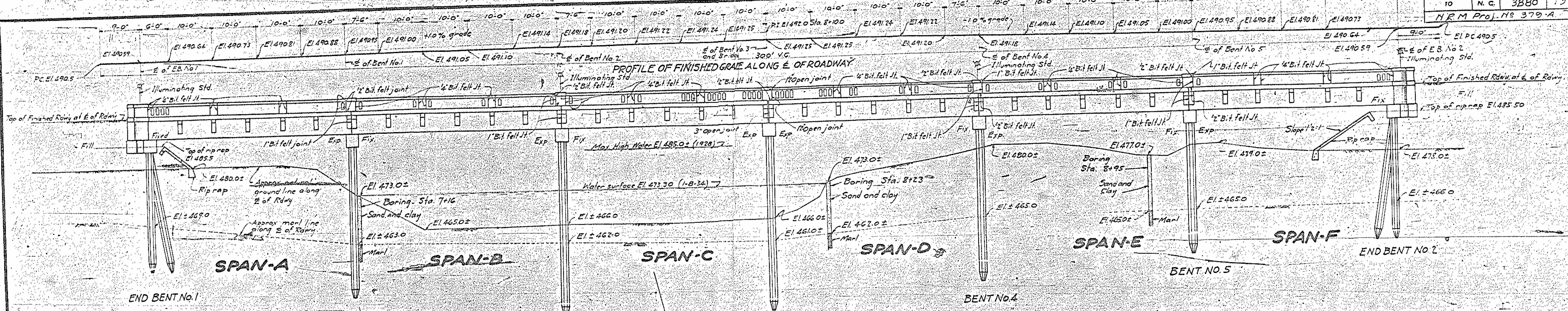
FED. ROAD DIST. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
10	N. C.	3880	13	

N R M Proj. No. 379-A

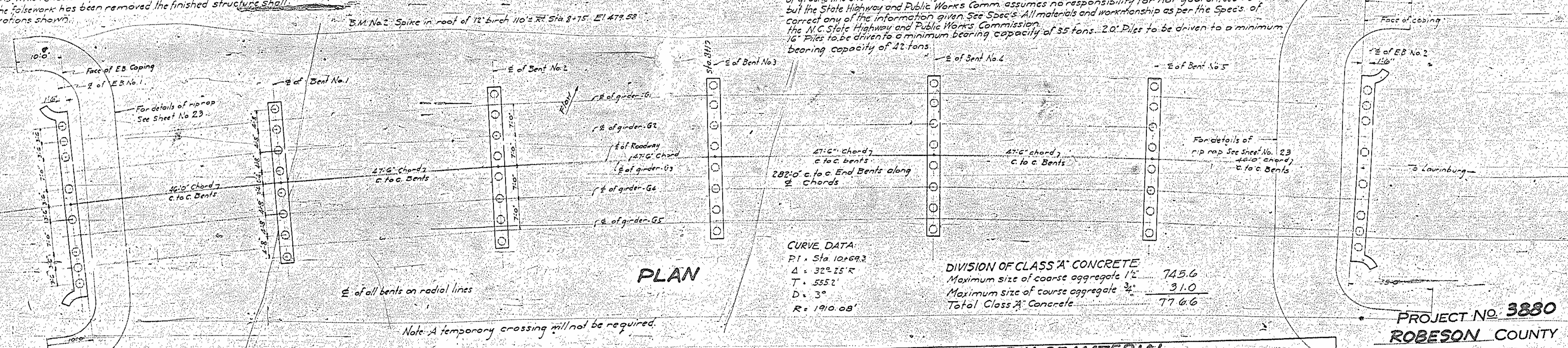


ELEVATION

NOTE:
This bridge to be built on a vertical and horizontal curve and superelevated as shown on plans. The handrails, roadway and sidewalk slabs and curbs shall conform to the vertical and horizontal curves. The girders shall conform to the vertical curve. No allowance has been made for the settlement of individual spans which should be provided for in addition to the elevations given. After the falsework has been removed the finished structure shall have the elevations shown.

GENERAL NOTE:
Class "A" Concrete to be used throughout. Maximum size of coarse aggregate to be 1½" except in handrails above top of curbs. Max. size of coarse aggregate in handrails to be ¾". No construction joints will be permitted except as shown on plans. All corners to be chamfered as shown on plans. All reinforcing steel to be deformed bars. No splices of reinforcement shall be permitted except as shown on plans. The foundation data and all elevations of ground line and water surfaces given are believed to be correct and are given for the convenience of bidders, but the State Highway and Public Works Comm. assumes no responsibility for nor guarantees as correct any of the information given. See Spec's. All materials and workmanship as per the Spec's. of the N.C. State Highway and Public Works Commission. 16" Piles to be driven to a minimum bearing capacity of 35 tons. 20" Piles to be driven to a minimum bearing capacity of 42 tons.

B.M. No. 2 Spike in root of 12" birch 110' Rt. Sta. 8+75 El. 479.58



PLAN

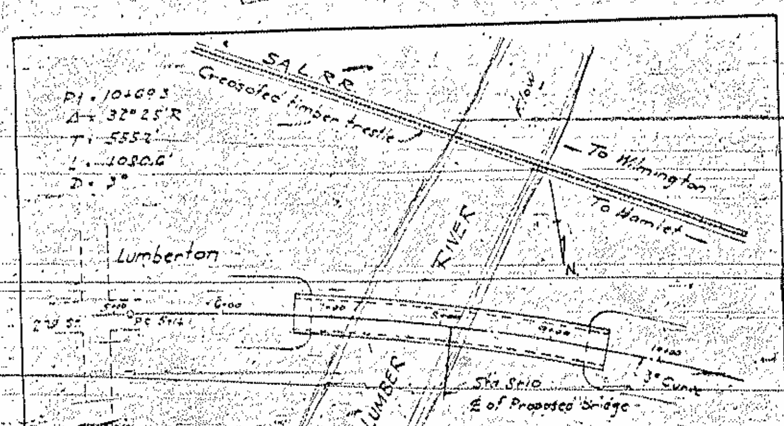
CURVE DATA:
P.I. = Sta. 10+69.3
Δ = 32°25'R
T. = 555.2'
D. = 3°
R = 1910.08'

DIVISION OF CLASS "A" CONCRETE:
Maximum size of coarse aggregate 1½" ... 745.6
Maximum size of course aggregate ¾" ... 31.0
Total Class "A" Concrete ... 776.6

Note: A temporary crossing will not be required.

PROJECT No. 3880
ROBESON COUNTY

STATION 8+10



SKETCH SHOWING LOCATION OF PROPOSED BRIDGE

TABLE OF BRIDGE SEAT ELEVATIONS	GIRDER				
	G1	G2	G3	G4	G5
End Bent No. 1	486.80	486.66	486.51	486.36	486.22
Bent No. 1	487.13	486.99	486.84	486.69	486.55
Bent No. 2	487.36	487.22	487.07	486.92	486.78
Bent No. 3	487.43	487.29	487.14	486.99	486.85
Bent No. 4	487.36	487.22	487.07	486.92	486.78
Bent No. 5	487.13	486.99	486.84	486.69	486.55
End Bent No. 2	486.80	[illegible]	486.51	486.36	486.22

TOTAL BILL OF MATERIAL

	Class "A" Conc. Cu. Yds.	Reinforcing Steel Lbs.	Conc. Wear. Surf. Sq. Yds.	Plates & Bolts Lbs.	Illuminating Stds. No.	Precast Piles No. 1'-4"	Precast Piles No. 1'-8"	R.C. Rip rap Sq. Yds.	Castings & Struct. Steel	Unloaded Tim. Test Piles - No.
Span A	113.3	25457	145.4	118	—	—	—	—	—	
Span B	113.5	25645	147.5	118	—	—	—	—	2212	
Span C	112.9	25769	146.2	118	2	—	—	—	2213	
Span D	112.3	25732	146.2	118	2	—	—	—	—	
Span E	113.5	25645	147.5	118	—	—	—	—	—	
Span F	113.3	25457	145.4	118	—	—	—	[illegible]	—	
End Bent No. 1	16.4	1700	—	—	2	8	—	250	—	
End Bent No. 2	16.4	1700	—	—	2	8	—	—	—	
Bent No. 1	13.0	1986	—	118	—	—	8	—	—	
Bent No. 2	13.0	1986	—	118	—	—	8	—	—	
Bent No. 3	13.0	1866	—	269	—	—	8	—	—	
Bent No. 4	13.0	1986	—	118	—	—	8	—	—	
Bent No. 5	13.0	1986	—	118	—	—	8	—	—	
Precast RC Piles	—	24696	—	—	—	—	—	—	—	
Totals	776.6	*[illegible]	878.2	1449	8	16	40	375	4425	3

* Includes 4103 Lbs. galvanized steel to be paid for as reinforcing steel.
Approx. Lin. Ft. 1280
Approx. Lin. Ft. 440

STATE OF NORTH CAROLINA
STATE HIGHWAY AND PUBLIC WORKS COMMISSION
RALEIGH

GENERAL DRAWING FOR LUMBER RIVER BRIDGE OVER LUMBER RIVER LUMBERTON N.C.

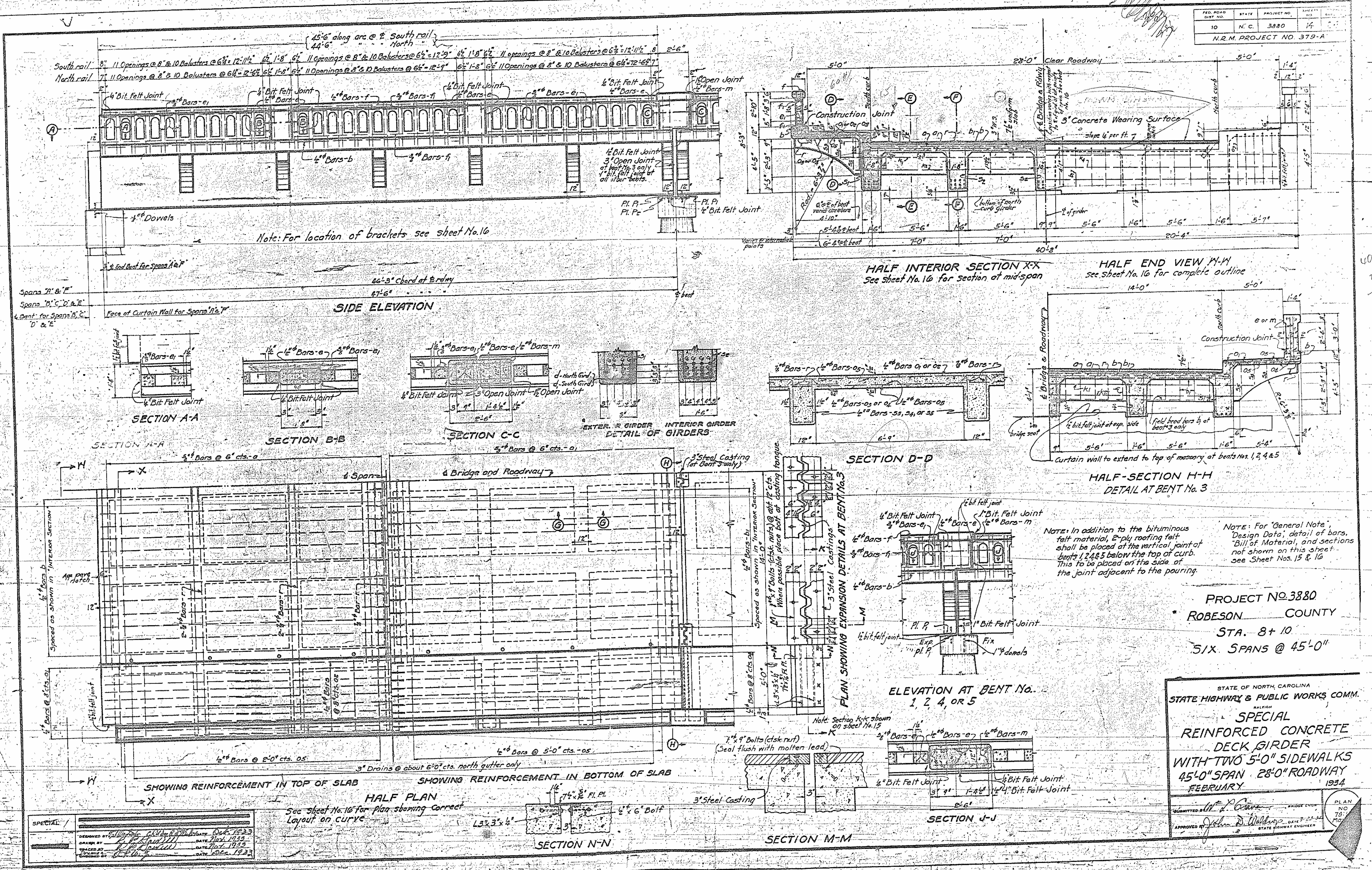
FEB. 1934

SUBMITTED BY [signature] BRIDGE ENGR.
APPROVED BY John D. Waldrop DATE 3-23-34
STATE HIGHWAY ENGINEER

PLAN NO. 78.133 Mar. 22 1934

DESIGNED BY T. R. Weston Jr. DATE Feb. 1934
DRAWN BY [signature] DATE Feb. 1934
TRACED BY DATE
DRAWING CHECKED BY [signature] DATE Feb. 1934

