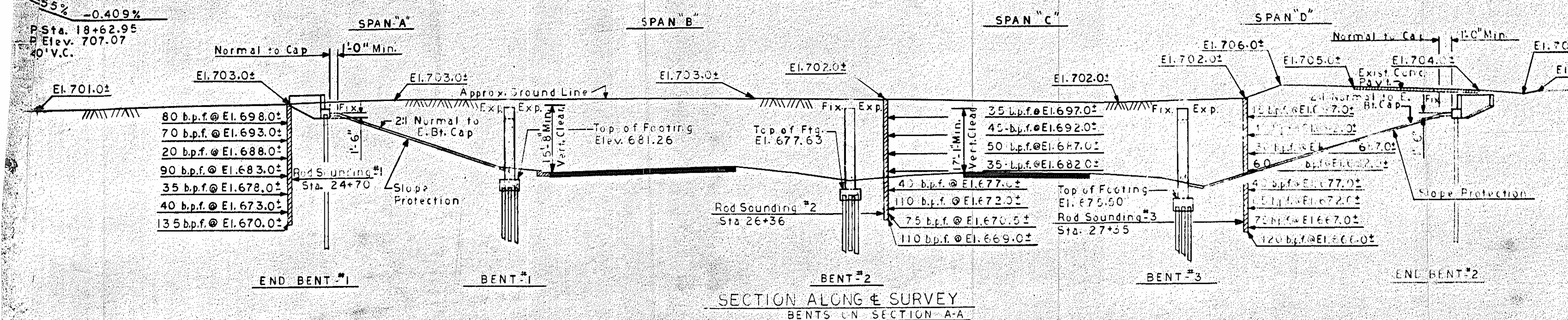
	N.C.	8I592504
F.A.Proj.	F-51-1 (7)	

3-159



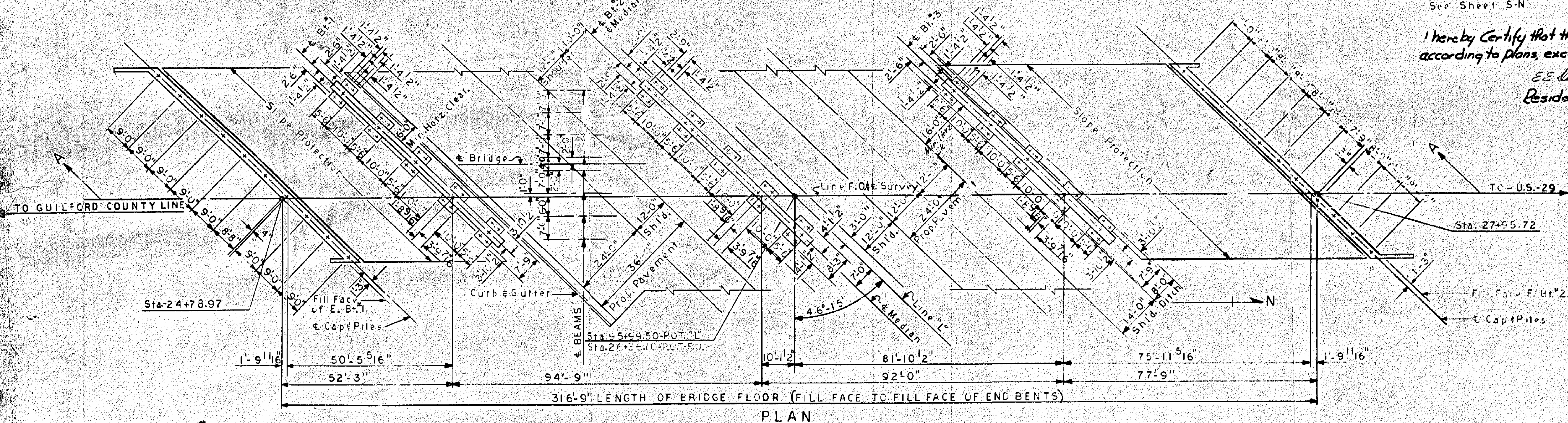
SECTION ALONG ℄ SURVEY
BENTS ON SECTION A-A

NOTES

Assumed Live Load = H20-S16 (44) or Alternate Load.
The Contractor shall be responsible for determining the length of piles required, See Special Provisions.
Piles for End Bents 1&2 and Bents 1,2&3 to be driven to a minimum bearing capacity of 30 tons each.
Work is not to be started on this bridge until roadway section has been excavated by roadway contractor.
Unclass. Structure Excav. for Bents 1, 2 & 3 to be measured from surface of roadway cut.
For other design data & General Note See Sheet S-N

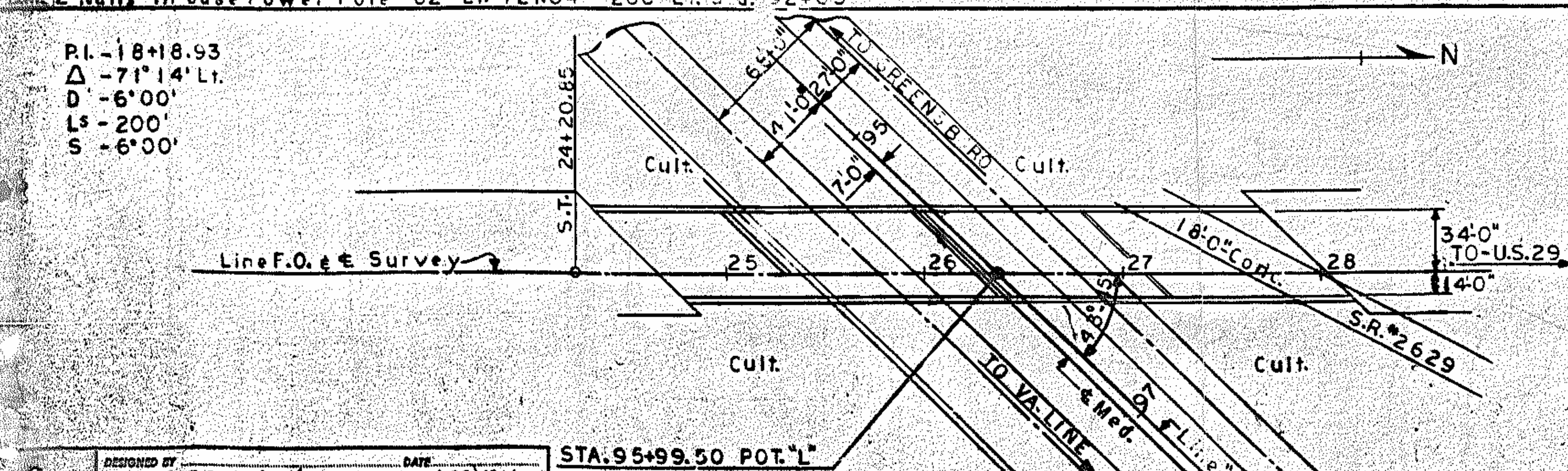
I hereby Certify that this Structure was built according to plans, except as noted herein

E.E. deVault
Resident Engineer



PLAN

BM 2 Nails in base Power Pole #82 - El. 721.34 - 200' Lt. Sta. 92+05



STA. 95+99.50 POT. "L"
STA. 26+36.10 P.O.T. F.O.

DESIGNED BY		DATE
DRAWN BY	E.D. Hartsell	DATE 1-28-1966
TRACED BY		DATE
CHECKED BY	R.H. Ellis	DATE March, 1966

TOTAL BILL OF MATERIAL

	CLASS "A" CONC.	REINF. STEEL	STRUCT. STEEL	12" PRESTR. CONC. PILES.			TWO-BAR METAL RAIL	4" CONC. SLOPE PROTECTION	UNCLASS. STRUCTURE EXCAV.	
	Cu. Yds.	Lbs.	Approx. Lbs.	No.	Lin. Ft.		Lin. Ft.	S.Y.	Cu. Yds.	
SUPERSTRUCTURE	451.9	113,105	616,500				628.00			
END BENT #1	25.1	5,302		10	~~340~~	399'0"		~~400~~ 440.32		
BENT #1	69.5	11,177		23	~~525~~	586'0"			~~95~~	90.26 90.67
BENT #2	76.9	11,874		32	~~630~~	356'11"			~~125~~	137.33 127.58
BENT #3	76.5	13,428		25	~~525~~	362'5"			~~125~~	139.62
END BENT #2	25.0	5,178		11	~~396~~	[illegible]'1"		~~520~~ 348.94		
TOTAL	724.9	160,764	616,500	101	~~2436~~	1,953'5"	628.00	~~920~~ 889.26	~~340~~ 357.87	357.87

PROJECT NO. 8I592504

ROCKINGHAM **COUNTY**

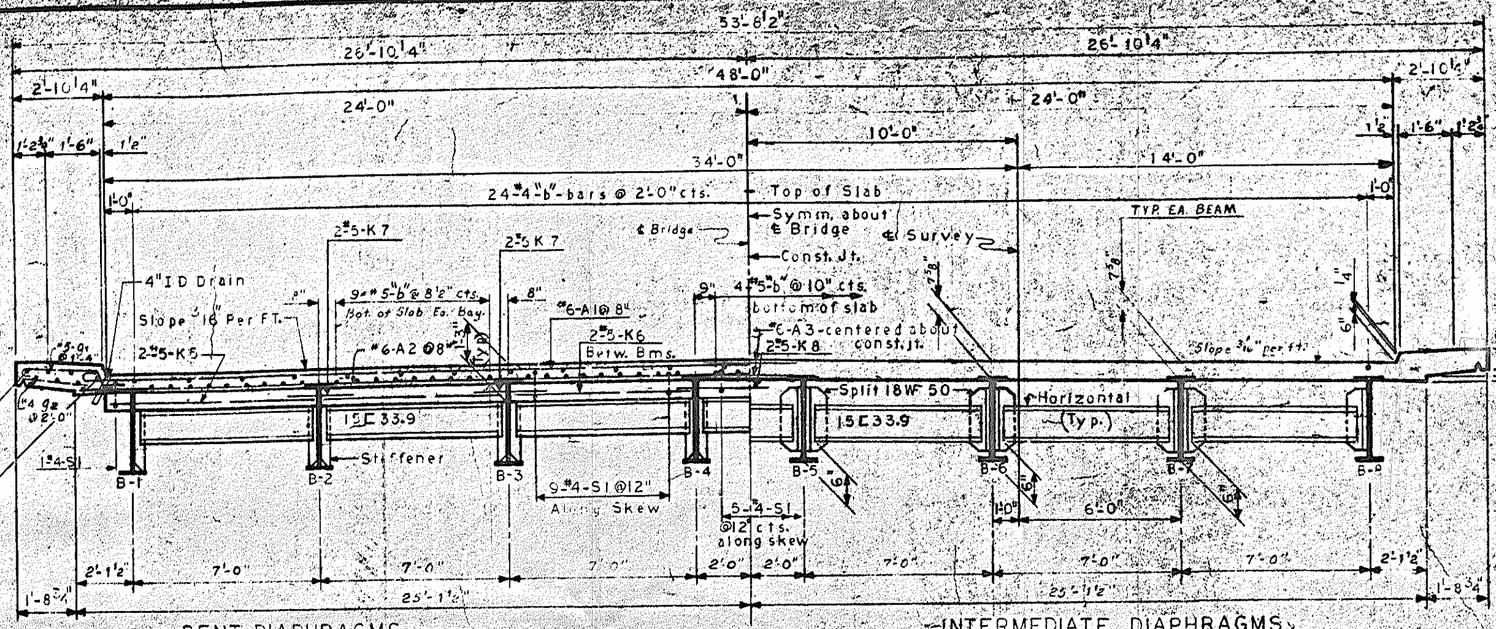
STATION: 95+99.50-POT.-L.
26+36.10-POT.-F.O.

