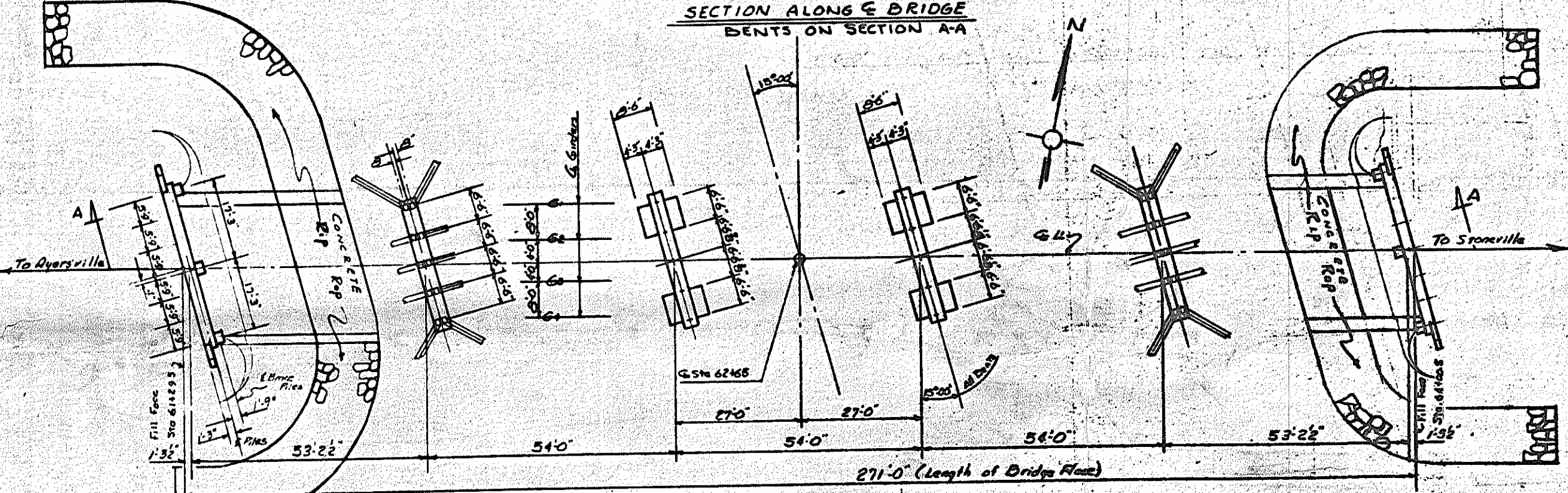
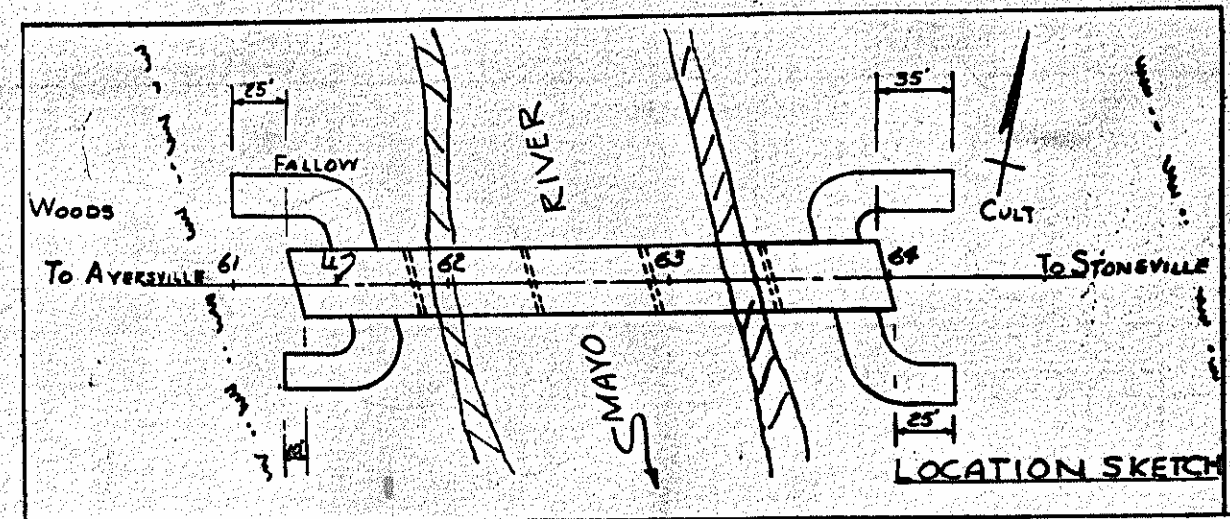


SECTION ALONG E BRIDGE
BENTS ON SECTION A-A



PLAN

- NOTES-**
- Assumed Live Load = $H20-S16(44)$ or Alternate Loading
 - For other design data and general note see sheet 51
 - Computed foundation load for Bents 2 & 3 equals 3t tons per sq. ft. Footings to be carried at least 12" into rock with a minimum thickness as shown on PLANS.
 - The contractor will be responsible for determining the length of piles required. See Special Provisions.
 - The piles are to be driven to a minimum bearing capacity of 28 tons for End Bents 1 and 2, and 29 tons for Bents 3 and 4.
 - The contractor will be required to excavate completely through the fill at End Bents 1 and 2 before driving the piles. (See sheet 51)
 - Bench Mark: "5 2 Nails in base of 6" Pine 75' Right Station 62105 Line - L. EL. 695.04
 - * These piles are designated as alternate types on the detailed structure plans. The type pile for which the contractor submits a bid in his proposal shall be used in the structure as no substitution of alternate types will be permitted after bids are received.



	TOTAL BILL OF MATERIAL									
	Class A Concrete	Reinforcing Steel	45' Post Conc. 10" dia	12" Post Conc. 10" dia	Cast in Place Conc. with Steel Pipe	Cast in Place Conc. with Steel Pipe and Shell	190T Excavation	Rip Rap Conc.		
	Cu. Yds.	Lbs.	No.	No.	Lbs.	Lbs.	Cu. Yds.	Sq. Yds.		
Superstructure	2953	69966	20	10767	-	-	-	-	-	-
End Bent 1	12.3	2249	-	-	10	385	10	500	-	255.24
Bent 1	9.9	1771	-	-	10	385	-	-	-	-
Bent 2	51.7	6939	-	-	-	-	-	-	61.872	-
Bent 3	50.0	6039	-	-	-	-	-	-	59.874	-
Bent 4	36	1771	-	-	10	385	-	-	-	-
End Bent 2	12.3	2249	-	-	10	385	10	500	-	255.24
App. Coebs	3.2	76	-	-	-	-	-	-	-	-
TOTAL	445	91878	20	10767	10	1552	20	1000	118.74	1085.14

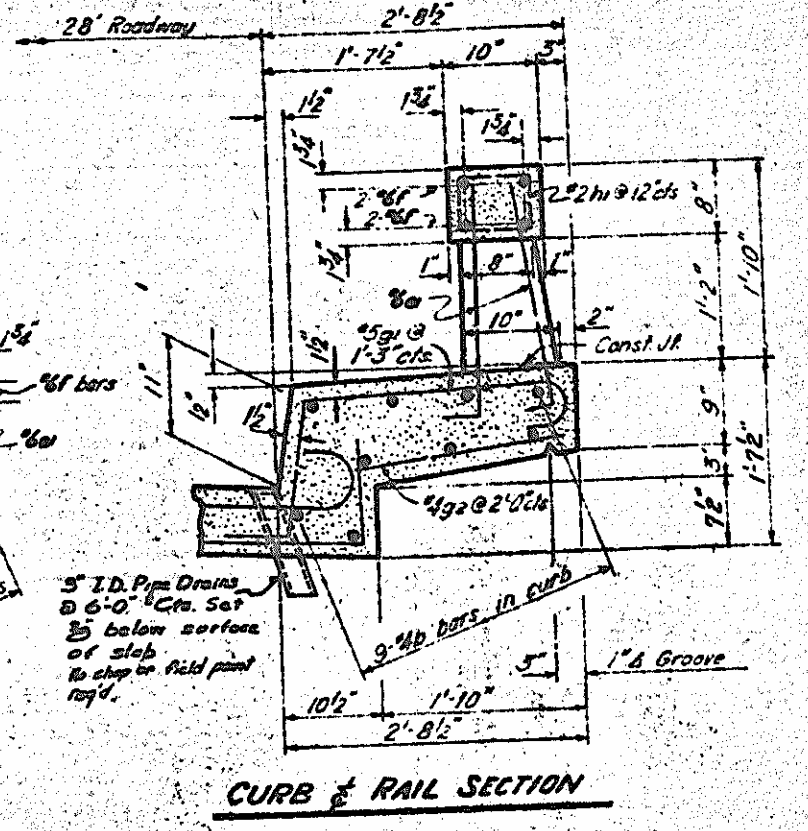
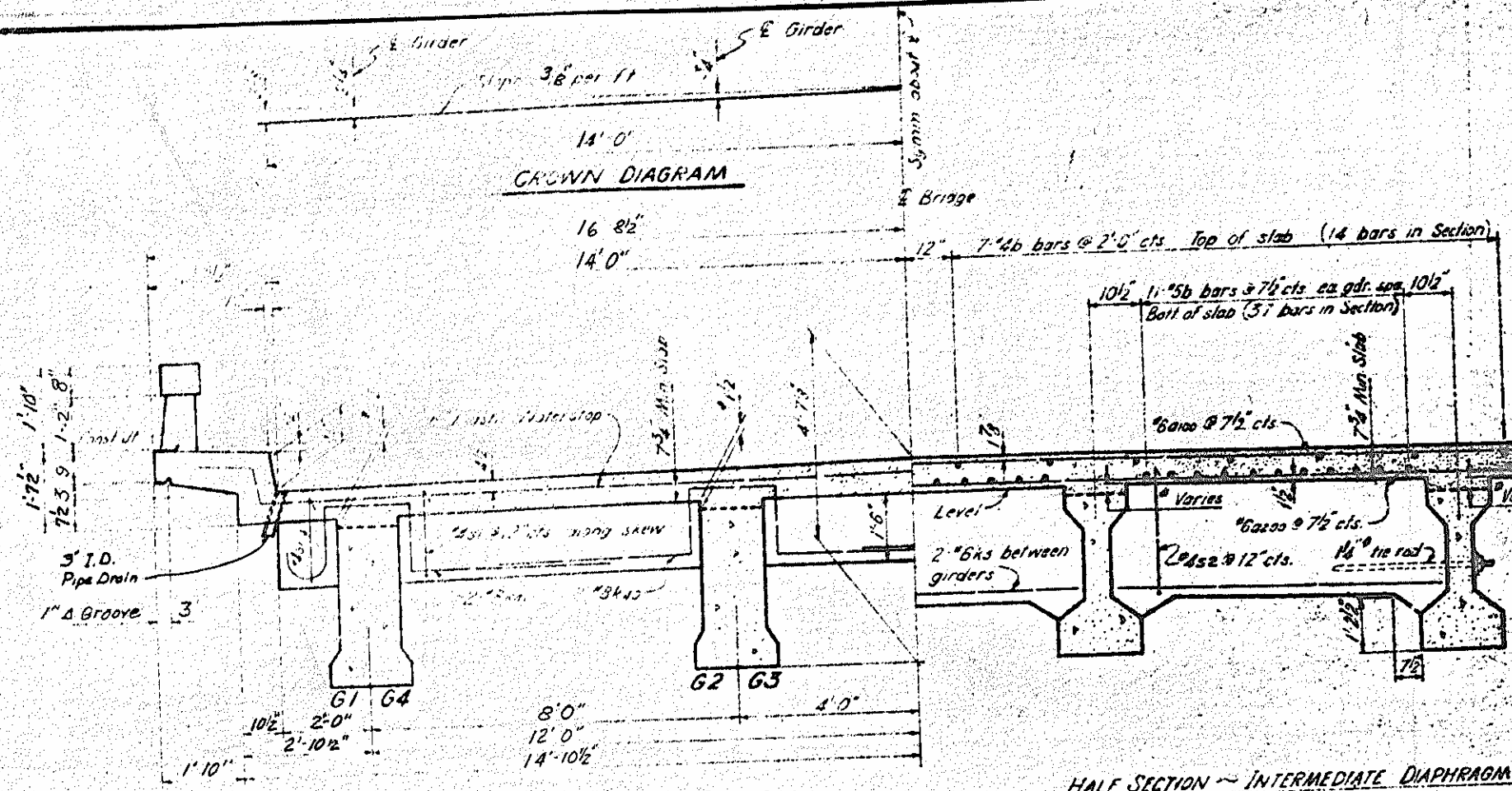
Cr. # 35

PROJECT No. **015909**
 ROCKINGHAM COUNTY
 STATION **62165 L**
REEL 803 P. 18

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
 RALEIGH
GENERAL DRAWING
 BRIDGE OVER MAYO RIVER
 ON RELOCATED N.C. 770
 BETWEEN
 AVERYSVILLE & STONEVILLE
 Feb. 1954

REV.	BY	DATE	NO.	DESCRIPTION
1			0	
2			0	

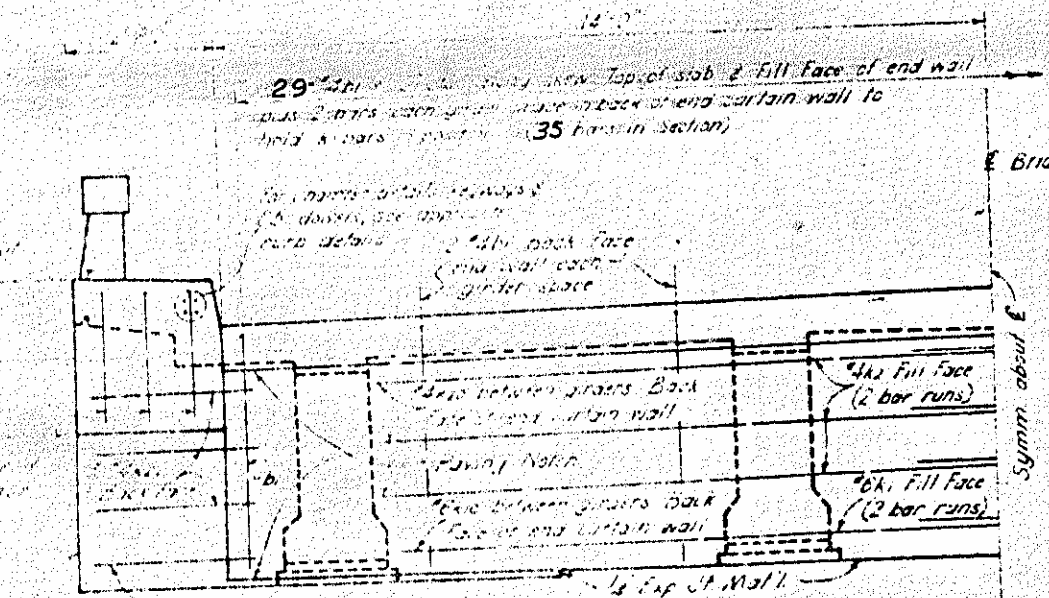
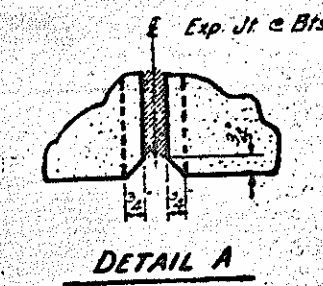
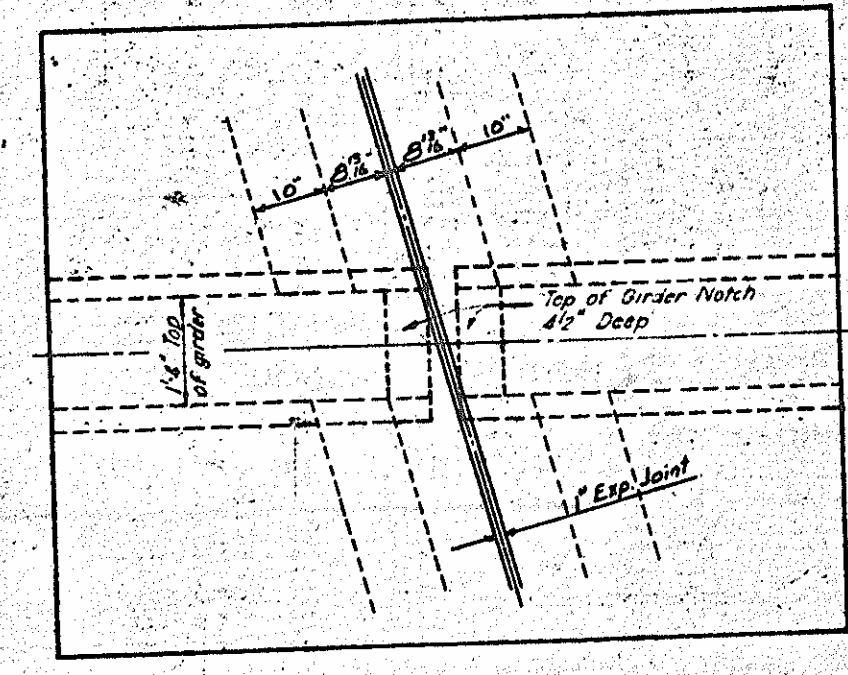
Column 1 Bottom of overhang		Column 2 E of Roadway		Column 3 Bottom of overhang	
Dist.	Elev.	Dist.	Elev.	Dist.	Elev.
2'-5 1/2"	672.807	0'-6"	678.539	6'-6 1/2"	677.503
	672.835		678.520		677.258
	677.258		678.144		676.890
	676.890		677.776		676.890
	676.532		677.417		676.532
	676.182		677.067		676.182
0'-0 3/4"	675.842	4'-0"	676.727	7'-11 1/2"	675.842
9'-11 1/2"	675.510	6'-0"	676.396	2'-0 3/4"	675.510
	675.188		676.073		675.188
	674.875		675.760		674.875
	674.517		675.456		674.517
	674.160		675.161		674.160
	673.844		674.875		673.844
	673.528		674.584		673.528
	673.212		674.293		673.212
	672.896		674.002		672.896
	672.580		673.711		672.580
	672.264		673.420		672.264
	671.948		673.129		671.948
	671.632		672.838		671.632
	671.316		672.547		671.316
	671.000		672.256		671.000
	670.684		671.965		670.684
	670.368		671.674		670.368
	670.052		671.383		670.052
	669.736		671.092		669.736
	669.420		670.801		669.420
	669.104		670.510		669.104
	668.788		670.219		668.788
	668.472		669.928		668.472
	668.156		669.637		668.156
	667.840		669.346		667.840
	667.524		669.055		667.524
	667.208		668.764		667.208
	666.892		668.473		666.892
	666.576		668.182		666.576
	666.260		667.891		666.260
	665.944		667.600		665.944
	665.628		667.309		665.628
	665.312		667.018		665.312
	664.996		666.727		664.996
	664.680		666.436		664.680
	664.364		666.145		664.364
	664.048		665.854		664.048
	663.732		665.563		663.732
	663.416		665.272		663.416
	663.100		664.981		663.100
	662.784		664.690		662.784
	662.468		664.399		662.468
	662.152		664.108		662.152
	661.836		663.817		661.836
	661.520		663.526		661.520
	661.204		663.235		661.204
	660.888		662.944		660.888
	660.572		662.653		660.572
	660.256		662.362		660.256
	659.940		662.071		659.940
	659.624		661.780		659.624
	659.308		661.489		659.308
	658.992		661.198		658.992
	658.676		660.907		658.676
	658.360		660.616		658.360
	658.044		660.325		658.044
	657.728		660.034		657.728
	657.412		659.743		657.412
	657.096		659.452		657.096
	656.780		659.161		656.780
	656.464		658.870		656.464
	656.148		658.579		656.148
	655.832		658.288		655.832
	655.516		657.997		655.516
	655.200		657.706		655.200
	654.884		657.415		654.884
	654.568		657.124		654.568
	654.252		656.833		654.252
	653.936		656.542		653.936
	653.620		656.251		653.620
	653.304		655.960		653.304
	652.988		655.669		652.988
	652.672		655.378		652.672
	652.356		655.087		652.356
	652.040		654.796		652.040
	651.724		654.505		651.724
	651.408		654.214		651.408
	651.092		653.923		651.092
	650.776		653.632		650.776
	650.460		653.341		650.460
	650.144		653.050		650.144
	649.828		652.759		649.828
	649.512		652.468		649.512
	649.196		652.177		649.196
	648.880		651.886		648.880
	648.564		651.595		648.564
	648.248		651.304		648.248
	647.932		651.013		647.932
	647.616		650.722		647.616
	647.300		650.431		647.300
	646.984		650.140		646.984
	646.668		649.849		646.668
	646.352		649.558		646.352
	646.036		649.267		646.036
	645.720		648.976		645.720
	645.404		648.685		645.404
	645.088		648.394		645.088
	644.772		648.103		644.772
	644.456		647.812		644.456
	644.140		647.521		644.140
	643.824		647.230		643.824
	643.508		646.939		643.508
	643.192		646.648		643.192
	642.876		646.357		642.876
	642.560		646.066		642.560
	642.244		645.775		642.244
	641.928		645.484		641.928
	641.612		645.193		641.612
	641.296		644.902		641.296
	640.980		644.611		640.980
	640.664		644.320		640.664
	640.348		644.029		640.348
	640.032		643.738		640.032
	639.716		643.447		639.716
	639.400		643.156		639.400
	639.084		642.865		639.084
	638.768		642.574		638.768
	638.452		642.283		638.452
	638.136		641.992		638.136
	637.820		641.701		637.820
	637.504		641.410		637.504
	637.188		641.119		637.188
	636.872		640.828		636.872
	636.556		640.537		636.556
	636.240		640.246		636.240
	635.924		639.955		635.924
	635.608		639.664		635.608
	635.292		639.373		635.292
	634.976		639.082		634.976
	634.660		638.791		634.660
	634.344		638.500		634.344
	634.028		638.209		634.028
	633.712		637.918		633.712
	633.396		637.627		633.396
	633.080		637.336		633.080
	632.764		637.045		632.764
	632.448		636.754		632.448
	632.132		636.463		632.132
	631.816		636.172		631.816
	631.500		635.881		631.500
	631.184		635.590		631.184
	630.868		635.299		630.868
	630.552		635.008		630.552
	630.236		634.717		630.236
	629.920		634.426		629.920
	629.604		634.135		629.604
	629.288		633.844		629.288
	628.972		633.553		628.972
	628.656		633.262		628.656
	628.340		632.971		628.340
	628.024		632.680		628.024
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	627.392		632.098		627.392
	627.076		631.807		627.076
	626.760		631.516		626.760
	626.444		631.225		626.444
	626.128		630.934		626.128
	625.812		630.643		625.812
	625.496		630.352		625.496
	625.180		630.061		625.180
	624.864		629.770		624.864
	624.548		629.479		624.548
	624.232		629.188		624.232
	623.916		628.897		623.916
	623.600		628.606		623.600
	623.284		628.315		623.284
	622.968		628.024		622.968
	622.652		627.733		622.652
	622.336		627.442		622.336
	622.020		627.151		622.020
	621.704		626.860		621.704
	621.388		626.569		621.388
	621.072		626.278		621.072
	620.756		625.987		620.756
	620.440		625.696		620.440
	620.124		625.405		620.124
	619.808		625.114		619.808
	619.492		624.823		619.492
	619.176		624.532		619.176
	618.860		624.241		618.860
	618.544		623.950		618.544
	618.228		623.659		618.228
	617.912		623.368		617.912
	617.596		623.077		617.596
	617.280		622.786		617.280
	616.964		622.495		616.964
	616.648		622.204		616.648
	616.332		621.913		616.332
	616.016		621.622		616.016
	615.700		621.331		615.700
	615.384		621.040		615.384
	615.068		620.749		615.068
	614.752				



