

TOTAL BILL OF MATERIAL

	Class "A" Concrete	Reinforcing Steel	4.5" Prest. Concrete Girders	12" Prest. Concrete Piles	Unclassified Structure	One Bar Aluminum Rail	Slope Protection	12" Prest. Conc. Piles
	Cu. Yds.	Lbs.	No./Lin. Ft.	No./Lin. Ft.	Cu. Yds.	Lin. Ft.	Sq. Yds.	Lin. Ft.
Span A	52.5	9,220	4	165.17		79.42		
Span B	63.8	13,199	4	245.33		123.00		
Span C	63.8	13,199	4	245.33		123.00		
Span D	55.8	9,866	4	179.17		86.41		
End Bent No. 1	12.1	2,416			179			
Bent No. 1	35.5	7,502		6	180		220-224-220	2.0
Bent No. 2	36.7	6,331			65-58-6			
Bent No. 3	36.6	6,922			65-58-6			
End Bent No. 2	12.1	2,416		6	179		230-237-250	4.0
Approach Curves	3.2	76						
Totals	372.1	68,447	16	835.00	12	203.74	478	470

NOTES

Assumed Live Load - H15-S12 (44).
 For other design data and general note see sheet S-N.
 Computed foundation load for Bents No. 1, 2 & 3 equals 26 tons per sq. ft.
 Work is not to be started on this bridge until after roadway section has been excavated by the roadway contractor.
 Unclassified structure excavation for Bents No. 1, 2 & 3 to be measured from proposed surface of cut.
 Shaded areas to be excavated by the structure contractor. See Special Provisions.
 Piles for End Bents No. 1 & 2 to be driven to a minimum bearing capacity of 27 tons each.
 Test piles will not be required. Order list to be based on piles 30' long for End Bents # 1 & 2.
 Traffic will be detoured over ramp during construction of the proposed structure. See Special Provisions.

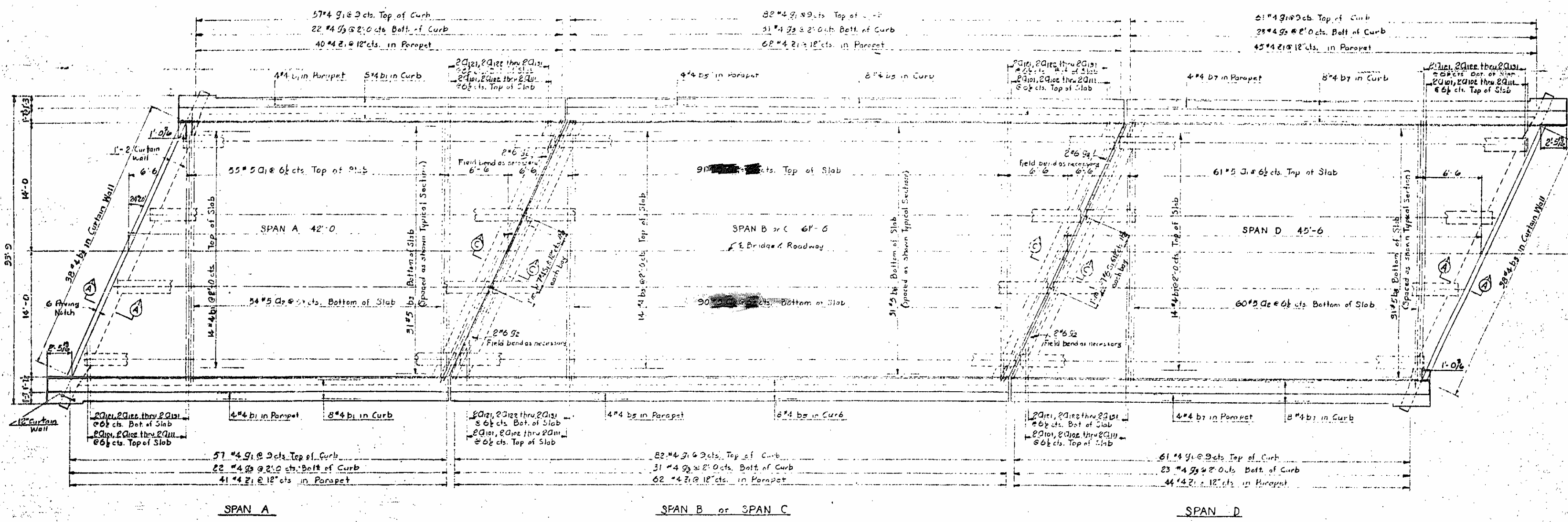
PROJECT No. 81591A
ROCKINGHAM COUNTY
STATION: 506+56.8-L
7+72.7-Y

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION

GENERAL DRAWING
 FOR BRIDGE OVER RELOC. U.S. 220
 ON COUNTY ROAD BETWEEN
 SANDY RIDGE & OLD U.S. 220
 SEPTEMBER 1961

DESIGNED BY: J. L. Taylor
 ASSISTANT COUNTY ENGINEER
 APPROVED BY: W. J. Brumse
 RESIDENT ENGINEER

Reel 761
 Pos. 2
 1360-220-51-60
 ROCKINGHAM



PROJECT NO. 815914
 ROCKINGHAM COUNTY
 STATION: 7+72.7 Y:
 506+56.8 L

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
 RALEIGH

SUPERSTRUCTURE

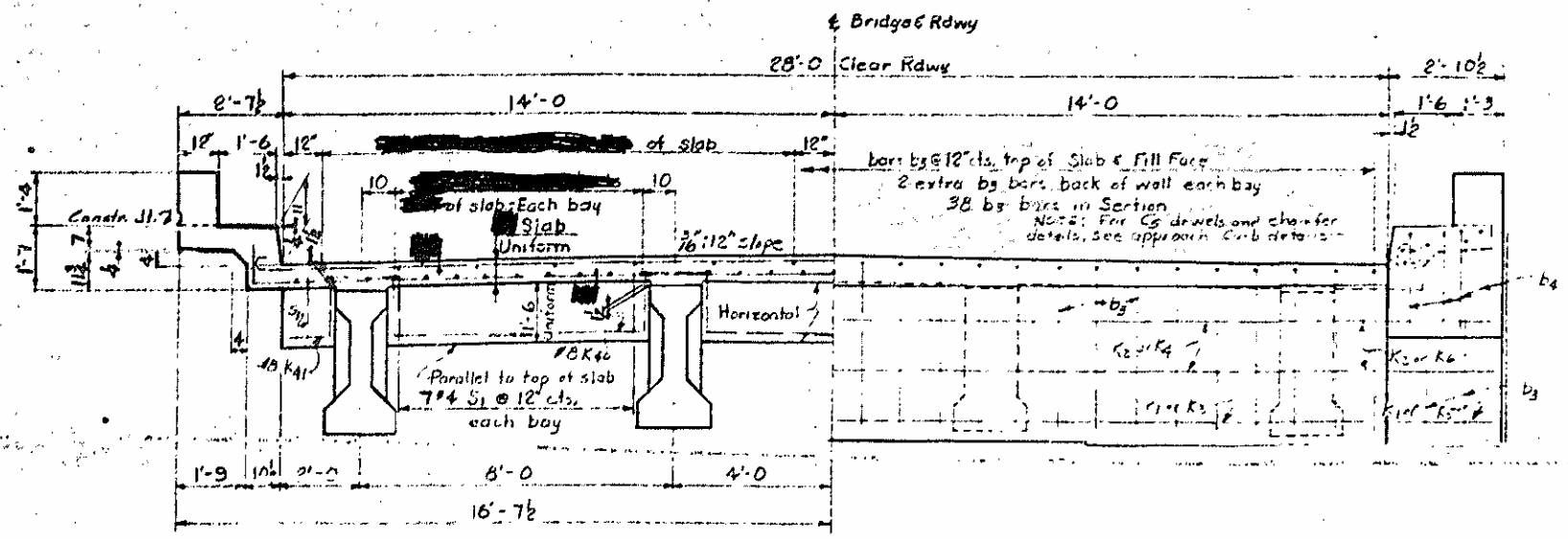
August 1967

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

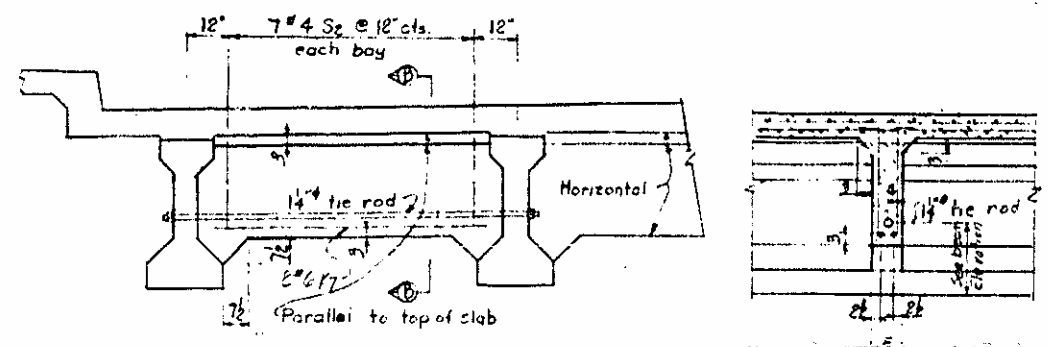
SHEET NO. S-37
 TOTAL SHEETS 48

DESIGNED BY: Jack B. ... DATE: 11-1967
 CHECKED BY: ... DATE: 02-1967

NOTE: Temporary struts shall be placed between prestressed girders adjacent to the diaphragms and the nuts on the 1/2" tie bars shall be fully tightened before diaphragms are cast. Struts shall remain in place at least 3 days after concrete is placed. The tie bars shall be retightened after struts have been removed.