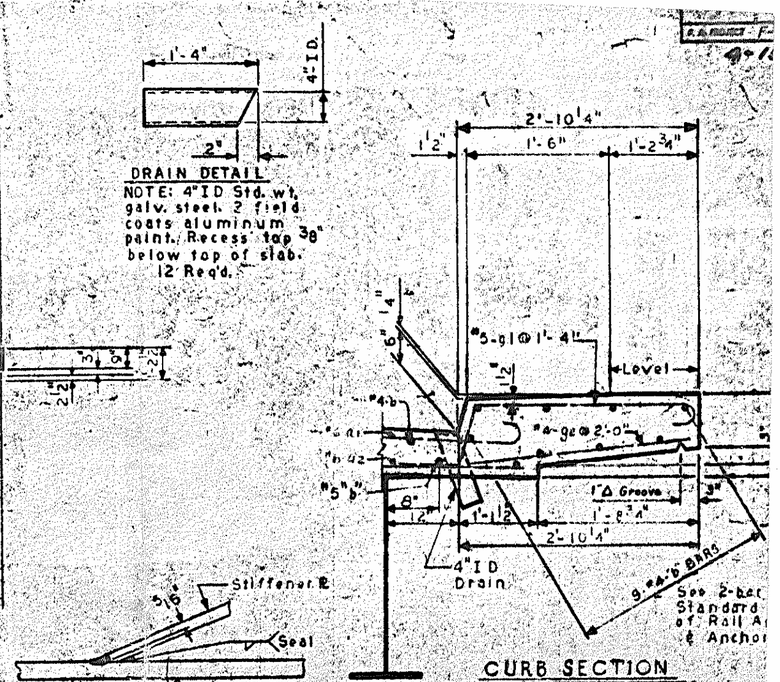
STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

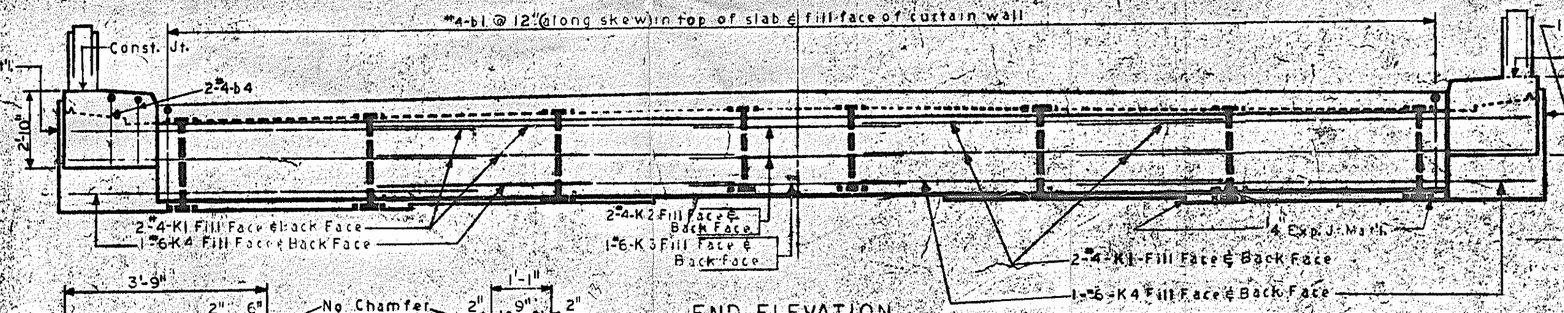
GENERAL DRAWING FOR BRIDGE OVER RELOCATION-U.S. #29 BETWEEN GREENSBORO AND REIDSVILLE

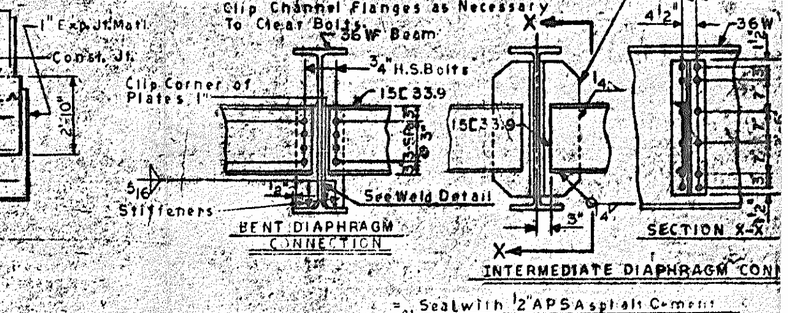
JANUARY, 1966

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-2
1			3			TOTAL SHEETS
2			4			130







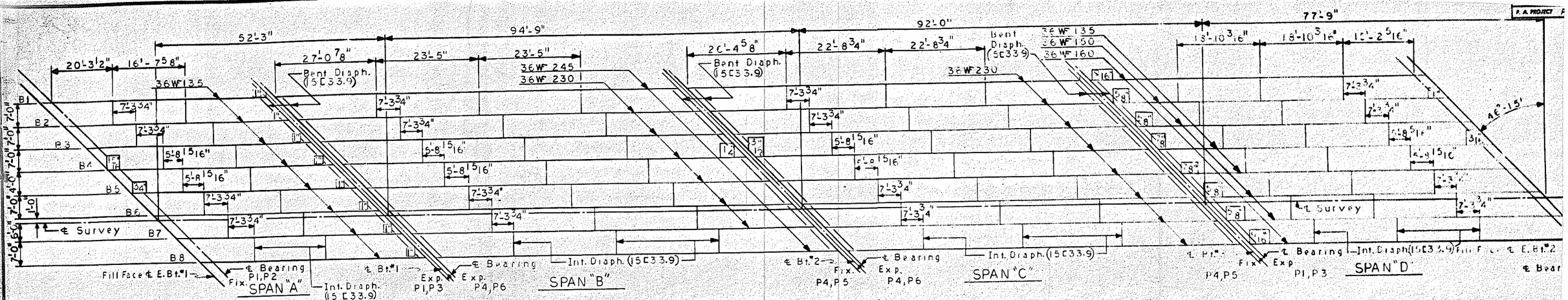


PROJECT No. 8.1
ROCKINGHAM CO
STATION: 95+99

STATE OF NORTH CAR
STATE HIGHWAY CO
STANDARD TYPICAL
48' ROADWAY - 18"
2-BAR METAL RA
October 196

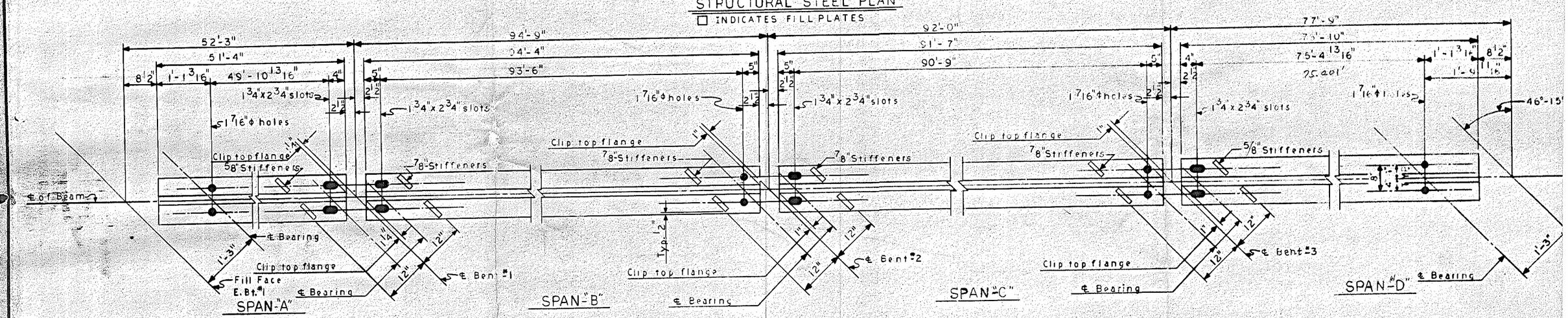
REVISIONS				
NO.	BY	DATE	NO.	BY
1				
2				
3				

F. A. PROJECT



STRUCTURAL STEEL PLAN

□ INDICATES FILL PLATES



BOTTOM FLANGE DETAIL

See Typical Section sheet for diaphra
stiffener connections.

PROJECT NO. 8

ROCKINGHAM C

STATION: 95+

Sheet 1 of 2

STATE OF NORTH CA
STATE HIGHWAY C
RALEIGH

STRUCTURAL

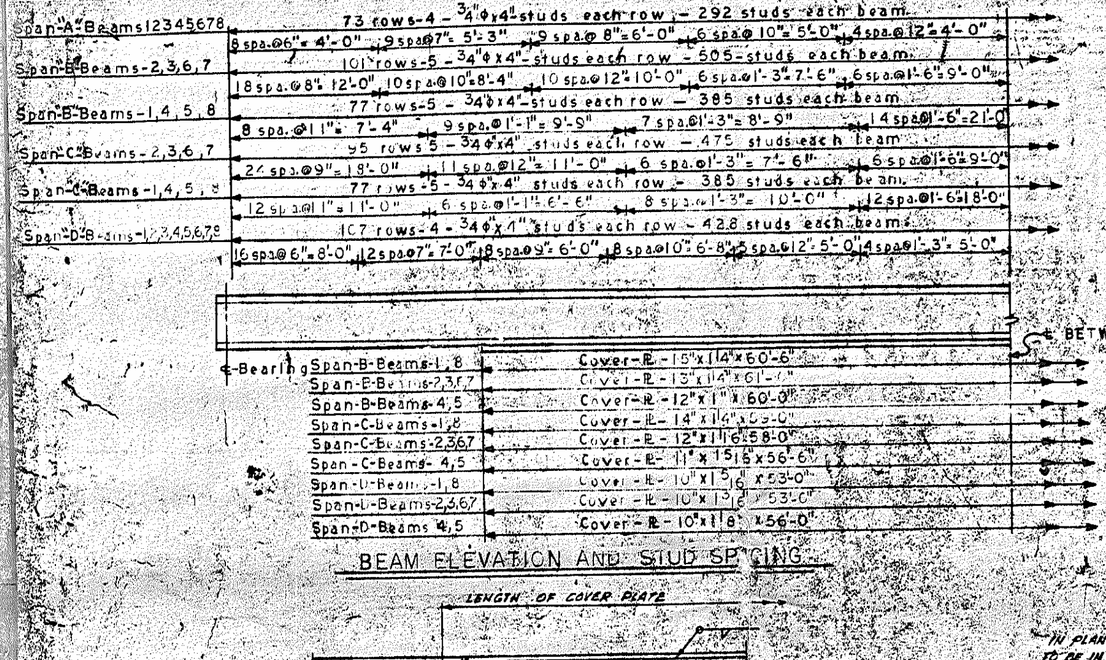
December, 1965

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

5/93

DRAWN BY E. D. Hartsell DATE Dec. 1965
CHECKED BY W. W. Ellis DATE Jan. 1966

49.9010

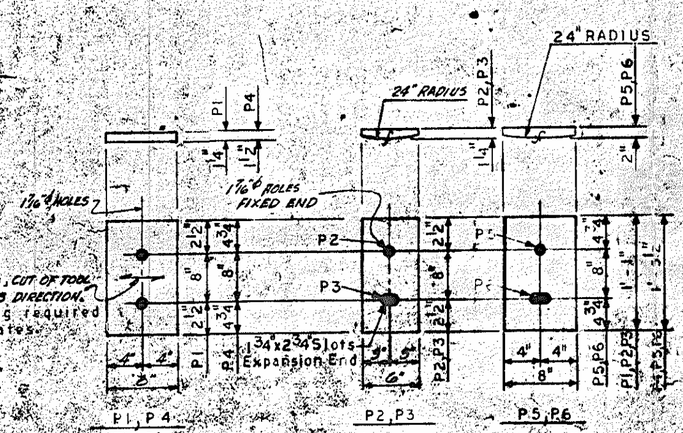


BEAM ELEVATION AND STUD SPACING

COVER PLATE WELD DETAIL

NOTE: COVER PLATE LENGTHS ARE SYMMETRICAL ABOUT ℄ BETWEEN CENTER TO CENTER OF BEARINGS AND FOR BOTTOM FLANGE ONLY.

