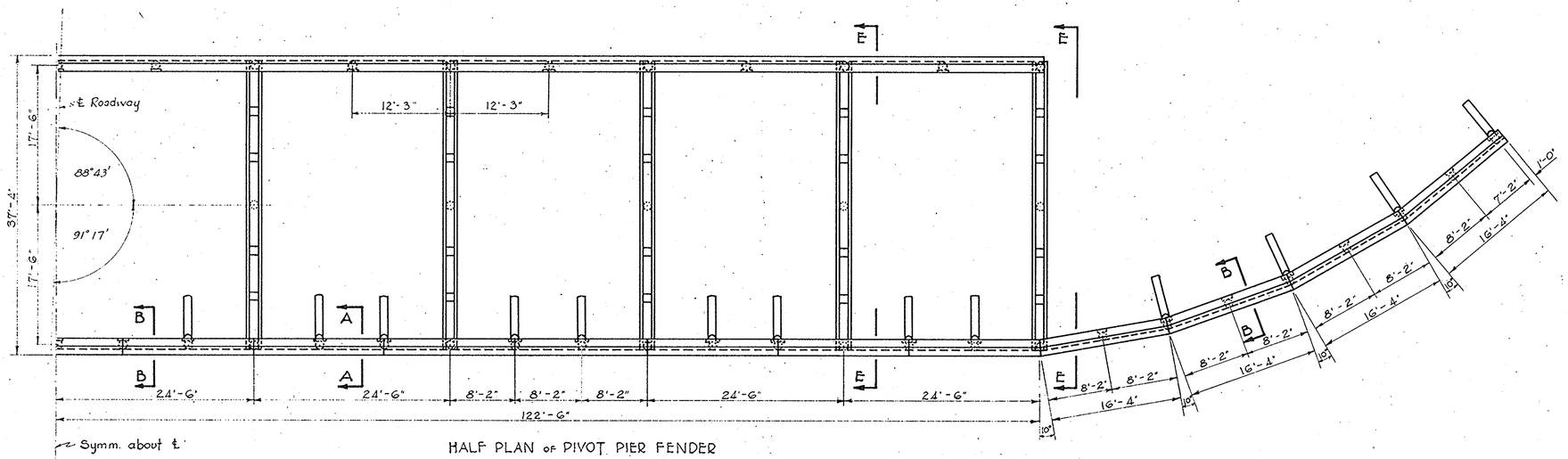
AT COVE INLET

S.C. Docket No. 10.229 — Charleston County
S.C. Route No. 703 — November 1941.

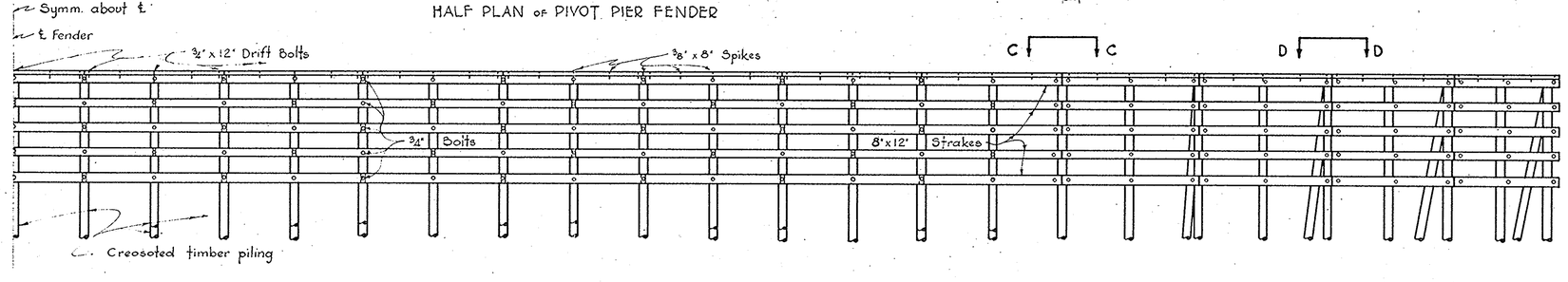
Scales 3/16" & 1/2" = 1'-0"

Dr. & Tr. by: C.F.D. 11-30-41.
Ckd by: E.M.Q. & W.R.R. 12-20-41.

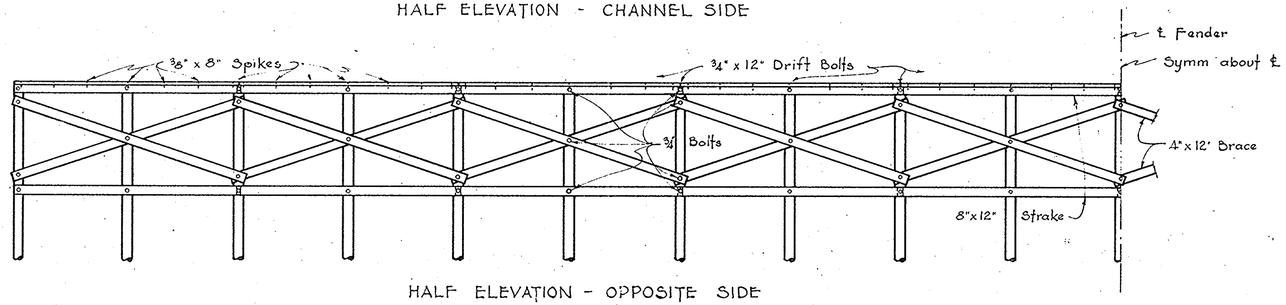
FED. ROAD DIST. NO.	STATE	COUNTY	DOCKET NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
14	S.C.	CHARLESTON	10.229	703	24	24



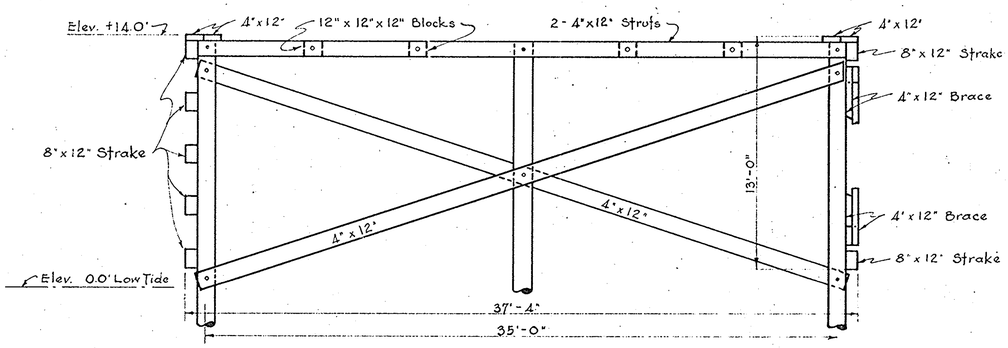
HALF PLAN of PIVOT PIER FENDER



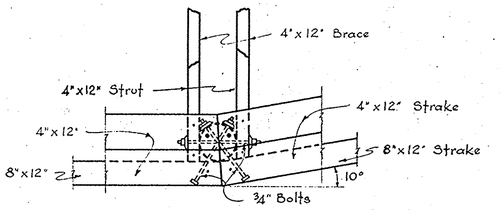
HALF ELEVATION - CHANNEL SIDE



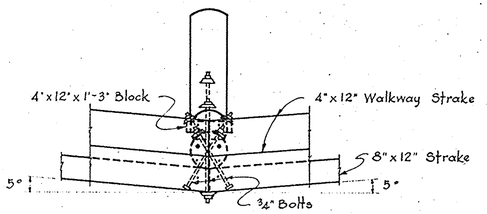
HALF ELEVATION - OPPOSITE SIDE



ELEVATION E-E



PLAN AT C-C



PLAN AT D-D

Section D-D same as Section A-A on sheet no. 9.

Notes:-
For general notes, see sheet no. 9.
For Section A-A and Section B-B, see sheet no. 9.
For detail at strake splice and method of bolting strakes to piles, see sheet no. 9.