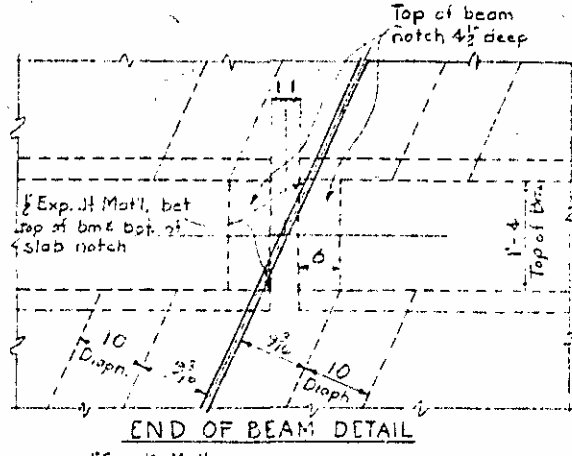


TYPICAL HALF-SECTION & INTERIOR BENTS

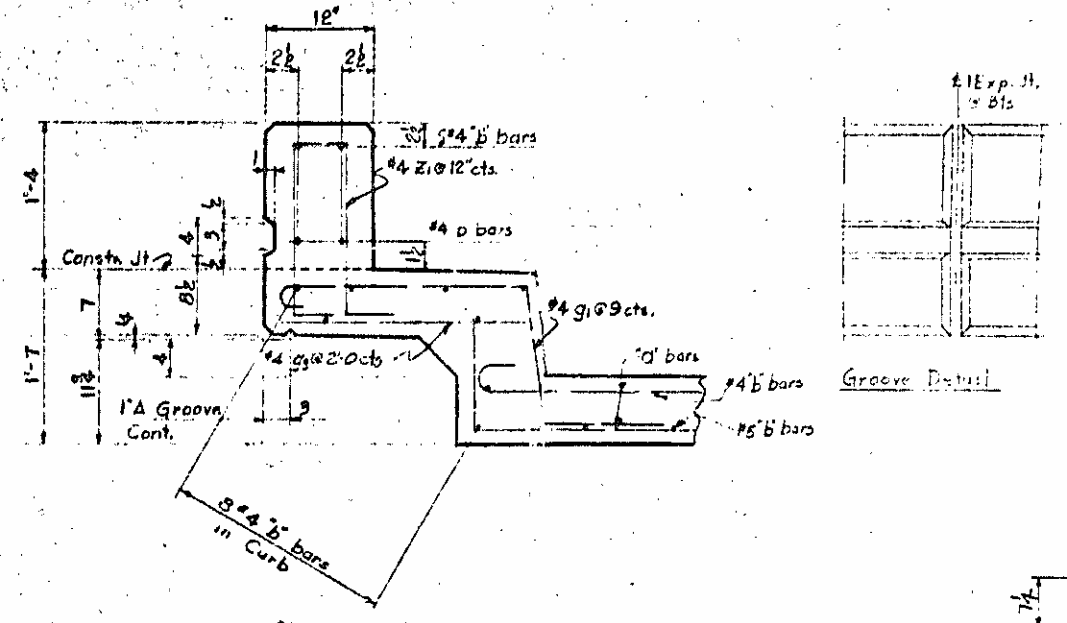


MID SPAN DIAPHRAGM SECTION B-B

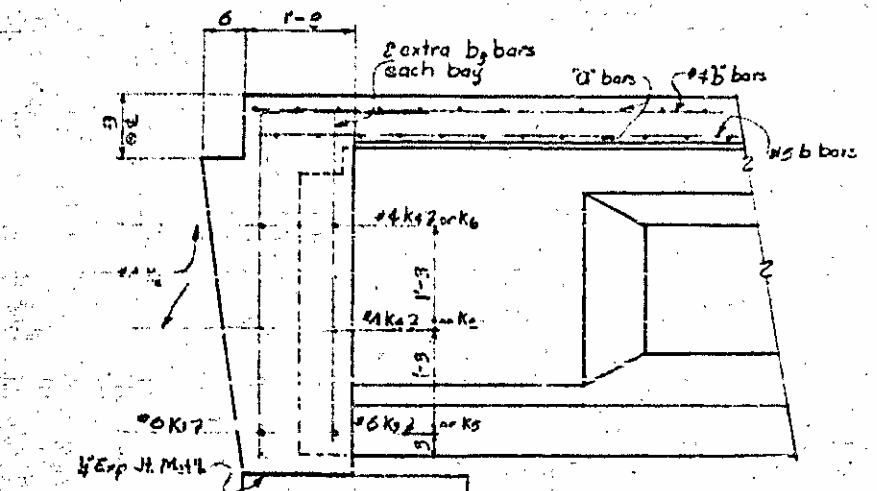
HALF-END VIEW



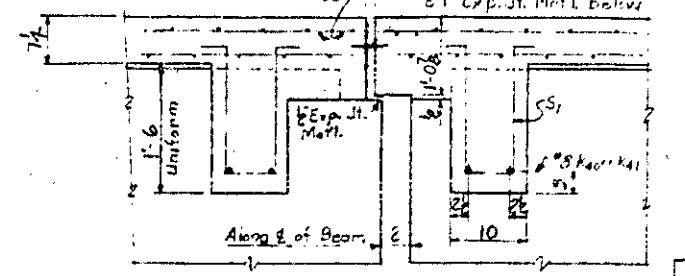
END OF BEAM DETAIL



SECTION THRU CURB



SECTION A-A



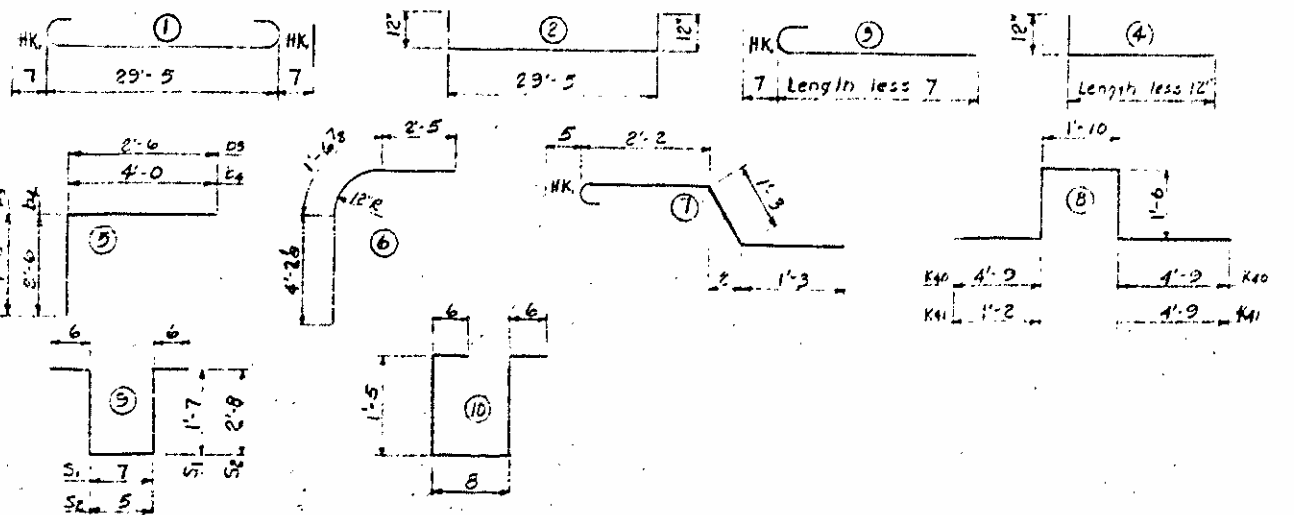
SECTION C-C

BEAM DEFLECTION

Deflection at girder along its place	SPAN A		SPAN B		SPAN C		SPAN D	
	Int.	Ext.	Int.	Ext.	Int.	Ext.	Int.	Ext.
Deflection due to superimposed DL	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"
Final Deflection	0	0	0	0	0	0	0	0

BILL OF MATERIAL

BAR SIZE	TYPE	LENGTH	SPAN A		SPAN B		SPAN C		SPAN D		BAR SIZE	TYPE	LENGTH	SPAN A		SPAN B		SPAN C		SPAN D				
			NO	WEIGHT	NO	WEIGHT	NO	WEIGHT	NO	WEIGHT				NO	WEIGHT	NO	WEIGHT	NO	WEIGHT	NO	WEIGHT	NO	WEIGHT	
C1	#5	1	30'-7"	55	1754	91	2309	91	2309	61	1946	E1	#4	6	8'-2"	4	22				4	22		
C2	#5	2	31'-5"	54	1743	90	2293	90	2293	60	1936	E2	#4	Str	2'-9"	2	15				8	15		
Q101	#4	3	26'-10"	4	112	4	112	4	112	4	112	E3	#4	Str	2'-9"	4	14				4	14		
Q102	#4	3	24'-6"	4	102	4	102	4	102	4	102	F1	#4	Str	3'-9"	6	15				6	15		
Q103	#4	3	22'-1"	4	92	4	92	4	92	4	92	F2	#4	Str	2'-0"	8	11				8	11		
Q104	#4	3	19'-8"	4	82	4	82	4	82	4	82	G1	#4	7	5'-1"	114	587	164	557	164	557	122	414	
Q105	#4	3	17'-3"	4	72	4	72	4	72	4	72	G2	#6	Str	32'-0"	2	96	4	192	4	192	2	96	
Q106	#4	3	14'-11"	4	62	4	62	4	62	4	62	G3	#4	Str	2'-5"	44	66	62	93	62	93	44	69	
Q107	#4	3	12'-6"	4	52	4	52	4	52	4	52	K1	#4	Str	13'-2"	1	55				1	55		
Q108	#4	3	10'-1"	4	42	4	42	4	42	4	42	K2	#4	Str	7'-0"	4	51				4	51		
Q109	#4	3	7'-8"	4	32	4	32	4	32	4	32	K3	#4	Str	4'-0"	3	30				3	30		
Q110	#4	3	5'-4"	4	22	4	22	4	22	4	22	K4	#4	Str	7'-0"	6	29				6	29		
Q111	#5	3	2'-11"	4	12	4	12	4	12	4	12	K5	#4	Str	4'-0"	2	12				2	12		
Q121	#5	4	27'-11"	4	116	4	116	4	116	4	116	K6	#4	Str	4'-0"	4	11				4	11		
Q122	#4	4	25'-6"	4	106	4	106	4	106	4	106	K7	#6	Str	6'-11"	6	62	12	125	12	125	6	62	
Q123	#4	4	23'-1"	4	96	4	96	4	96	4	96	K8	#4	Str	4'-0"	4	11				4	11		
Q124	#4	4	20'-8"	4	86	4	86	4	86	4	86	K9	#6	Str	6'-11"	6	62	12	125	12	125	6	62	
Q125	#4	4	18'-4"	4	76	4	76	4	76	4	76	K40	#8	B	14'-4"	4	153	8	306	8	306	4	153	
Q126	#4	4	15'-11"	4	66	4	66	4	66	4	66	K41	#8	B	10'-9"	4	115	8	230	8	230	4	115	
Q127	#4	4	13'-6"	4	56	4	56	4	56	4	56	S1	#4	9	4'-5"	23	79	46	146	46	146	23	79	
Q128	#4	4	11'-1"	4	46	4	46	4	46	4	46	S2	#4	9	6'-9"	21	95	42	180	42	180	21	95	
Q129	#4	4	8'-9"	4	37	4	37	4	37	4	37	E1	#4	10	4'-6"	81	243	124	373	124	373	89	248	
Q130	#4	4	6'-4"	4	26	4	26	4	26	4	26													
Q131	#5	4	3'-11"	4	16	4	16	4	16	4	16													
b1	#4	Str	21'-8"	76	1100																			
b2	#5	Str	21'-11"	62	1417																			
b3	#4	5	6'-6"	42	182																			
b4	#4	5	6'-6"	8	35																			
b5	#4	Str	21'-4"			114	1625	114	1625															
b6	#5	Str	21'-8"			93	2102	93	2102															
b7	#4	Str	23'-5"																					
b8	#5	Str	23'-8"																					
													Reinforcing Steel lbs.		9280		13199		13199		9866			
													Class 'A' Concrete cu. yds.		52.5		698		698		558			
													1 Bar Alum. Kt. lbs.		73.42		123.00		123.00		84.41			
													76		1189									
													62		1530									