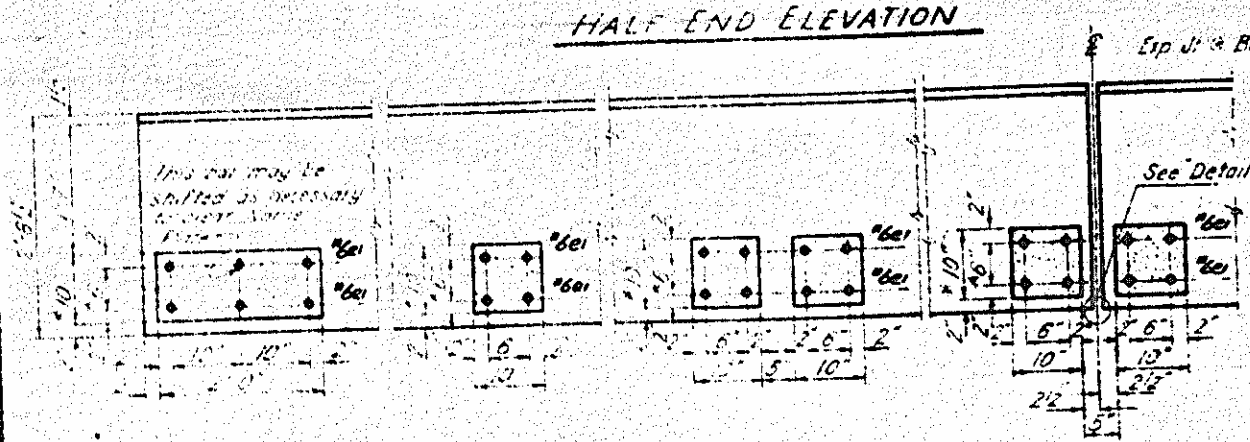
NOTES

Assumed Live Load H20-S16(44) or Alternate Load
 For bars indicated and no bar marks shown, see care plan for the different spans
 Temporary struts shall be placed between prestressed girders adjacent to the diaphragms and the nuts on 1/2" tie rods shall be fully tightened before diaphragms are cast. Struts shall remain in place 3 days after concrete is placed. The tie rods shall be retightened after the struts have been removed.
 Reinforcing Steel in tension 20,000 lbs. per sq
 Concrete in Compression 1,100 lbs. per sq
 * This dimension will vary along the girder toward E span.
 See S-N Sheet for other design data and general notes.
 Bearing plates, including exposed portion of the bearing anchor plate, are to be painted as required for structural steel (See sheet S-N) except for finished surface on curved top plate (CP) and on masonry plate (PE) are to be coated with white lead and tallow. See Specifications.

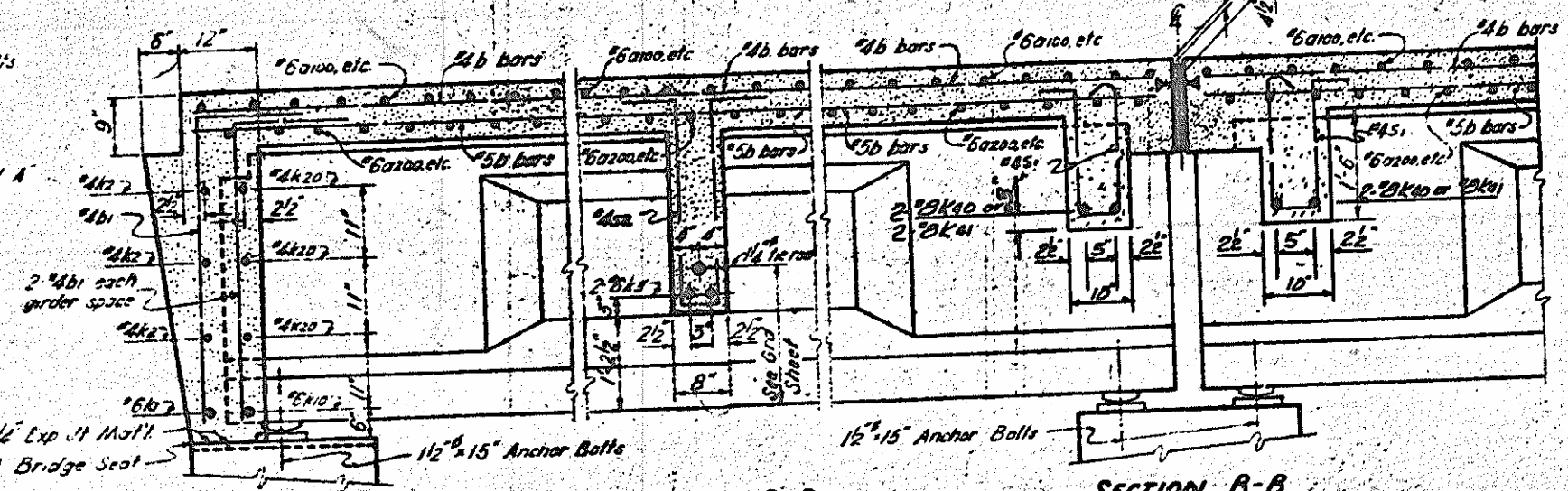
HALF SECTION - BENT DIAPHRAGM
 TYPICAL SECTION
 HALF SECTION - INTERMEDIATE DIAPHRAGM



HALF END ELEVATION



POST DETAILS



SECTION A-A

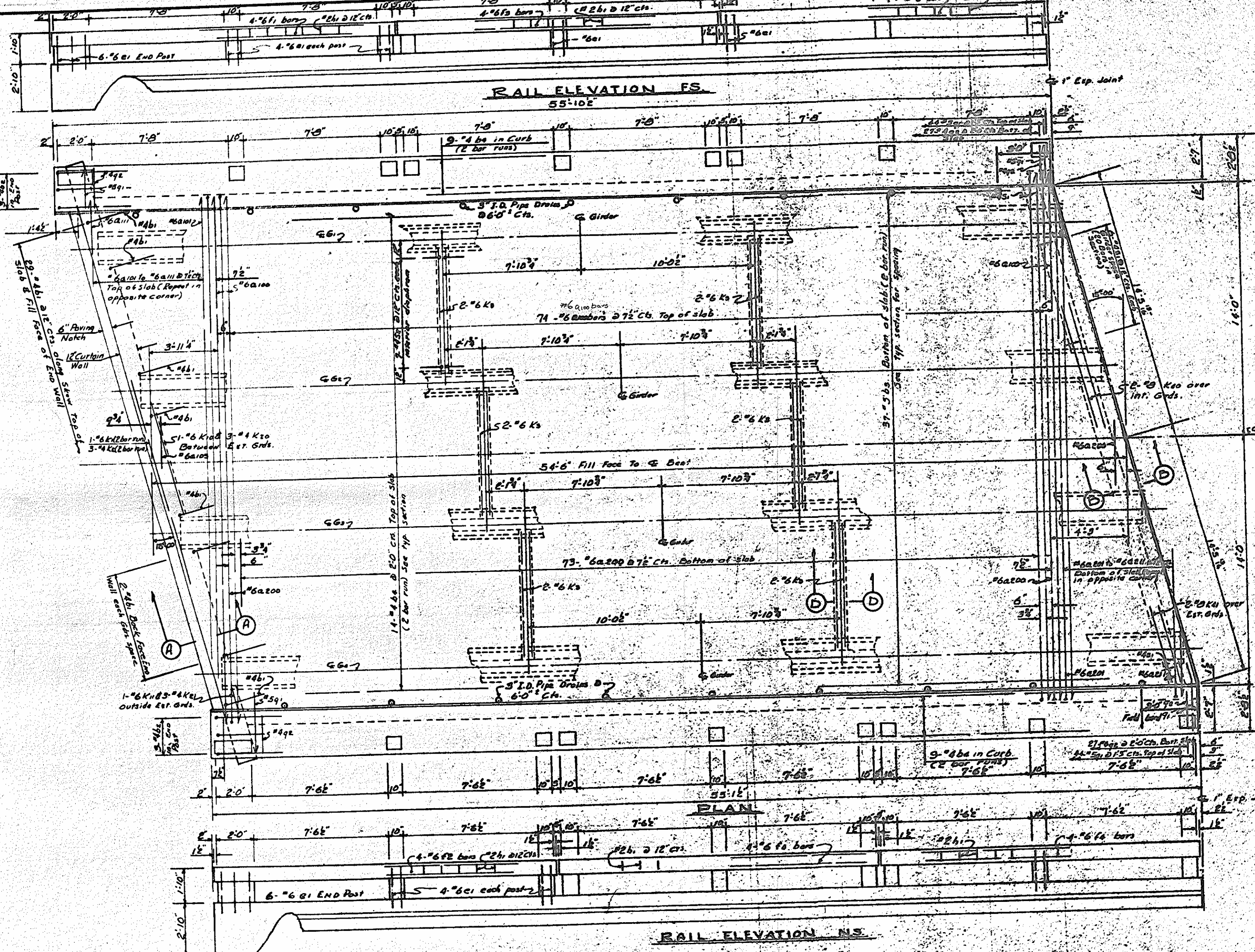
SECTION D-D

SECTION B-B

PROJECT No. 8.1590
 ROCKINGHAM COU
 STATION 62+65

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
 RALEIGH
STANDARD TYPICAL SECTION
 28' ROADWAY - 18" CURBS - 15" RH
 6-45" PRESTR. CONC. GIRDERS - H20
 TAPERED POST CONCRETE RA
 NOVEMBER, 1954

Designed by James N. Palmer Feb 10 1964
 Checked by Paul W. Adams Jr. Dist. March 1964
 DRAWN BY: [Signature] DATE: [Signature]
 CHECKED BY: [Signature] DATE: [Signature]



DEAD LOAD DEFLECT.

USING STANDARD 1/2" CABLES
Camber (Girder alone in place)
Deflection due to superimposed dead load
Total Camber
Vertical Curve Ordinate
USING HIGH STRENGTH 1/2" CABLES
Camber (Girder alone in place)
Deflection due to superimposed dead load
Total Camber
Vertical Curve Ordinate

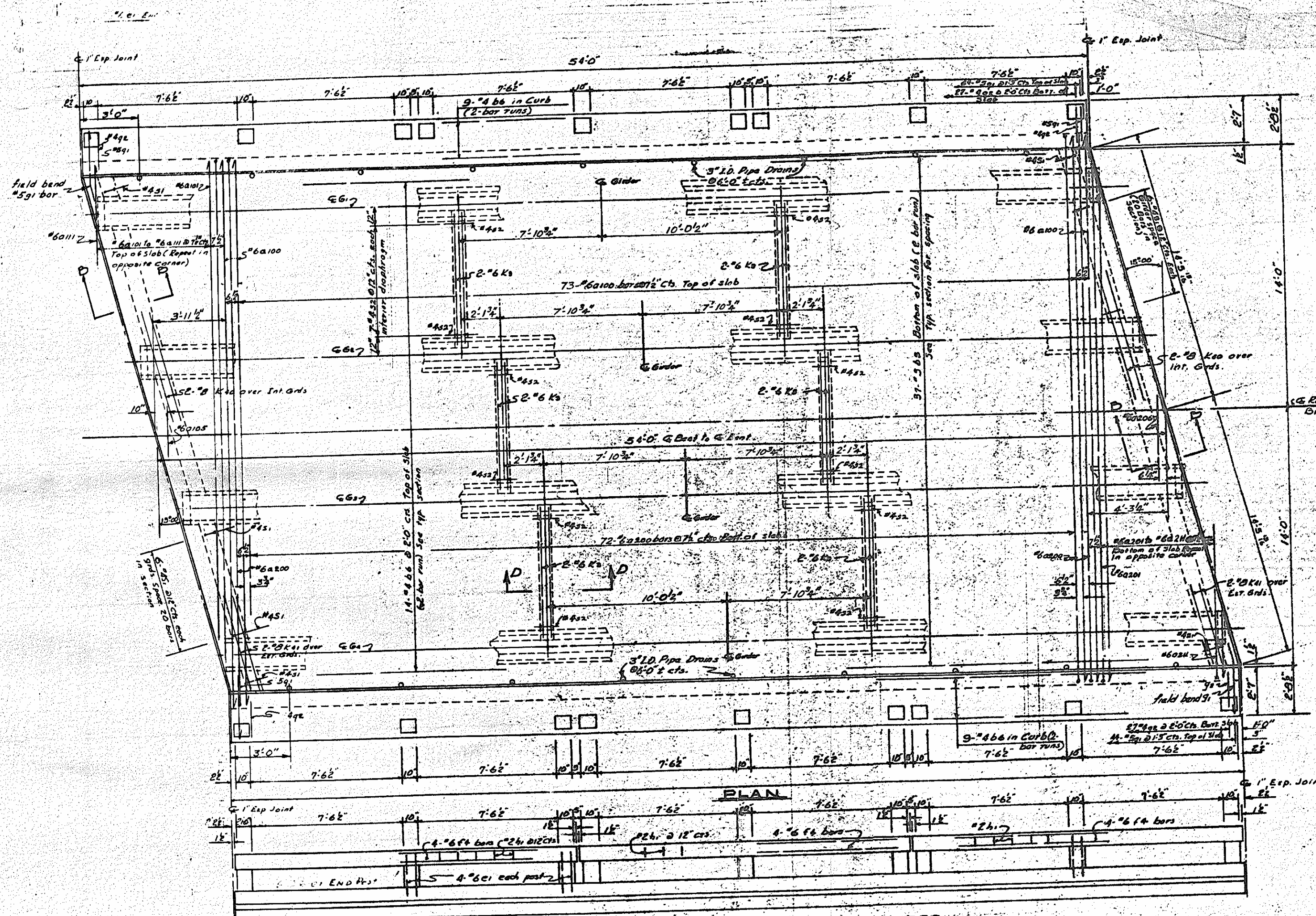
PROJECT NO. 21
 ROCKINGHAM
 STATION 62+65

STATE OF NORTH CAROLINA
 STATE HIGHWAY COMM.
 RALEIGH
 SUPERSTRUCTURE
 SPAN AREA

FEBRUARY

REVISIONS	
NO.	DATE
1	
2	

DESIGNED BY JAMES N. PRAGER DATE FEB. 2, 1924
 CHECKED BY [Signature] DATE [Date]