ESTIMATED QUANTITIES		
Total Treated Lumber	32.736	M.B.M.
Total Treated Piling	5100	LIN. FT.
Required no. of Piles	104	

CONSTRUCTED AS CONTRACT NO. 1.

Drawn & Traced by: C.T.D. 11-26-41.
Checked by: J.M.L. 12-22-41.
Quantities by: C.T.D. Checked by: [illegible] 12-22-41.

S.C. STATE HIGHWAY DEPARTMENT
COLUMBIA, S.C.

DETAIL OF PIVOT PIER FENDER

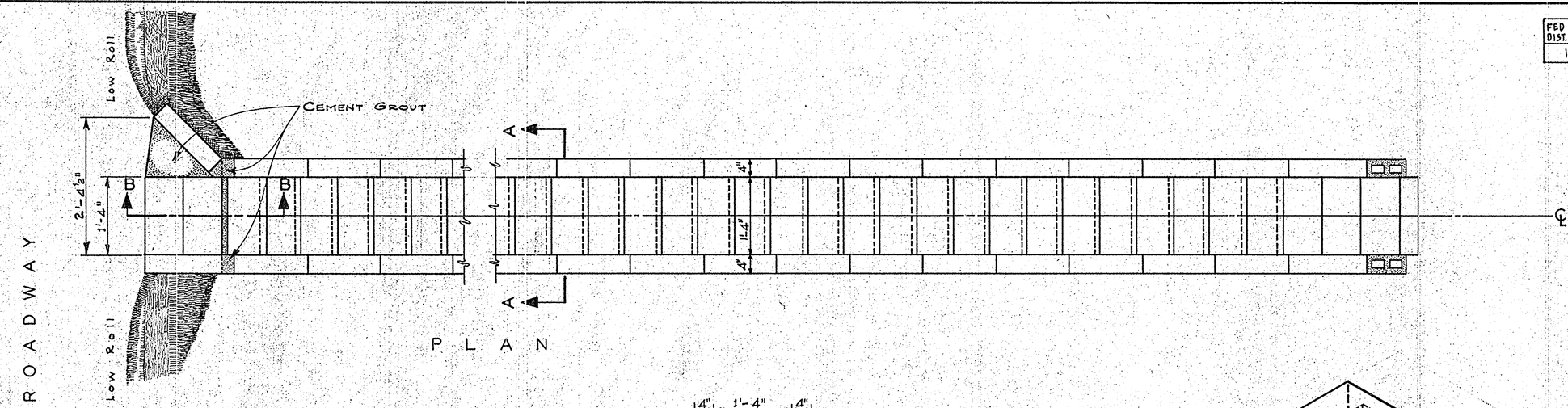
FOR BRIDGE OVER

INTRA-COASTAL WATERWAY

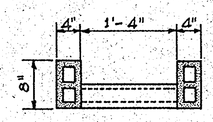
AT COVE INLET

S.C. Docket No. 10.229 Charleston County
S.C. Route No. 703 November 1941.
Scales ⅛", ¼", ½" = 1'-0"

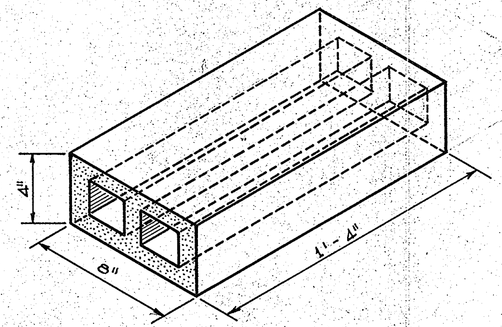
FED ROAD DIST. NO.	STATE	COUNTY	DOCKET NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
14					25	



PLAN



SECTION A-A



STANDARD CONCRETE BLOCK

Total Length "L" =

* Resident Engineer to vary this dimension to suit shoulder

ELEVATION

SECTION ON ℄ AT B-B

Scale 1" = 1Ft

NOTE: Necessary Concrete and extra blocks at end of drain will be paid for as 2 feet of slope drain at unit price bid per lin. ft. Except for the cement grout shown, blocks are to be laid without mortar in the joints.

S. C. STATE HIGHWAY DEPARTMENT
COLUMBIA

TYPICAL CONCRETE TILE SLOPE DRAINS

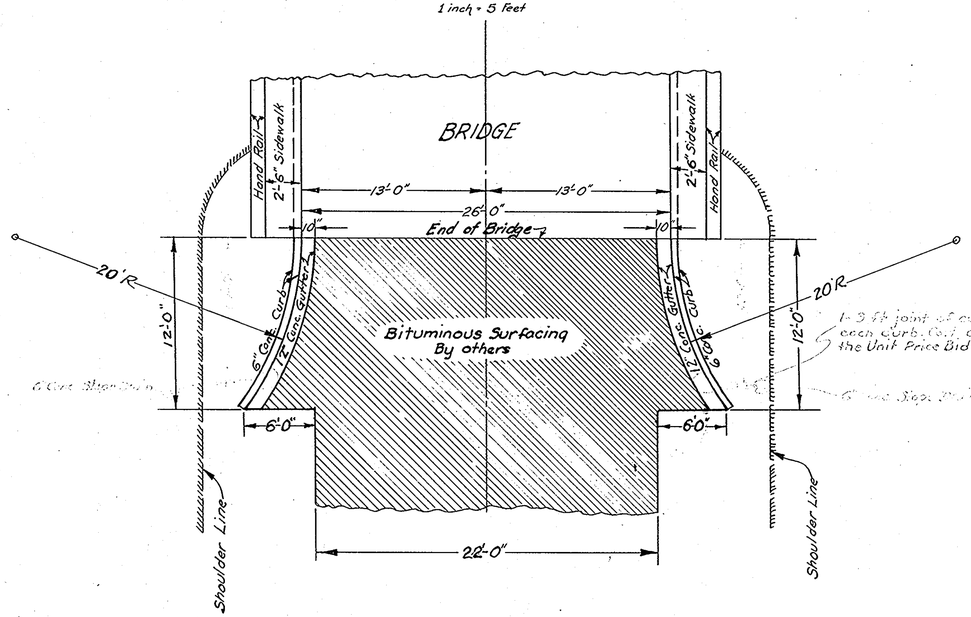
S C DOCKET NO. _____ _____ COUNTY
ROUTE NO. _____ DATE _____

Rev.			
QUANT.			
Tr.	W.R.T.		
Dr.	W.R.T.		

F.A.D. ROAD DIST. NO.	STATE	COUNTY	DOCKET NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
14	S.C.	Charleston	10.264	703	26	

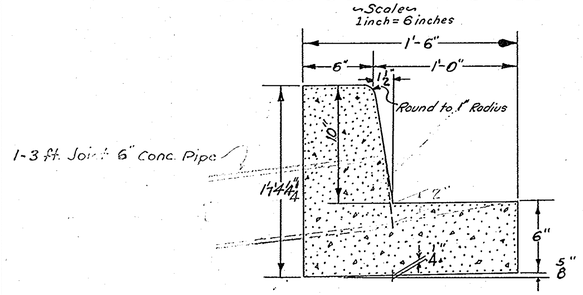
SKETCH
SHOWING
FLARE AT BRIDGE ENDS

Scale
1 inch = 5 feet



DETAIL
OF
CONC. CURB AND GUTTER

Scale
1 inch = 6 inches



CURB & GUTTER QUANTITIES - ONE END - ONE BRIDGE

Class "A" Concrete for one end of bridge = 1.16 C.Y.

