DIV. NO.		
8	R/W.	B.1107806
F. A. PROJECT		S-1194(12)

Beginning of Bridge Sta. 90+39.78 ℄ Median

℄ Sta. 90+80 ℄ Lt. Ln.

End of Bridge Sta. 91+29.78 ℄ Median

℄ Sta. 90+35 ℄ Lt. Ln. El. 59.405

℄ Sta. 91+25 ℄ Lt. Ln. El. 58.955

34' Rt. ℄ Med Sta. 90+00

SPAN 'A' — 1:0" Beam Normal to Cap

SPAN 'B'

SPAN 'C' — 1:0" Beam Normal to Cap

Crown Elev. @ ℄ = 59.180

-0.5%

Slope 1½:1 - Normal to Cap.

Slope 1½:1 - Normal to Cap

Approx. H.W. El. 54.0±

Design Discharge = 1700 cfs
Frequency = 50 yrs.
Water Surface El. 50.3 (4-27-67)

Rod Sounding #3 El. 51.0±

Pushed El. 45.0±
10 B.P.F. El. 41.0±
50 B.P.F. El. 39.0±
75 B.P.F. El. 36.0±
80 B.P.F. El. 31.0±
100 B.P.F. El. 27.0±

End Bent #1

Fill

El. 50.0±

El. 49.0±

El. 47.0±

Rip Rap

Approx. Ground Line

El. 44.0±

El. 46.0±

Stream Bed

El. 43.0±

Rod Sounding #1 El. 50.0±

Bent #1

Bent #2

Pushed El. 45.0±
10 B.P.F. El. 40.0±
50 B.P.F. El. 35.0±
90 B.P.F. El. 30.0±
100 B.P.F. El. 25.0±

Concrete Rip Rap

End Bent #2

Approx. Nat. Ground Line

34' Lt ℄ Med Sta. 91+50

Rod Sounding #2 El. 50.0±

Pushed El. 45.0±
20 B.P.F. El. 40.0±
50 B.P.F. El. 35.0±
50 B.P.F. El. 30.0±
90 B.P.F. El. 27.0±
110 B.P.F. El. 25.0±

SECTION ALONG ℄ BRIDGE

Bents & End Bents Along Sec. A-A

℄ Med Sta 91+00

Pavm't Notch

90'-0" Length of Bridge Floor (Fill Face to Fill Face)

30'-0" | 30'-0" | 30'-0"

Work Point

Sta. 90+35

Sta 90+65

Sta. 90+95

Sta. 91+25

Fill Face End Bent #1

Fill Face End Bent #2

42°00'

34'-0"

1'-6"

℄ End Bent #1 & ℄ Piles

℄ Bent #1

℄ Bent #2

℄ End Bent #2 & ℄ Piles

Concrete Rip Rap

℄ Median & Survey

10'-0"

PLAN

TOTAL BILL OF MATERIAL

	Class "AA" Concrete Cu. Yds.	Reinforcing Steel - Lbs.	12" Prestressed Concrete Piles No.	12" Prestressed Concrete Piles Lin. Ft.	Linseed Oil Conc. Prot. Gals. *	Concrete Handrail Lin. Ft.	5" Concrete Rip Rap Sq. Yds.	Removal of Exist. Str.
Superstructure	300.8	64587			10	183.33		
End Bent 1			7	245			460	
Bent 1			11	385				
Bent 2			11	385				
End Bent 2			7	245			485	
Curved End Blocks	0.8	85						
Total	301.6	64,672	36	1260	10	183.33	945	Lump Sum

DRAWN BY Joel A. Johnson DATE June 1969
CHECKED BY D. L. Lloyd DATE July 69

NOTES:

Assumed Live Load = HS20-44 or Alternate Loading.

For other design data and general note, see Sheet S-N.

The contractor will be responsible for determining lengths of piles required. See Special Provisions.

Piles for End Bents #1 & 2 and Bents #1 & 2 to be driven to a minimum bearing capacity of 30 tons each.

Piles for End Bents #1 & 2 to be driven through the roadway fill.

Traffic shall be maintained on exist. bridge during construction of this project.

Maintenance and Removal of Existing Structure: After serving as a temporary crossing, the existing structure consisting of 1@ 16' timber span, 1@ 42.7' I-Bm. span, and 1@ 16' timber span on piles and timber bulkheads and located 70± downstream from proposed structure shall be removed. See Specifications and Special Provisions.

Use Class AA concrete only. See Spec.'s and Spec. Prov.

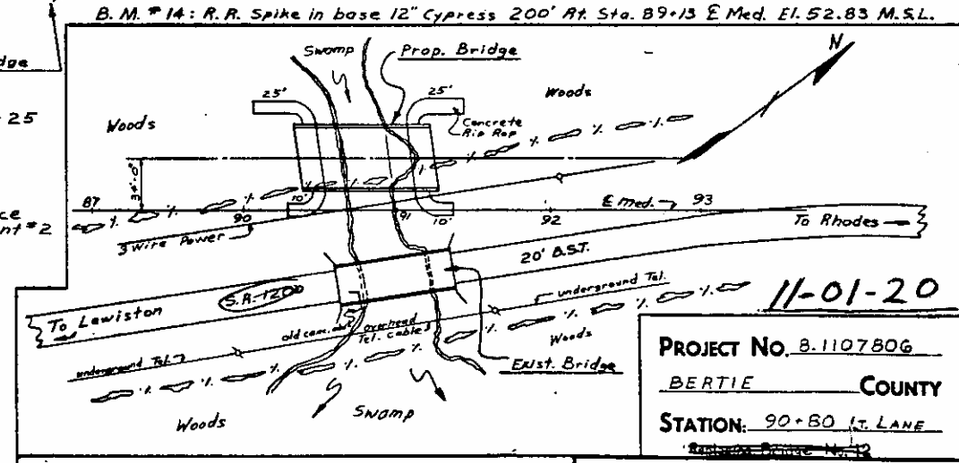
*See Special Provisions for method of curing bridge deck and mixing and applying the linseed oil solution.