DEAD LOAD DEFLECTIO

USING STANDARD 1/2 CABLES IN	
Camber (Girder alone in place)	3/8"
Deflection due to superimposed dead load	3/16"
Total Camber	1/16"
Vertical Curve Ordinate	
USING HIGH STRENGTH 1/2 CABLES IN	
Camber (Girder alone in place)	3/8"
Deflection due to superimposed dead load	3/16"
Total Camber	1/16"
Vertical Curve Ordinate	

PROJECT NO. 3159C
 ROCKINGHAM CO.
 STATION 62+65

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
 RALEIGH

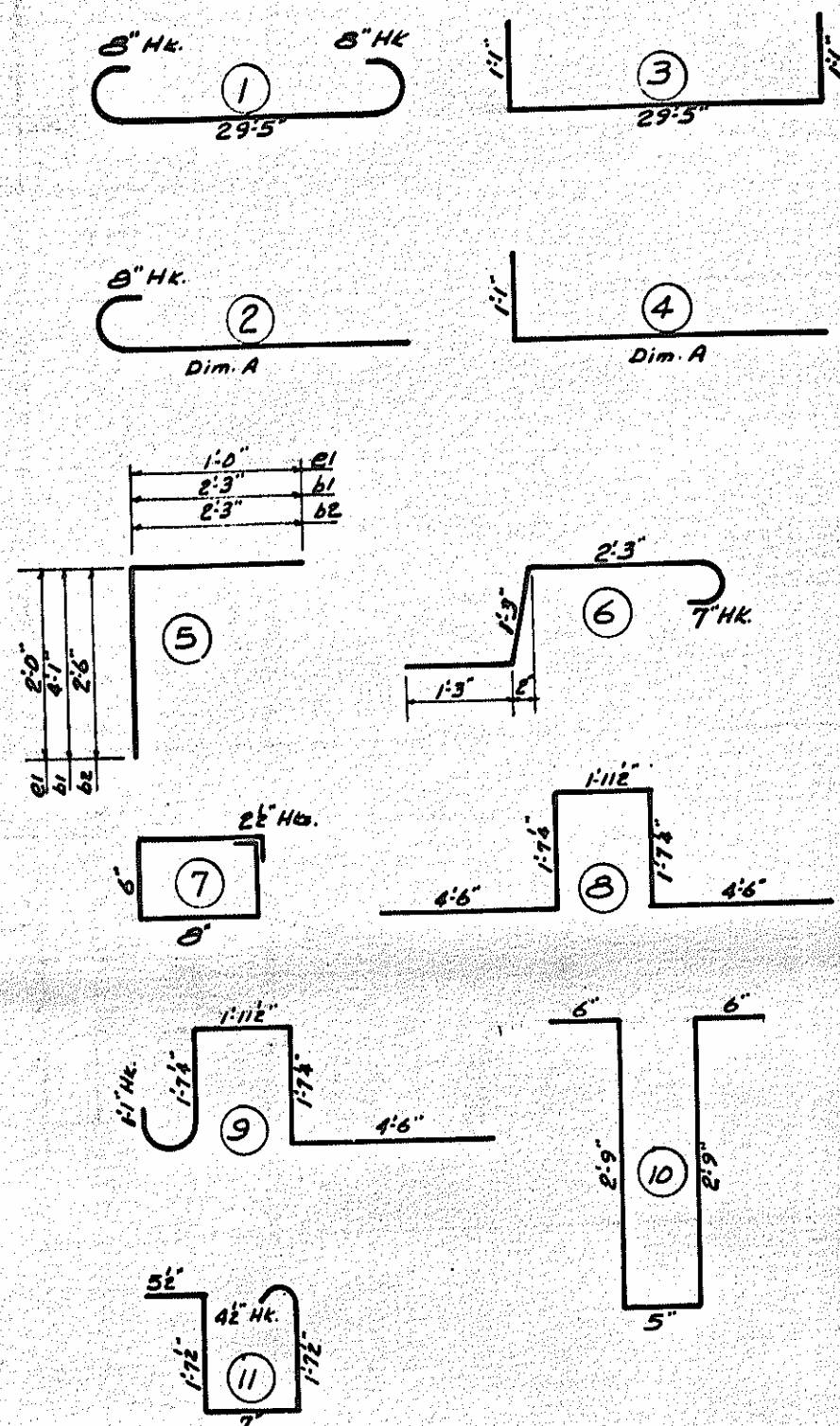
SUPERSTRUCTURE
SPAN B-C-D

FEBRUARY

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			1		
2			2		

DESIGNED BY JAMES M. PALMER DATE FEB 7 1964
 CHECKED BY R. M. SALMONS DATE MAR 10 1964

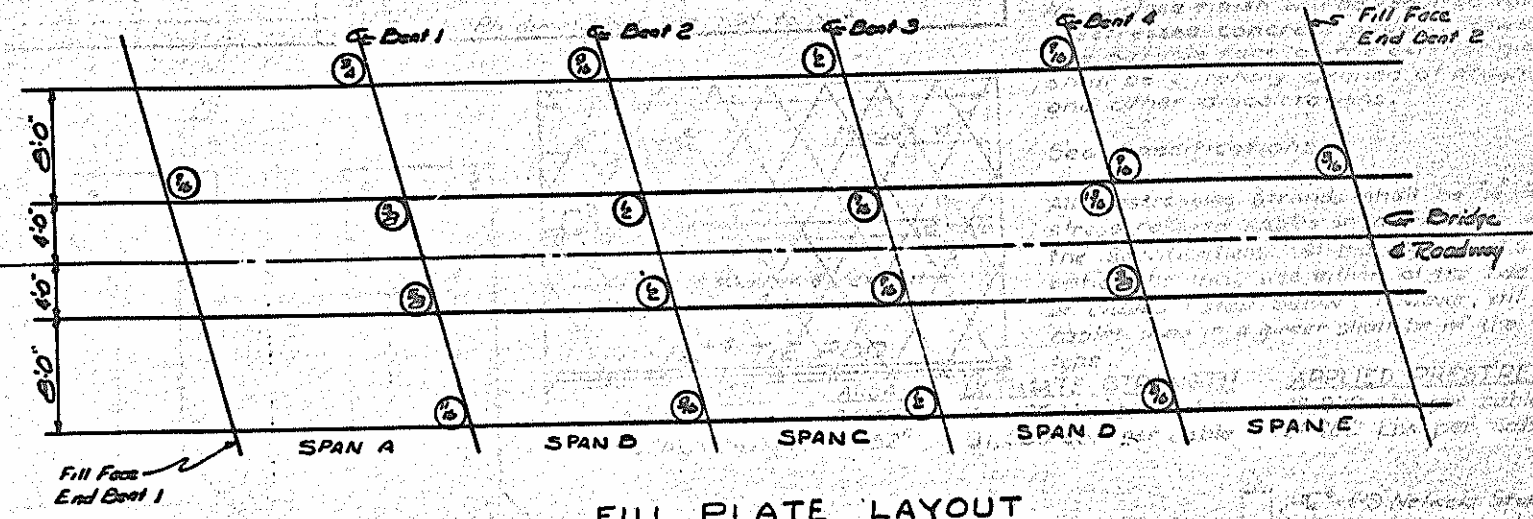
BAR TYPES



All bar dimensions are out to out

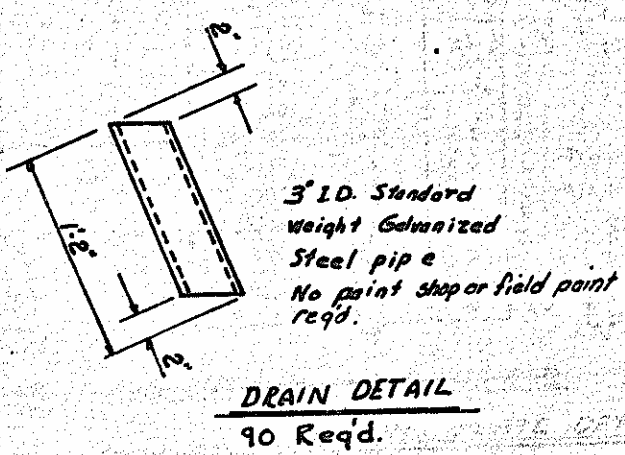
REINFORCING STEEL

BAR NO	SIZE	TYPE	DIM. A	LENGTH	WEIGHT	BARS PER SPAN					
						A	B	C	D	E	
a100	377	#6	1	29'5"	30'9"	17612	76	75	75	75	76
a101	10	#6	2	26'4"	27'0"	406	2	2	2	2	2
a102	10	#6	2	24'0"	24'8"	370	2	2	2	2	2
a103	10	#6	2	21'8"	22'4"	335	2	2	2	2	2
a104	10	#6	2	19'4"	20'0"	300	2	2	2	2	2
a105	10	#6	2	17'0"	17'8"	265	2	2	2	2	2
a106	10	#6	2	14'8"	15'4"	230	2	2	2	2	2
a107	10	#6	2	12'4"	13'0"	195	2	2	2	2	2
a108	10	#6	2	10'0"	10'8"	160	2	2	2	2	2
a109	10	#6	2	7'8"	8'4"	125	2	2	2	2	2
a110	10	#6	2	5'4"	6'0"	90	2	2	2	2	2
a111	10	#6	2	3'0"	3'8"	55	2	2	2	2	2
a200	372	#6	3	29'5"	31'7"	17647	75	74	74	74	75
a201	10	#6	4	27'6"	28'7"	479	2	2	2	2	2
a202	10	#6	4	25'2"	26'3"	394	2	2	2	2	2
a203	10	#6	4	22'10"	23'11"	359	2	2	2	2	2
a204	10	#6	4	20'6"	21'7"	324	2	2	2	2	2
a205	10	#6	4	18'2"	19'3"	289	2	2	2	2	2
a206	10	#6	4	15'10"	16'11"	254	2	2	2	2	2
a207	10	#6	4	13'6"	14'7"	219	2	2	2	2	2
a208	10	#6	4	11'2"	12'3"	184	2	2	2	2	2
a209	10	#6	4	8'10"	9'11"	149	2	2	2	2	2
a210	10	#6	4	6'6"	7'7"	114	2	2	2	2	2
a211	10	#6	4	4'2"	5'3"	79	2	2	2	2	2
b1	70	#4	5	6'4"	296	35	—	—	—	—	35
b2	12	#4	5	4'9"	38	6	—	—	—	—	6
b3	148	#5	STR	28'0"	4322	74	—	—	—	—	74
b4	128	#4	STR	27'9"	2373	64	—	—	—	—	64
b5	222	#5	STR	27'9"	6425	—	64	64	64	—	—
b6	192	#4	STR	27'6"	3527	—	64	64	64	—	—
c1	368	#6	5	3'0"	1658	76	72	72	72	76	—
f1	8	#6	STR	19'0"	228	4	—	—	—	—	4
f2	8	#6	STR	18'9"	225	4	—	—	—	—	4
f3	16	#6	STR	17'10"	429	8	—	—	—	—	8
f4	88	#6	STR	17'7"	2324	8	24	24	24	—	8
g1	440	#5	6	5'4"	2448	88	88	88	88	88	—
g2	270	#4	STR	2'0"	361	54	54	54	54	54	—
h1	548	#2	7	2'9"	252	112	108	108	108	112	—
k1	4	#6	STR	18'3"	110	2	—	—	—	—	2
k2	12	#4	STR	18'0"	144	6	—	—	—	—	6
k3	60	#6	STR	7'7"	638	12	12	12	12	—	12
k10	6	#6	STR	6'1"	55	3	—	—	—	—	3
k11	4	#6	STR	5'7"	22	2	—	—	—	—	2
k20	18	#4	STR	6'7"	79	9	—	—	—	—	9
k21	12	#4	STR	3'10"	31	6	—	—	—	—	6
k40	32	#8	8	19'2"	1210	4	8	8	8	—	4
k41	32	#8	9	10'9"	918	4	8	8	8	—	4
s1	160	#4	11	4'8"	499	20	40	40	40	—	20
s2	210	#4	10	6'11"	970	42	42	42	42	—	42



FILL PLATE LAYOUT

BILL OF MATERIAL		
CLASS 'A' CONCRETE		Cu. Yds
SPAN A	HAND RAIL SLAB & CURB	2.02 ✓ 61.20 ✓
SPAN B	HAND RAIL SLAB & CURB	2.69 ✓ 54.41 ✓
SPAN C	HAND RAIL SLAB & CURB	2.69 ✓ 54.41 ✓
SPAN D	HAND RAIL SLAB & CURB	2.69 ✓ 54.41 ✓
SPAN E	HAND RAIL SLAB & CURB	2.02 ✓ 61.20 ✓
TOTAL		299.50 ✓
REINFORCING STEEL		Lbs. 69,966 ✓



DRAIN DETAIL
90 Reqd.

PROJECT No. 815909
ROCKINGHAM COUNTY
STATION: 62+65

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

FILL PLATE LAYOUT &
BILL OF MATERIAL

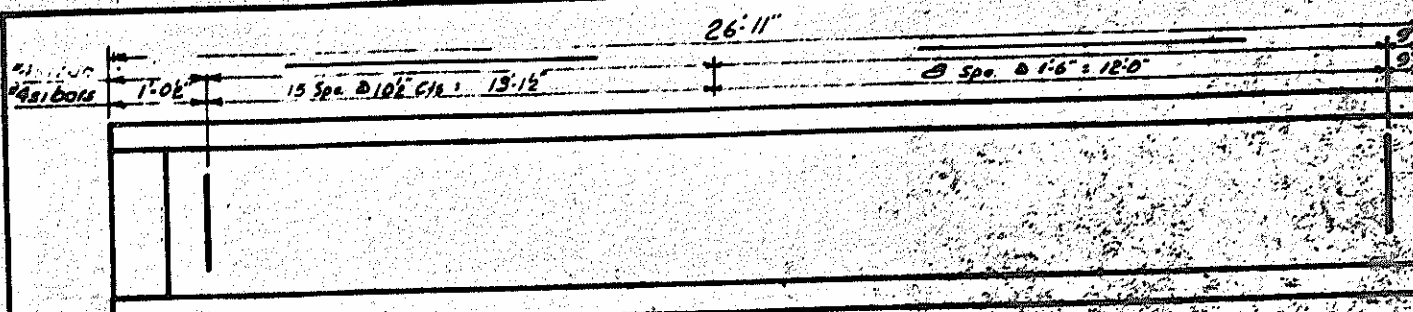
FEBRUARY 1964

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

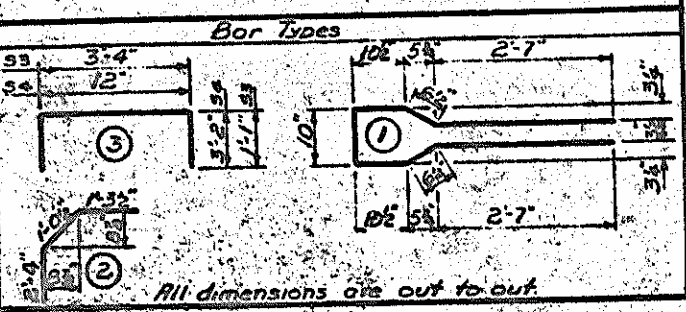
DRAWN BY James N. Palmer DATE Feb 12 1964
CHECKED BY J. H. ... DATE March 1964

REINFORCING STEEL FOR ONE GIRDER

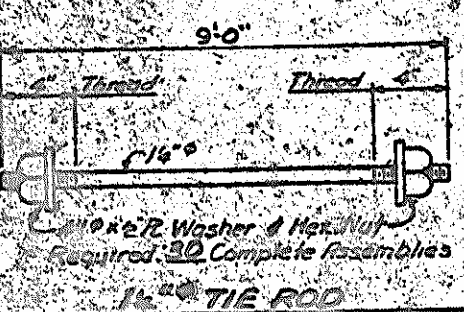
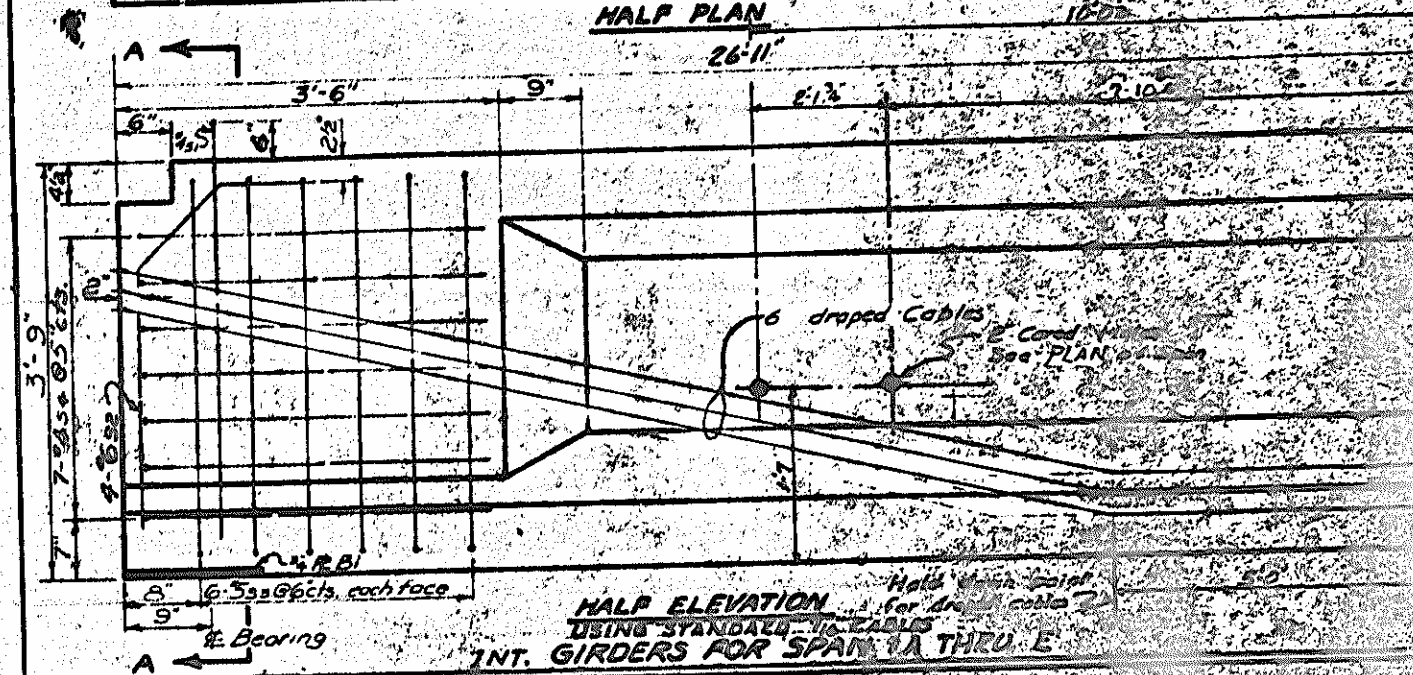
F. A. PROJECT