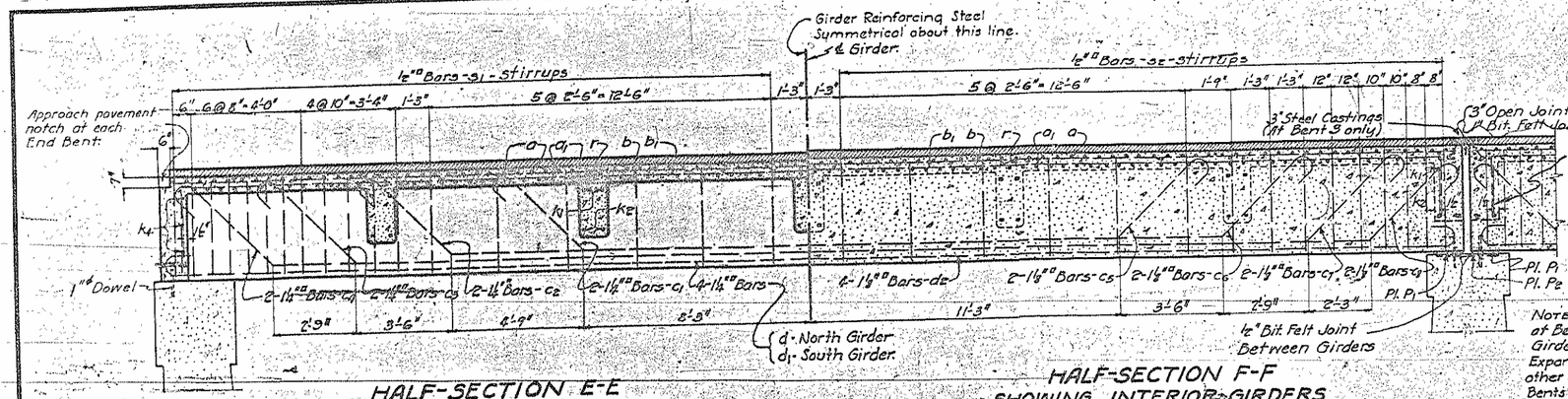
Reel 27
Pos 17
41-46-85



FED. ROAD DIST. NO. 10 | STATE N.C. | PROJECT NO. 3880 | SHEET NO. 14
N.R.M. PROJECT NO. 379-A
STEM DEPTH: (4'-1") - (3"+7½") 49" - 10½ = 38.5"
SIDE ELEVATION
Note: For location of brackets see sheet No. 16
HALF INTERIOR SECTION X-X
See Sheet No. 16 for section at mid-span
HALF END VIEW H-H
See Sheet No. 16 for complete outline
28'-0" Clear Roadway
3" Concrete Wearing Surface
SECTION A-A
SECTION B-B
SECTION C-C
EXTERIOR GIRDER
INTERIOR GIRDER
DETAIL OF GIRDERS
SECTION D-D
HALF-SECTION H-H
DETAIL AT BENT No. 3
Curtain wall to extend to top of masonry at bents Nos. 1, 2, 4 & 5
NOTE: In addition to the bituminous felt material, 2-ply roofing felt shall be placed at the vertical joint of bents 1, 2, 4 & 5 below the top of curb. This to be placed on the side of the joint adjacent to the pouring.
NOTE: For "General Note", "Design Data", detail of bars, "Bill of Material", and sections not shown on this sheet see Sheet Nos. 15 & 16
PROJECT No. 3880
ROBESON COUNTY
STA. 8+10
SIX SPANS @ 45'-0"
ELEVATION AT BENT No. 1, 2, 4, OR 5
PLAN SHOWING EXPANSION DETAILS AT BENT No. 3
SHOWING REINFORCEMENT IN TOP OF SLAB
SHOWING REINFORCEMENT IN BOTTOM OF SLAB
HALF PLAN
See Sheet No. 16 for plan showing correct layout on curve
SECTION N-N
SECTION M-M
SECTION J-J
Note: Section K-K shown on sheet No. 15
STATE OF NORTH CAROLINA
STATE HIGHWAY & PUBLIC WORKS COMM.
SPECIAL
REINFORCED CONCRETE
DECK GIRDER
WITH TWO 5'-0" SIDEWALKS
45'-0" SPAN 28'-0" ROADWAY
FEBRUARY 1934
STATE HIGHWAY ENGINEER

FED. ROAD DIST. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
16	N. C.	3880	15	24

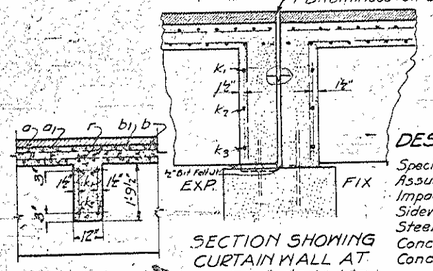
N.R.M. PROJECT NO. 379-A



HALF-SECTION E-E SHOWING EXTERIOR GIRDERS

HALF-SECTION F-F SHOWING INTERIOR GIRDERS

Note: Detail of girders at Bent No. 3 as shown. Girders at Bents 1-2-4 & 5 Expansion on one side, fixed other side. See Elevation at Bents No. 1-2-4 & 5 Sheet No. 14



SECTION SHOWING CURTAIN WALL AT BENTS #1-#2-#4 & #5

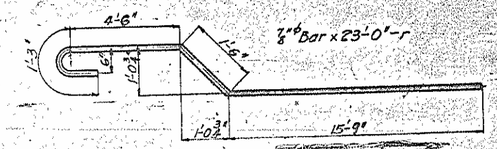
SECTION G-G

DESIGN DATA:

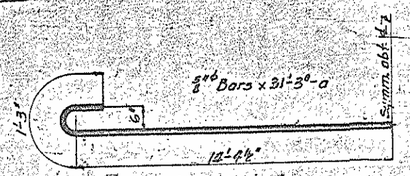
Specifications: N.C. State Highway & Public Works Comm.	
Assumed Live Load:	H-15
Impact Allowance:	See Specifications
Sidewalk Live Load:	100#/□', No Impact Allowance
Steel in Tension:	18,000#/□"
Concrete in Compression:	800#/□"
Concrete in Shear:	60#/□"

GENERAL NOTE:

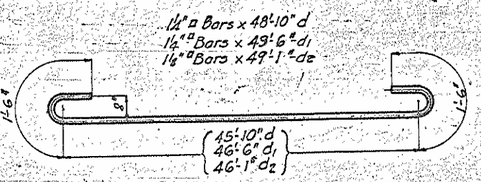
Class "A" concrete shall be used throughout. Maximum size of coarse aggregate to be 1½" except in hand rails. Maximum size of coarse aggregate in hand rails to be ¾". All exposed corners to be chamfered 1" except on hand rails and expansion joints. Hand rail corners to be chamfered ¾". Baluster and expansion-joint corners to be chamfered ⅜". All concrete below the base of hand rail shall be poured in one operation allowing no time for initial set to take place between successive pourings. Construction joints will be permitted only at top of sidewalk curbs. All reinforcing steel shall be deformed bars. All dimensions relative to reinforcement are to centers of bars. No splices of bars other than those shown on plans will be permitted. All reinforcing steel shall be securely held in correct position. Unless otherwise stated under "Special Provisions", the wearing surface shall be laid by the Bridge Contractor. Two name plates shall be placed on the bridge, one on the inside of each right-hand end post approaching the bridge. All material and workmanship as per the Specifications of the North Carolina State Highway and Public Works Commission.



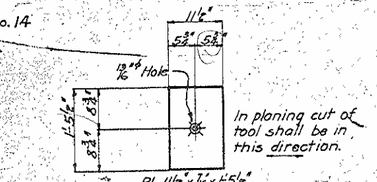
DETAIL OF BARS r



DETAIL OF BARS a



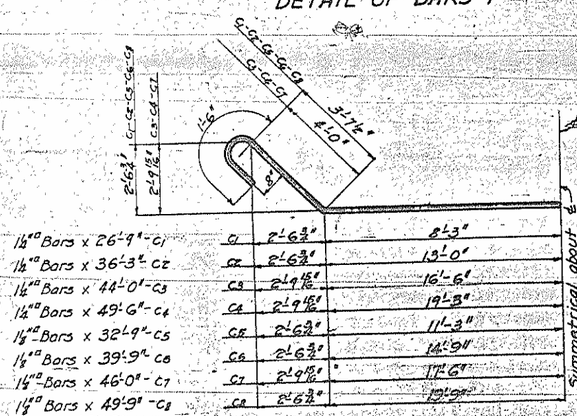
DETAIL OF BARS d1 & de



In planing cut of tool shall be in this direction.

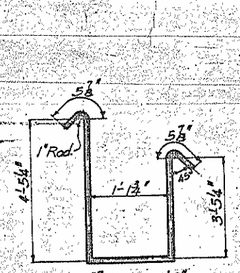
Pl. 11½" x ⅞" x 1'-5½" Plane near side to ⅜"

MAKE 50 PLATES-P1



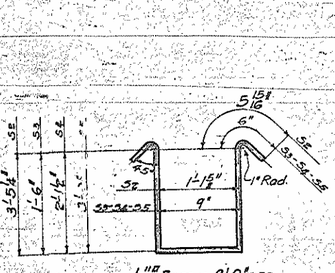
1½"ø Bars x 26'-9"-C1	C1	2'-6¾" 8'-3"
1½"ø Bars x 36'-3"-C2	C2	2'-6¾" 13'-0"
1½"ø Bars x 44'-0"-C3	C3	2'-9 15/16" 16'-6"
1½"ø Bars x 49'-6"-C4	C4	2'-9 15/16" 19'-3"
1⅛"ø Bars x 32'-9"-C5	C5	2'-6¾" 11'-3"
1⅛"ø Bars x 39'-9"-C6	C6	2'-6¾" 14'-9"
1⅛"ø Bars x 46'-0"-C7	C7	2'-9 15/16" 17'-6"
1⅛"ø Bars x 49'-9"-C8	C8	2'-6¾" 19'-3"

DETAIL OF BARS C1-C2-C3-C4-C5-C6-C7-C8



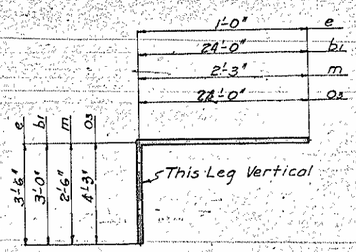
½"ø Bars x 10'-0"-s1

DETAIL OF BARS s1



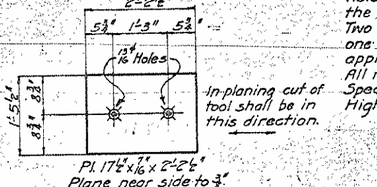
½"ø Bars x 9'-0"-s2
½"ø Bars x 4'-9"-s3
½"ø Bars x 6'-0"-s4
½"ø Bars x 7'-9"-s5

DETAIL OF BARS s2-s3-s4-s5



½"ø Bars x 4'-6"-e
½"ø Bars x 27'-0"-b1
½"ø Bars x 4'-9"-m
½"ø Bars x 28'-3"-o3

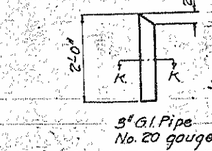
DETAIL OF BARS e-b1-m-o3



In planing cut of tool shall be in this direction.

Pl. 17½" x 7" x 2'-2½" Plane near side to ⅜"

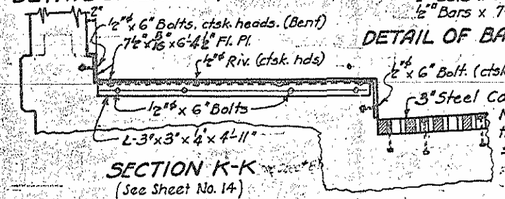
MAKE 5 PLATES-P2



3" G.I. Pipe No. 20 gauge

DETAIL OF DRAIN

SECTION K-K



SECTION K-K (See Sheet No. 14)

Not more than 6'

¾"ø Bolt, ctsk. head 5/16"

MAKE 60 BOLTS

NOTE: For location of sections and for details not shown on this sheet see Sheet No. 14.

BILL OF MATERIAL PER SPAN

Bars	a	a1	b	b1	c1	c2	c3	c4	c5	c6	c7	c8	d	d1	d2	de	e1	f	f1	k1	k2	k3	k4	m	o1	o2	o3	o4	o5	s1	s2	s3	s4	s5	Reinf. Steel† Lbs.	Class "A" Conc. Cu. Yds.	Conc. Wear. Surf. Sq. Yds.	Plates & Bolts Lbs.
Span "A"	93	94	56	40	4	4	4	4	6	6	6	6	4	4	12	16	288	12	24	22	22	2	6	—	40	20	18	18	68	24	72	90	12	12	25457	113.3	145.4	118
Span "B"	93	94	56	40	4	4	4	4	6	6	6	6	4	4	12	24	288	12	24	24	24	4	—	4	40	20	—	36	68	24	72	90	14	14	25645	113.5	147.5	118
Span "C"	93	94	56	40	4	4	4	4	6	6	6	6	4	4	12	24	288	12	24	24	24	4	—	4	40	20	—	36	68	24	72	90	14	14	25645	113.5	147.5	118
Span "D"	93	94	56	40	4	4	4	4	6	6	6	6	4	4	12	24	288	12	24	24	24	4	—	4	40	20	—	36	68	24	72	90	14	14	25645	113.5	147.5	118
Span "E"	93	94	56	40	4	4	4	4	6	6	6	6	4	4	12	24	288	12	24	24	24	4	—	4	40	20	—	36	68	28	72	90	14	14	25732	112.3	146.2	118
Span "F"	93	94	56	40	4	4	4	4	6	6	6	6	4	4	12	24	288	12	24	22	22	2	6	—	40	20	18	18	68	24	72	90	12	12	25457	113.3	145.4	118
Totals	558	564	336	240	24	24	24	24	36	36	36	36	24	24	72	136	1728	72	144	138	140	16	12	20	240	120	36	180	408	160	432	540	80	80	80	159705	678.8	878.2	708

† Includes 4103 lbs. of galvanized steel to be paid for as reinforcing steel.