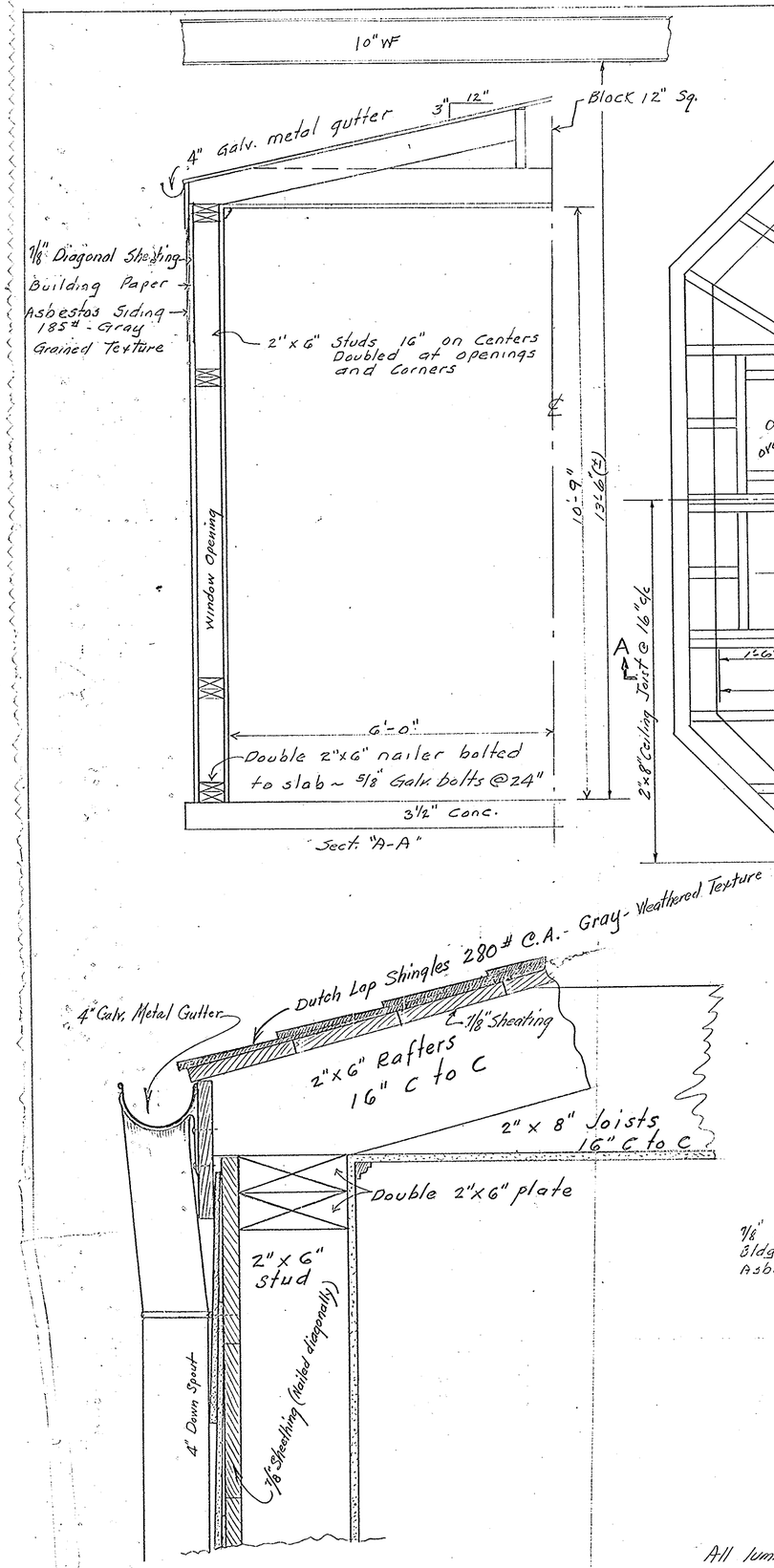
1-3 ft joint of concrete pipe to be set in each Curb. Cost of this pipe to be included in the Unit Price Bid for Class "A" Concrete.

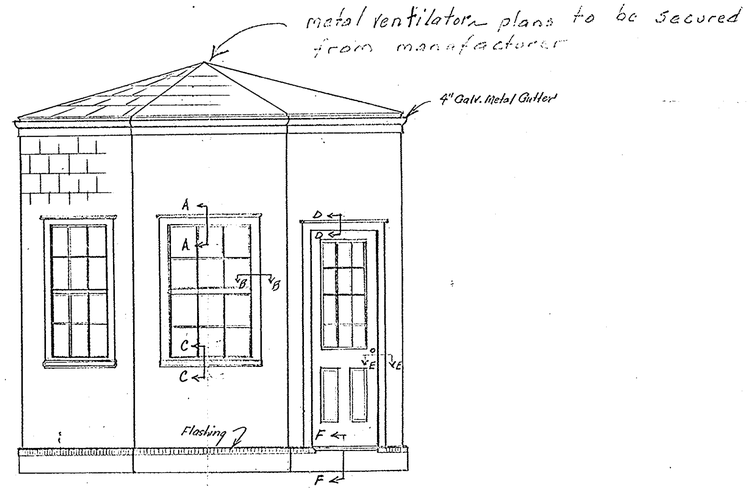
All costs of constructing the concrete curb and gutter at the ends of the bridge will be included in payment for the concrete involved at the Unit Price Bid for Class "A" Concrete.

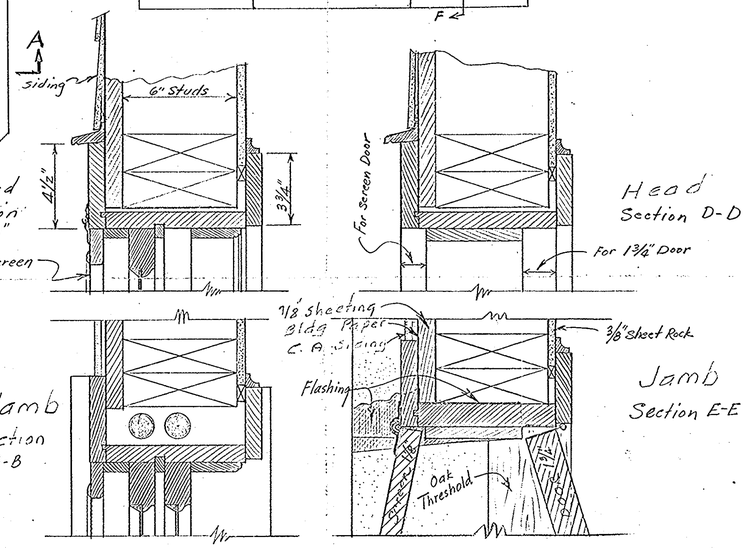
S. C. STATE HIGHWAY DEPARTMENT
COLUMBIA
DETAIL OF
CURB AND GUTTER FOR SLOPE
DRAINS AT ENDS OF BRIDGE

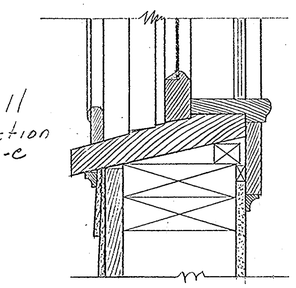
S. C. DOCKET NO. 10.264 CHARLESTON COUNTY

ROUTE NO. 703 DATE MAY 1945

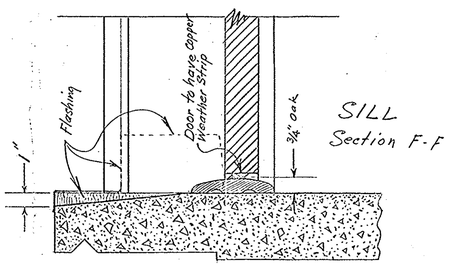








WINDOW
2'-7"X 4'-6"X 1 3/8" CHECK RAIL
Scale: 3"= 1'-0"



