FED. ROAD CONT. NO.	STATE	
4	N. C.	8.11 8.15
F. A. PROJECT	BRS-974 (4) BRS-974 (5)	

SHEET No 40 OF 82

Design Discharge = 100,900 cfs
Frequency of Design Flood = 50 years
Design High Water Elevation = 371.5'

PROJ. 8.1511101 F.A. PROJ. BRS 974 (5)
INCLUDES PORTION OF STRUCTURE FROM END BENT #1 THRU BENT #9 (INCLUDING BENT #9)

PROJ. 8.1511102 F.A. PROJ. RS 974 (4)
INCLUDES PORTION OF STRUCTURE FROM BENT #9 THRU END BENT #2

Fill Face End Bent #1 Sta. 29+08.0 El. 378.734

5'-6" Berm

Fill Face End Bent #2 Sta. 38+74.0 El. 412.284

5'-0" Min. Berm

Exp. Exp. Fix Exp. Fix Exp. Fix Exp. Fix Exp. Fix Exp. Fix Exp. Fix Exp. Fix Exp. Fix Exp. Fix Exp. Fix Exp.

Max. High Water El. 371.5 1940

Top of Fty. El. 357.716

Top of Fty. El. 347.250 346.030 Horiz. Surface

Top of Fty. El. 348.539

Top of Fty. El. 360.900

Top of Fty. El. 362.715

Top of Fty. El. 360.939

Top of Fty. El. 361.181

Top of Fty. El. 361.459

Top of Fty. El. 375.516

Top of Fty. El. 369.168 369.910 17 Accts. 359.570

El. 358.05

El. 344.05

El. 343.05

El. 344.05

El. 361.05

El. 361.05

El. 361.05

El. 361.05

El. 361.05

El. 361.05

El. 361.05

El. 361.05

El. 361.05

El. 361.05

End Bent #2

End Bent #1

Bent #11

Bent #10

Bent #9

Bent #8

Bent #7

Bent #6

Bent #5

Bent #4

Bent #3

Bent #2

Bent #1

End Bent #2

End Bent #1

SECTION ALONG ℄ OF BRIDGE

966' 966'-0" Length of Bridge from Face to Face of End Bents

80'-0" Span A | 80'-0" Span B | 80'-0" Span C | 80'-0" Span D | 80'-0" Span E | 80'-0" Span F | 80'-0" Span G | 80'-0" Span H | 80'-0" Span I | 92'-0" Span J | 78'-0" Span K | 88'-0" Span L

DAN RIVER

℄ Track Line Y1 Tan To Curve

℄ Line L6 0°-30' Curve Rt.

Tan to Curve 2

14'-0" Horiz. Cl.

℄ Slope Protection

To Virginia State Line

PLAIN RIP RAP CLASS II

To NRL

77°-11'-27" between tangents

38+02.40 -Y1 POC
9+91.03 Y1 POC

10+09 -Y1

El. 381.08

El. 381.05 10+17.00

El. 381.10 10+50.00

El. 381.28 11+00.00

El. 380.74 7+00.00

El. 380.77 8+50.00

El. 380.82 +00.00

El. 381.08 +50.00

El. 381.21 12+00.00

El. 381.67 13+00.00

Line L1 Match Lines

El. 380.78

TRACK ELEVATIONS LEFT OF LINE L1

TRACK ELEVATIONS RIGHT OF LINE L1

MP 51.52

Note:
For Pile Details in End Bents and Intermediate Bents See Individual Bent Details

℄ Track

T/R

1½:1

4.8'

15'-9"

SPAN LENGTH BASED ON THIS THEORETICAL SECTION
SPAN -L-

REVISION #1 - REVISED TO CHANGE BENT #10 FOOTING 9-27-74 BY RJ; V BY RDH

REV. #2 - REVISED TO CHANGE TYPE OF R-R FAP AT END BENT #1 BY GTO BY EGA 6-12-75

Reel # 1109
Pos # 1

8.1511101
PROJECT No. 8.1511102

COUNTY

STATION: 38+02.40 -Y1 POC
9+91.03 Y1 POC

Sheet 1 of 2

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

GENERAL GRADING OF BRIDGE ON
DAN RIVER AND RELOCATION OF FRANKLIN
DANVILLE ROAD OVER N.C. GR
BETWEEN MILTON AND VA. STATE

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
2	GTO	6-12-75	4		
1	RJ	2-21-74	3		

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N. C.	B-1511101 B-1511102
F. A. PROJECT		

SHEET No. 27 of 32

Fill Face
End Bent #1
Sta. 29+08.0
El. 378.75

5'-6" Berm

Exp. Exp.

Fix. Exp.

Fix Exp

Max. high Water

Fix Exp

Fill Face
End Bent #2
Sta. 38+74.0
El. 412.24

5'-0" Min. Berm

Fix Exp.

Fix

Top of Ftg. El. 375. Elev.

Top of Ftg. El. 359.190 LT. CTR. 359.810 RT.

End Bent #1

Bent #1

Bent #2

Bent #3

Bent #4

Bent #5

Bent #6

Bent #7

Bent #8

Bent #9

End Bent #2

Span A

Span B

Span C

Span D

Span E

Span F

Span G

Span H

Span I

Span J

Span K

Span L

Note: See Revised Sheet No. S-31A Bent # 10 For Lowering Footing And Changing From Pile To Spread Footing.

E Track Line Y1

Tan To Curve

Slope Protection

To Milton

To Virginia State Line

A

CLASS II ROCK RIP RAP

Note:

I HEREBY CERTIFY THAT THIS STRUCTURE WAS BUILT ACCORDING TO THE PLANS EXCEPT AS NOTED HEREIN.

E E Dellinger

RESIDENT ENGINEER

SPAN LENGTH BASED ON TANGENT THROUGH SECTION

DRAWN BY: [illegible] DATE:

CHECKED BY: E E Dellinger DATE:

PROJECT NO. B-1511101
B-1511102

COUNTY

STATION: 38+02.40-L6 POT
9+91.03 Y1 POT

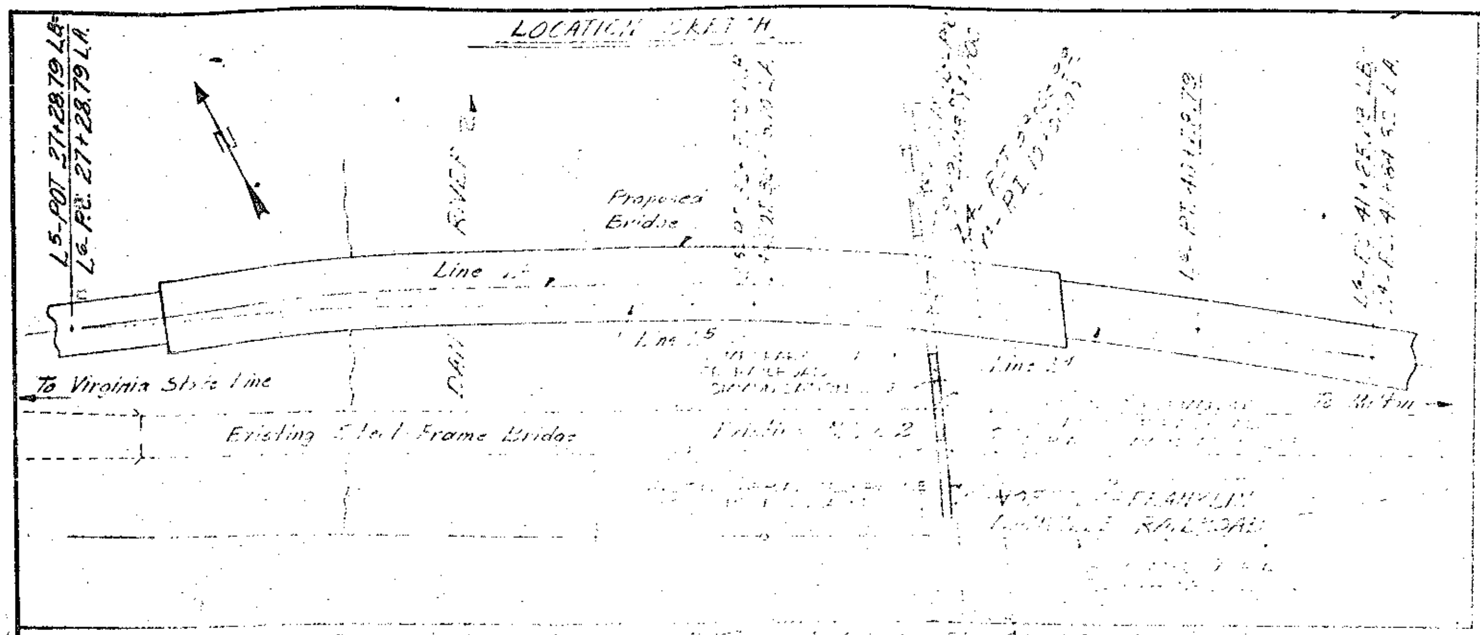
STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

[illegible] OF BRIDGE ON [illegible] OVER [illegible] ON SR [illegible] AND VA. STATE LINE

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S
1			3			TOTAL SHEETS
2			4			32

FED. ROAD DIV. NO.	STATE	PROJECT
4	N. C.	8.1511… / 8.151…
F. A. PROJECT		BRS-974 (…) / RS-974 (…)

SHEET Nº 41 OF 6…



Bench Mark - …

NOTES

ASSUMED LIVE LOAD = HS 20-44.