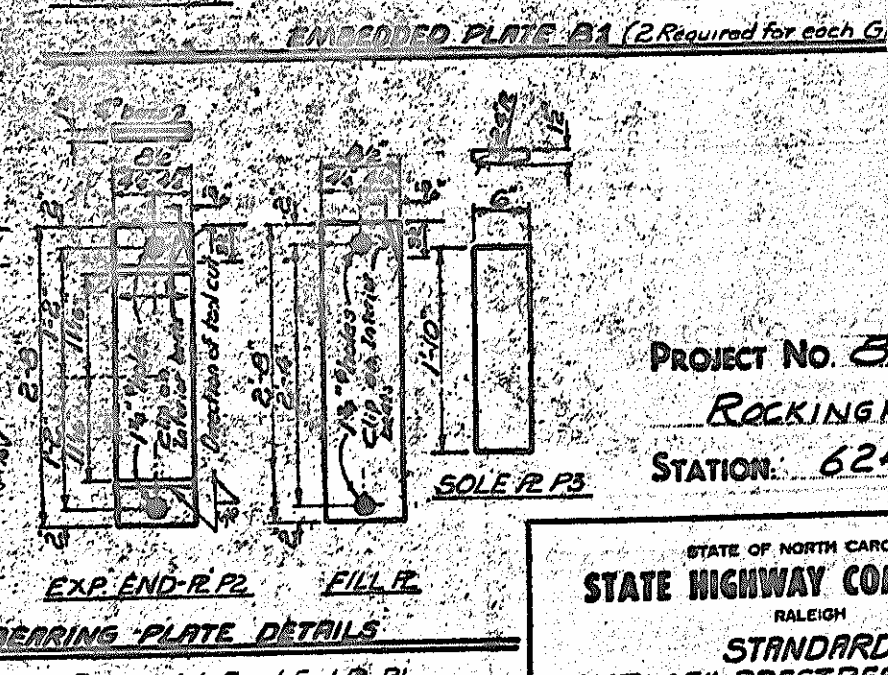
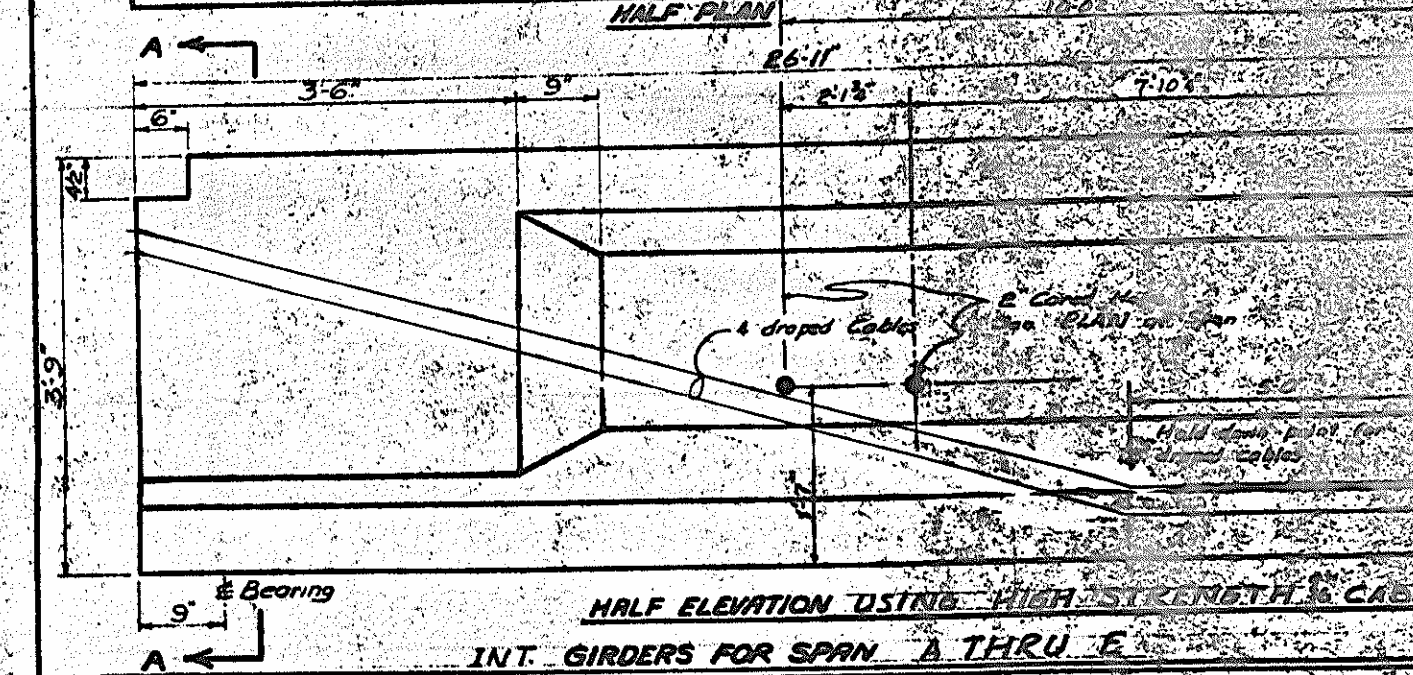
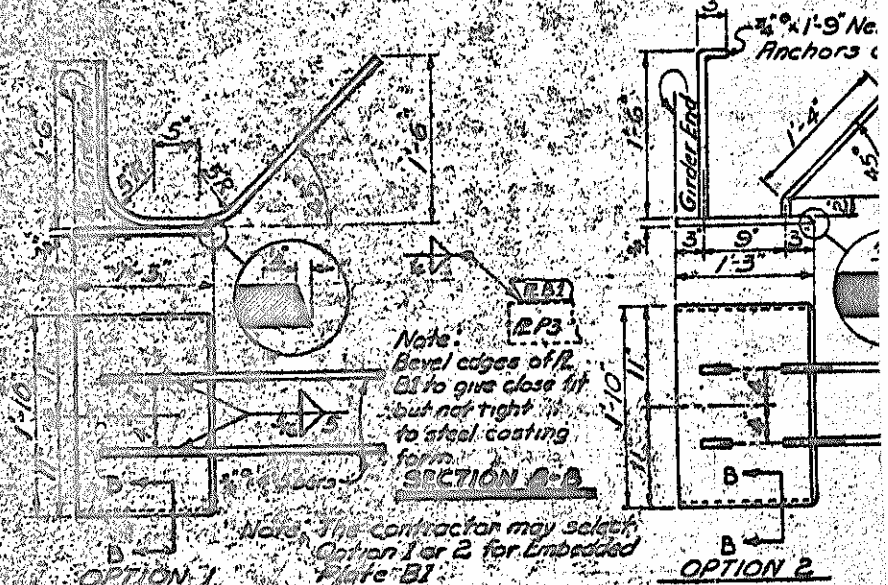
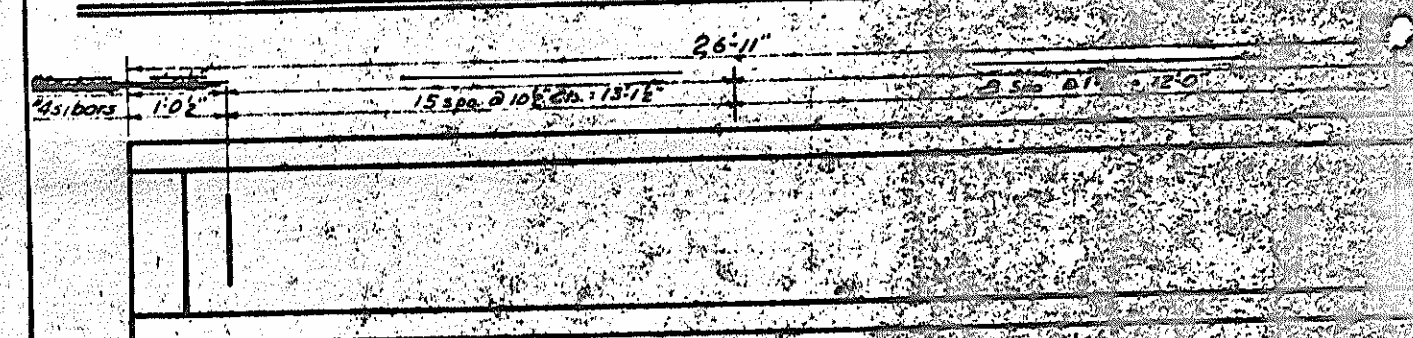
Str. to Cables	Interior Girder - Span A thru E	Bar No.	Size	Type	Length	Weight
Std. 1/2 Cables	Interior Girder - Span A thru E	31	1/2"	1	8'-10"	293
		32	1/2"	2	4'-8"	36
		33	1/2"	3	5'-6"	133
		34	1/2"	4	7'-6"	69
H.S. 1/2 Cables	Interior Girder - Span A thru E	35	1/2"	1	8'-10"	293
		36	1/2"	2	4'-8"	36
		37	1/2"	3	5'-6"	133
		38	1/2"	4	7'-6"	69



NOTES
 All prestressing strand shall meet or exceed ASTM A416.
 Cables to be cut off flush with girder.
 No surface finish will be required on prestressed concrete girder. The outside face of the girder shall be carefully cleaned and free of discolorations.
 See Specifications.



TYPE	AREA	ULTIMATE STRENGTH	APPLIED
Standard	0.1029	27,000 Lbs. per cable	13,900 Lbs.
High Strength	0.1152	31,000 Lbs. per cable	21,700 Lbs.



SPECIAL
 Assembled By James N. Palmer Date 12-22-64
 Checked By W. J. R. V. L. B. Date 1-1-65
STANDARD
 Drawn By G. J. K. Date 9-15-64
 Checked By W. J. R. V. L. B. Date 1-1-65

QUANTITIES FOR ONE GIRDER			
	Reinforcing Steel lbs.	5000psi Concrete Cu. Yds.	Standard 1/2" Cables No.
Interior Girder - Span A thru E	546	2.1	32
Interior Girder - Span A thru E	546	2.1	26

GIRDERS REQUIRED		
No.	Length	Total Length
10	53'-10"	538'-4"

Rev Dec 19, 1961 to show cables cut off flush with end of girder by W.K.C. / A.L.B.
 Rev. July 2, 1962 to add 7/8" High Strength Cables by W.J.R. V.L.B.
 Rev. Sept. 21, 1963 to show prestressing strand to meet requirements of ASTM-A416. by W.J.R. V.L.B.

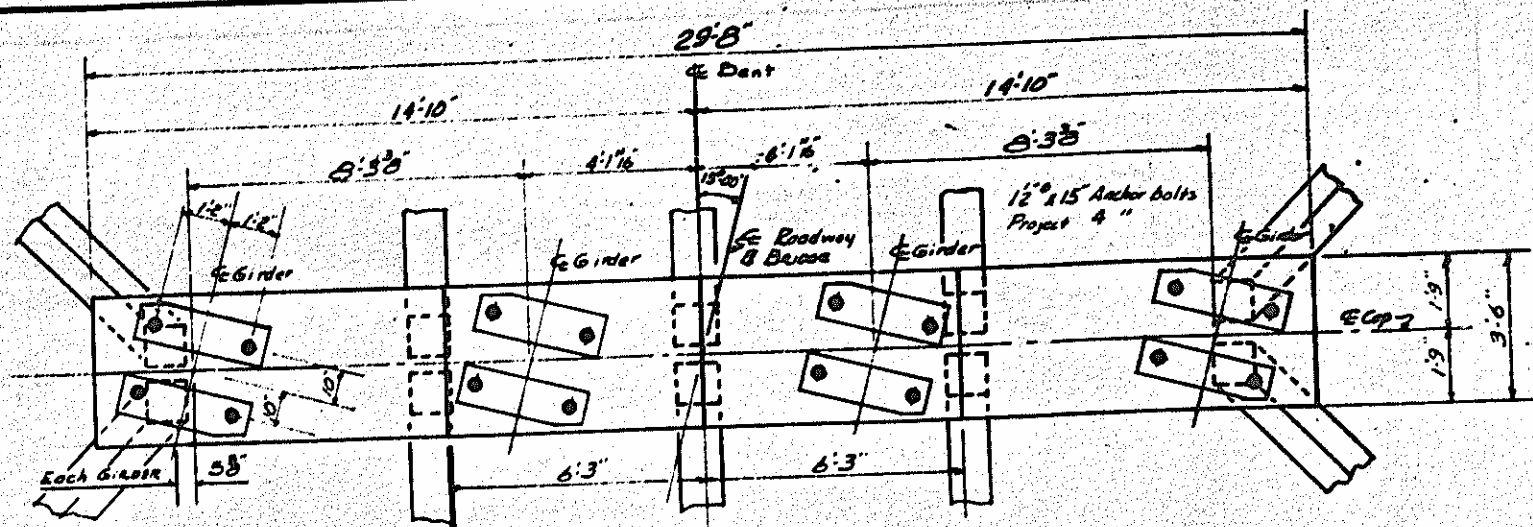
PROJECT No. 3
 ROCKINGHAM
 STATION 624

STATE OF NORTH CAROLINA
 STATE HIGHWAY COM.
 RALEIGH

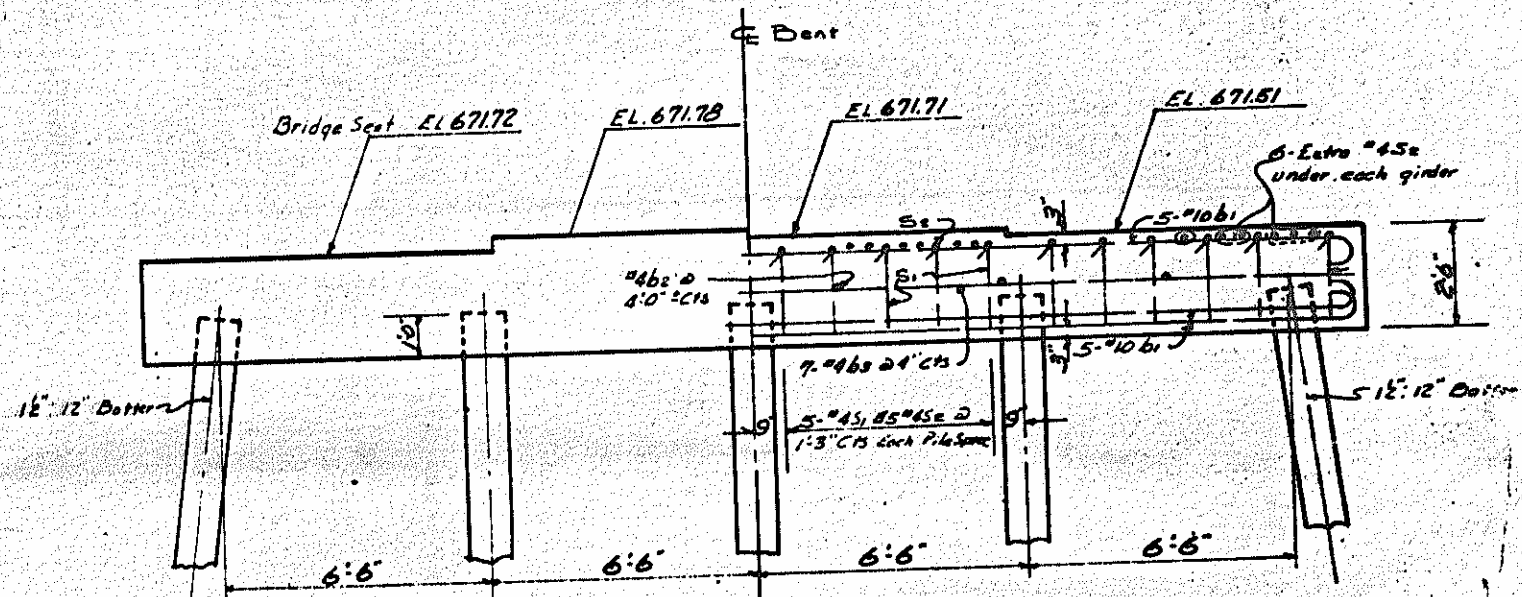
STANDARD
 INT. 45" PRESTRESS
 CONCRETE GIR

AUGUST 1964

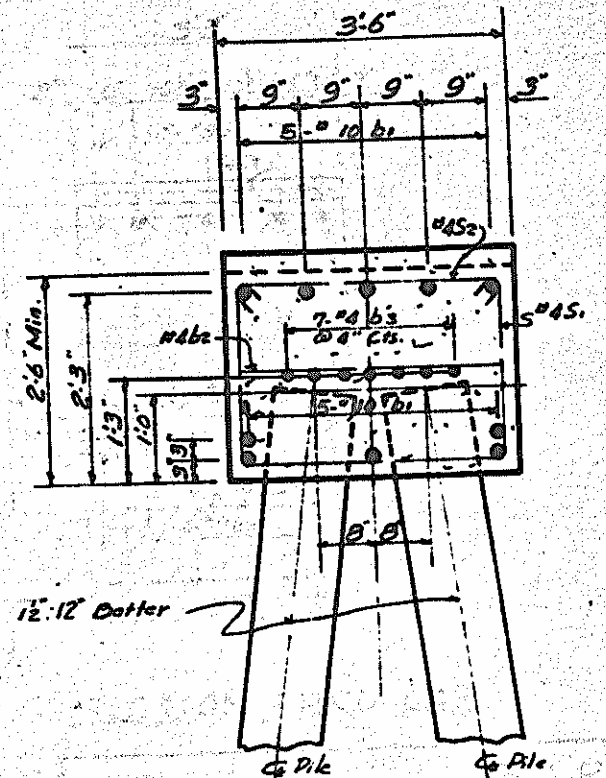
REVISIONS			
NO.	BY	DATE	NO.
1			3
2			4



PLAN



ELEVATION



SECTION THRU CAP

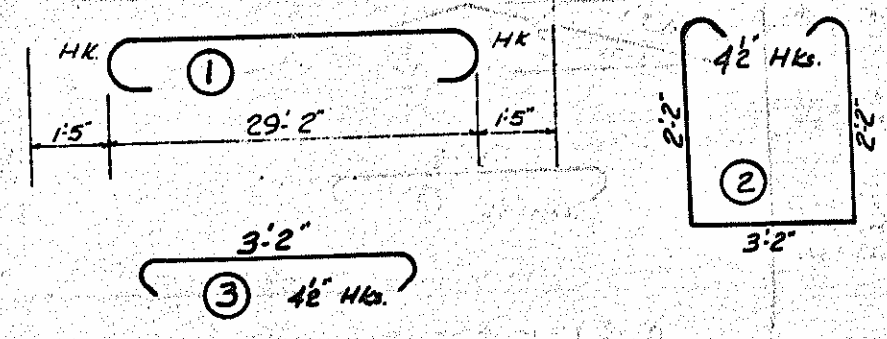
BILL OF MATE FOR ONE B

BAR	NO	SIZE	TYPE	LEN
b	10	#10		32
bc	8	#4	SPR	3
bs	7	#4	SPR	29
Sl	22	#4		6
Se	46	#4		3

* Class A Concrete Cu.
 Reinf. Steel Lbs.
 12" Prest. Conc. Piles No.
 12" Prest. Conc. Piles Lin.

* Class A Conc. displaced by pile heads been deducted
 12" Prestressed Conc. piles to be driven minimum bearing capacity of 29 tons.
 Cap steel may be shifted to clear and

BAR TYPES



All bar dimensions are out to out.