No rubbed surface finish will be required on any part of the structure except as specified in the Special Provision.

For method of measurement and payment for concrete handrails see Special Provisions.

The existing bridge will be maintained by others during construction of proposed bridge.

B. M. #14: R.R. Spike in base 12" Cypress 200' Rt. Sta. 89+13 ℄ Med. El. 52.83 M.S.L.



LOCATION SKETCH

11-01-20

PROJECT NO. B.1107806

BERTIE COUNTY

STATION: 90+80 Lt. Lane

Replaces Bridge No. 12

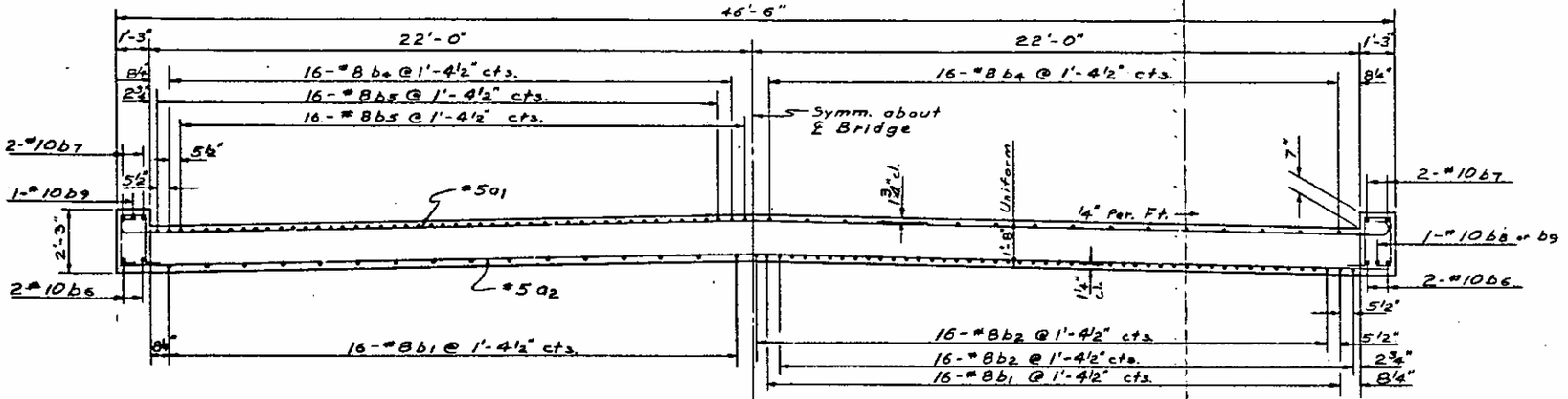
STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER THE CASHIE RIVER ON THE RELOCATION OF N.C. 11 BETWEEN LEWISTON AND AULANDER

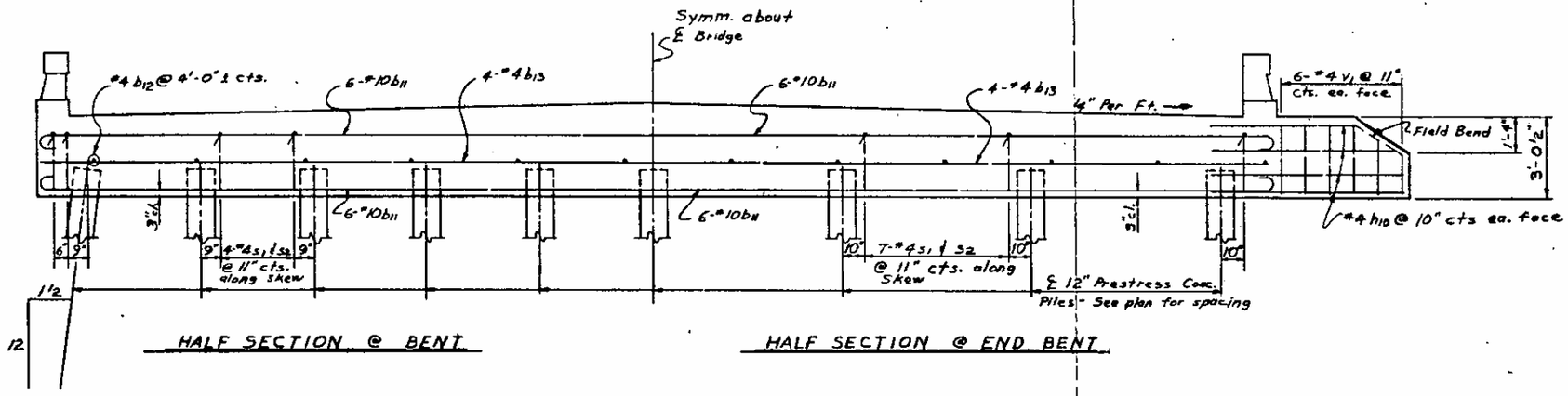
JUNE 1969

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-2
1			3			TOTAL SHEETS
2			4			10