REFERENCE TO S-N SHEET: FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET S-N.

PILE CAPACITIES: PILES FOR END BENTS AND INTERIOR BENTS TO BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 45 TONS EACH.

PAINTING: STRUCTURAL STEEL FOR THIS PROJECT SHALL BE PAINTED IN ACCORDANCE WITH PAINT SYSTEM #4. See Special Provisions.

CLASS "AA" CONCRETE (SEAL)
FOR CLASS "AA" CONCRETE (SEAL), SEE SPECIAL PROVISIONS.

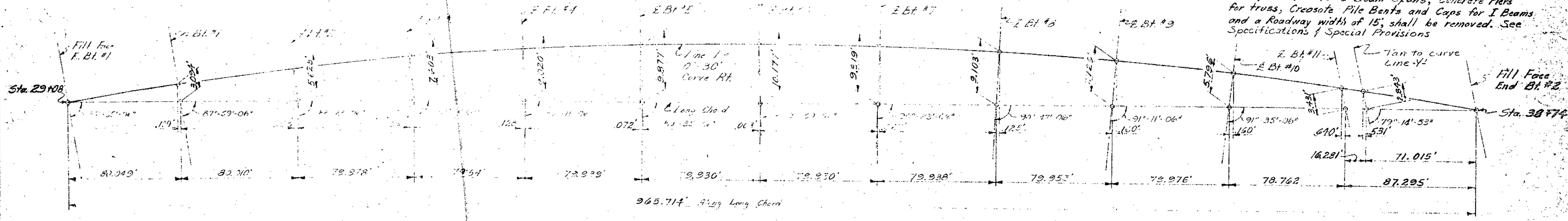
RAILROAD TRAFFIC
RAILROAD TRAFFIC SHALL BE MAINTAINED AT ALL TIMES. SEE SPECIAL PROVISIONS.

STRUCTURAL STEEL
THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THIS BRIDGE CONTAINS ASTM A572 GRADE 50 STRUCTURAL STEEL.

Computed Foundation Load: Computed Foundation Load for Bents Nº 3, 4, & 5 equals 3 Tons per sq. ft.

Cofferdams: For Cofferdams - see Special Provisions.

Removal of Existing Structure: After serving as a temporary crossing, the existing bridge consisting of 3 @ 40' I Beam Spans; 1 @ 200' thru steel truss, and 7 @ 40' I Beam Spans; Concrete Piers for truss, Creosote Pile Bents and Caps for I Beams and a Roadway width of 15', shall be removed. See Specifications & Special Provisions



LONG CHORD LAYOUT

End Bent #1 and Bents # thru #10 are on radial lines.
Bent #11 and End Bent #2 are parallel to tangent to curve Line Y1 @ Sta. 38 + 02.40 -Y1

* EPOXY COATED REINFORCING STEEL: FOR EPOXY COATED REINFORCING STEEL, SEE SPECIAL PROVISIONS.

Galvanized High Strength Bolts: For Galvanized High Strength Bolts, see Special Provisions.

TOTAL BILL OF MATERIAL See ~~Summary~~ Sheet Nº ~~…~~ 42

	CLASS "AA" CONCRETE (SEAL)	CLASS "A" CONCRETE	CLASS "AA" CONCRETE	EPOXY COATED REINFORCING STEEL *	REINFORCING STEEL	STRUCTURAL STEEL	HP 12 X 53 STEEL PILES		FOUNDATION EXCAVATION	4" CONCRETE SLOPE PROTECTION	LINSEED OIL CONCRETE PROTECTION	REMOVAL OF EXISTING STRUCTURE	COFFERDAMS	CONCRETE RAIL	5" CONCRETE RIP RAP	BRIDGE APPROACH SLABS
	CU. YDS.	CU. YDS.	CU. YDS.	LBS.	LBS.	APPROX. LBS.	NO.	LIN. FT.	CU. YDS.	SQ. YDS.	GALS.	LUMP SUM	Lump Sum	Lin. Ft.	Sq. Yds.	Lump Sum
SUPERSTRUCTURE			[illegible]	33,900	203,499	1,107,000										
END BENT Nº 1		[illegible]			3,369		11	351.32								Lump Sum
BENT Nº 1		[illegible]			5,532		15	235.04	45							
BENT Nº 2		[illegible]			5,603		15	211.60	45							
BENT Nº 3	[illegible]	[illegible]			18,488				60				Lump Sum			
BENT Nº 4	[illegible]	[illegible]			18,669				60				Lump Sum			
BENT Nº 5	[illegible]	[illegible]			19,018			262.18	60				Lump Sum			
BENT Nº 6		[illegible]			8,058		15		40							
BENT Nº 7		[illegible]			8,239		18	311.49	65							
BENT Nº 8		[illegible]			10,345		18	325.42	65							
BENT Nº 9		[illegible]			10,930		18	252.20	65							
BENT Nº 10		[illegible]			11,281		18	270	60							
BENT Nº 11		[illegible]			10,357		8	302.68	55							
END BENT Nº 2		[illegible]			3,293		11	456.49								Lump Sum
CURVED END WALLS			2.8		85											
TOTAL	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~1107,000~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	339	~~152~~	~~Lump Sum~~	~~Lump Sum~~	~~[illegible]~~	~~[illegible]~~	~~Lump Sum~~

"Replaces Bridge # 62-48-50"

PROJECT NO. 8.1511101 / 8.1511102

CASWELL COUNTY

STATION: 38+02.40-Y1- POC
Sheet 2 of 2 … Y1 POC

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

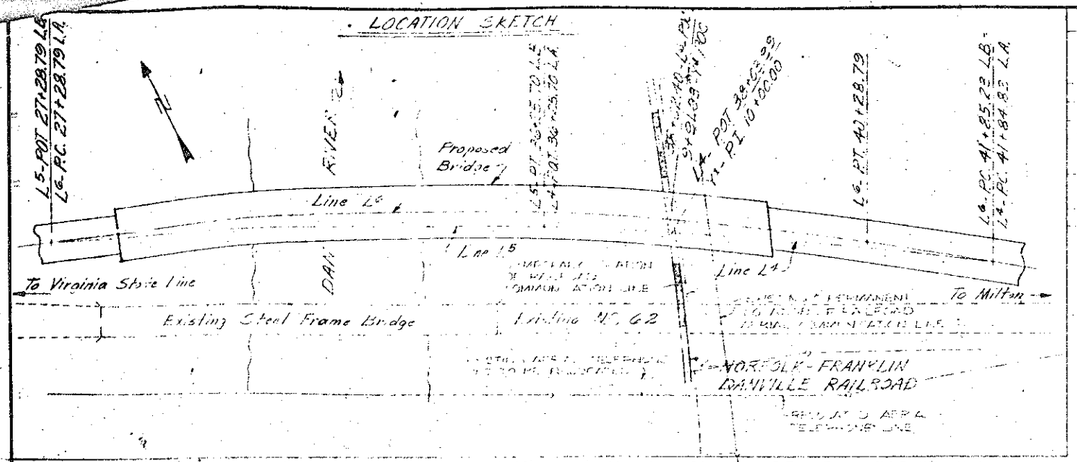
GENERAL DRAWING OF BRIDGE OVER DAN RIVER AND NORFOLK-FRANKLIN-DANVILLE RAILROAD ON N.C. 62 BETWEEN MILTON AND VA STATE LINE

June 1972

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-2
1			3			TOTAL SHEETS
2			4			39

DRAWN BY … DATE … 1972
CHECKED BY … DATE …

LOCATION SKETCH



Bench Mark – Nail in face of 15" oak 19.0' Lt. Sta. 21+25 Elev. 382.96 M.S.L.