FILL PLATES REQUIRED
1 - 8" x 3/16" x 1'-1"
1 - 8" x 3/16" x 1'-5 1/2"
1 - 8" x 1/4" x 1'-5 1/2"
2 - 8" x 9/16" x 1'-1"
4 - 8" x 5/8" x 1'-1"
1 - 8" x 3/4" x 1'-1"
2 - 8" x 7/8" x 1'-1"
1 - 8" x 15/16" x 1'-1"
5 - 8" x 1" x 1'-1"



BEARING PLATE DETAILS

BEARING PLATES REQUIRED
32 - P1 - 8" x 1 1/4" x 1'-1"
16 - P2 - 6" x 1 1/4" x 1'-1"
16 - P3 - 6" x 1 1/4" x 1'-1"
32 - P4 - 8" x 1 1/2" x 1'-5 1/2"
16 - P5 - 8" x 2" x 1'-5 1/2"
16 P6 - 8" x 2" x 1'-5 1/2"

MASONRY PLATES AND FILL PLATES MAY BE COMBINED.

F.A. P

NOTES:

ALL BEAMS AND COVER PLATES SHALL BE OF A.S. GRADE STRUCTURAL STEEL. SEE SHEET 3-N.

END STIFFENERS TO BE PARALLEL TO ENDS OF BE NO STIFFENERS ARE REQUIRED AT END BENTS OR OF EXTERIOR BEAMS.

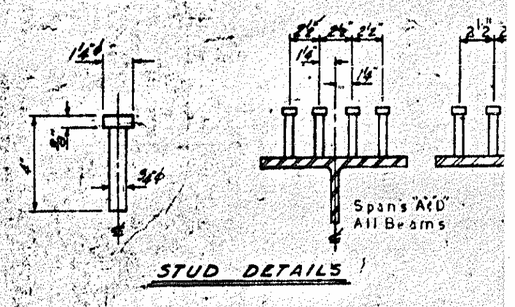
FIELD CONNECTIONS OF DIAPHRAGMS TO BEAMS SHA USING 3/4" Ø H.S. BOLTS IN ACCORDANCE WITH THE 3

AT THE CONTRACTOR'S OPTION FILL PLATES, WHEN U COMBINED WITH MASONRY PLATES.

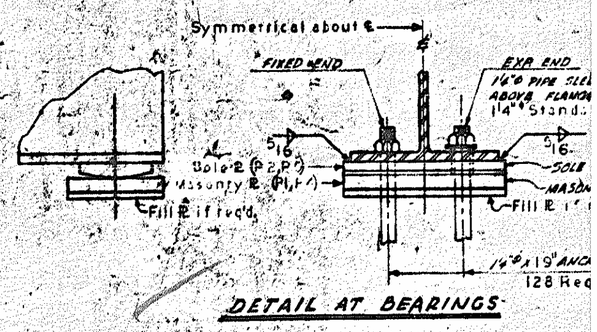
AT THE CONTRACTOR'S OPTION HE MAY SUBSTITUTE FO PLATES DESIGNATED ON THE PLANS COVER PLATES O AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" T DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDT A THICKNESS EQUAL TO 1½ Times Flange Thickne OF THIS WELD FOR ATTACHING THESE COVER PLATES ACCORDANCE WITH THE A.W.S. SPECIFICATIONS.

SEE SUPERSTRUCTURE DETAILS FOR LOCATION OF HOLE STEEL.

FOR BEAM CAMBER, SEE "DEAD LOAD DEFLECTION AND TABLE.



STUD DETAILS



DETAIL AT BEARINGS

* No camber other than natural mill camber required.

DEAD LOAD DEFLECTION AND BEAM CAMBER

		Deflection Due To Weight of Beam	Deflection Due To Superimposed Dead Load	Total Dead Load Deflection	Beam Camber
SPAN "A"	Exterior Bms. 1, 8	1/16"	5/16"	3/8"	3/8"
	Interior Bms. 2, 3, 6, 7	1/16"	1/2"	9/16"	9/16"
	Interior Bms. 4, 5	1/16"	3/8"	7/16"	7/16"
SPAN "B"	Exterior Bms. 1, 8	7/8"	2 5/16"	3 1/16"	3 1/16"
	Interior Bms. 2, 3, 6, 7	7/8"	2 1/4"	3 1/8"	3 1/8"
	Interior Bms. 4, 5	7/8"	1 15/16"	2 13/16"	2 13/16"
SPAN "C"	Exterior Bms. 1, 8	3/4"	2 1/2"	3 1/4"	3 1/4"
	Interior Bms. 2, 3, 6, 7	1 5/16"	2 1/16"	2 7/8"	2 7/8"
	Interior Bms. 4, 5	1 5/16"	1 7/8"	2 9/16"	2 9/16"
SPAN D	Exterior Bms. 1, 8	3/8"	1 3/4"	2 1/8"	2 1/8"
	Interior Bms. 2, 3, 6, 7	7/16"	1 11/16"	1 7/8"	1 7/8"
	Interior Bms. 4, 5	7/16"	1 5/16"	1 3/4"	1 3/4"

DESIGNED BY E.D. Hartsell — DATE 12-15-65
DRAWN BY — DATE
TRACED BY — DATE
CHECKED BY R.N. Ellis — DATE Jan., 1966

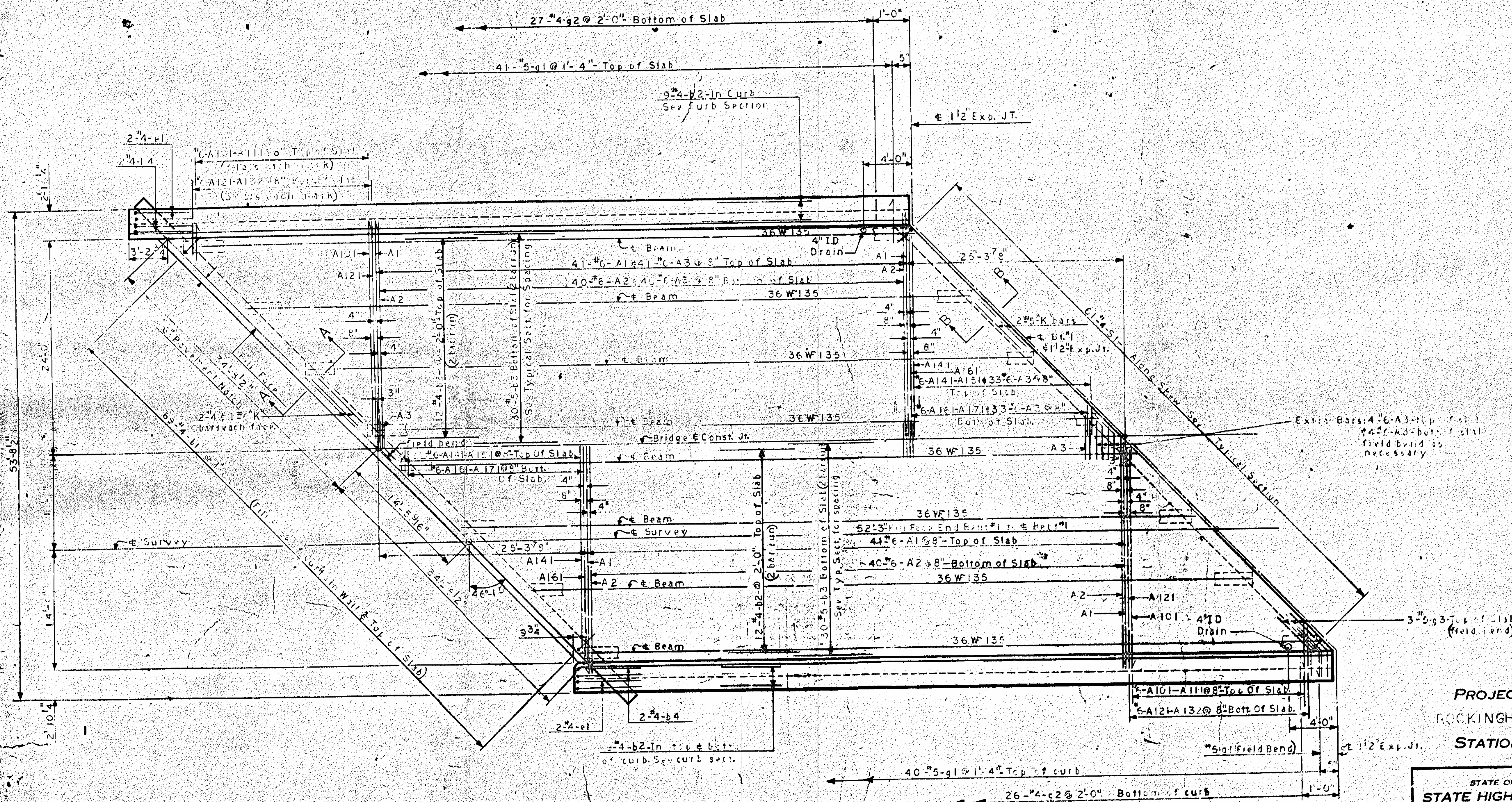
PROJECT NO
ROCKINGHAM
STATION: 9.5
Sheet 2 of 2

STATE OF NORTH
STATE HIGHWAY
RALEIGH

STRUCTURA

MARCH

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



PLAN-SPAN-A

PROJECT NO.