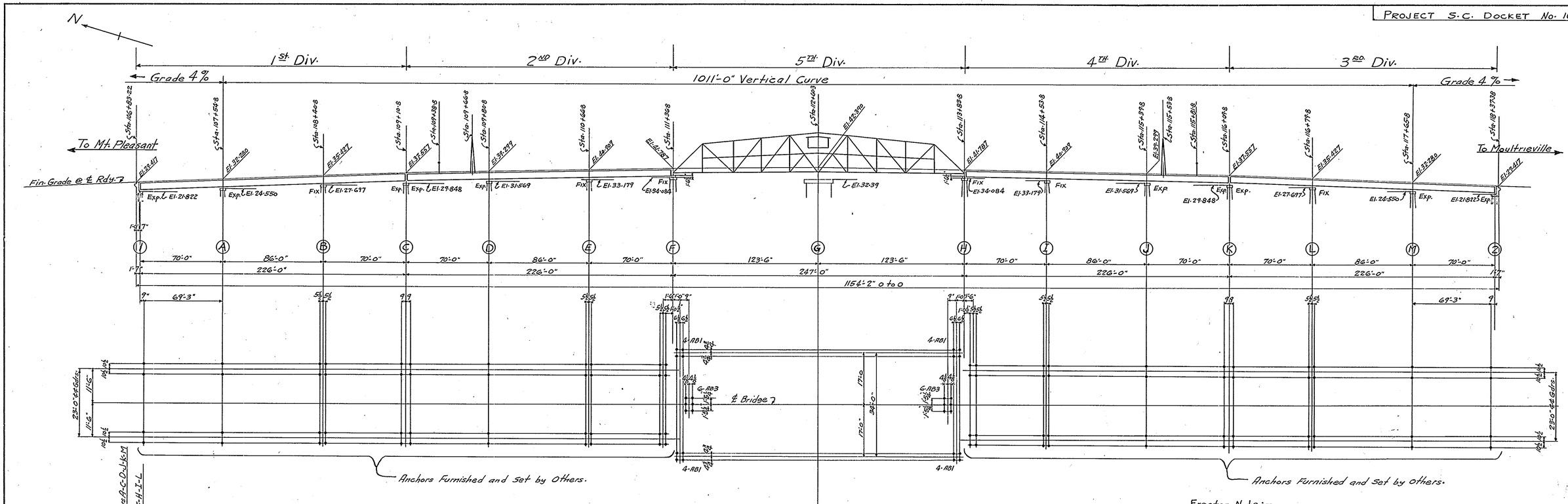
DOOR
6'-8"X 2'-8"X 1 3/4"
Scale: 3"=1'-0"

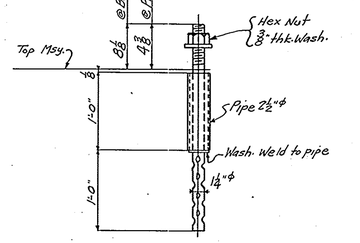
All lumber No. 1 Common D45.
Doors and Windows Longleaf Yellow Pine
2"x6" Braces between studs at same level as top and bottom of Window openings.
Note: Chimney to be Constructed as shown on sheet #13 of Highway Plans.

CONTROL HOUSE FOR SWING SPAN
COVE INLET BRIDGE
MEMEEKIN CONSTR CO.
Feb. 5, 1945
Docket 10.264

JCG
Rev.

PROJECT S.C. DOCKET No. 10.764

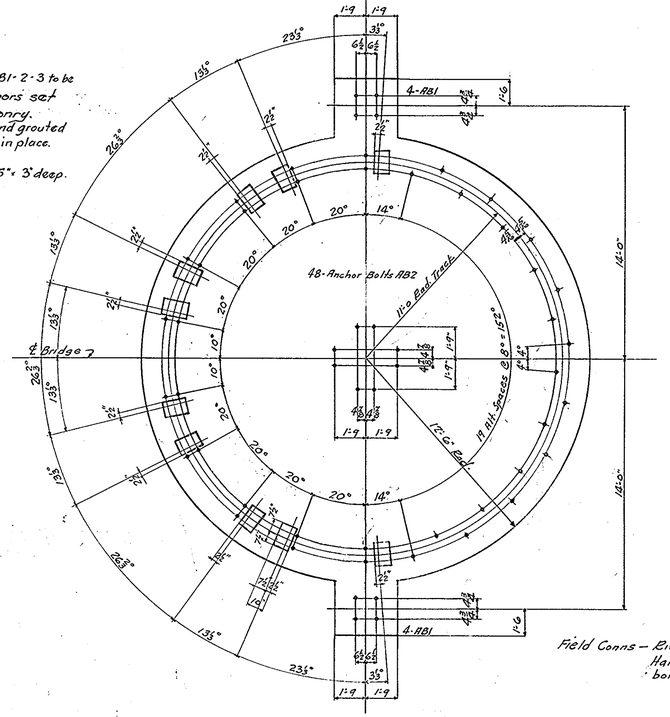




Detail of Anchors for Girder Spans Not Furnished by Va. Br. Co.

Note:-
Holes for Anchor Bolts AB1-2-3 to be Drilled 3"×1'-9" deep, and Anchors set abt. 1'-6" in the masonry.
Anchor Bolts to be set and grouted after Steel and Machinery is in place.

All recesses are 10"×15"× 3' deep.



Field Conns – Riveted except Int. Str. Conns, Hanger Struts and Exp. Joints bolted.

Erector Note:-
Before placing shoes in position thoroughly swab the bridge seat bearing area with red lead paint and place upon it three layers of 12 to 14 ounce duck, each layer being thoroughly swabbed on its top surface with red lead paint. Place the superstructure shoes in position while the paint is plastic. Red Lead and Duck for shoes and expansion joints not furnished by Va. Br. Co.

Shop Note:-
Camber required for all girders.

Special Notes:-
All holes for Continuous girder field Splices shall be subpunched ¾" small and reamed to size. Continuous girders shall be assembled in Shop, in cambered position, holes reamed and matchmarked while assembled.
Both ends of Stiffener angles over bearings shall be milled for full even bearing, other stiffener angles to be fitted tight enough to exclude water after painting.
Floor beam conns. and framed Stringer Conns. Shall be reamed to a metal templet 1" thick.

Paint Note:-
Surfaces to be riveted in contact either in the shop or field shall not be painted.

Note:-
Drains, Canvas for Shoes, Bolts or other hardware for wood framing, Electrical equipment, Beam Lok floor, Reinforcing Steel, Field Weld Rods, Downspouts, Gutters, Misel. Matl. for Control House, Hardware for Wood railing, Barriers, Gates or Warning Signals not furnished by Va. Br. Co.

☞ The dimensions on this plan must be strictly adhered to in all masonry, concrete and building construction or the steelwork will not fit. Report any error or misunderstanding at once.

GENERAL NOTES:

Material O.H. Struct. Steel unless noted
Specifications S.C. State Hwy. Dep't. 1929
Rivets ⅞" ϕ unless noted
Holes ⅞" ϕ " " "
Reaming See Detail Dwgs.
Shop Paint 1 ct. R.L. to per spec. See note.
Field Paint By others
Erection By others
Field Conn's. See Note
Inspection S.C. State Hwy. Dept.
Design " " " "
Material on Shop Bills

PRINTS
Sup't
Temp. Shop
Lay Out
Stk. Clerk
B. S. Shop
Spac. Dept.
Pipe Shop
Inspector
O. S. Insp.
Mch. Shop
Riv. Dpt.

CONTRACT V 4741

Details of Erection Plan and Anchor Bolt Setting Plan for four 226' Cont. Gdr. Spans and one 245' Swing Span
For Intra-Coastal Waterway at Cove Inlet
Location S.C. Route #703, Charleston Co., S.C.
Owner McMeekin Construction Co.

VIRGINIA BRIDGE COMPANY
ROANOKE, VIRGINIA

To be fabricated at Roanoke & Birmingham plant
Made by JCW Traced by ELF 8/9/44
In charge of Webber Checked by W.F.S 8-10-44
Revised Fld Ch'k'd by
Scale ..... In. = 1 Ft. Sheet No. E1 of E11

PROJECT S.C. DOCKET No. 10-264

PLAN

ELEVATION Div. I

Bent 1

Section @ "C"

Section AA (Typical Section @ Ends of Gdrs)

Section BB (Typical Intermediate Section)

Customer Note:— Please check

Sketch showing Connection of Drains to Girders. Drains and Supports not furnished by Va. Br. Co.