TRACK DEFLECTION ANGLES

Instrument @ Sta. 38+03.99 - L4
℄ Track - Far Sight - Line Ahead

Distance	Deflection Angle
300' Lt.	103° - 54' Lt.
200' Lt.	103° - 47' Lt.
100' Lt.	103° - 25' Lt.
50' Lt.	103° - 03' Lt.
50' Rt.	78° - 51' Rt.
100' Rt.	79° - 50' Rt.
200' Rt.	81° - 53' Rt.
300 Rt.	83° - 56' Rt.

ASSUMED LIVE LOAD – HS 20-44

REFERENCE TO STD. SHEET FOR OTHER BASIC DATA AND CONSTRUCTION, SEE SHEET S-1.

PILE CAPACITY FOR STEEL PILE BENTS AND PENETRATION REQUIRED IN N.C. PLASTICITY INDEX CHART TO A MINIMUM GRADE TO CAPACITY OF 45 TONS EACH.

PAINTING OF STRUCTURAL STEEL FOR THIS STRUCTURE SHALL BE PAINTED IN ACCORDANCE WITH PAINTING SYSTEM #1 of Spec. Special Provisions.

Class "AA" Concrete (Seal)
For Class "AA" Concrete (Seal), see Special Provisions.

Railroad Traffic
Railroad traffic shall be maintained at all times. See Spec. & Provisions.

Structural Steel
The Contractor's attention is called to the fact that this bridge contains ASTM A 572 Grade 50 Structural Steel.

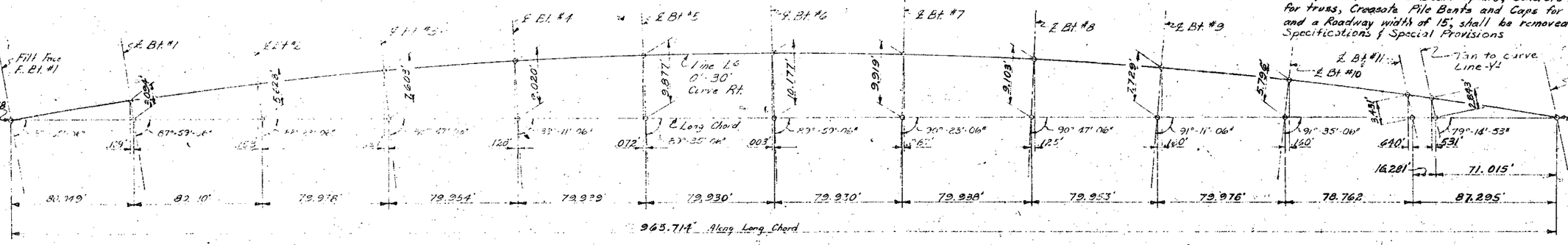
Computed Foundation Load: Computed Foundation Load for Bents No 3, 4, & 5 equals 3 Tons per sq. ft. and Bent No 10 equals 4 Tons per sq. ft.

Coffordams: For Coffordams – see Special Provisions.

Removal of Existing Structure: After serving as a temporary crossing, the existing bridge consisting of 3 @ 40' I Beam Spans; 1 @ 200' thru steel truss, and 7 @ 40' I Beam Spans; Concrete Piers for truss, Creosote Pile Bents and Caps for I Beams, and a Roadway width of 15', shall be removed. See Specifications & Special Provisions

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N.C.	B-1511101 B-1511102
F. A. PROJECT		BRS-S78 (2) & BR-S78 (2)

SHEET No 42 of 82



LONG CHORD LAYOUT

End Bent #1 and Bents #1 thru #10 are on radial lines. Bent #11 and End Bent #2 are parallel to tangent to Curve Line Y1 @ Sta. 38+02.40 -L6.

Revision #1 - Revised to change quantities related to change in Bent #10 footings and add foundation load to notes 9-27-74 BY RG BY GTD

Rev. "2" Revised To Change Reinforcing Steel Weight In End Bent #1 By GTL /By RG Jan 6, 1975

REV #3 - REVISED TO CHANGE TYPE AND QUANTITY OF RIP RAP AT END BENT #1. BY GTD /BY [illegible] JUNE 12, 1975

* Epoxy Coated Reinforcing Steel: For epoxy coated reinforcing steel, see Special Provisions.

Galvanized High Strength Bolts: For Galvanized High Strength Bolts, see Special Provisions.

TOTAL BILL OF MATERIAL See Summary Sheet No 75

	Class "AA" Concrete (Seal)	Class "A" Concrete	Class "AA" Concrete	Epoxy Coated Reinforcing Steel *	Reinforcing Steel	Structural Steel	H.P. 12 x 53 Steel Piles		Foundation Excavation	4" Concrete Slope Protection	Linseed Oil Concrete Protection	Removal of Existing Structure	Cofferdams	Concrete Rail	Plain Bridge Rip Rap Approach Class II Slabs
	Cu. Yds.	Cu. Yds.	Cu. Yds.	Lbs.	Lbs.	Approx. Lbs.	No.	Lin. Ft.	Cu. Yds.	Sq. Yds.	Gals.	Lump Sum	Lump Sum	Lin. Ft.	Sq. Yds. Lump Sum
Sample Reinf. Stl.					168										
Bent #1 Structure			262.8	33,900	203,499	1,107,000									
								351.32							
End Bent #1		137			3,369		11	345							1246.48 Lump Sum
Bent #2		120			5,532		15	300	235.04 45 38.26						
Bent #3	55.38	206			5,603		15	300	45 43.94						
Bent #4		111.59			18,488			211.60	60 21.20			Lump Sum			
Bent #5	55.20	111.74			18,669				60 22.88			Lump Sum			
Bent #6		110.70			19,018			262.18	60 29.69			Lump Sum			
Bent #7	56.12	81.9			8,058		18	360	40 57.72						
Bent #8		85.9			8,239		18	360	311.49 65 83.24						
Bent #9		88.2			10,345		18	360	325.42 65 78.04						
Bent #10		96.9			10,930		18	270	257.12 65 91.31						
Bent #11		77 76.96			13,308			302.68	200 160.27						
End Bent #2		120 57.80			10,357		18	450	55 54.21						
		155			3,293		11	495		341.88					Lump Sum
								456.49							
Curved End Walls			0.8		65										
TOTAL	166.7	820.29 855	293.6	138,900	338,762 338,793	1,107,000	142	3300	680.76 660	341.88 330	110 102	Lump Sum	Lump Sum	1936.15 1934.99	1246.48 1170 Lump Sum

Replaces Bridge # 62-48-50

8.1511101
PROJECT NO. 8.1511102

CASWELL COUNTY

STATION: 38+02.40 -L- POC
9+91.03 Y1 POC

Sheet 2 of 2

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

GENERAL DRAWING OF BRIDGE OVER DAN RIVER AND NORFOLK-FRANKLIN-DANVILLE RAILROAD ON N.C. 62 BETWEEN MILTON AND VA. STATE LINE

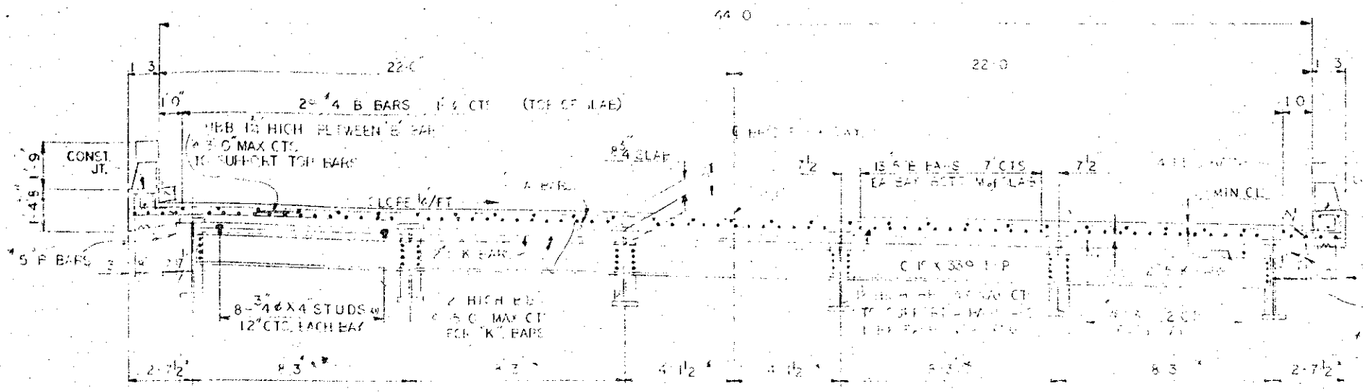
June 1974

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-2
1	RG	9-27-74	3	GTD	6-12-75	TOTAL SHEETS
2	GTL	1-6-75	4			39