ROCKINGHAM

STATION: 95+

STATE OF NORTH C

STATE HIGHWAY C

RALEIGH

SUPERSTRUCT

SPAN "A"

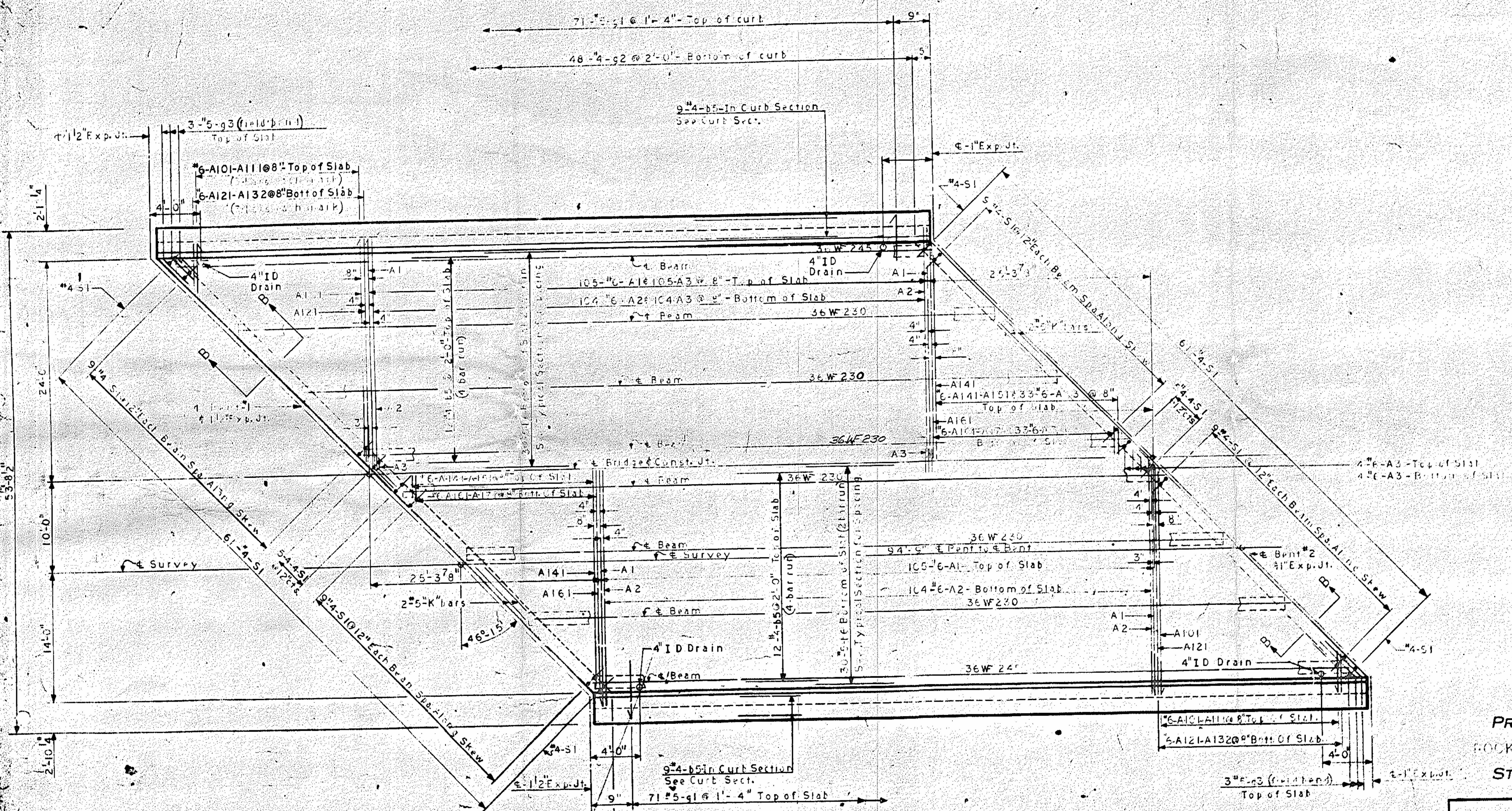
Oct. 1965

REVISIONS

NO.	BY	DATE	NO.	BY

C.D. Hartsell DATE Oct. 18, 1965

R.H. Ellis DATE 1965



PLAN-SPAN "B"

PROJECT NO.
ROCKINGHAM COUNTY
STATION:

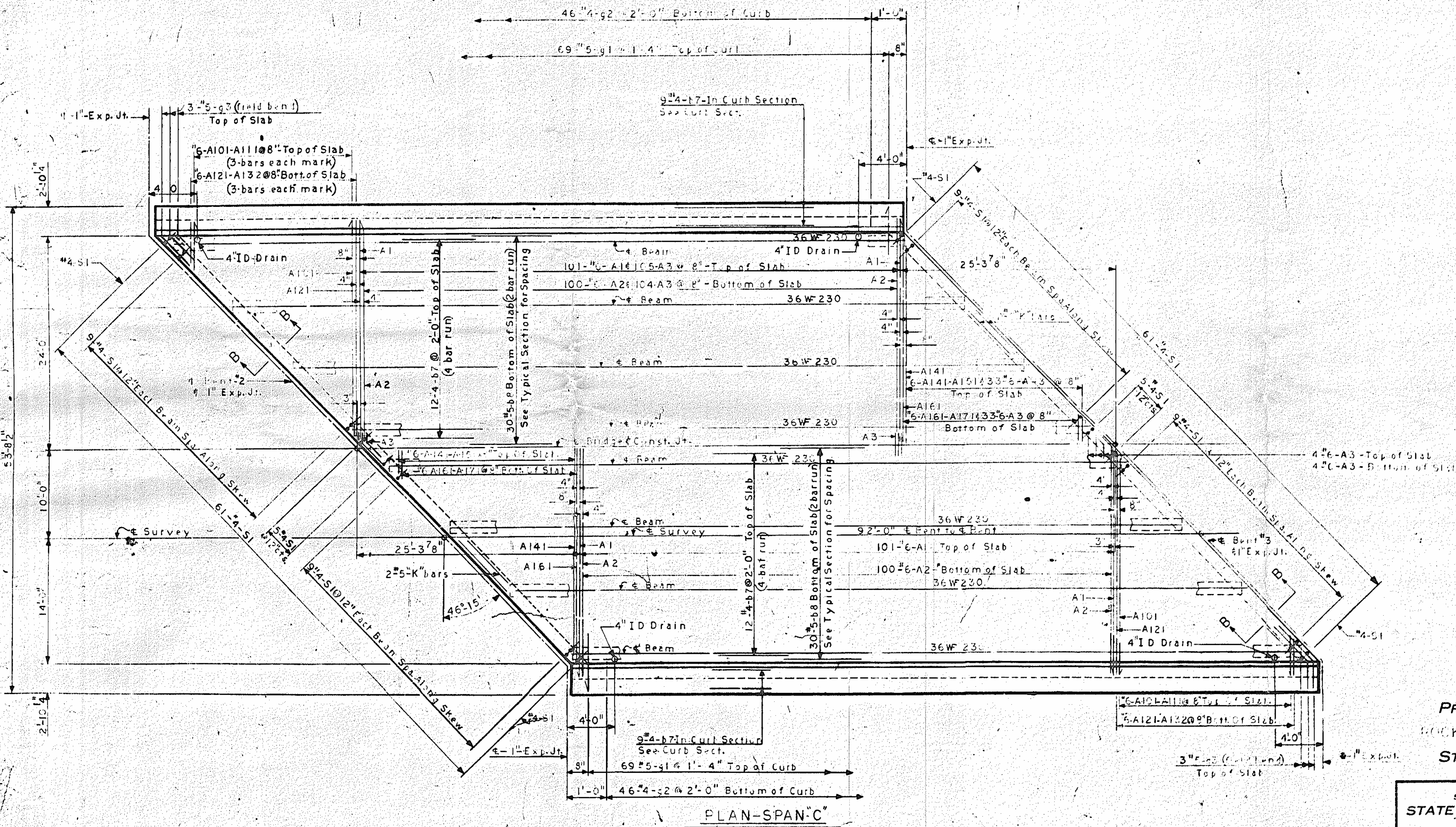
STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION

SUPERSTRUCTURE
SPAN "B"

REVISIONS

NO.	BY	DATE	NO.	BY	DATE

B. Hartsell DATE OCT. 15, 1965



FED. ROAD DIST. NO.	STATE	
3	N. C.	8.1592504
F. A. PROJECT	F-51-1 (7)	

9-139

PROJECT NO. 8.1592504

ROCKINGHAM **COUNTY**

STATION: 95+...

STATE OF NORTH CAROLINA

STATE HIGHWAY COMMISSION

SUPERSTRUCTURE
SPAN "C"

REVISIONS

NO.	BY	DATE	NO.	BY	DATE

SHEET NO. S-8

C. O. Hartsell DATE Oct. 18, 1965

F-51-1(7)

10.159

PLAN-SPAN-D

PROJECT NO. 8.1592.04

ROCKINGHAM COUNTY

STATION: 95+[illegible]

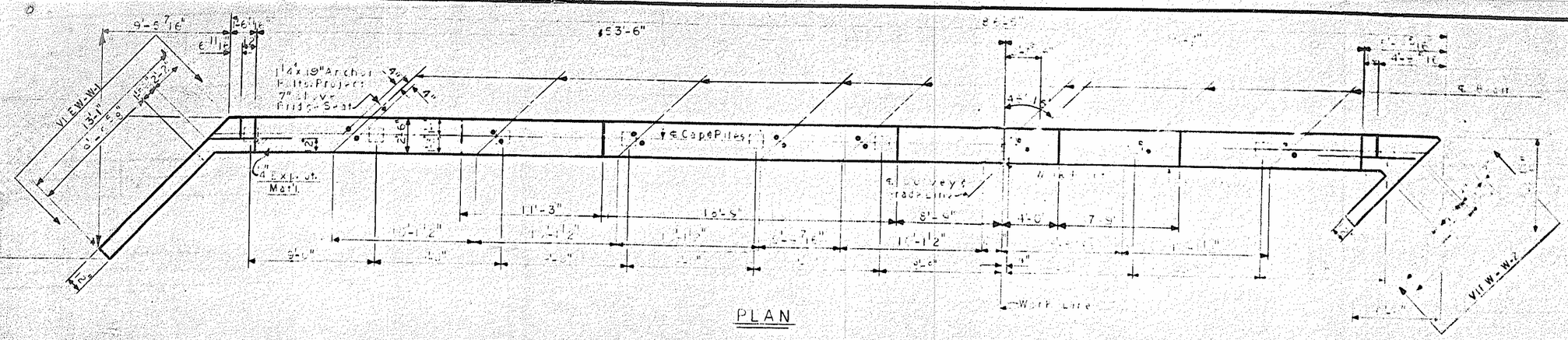
STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION

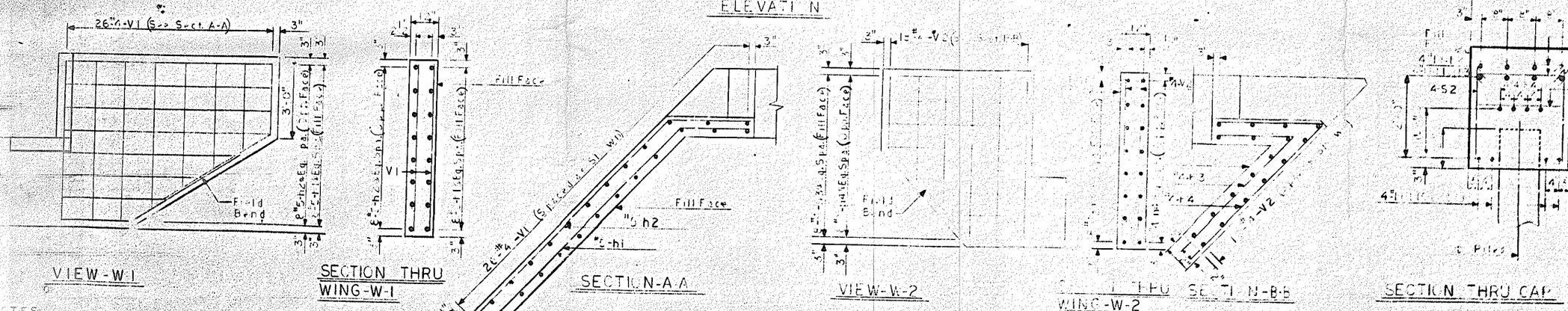
SUPERSTRUCTURE
SPAN-D'