PROJECT No. 8159
 ROCKINGHAM, C
 STATION: 62165

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISS
 RALEIGH
SUBSTRUCTURE
 BENT NO. 1

JANUARY

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

DRAWN BY James N. Palmer DATE 29 Jan 1964
 CHECKED BY DATE

BILL OF MATERIAL FOR ONE BENT

BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
b1	5	#9	1	31.8	5.2
b2	2	#9	Str.	29.2	1.4
b3	1	#11	4	23.4	4.5
b4	8	#9	1	23.2	6.2
b5	12	#5	1	7.0	2.2
b6	8	#5	3	5.0	6.2
S1	21	#4	6	9.0	1.8
S2	24	#4	5	3.8	5.2
S3	15	#4	6	6.9	6.2
S4	2	#4	6	11.10	1.2
S5	2	#4	6	11.6	1.2
S6	2	#4	6	10.11	1.2
S7	2	#4	6	10.6	1.2
S8	2	#4	6	9.10	1.2
S9	2	#4	6	9.6	1.2
S10	2	#4	6	11.11	1.2
S11	2	#4	6	11.8	1.2
S12	2	#4	6	11.6	1.2
S13	2	#4	6	11.3	1.2
S14	2	#4	6	11.1	1.2
S15	2	#4	6	10.11	1.2
S16	2	#4	6	10.8	1.2
S17	2	#4	6	10.6	1.2
S18	2	#4	6	9.11	1.2
S19	2	#4	6	9.7	1.2
C1	23	#6	1	9.0	1.2
C2	34	#4	1	7.0	1.2
m1	16	#11	2	9.7	2.2
V1	16	#11	Str.	13.10	1.2
V2	16	#11	2	20.8	1.2

Class A Concrete Cu Yds.
Reinforcing Steel Lbs. 69
Wet Excavation Cu Yds. 51.07

PROJECT NO. 815909
ROCKINGHAM COUNTY
STATION: 62+65

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

SUBSTRUCTURE BENT NO. 2

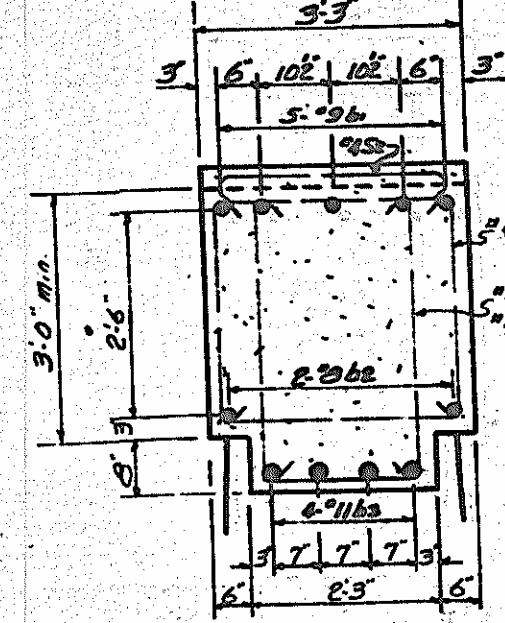
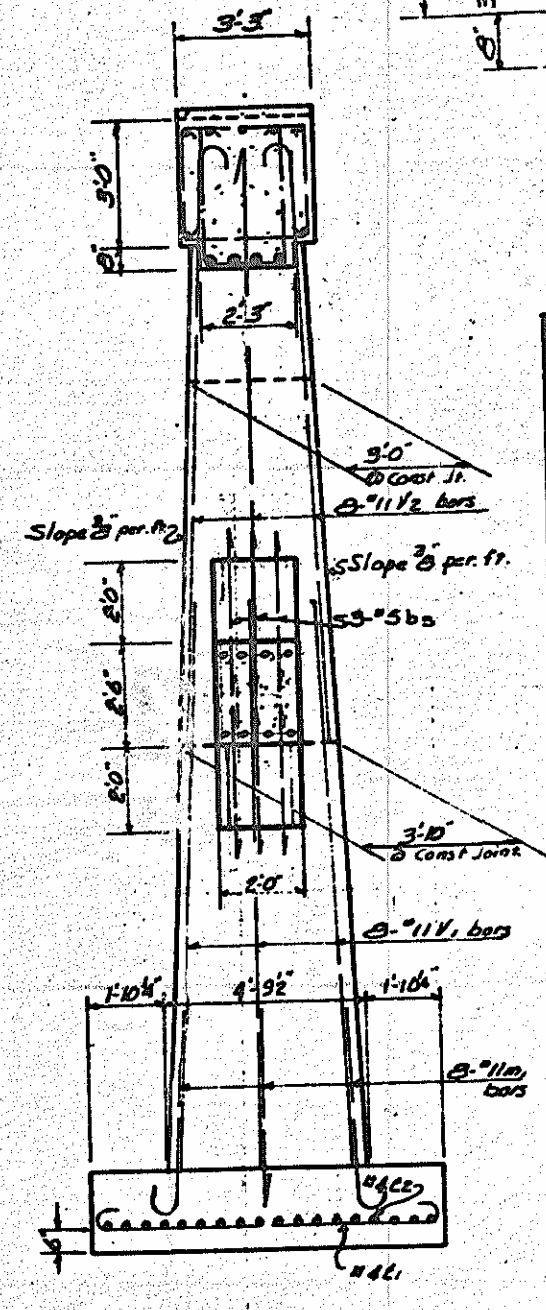
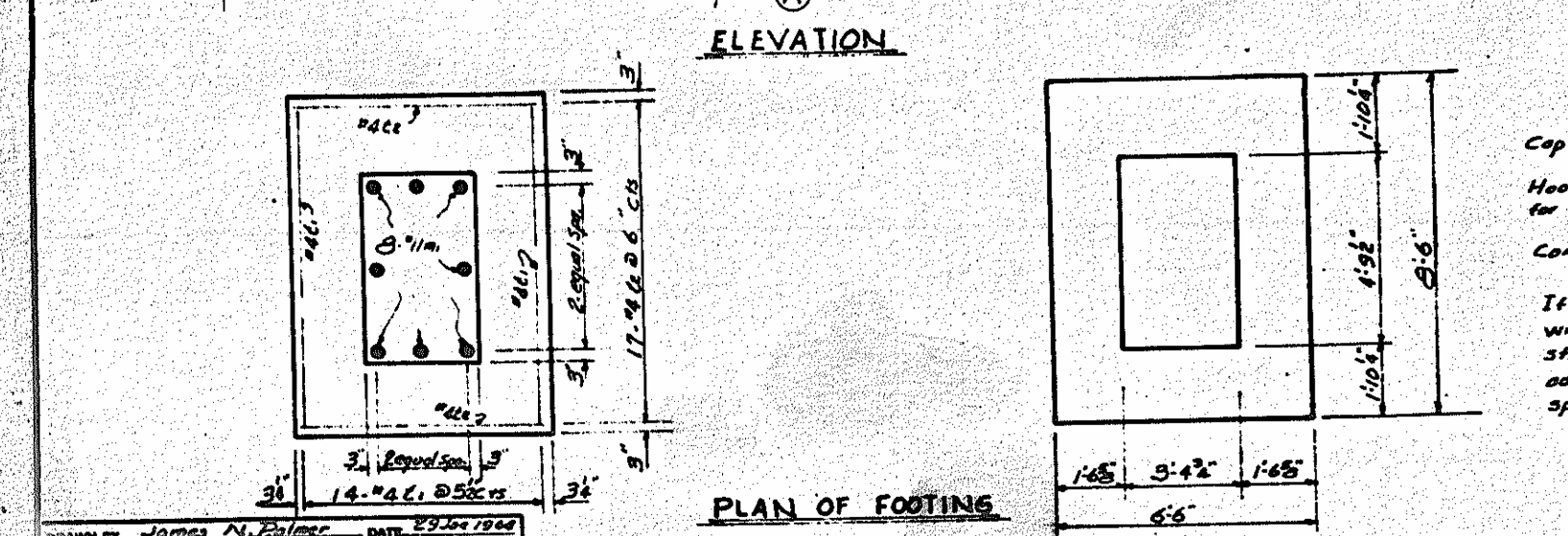
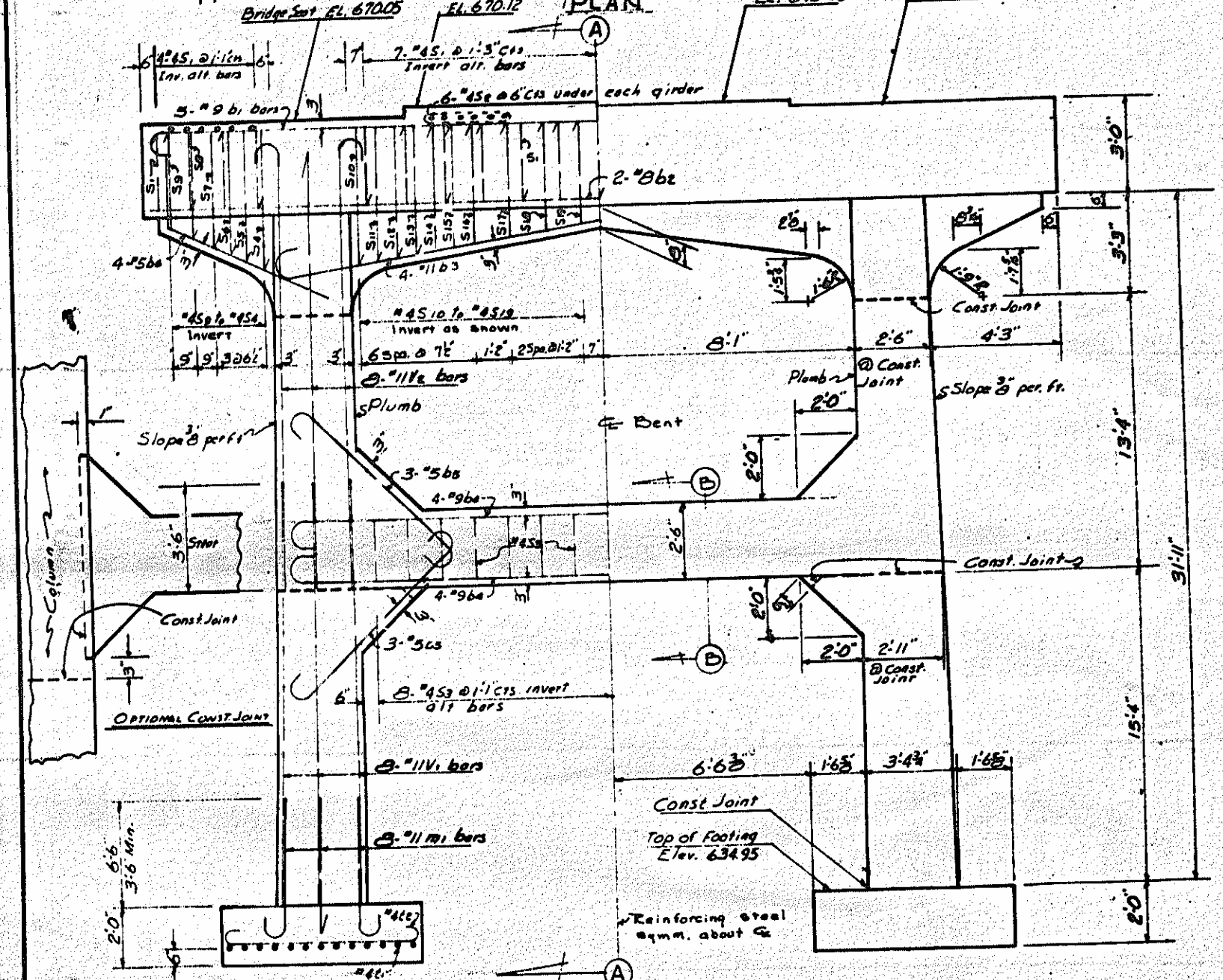
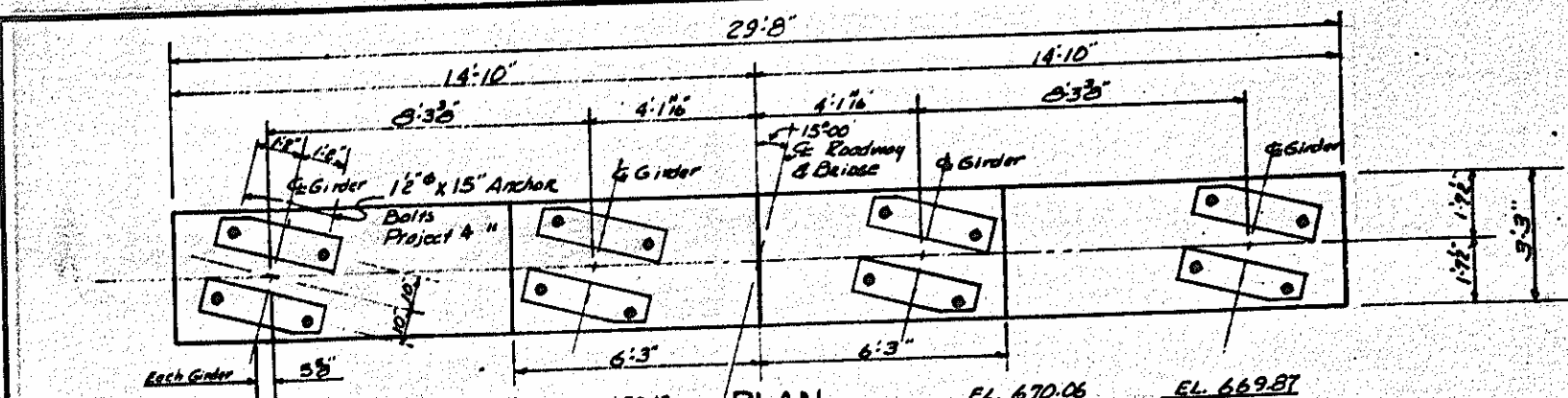
JANUARY 1966

REVISIONS	
NO.	DATE
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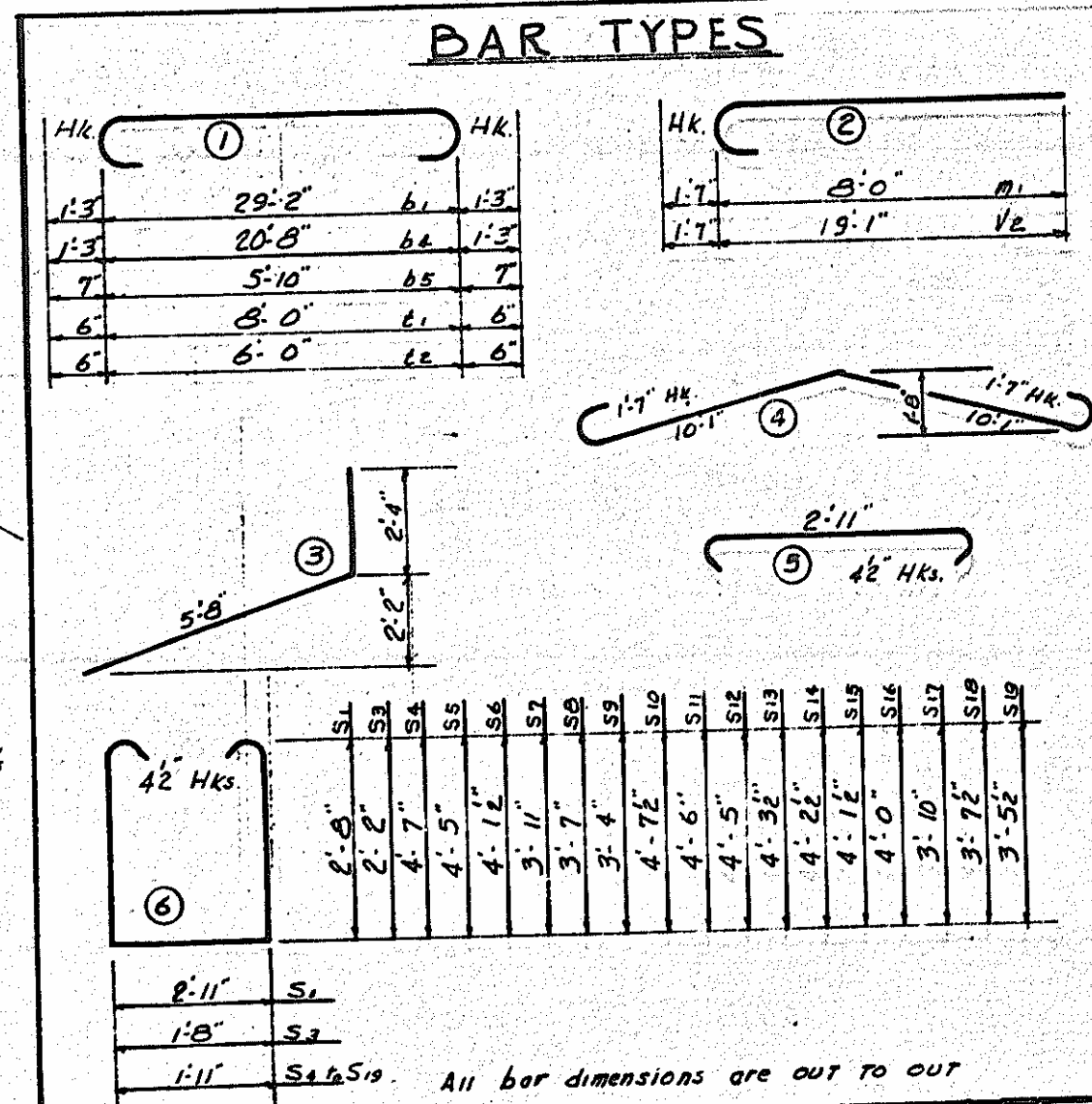
CLASS A CONCRETE Cu Yds.

Item	Totals
Cap Pour	15.44 ✓
2nd Column Pour	12.38 ✓
1st Column Pour	15.71 ✓
Footing Pour	2.19 ✓
Total Class A Concrete	51.72 ✓

Cap steel may be shifted to clear anchor bolts.
Hooks on V bars may be turned as necessary for placing reinforcement in cap.
Computed foundation load equals 3 1/2 tons per sq. ft.
If the optional construction joint is used, the contractor will be required to splice the horizontal bars in the struts outside the face of each post and the additional cost of the steel bars required for the splice must be absorbed by the contractor.