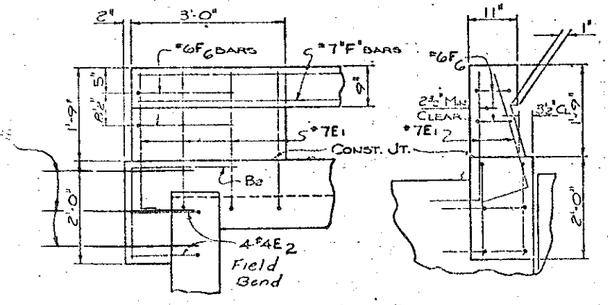
DRAWN BY: R. L. S. JHL DATE: June 1974
CHECKED BY: S. G. [illegible] DATE: JULY '74

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N. C.	8.1511101 8.1511102
F. A. PROJECT	BRS-974 (3) BRS-974 (6)	

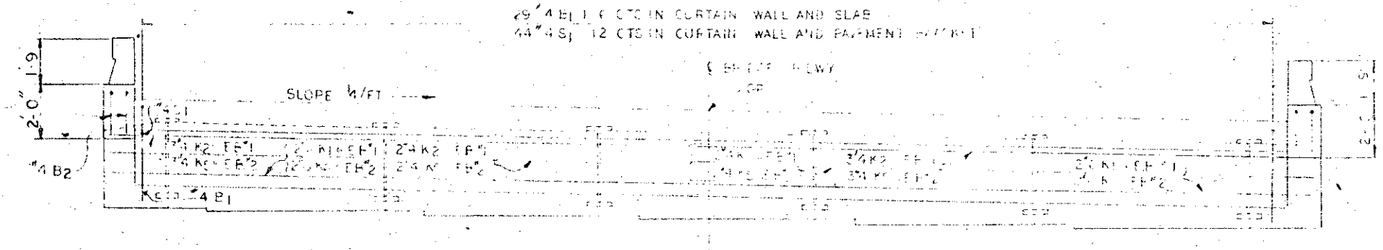
SHEET NO 43 OF 82



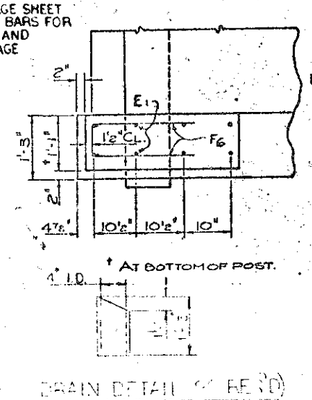
TYPICAL SECTION
SHOWING BENT DIAPHRAGM



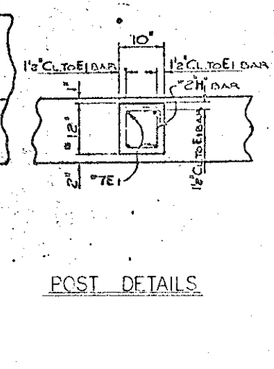
** NOTE: SEE STANDARD CONCRETE ANCHORAGE SHEET FOR LOCATION OF 6 BARS FOR WINGWALLS, CURBS AND RAIL ANCHORAGE ASSEMBLY

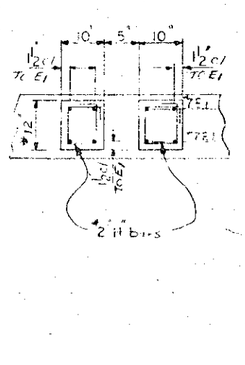


END VIEW



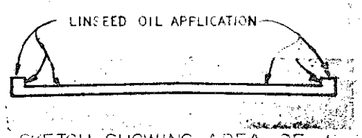
POST DETAILS



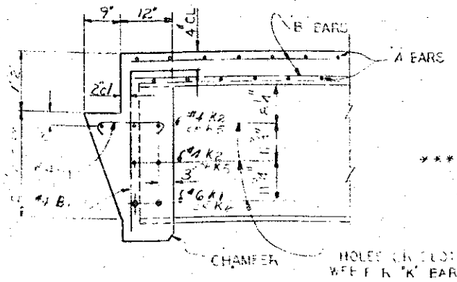


DRAIN DETAIL (2 REQ'D)

DRAINS SHALL BE OF PVC PLASTIC PIPE. TOP OF DRAINS TO BE SET ½" BELOW SURFACE OF SLAB.



SKETCH SHOWING AREA OF LINSEED OIL APPLICATION

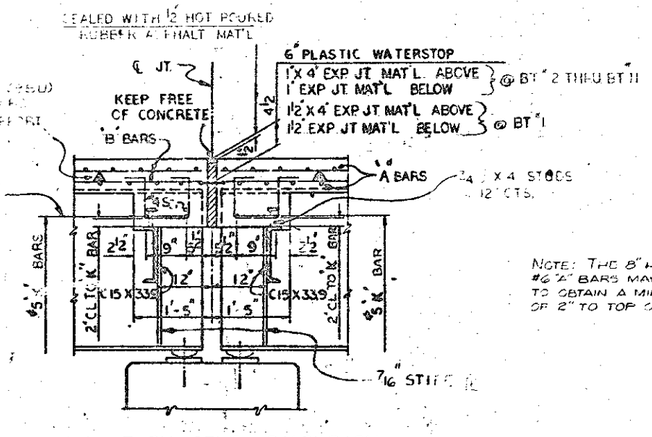


SECTION THRU CURTAIN WALL

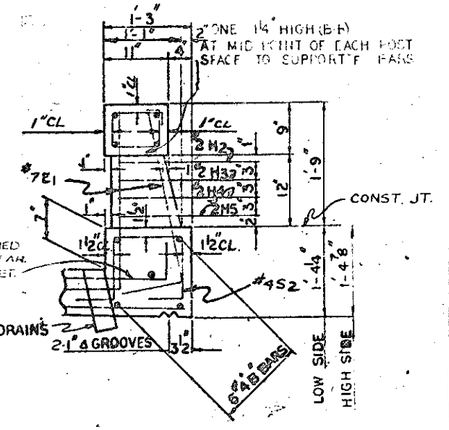
*** BEAM SPLICES (IF REQ'D) 24" HIGH BETWEEN 'B' BARS 3'-0" MAX CTS TO SUPPORT TOP BARS

HOLES IN FLOOR IN WEB FOR 'K' BAR

*** C.I.P. BEAM FOR SPLICE (IF REQ'D) SEE SHEET "A" FOR DETAILS



SECTION THRU BENT DIAPHRAGM



NOTE: THE 8" HOOK ON #6 'A' BARS MAY BE TURNED TO OBTAIN A MINIMUM CLEAR OF 2" TO TOP OF PARAPET.