BAR TYPES All dimensions are out to out

PROJECT No. 815914

ROCKINGHAM COUNTY

STATION: 7+72.7 Y= 506+56.8 L

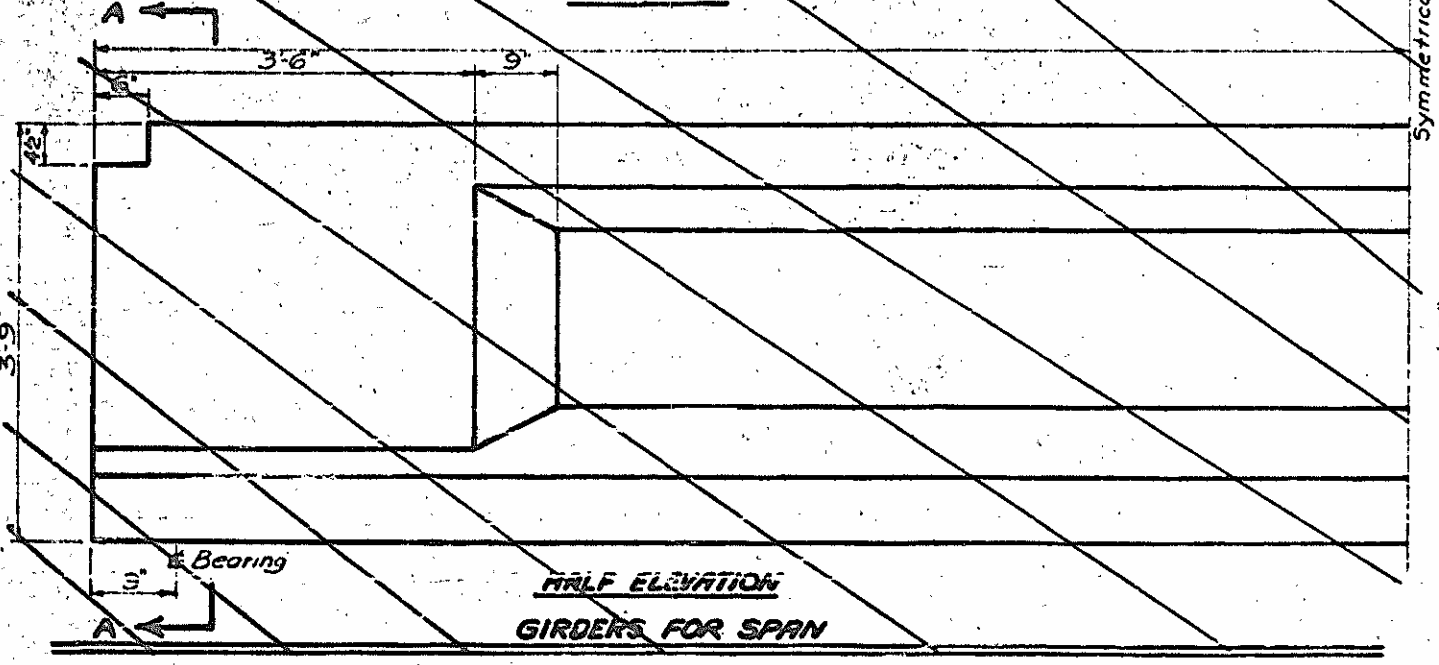
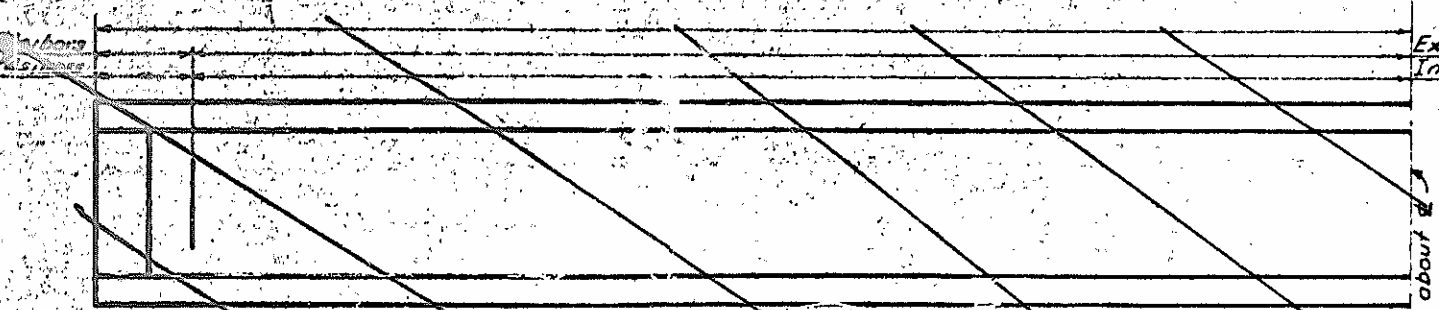
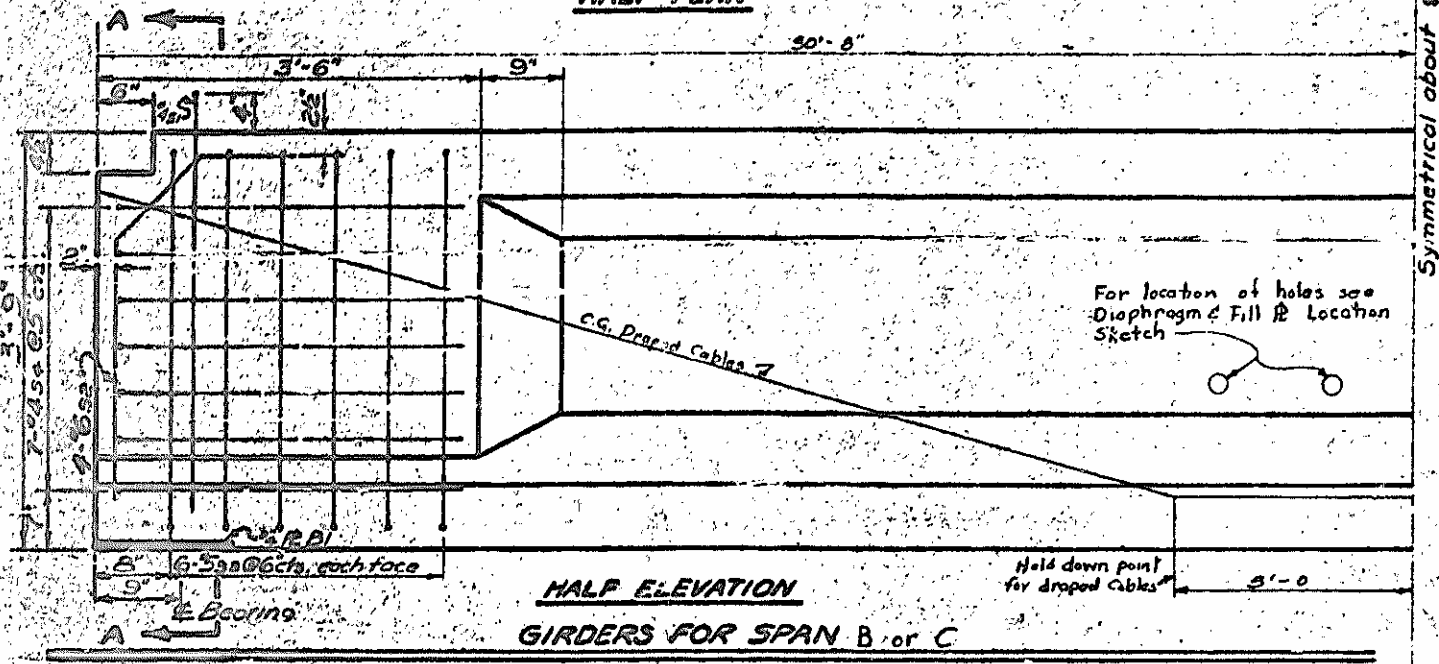
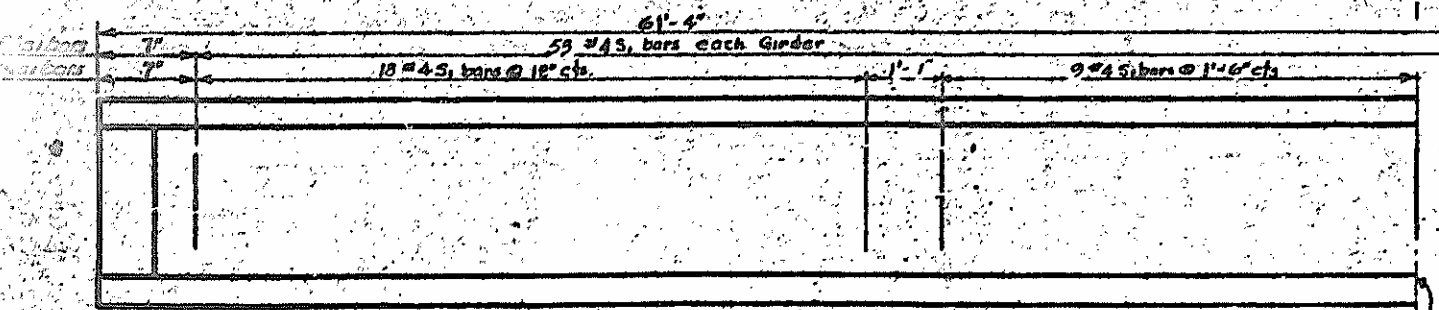
STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

SUPERSTRUCTURE DETAILS
AND
BILL OF MATERIAL

August 1961

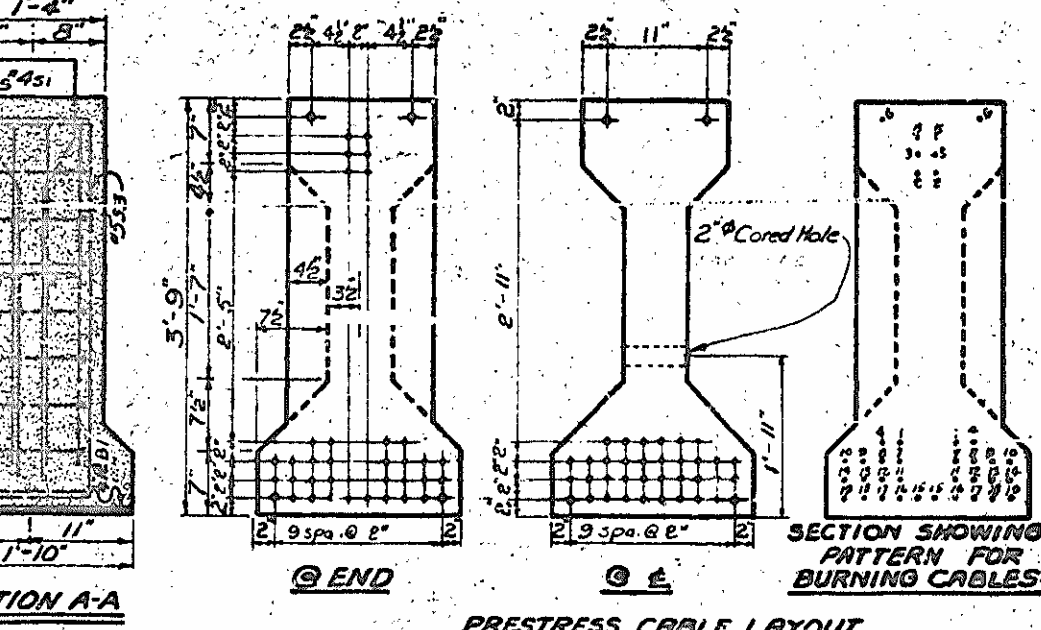
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			S-88
2			4			

TOTAL SHEETS 68



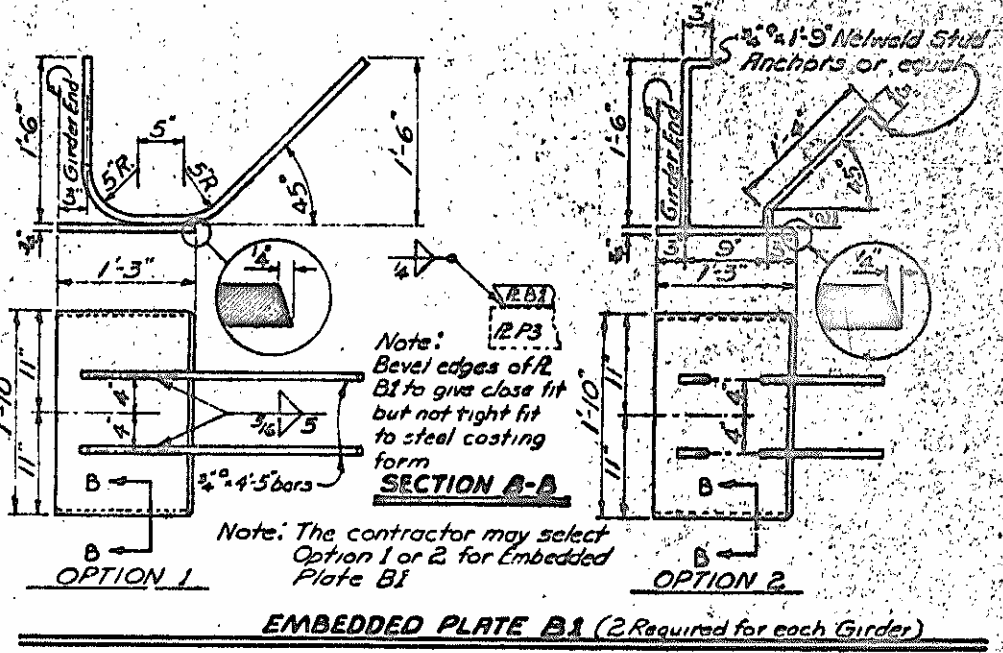
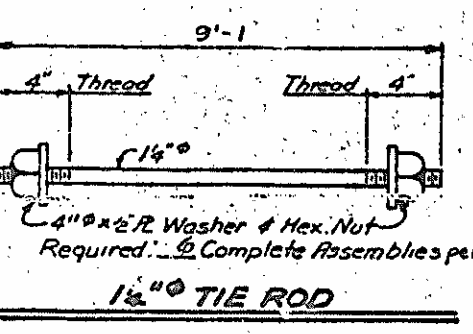
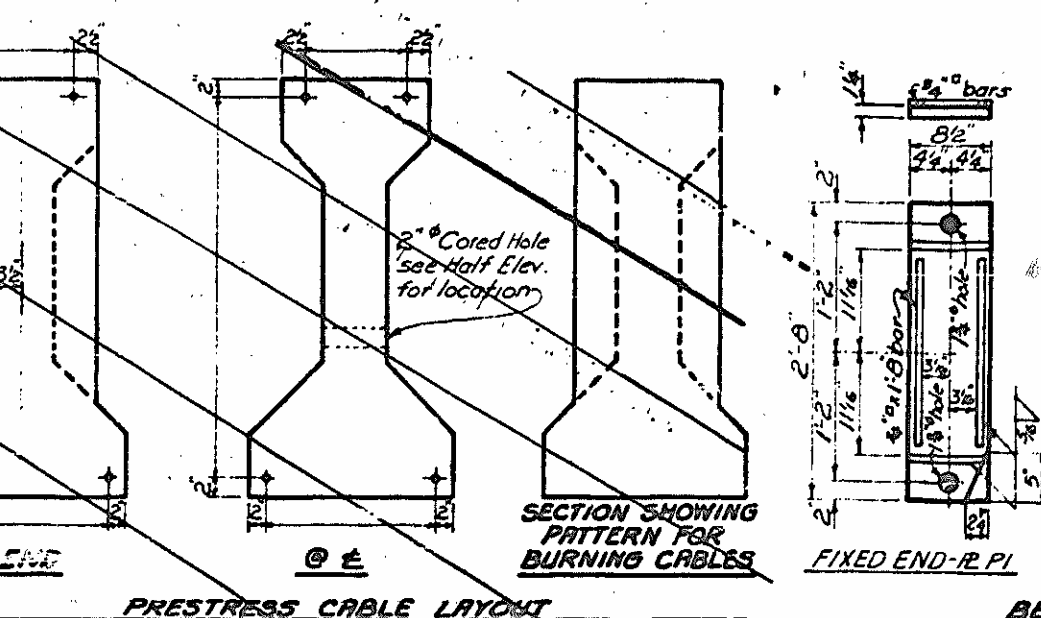
REINFORCING STEEL FOR ONE GIRDER

Bar No.	Size	Type	Length	Weight
51	#4	1	8'-6"	301
52	#4	1	8'-6"	301
53	#4	1	8'-6"	301
54	#6	2	4'-8"	56
55	#5	3	5'-6"	138
56	#4	3	7'-4"	69



NOTE: If cable stress is relieved by burning, each pair of cables shall be burned at ends of bed and between all girders before burning of the next pair of cables. The following order of burning shall be strictly adhered to:

- (1) Bottom Cables 1-1
- (2) Dropped Cables 2-2
- (3) Dropped Cables 3-3
- (4) Bottom Cables 4-4
- (5) Dropped Cables 5-5
- (6) Top Cables 6-6
- (7) Release hold downs
- (8) Each pair of cables 7-7 thru 14-14 in numbered order.