DIVISION OF CONCRETE

Maximum Size of Coarse Aggregate = ¾"	Cu. Yds.	28.8
Maximum Size of Coarse Aggregate = 1½"	Cu. Yds.	650.0
Total	Cu. Yds.	678.8

TOTAL BILL OF MATERIAL SIX SPANS

Bar	No.	Size	Length	Weight	Bar	No.	Size	Length	Weight
a	558	⅞"ø	31'-3"	18186	k2	148	1½"ø	16'-0"	2010
a1	564	⅞"ø	29'-3"	17208	k3	16	1½"ø	15'-6"	210
b	336	⅞"ø	24'-6"	5490	k4	12	1½"ø	21'-0"	214
b1	240	1½"ø	27'-0"	4326					
c1	24	1⅛"ø	26'-9"	5414	*m	20	1½"ø	4'-9"	65
c2	24	1⅛"ø	36'-3"	4620	o1	240	1⅛"ø	13'-0"	2082
c3	24	1⅛"ø	44'-0"	5610	o2	120	1½"ø	25'-3"	2022
c4	24	1⅛"ø	49'-6"	6812	o3	36	1½"ø	28'-3"	680
c5	36	1⅛"ø	32'-9"	5076	o4	180	1½"ø	24'-6"	2950
c6	36	1⅛"ø	39'-9"	6156	o5	408	1½"ø	6'-0"	1638
c7	36	1⅛"ø	46'-0"	7128	r	160	1½"ø	23'-0"	7522
c8	36	1⅛"ø	49'-9"	7704					
d1	24	1⅛"ø	49'-6"	6312	o1	432	1½"ø	10'-0"	9612
de	72	1⅛"ø	49'-1"	15204	s2	540	1½"ø	9'-0"	4134
d	24	1⅛"ø	48'-10"	6228	s3	80	1½"ø	4'-9"	324
*e	136	½"ø	4'-6"	408	s4	80	1½"ø	6'-0"	408
*f	1728	⅞"ø	3'-6"	2272	s5	80	1½"ø	7'-9"	526
*f1	144	⅞"ø	13'-3"	636	Reinforcing Steel, Lbs.				139705
			13'-3"	720	Class "A" Conc., Cu. Yds.				678.8
					Conc. Wear. Surf., Sq. Yds.				878.2
k1	148	1⅛"ø	17'-9"	2232	Plates & Bolts, Lbs.				708
					Castings & Struct. Steel, Lbs.				4425

*Galv. steel bars to be paid for as reinforcing steel.

Note: Steel castings and structural steel shall receive one shop coat of red lead and two field coats of aluminum paint as per Specifications. The cost of structural steel and castings to be included in the unit price bid for Class "A" concrete.

PROJECT NO. 3880
ROBESON COUNTY
STA. 8+10
SIX SPANS @ 45'-0"

STATE OF NORTH CAROLINA
STATE HIGHWAY & PUBLIC WORKS COMM.
RALEIGH

SPECIAL REINFORCED CONCRETE DECK GIRDER WITH TWO 5'-0" SIDEWALKS 45'-0" SPAN 28'-0" ROADWAY

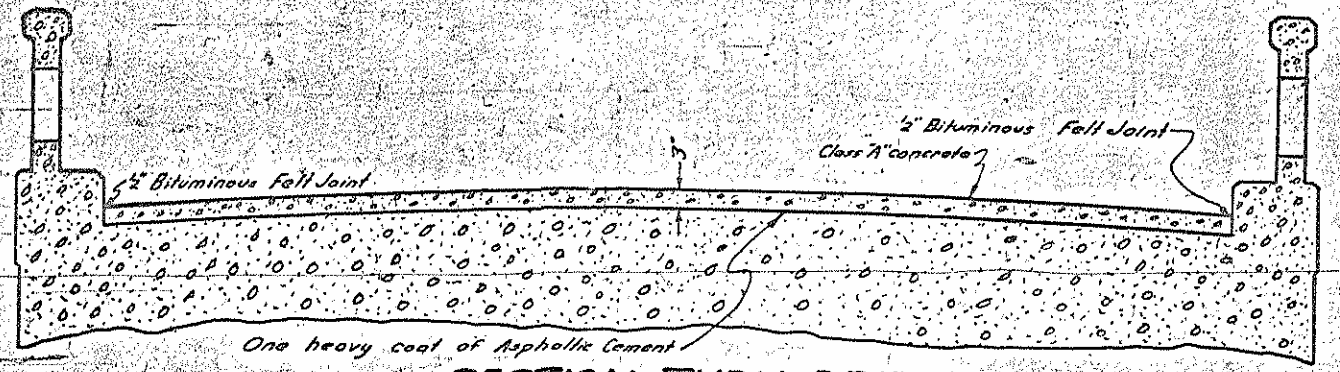
FEBRUARY 1934

SUBMITTED BY W. E. Graves BRIDGE ENGR.
APPROVED BY John D. Wilson DATE 2-27-34 STATE HIGHWAY ENGINEER

PLAN NO. 78193 Mar. 22 1934

SPECIAL	
DESIGNED BY W. E. Graves	DATE Dec. 1933
DRAWN BY	DATE Jan. 1934
TRACED BY	DATE Feb. 1934
CHECKED BY J. D. Wilson	DATE Feb. 1934

FED. ROAD DIST. NO.	STATE	PROJECT NO.	SHEET NO.	TO[TAL] SH[EETS]
10	N. C.	3880	17	[illegible]
N.R.M. Proj No. 379				



SECTION THRU BRIDGE

PLAN

PLAIN CONCRETE OR REINFORCED CONCRETE PAVEMENTS
GRADED, TOPSOIL, SANDCLAY, GRAVEL, SHALE, WATER-BOUND OR BITUMINOUS MACADAM ROADS

The wearing surface of the bridge shall consist of 2" of Class "A" concrete. See Specifications.
The top of the floor slab shall be coated with a heavy coat of asphaltic cement applied hot before the wearing surface is laid.
A ½" bituminous felt joint shall be placed between the curbs and the wearing surface. A 1" bituminous felt joint shall be placed at all piers and abutments parallel to the face thereof. The joint shall be cut to the crown of roadway and shall not be in more than two pieces. The wearing surface shall be hand finished in accordance with the Specifications. Payment will be made at the contract unit price for wearing surface. All material and workmanship as per specifications of the N.C. State Highway and Public Works Commission.

PROJECT NO. 3880
ROBESON COUNTY
STATION 8+10

STATE OF NORTH CAROLINA
STATE HIGHWAY & PUBLIC WORKS COMM.
RALEIGH

SKETCH SHOWING STANDARD DETAILS FOR CONTINUING ROAD SURFACING ACROSS ~~REINF.~~ CONCRETE BRIDGES

APRIL 1932

SUBMITTED BY Wm L. Craven BRIDGE ENGR.
APPROVED L. R. Ames DATE 7-30-32 STATE HIGHWAY ENGINEER

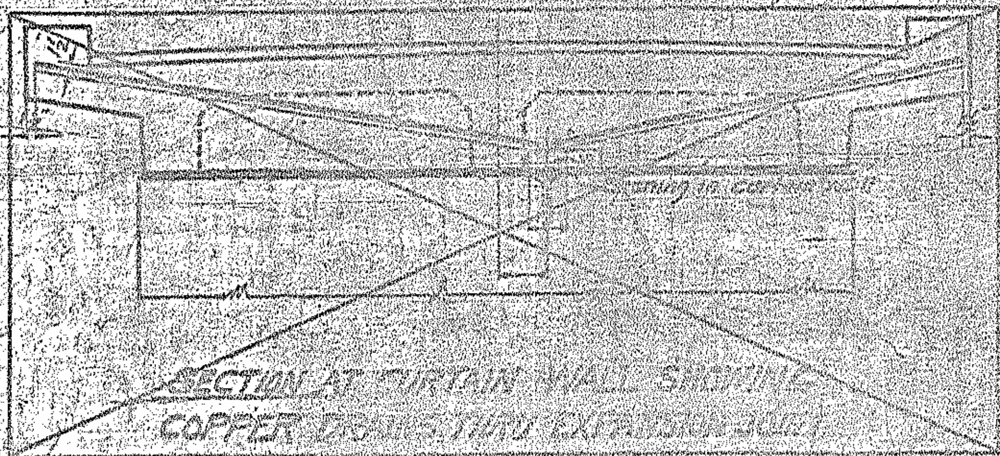
PLAN NO. 15132 Mar. 32 1932

SPECIAL — APPROVED BY [illegible] DATE [illegible]
STANDARD — [illegible]

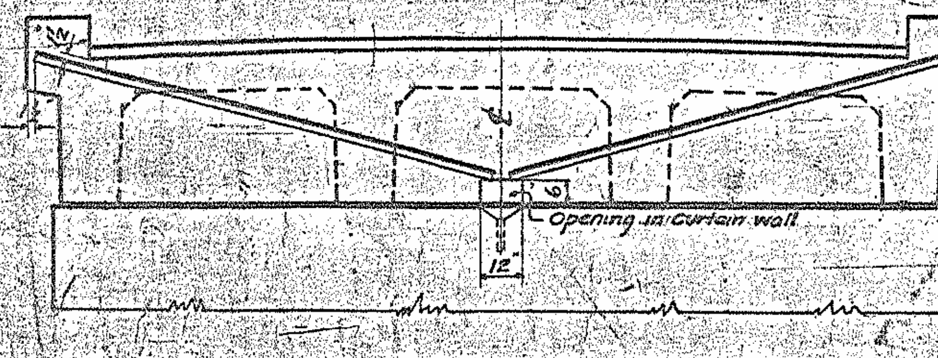
STANDARD NO. M-7

FED. ROAD DIST. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
10	N.C.	3880	18	2[illegible]