SECTION THRU PARAPET & RAIL

8.1511101
PROJECT NO. 8.1511102
CASWELL COUNTY
STATION: 38+02.1 -L-6

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

SUPERSTRUCTURE TYPICAL SECTIONS

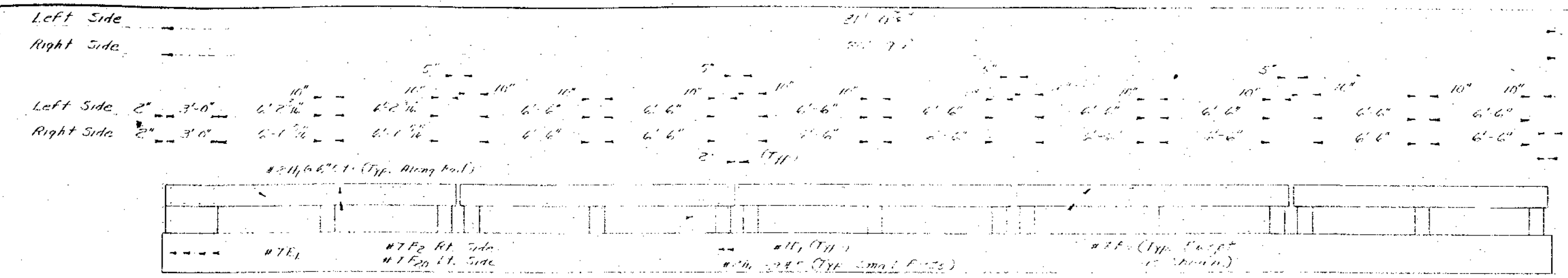
DECEMBER 1972

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-8
1			3			TOTAL SHEETS
2			4			39

DRAWN BY: [illegible] DATE: 6-72
CHECKED BY: [illegible] DATE: June 73
CHECKED BY: [illegible]

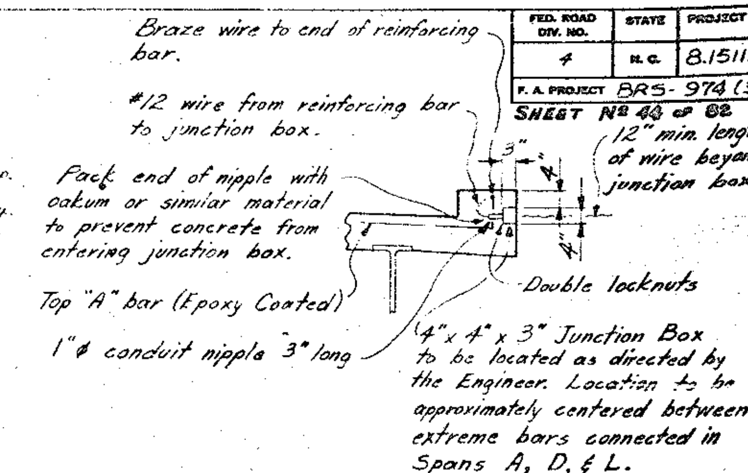
FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N.C.	8.1511101
F. A. PROJECT	BRS-974 (3)	

SHEET Nº 44 OF 82



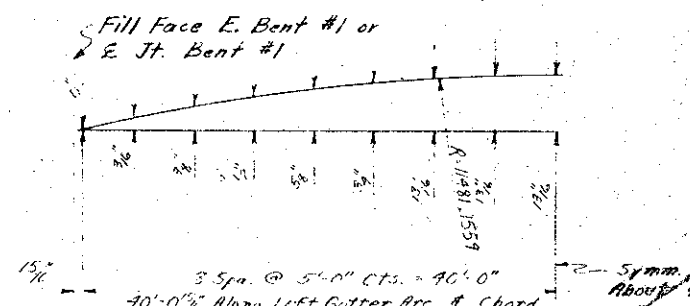
NOTE: The dimensions shown above are arc lengths taken along the inside face of the parapet.

ELEVATION - SPAN "A"

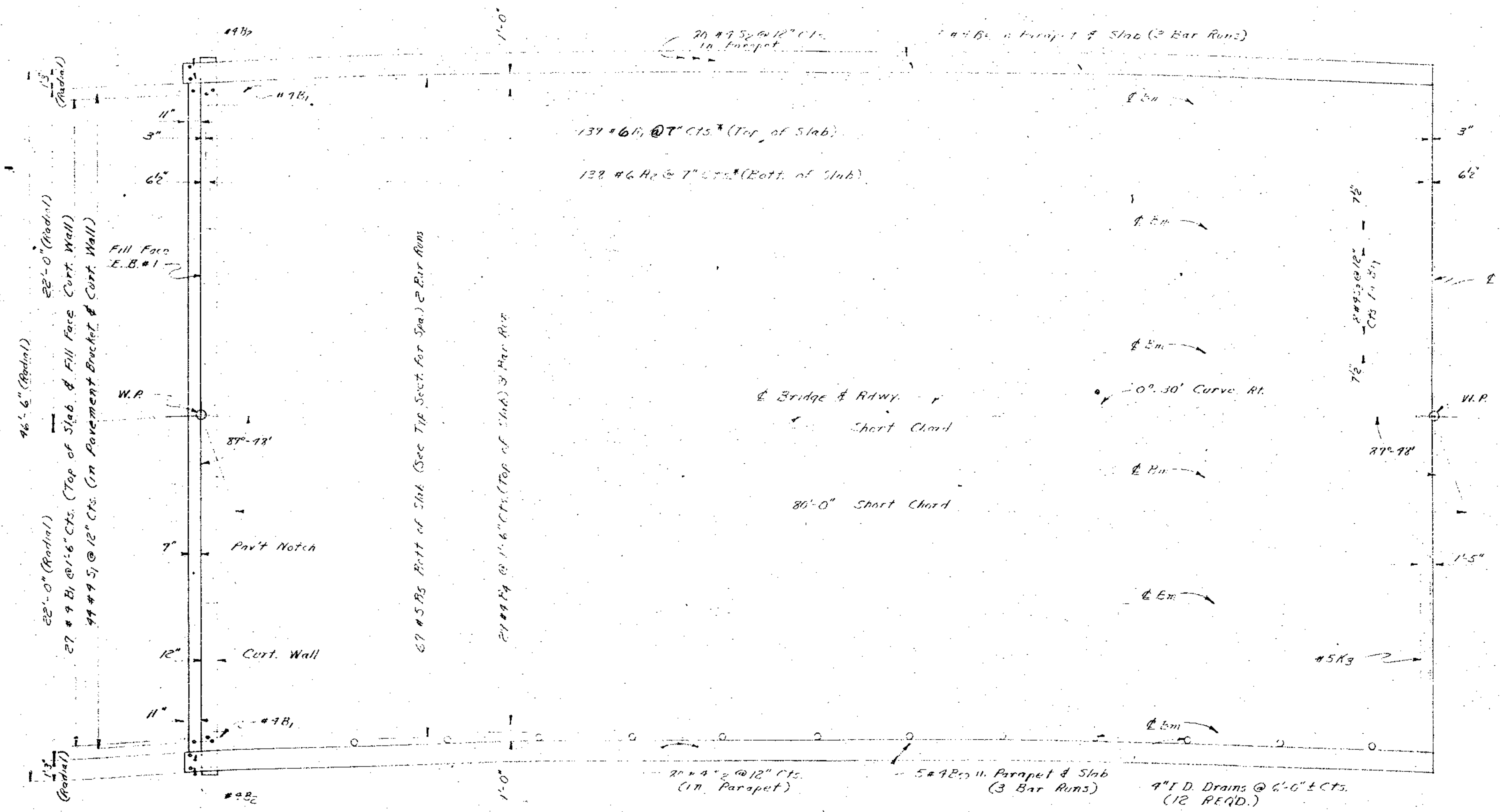


PART SECTION THRU PARAPET SHOWING TEST LEAD ATTACHMENT TO REINFORCING STEEL

Note: For test lead attachment, see Special Provisions.

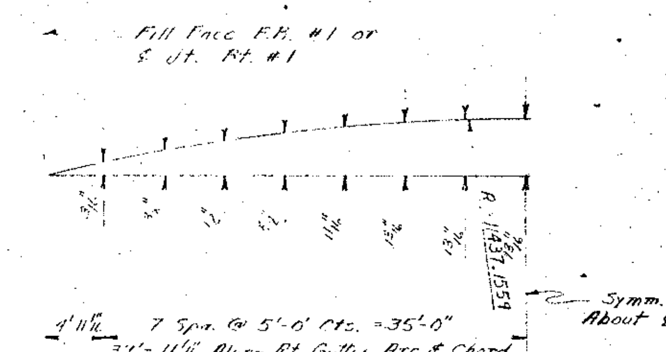


LEFT SIDE GUTTER CURVE OFFSETS



PLAN - SPAN "A"

*NOTE: "A" bars shall be placed perpendicular to ¢ short chord & spaced along the short chord except for the last four bars @ each end of span. These bars are to be flared @ 5" cts. along short chord.



RIGHT SIDE GUTTER CURVE OFFSETS

NOTE: The curve offsets are measured from the short chord which is measured from the fill face of E. Bt. #1 to ¢ of Jt. Bt. #1 for Span "A".