SECTION THRU CAP



DRAWN BY: James N. Palmer DATE: 29 Jan 1966
CHECKED BY: [Signature] DATE: March 1966

BILL OF MATERIAL FOR ONE BENT

BAR NO	SIZE	TYPE	LENGTH	WEIGHT
b1	5" 9	1	31.8	53.0
b2	2" 8	5	29.2	15.6
b3	4" 11	4	23.4	49.6
b4	3" 9	1	23.2	63.0
b5	2" 5	1	7.0	28.0
b6	3" 5	3	8.0	67.0
S1	21" 4	6	9.0	12.6
S2	24" 4	5	3.3	59.0
S3	15" 4	6	6.9	66.0
S4	2" 4	6	11.10	16.0
S5	2" 4	6	11.6	15.0
S6	2" 4	6	10.11	15.0
S7	2" 4	6	10.6	14.0
S8	2" 4	6	9.10	13.0
S9	2" 4	6	9.4	12.0
S10	2" 4	6	11.11	16.0
S11	2" 4	6	11.0	16.0
S12	2" 4	6	11.6	15.0
S13	2" 4	6	11.3	15.0
S14	2" 4	6	11.1	15.0
S15	2" 4	6	10.11	15.0
S16	2" 4	6	10.0	12.0
S17	2" 4	6	10.4	12.0
S18	2" 4	6	9.11	13.0
S19	2" 4	6	9.7	13.0
L1	29" 4	1	9.0	16.0
L2	34" 4	1	7.0	15.0
m1	16" 11	2	9.7	215.0
v1	16" 11	5	17.5	129.0
v2	16" 11	2	20.6	178.0

Class A Concrete Cu.Yds. 50.01
 Reinforcing Steel Lbs. 6339
 Wet Excavation Cu.Yds. 58.02

PROJECT No. 815909
 ROCKINGHAM COUNTY
 STATION: 62+65

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
 RALEIGH
SUBSTRUCTURE
 BENT NO. 3

JANUARY 1964

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

5-12
 TOTAL SHEETS 18

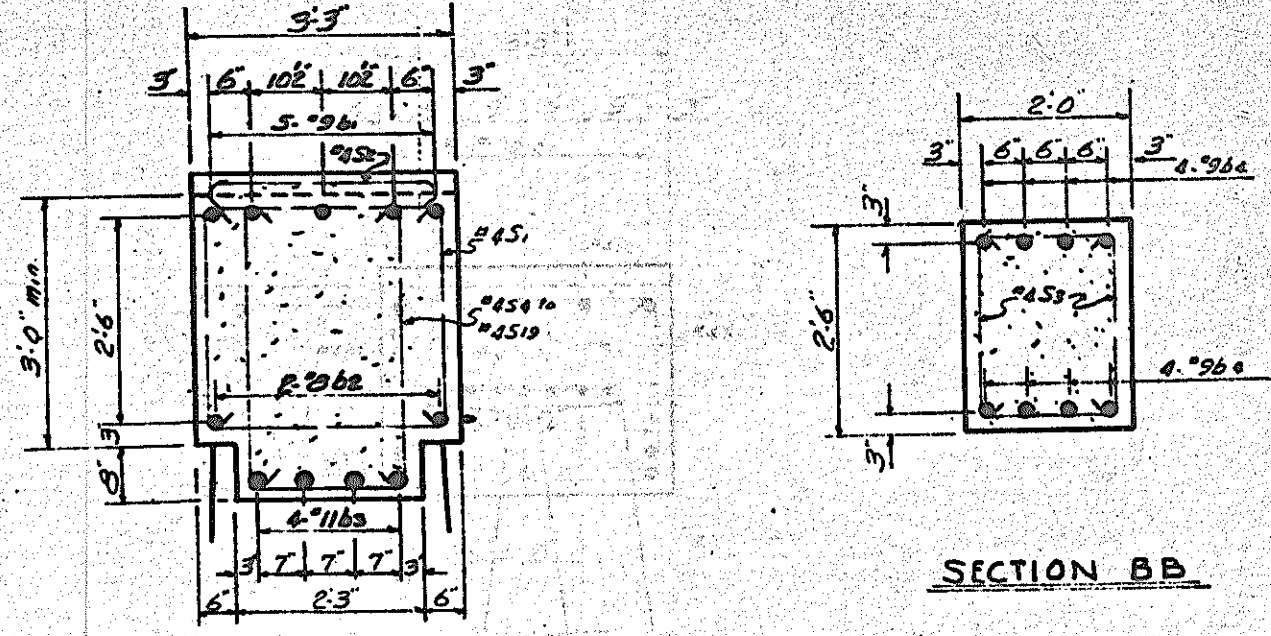
CLASS A CONCRETE EG's.

	Totals
Cop Pour	15.39
2nd Column Pour	12.38
1st Column Pour	14.05
Footing Pour	2.19
Total Class A Concrete	50.01

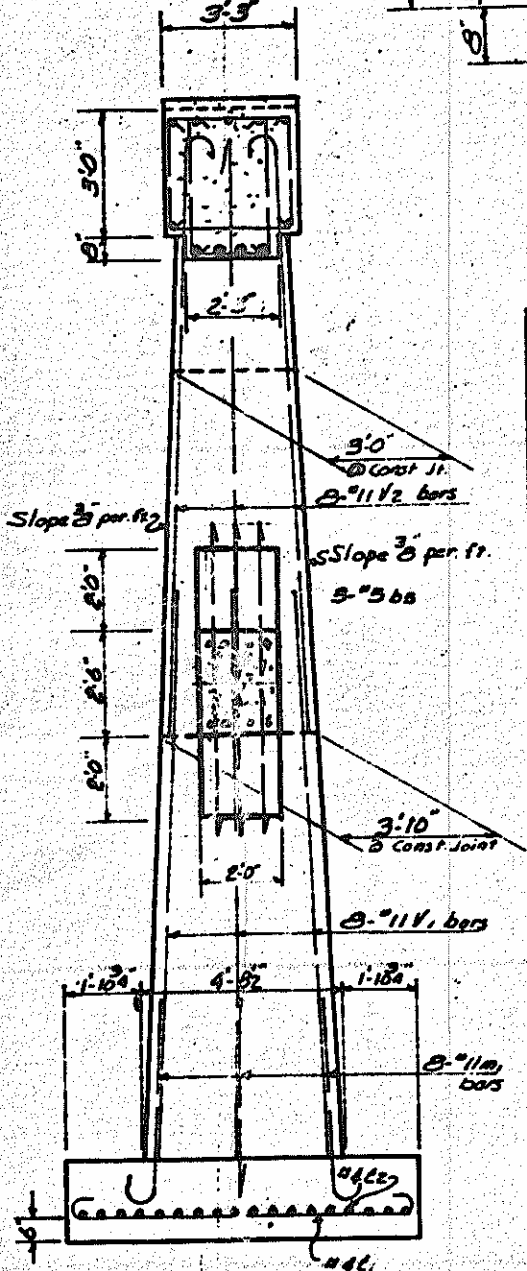
Cap steel may be shifted to clear anchor bolts
 Hooks on V bars may be turned as necessary for placing reinforcement in the cap.
 Computed Foundation pressure equals 3 1/2 tons per sq. ft.
 If the optional construction joint is used, the contractor will be required to splice the horizontal bars in the street outside of the face of each post and the additional cost of the steel bars required for the splice must be absorbed by the contractor.

BAR TYPES

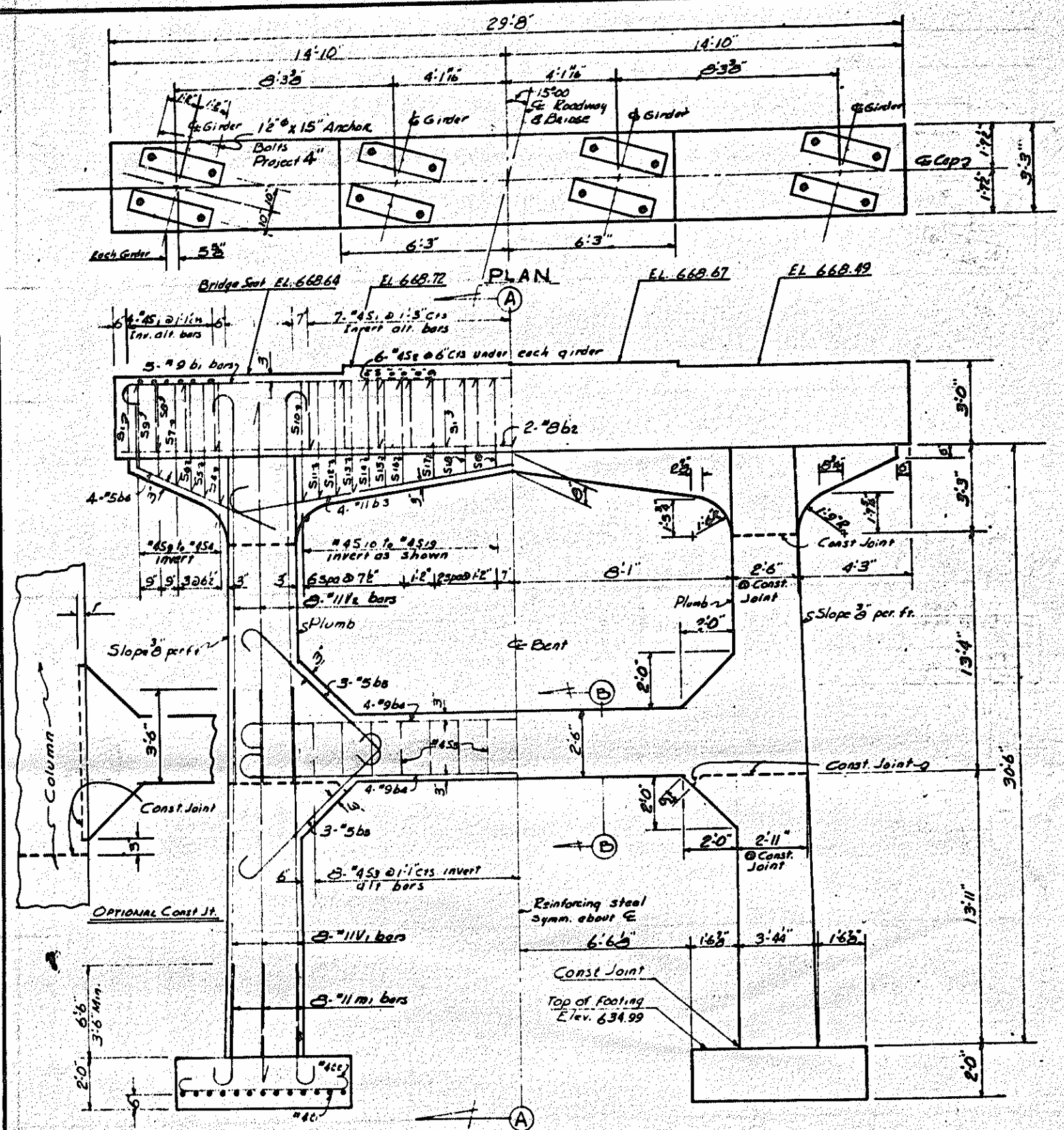
HK 1: 29'-2" b1 1:3
 HK 2: 9'-0" m1 1:7
 HK 3: 19'-1" v2 1:7
 HK 4: 10'-1" 1:7 HK
 HK 5: 10'-1" 1:7 HK
 HK 6: 4'-2" Hks
 HK 7: 2'-11" S1
 HK 8: 1'-8" S3
 HK 9: 1'-11" S4 & S19. All bar dimensions are out to out



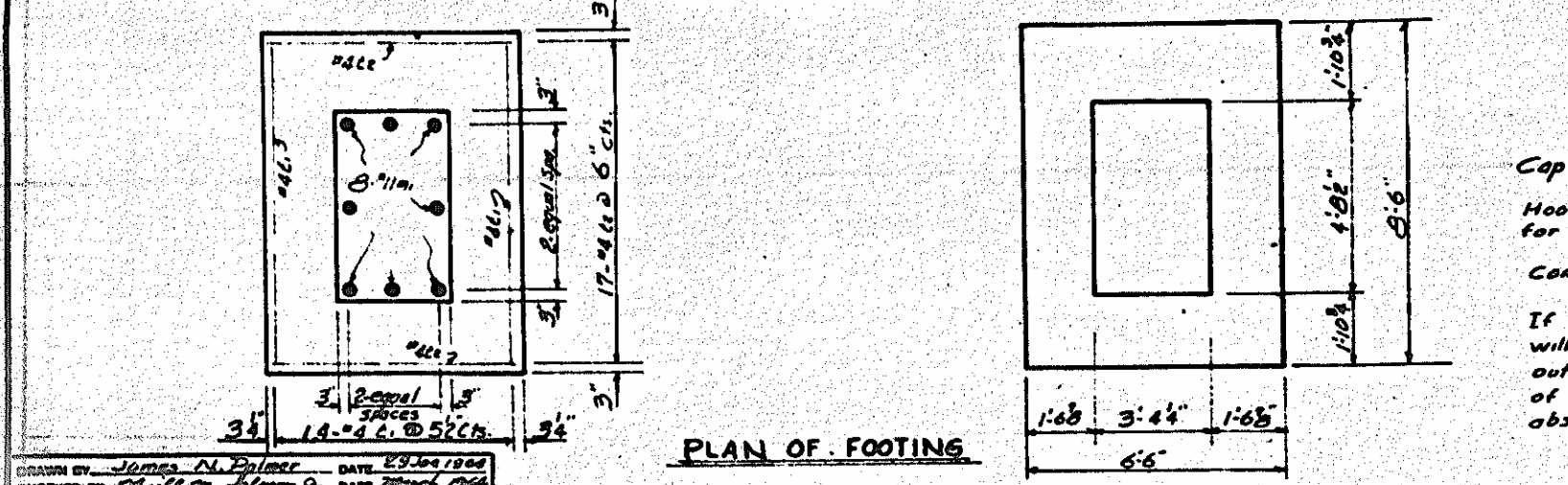
SECTION THRU CAP



SECTION AA

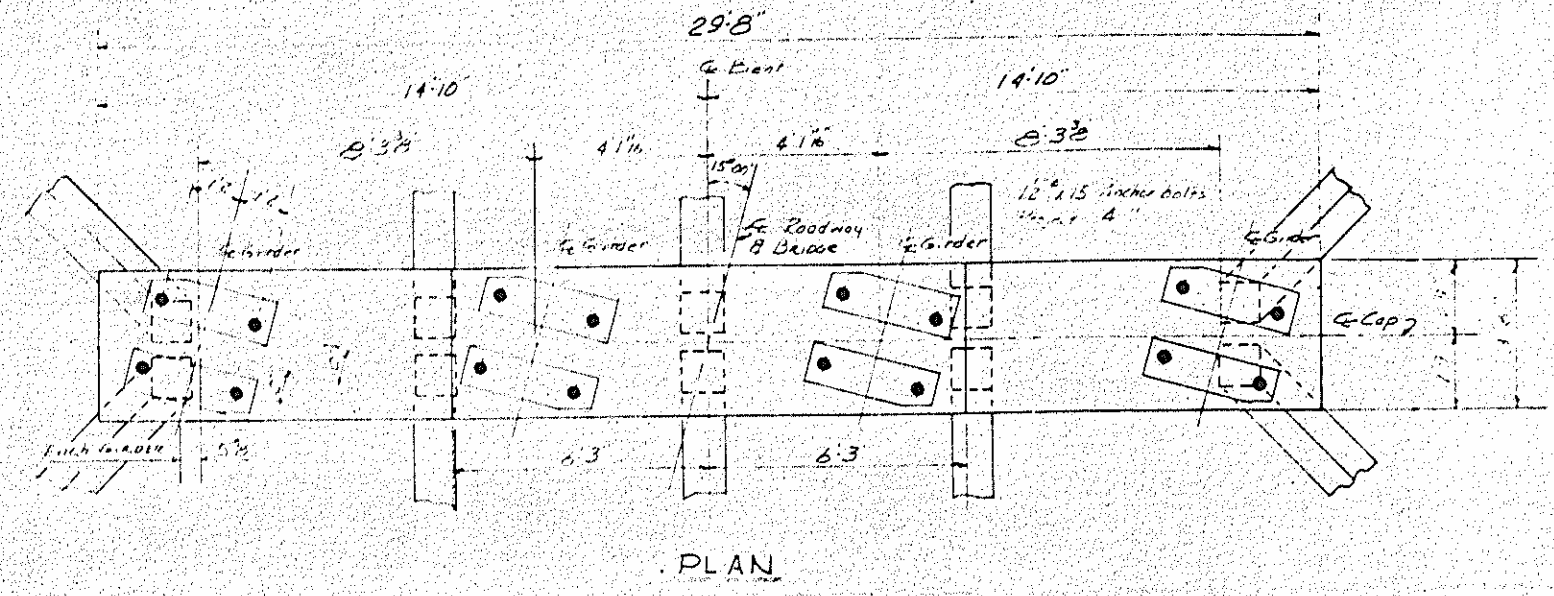


ELEVATION

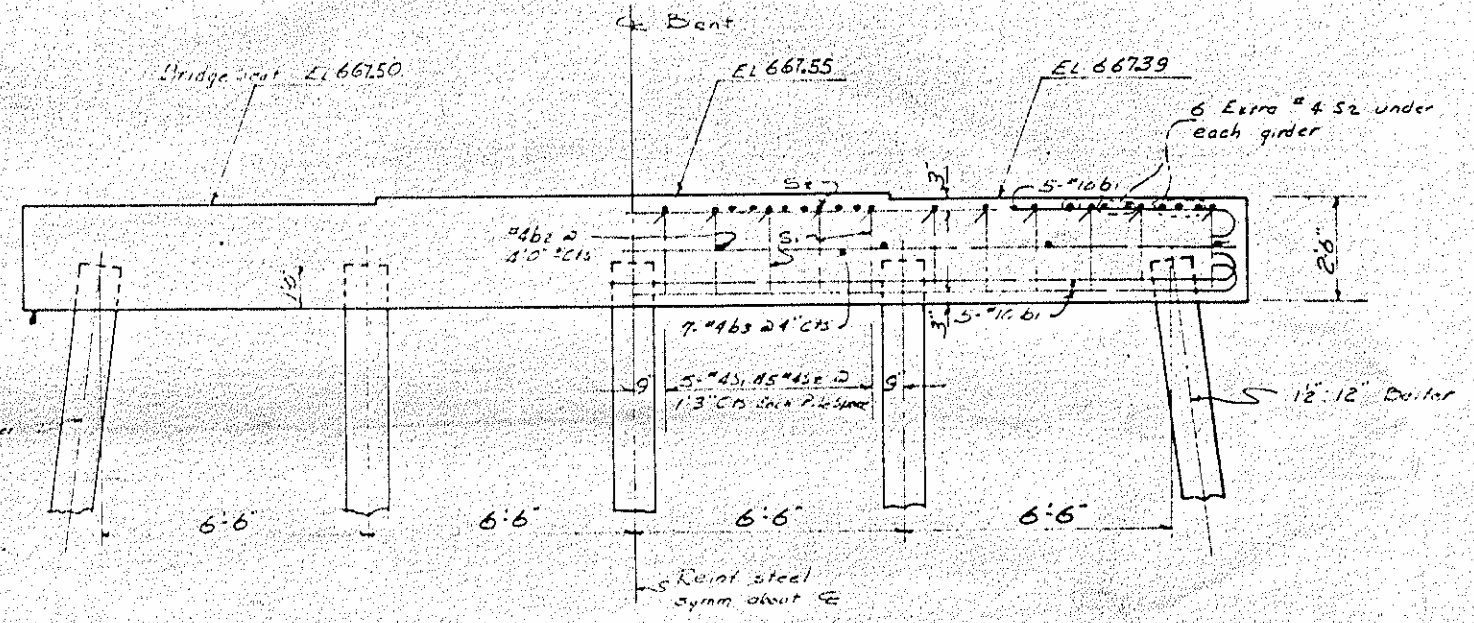


PLAN OF FOOTING

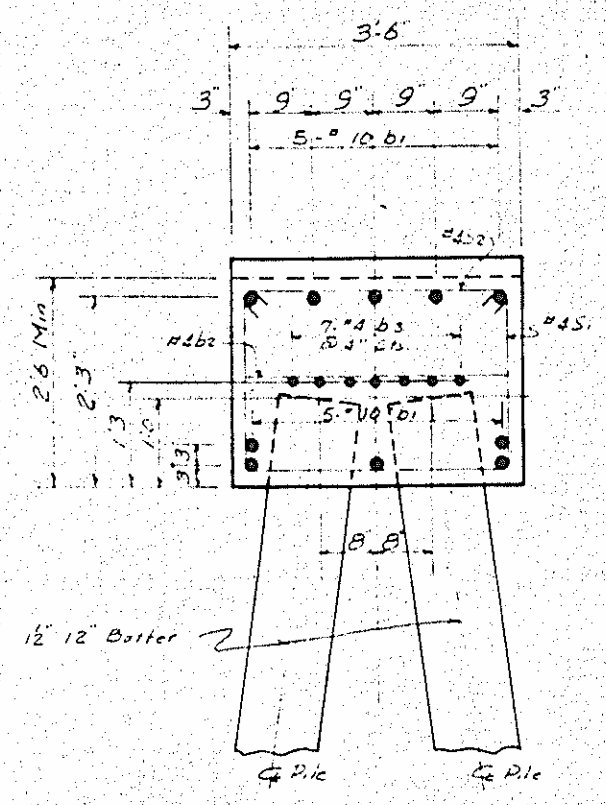
DRAWN BY: James N. Palmer DATE: 1/26/64
 CHECKED BY: [Signature] DATE: March 1964