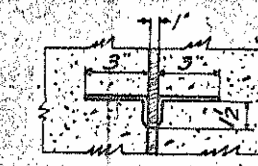
NR.M. Proj. No. 379-A



~~SECTION AT CURTAIN WALL SHOWING COPPER DRAINS THRU EXPANSION JOINT~~

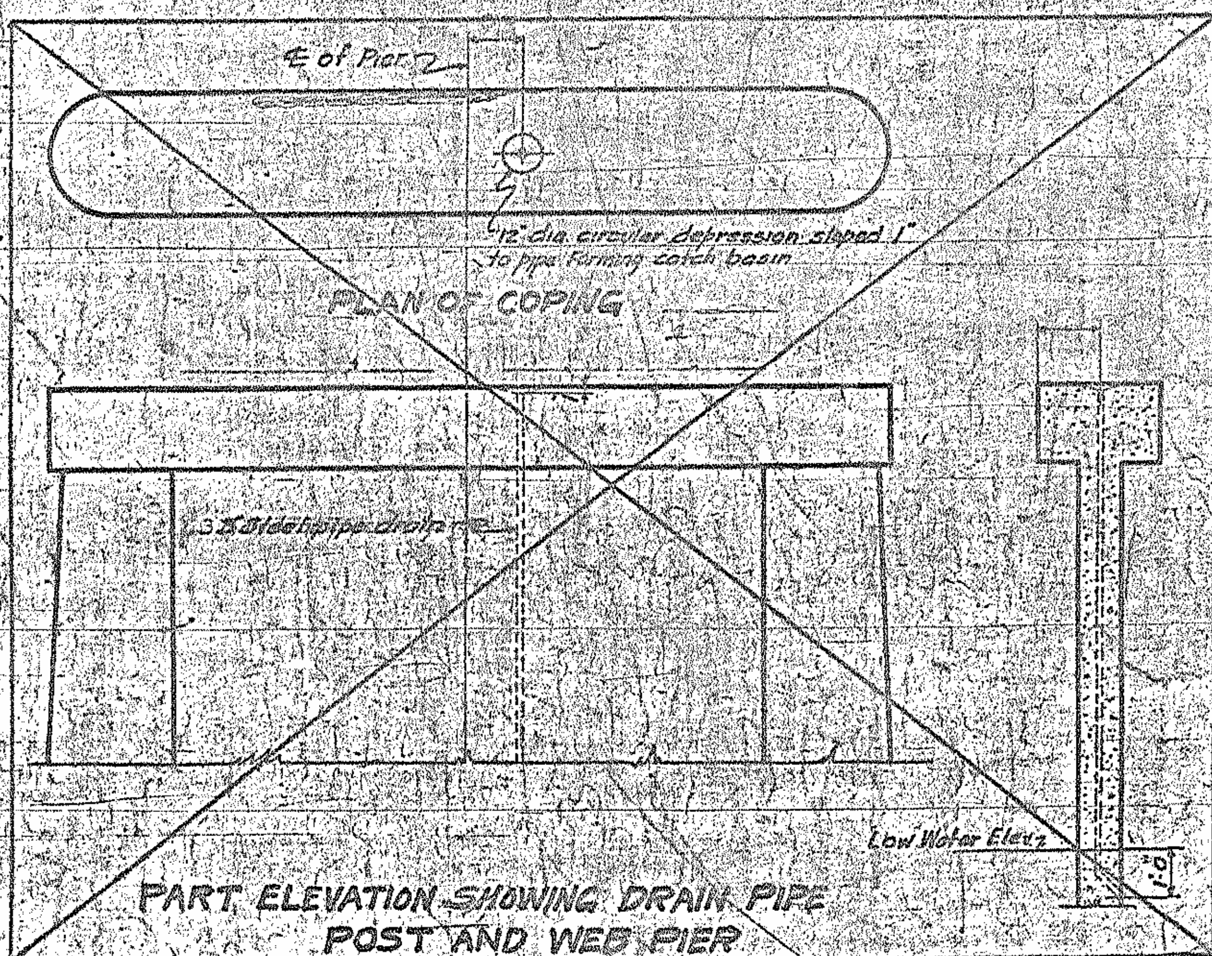


SECTION AT CURTAIN WALL SHOWING COPPER DRAINS THRU EXPANSION JOINT AT BENTS No 1-2-4&5 ONLY



DETAIL OF COPPER DRAIN

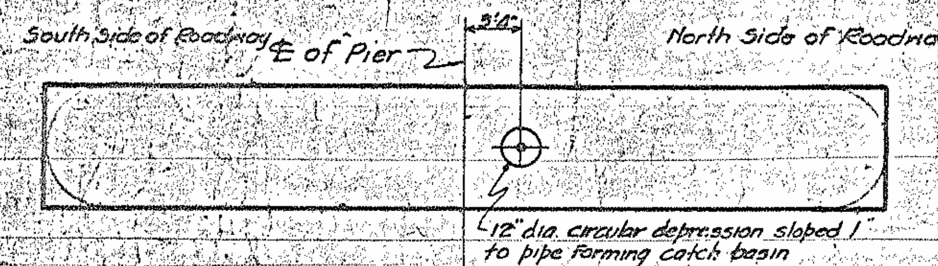
MAKE 4 PIECES 10" x 18'-3" LONG
MAKE 4 PIECES 10" x 12'-0" LONG



~~PLAN OF COPING~~

~~PART ELEVATION SHOWING DRAIN PIPE POST AND WEB PIER~~

~~SECTION SHOWING DRAIN PIPE THRU WEB~~



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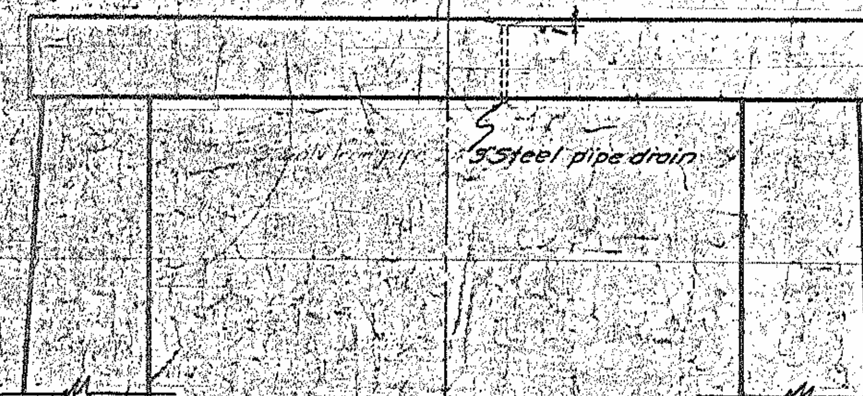


ELEVATION SHOWING DRAIN PIPE THRU CAP POST AND BEAM PIER

SECTION

GENERAL NOTE

Copper drains shall be placed in expansion joints between spans at all piers as shown. Copper for drains to be of the best grade #20 gauge 24 oz. sheet copper and shall be shop bent. The cost of same shall be included in contract unit price bid for reinforcing steel, which price shall include cost of drains complete in place and all labor, tools and materials incidental thereto, including the steel pipe in piers or bents.

PROJECT No 3880
ROBESON COUNTY

STATION 8+10

STATE OF NORTH CAROLINA
STATE HIGHWAY & PUBLIC WORKS COMM.
RALEIGH

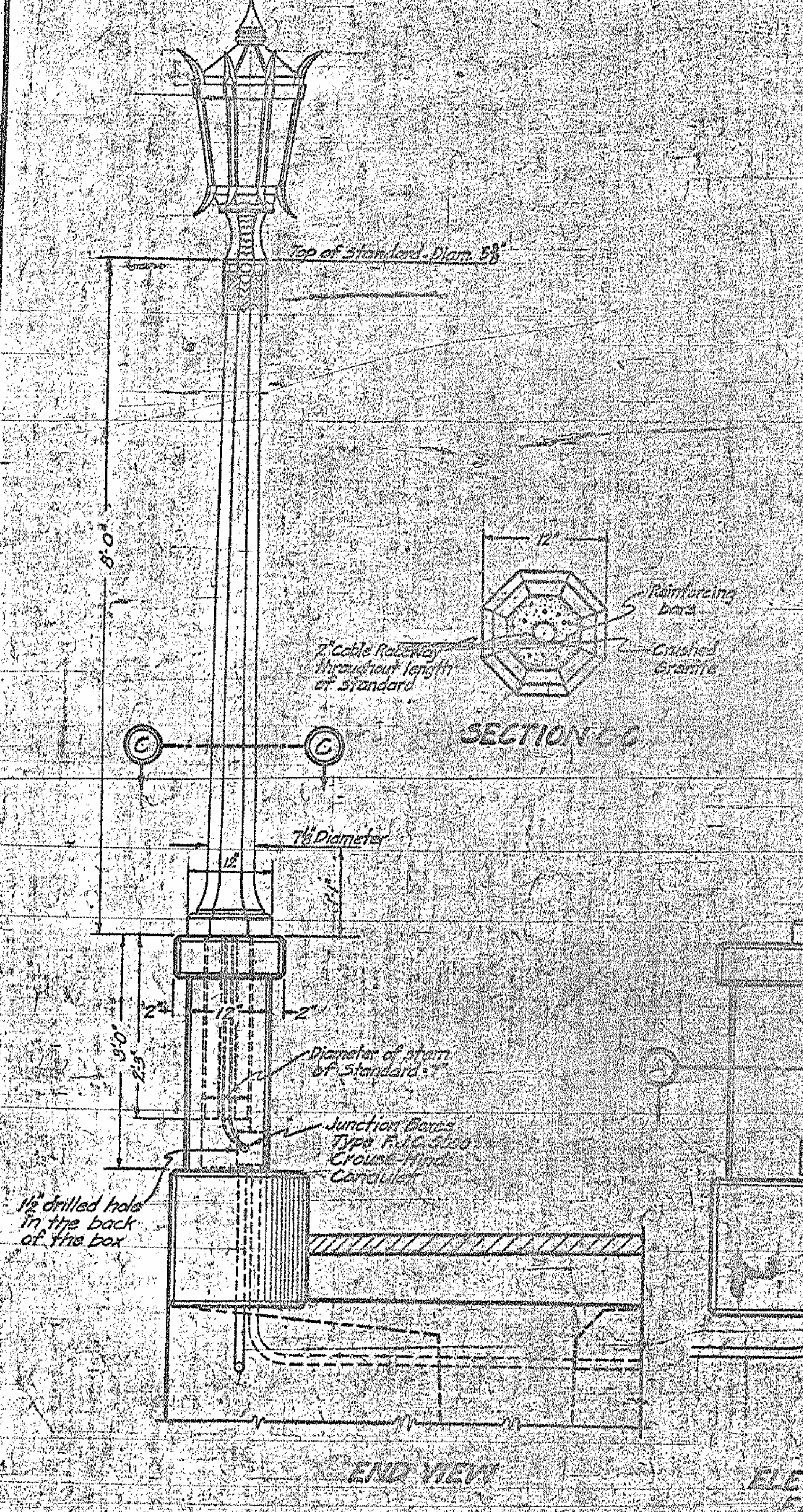
STANDARD
DETAILS ~~SHOWING COPPER DRAINS~~
THRU CURTAIN WALLS
R.C. DECK GIRDER

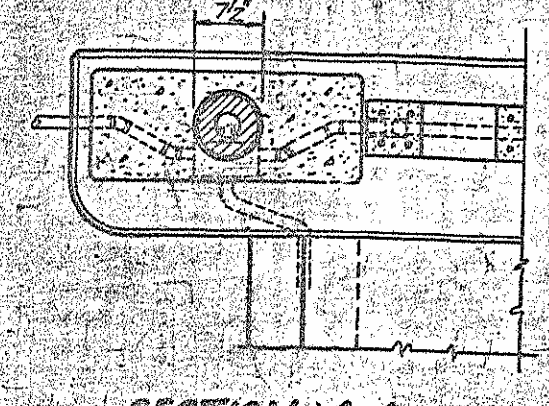
FEB 1931

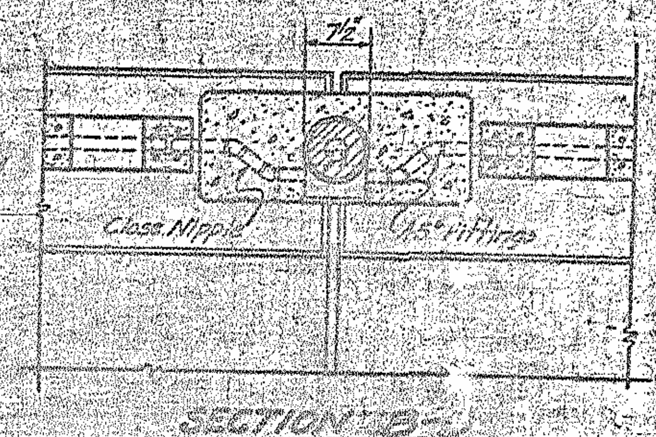
Revised pipe drain from 24 gauge galv. iron 7-16-31 - EHP

FED. ROAD DIST. NO.	STATE	PROJECT NO.	SHEET NO.
10	N. C.	3880	19

N.R.M. Proj. No. 379-







GENERAL NOTE:

The Contractor shall furnish all Materials, labor, tools, etc. to completely install ready for operation a series, ornamental bridge lighting system, consisting of ornamental lighting units, standards, the necessary cable, laterals, transformers, time switches, lightning arresters, etc. as manufactured by the Westinghouse Electric and Manufacturing Company.

WIRING

Cables shall extend to first ornamental standard in one piece and then in one piece from standard to standard and be connected direct to the lamp socket terminals in each standard.

Cables shall be No. 8, B.&S. gauge single conductor solid copper wire tinned, insulated for 2000 Volts, braided and lead covered and have a conductivity of not less than 98% as manufactured by Hazard Mfg. Co. The cable shall be continuous in length from standard to standard and run in 1 1/2" galvanized conduit.

CONDUITS

All cables shall be run in 1 1/2" galvanized conduits imbedded in base of concrete handrail as shown. The conduits shall be galvanized and of an approved manufacture and shall be continuous from outlet to outlet. There shall be installed where shown Type F.J.C. 5000 Crouse-Hinds condulets with brass covers.

GROUNDING

The entire system shall be properly grounded.

TRANSFORMERS ETC.

The Contractor shall furnish and install one pole mounting isolating current transformer of 2 K.V.A. group series type, 6.6 amperes primary, 6.6 amperes secondary, 60 cycles, and four 3000 volt lightning arresters. The service pole will be furnished by others and located 50' from the bridge.

GUARANTEE

The Contractor shall give a written guarantee covering the entire installation for a period of one year from date of completion, this to apply both to material and workmanship.

REGULATIONS

All electrical work shall be done in strict accordance with the requirements of the National Electric Code, and with the accordances and regulations of the local and State Authorities.

STANDARDS

The contractor shall furnish and install illuminating standards and equipment as shown on this plan. The concrete standards shall be reinforced and manufactured by the hollow spinning or centrifugal process and shall be equal to Westinghouse Electric & Mfg. Co. S-8 Type or General Electric Utility No. 8.

Cast Aluminum folium slipover casing, cast aluminum lighting unit with metal canopy and spurs including Bi-lux Bowl type or Holophane B symmetric Refractor.

Mazda "C" Street Series, incandescent Lamp, 250 candle power, 6.6 Amperes.