Section DD

Blocking Diagram for Girders G1-3-5-7-9.

Special Notes:—

All holes for continuous girder field splices shall be subpunched ¼" small and reamed to size.

Continuous girders shall be assembled in Shop, in cambered position, holes reamed and matchmarked while assembled.

Both ends of stiffener angles over bearings shall be milled for full even bearing, other stiffener angles to be fitted tight enough to exclude water after painting.

Floor beam conns. and framed Stringer conns. to be reamed to a metal templet 1" thick.

Paint Note:—

Surfaces to be riveted in contact either in the Shop or field shall not be painted.

Field Conns. Riveted except Int. Str. Conns. Hanger struts and Exp. Joints Bolted.

GENERAL NOTES:

Material O.H. Struct. Steel Unless Noted	PRINTS
Specifications S.C. State Hwy. Dept. 1939	Sup't
Rivets ⅞" unless noted	Temp. Shop
Holes ⅞" " "	Lay Out
Reaming See Detail Dwgs.	Stk. Clerk
Shop Paint 1st P.L. to per spec. See note.	B. S. Shop
Field Paint By others	Spac. Dept.
Erection By others	Pipe Shop
Field Conn's See Note	Inspector
Inspection S.C. State Hwy. Dept.	O. S. Insp.
Design " " " "	Mch. Shop
	Riv. Dpt.

Material on Shop Bills

Note:— Drains, Canvas for Shoes and Exp. Joints, Electrical Equipment, Reinforcing Steel, Hardware for Wood Railing, Barriers, Gates or Warning Signals not furnished by Va. Br. Co.

CONTRACT V 4741

Details of Erection Plan and Blocking Diagram For Four 226' Continuous Girder Spans

For Intra-Coastal Waterway at Cove Inlet

Location S.C. Route #703, Charleston Co., S.C.

Owner McMeekin Construction Co.

VIRGINIA BRIDGE COMPANY

ROANOKE, VIRGINIA

To be fabricated at Birmingham plant

Made by J.C.W. Traced by B.L.F. 1/24/44

In charge of Webber Checked by W.H.S. 2-17-44

Revised F'ld Ch'k'd by

Scale in. = 1 Ft. Sheet No. E2 of

PLAN

ELEVATION Div. 2

Section DD

Section EE

Sect @ F

Section AA

Section BB

Section GG

Plan of Barrier Walkway @ Pier "E"

Blocking Diagram for Girders G2-4-6-8-10

Special Notes:—

All holes for continuous girder field splices shall be subpunched ¼" small and reamed to size.

Continuous girders shall be assembled in shop, in cambered position, holes reamed and matchmarked while assembled.

Both ends of stiffener angles over bearings shall be milled for full even bearing, other stiffener angles to be fitted tight enough to exclude water after painting.

Floor beam conns. and framed stringers conns. to be reamed to a metal templet ⅛" thick.

Paint Note:—

Surfaces to be riveted in contact either in the shop or field shall not be painted.

GENERAL NOTES:

Material O.H. Struct. Steel Unless Noted.

Specifications S.C. State Hwy. Dep't 1932

Rivets ⅞" unless noted

Holes ⅞" " "

Reaming See Detail Dwgs.

Shop Paint 1st Q. Lt. O. per spec. See note.

Field Paint By others

Erection By others

Field Conn's. Riveted & Bolted (See note on dwg. dep)

Inspection S.C. State Hwy. Dep't.

Design " " " "

Material on Shop Bills

PRINTS: Sup't; Temp. Shop; Lay Out; Stk. Clerk; B. S. Shop; Spac. Dept.; Pipe Shop; Inspector; O. S. Insp.; Mch. Shop; Riv. Dpt.

CONTRACT V 4741

Details of Erection Plan and Blocking Diagram For Four 226' Continuous Girder Spans

For Intra-Coastal Waterway at Cove Inlet

Location S.C. Route No. 703, Charleston Co. S.C.

Owner McMeekin Construction Co.

VIRGINIA BRIDGE COMPANY

ROANOKE, VIRGINIA

To be fabricated at Birmingham plant

Made by J.C.M. Traced by E.L.F.

In charge of Webber Checked by W.H.S. 2-17-44

Revised Fld Ch'k'd by

Scale ..in. = 1 Ft. Sheet No. E3 of

PLAN

ELEVATION Div. 4

Section EE (Shown on Dwg. E3)

Spot weld pin plate to Girder 1" each side after Girder is set in final position.

℄ Pier "H" — El. 34.084 — 4-F2, 2-PP3, 2-PT, 4-PN5, 8-WG, 8-W7, 4-8x1 1/8" ø 8⅞ Hex H.N., 2-FS1, 2-BG, 2-BT — Fix

℄ Pier "I" — El. 33.1797 — 4-F3, 2-PP4, 2-PT, 4-PN5, 8-B5, 8-W7, 2-FS1 — Fix

℄ Pier "J" — El. 31.5697 — 4-F3, 2-PP4, 2-PT, 4-PN5, 8-B5, 8-W7, 2-ES1, 2-BP1 — Exp.

℄ Pier "K" — El. 29.848 — 4-F1, 2-PP2, 2-PT, 4-PN5, 8-WG, 2-ES1, 2-BP1, 4-Bolts 1"ø 8⅞ Hex H.N., 4-.. 1"ø 9" - .. .. — Exp.

70'-0" | 86'-0" | 70'-0" | 226'-0"

Sta. 113+83.8 — Sta. 114+53.8 — Sta. 115+39.8 — Sta. 116+09.8

4" Cont. Field Weld EJ6 to EJ4.

4" Cont. Field Weld EJ6 to EJ4.

23'-0" ℄ of Girders. 4'-9" | 4'-6" | 4'-6" | 4'-9"

Section GG.

℄ Pier 7 — 124'-7½" Rad. — 9¼" @ ℄ Roadway — EJ7 — Radial Line — W.P. — ℄ Bk. of Batt. Flg. 18 — 1'-10" — 6'-2⅜" to FG @ ℄ Rdy.

Plan of Barrier Walkway @ Pier "I"

℄ Bridge — ℄ Pier "I" — 7'-6" — 4'-6" — 2'-1½" — 4'-10" — 14'-6" — 2'-3" — W1, W2, W3, W4, W5, W6, W7, W8 — ℄ E. Walkway and Manhole Frame — 1-Exp. Bolt 1"ø 7" lg., 1-PS Pipe-GII, 1-Wash. W8 — 4-Exp. Bolts ⅞"ø 4", 4-Wash.. W8 — 11⅞" — 1'-1" — 1'-9" — 2'-9" — M1½ — R1½ — R2 — HZ — Field weld railings to Hangers — Top Pier El 33.17 — Spot weld Nuts each end of Hanger Rods to Plate.

Section AA

Section BB

Creosoted Lumber 11⅞"x 2⅝" (Not furnished by Va. Br. Co.) — 2'-0" — 2'-1½" — 2'-2" — 2½" — ½" Bolts (Not furnished by Va. Br. Co.)

½" Bolts heads up. to be removed after concrete has hardened. — 2'-2" — EJ4 — Radial Line — W.P. — ℄ Bk. Batt. Flg. 18 — 6'-2⅜" to FG @ ℄ Rdy. — ℄ Pier "K"

Section DD

4'-2 5/16"

1/16" | 2 25/32" | 3 25/32" | 4 25/32" | 5 1/16" | 5 5/8" | 6 1/16" | 6 1/4" | 6 3/32" | 5 27/32" | 5 3/32" | 4 5/32" | 3 5/32" | 2 27/32" | 12/32"

12'-6" | 4 @ 14'-0" = 56'-0" | 6 @ 14'-4" = 86'-0" | 4 @ 14'-0" = 56'-0" | 13'-3"

68'-6" ℄ ℄ Brgs. | 86'-0" ℄ ℄ Brgs. | 69'-3" ℄ ℄ Brgs.

Blocking Diagram for Girders G2-4-6-8-10.