NO	BY	DATE	NO	BY	DATE
1			3		
2			4		

SHEET NO. S-9
TOTAL SHEETS 730

DATE Oct. 15, 1965
DATE Feb, 1966





NOTES

BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MA

END (EI

BAR	NO.	SIZE	TYPE
b1	4	#11	1
S1	6	#6	4
S2	5	#6	4
S3	2	#6	4
V1	6	#11	1
h		#5	2
h2	2	#5	2
1	8	#4	7
2	8	#4	7
V1	24	#4	3
V2	14	#4	3

PROJECT NO. 6.15

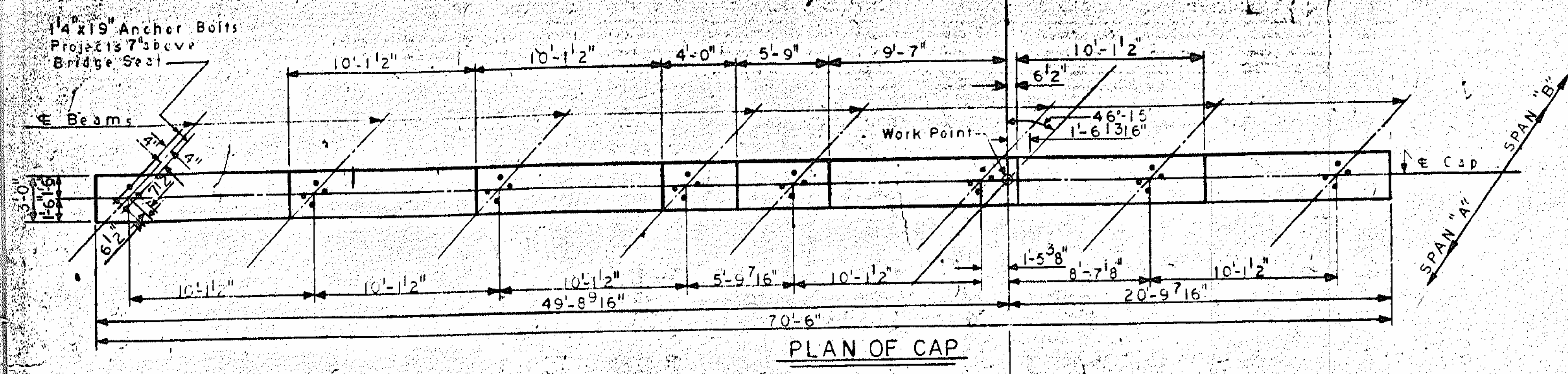
ROCKINGHAM COUN

STATION: 5+

STATE OF NORTH CAROLINA
STATE HIGHWAY COMM
RALEIGH

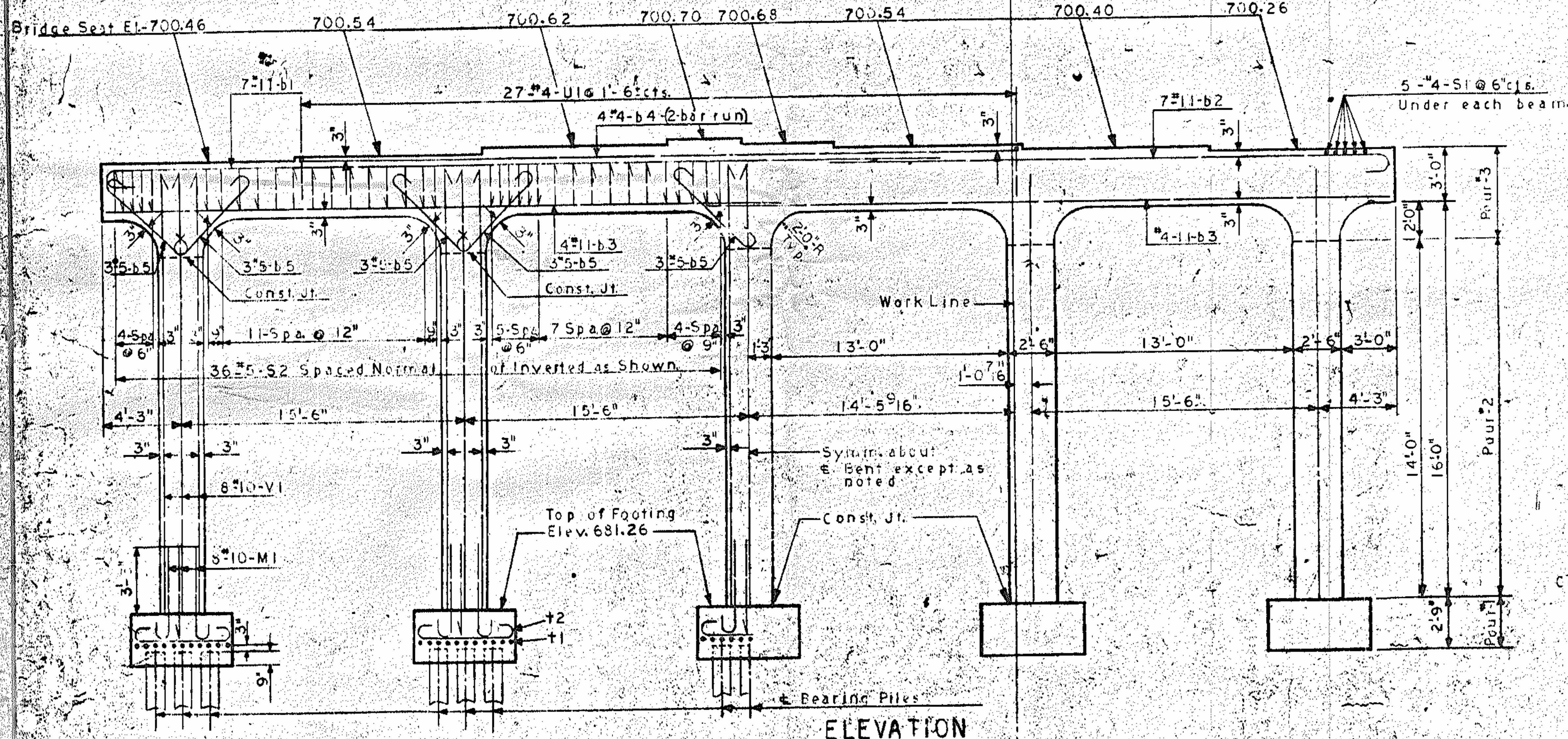
SUBSTRUCTURE
END BENT NO. 1

REVISIONS
NO. BY DATE NO. DATE

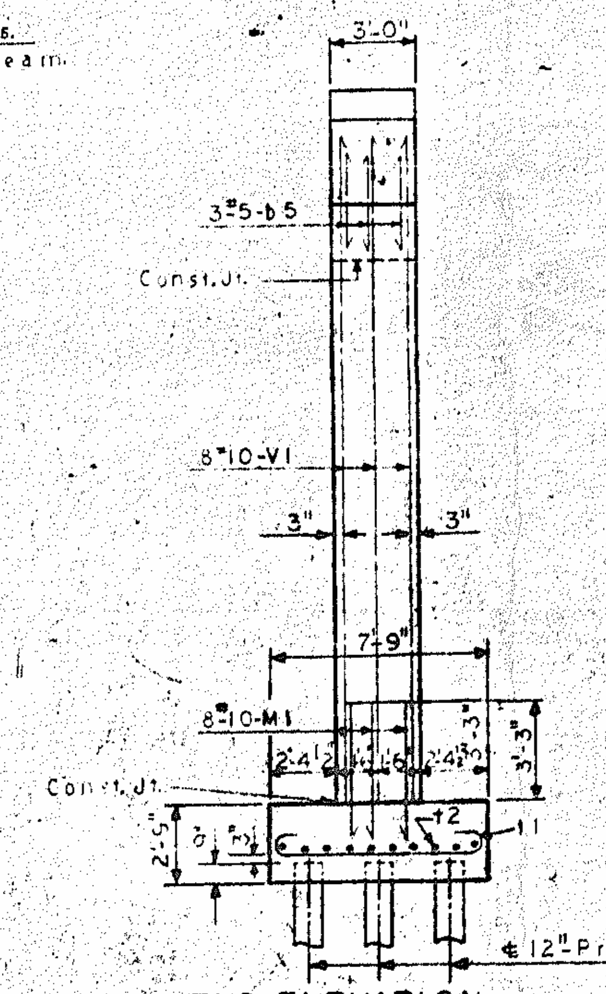


PLAN OF CAP

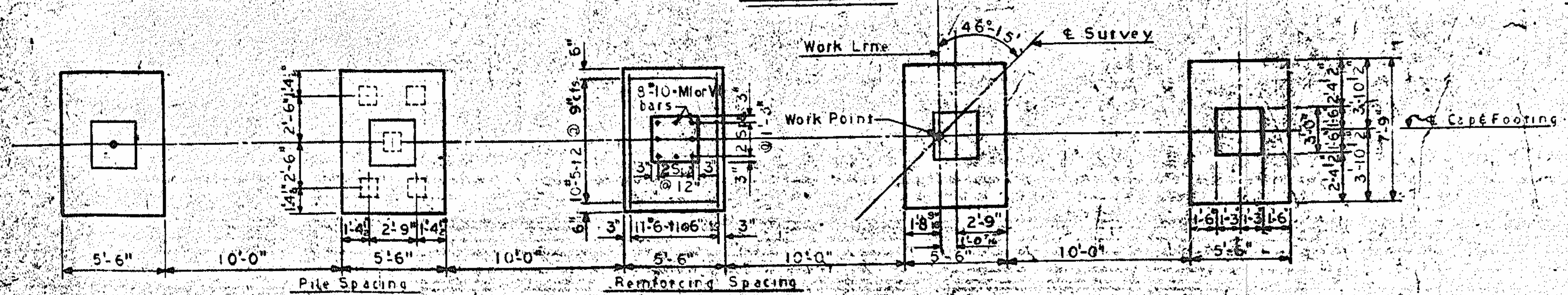
NOTES:
Hooks on "V" bars may be turned as necessary for placing reinforcing.
Drive bearing piles to 30 tons each.
Cap steel may be shifted as necessary to clear anchor bolts.