CIRCUIT

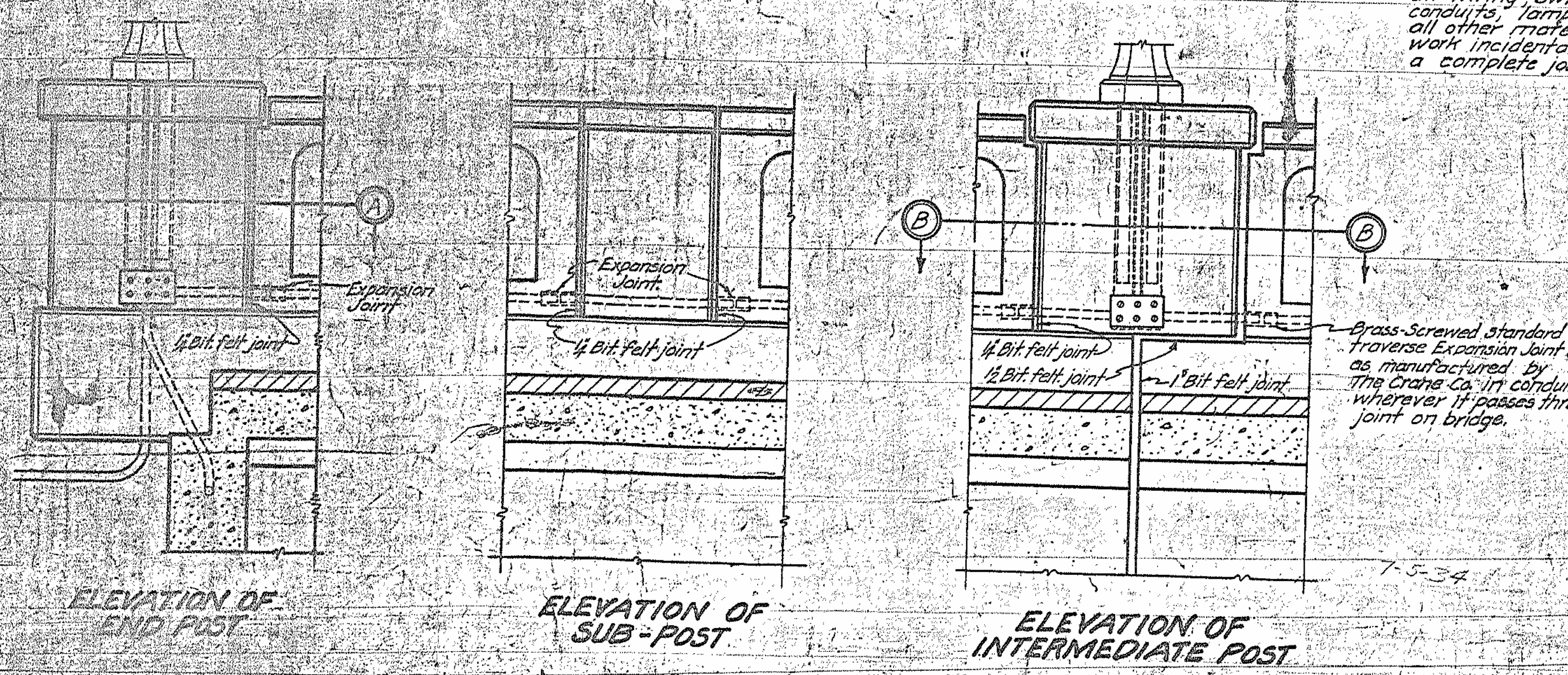
The entire Bridge shall be wired on one circuit.

GROUTING

The Standards shall be grouted in place with 2:1 Sand-cement mortar.

BASIS OF PAYMENT

Illuminating Standards will be paid for at the contract unit price for "Illuminating Standards" as shown on plans, complete in place. This price will be payment in full for furnishing and placing the Standards ready for use, and for all wiring, switches, junction and pull boxes, conduits, lamps, globes, globe holders, and for all other materials, equipment, labor and all work incidental thereto necessary to make a complete job.



PROJECT No. 3880
ROBESON COUNTY
STA. 8+10

7-5-34

STATE OF NORTH CAROLINA
STATE HIGHWAY & PUBLIC WORKS COMM.
RALEIGH

STANDARD DETAIL OF ILLUMINATING STANDARD AND WIRING CIRCUIT
JAN. 1933

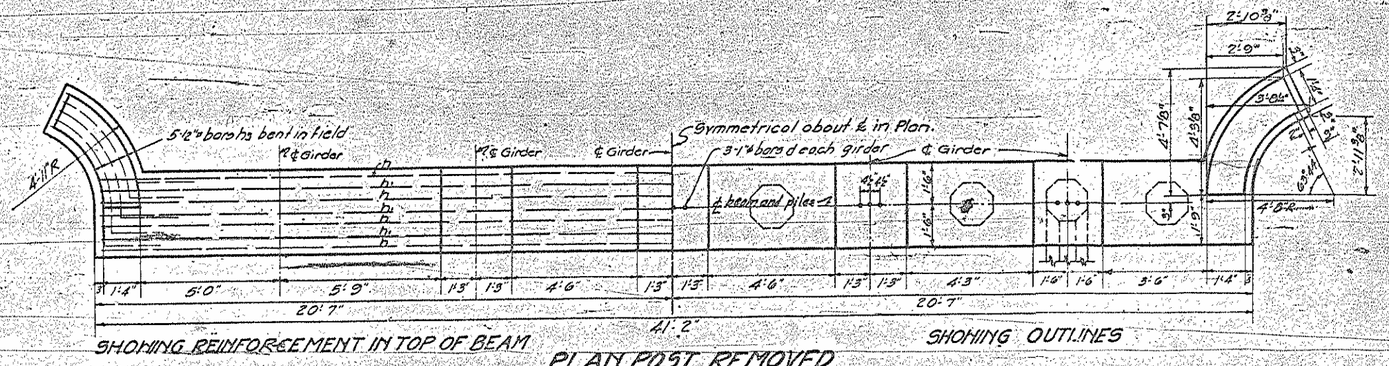
SUBMITTED BY ______ BRIDGE ENGR.
APPROVED BY ______

Revised 7-5-34 for transformer By F.W.H. & H.L.W.
Revised 2-10-34 by J.M.J. & by R.P.H.
Revised to show dimension at base of illuminating standard 1-3-34 by J.M.J. & by T.B.G. Jr.

SPECIAL | STANDARD

FED. ROAD DIST. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
10	N. C.	3880	20	21

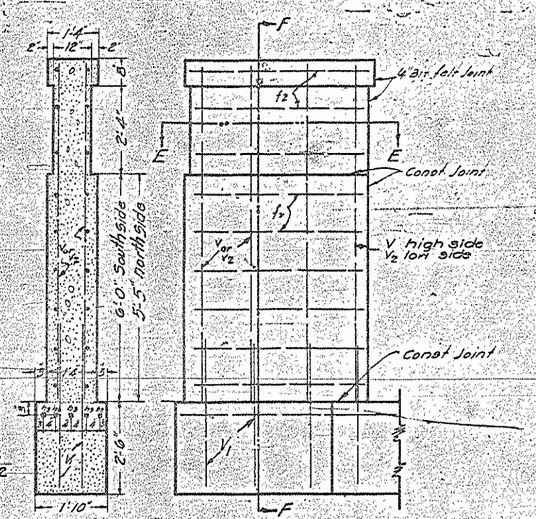
N.R.M. Proj: No. 379-A



SHOWING REINFORCEMENT IN TOP OF BEAM

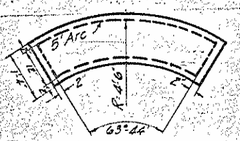
PLAN POST REMOVED

SHOWING OUTLINES

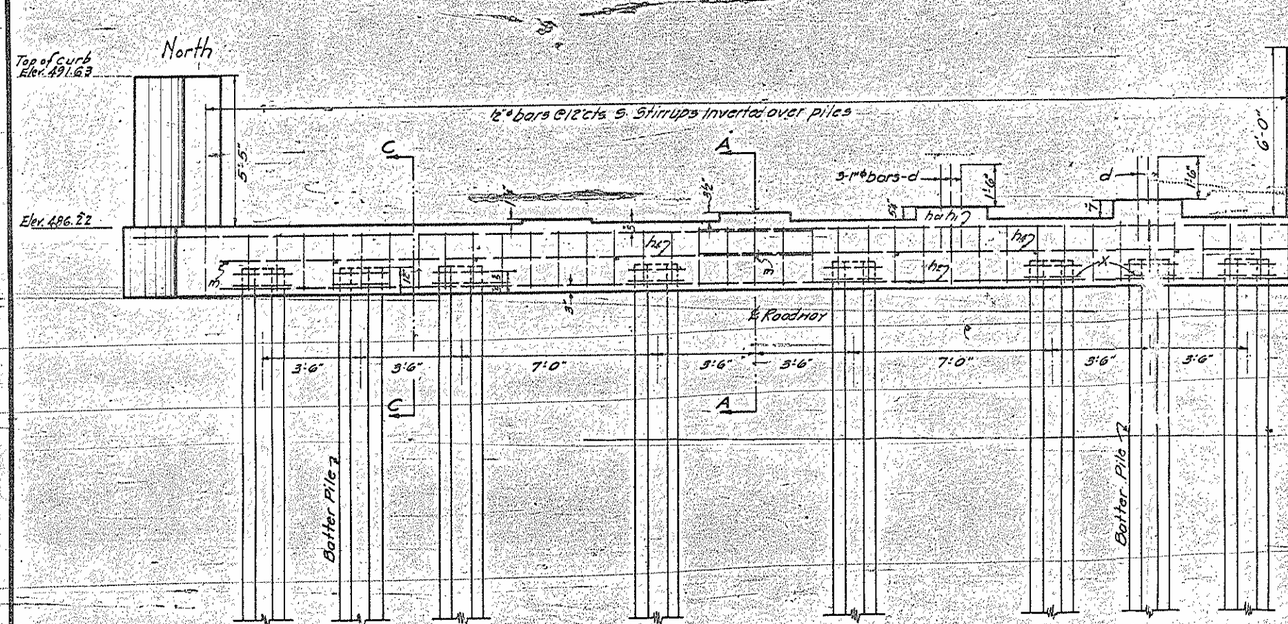


SECTION F-F ELEVATION

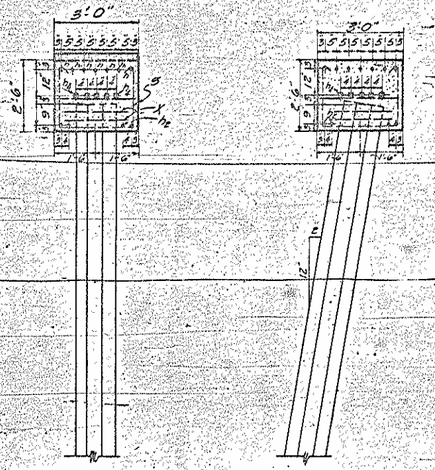
SECTION E-E



PLAN OF POST

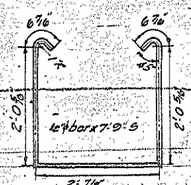


ELEVATION
END BENT Nº1
(END BENT Nº2 OPP. HAND)

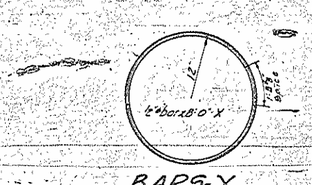


SECTION A-A

SECTION C-C



BARS-S



BARS-X

DESIGN DATA

Specifications N.C. State Highway & Public Works Commission
Live Load H15
Impact Allowance None
Steel in Tension 18000 Lbs per sq.in
Concrete in Compression 650 Lbs per sq in
Shear Class A Concrete 60 Lbs per sq in

GENERAL NOTE:

Class A Concrete to be used throughout. Max size of coarse aggregate to be 1½" except in Post and precast Piles. Max size of coarse aggregate in post and precast piles to be ¾"
All corners to be chamfered 1" except on post. Post corners to be chamfered ¾"
All reinforcing steel shall be deformed bars. All dimensions relative to reinforcement are to centers of bars.
No splices of bars other than those shown on plans will be permitted. All reinforcing steel to be securely held in correct position.
The portion of the pile projecting into the cap shall be roughened, thoroughly cleaned of all loose material and wetted previous to pouring the cap.
All material and workmanship as per Specifications

Approx. Lin. Ft. Piling End Bent #1 - 200
Approx. Lin. Ft. Piling End Bent #2 - 240

Note: Volume of concrete displaced by piles has been deducted.

Note: Use 1'-A' Piles in End Bents.