Special Notes:—

All holes for continuous girder field splices shall be subpunched ¼" small and reamed to size.

Continuous girders shall be assembled in Shop, in cambered position, holes reamed and matchmarked while assembled.

Both ends of stiffener angles over bearings shall be milled for full even bearing, other stiffener angles to be fitted tight enough to exclude water after painting.

Floor beam conns. and framed Stringers conns. to be reamed to a metal templet 1" thick.

Paint Note:—

Surfaces to be riveted in contact either in the Shop or field shall not be painted.

GENERAL NOTES:

Material Q-H. Struct. Steel unless Noted

Specifications S.C. State Hwy. Dept. 1939

Rivets ⅞" unless noted

Holes ⅞" " "

Reaming See Detail Dwgs.

Shop Paint 1 Coat R.I.T. per spec. See note.

Field Paint By others

Erection By others

Field Conn's. Riveted & Bolted (See note 2, Dwg. E2)

Inspection S.C. State Hwy. Dept.

Design " " " "

Material on Shop Bills

PRINTS: Sup't | Temp. Shop | Lay Out | Stk. Clerk | B. S. Shop | Spac. Dept. | Pipe Shop | Inspector | O. S. Insp. | Mch. Shop | Riv. Dpt.

CONTRACT V 4741

Details of Erection Plan and Blocking Diagram For Four 226' Continuous Girder Spans

For Intra-Coastal Waterway at Cove Inlet

Location S.C. Route #703 Charleston Co. S.C.

Owner McMaekin Construction Co.

VIRGINIA BRIDGE COMPANY

ROANOKE, VIRGINIA

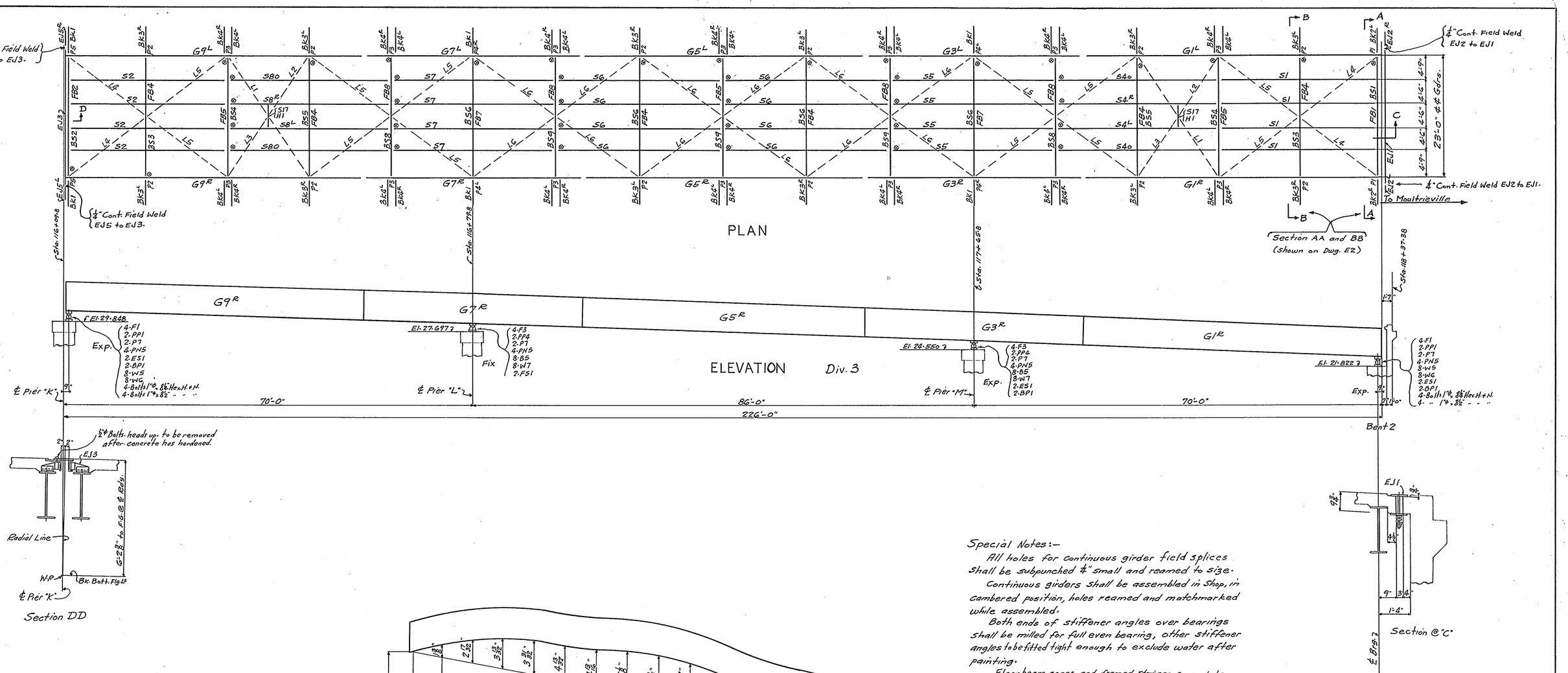
To be fabricated at Birmingham plant

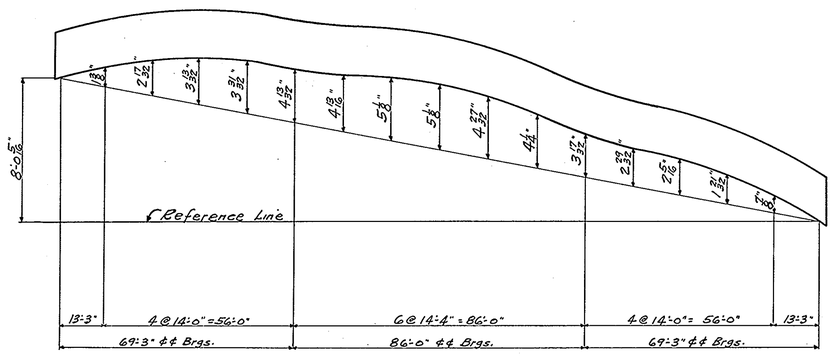
Made by J.C.W. Traced by B.L.F.

In charge of Webber Checked by W.H.S. 2-17-44

Revised F'ld Ch'k'd by

Scale ..... In. = 1 Ft. Sheet No. E4 of .....





Blocking Diagram for Girders G1-3-5-7-9.

Special Notes:-

All holes for continuous girder field splices shall be subpunched ¼" small and reamed to size.

Continuous girders shall be assembled in shop, in cambered position, holes reamed and matchmarked while assembled.

Both ends of stiffener angles over bearings shall be milled for full even bearing, other stiffener angles to be fitted tight enough to exclude water after painting.

Floor beam conns. and framed stringer conns. to be reamed to a metal templet 1" thick.

Paint Note:-

Surfaces to be riveted in contact either in the shop or field shall not be painted.

GENERAL NOTES:

Material Carb. Struct. Steel Unless Noted
Specifications S.C. State Hwy. Dep't 1937
Rivets ⅞"ø unless noted
Holes ⅞"ø " "
Reaming See Detail Dwgs.
Shop Paint 1 ct. R.L.10 per spec. See note
Field Paint By others
Erection By others
Field Conn's Riveted & Bolted (See note Dwg. E2)
Inspection S.C. State Hwy. Dep't
Design " " " " "

PRINTS: Sup't; Temp. Shop; Lay Out; Stk. Clerk; B. S. Shop; Spac. Dept.; Pipe Shop; Inspector; O. S. Insp.; Mch. Shop; Riv. Dpt.