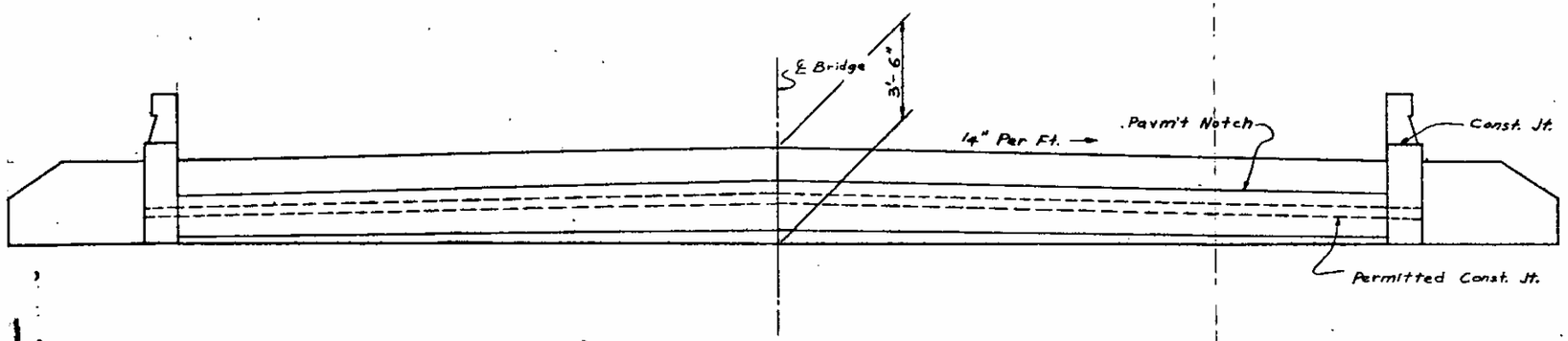
HALF SECTION THRU SLAB @ BENT

HALF SECTION THRU SLAB @ MIDSPAN



HALF SECTION @ BENT

HALF SECTION @ END BENT



END VIEW

DRAWN BY Joe A. Johnson DATE Jul 1969
CHECKED BY [illegible] DATE [illegible]

PROJECT NO. 8.1107806

BERTIE COUNTY

STATION 90+80 - Lt. Lane

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

SUPERSTRUCTURE
TYPICAL SECTIONS

JUNE 1969

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-3
1			3			TOTAL SHEETS
2			4			10

F.A. PROJ. NO.		8.1107806
F.A. PROJECT		S-1194(12)

FED. ROAD DIV. NO.	STATE	PROJECT NO.
3	N.C.	B-1107806
R.A. PROJECT	S-1194(12)	

2 of 12

NOTES:

Assumed Live Load = HS20-44 or Alternate Loading.

For other design data and general note, see Sheet S-N.

The contractor will be responsible for determining lengths of piles required. See Special Provisions.

Piles for End Bents #1 & 2 and Bents #1 & 2 to be driven to a minimum bearing capacity of 30 tons each.

Piles for End Bents #1 & 2 to be driven through the roadway fill.

Traffic shall be maintained on exist. bridge during construction of this project.

Maintenance and Removal of Existing Structure. After serving as a temporary crossing, the existing structure, consisting of 1 @ 16' timber span, 1 @ 20'-7" R.R. span, and 1 @ 16' timber span on piles and timber bulkheads and located 70± downstream from proposed structure, shall be removed. See Specifications and Special Provisions.

Use Class AA concrete only See Specs and Spec. Prov.

* See Special Provisions for method of curing bridge deck and mixing and applying the linseed oil solution.

No rubbed surface finish will be required on any part of the structure except as specified in the Special Provision.

For method of measurement and payment for concrete handrails see Special Provisions.

The existing bridge will be maintained by others during construction of proposed bridge.

Beginning of Bridge Sta. 90+39.78 ℄ Median

℄ Sta. 90 + 80 ℄ Lt. Ln.

End of Bridge Sta 91+29.78 ℄ Median

FF Sta 90+35 ℄ Lt Ln. C/R El. 59.405

FF Sta 91+25 ℄ Lt Ln. El. 59.455

SPAN "A" — 1:0" Camb. Normal to Cap

SPAN "B" — Crown Elev. @ ℄ = 59.180

SPAN "C" — 1:0" Camb. Normal to Cap — -0.5 %

34' Rt. ℄ Med Sta. 90+00

Slope 1½:1 Normal to Cap.

Slope 1½:1 Normal to Cap.

Rod Sounding #3 El. 51.0±

Fill — El. 50.0± — El. 49.0± — El. 47.0±

Rip Rap — Approx. Ground Line

Approx. W. W. El. 54.0±

Design Discharge = 1700 c.f.s.

Frequency = 50 yrs.

Water Surface El. 50.3 (4-27-67)

El. 46.0± — El. 44.0± — El. 44.0± — Stream Bed — El. 43.0±

Rod Sounding #1 El. 50.0±

Rod Sounding #2 El. 50.0±

Pushed El. 45.0±
10 B.P.F. El. 41.0±
50 B.P.R. El. 39.0±
75 B.P.F. El. 36.0±
90 B.P.F. El. 31.0±
End Bent #1
100 B.P.F. El. 27.0±

Bent #1

Bent #2

End Bent #2

Pushed El. 45.0±
10 B.P.F. El. 40.0±
50 B.P.F. El. 35.0±
90 B.P.F. El. 30.0±
90 B.P.F. El. 25.0±

Concrete Rip Rap

Approx. Nat. Ground Line

34' Lt ℄ Med ℄ Sta. 91+50±

Pushed El. 45.0±
20 B.P.R. El. 40.0±
50 B.P.R. El. 35.0±
50 B.P.R. El. 30.0±
90 B.P.R. El. 27.0±
110 B.P.F. El. 25.0±