BM #2 Spike in root of -12" birch 110'± Rt. Sta. 8+75 Elev. 479.58

BILL OF MATERIAL
ONE BENT

Bars	Nº	Size	Length	Weight
d	15	1" ø	3'-0"	120
h₂	36	½" ø	3'-9"	90
h	10	⅝" ø	21'-3"	222
h₁	4	⅝" ø	21'-3"	128
h₂	4	1" ø	38'-6"	411
h₃	10	½" ø	7'-6"	64
h₄	10	½" ø	21'-6"	183
m	9	½" ø	2'-9"	21
S	30	½" ø	7'-0"	202
V	8	½" ø	8'-9"	60
X	16	½" ø	8'-0"	85
V₁	16	½" ø	4'-3"	58
V₂	8	½" ø	8'-3"	56
Reinforcing Steel-Lbs				1700
Conc. Max. Size Coarse agg ¾" -				11
" " " " " 1½" -				15.3
Total Concrete Cu Yds -				16.4
R.C. Precast Piles Nº				8

PROJECT Nº 3880
ROBESON COUNTY
STA. 8+10
END BENTS 1 AND 2

STATE OF NORTH CAROLINA
STATE HIGHWAY AND PUBLIC WORKS COMMISSION
RALEIGH
SPECIAL
PRECAST PILE END BENTS
FOR
LUMBER RIVER BRIDGE
OVER
LUMBER RIVER
MARCH 1934

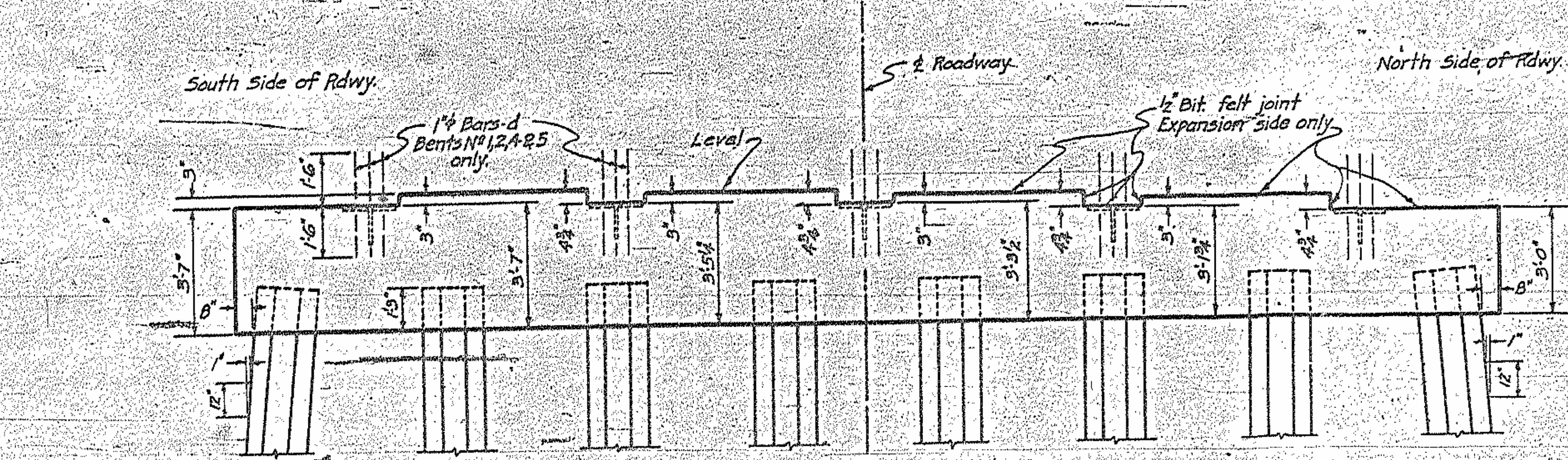
SUBMITTED BY W. T. Brown BRIDGE ENGR.
APPROVED BY John D. Wall DATE 3-23-34 STATE HIGHWAY ENGINEER.
PLAN NO. 78-195 Mar. 27, 1934

SPECIAL

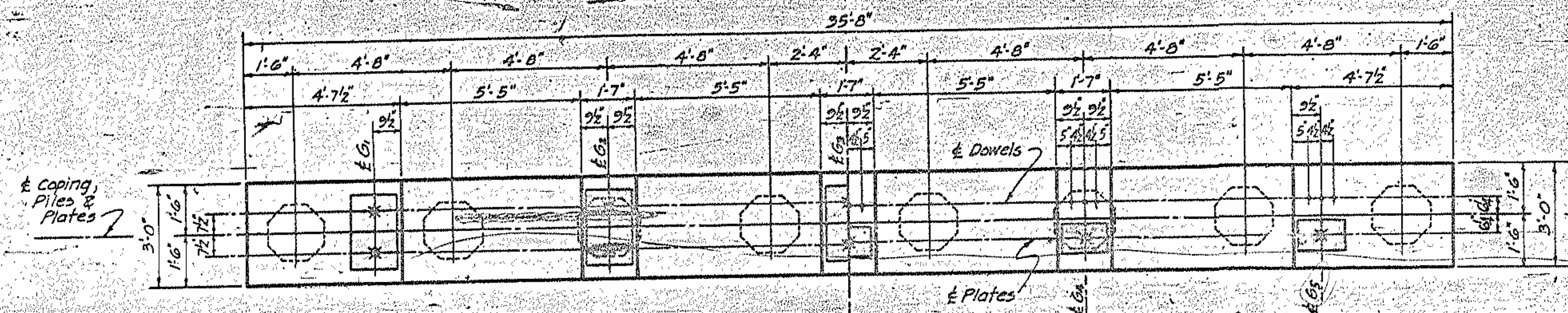
DESIGNED BY Riley Gaylord DATE Feb. 1934
DRAWN BY Riley Gaylord DATE Feb. 1934
TRACED BY Riley Gaylord DATE Feb. 1934
CHECKED BY A.R. Thomas DATE

FED. ROAD DIST. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
10	N. C.	3880	21	24

N.R.M. Proj. No. 379-A

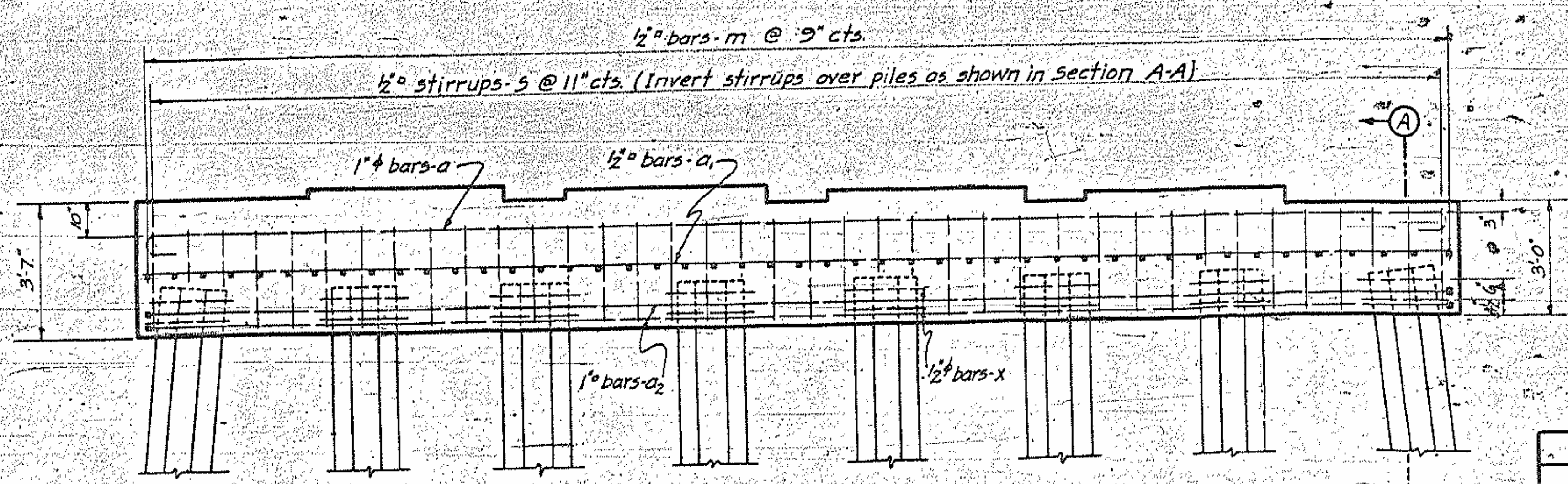


ELEVATION BENTS Nº 1,2,3,4 & 5



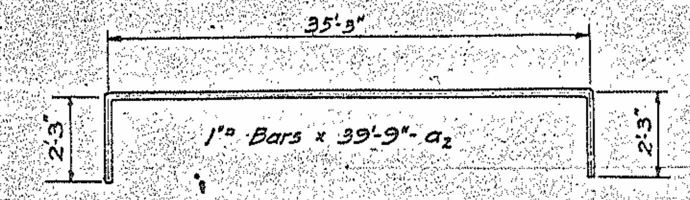
HALF PLAN BENT Nº 3

HALF PLAN BENTS Nº 1,2,4 & 5

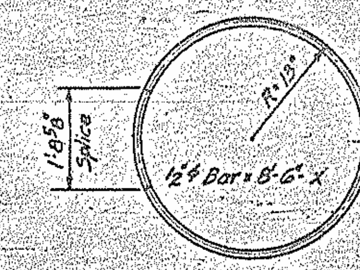


ELEVATION SHOWING REINFORCEMENT

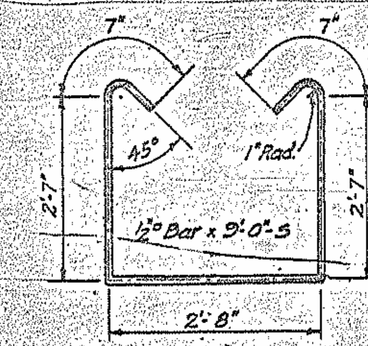
TABLE OF BRIDGE SEAT ELEVATIONS					
	Bent #1	Bent #2	Bent #3	Bent #4	Bent #5
Girder G_1	487.13	487.36	487.43	487.36	487.13
Girder G_2	486.99	487.22	487.29	487.22	486.99
Girder G_3	486.84	487.07	487.14	487.07	486.84
Girder G_4	486.69	486.92	486.99	486.92	486.69
Girder G_5	486.55	486.78	486.85	486.78	486.55



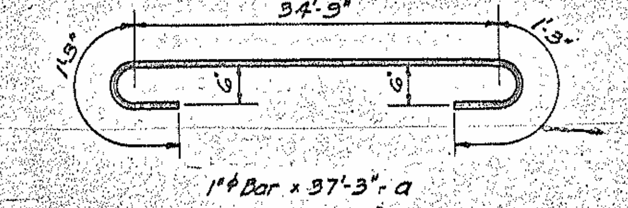
DETAIL OF BARS-a_2



DETAIL OF BARS-X

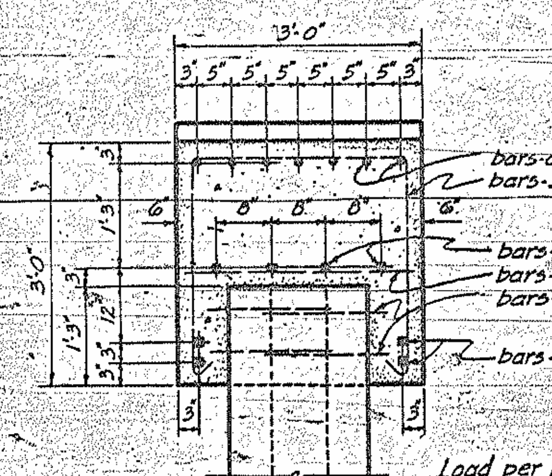


DETAIL OF BARS-S



DETAIL OF BARS-a

NOTE: For "Design Data" see Sheet Nº 20.



Load per Pile = 42 Tons

SECTION A-A

GENERAL NOTE:

Class "A" concrete to be used throughout. Maximum size of coarse aggregate to be 1½" except in precast piles. Maximum size of coarse aggregate in precast piles to be ¾".

All reinforcing steel shall be deformed bars. All dimensions relative to reinforcement are to centers of bars. No splices of bars other than those shown on plans will be permitted. All reinforcing steel to be held securely in correct position.

The portion of the pile extending into the cap shall be roughened, thoroughly cleaned of all loose material, and wetted, previous to pouring concrete.

All exposed corners of concrete shall be chamfered 1".

All material and workmanship as per specifications.

Size of piles for all intermediate bents to be 20" diameter.

PROJECT Nº 3880
ROBESON COUNTY
STATION 8+10.00
BENTS Nº 1,2,3,4 & 5

BILL OF MATERIAL ONE BENT BENT Nº 1, 2, 3, 4 OR 5				
Bar	Nº	Size	Length.	Weight
a	7	1"ϕ	37'-3"	696
a_1	4	½"ϕ	35'-3"	120
a_2	4	1"ϕ	39'-9"	541
* d	15	1"ϕ	3'-0"	120
m	48	½"ϕ	2'-9"	112
s	40	½"ϕ	9'-0"	306
x	16	½"ϕ	8'-6"	91
Total Reinforcing Steel Bent #1,2,4 or 5 Lbs.				1986
Total Reinforcing Steel Bent #3 Lbs.				1866
Total Class "A" Concrete Cu. Yds.				19.0
1'-8" Precast Reinforced Concrete Piles-Nº				8

Plates & Bolts Bent #1,2,4 or 5 - Lbs.	118
Plates & Bolts Bent #3 - Lbs.	269
Approx. Lin. ft. 1'-8" Precast R.C. Piles Bent #1	280
Approx. Lin. ft. 1'-8" Precast R.C. Piles Bent #2	320
Approx. Lin. ft. 1'-8" Precast R.C. Piles Bent #3	320
Approx. Lin. ft. 1'-8" Precast R.C. Piles Bent #4	280
Approx. Lin. ft. 1'-8" Precast R.C. Piles Bent #5	280

* No "d" bars required for Bent #3

NOTE: Volume of concrete displaced by piles has been deducted.