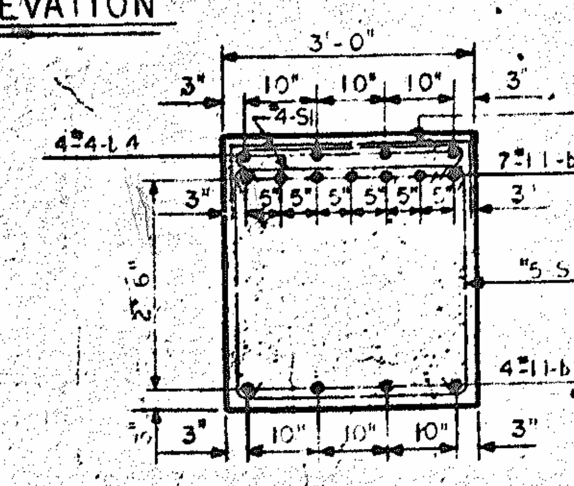
ELEVATION



END ELEVATION

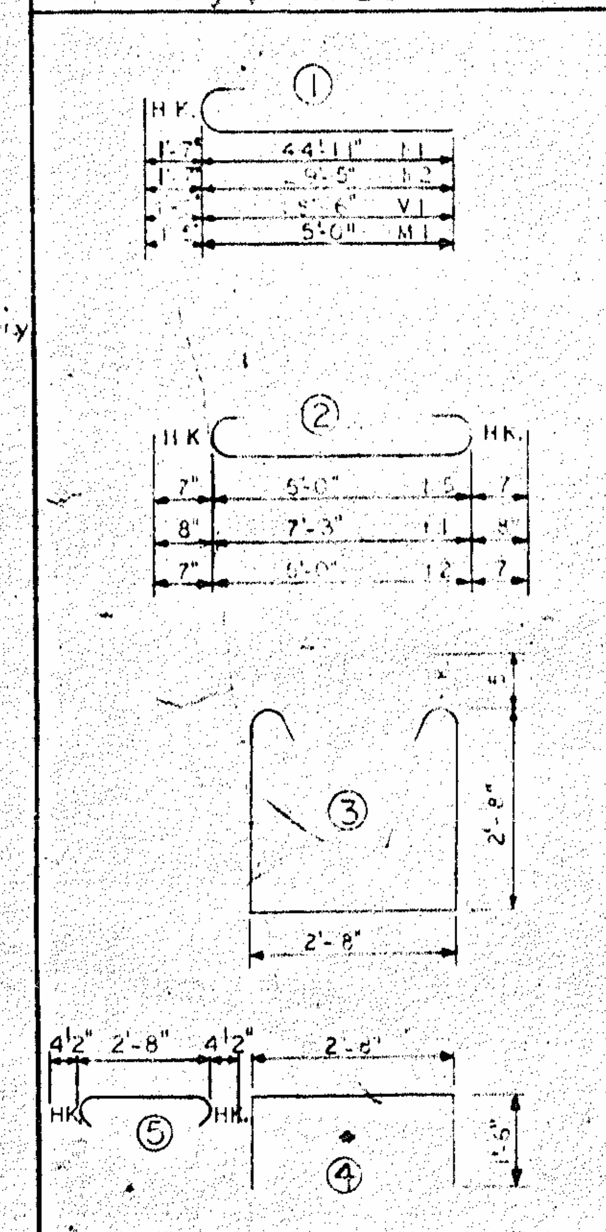


PLAN OF FOOTINGS



SECTION THRU CAP

BAR TYPES



All bar dimensions are out to out

Class A Concrete by Pours	
Pours	Cu. Yds.
* #1	21.0
#2	19.4
#3	29.1
Total	69.5

*Concrete displaced by pile heads has been deducted.

BILL OF MA[TERIAL]

BENT No. 1

BAR	NO.	SIZE	TYPE
b1	7	#11	1
b2	[illegible]	#11	1
b3	[illegible]	#11	Str
b4	[illegible]	#4	Str
b5	30	#5	2
S1	40	#4	[illegible]
S2	72	#5	3
V1	4[illegible]	#10	1
M1	40	#[illegible]	1
[illegible]	56	#[illegible]	2
[illegible]	50	#[illegible]	2
U1	27	#4	4

Reinforcing Steel
Class A Concrete
12" Prestr. Conc. Piles

F.A. PROJECT 16-

PROJECT No.

ROCKINGHAM CO[UNTY]

STATION: 95+99

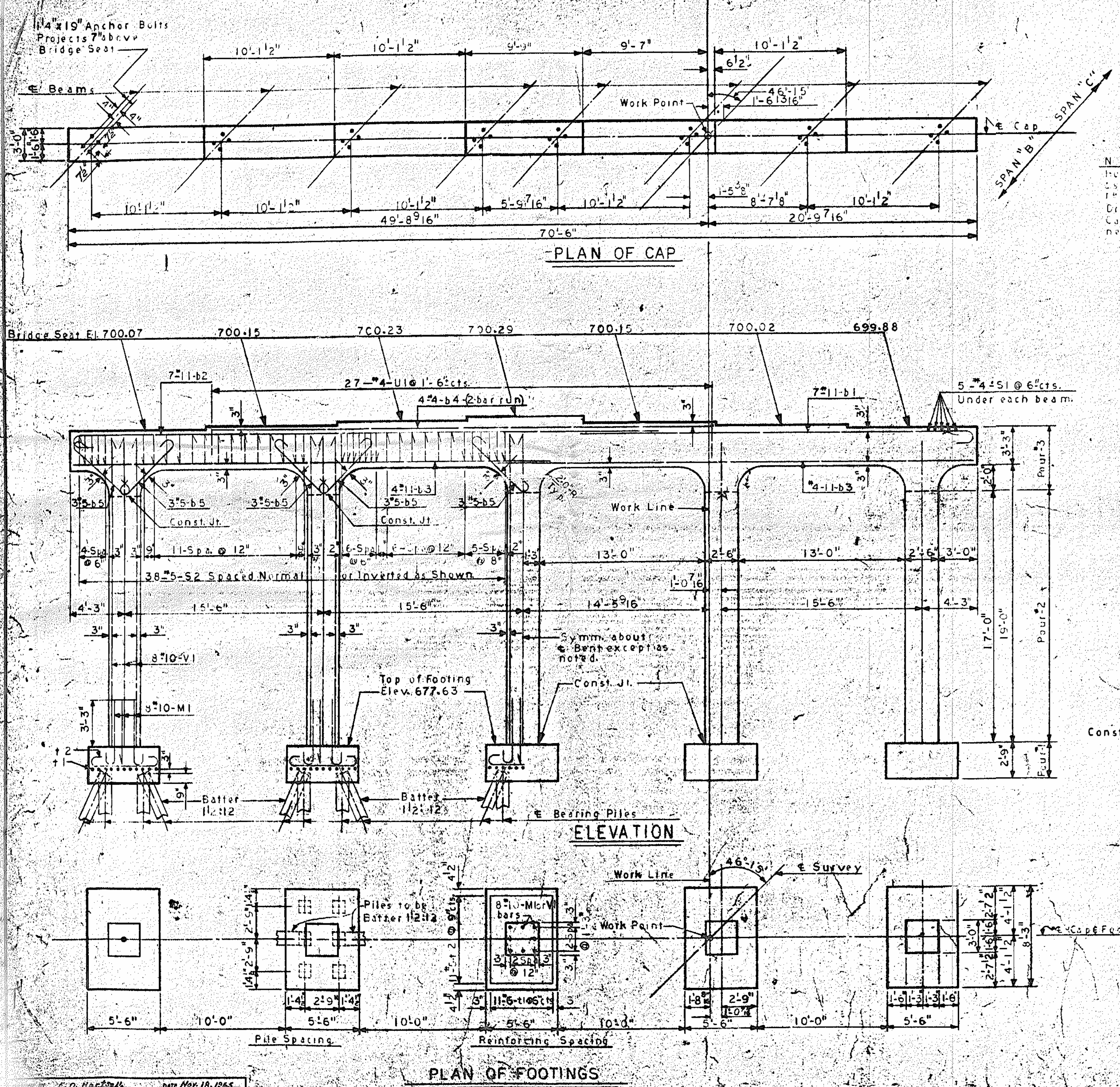
STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH
SUBSTRUCTURE
BENT #1

November, 1965

REVISIONS

NO.	BY	DATE	NO.	BY
1			3	
2			4	

DRAWN BY: C.D. Hartsell DATE Nov. 18, 1965
CHECKED BY: [illegible] DATE Dec. 1965

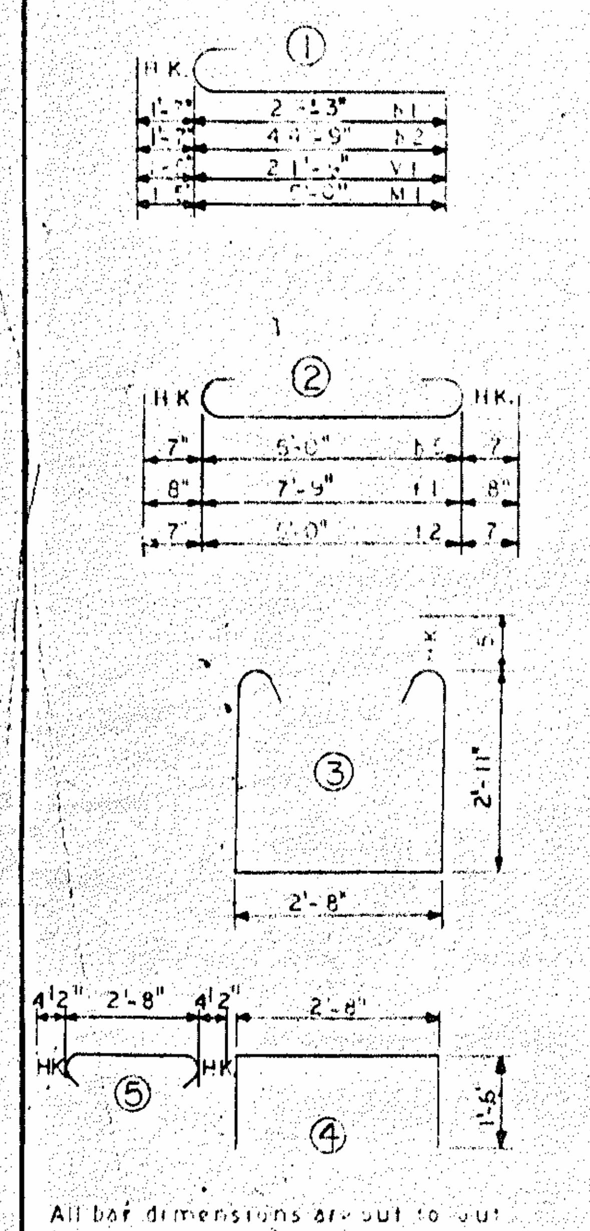


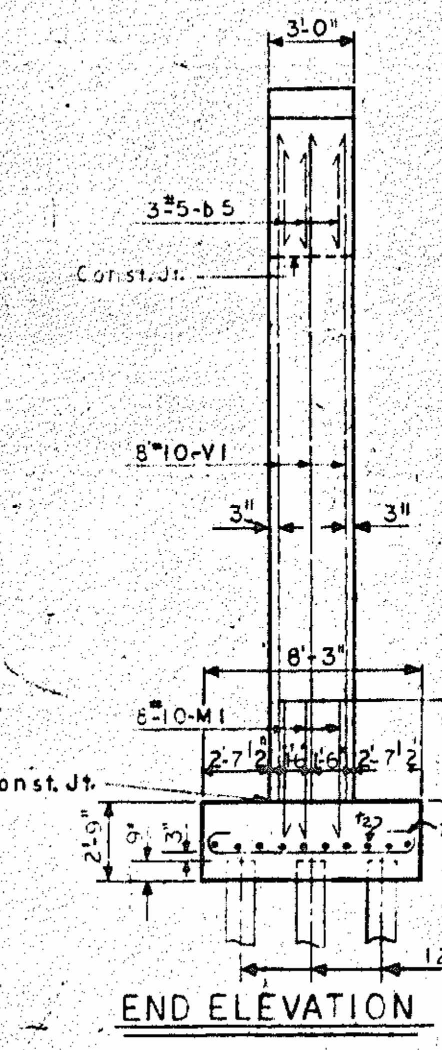
NOTES

Hooks on "V" bars may be turned as necessary for placing reinforcing.

Drive Bearing piles to 30 tons each.