SECTION ALONG ℄ BENTS

Bents & End Bents Along Sec. A-A

℄ Med Sta 91+00

Pavmt Notch

90'-0" Length of Bridge Back (Fill Face to Fill Face)

30'-0" — 30'-0" — 30'-0"

Work Point

Sta. 90+25 — Sta 90+65 — Sta. 90+95

Fill Face End Bent #1

Work Point

℄ Bridge

Sta. 91+25

Fill Face End Bent #2

34'-0"

1'-6"

℄ End Bent #1 & 21 Piles

℄ Bent #2

℄ End Bent #2 & 8 Piles

Concrete Rip Rap

Concrete Rip Rap

℄ Median & Survey

℄ Median & Survey

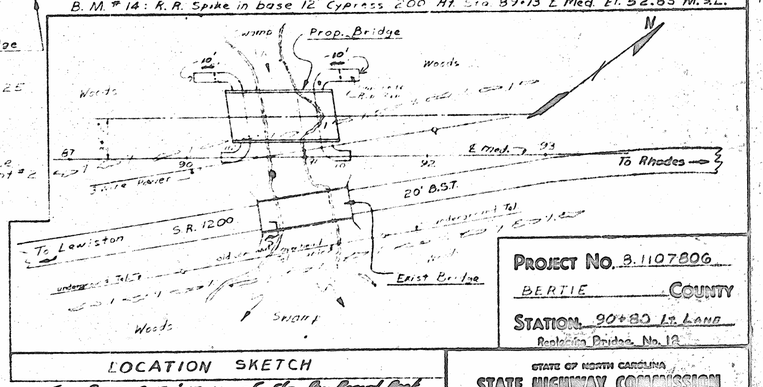
10'-0"

10'-0"

	Class AA Concrete Cu. Yds.	Reinforcing Steel Lbs.	Prestressed Conc. Piles Lin. Ft.	Linseed Oil Conc. Prot. Gals. *	Concrete Handrail Lin. Ft.	5" Concrete Rip Rap Sq. Yds.	Removal of Exist. Str.
Superstructure	200.8	45,617		10	183.33		
End Bent 1			210				LUMP SUM
Bent 1			210				
Bent 2			210				
End Bent 2			210				LUMP SUM
Curved Rail	0.8						
				10	183.33		LUMP SUM

SUMMARY OF MATERIAL

B. M. #14: R.R. Spike in base 12" Cypress 200' Ht. Sta. 89+13 ℄ Med. El. 52.83 M.S.L.



LOCATION SKETCH

See Pages 0-B, 0-C, 1-B of Std. Pg Board Book

PROJECT NO. B-1107806

BERTIE COUNTY

STATION 90+80 Lt. LANE

Replacing Bridge No. 19

STATE OF NORTH CAROLINA

STATE HIGHWAY COMMISSION

RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER THE CASHIE RIVER ON THE RELOCATION OF N.C. 11 BETWEEN LEWISTON AND AULANDER

JUNE 1969

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

S-2

70 of 70

FED. ROAD DIV. NO.	STATE	PROJECT NO.
3	N. C.	B-1107806
P. A. PROJECT		S-1194(12)

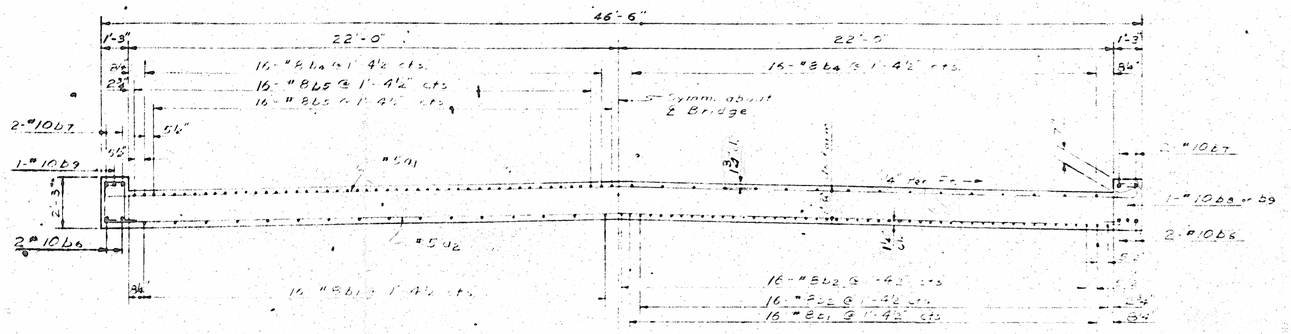
3 of 12

#8

$1\frac{3}{4}$ CL = 1.75 + 0.5 = 2.25"

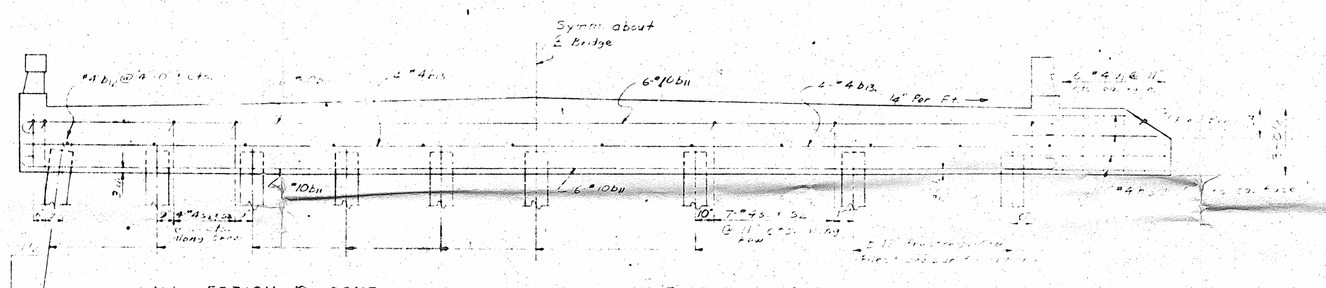
$1\frac{1}{4}$ CL = 1.25 + 0.5 = 1.75"

P.E.