STATE OF NORTH CAROLINA
STATE HIGHWAY AND PUBLIC WORKS COMMISSION
RALEIGH

SPECIAL DETAIL OF INTERMEDIATE PILE BENTS FOR LUMBER RIVER BRIDGE
FEB. 1934

SUBMITTED BY W. L. Craven BRIDGE ENGR.
APPROVED BY John D. Waldrop DATE 3-23-34 STATE HIGHWAY ENGINEER

PLAN NO. 78133 Mar. 22 1934

SPECIAL

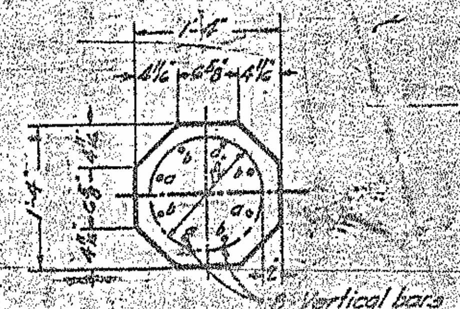
DESIGNED BY T. P. Weston DATE Feb. 1934
DRAWN BY C. M. Johnson DATE Feb. 1934
TRACED BY C. M. Johnson DATE Feb. 1934
CHECKED BY John Galloway DATE Feb. 1934

B.M. #2 Spike in root of 12" Birch 110'± Rt. Sta. 8+75 Elev. 479.58

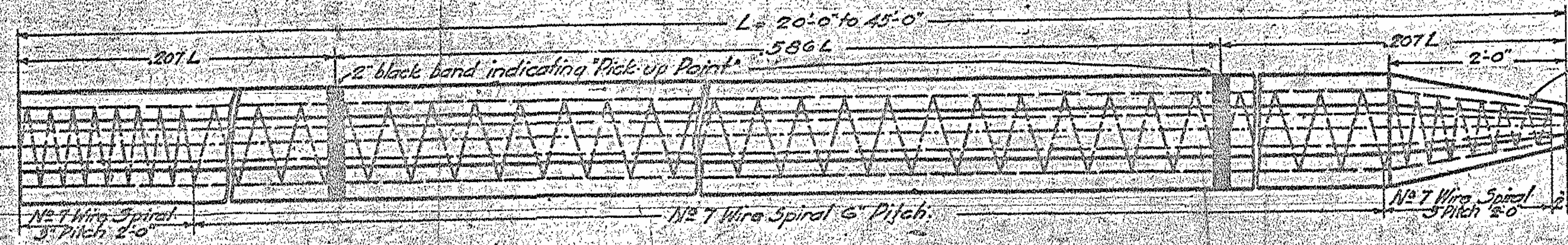
FED. ROAD DIST. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
10	N.C.	3880		24

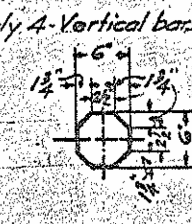
N.R.M. Project No. 379-A

1'-4" OCTAGONAL PILE



BUTT





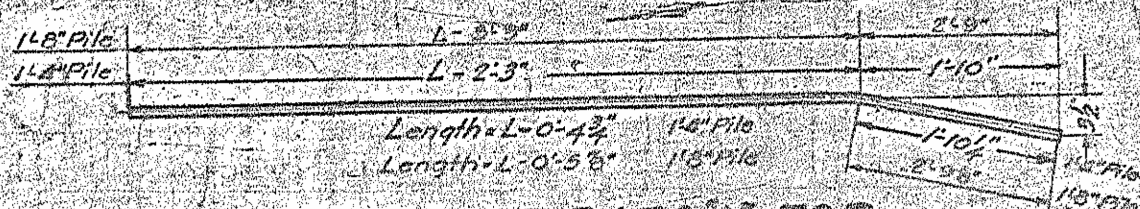
TIP

QUANTITIES FOR ONE 1'-4" OCTAGONAL PILE.

LENGTH "L"	VERTICAL REIN. BARS				TOTAL REIN. STEEL LBS.	CONCRETE CU. YDS.	PILE WT. TONS	TWO PICKUP POINTS	
	BAR	NO	SIZE	LENGTH.				.207L	.586L
20'-0"	a b	4 4	⅝"φ	17'-9" 19'-7¼"	169	1.04	2.11	4'-2"	11'-8"
25'-0"	a b	4 4	⅝"φ	22'-9" 24'-7¼"	213	1.31	2.65	5'-2	14'-8"
30'-0"	a b	4 4	⅝"φ	27'-9" 29'-7¼"	256	1.58	3.20	6'-2½	17'-7"
35'-0"	a b	4 4	¾"φ	32'-9" 34'-7¼"	424	1.85	3.75	7'-3"	20'-6
40'-0"	a b	4 4	¾"φ	37'-9" 39'-7¼"	480	2.13	4.31	8'-3½"	23'-5"
45'-0"	a b	4 4	¾"φ	42'-9" 44'-7¼"	550	2.40	4.86	9'-4"	26'-4

Wt. No 7 Wire is considered as .08356 Lbs. per Ft. American Steel and Wire Co's. Standard.

Conc. per lin. ft. of Pile = 0.0545 cu. yds.
Conc. in point = 0.055 CU. YDS.

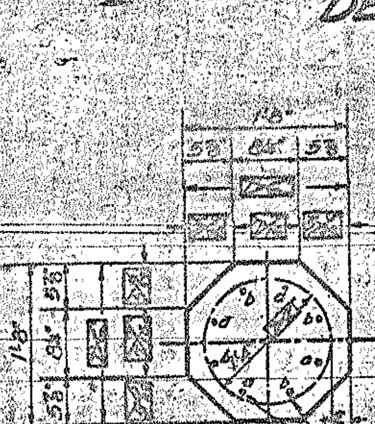


DETAIL OF BARS "b" FOR 1'-4" AND ~~1'-6"~~ 1'-8" PILES

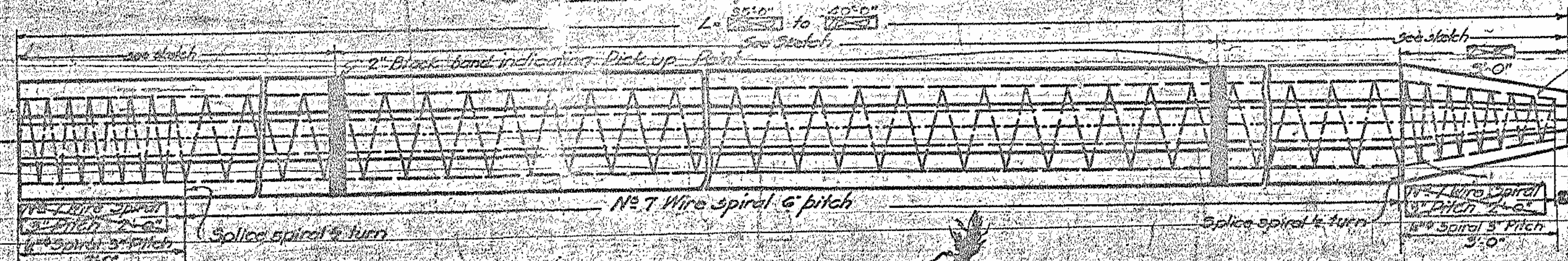
METHOD OF PICKING UP 1'-8" ~~1'-6"~~ PILES 60 FEET AND OVER 3 PICKUP POINTS.

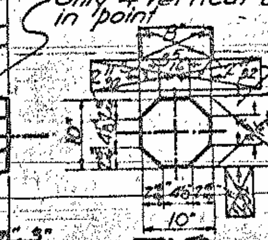
METHOD OF PICKING UP 1'-4" AND ~~1'-6" PILES~~ 1'-8" PILES UNDER 60 FEET 2 PICKUP POINTS

1'-8" ~~1'-6"~~ OCTAGONAL PILE



BUTT





TIP

QUANTITIES FOR ONE 1'-6" OCTAGONAL PILE.

LENGTH "L"	VERTICAL REIN. BARS				TOTAL REIN. STEEL LBS.	CONCRETE CU. YDS.	PILE WT. TONS	TWO PICKUP POINTS		THREE PICKUP POINTS	
	BAR	NO	SIZE	LENGTH				.207L	.586L	.15L	.35L
46'-0"	a b	4 4	⅞"φ	43'-9" 45'-7¼"	761	3.11	6.30	9'-6"	27'-0"		
50'-0"	a b	4 4	1"φ	47'-9" 49'-7¼"	1073	3.39	6.86	10'-4"	29'-4"		
55'-0"	a b	4 4	1"φ	52'-9" 54'-7¼"	1495	3.73	7.55	11'-4½"	32'-3"		
60'-0"	a b	4 4	1⅛"φ	57'-9" 59'-7¼"	2059	4.08	8.26	—	—	9'-0	21'-0"
65'-0"	a b	4 4	1¼"φ	62'-9" 64'-7¼"	2749	4.42	8.95	—	—	9'-9"	22'-9"
70'-0"	a b	4 4	1¼"φ	67'-9" 69'-7¼"	2965	4.77	9.66	—	—	10'-6"	24'-6"

Wt. No 7 Wire is considered as .08356 Lbs. per Ft. American Steel and Wire Co's. Standard.

Conc. per lin. ft. of Pile = 0.069 cu. yds.
Conc. in point = 0.076 cu. yds.

QUANTITIES FOR ONE 1'-8" OCTAGONAL PILE

LENGTH "L"	VERTICAL REINFORCING BARS				TOTAL REIN. STEEL LBS.	CONCRETE CU. YDS.	PILE WT. TONS	TWO PICKUP POINTS	
	BAR	NO	SIZE	LENGTH				.207L	.586L
35'-0"	a b	4 4	¾"φ	31'-9" 34'-6⅛"	432	2.87	5.9	7'-3"	20'-6"
40'-0"	a b	4 4	⅞"φ	36'-9" 39'-6⅛"	661	3.30	6.7	8'-3"	23'-6"

Concrete per lin. ft. of pile = 0.0851 Cu. Yds.
" in point " " = 0.15 " "

GENERAL NOTE:

Concrete shall be Class "A". Maximum size of coarse aggregate to be ¾". Coarse Aggregate shall consist of crushed stone only. All reinforcing steel shall be deformed bars. No splices of bars will be permitted. The spiral hooping shall be wired to the vertical bars at intervals of not more than 2'-0". In driving piles, a method approved by the Engineer shall be used whereby the head of the pile is not damaged. [illegible]

All material and workmanship as per the specifications of the North Carolina State Highway and Public Works Commission.

SUMMARY OF PILES.

NO	LENGTH	DIAMETER	CONC. CU. YDS.	REIN. STEEL LBS.
8	25'-0"	1'-4"	10.5	1704
8	30'-0"	1'-4"	17.6	2048
24	35'-0"	1'-8"	69.0	10368
14	40'-0"	1'-8"	52.8	10576

REINFORCING STEEL LBS.	[illegible]
CONCRETE CLASS "A" CU. YDS.	[illegible]
LINEAR FEET 1'-4" PILES	[illegible]
LINEAR FEET 1'-8" PILES	[illegible]
TOTAL PILES NO	[illegible]

PROJECT NO. 3880
ROBESON COUNTY

STATION 8+10

STATE OF NORTH CAROLINA
STATE HIGHWAY & PUBLIC WORKS COMM.
RALEIGH

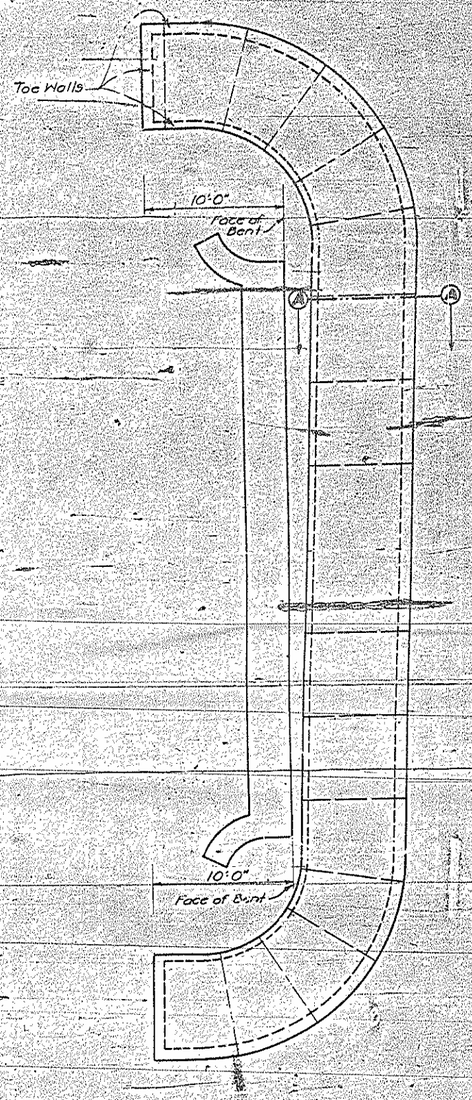
STANDARD PRE-CAST R.C. PILES
SEPTEMBER 1925

Revised to allow only crushed stone for coarse aggregate. May 1, 1934
Traced and revised as to Class "A" concrete & size of aggregate by E.H.P. & W.S.S. ck. by A.I.R. 3-28-31.
Revised May 26, 1926 for Concrete quantities and Pile weight by F.A.F. Jr. Checked by B.R.R.
Revised Jan. 31, 1925 for weight reinforcing steel, & length by J.G.
Revised for a bars, 60 Pile, 4-28-24 by E.P.
Revised for a & b bars, 10-16-22 by T.P.H. checked by G.T.B. Revised June 21, 1927 for Pickup Points by B.R.R. ck. by T.P.W. Jr.