PROJECT NO. 8.1511101

CASWELL COUNTY

STATION: 38+02.40-L

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

SUPERSTRUCTURE SPAN "A"

Dec. 197

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

SH. NO. S
TOTAL SHS. 3

DRAWN BY G. Lane DATE Dec. 1972
CHECKED BY R. H. … DATE June 73
CHECKED BY K. H…

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N.C.	B-1511101 B-1511102
F. A. PROJECT		BRS 974 (3) RS 974 (3)

SHEET No 45 of 82

LEFT SIDE
RIGHT SIDE

RIGHT SIDE 7.54
LEFT SIDE 7.54

NOTE: THE DIMENSIONS SHOWN ABOVE ARE ARC LENGTHS TAKEN ALONG THE INSIDE FACE OF THE PARAPET

ELEVATION

℄ EXP JT

22'-0" (RADIAL)

WORK POINT

℄ EXP JT

℄ BRG

"BK2"

℄ EM

℄ EP FOR R'WAY

WORK POINT

℄ EM

℄ EM

℄ EXP JT

℄ EM

PLAN

NOTE: SEE SPAN A AND SPECIAL PROVISION FOR TEST PILE ATTACHMENT TO REINFORCING BARS IN SPAN B.

LEFT SIDE GUTTER SCALE OFFSETS

RIGHT SIDE GUTTER SCALE OFFSETS

8.1511101
PROJECT NO. 8.1511102
CALDWELL COUNTY
STATION: 78+12.40 -L-

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

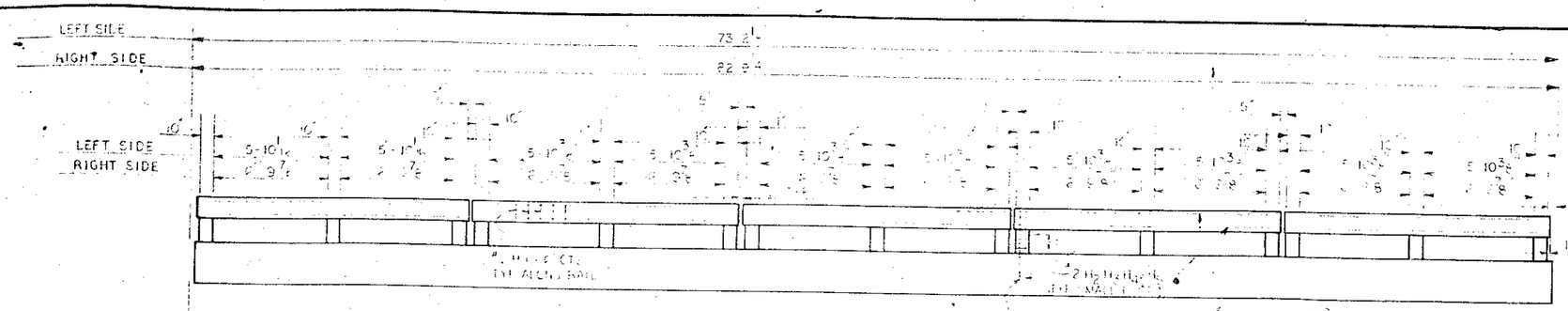
SUPERSTRUCTURE
SPAN B THRU J

DRAWN BY: DEC DATE:
CHECKED BY: DATE: JUNE 73

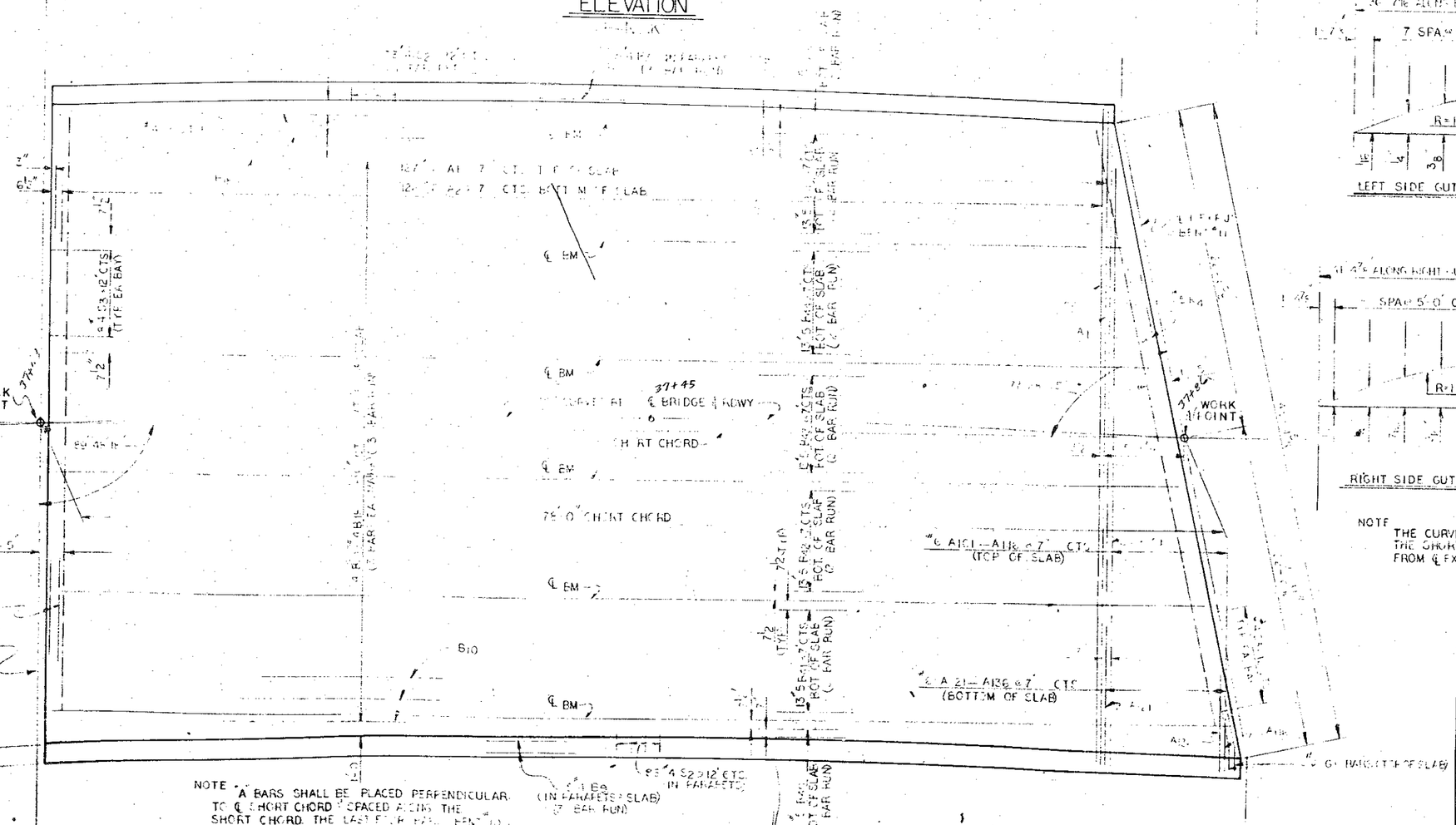
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N. C.	8.1511102
F. A. PROJECT	RS-974 (4)	

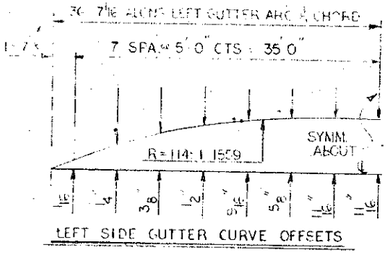
SHEET No 46 OF 82

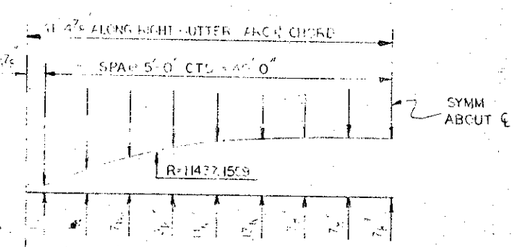


ELEVATION



PLAN
SPAN "K"





NOTE
THE CURVE OFFSETS ARE MEASURED FROM THE SHORT CHORD WHICH IS MEASURED FROM ℄ EXP JT @ BT "0" TO ℄ EXP JT @ BT "11"

PROJECT No. 8.1511102
CASWELL COUNTY
STATION: 38+02.40 - L6

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

SUPERSTRUCTURE
SPAN "K"