PLAN



ELEVATION

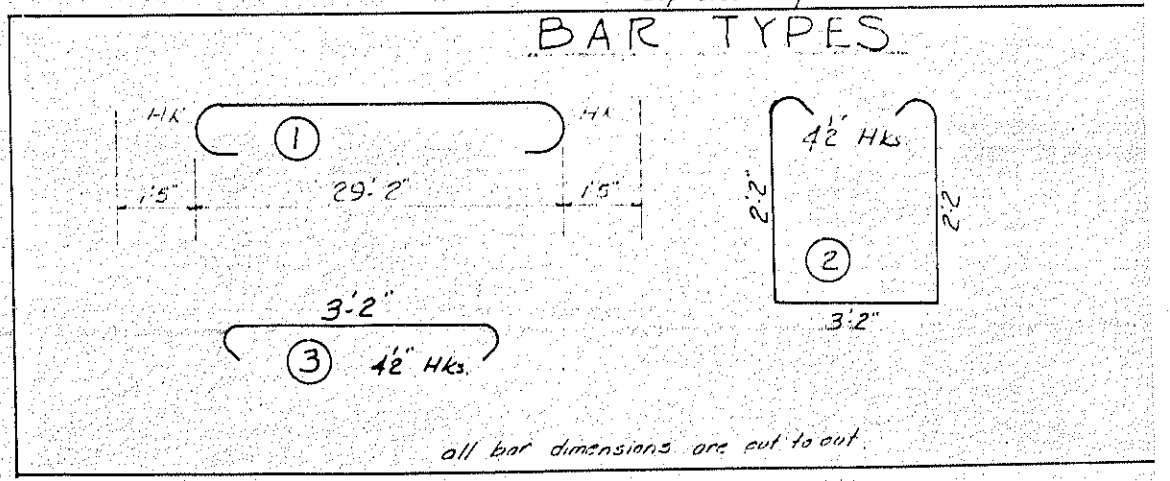


SECTION THRU CAP

BILL OF MATER				
FOR ONE BE				
BAR	NO	SIZE	TYPE	LENG
b1	10	#10	1	32'0
b2	8	#4	Spr	3'2
b3	7	#4	Spr	29'2
S1	22	#4	2	8'3
S2	46	#4	3	3'11

* Class "A" Concrete Cu Vol
 Rein Steel Lbs
 12" Prest Conc Piles No
 12" Prest Conc Piles Lin ft

* Class "A" Conc displaced by pile heads & been deducted
 12" Prestressed Conc piles to be driven to minimum bearing capacity of 29 Tons
 Cap steel may be shifted to clear anchor b



BAR TYPES

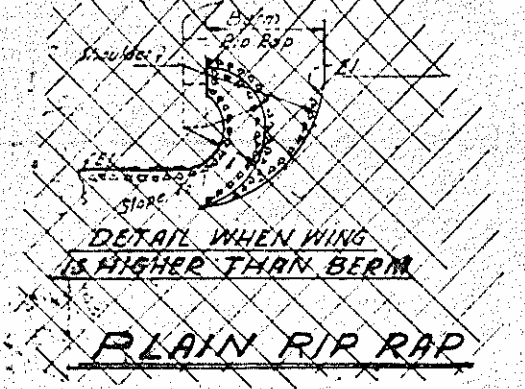
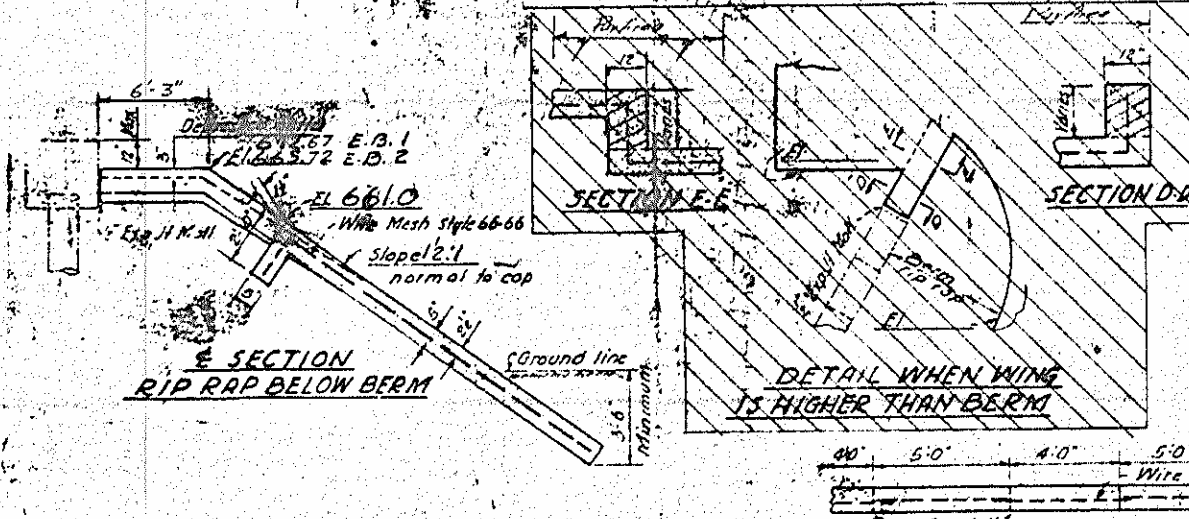
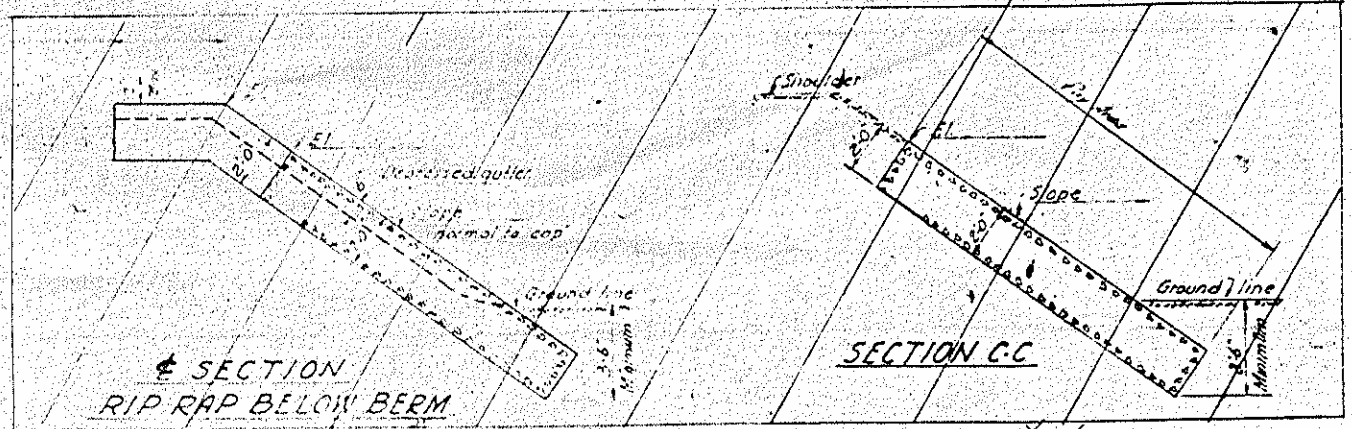
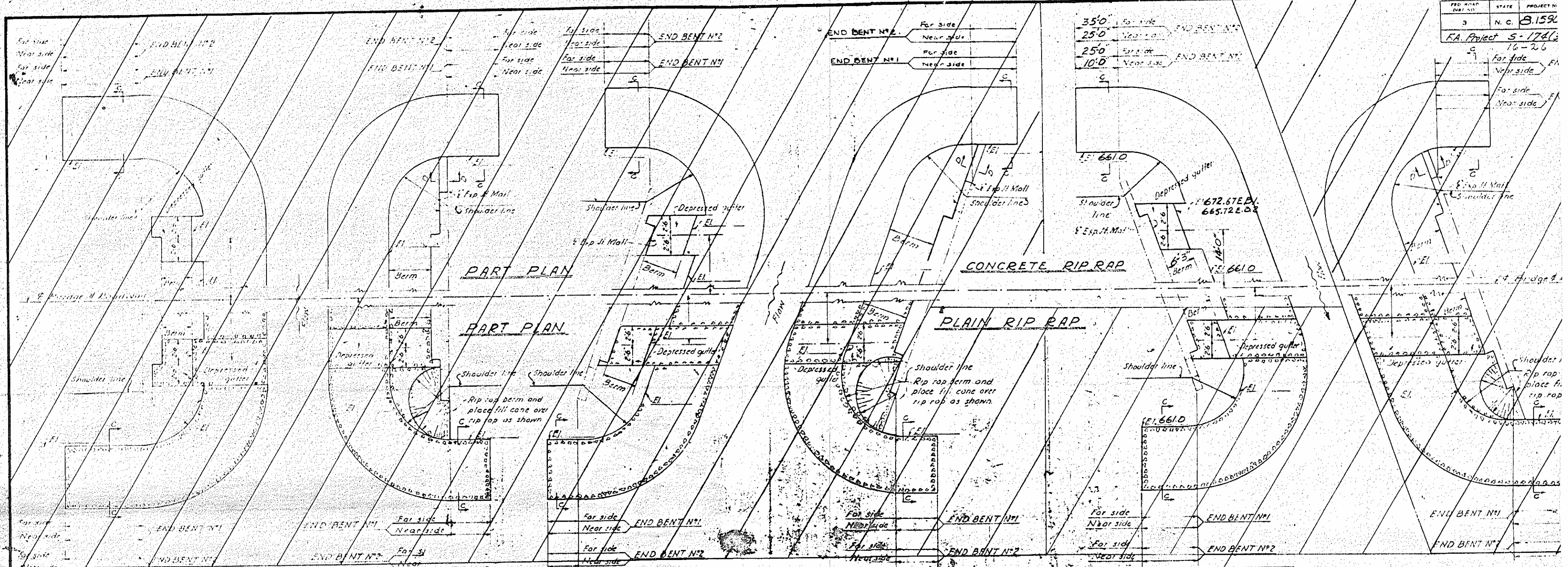
PROJECT No. 81590
 ROCKINGHAM CO
 STATION: 62+65

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
 HALLIGH
 SUBSTRUCTURE
 BENT NO 4

JANUARY

REVISIONS					
NO.	BY	DATE	BY	DATE	
1					
2					

DRAWN BY [Signature] DATE [Date]
 CHECKED BY [Signature] DATE [Date]



NOTE
 CONCRETE RIP RAP shall be Class B Concrete using 3/4 size aggregate. Wire mesh reinforcing to be Style 66-60 in runs of wire mesh to lap at least 6'. Concrete rip rap to alternate 4' & 5' strips as shown in Pouring Detail.
 TOE WALLS shall be constructed at ends of rip rap to that shown for the top of the rip rap. (For Concrete DEPRESSED GUTTERS to be formed as indicated for rip rap specified. Gutter area in Plain Rip Rap to be grouted in mortar. All work and material incidental to forming and be included in the unit price bid for Rip Rap.)
 Note: Concrete in walls of end bent wings is indicated by hatched areas in SECTION D-D. It will not be paid for as separate item in the unit price bid. It shall be included in the price bid per cu. yd. for concrete rip rap.

PROJECT NO. 3
 ROCKINGHAM, N. C.
 STATION: 62+65

POURING DETAIL
 Pour a 4' strip first. Strip widths may vary in curved portion.

CONCRETE RIP RAP

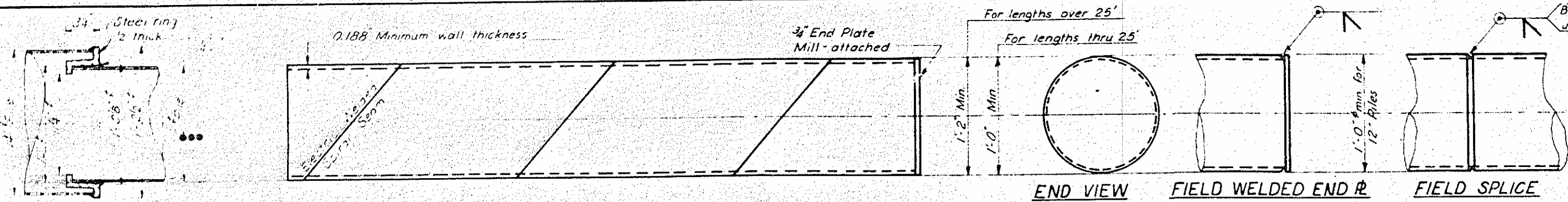
ESTIMATED QUANTITIES	Plain Rip Rap Class B		Concrete Rip Rap Class B		Wire Mesh 60' wide Approx. 112 ft.
	EB N°1	EB N°2	EB N°1	EB N°2	
Ordin. @ 62+65	54	54	555	470	2040
Revised			555	5395	

SPECIAL	ASSEMBLED BY	DATE
STANDARD	DESIGNED BY	DATE
	DRAWN BY	DATE
	CHECKED BY	DATE

Revision No. 2 - Revised to eliminate toe wall for plain Rip Rap - By C.I.K. V.B. AL B. Date July 25, 1961
 Revision No. 1 - Revised to show wing dimensions from end of End Bent. - By C.I.K. V.B. AL B. Date Oct 1955 R.T.J. & R.W.

STANDARD M-RR-10

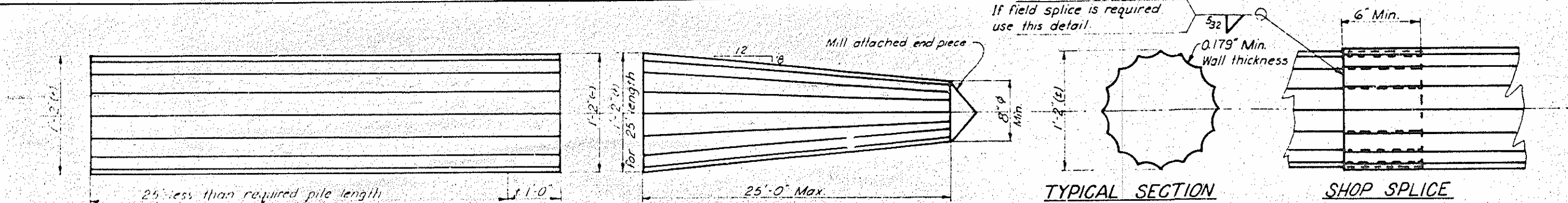
General Notes
 For Design Data and additional notes, see Specifications and Special Provisions.
 *These piles are designated as alternate types on the detailed structure plans. The type pile for which the contractor submits a bid in his proposal shall be used in the structure as no substitution of alternate type will be permitted after bids are received.