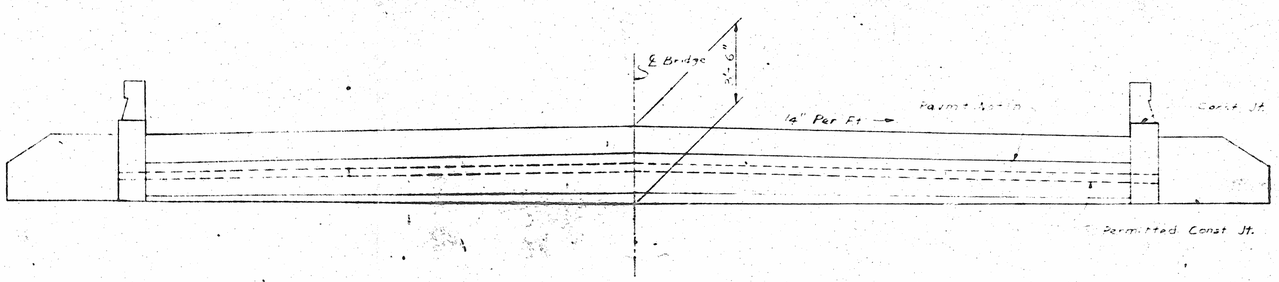
HALF SECTION THRU SLAB @ BENT

HALF SECTION THRU SLAB @ MIDSPAN



HALF SECTION @ BENT

HALF SECTION @ END BENT



END VIEW.

See pages 17 thru 19 of Str. Rep. Record Book

PROJECT NO. B-1107806

BERTIE COUNTY

STATION: 20+80 - Lt. Lane

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

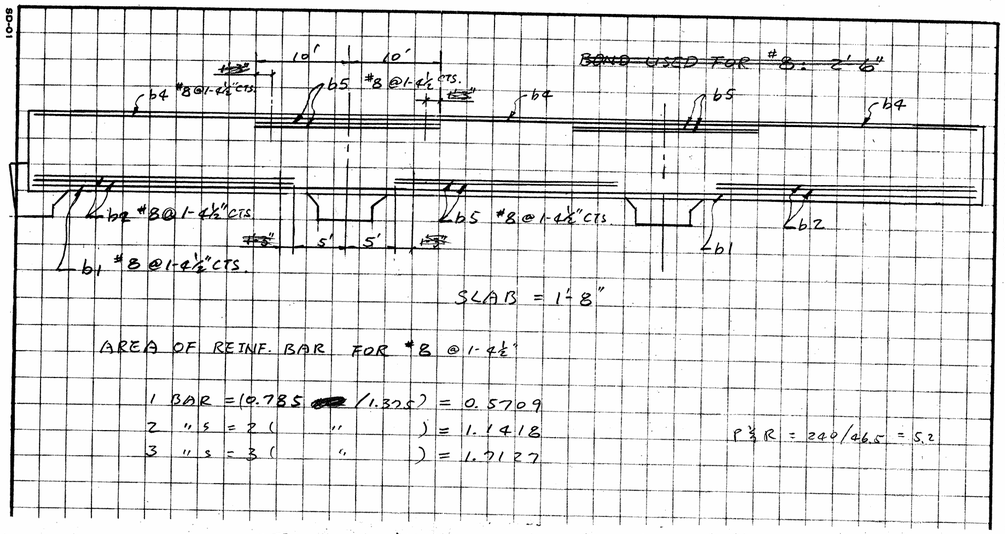
SUPERSTRUCTURE

TYPICAL SECTIONS

JUNE 1969

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-3
1			3			TOTAL SHEETS
2			4			12

BR. # 24 BERTIE SMC 10/22/92



SLAB = 1'-8"

AREA OF REINF. BAR FOR #8 @ 1-4½"