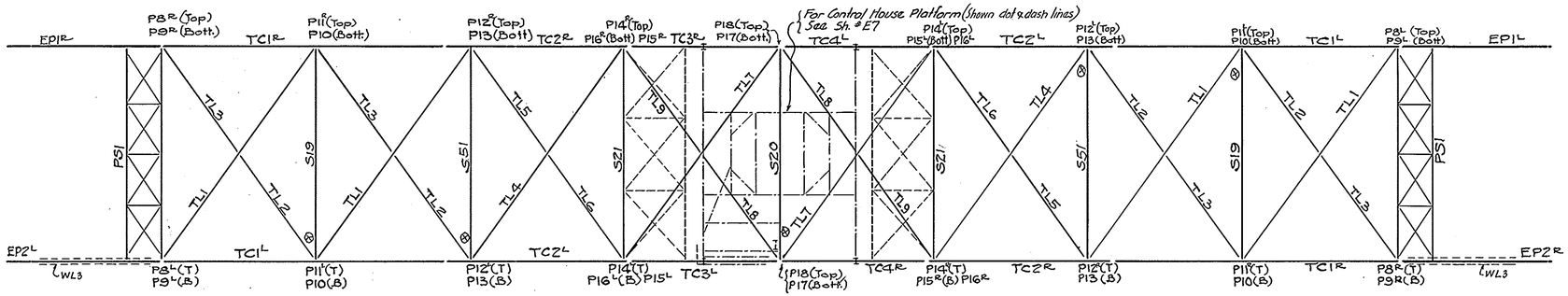
Material on Shop Bills

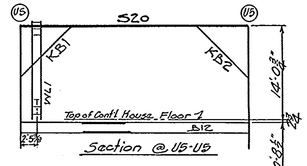
CONTRACT V 4741

Details of Erection Plan and Blocking Diagram For Four 226' Continuous Girder Spans
For Intra-Coastal Waterway at Cove Inlet
Location S.C. Route #703 Charleston Co., S.C.
Owner McMeekin Construction Co.

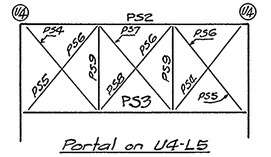
VIRGINIA BRIDGE COMPANY
ROANOKE, VIRGINIA

To be fabricated at Birmingham plant
Made by J.C.W. Traced by R.L.F.
In charge of Webber Checked by W.H.S. 2-17-44
Revised F'ld Ch'k'd by
Scale in. = 1 Ft. Sheet No. E5 of

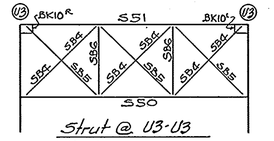




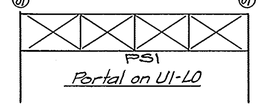
Section @ U5-U6



Portal on U4-L5



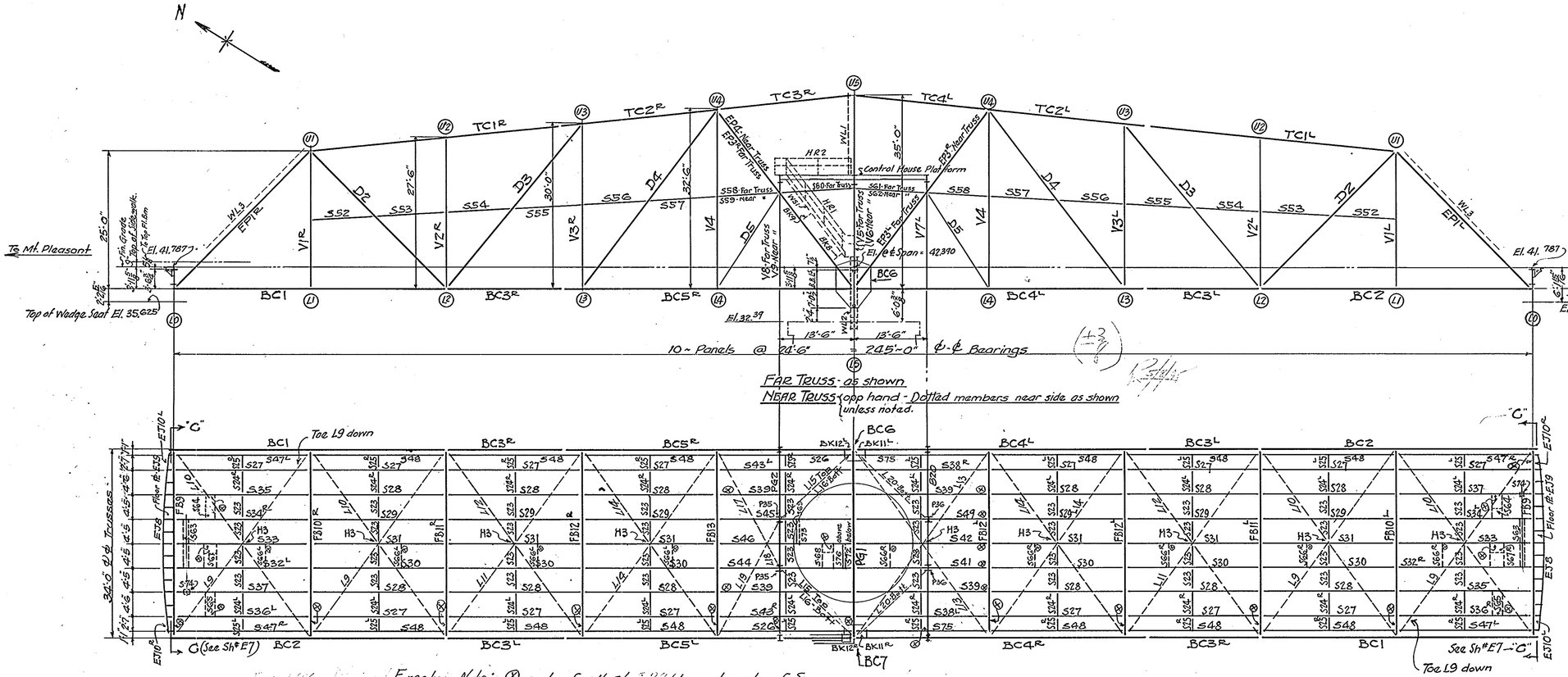
Strut @ U3-U3
Looking towards end of Bridge from ℄

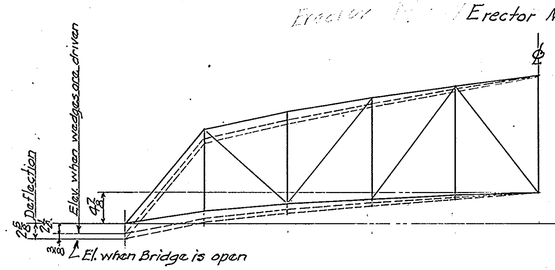


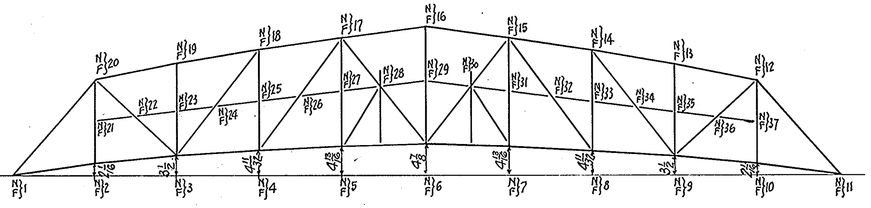
Portal on U1-L0



Strut @ U2-U2
Looking towards end of bridge from ℄







MATCH-MARKING & CAMBER DIAGRAM
Fabricated position of Truss members as shown.