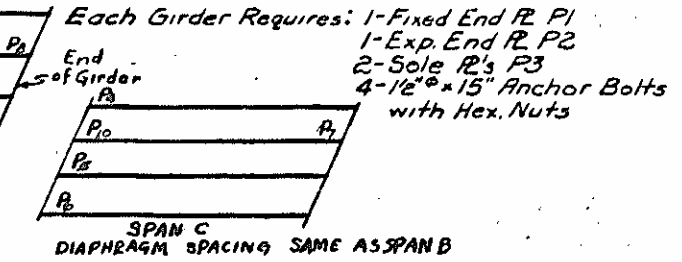
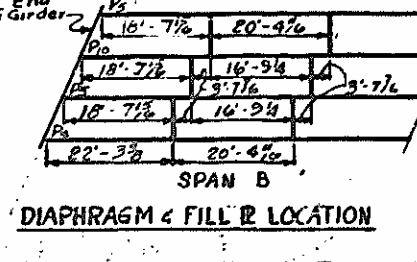
SPECIAL
 Assembled by Jack Fisher
 Checked by R. J. Hale
STANDARD
 Drawn by Carl J. Kiser
 Checked by W. H. ...

QUANTITIES FOR ONE GIRDER

	Reinforcing Steel lbs.	5000 psi Concrete Cu. Yds.	3/8" S R Cables No.
Exterior Girder - Span B	564	9.2	38
Interior Girder - Span B	564	9.2	38
Exterior Girder - Span C	564	9.2	38
Interior Girder - Span C	564	9.2	38

GIRDERS REQUIRED

No.	Length	Total Length
B	61'-4"	490'-8"



PROJECT No. 6.1594
 ROCKINGHAM COUNTY
 STATION: 7+72.7 Y.
 SPAN B' C' 506+56.8 L

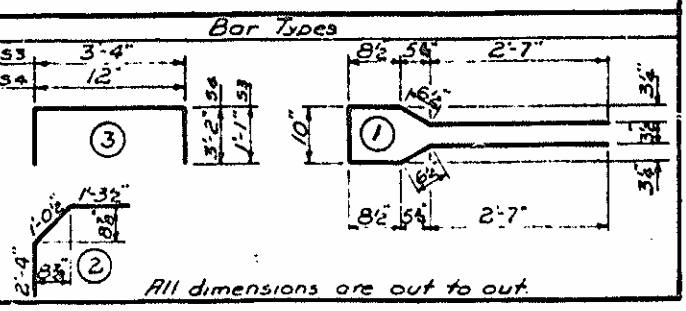
STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
 RALEIGH
STANDARD
45" PRESTRESSED
CONCRETE GIRDER
 AUGUST 1961

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
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2			4		

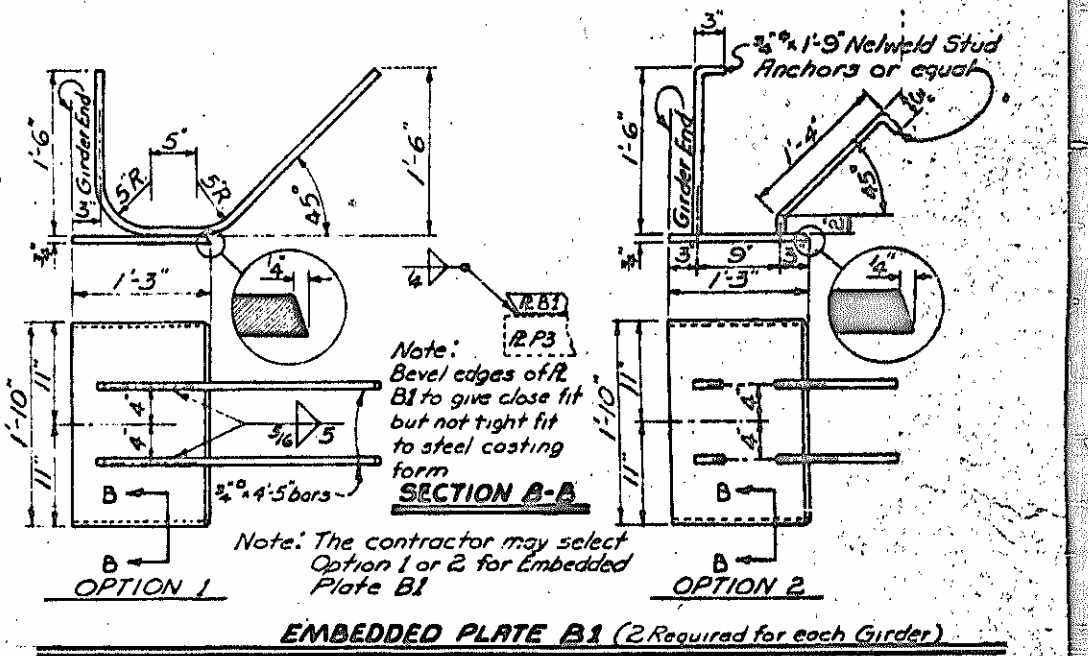
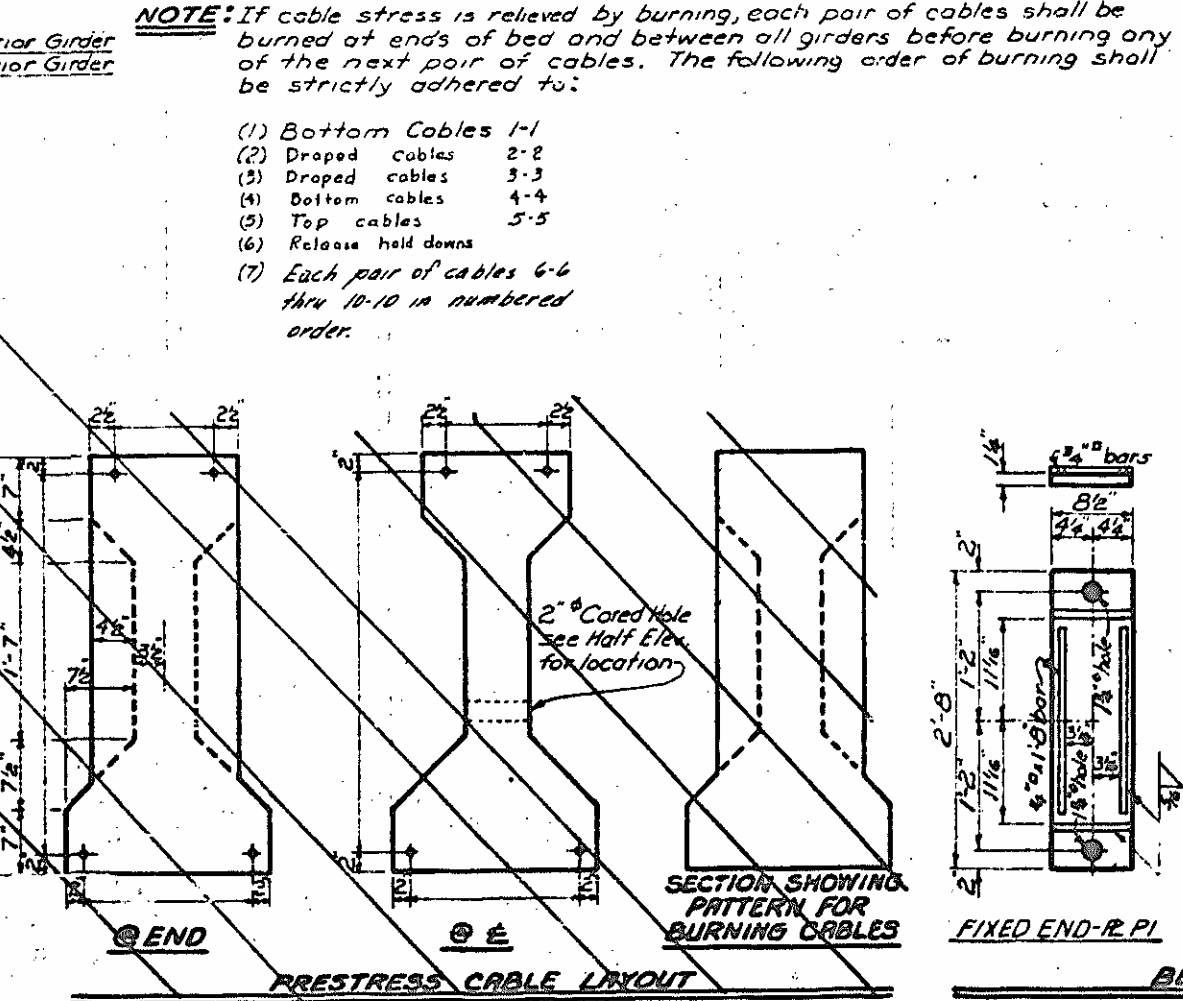
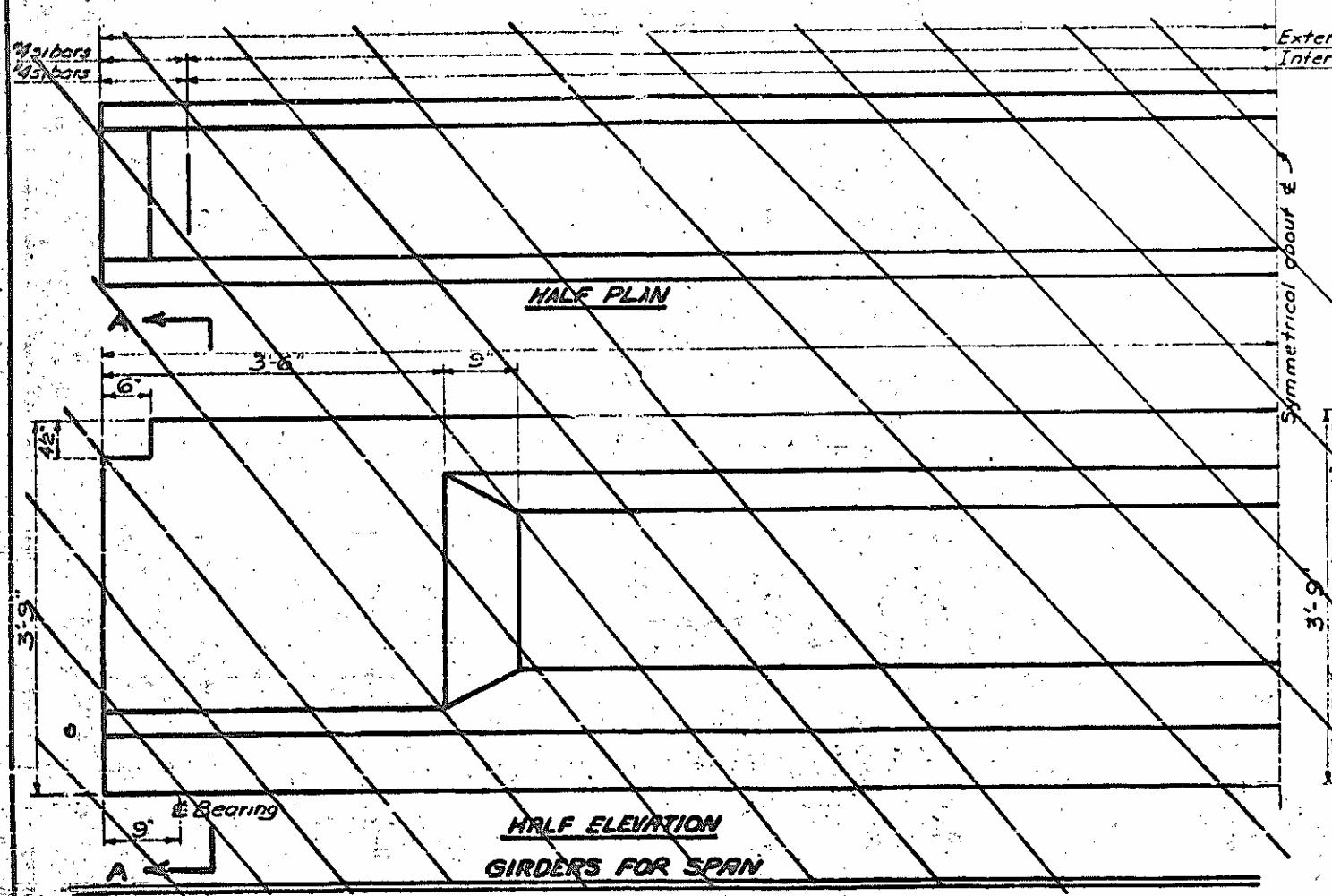
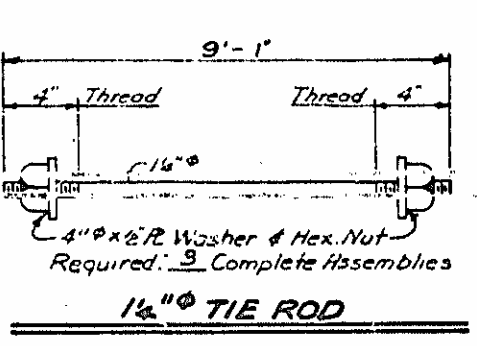
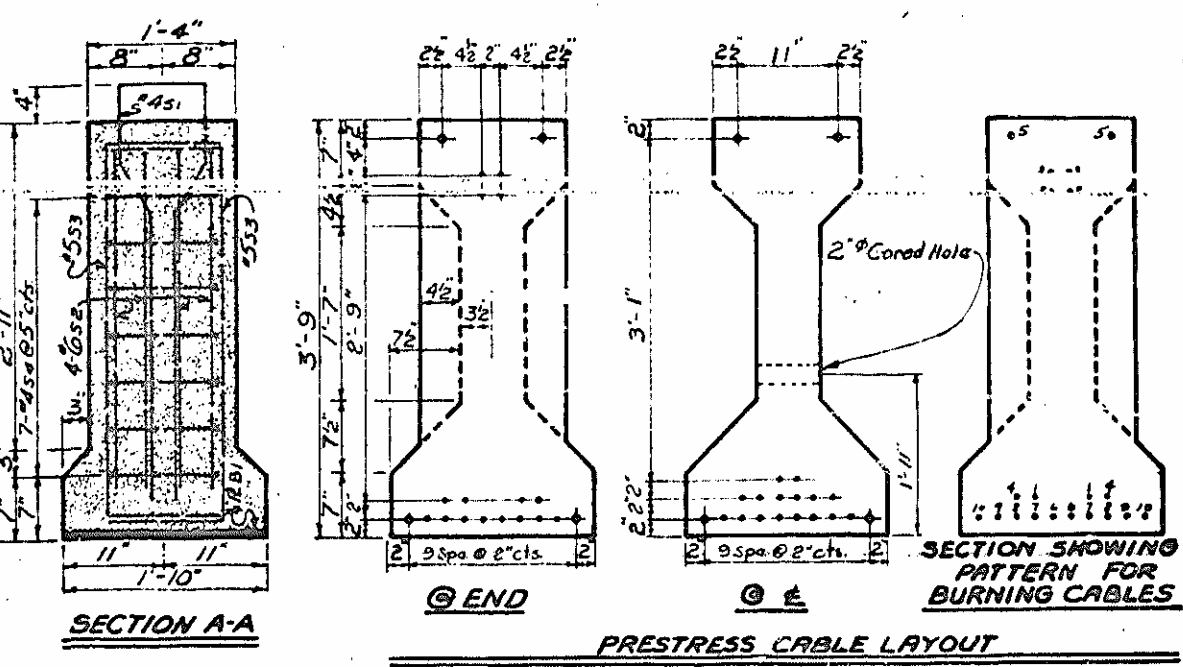
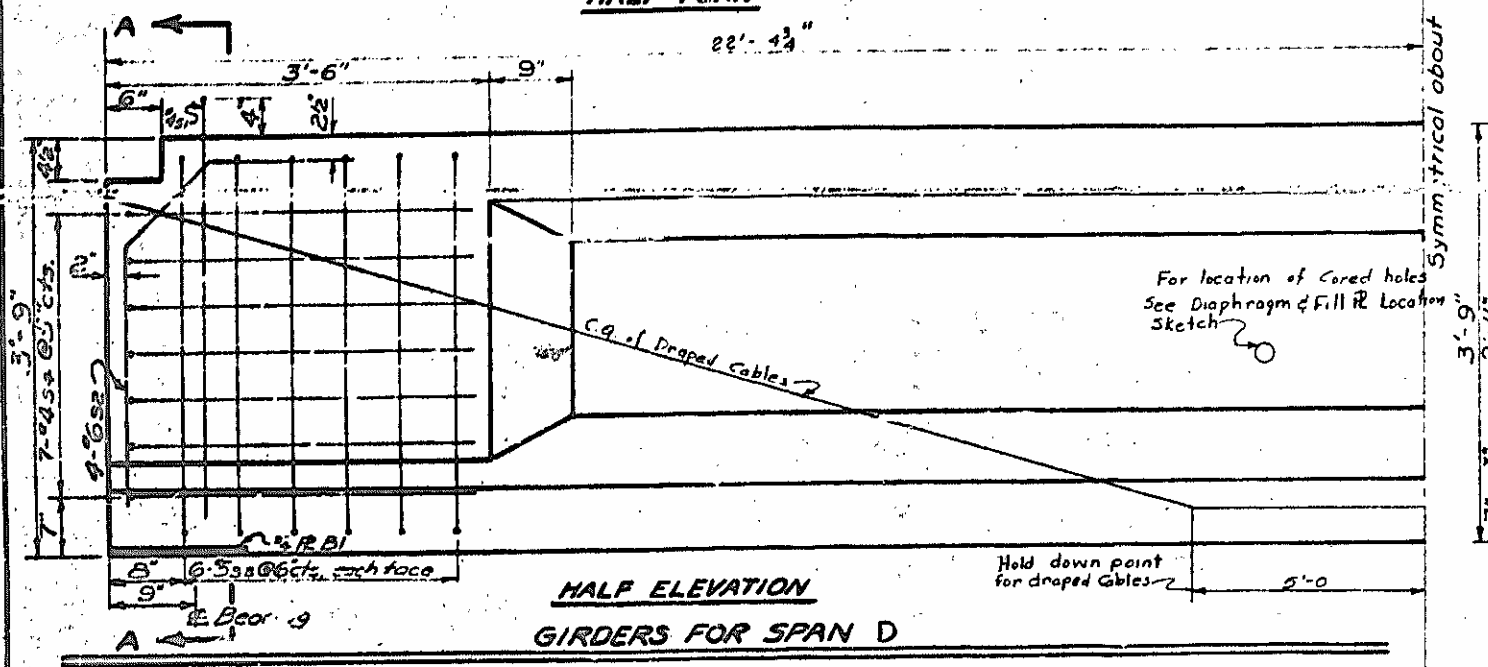
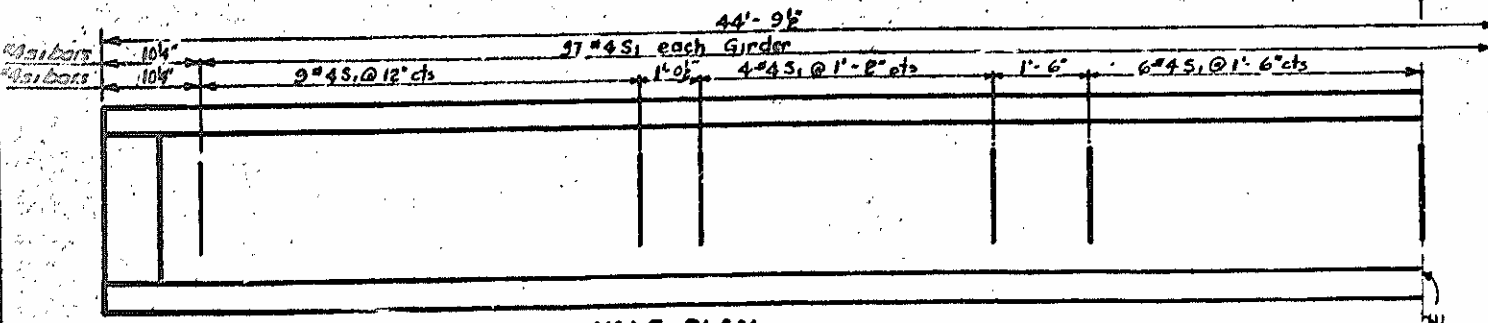
SHEET NO. 5-20
 TOTAL SHEETS 17-20