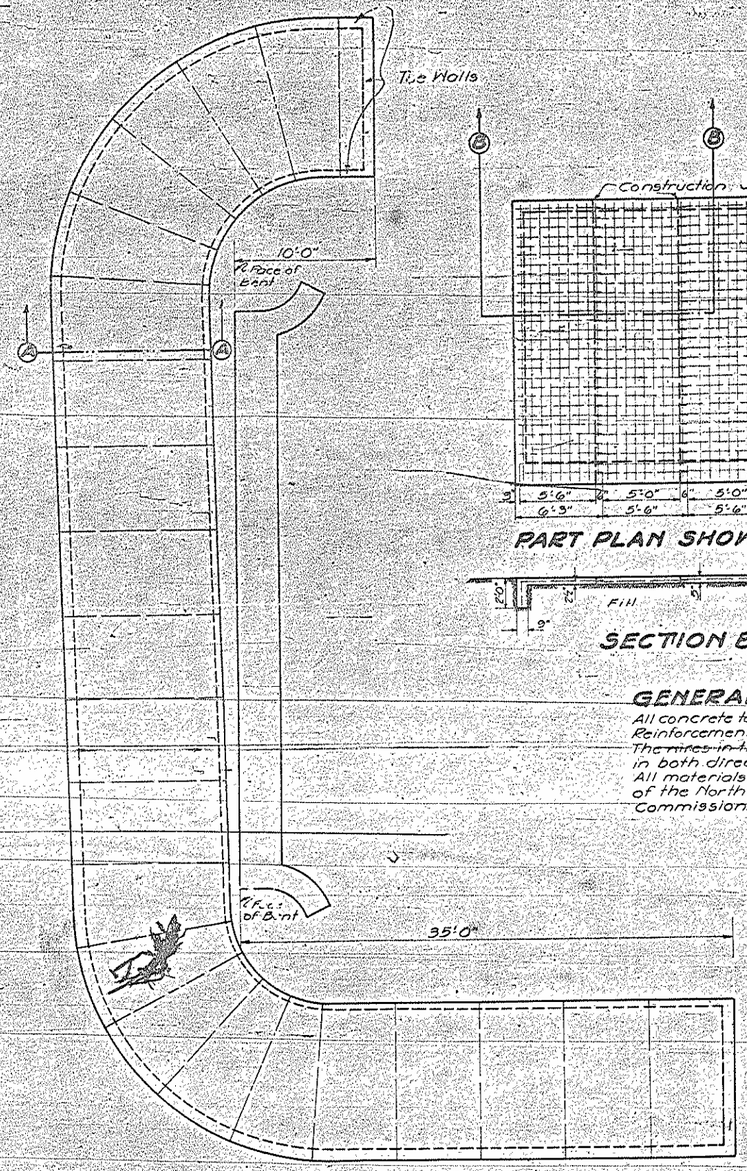
SPECIAL
STANDARD

STANDARD NO. [illegible]

FED. ROAD DIST. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
10	N. C.	3880	23	24
N.R.M. Proj. No. 379-A				



PLAN



PART PLAN SHOWING WIRE MESH

SECTION B-B

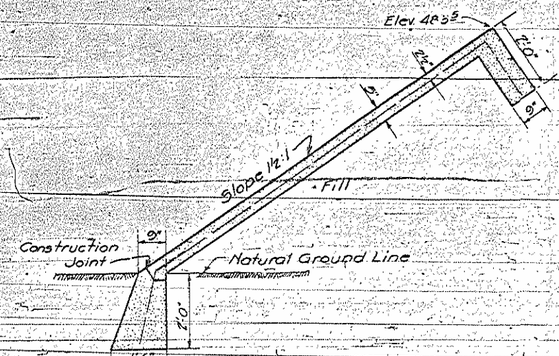
GENERAL NOTE

All concrete to be Class "B" Proportions 1-2½-5
Reinforcement to be #7 electrically welded wire mesh
The wires in the mesh to be spaced at 4" centers
in both directions.
All materials and workmanship to conform to specifications
of the North Carolina State Highway and Public Works
Commission.

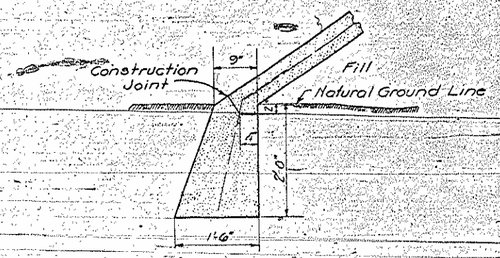
Note: No allowance will be made for metal mesh.
The cost of same complete in place including
all material, equipment, tools, labor and incidentals to complete the item to be included in the
unit price bid per sq. yd. for concrete rip rap.

PROJECT No. 3880
ROBESON COUNTY

STATION 8+10



SECTION A-A



DETAIL OF CONSTRUCTION JOINT AT TOE

Concrete Rip Rap 275.0 Sq. Yds
6' #7 Wire Mesh 72.0 Lin. Ft.

Approximate cu. yds. concrete rip rap - 72.0

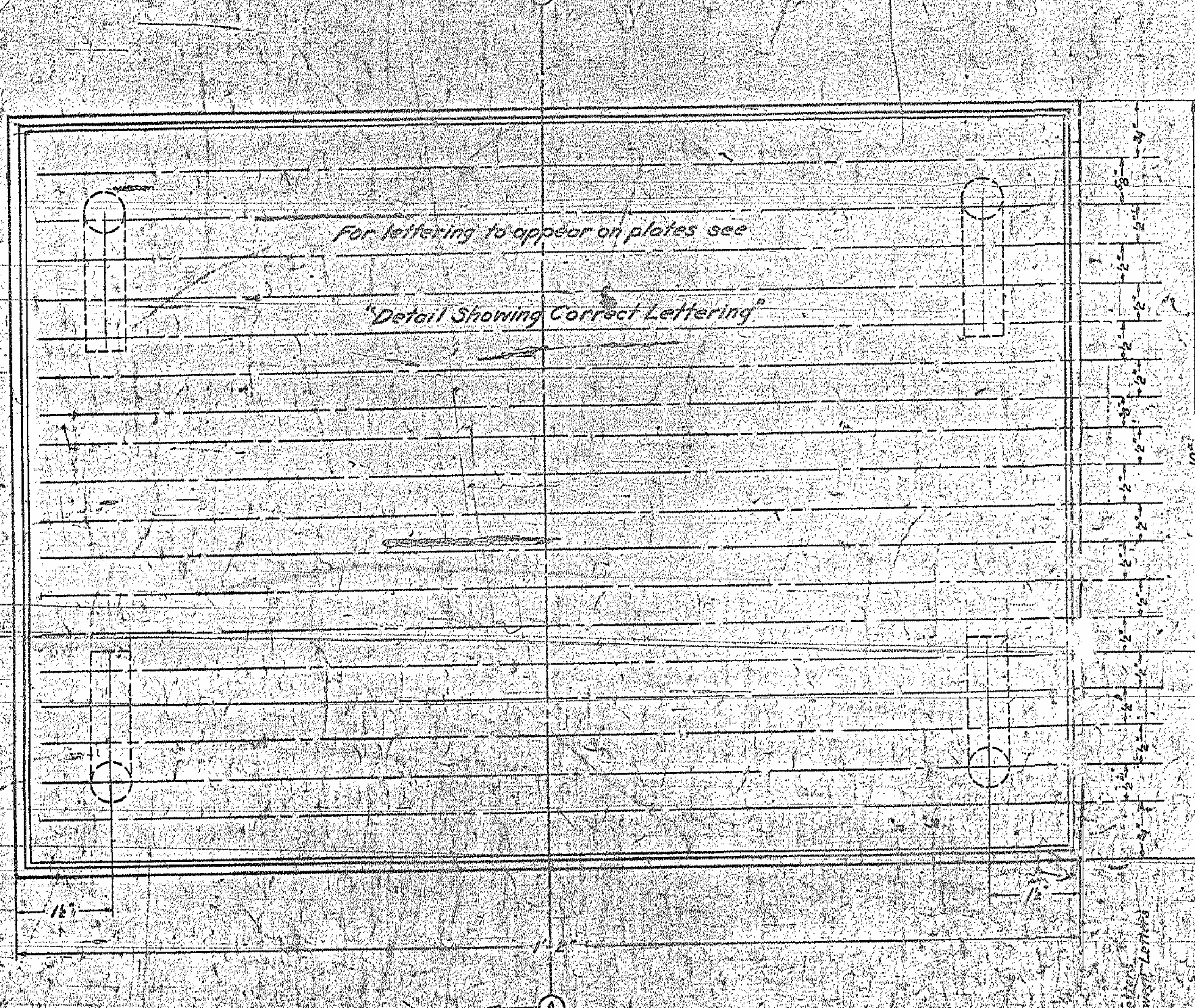
STATE OF NORTH CAROLINA
STATE HIGHWAY AND PUBLIC WORKS COMMISSION
RALEIGH

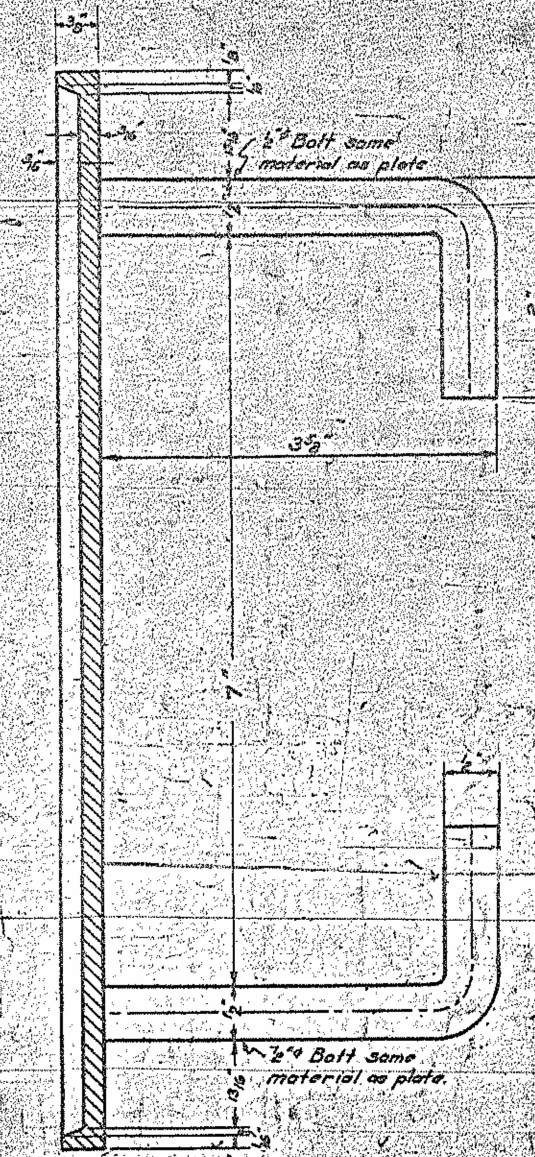
SPECIAL DETAIL OF CONCRETE RIP RAP LUMBER RIVER BRIDGE FEBRUARY 1934

SUBMITTED BY W. E. Graves — BRIDGE ENGR.
APPROVED BY Frank D. Wallace — STATE HIGHWAY ENGINEER — DATE 3-22-34

PLAN NO. 78-139 Mar. 22 1934

SPECIAL	DESIGNED BY	DATE
	DRAWN BY J. W. Flair	DATE Feb. 1934
	TRACED BY J. W. Flair	DATE Feb. 1934
	CHECKED BY J. N. Wall	DATE Feb. 1934





SECTION A-A

NOTE:
Shop bend Name Plate to 4'-6" Radius to fit curvature of end post.

GENERAL NOTE:

Two name plates are required for each bridge. One is to appear on each right hand end post approaching the bridge. It is to be securely fastened to the end of R.C. Thr. Girders or on the roadway side of handrail posts of R.C. Slabs and R.C. Deck Girders.

The plates are to be made of Grade "C" Phosphor Bronze. border and all lettering shall be raised ⅛" above the face of the plate. The top surface of the raised border and lettering shall be smooth. Lettering may be square cut or tapered. The height of the letters shall be ... and ⅜. The lettering shall be as shown in the "Detail Showing Correct Lettering".

Two name plates shall be provided for ... bridge at station: 8+10

PROJECT No. 3880
ROBESON COUNTY
STA. 8+10

LUMBER RIVER BRIDGE
ROBESON COUNTY
STATE PROJECT No. 3880
BUILT BY
NORTH CAROLINA
STATE HIGHWAY AND
PUBLIC WORKS COMMISSION
WITH FEDERAL AID
1934

DETAIL SHOWING CORRECT LETTERING

STATE OF NORTH CAROLINA
STATE HIGHWAY & PUBLIC WORKS COMMISSION
RALEIGH
STANDARD
NAME PLATE
FOR
CONCRETE BRIDGES
JULY 1933

SPECIAL
STANDARD