1 BAR = (0.785 / 1.325) = 0.5709
2 " s = 2 (") = 1.1418
3 " s = 3 (") = 1.7127

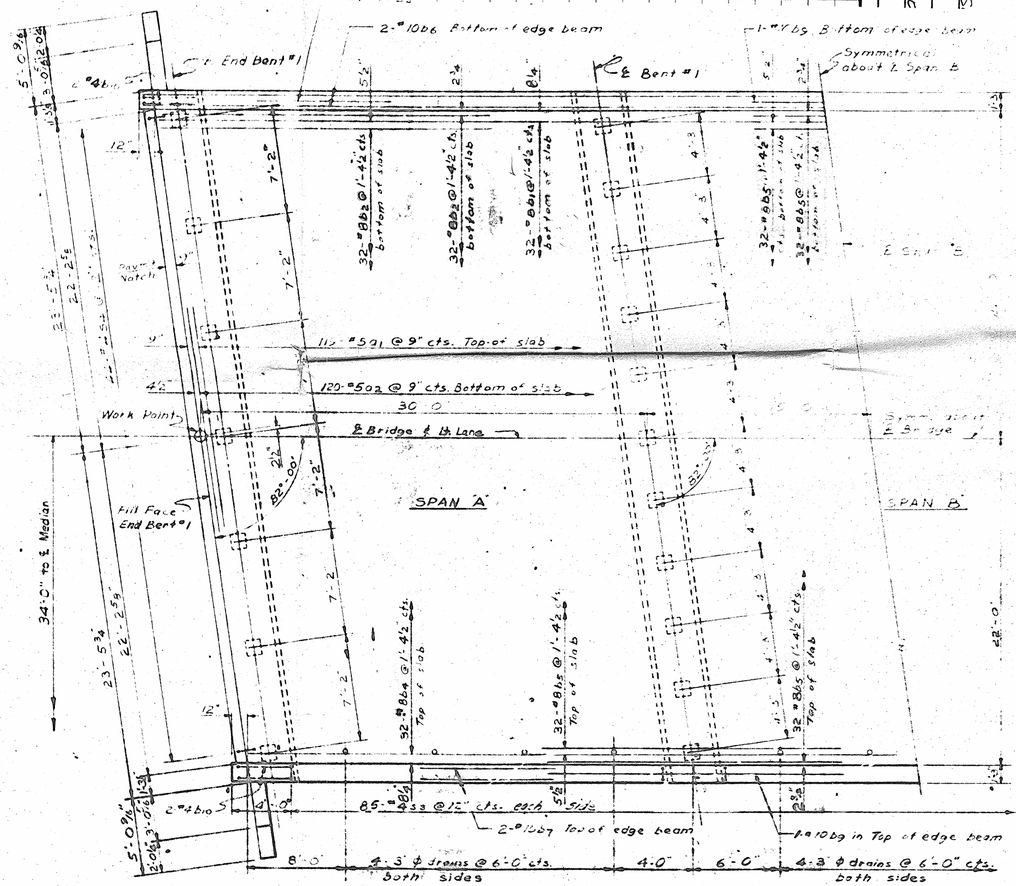
P & R = 240/46.5 = 5.2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
HIGHWAY BUILDING
P. O. BOX 29201
RALEIGH, NORTH CAROLINA 27611

SUBJECT MONOLITHIC

PREPARED BY SMC DATE 12

CHECKED BY _____ DATE _____

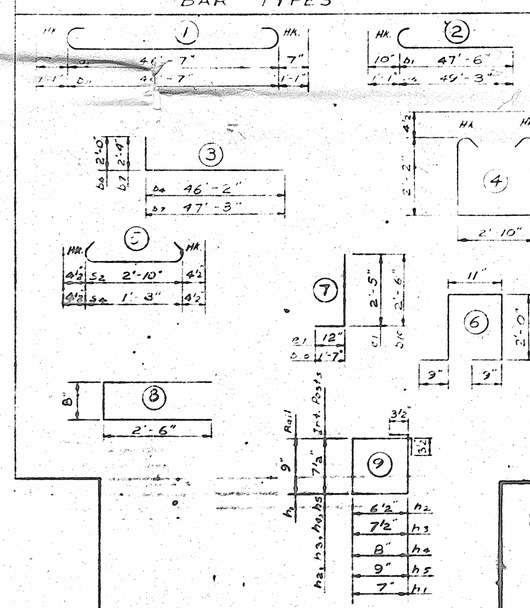


PLAN

BILL OF MATERIAL For Concrete Handrail					
Bar	No	Size	Type	Length	Weight
s1	136	#7	1	3'-5"	950
s2	2	#6	8	5'-8"	68
s3	16	#7	Str.	9'-6	627
s4	24	#7	Str.	17'-0	834
b1	16	#8	2	3'-5"	97
b2	64	#8	3	46'-2"	6231
b3	2	#6	3	2'-11"	13
b4	64	#8	Str.	20'-0"	10253
b5	8	#10	2	50'-2"	1793
b6	8	#10	3	50'-0"	1787
b7	8	#10	Str.	25'-5"	443
b8	4	#10	Str.	21'-6"	555
b9	6	#4	7	4'-1"	22
b10	6	#10	1	46'-9"	10,069
b11	48	#4	Str.	2'-8"	86
b12	48	#4	Str.	20'-8"	518
h10	32	#4	Str.	7'-6"	160
Reinforcing Steel - Lbs. = 31,474					
Class AA Concrete - Cu. Yds. = 58					

BILL OF MATERIAL					
Bar	No.	Size	Type	Length	Weight
a1	119	#5	1	47'-9"	5927
a2	120	#5	Str.	46'-7"	5830
b1	64	#8	2	48'-4"	2059
b2	128	#8	Str.	25'-0"	8546
b3	16	#4	Str.	3'-5"	37
b4	64	#8	3	46'-2"	6231
b5	192	#8	Str.	20'-0"	10253
b6	8	#10	2	50'-2"	1793
b7	8	#10	3	50'-0"	1787
b8	4	#10	Str.	25'-5"	443
b9	6	#10	Str.	21'-6"	555
b10	6	#4	7	4'-1"	22
b11	48	#10	1	46'-9"	10,069
b12	48	#4	Str.	2'-8"	86
b13	92	#4	Str.	20'-8"	518
h10	32	#4	Str.	7'-6"	160
s1	176	#4	4	7'-11"	931
s2	176	#4	5	3'-7"	421
s3	170	#4	6	6'-5"	727
s4	88	#4	5	2'-0"	118
Reinforcing Steel - Lbs. = 4567					
Class "AA" Concrete - Cu. Yds. = 3002					
12" ϕ Prestressed Concrete Piles No. = 36 - Lin. Ft. = 1260					1288
Linseed Oil Conc. Protection Gallons = 10 -					

BAR TYPES



All bar type dimensions are out to out.