REINFORCING STEEL FOR ONE GIRDER

Bar No.	Size	Type	Length	Weight
31	#4	1	8'-6"	210
32	#4	1	8'-6"	210
33	#4	1	8'-6"	210
34	#4	1	8'-6"	210
35	#4	1	8'-6"	210
36	#4	1	8'-6"	210
37	#4	1	8'-6"	210
38	#4	1	8'-6"	210
39	#4	1	8'-6"	210
40	#4	1	8'-6"	210
41	#4	1	8'-6"	210
42	#4	1	8'-6"	210
43	#4	1	8'-6"	210
44	#4	1	8'-6"	210
45	#4	1	8'-6"	210
46	#4	1	8'-6"	210
47	#4	1	8'-6"	210
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51	#4	1	8'-6"	210
52	#4	1	8'-6"	210
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54	#4	1	8'-6"	210
55	#4	1	8'-6"	210
56	#4	1	8'-6"	210
57	#4	1	8'-6"	210
58	#4	1	8'-6"	210
59	#4	1	8'-6"	210
60	#4	1	8'-6"	210
61	#4	1	8'-6"	210
62	#4	1	8'-6"	210
63	#4	1	8'-6"	210
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93	#4	1	8'-6"	210
94	#4	1	8'-6"	210
95	#4	1	8'-6"	210
96	#4	1	8'-6"	210
97	#4	1	8'-6"	210
98	#4	1	8'-6"	210
99	#4	1	8'-6"	210
100	#4	1	8'-6"	210



NOTES
 12 of 58
 58 of 102
 All prestress strands to be 7/8" Stress Relieved Cables. Each cable to be pre-stressed at 18 900 lbs.
 Cables to be cut off flush with end of girder.
 No surface finish will be required for prestressed concrete girders. However the outside face of the exterior girders shall be carefully cleaned of drippings and other discolorations.
 See Specifications.



NOTE: If cable stress is relieved by burning, each pair of cables shall be burned at ends of bed and between all girders before burning any of the next pair of cables. The following order of burning shall be strictly adhered to:

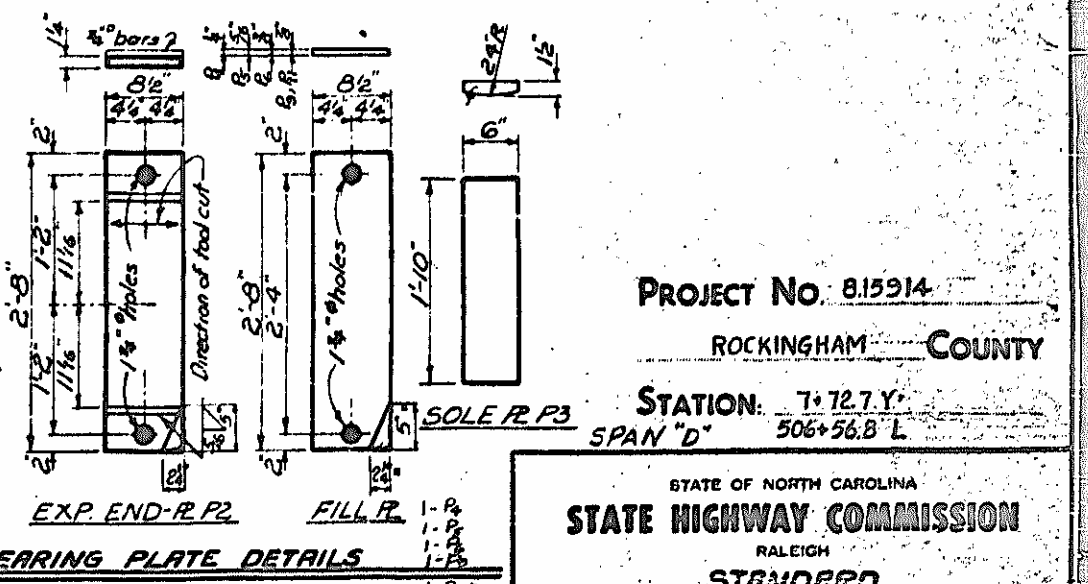
- Bottom cables 1-1
- Dropped cables 2-2
- Dropped cables 3-3
- Bottom cables 4-4
- Top cables 5-5
- Release hold downs
- Each pair of cables 6-6 thru 10-10 in numbered order.