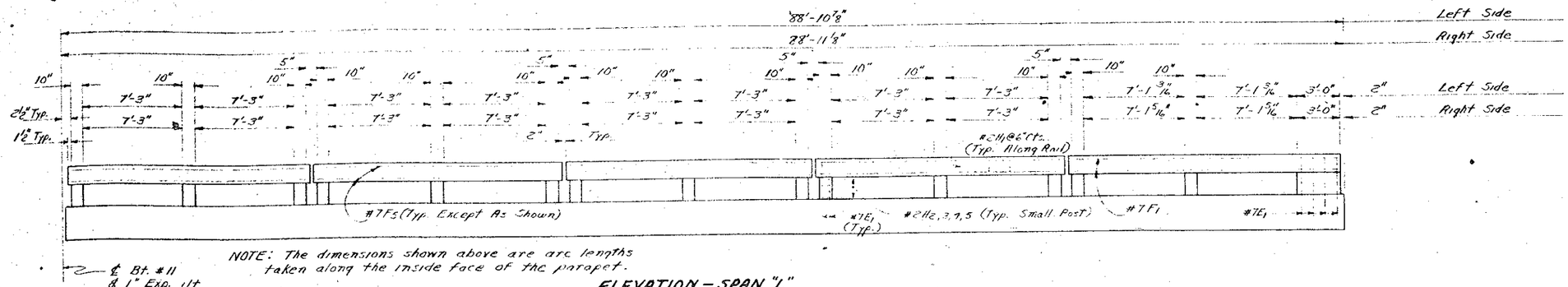
JANUARY 197

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

DRAWN BY J.H. LEE DATE JAN-1974
CHECKED BY R.H. Leigh DATE June 73

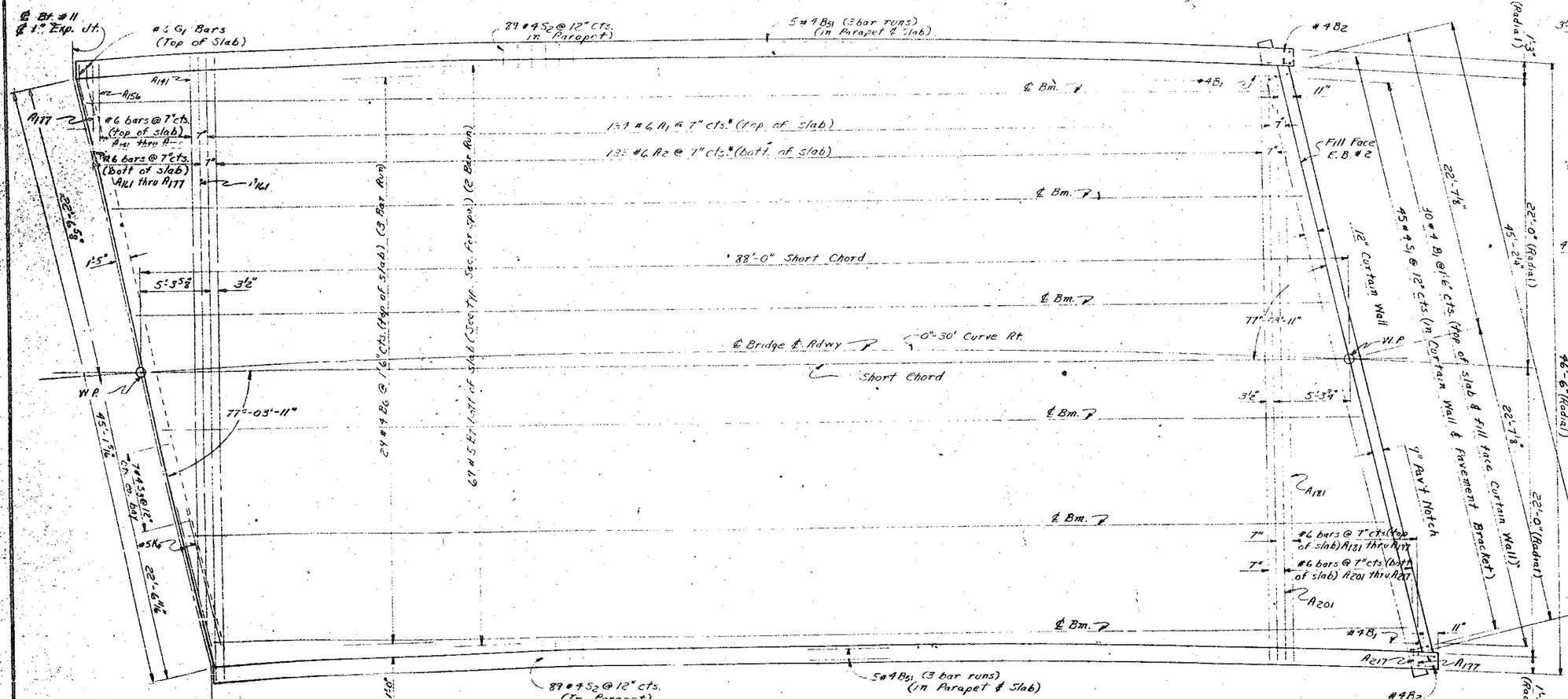
FED. ROAD SEC. NO.	STATE	PROJECT NO.
7	N.C.	8.1511102
R.A. PROJECT	RS-974(4)	

SHEET NO 47 OF 82



NOTE: The dimensions shown above are arc lengths taken along the inside face of the parapet.

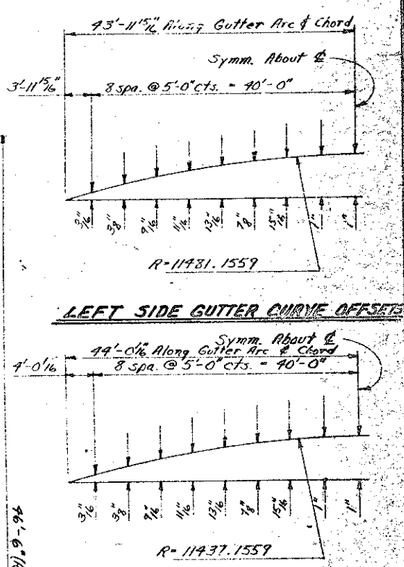
ELEVATION – SPAN "L"



* NOTE: "A" bars shall be placed perpendicular to ℄ short chord & spaced along the short chord.

NOTE: SEE SPAN A AND SPECIAL PROVISIONS FOR TEST LEAD ATTACHMENT TO REINFORCING BARS.

PLAN – SPAN "L"



RIGHT SIDE GUTTER CURVE OFFSETS

Note: The curve offsets are measured from the short chord which is measured from the ℄ of Brg. #11 to the fill face @ E.B. #2.

PROJECT NO. 8.1511102

CASWELL COUNTY

STATION: 38+02.40-L-

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

SUPERSTRUCTURE SPAN "L"

Jan. 1973

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

DRAWN BY: [illegible] DATE: 4/20 [illegible]
CHECKED BY: [illegible] DATE: [illegible]

S-12
39

SPAN A

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
* A1	139	6	1	47- 6	9,917
A2	138	6	STR	46- 2	9,569
B4	87	4	STR	27- 7	1,603
B5	138	5	STR	46- 5	5,865
B50	30	4	STR	27- 7	553
B3	138	5	STR	46- 5	5,865
B50	30	4	STR	27- 7	553
E2	8	4	STR	3- 5	18
K1	4	6	STR	24-1	145
K2	10	4	STR	23-9	159
K3	4	5	STR	21-4	89
B1	44	4	7	2:0	59
B2	140	4	5	4:2	445
B3	40	4	4	3:7	96

* EPOXY COATED REINFORCING STEEL LBS 11,520
Reinforcing Steel Lbs. 17,114
Class AA Concrete Cu Yds. 112.1

BILL OF MATERIAL FOR CONCRETE POSTS & RAIL

E1	128	7	2	3- 5	894
F2	6	7	STR	15- 6	1014
F3	28	7	STR	15- 11	1,014
F4	4	6	STR	5- 8	34
H1	320	2	6	3- 3	176
H2	28	2	6	2-11	14
H3	28	2	6	3- 1	14
H4	28	2	6	3- 2	15
H5	28	2	6	3- 4	16

Reinforcing Steel lbs. 2451
Class AA Concrete Cu Yds. 5.0
Concrete Rail Lin. Ft. 161.50