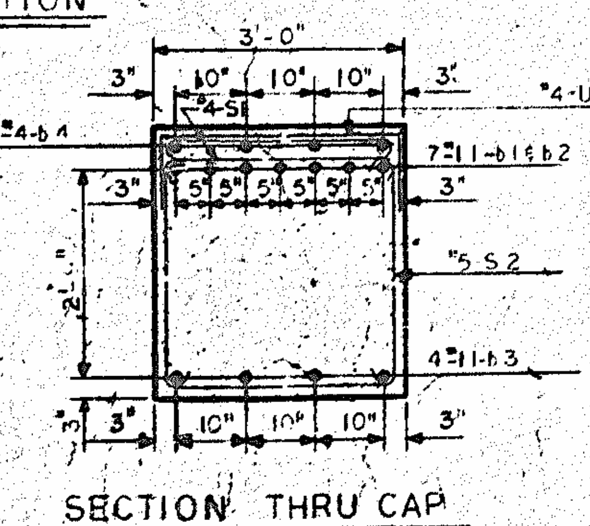
Cap steel may be shifted as necessary to clear anchor bolts.





Class A Concrete by Pours	
Pours	Cu. Yds.
* #1	22.3
#2	23.6
#3	31.0
Total	76.9

* Concrete displaced by pile heads has been deducted.



BILL OF MATERIAL FOR BENT No.

BAR	NO.	SIZE	TYPE	LE…
[illegible]	7	#11	1	3…
[illegible]	[illegible]	#11	1	4…
[illegible]	[illegible]	#11	Str.	3…
[illegible]	[illegible]	#4	Str.	2…
[illegible]	30	#[illegible]	2	[illegible]
S1	40	#4	5	[illegible]
[illegible]2	76	#5	3	[illegible]
V1	4[illegible]	#10	1	[illegible]
M1	4[illegible]	#1[illegible]	1	6…
11	66	#6	2	[illegible]
12	66	#5	2	6…
U1	27	#4	4	[illegible]

Reinforcing Steel - lb.

Class A Concrete - cu. yds.

12" Prestr. Conc. Piles No. Lin.

F. A. PROJECT F

17-1…

PROJECT No. 3.159…

ROCKINGHAM COUN…

STATION: 95+99.5…

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMI…
RALEIGH

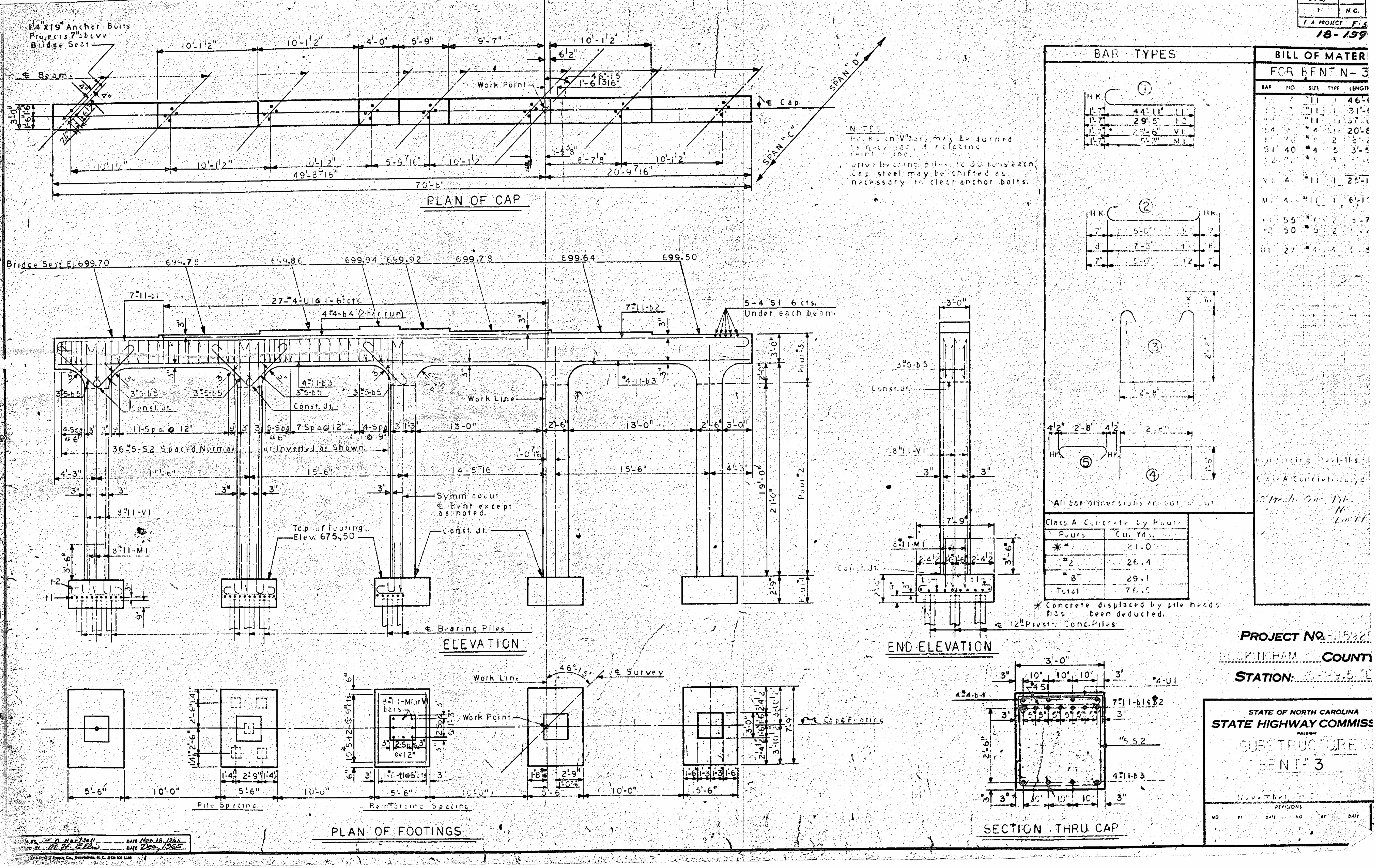
SUBSTRUCTURE
BENT #2

November, 1965

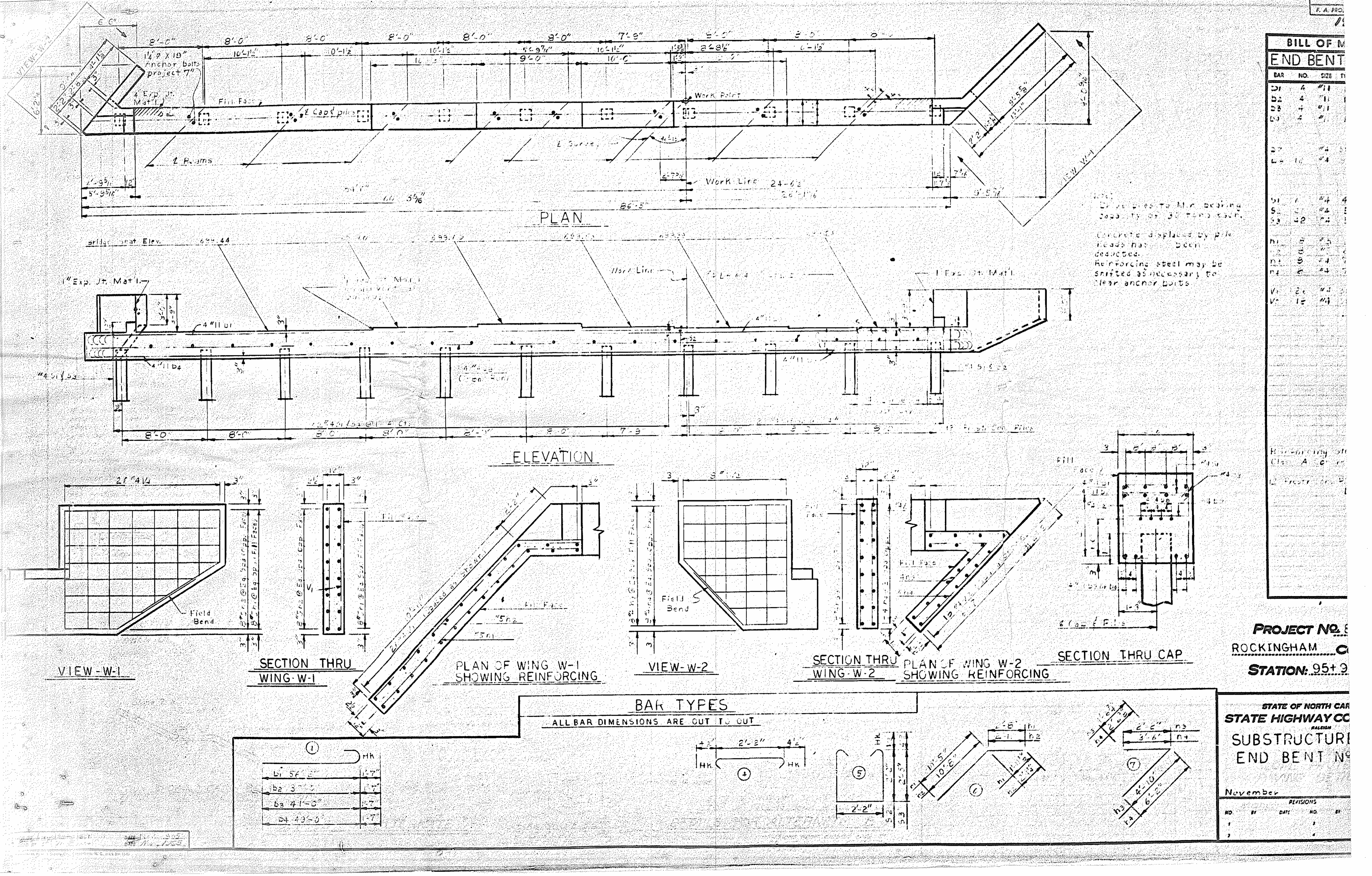
REVISIONS

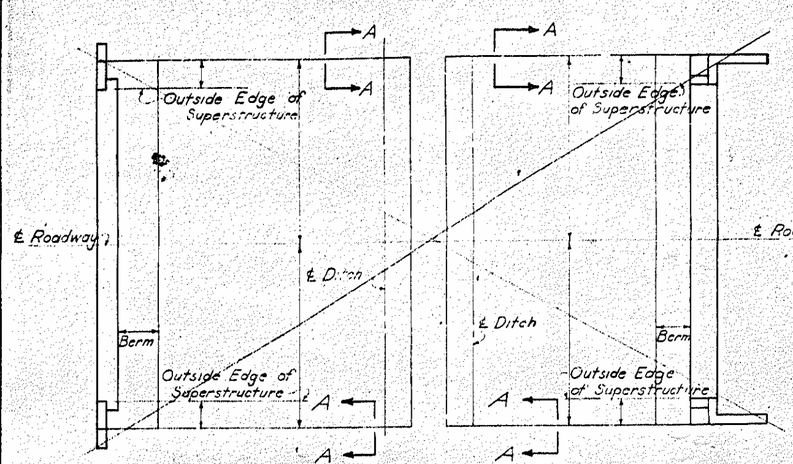
NO.	BY	DATE	NO.	BY

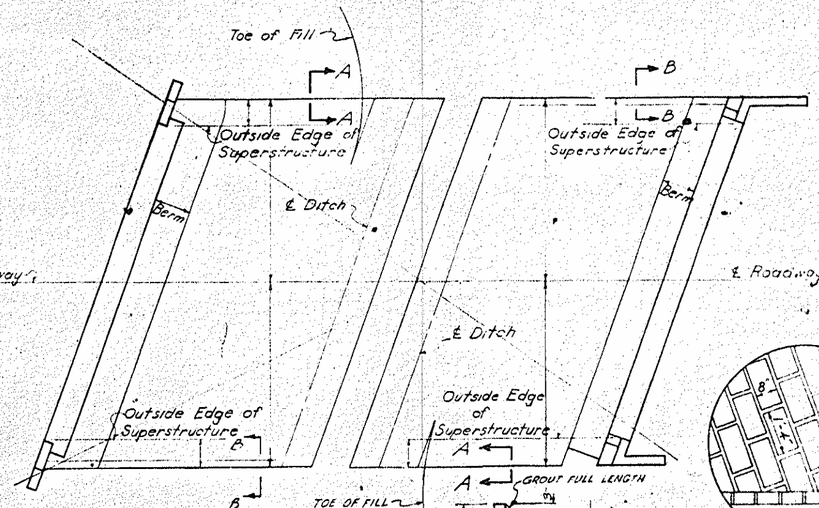
Drawn: F. O. Hartsell — Date: Nov. 18, 1965
Checked: R. H. Ellis — Date: Dec. 1965