GENERAL NOTES:

Material
Specifications
Rivets
Holes
Reaming — See det. Dwgs.
Shop Paint
Field Paint
Erection
Field Conn's.
Inspection
Design

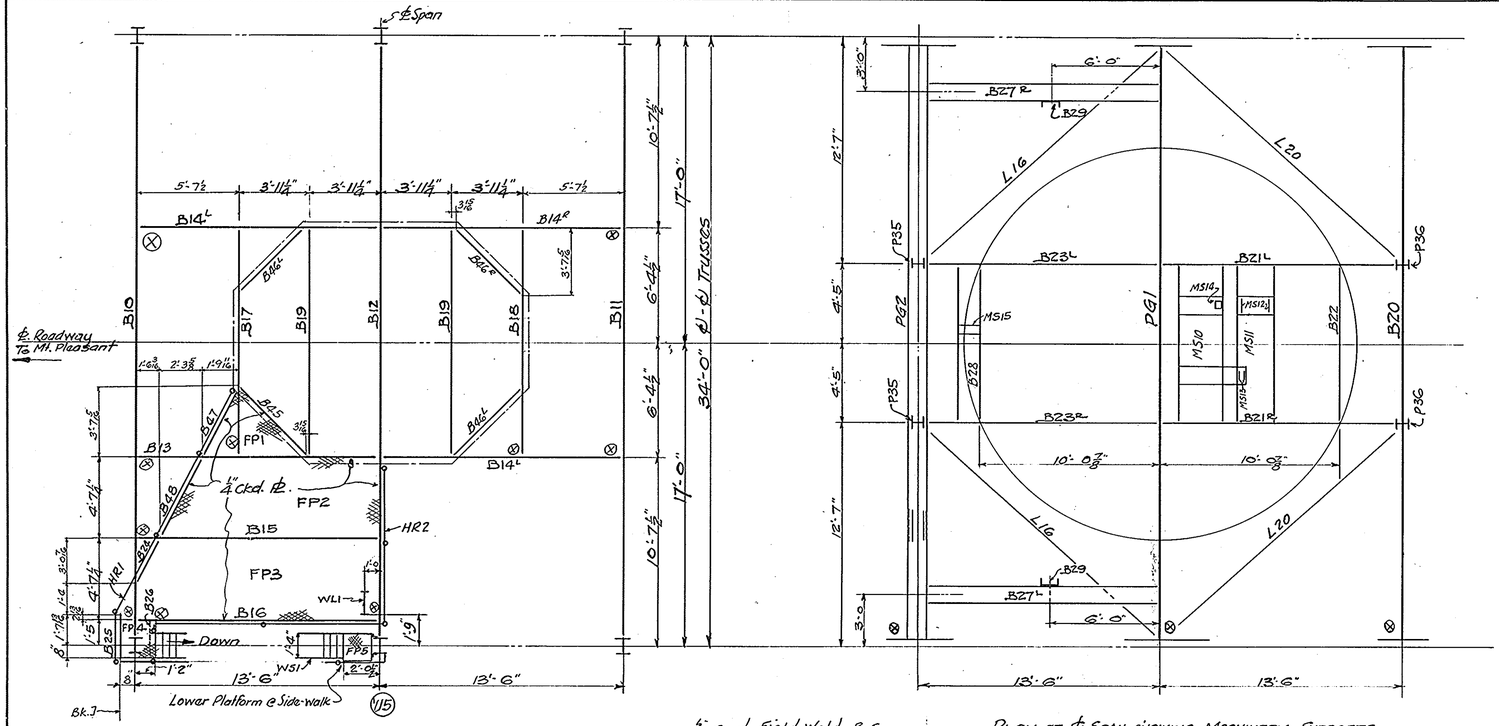
Material on Shop Bills

CONTRACT V-4741

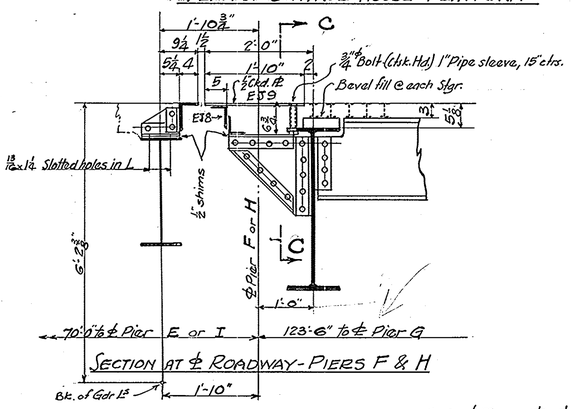
Details of ERECTION DIAGRAM
245 Ft SWING SPAN
For INTER-COASTEL WATERWAY AT COVE INLET
Location S.C. ROUTE 703 CHARLESTON CO., S.C.
Owner McMEEKIN CONSTRUCTION CO.

VIRGINIA BRIDGE COMPANY
ROANOKE, VIRGINIA

To be fabricated at Bham & Roanoke plant
Made by B.W. 2-11-44 Traced by
In charge of Webber Checked by W.H.S. 3-21-44
Revised Fld Ch'k'd by
Scale in. = 1 Ft. Sheet No. E6 of

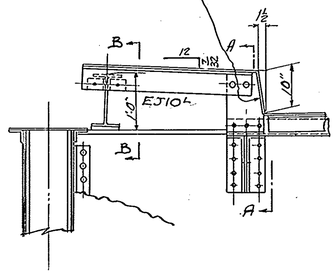


PLAN AT ℄ SPAN SHOWING MACHINERY SUPPORTS.

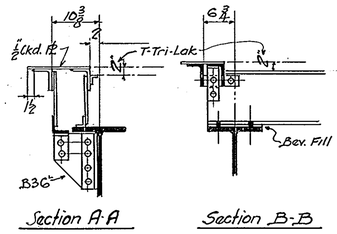


PLAN OF CONTROL HOUSE PLATFORM

SECTION AT ℄ ROADWAY - PIERS F & H

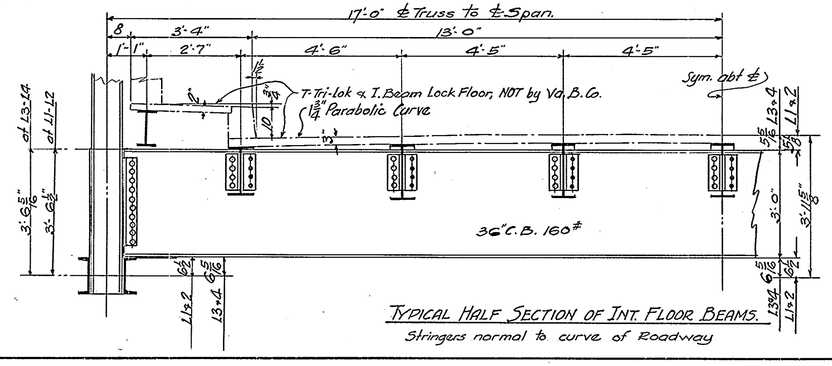


VIEW AT END OF WALKWAY

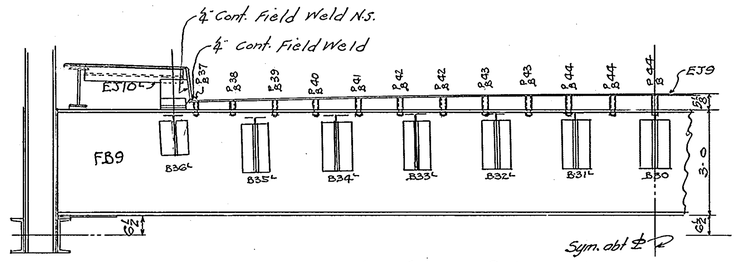


Section A-A

Section B-B



TYPICAL HALF SECTION OF INT. FLOOR BEAMS.
Stringers normal to curve of Roadway



HALF SECTION C-C End FL. Beams

GENERAL NOTES:

Material
Specifications — Spec. dated Jan 1944
Rivets
Holes
Reaming
Shop Paint
Field Paint
Erection
Field Conn's.
Inspection
Design

Material on Shop Bills

CONTRACT V-4741

Details of ERECTION DIAGRAM

245 Ft. SWING SPAN

For INTERCOSTAL WATERWAY AT COVE INLET

Location S.C. ROUTE 703, CHARLESTON CO., S.C.

Owner McMEEKIN CONSTRUCTION CO.

VIRGINIA BRIDGE COMPANY

ROANOKE, VIRGINIA

To be fabricated at B'ham & Roanoke plant

Made by B.W. 2-10-44 Traced by

In charge of Webber Checked by W.H.S. 3-21-44

Revised Fld Ck'd by

Scale in. = 1 Ft. Sheet No. E7 of E7