CYLINDRICAL STEEL PIPE SHELLS FOR CAST-IN-PLACE CONCRETE PILES

REQUIRED		
NR	Length	Total
E.B.1 *	10 36'	360
E.B.2 *	10 36'	360
TOTAL	20	720

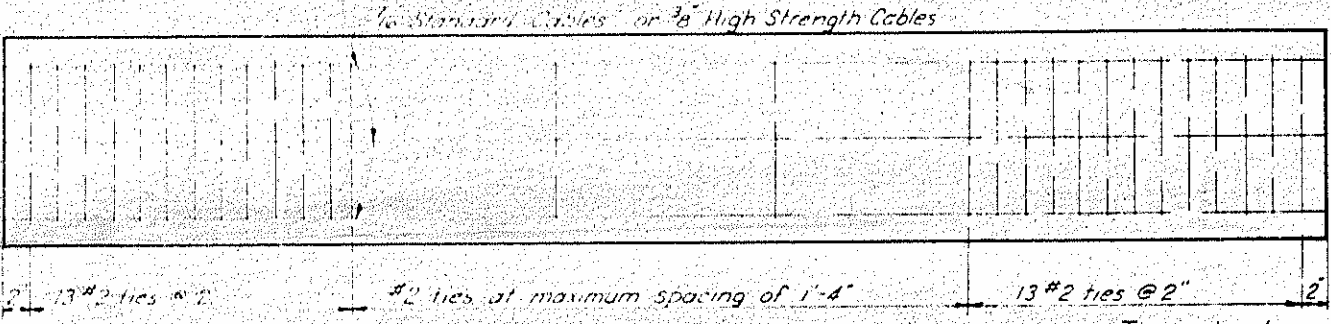
DETAIL OF TRANSITION SLEEVE FOR STEP TAPER



FLUTED TUBULAR STEEL SHELLS FOR CAST-IN-PLACE CONCRETE PILES

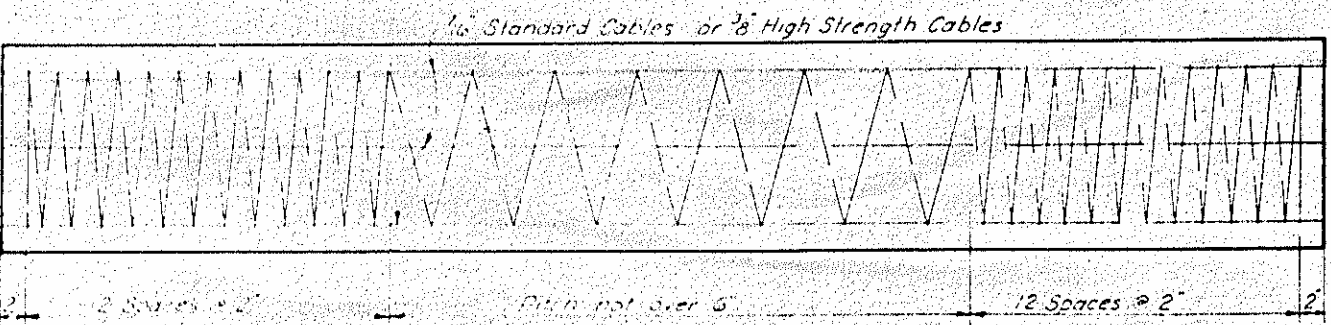
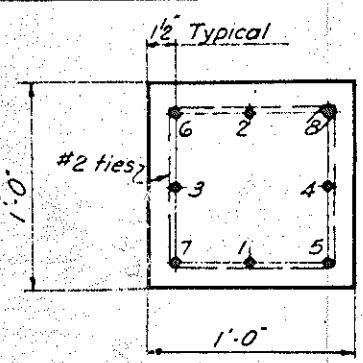
REQUIRED		
NR	Length	Total
E.B.1 *	10 36'	360
E.B.2 *	10 36'	360
TOTAL	20	720

After driving the steel shell, it is to be thoroughly inspected and then filled with class "A" concrete to cut-off elevation.
 For additional requirements and methods of measurement and payment for cast-in-place concrete piles, see Special Provisions

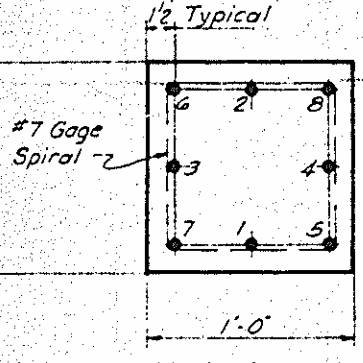


12" PRESTRESSED CONCRETE PILES USING #2 TIES

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



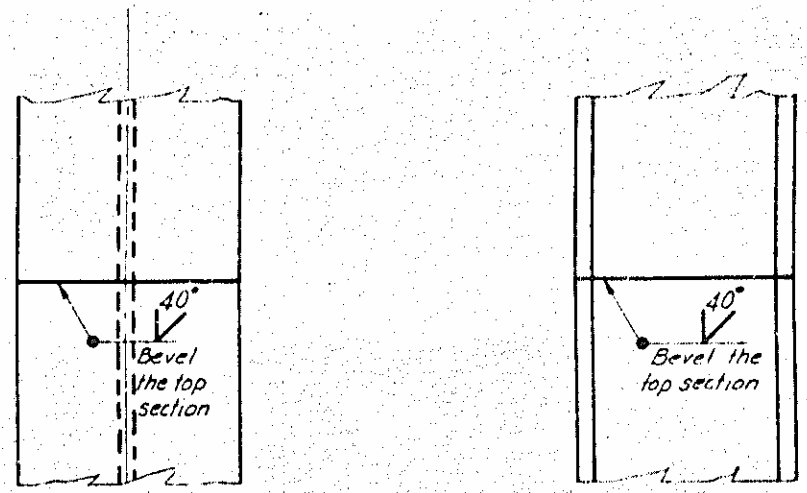
12" PRESTRESSED CONCRETE PILES USING #7 GAGE SPIRAL



Design Data:
 Concrete: f'c = 5,000 p.s.i. ; f'e = 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 APPLIED PRESTRESSING
 3/8 High Strength 0.0840 sq. 23,000 per cable 16,100 per cable
 1/2 Standard 0.1089 sq. 27,000 per cable 18,900 per cable

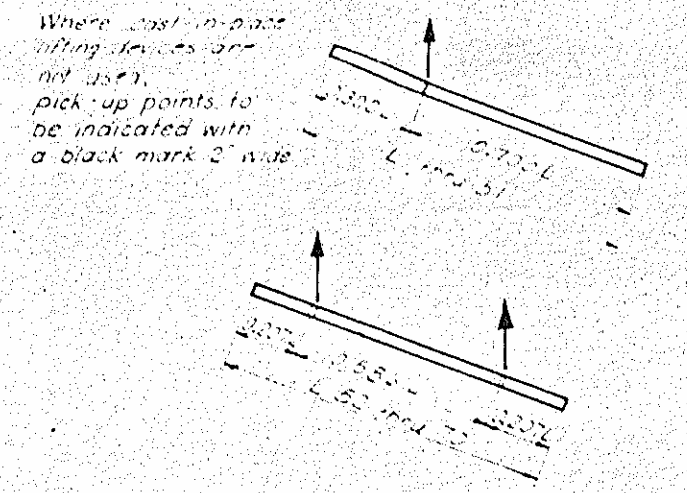
Devices for lifting the piles from the casting beds shall be approved by the Engineer. Where piles will be exposed to view in the structure, inserts set in the piles to receive threaded eye-bolts or similar approved devices shall be used. Loops of cable cast in the pile will not be permitted except for piles for End Bents and Foundations which will not be exposed to view. 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 3/8".



FIELD SPLICE FOR STEEL H PILES

PROJECT NO. 815909
 ROCKINGHAM COUNTY
 STATION: 62+65

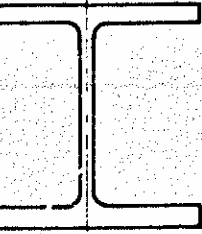


FIELD BUILD-UP

Build up where necessary shall be done in accordance with the specifications, except that the reinforcing steel required in the build-ups shall be included in the contract unit price per foot for the pile and will not be paid for its reinf. steel.

12" PRESTRESSED CONCRETE PILES

REQUIRED		
NR	Length	Total
E.B.1 *	10 36'	360
Bent 1	10 42'	420
Bent 4	10 39'	390
E.B.2 *	10 36'	360
TOTAL	40	1530



REQUIRED		
NR	Length	Total
TOTAL		

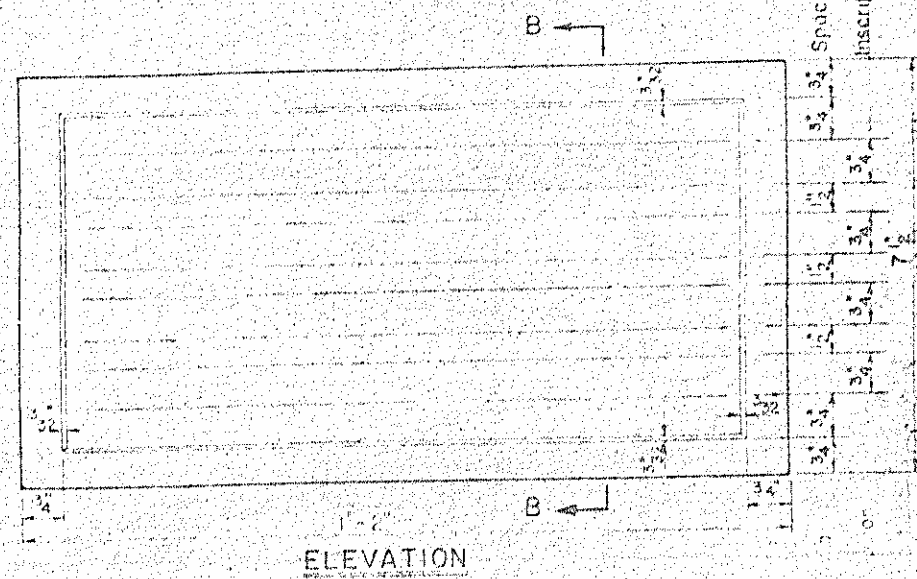
STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
 RALEIGH

STANDARD DETAILS FOR BEARING PILES

January 1964

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

SHEET NO. S-15
 TOTAL SHEETS 18



ROCKINGHAM COUNTY
PROJECT 81599
FEDERAL AID
* 196

DETAIL SHOWING CORRECT WORDING
NAME PLATE USING FOUR LINES

*The date to be shown on the name plates is the year in which the structure will be finished. This date shall be verified by the Resident Engineer before the name plate inscription is ordered.

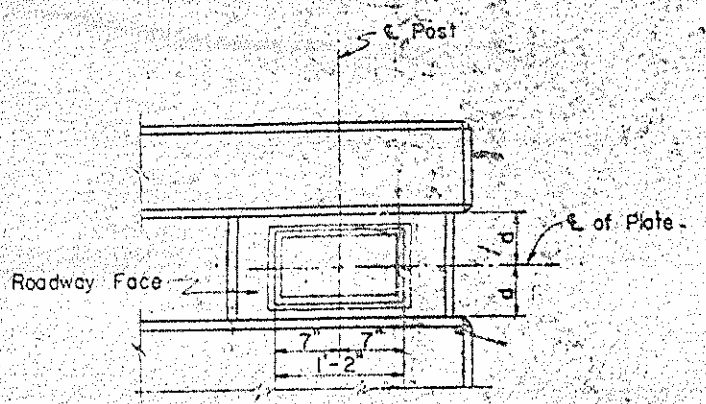
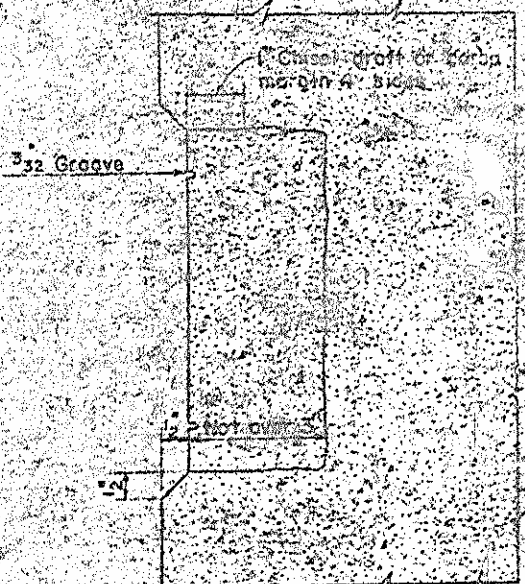
GENERAL NOTES

For bridges on which there will be two-way traffic, 2 name plates are required for each bridge. For bridges on which there will be one-way traffic, one name plate is required for each bridge. Name plates to be placed on the right hand end post approaching the bridge, and shall be placed parallel to grade of curb. See LOCATION DETAIL.

The name plates are to be made of granite. Granite shall be light grey, fine or medium grained, sound in quality and free from defects that would mar its appearance. Exposed face of plates to have a fine rubbed finish.

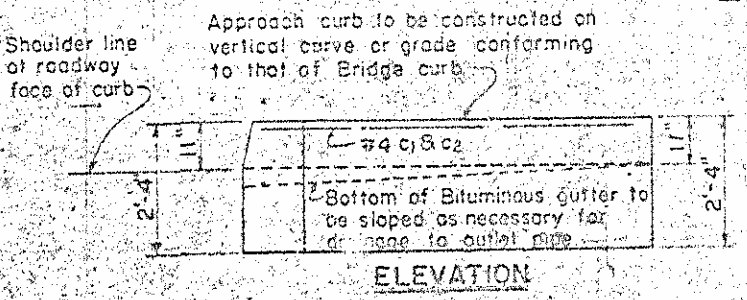
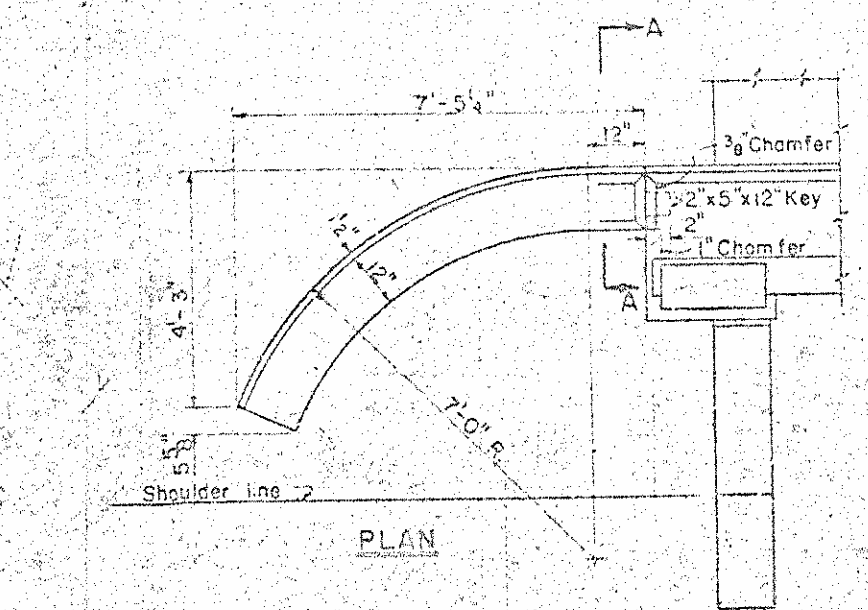
Lettering shall be sandblast sunk, 3/4" high, vertical, Modern Roman style. The wording shall be as shown in the "DETAIL SHOWING CORRECT WORDING."

The entire cost of the name plates, complete in place, shall be included in the contract price bid for Class "A" Concrete.



NAME PLATES

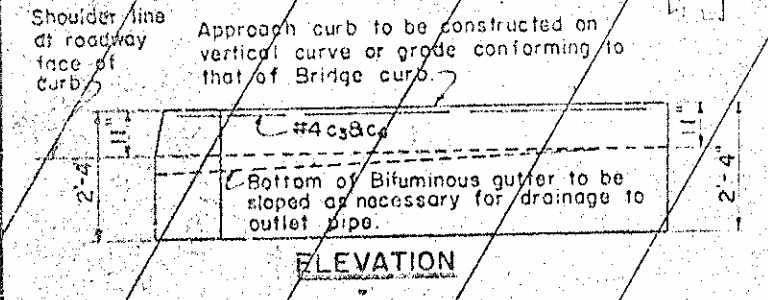
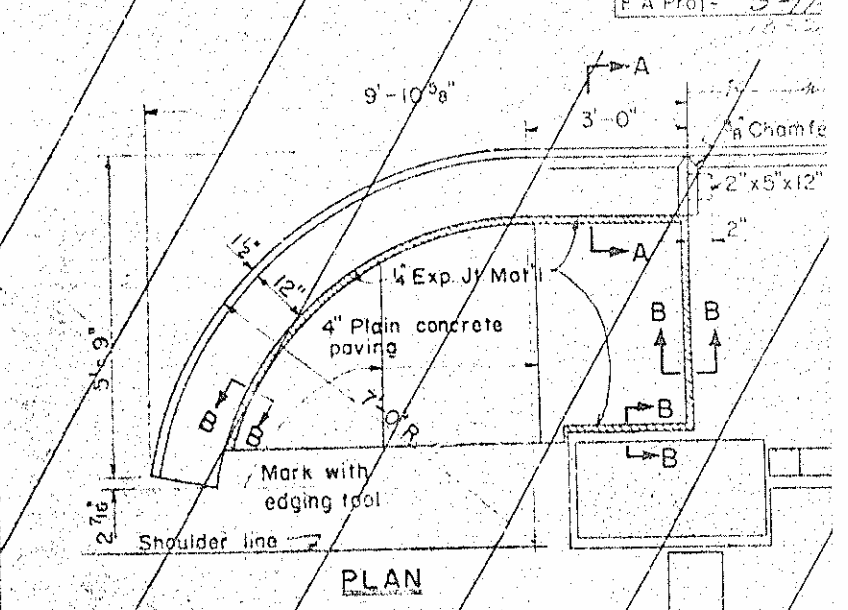
SPECIAL	ASSEMBLED BY: JAMES N. SIMMER DATE: 8/26/1960
	CHECKED BY: Nels B. Samsco DATE: 8/26/1960
STANDARD	DESIGNED BY: H. G. Fagan DATE: April 1, 1960
	DRAWN BY: H. G. Fagan DATE: April 1, 1960
	CHECKED BY: Alan J. Fagan DATE: Sept. 2, 1960



BILL OF MATERIAL FOR 4 CURBS

Bar No.	Size	Length	Weight
C1	#4	7'-0"	21
C2	#4	6'-6"	23
C3	#4	3'-0"	32
Reinforcing Steel			76 Lbs
Class "A" Concrete			3.2 CY

TO BE USED WITH 12" & 18" CURBS

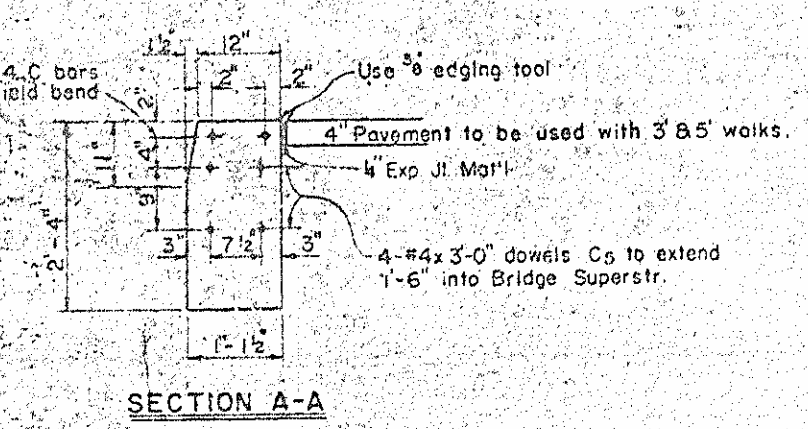
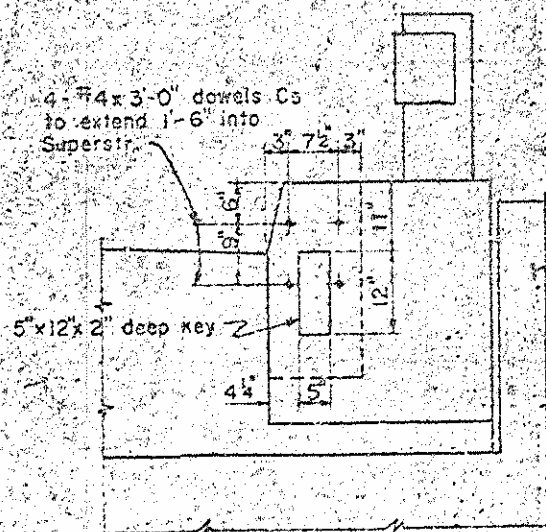


BILL OF MATERIAL FOR 4 CURBS & PAVING

Bar No.	Size	Length	Weight
C1	#4	11'-0"	29
C2	#4	12'-0"	32
C3	#4	3'-0"	32
Reinforcing Steel			93 Lbs
Class "A" Concrete			5.1 CY
For 3' Walks - Class "A" Concrete			5.1 CY
For 5' Walks - Class "A" Concrete			5.9 CY

SECTION B-B

TO BE USED WITH 3' & 5' WALKS



APPROACH CURBS

NOTE: The excavation for curbs will not be measured and paid for as a separate item. The entire cost for same is to be included in the unit price bid for Class "A" Concrete.

Drains and Bituminous surfacing at ends of Bridge to be furnished and placed by the Roadway Contractor.

PROJECT No. 8159
ROCKINGHAM COUNTY
STATION: 62165

DATE	
DATE	
DATE	
DATE	
DATE	
DATE	

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH
STANDARD
APPROACH CURBS
AND
NAME PLATES
SEPT. 1960