QUANTITIES FOR ONE GIRDER

	Reinforcing Steel lbs.	2000ops Concrete Cu.Yds	7/8" S.R Cables No
Exterior Girder - Span D	473	68	20
Interior Girder - Span D	473	68	20
Exterior Girder - Span			
Interior Girder - Span			

GIRDERS REQUIRED

No.	Length	Total Length
4	44'-2 1/2"	177'-2"



PROJECT No. 815914
 ROCKINGHAM COUNTY
 STATION: 7+72.7 Y.
 SPAN "D" 506+56.8 L

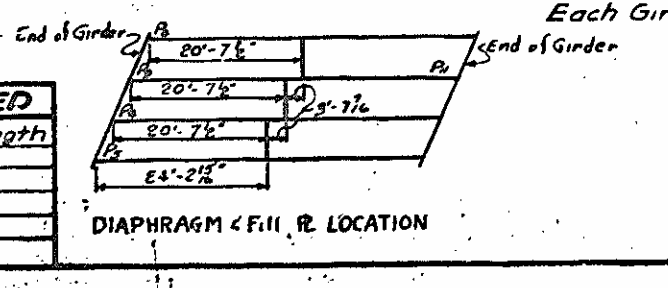
STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
 RALEIGH

STANDARD 45" PRESTRESSED CONCRETE GIRDER

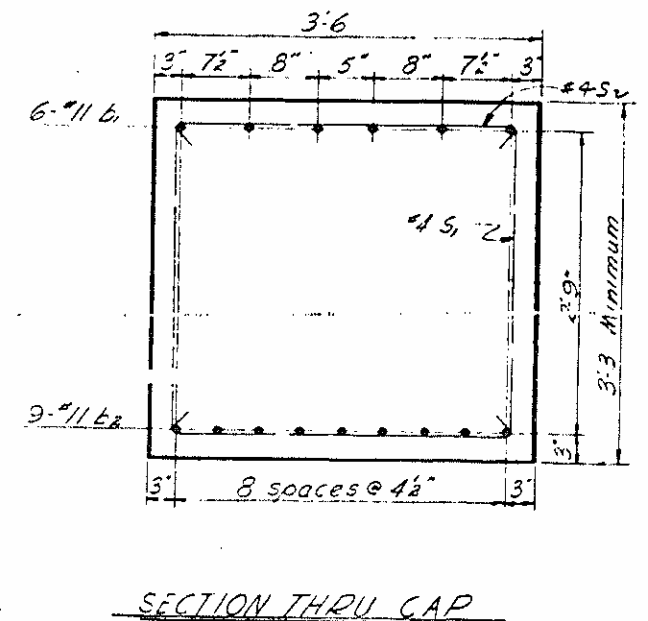
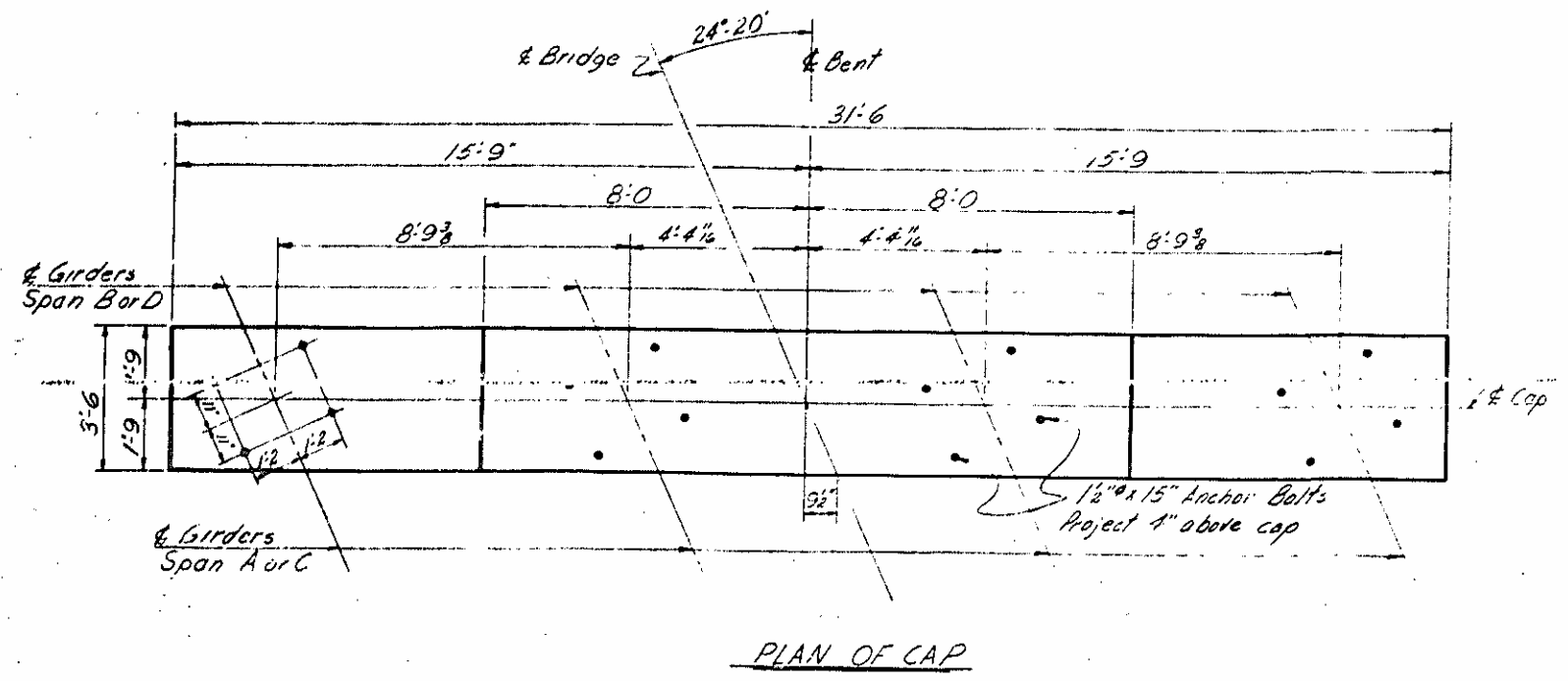
AUGUST 1961

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

SPECIAL
 Assembled By: Jack Baker Date: Aug 22, 1961
 Checked By: R. J. Hale Date: Oct. 1961
 STANDARD
 Drawn By: Carl J. Kiser Date: Aug 31, 1961
 Checked By: R. J. Hale Date: Oct. 1961



Each Girder Requires: 1-Fixed End R P1
 1-Exp. End R P2
 2-Sole R's P3
 4-1/2" x 15" Anchor Bolts with Hex. Nuts
 * Note: Plate P1 not to be clipped



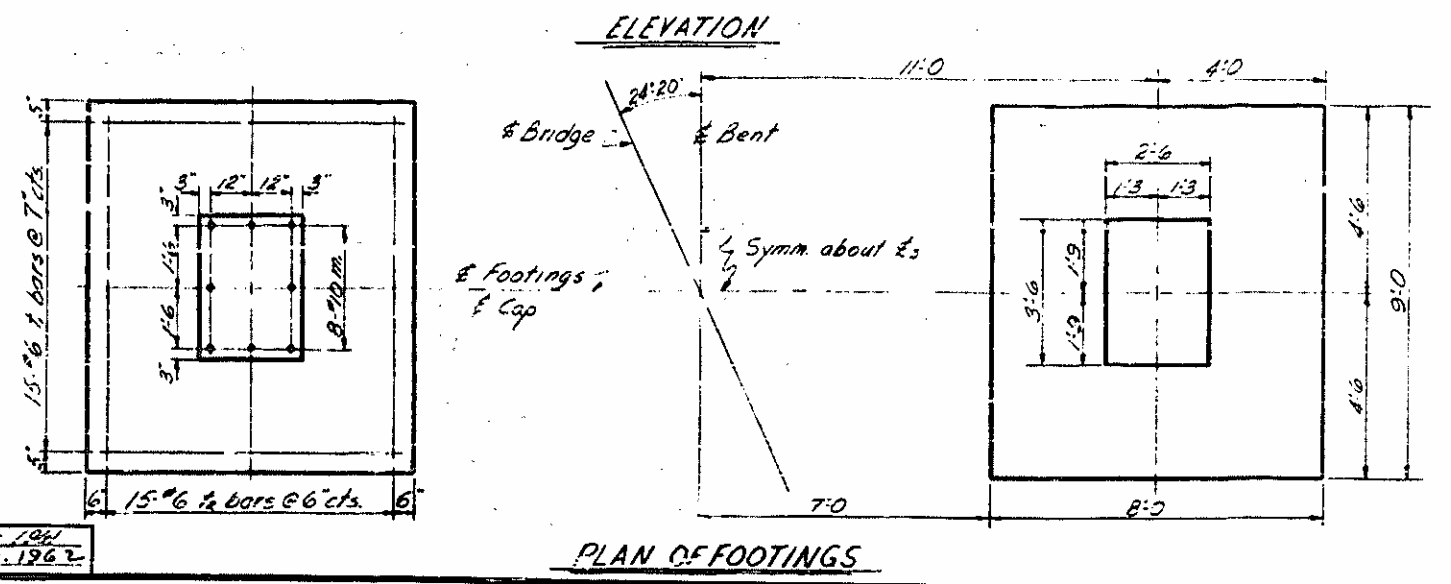
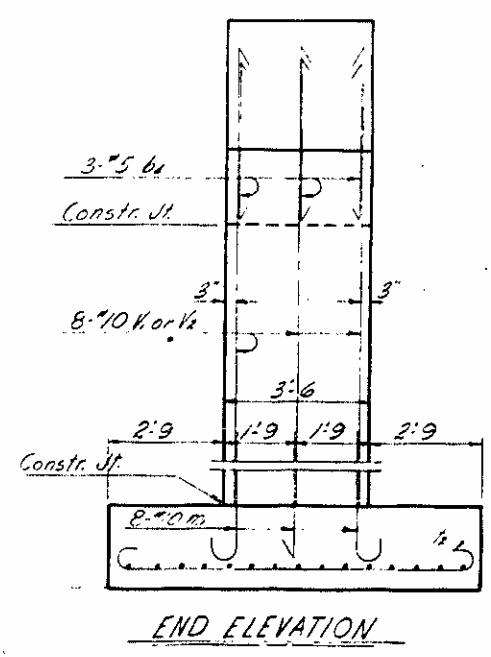
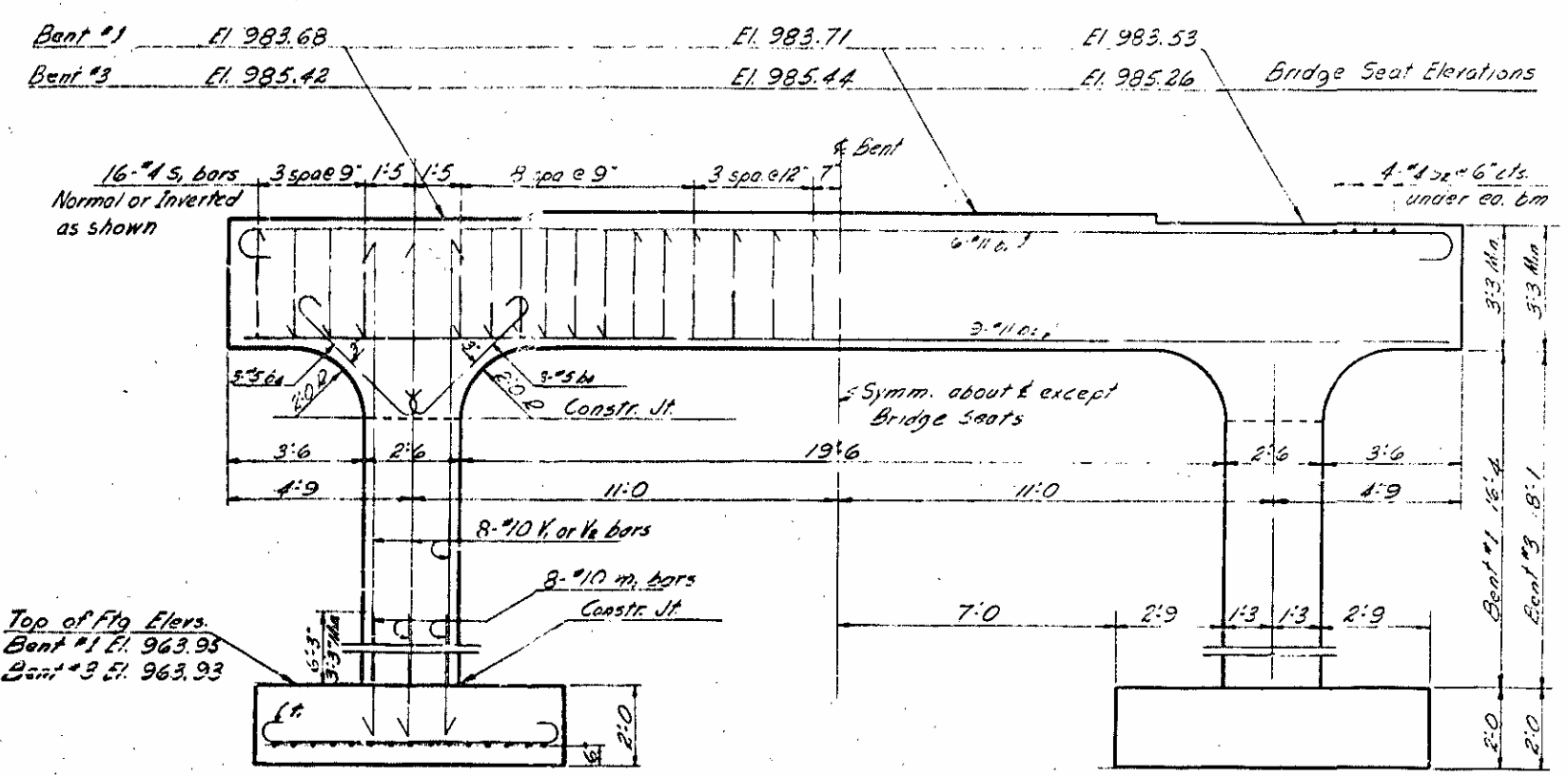
BAR TYPES
 (All dimensions are cut to cut)

NO.	SIZE	TYPE	LENGTH	WEIGHT
1	#11	1	34'-4	1090
2	#11	str.	31'-2	1490
3	#5	1	5'-10	75
4	#10	2	9'-2	631
5	#4	4	3'-9	208
6	#4	3	3'-11	42
7	#8	1	2'-10	396
8	#6	1	9'-7	443
9	#10	2	20'-8	1423
10	#10	2	22'-5	1543

BILL OF MATERIAL
 FOR ONE BENT, TWO REQD.

BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
Bent #1	1	#11	1	34'-4	1090
Bent #3	2	#11	str.	31'-2	1490
	3	#5	1	5'-10	75
	4	#10	2	9'-2	631
	5	#4	4	3'-9	208
	6	#4	3	3'-11	42
	7	#8	1	2'-10	396
	8	#6	1	9'-7	443
Bent #1	9	#10	2	20'-8	1423
Bent #3	10	#10	2	22'-5	1543

Bent #	Reinforcing Steel Lbs.	Class A Concrete Cu Yds.
Bent #1	5802	35.5
Bent #3	5922	36.6



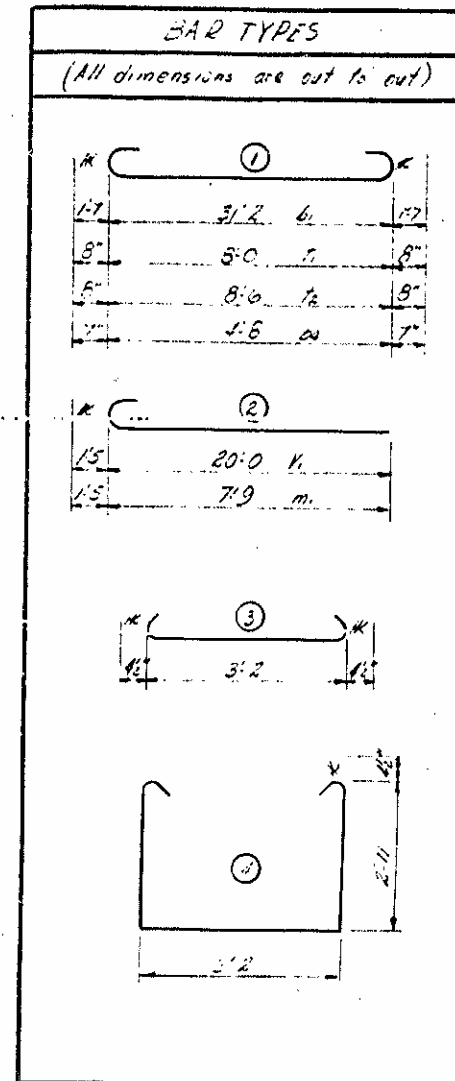
PROJECT NO. 8.159/4
 ROCKINGHAM COUNTY
 STATION: 506+56.8 L

STATE OF NORTH CAROLINA
 STATE HIGHWAY COMMISSION
 BALDWIN
 SUBSTRUCTURE
 BENT NO. 1 & NO. 3

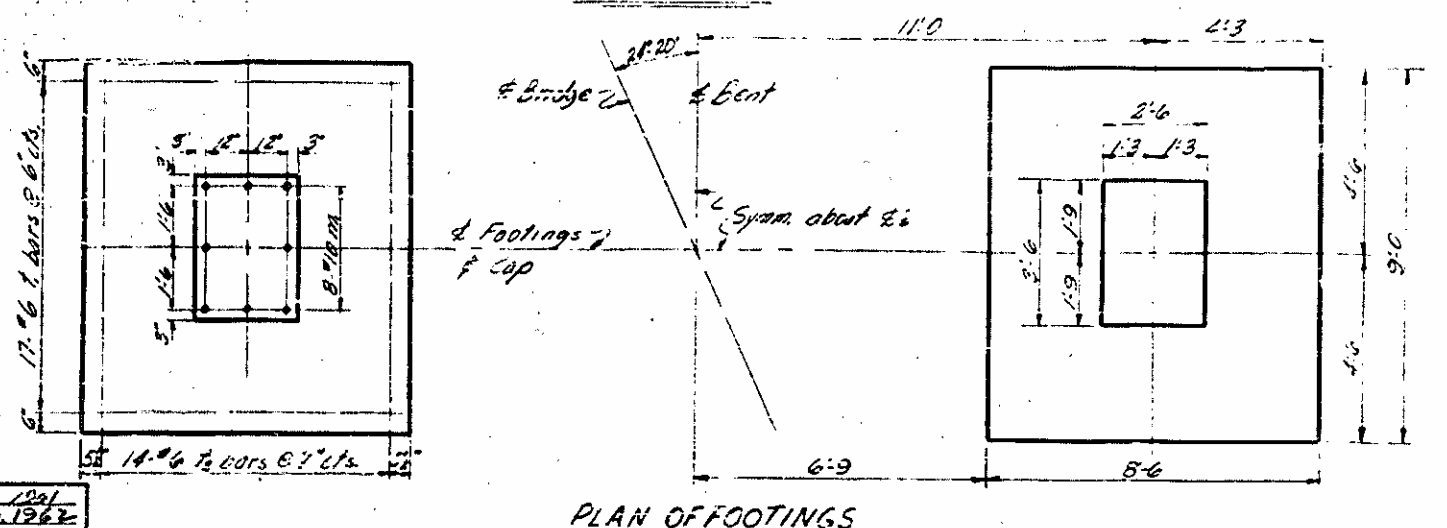
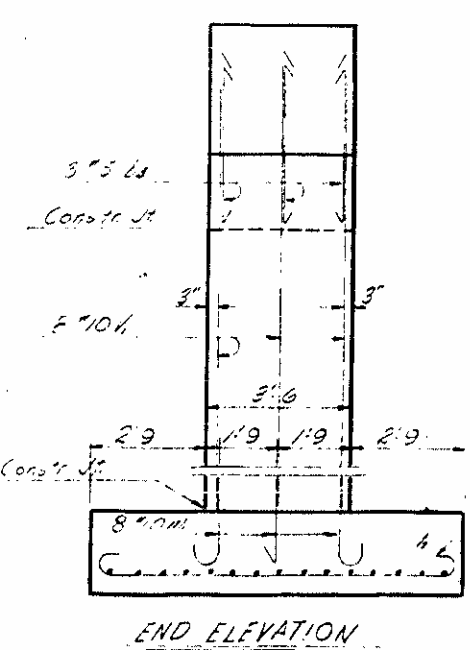
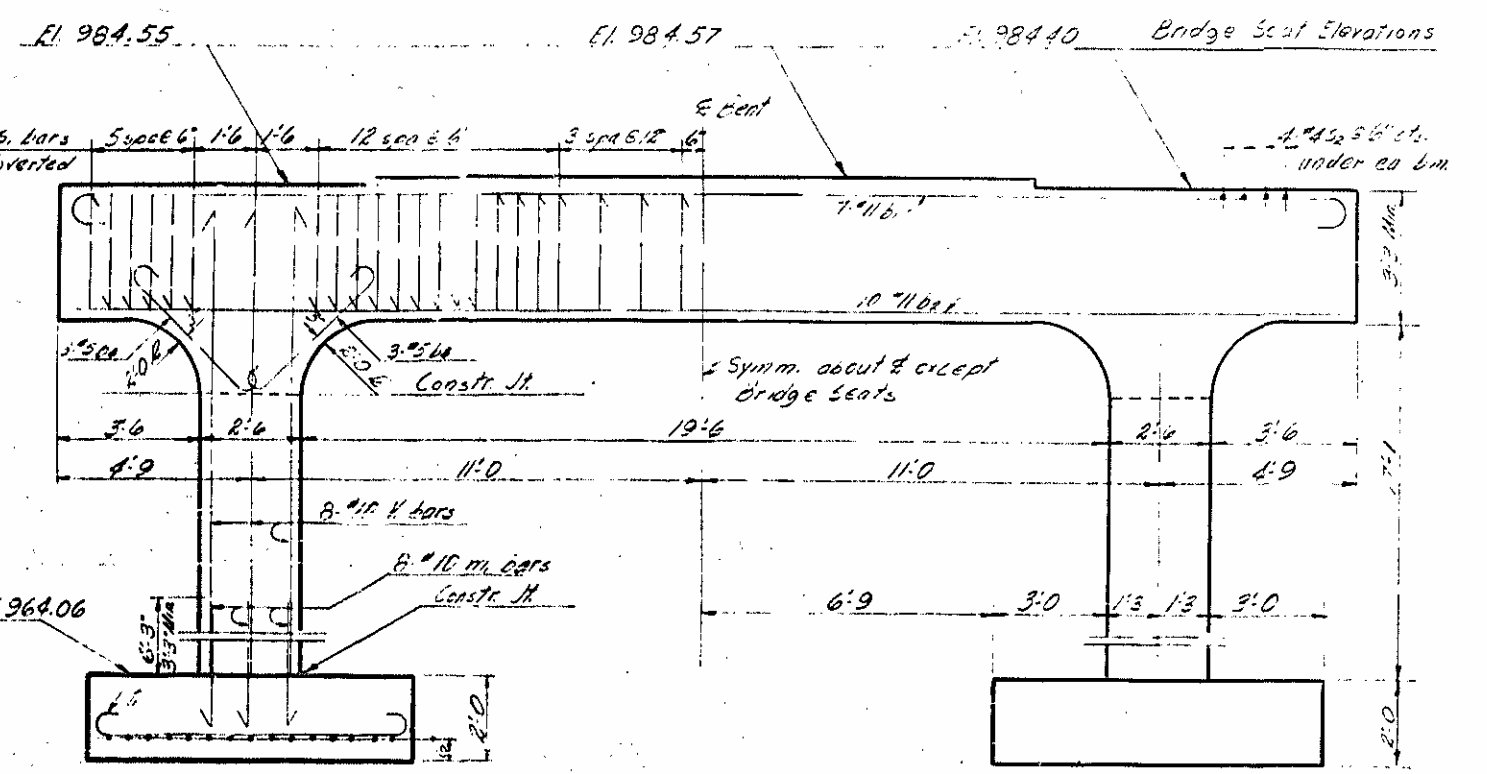
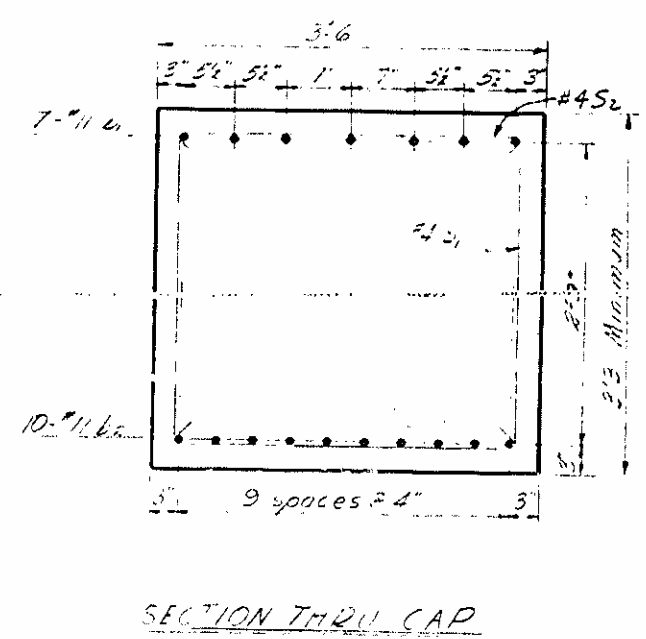
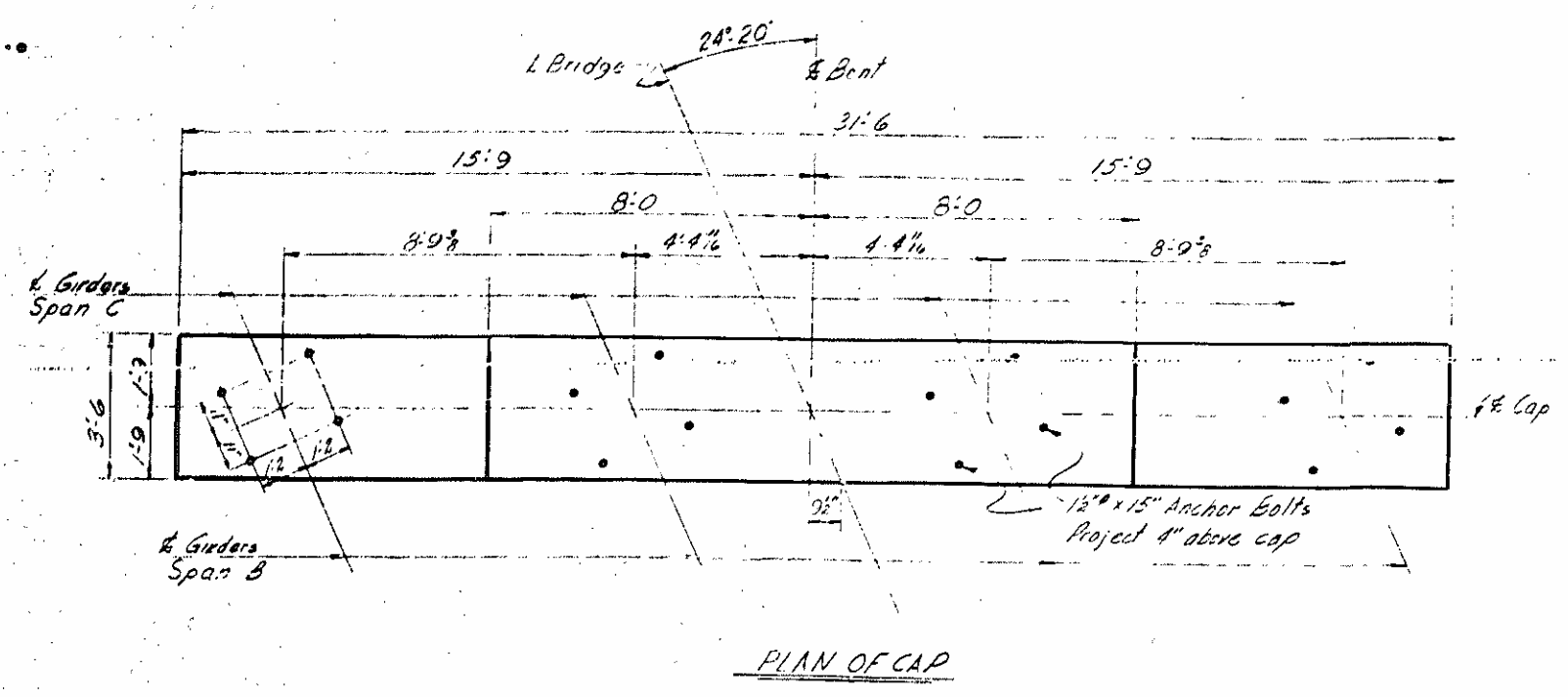
AUGUST 1961