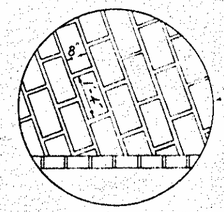


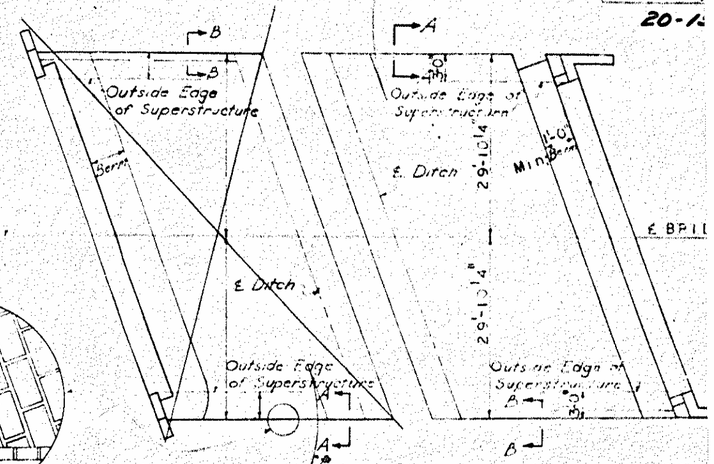
Class A Concrete by Pours	
Pours	Cu. Yds.
* #1	21.0
#2	26.4
#3	29.1
Total	76.5

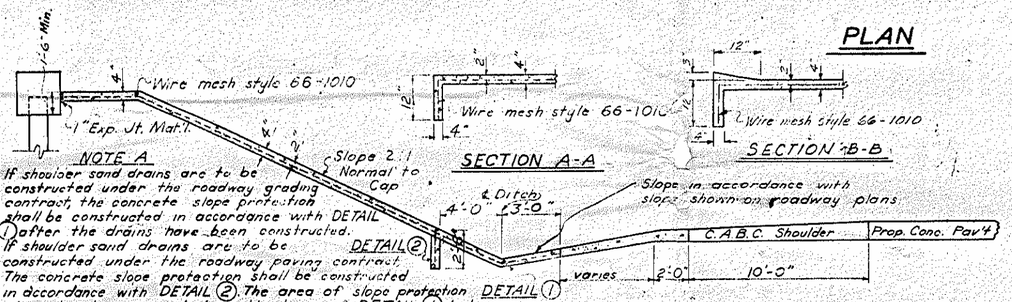

PLAN
ELEVATION
VIEW-W-1
SECTION THRU WING-W-1
PLAN OF WING W-1 SHOWING REINFORCING
VIEW-W-2
SECTION THRU WING-W-2
PLAN OF WING W-2 SHOWING REINFORCING
SECTION THRU CAP
BAR TYPES
ALL BAR DIMENSIONS ARE OUT TO OUT
Work Point
Work Line
Fill Face
Field Bend
1" Exp. Jt. Mat'l.
Reinforcing steel may be shifted as necessary to clear anchor bolts.
BILL OF M
END BENT
PROJECT NO.
ROCKINGHAM
STATION: 95+9
STATE OF NORTH CAR
STATE HIGHWAY CO
RALEIGH
SUBSTRUCTURE
END BENT No
November
REVISIONS
NO. BY DATE NO. BY

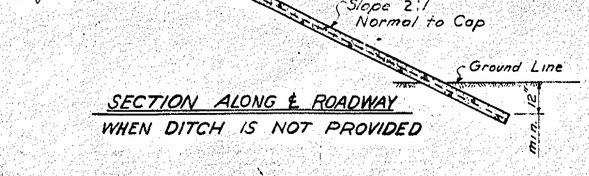


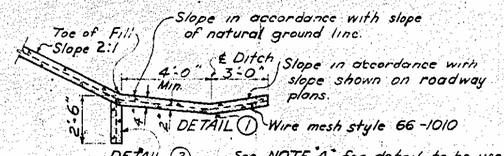


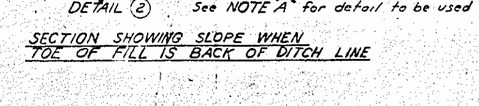


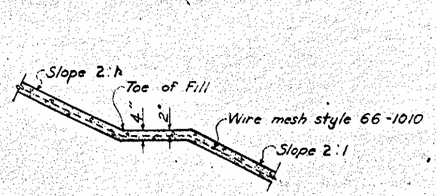


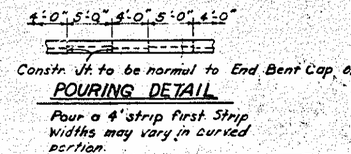




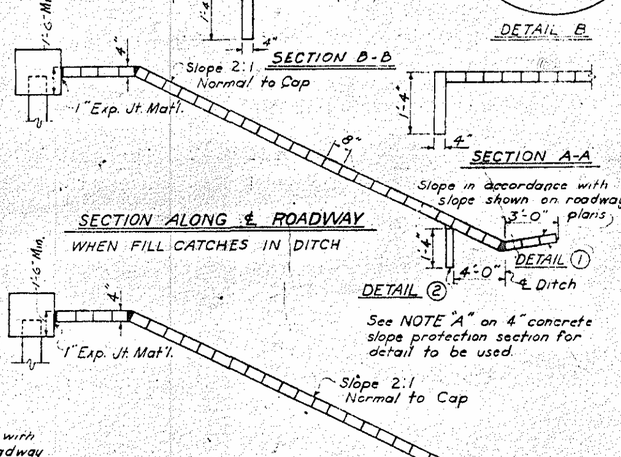


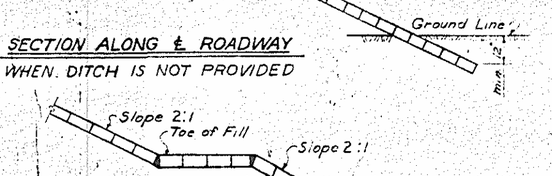


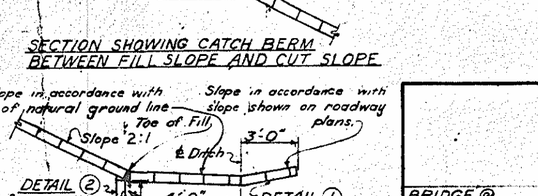


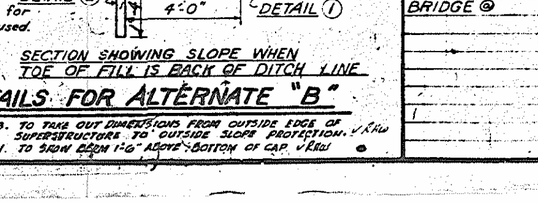


PLAN WHERE CONC OR CONC. BLOCK SLOPE PROTECT. MUST BE PLACED AROUND A BENT COLUMN









NOTES:

A 4" concrete slope protection paving shall be placed under the ends of the bridg
of the protection shall be as shown in the details The contractor, at his option, may
either type. Alternate "A" or "B" as described below. Immediately before placing the pavin
slope shall be properly shaped and firmly compacted so that it conforms to the lines and
shown The finished surface shall be reasonably smooth and uniform and shall not va
lines, grades, and sections shown by more than ½" along a 10' straight edge.

ALTERNATE "A"

Alternate "A" shall consist of 4" poured in place concrete paving as shown in details on
Concrete shall be Class B The concrete
shall be floated with a wooden float and finished
The quantity to be paid for under this item shall be the number of square yards of slop
measured in place complete and accepted, including the area of the toe walls below 4"
of protection (For example 8" pay area for ton wall 1'-0" deep.)
The quantity measured as provided for above, shall be paid for at the contract unit price p
yard for mesh excavation, backfilling, preparation of slopes, and all materials, labor, equ
tools and incidentals necessary to complete the work.

ALTERNATE "B"

Alternate "B" shall consist of solid concrete blocks 4"x8"x16" laid in horizontal courses such t
in successive courses will break joints with units in the preceding one Blocks are to b
with their long axis parallel to the end bent cap with grouted joints preferably ¾" but
than ½" nor more than 1½" wide between successive courses and ends of blocks. Joints shall b
by pouring a mixture of one part Portland cement to three parts sand mixed with sufficient
enable the mixture to be poured through a spout.
The concrete blocks shall be cast to accurate dimensions, shall have uniform surface color
and shall be manufactured of materials to produce a compressive strength of not less th
p.s.i. at age of 28 days No broken blocks shall be used except in constructing a st
along each side of the paving down the slope. Care shall be taken to trim the blocks
a uniform workmanlike joint and surface.
Method of measurement and basis of payment shall be as prescribed above under Alterna

ALTERNATE "A" wire mesh reinforcing to be style 66-1010 60" wide Adjacent ru
mesh to lap at least 6" Slope Protection to be poured in alternate 4', 5' strips as
Pouring Detail. The cost of wire mesh to be included in the contract unit price bid p
yard for 4" concrete slope protection.

The same type of slope protection shall be used under both ends of any one bridge.

PROJECT NO. 81592

ROCKINGHAM COUN

STATION: 95+99.5

SHEET 1 of 2

	4" Conc. Slope Protection or 4" Conc. Block Slope Protect.	Wire Mesh 60" Wide
	S.Y.	
BRIDGE ⓔ	E.B. 1 ~~420~~ 240.32	E.B. 2 ~~420~~ 508.24	Approx L.F. 1540

REVISIONS	DATE	BY
NO. 3	4-15-65	F.G.A.
NO. 2	3-22-65	F.G.A.
NO. 1	2-2-65	F.G.A.

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISS
RALEIGH

STANDARD SLOPE PROTECTIO PAVING DETAILS

March 196

ASSEMBLED BY F.D. Hartsell DATE Dec. 1965
CHECKED BY R.N. Eller DATE March 1966
DRAWN BY W.J. Baldwin DATE Mar. 9, 64
CHECKED BY G.T. PHILLIPS DATE MAR. 10, 64

DETAILS FOR ALTERNATE "A"

REV. NO 2. TO ELIMINATE 90° CORNER AT TOE OF SLOPE FOR SKEWED WITH BOSSES, ADD SECT. B-B, AND TO ALLOW ALTERNATE FOR CONSTRUCTION JTS.

DETAILS FOR ALTERNATE "B"

REV. NO 3. TO TAKE OUT DIMENSIONS FROM OUTSIDE EDGE OF SUPERSTRUCTURE TO OUTSIDE SLOPE PROTECTION. V.R.H.W.
REV. NO. 1. TO SHOW BERM 1'-6" ABOVE BOTTOM OF CAP. V.R.H.W.