See pages 17 thru 19 of Str. Pay Record Book

PROJECT NO. 8.1107806
BERTIE COUNTY
STATION: 90+80 -/t. Lane

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION

SUPERSTRUCTURE PLAN

JUNE 1969

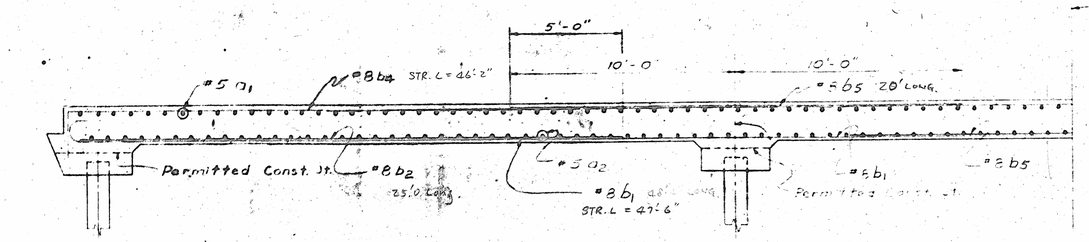
0	DG	0.1107806	
R.A. PROJECT	S-1194(12)		

4 of 18

0	B.C.	B.1107806
R.A. PROJECT	S-1194(12)	

5 of 12

Symmetrical about ℄ Span 2



END BENT No 1 OF 2 — BENT No 1 OF 2

SECTION ALONG ℄ BRIDGE

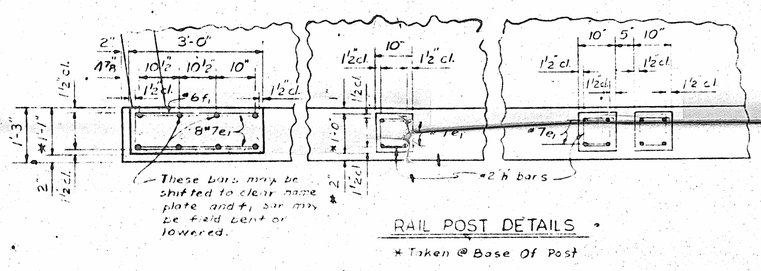
Assumed Live Load — HS 20-44

Reinforcing Steel in Tension 20,000 lbs. per sq. in.

Concrete in Compression 1,100 lbs per sq. in.

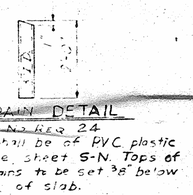
For other design data and general notes, see Sheet S-N

For bars indicated and no bar marks shown see concrete plan for the different spans.



RAIL POST DETAILS

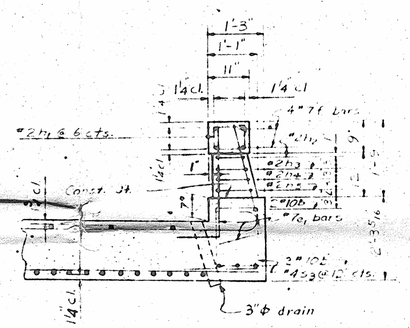
* Taken @ Base Of Post



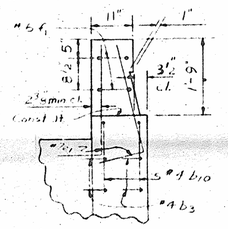
DRAIN DETAIL

No REQ'D 24

Drains shall be of PVC plastic pipe. See sheet S-N. Tops of floor drains to be set 3/8" below surface of slab.

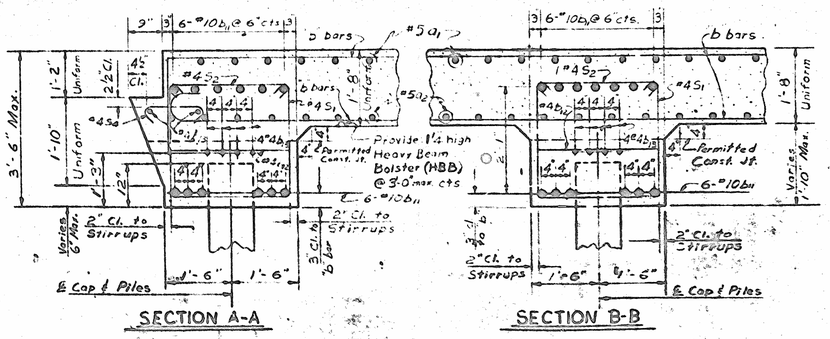


SECTION THRU POST RAIL & PARAPET



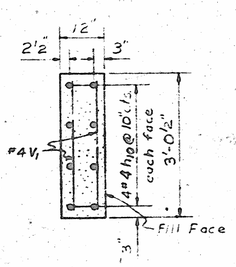
END POST DETAIL

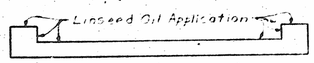
Note: See Standard Guard Rail Anchorage sheet for location of C6 bars for curved end blocks and guard rail anchorage assembly.



SECTION A-A

SECTION B-B





Sketch Showing Linseed Oil Application
Gallons Req'd. = 10

See pages 17 thru 19 of Str. Ry Record Book

PROJECT No. 8.1107806

BERTIE COUNTY

STATION: 90+80 - Lt. LANE

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

SUPERSTRUCTURE TYPICAL SECTIONS

JUNE 1969

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

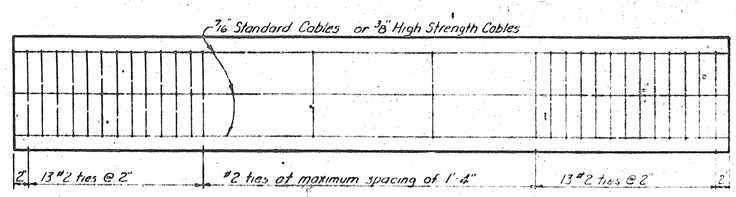
SHEET NO. S-2

DRAWN BY Joe A. Johnson DATE June 1969

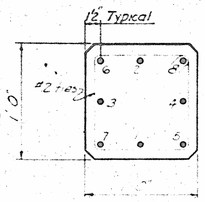
CHECKED BY [illegible] DATE [illegible]

SOUTHERN BLUE PRINT CO. CHARLOTTE, N. C.