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

5-44
 48



BILL OF MATERIAL					
FOR BENT NO 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B ₁	7	#11	1	34' 8"	1277
B ₂	10	#11	17	31' 2"	1656
B ₃	12	#5	1	5' 10"	76
B ₄	16	#10	2	9' 2"	681
B ₅	44	#4	4	9' 9"	287
B ₆	16	#4	3	3' 11"	42
B ₇	32	#6	1	9' 4"	477
B ₈	28	#6	1	9' 10"	414
B ₉	16	#10	2	2' 5"	1470
Reinforcing Steel Lbs.				6931	
Class 'A' Concrete Cu. Yds.				36.7	

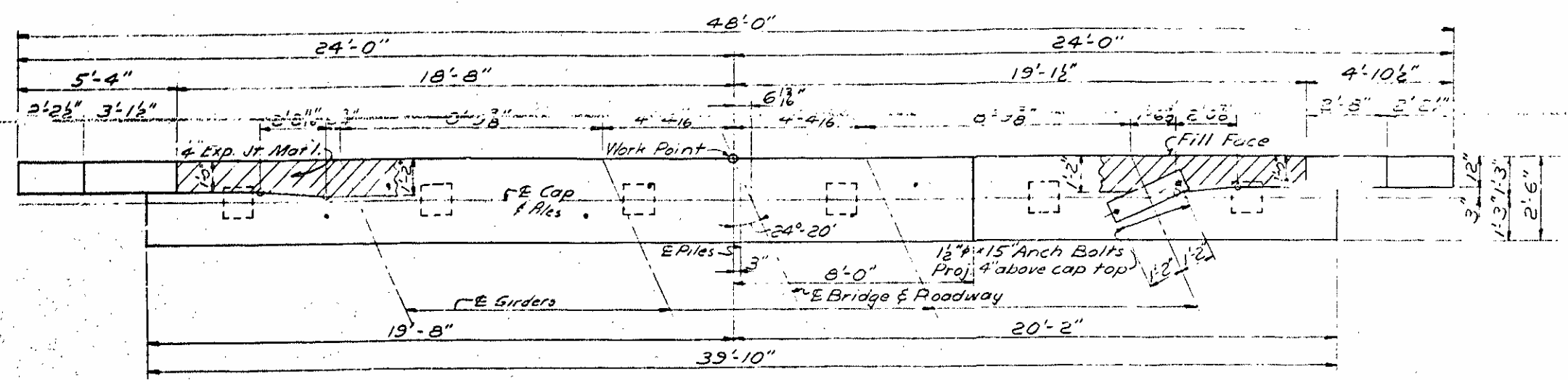


PROJECT NO. 8-15914
ROCKINGHAM COUNTY
STATION: 506+56.8 'L'

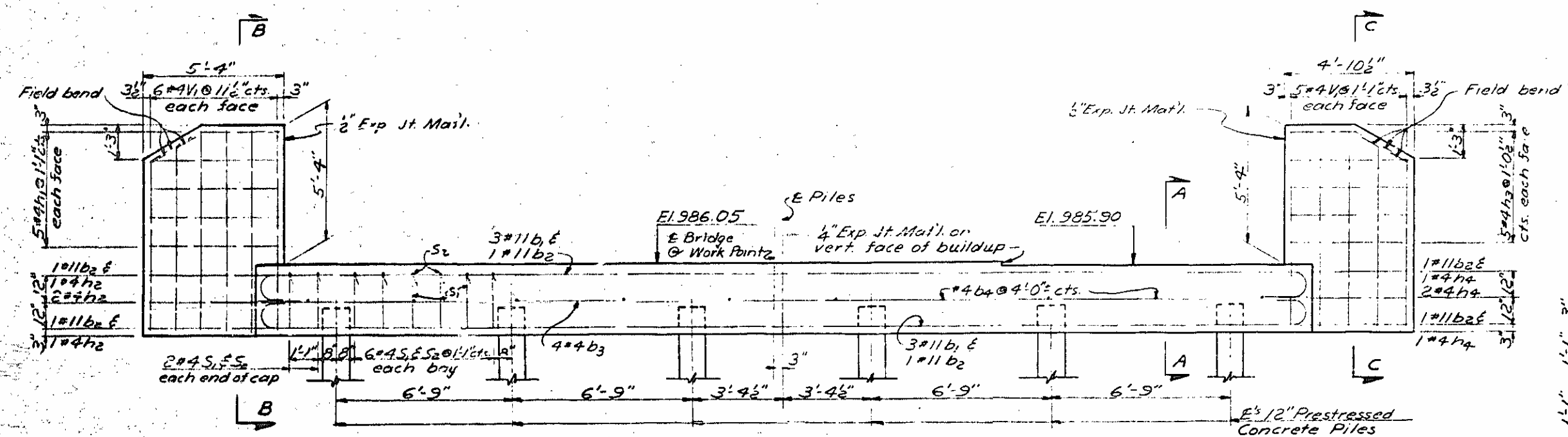
STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH
SUBSTRUCTURE
BENT NO 2

REVISEMENTS		DATE		BY	
NO.	BY	NO.	BY	NO.	BY
1		1		1	
2		2		2	

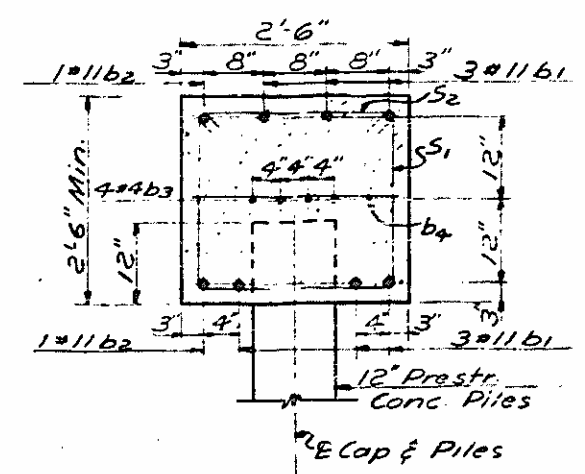
SHEET NO. **S-25**



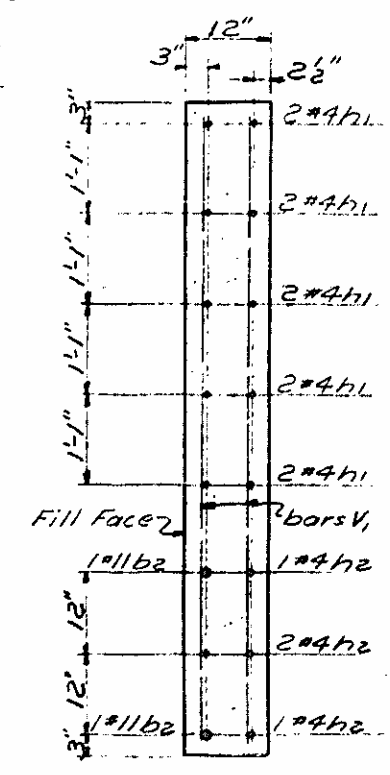
PLAN OF CAP
 END BENT #2



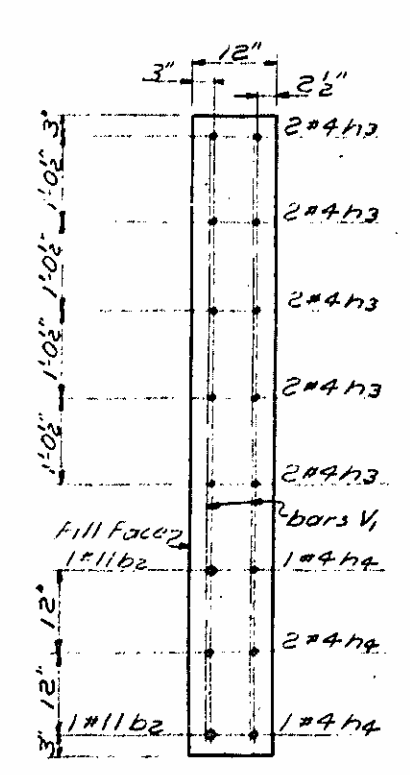
ELEVATION
 END BENT #2



SECTION A-A



SECTION B-B



SECTION C-C

NOTE: All bar dimensions are out-to-out

* Concrete displaced by pile heads has been deducted.

BAR TYPES					BILL OF MATERIAL				
					FOR END BENT #2				
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
b1	#11	1	42'-6"	1355	b1	#11	1	42'-6"	1355
b2	#11	Str.	47'-6"	505	b2	#11	Str.	47'-6"	505
b3	#4	Str.	20'-6"	110	b3	#4	Str.	20'-6"	110
b4	#4	Str.	2'-2"	14	b4	#4	Str.	2'-2"	14
h1	#4	Str.	5'-0"	33	h1	#4	Str.	5'-0"	33
h2	#4	Str.	5'-7"	15	h2	#4	Str.	5'-7"	15
h3	#4	Str.	4'-6"	30	h3	#4	Str.	4'-6"	30
h4	#4	Str.	5'-1"	14	h4	#4	Str.	5'-1"	14
s1	#4	2	7'-3"	165	s1	#4	2	7'-3"	165
s2	#4	3	2'-11"	66	s2	#4	3	2'-11"	66
v1	#4	Str.	7'-5"	109	v1	#4	Str.	7'-5"	109

Reinforcing Steel-Lbs 2416
 Class A Concrete-Cu Yds. 12.1
 12" Prestr. Conc. Piles-No 6.4 in Ft 180

PROJECT NO. 815914
 ROCKINGHAM COUNTY
 STATION: 506+56.21
 = 7+72.21

STATE OF NORTH CAROLINA
 STATE HIGHWAY COMMISSION
 SUBSTRUCTURE
 END BENT NO. 2

AUGUST 1961

REVISIONS						SHEET NO. 5-46
NO.	BY	DATE	NO.	BY	DATE	
1			2			TOTAL SHEETS 48
2			4			