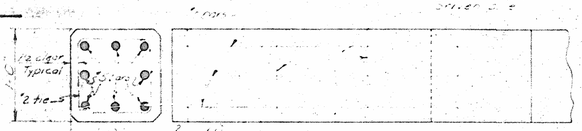
FED. ROAD DIV. NO.	STATE	PROJECT NO.
3	N.C.	8.1107806
F. A. PROJECT		S-1194(12)



12"□ PRESTRESSED CONCRETE PILES USING #2 TIES



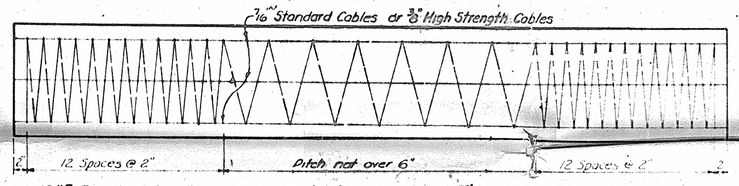
The contractor may use either #2 ties or #7 gage wire spiral as shown.



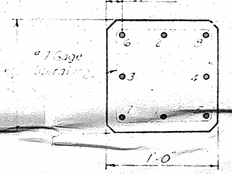
If additional driving is required, 2" spacing shall be used for #2 ties within these limits.

FIELD BUILD-UP USING #2 TIES

Build-up where necessary shall be done in accordance with the specifications and Special Provisions.



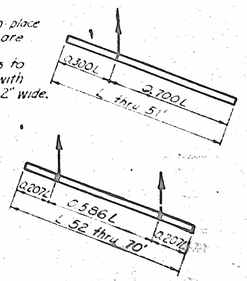
12"□ PRESTRESSED CONCRETE PILES USING #7 GAGE SPIRAL



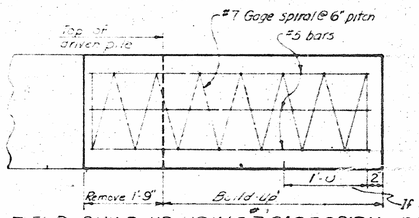
If cable stress is to be relieved by burning, the cables shall be burned in pairs in the order shown above. Not more than 4 cables may be burned at any one section before the same cables are burned at both ends of the bed and between each pair of piles in the bed.

TYPICAL PATTERN FOR BURNING CABLES

Where cast-in-place lifting devices are not used, pick-up points to be indicated with a block mark 2" wide.



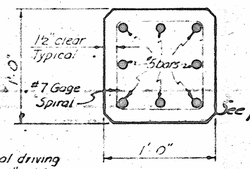
METHOD OF PICKING UP PILES



If additional driving is required, 2" pitch shall be used for spiral wire within these limits.

FIELD BUILD-UP USING 7 GAGE SPIRAL

Build-up where necessary shall be done in accordance with the specifications and Special Provisions.



12"□ PRESTRESSED CONCRETE PILES

Design Data:
Concrete: f'c = 5,000 p.s.i. ; fc = 2,000 p.s.i.
Impact in handling +50%
In driving piles a method approved by the Engineer shall be used, whereby the head of the pile is not damaged.
All prestressing strand shall be 7-wire stress relieved cables in accordance with the Specifications. The contractor may, at his option, use either of the two types of cable listed below; however, all cables in a pile shall be of the same type:

Type	Area	Ultimate Strength	Initial Prestressing
7/16 high Strength	0.0840 sq. in.	23,000 lbs. per cable	16,100 lbs. per cable
7/16 Standard	0.1089 sq. in.	27,000 lbs. per cable	18,900 lbs. per cable

Devices for lifting the piles from the casting beds shall be approved by the Engineer. Where piles will be exposed to view in the structure, inserts set in the piles to receive threaded eye bolts or similar approved devices shall be used. Loops of cable cast in the pile will not be permitted.

The use of satisfactory clamps or slings will be permitted where this is practicable without the use of lifting devices cast in the piles. After eye bolts or other attachments have been removed, the openings shall be repaired in a satisfactory manner before delivery to the bridge site in order to obtain a uniform appearance. It will not be necessary to remove loops of cable or other lifting devices in piles for End Bents and foundations which will not be exposed to view.

All corners to be chamfered ¾".

PROJECT No. 8.1107806
BERTIE COUNTY
STATION: 90 + 80 Lt Ln.

See pages 8 thru 11 of Str. Rep. Record Book.

Prepared By: Joel A. Johnson Date: June 1969
Checked By: [illegible] Date:
DRAWN BY: Carl L. Hinnant DATE: 7/1/69
CHECKED BY: [illegible] DATE: [illegible]

SPECIAL
STANDARD

Revised for note concerning loops of cable. 5/13/66 by J.M.T. / D.W.P.
Revised for note concerning fixed Build-Up. 8/17/66 by C.J.K. / D.W.P.

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

STANDARD
12" PRESTRESSED CONCRETE PILES

MARCH 1969

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

SHEET NO. S-1
TOTAL SHEETS 101