SPANS B thru J

One (1) Span Shown, Nine (9) Required

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
* A1	139	6	1	47- 6	9,917
A2	138	6	STR	46- 2	9,569
B4	87	4	STR	27- 7	1,603
B5	138	5	STR	46- 5	5,865
B50	30	4	STR	27- 7	553
B3	138	5	STR	46- 5	5,865
B50	30	4	STR	27- 7	553
E2	8	4	STR	3- 5	18
K1	4	6	STR	24-1	145
K2	10	4	STR	23-9	159
K3	4	5	STR	21-4	89
B1	44	4	7	2:0	59
B2	140	4	5	4:2	445
B3	40	4	4	3:7	96

* EPOXY COATED REINFORCING STEEL LBS 11,520
Reinforcing Steel lbs. 16,801
Class AA Concrete Cu Yds. 106.1

BILL OF MATERIAL FOR CONCRETE POSTS & RAIL

E1	120	7	2	3- 5	838
F6	46	7	STR	15- 7	1,197
F40	4	7	STR	15- 5	126
H1	320	2	6	3- 3	176
H2	28	2	6	2-11	14
H3	20	2	6	3- 1	15
H4	33	2	6	3- 2	16
H5	33	2	6	3- 4	17

Reinforcing Steel lbs. 2348
Class AA Concrete Cu Yds. 4.8
Concrete Rail Lin. Ft. 160.00

SPAN K

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
* A1	127	6	1	47- 6	9,081
A2	126	6	STR	46- 2	8,737
A101	1	6	3	43- 2	65
A102	1	6	3	40- 6	61
A103	1	6	3	37-11	57
A104	1	6	3	35- 3	53
A105	1	6	3	32- 8	49
A106	1	6	3	30- 0	45
A107	1	6	3	27- 9	41
A108	1	6	3	24- 9	37
A109	1	6	3	22- 2	33
A110	1	6	3	19- 6	29
A111	1	6	3	16-11	25
A112	1	6	3	14- 4	22
A113	1	6	3	11- 8	18
A114	1	6	3	9- 1	14
A115	1	6	3	6- 5	10
A116	1	6	3	3-10	6
A121	1	6	STR	43- 9	66
A122	1	6	STR	41- 2	62
A123	1	6	STR	38- 7	58
A124	1	6	STR	35-11	54
A125	1	6	STR	33- 4	50
A126	1	6	STR	30- 8	46
A127	1	6	STR	28- 1	42
A128	1	6	STR	25- 5	38
A129	1	6	STR	22-10	34
A130	1	6	STR	20- 2	30
A131	1	6	STR	17- 7	26
A132	1	6	STR	14-11	22
A133	1	6	STR	12- 4	19
A134	1	6	STR	9- 8	15
A135	1	6	STR	7- 1	11
A136	1	6	STR	4- 5	7
B9	15	4	STR	29- 4	286
B10	9	4	STR	28- 3	170
B11	9	4	STR	27-11	168
B12	9	4	STR	27- 7	166
B13	9	4	STR	27- 3	164
B14	9	4	STR	26-11	162
B15	9	4	STR	26- 7	160
B16	9	4	STR	26- 3	158
B17	9	4	STR	25-11	156
B18	9	4	STR	25- 7	154
B19	6	4	STR	25- 3	101

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
B39	15	4	STR	25- 2	252
B40	4	5	STR	42- 2	176
B41	26	5	STR	42- 0	1,139
B42	26	5	STR	41- 1	1,116
B43	26	5	STR	40- 2	1,089
B44	26	5	STR	39- 3	1,066
B45	26	5	STR	38- 5	1,042
B46	4	5	STR	37- 6	156
* B1	2	6	9	6-0	18
K3	4	5	STR	21- 4	89
K4	4	5	STR	22- 0	92
S2	156	4	5	4- 2	439
S3	80	4	4	3- 7	191

* EPOXY COATED REINFORCING STEEL LBS 11,203
Reinforcing Steel lbs. 5,439
Class AA Concrete Cu Yds. 103.2

BILL OF MATERIAL FOR CONCRETE POSTS & RAIL

E1	120	7	2	3- 5	838
F7	20	7	STR	16- 0	656
F70	20	7	STR	16- 2	579
H1	310	2	6	3- 3	168
H2	30	2	6	2-11	15
H3	30	2	6	3- 1	15
H4	30	2	6	3- 2	16
H5	30	2	6	3- 4	17

Reinforcing Steel lbs. 2302
Class AA Concrete Cu Yds. 4.7
Concrete Rail Lin. Ft. 155.99

SPAN L

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
* A1	134	6	1	47- 6	9,560
A2	133	6	STR	46- 2	9,223
A141	1	6	3	43- 3	65
A142	1	6	3	40- 8	61
A143	1	6	3	38- 2	57
A144	1	6	3	35- 7	53
A145	1	6	3	33- 1	50
A146	1	6	3	30- 6	46
A147	1	6	3	28- 0	42
A148	1	6	3	25- 5	38
A149	1	6	3	22-11	34
A150	1	6	3	20- 4	31
A151	1	6	3	17-10	27
A152	1	6	3	15- 3	23
A153	1	6	3	12- 9	19
A154	1	6	3	10- 3	15
A155	1	6	3	7- 8	12
A156	1	6	3	5- 2	8
A161	1	6	STR	43-10	66
A162	1	6	STR	41- 3	62
A163	1	6	STR	38- 9	58
A164	1	6	STR	36- 3	54
A165	1	6	STR	33- 8	51
A166	1	6	STR	31- 2	47
A167	1	6	STR	28- 7	43
A168	1	6	STR	26- 1	39
A169	1	6	STR	23- 6	35
A170	1	6	STR	21- 0	32
A171	1	6	STR	18- 5	28
A172	1	6	STR	15-11	24
A173	1	6	STR	13- 4	20
A174	1	6	STR	10-10	16
A175	1	6	STR	8- 3	12
A176	1	6	STR	5- 9	9
A177	1	6	STR	3- 2	5
A181	1	6	3	43- 3	65
A182	1	6	3	40- 8	61
A183	1	6	3	38- 2	57
A184	1	6	3	35- 7	53
A185	1	6	3	33- 1	50
A186	1	6	3	30- 7	46
A187	1	6	3	28- 0	42
A188	1	6	3	25- 6	38
* A189	1	6	3	23-11	36
A190	1	6	3	20- 5	31
A191	1	6	3	17-10	27
A192	1	6	3	15- 3	23
A193	1	6	3	12-10	19
A194	1	6	3	10- 3	15
A195	1	6	3	7- 9	12
A196	1	6	3	5- 2	8
A197	1	6	3	2- 8	4

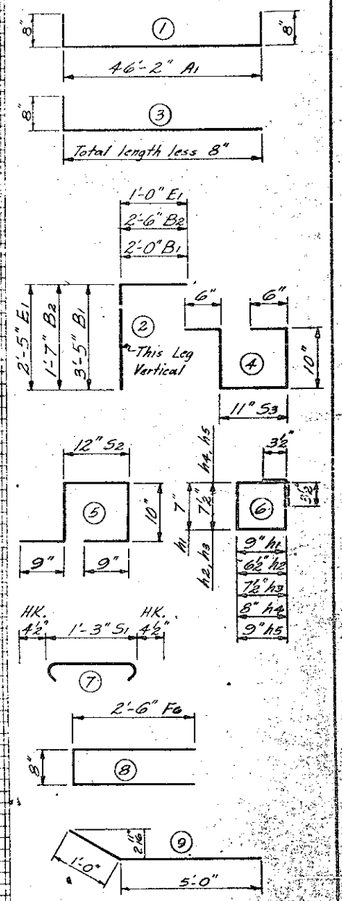
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
A201	1	6	STR	43-10	66
A202	1	6	STR	41- 4	62
A203	1	6	STR	38- 9	58
A204	1	6	STR	36- 3	54
A205	1	6	STR	33- 8	51
A206	1	6	STR	31- 2	47
A207	1	6	STR	28- 7	43
A208	1	6	STR	26- 1	39
A209	1	6	STR	23- 7	35
A210	1	6	STR	21- 0	32
A211	1	6	STR	18- 6	28
A212	1	6	STR	15-11	24
A213	1	6	STR	13- 5	20
A214	1	6	STR	10-10	16
A215	1	6	STR	8- 4	13
A216	1	6	STR	5-10	9
A217	1	6	STR	3- 3	5
B1	30	4	2	5-5	109
B2	4	4	2	4-1	11
B6	87	4	STR	30-2	1,753
B7	138	5	STR	45-3	6,513
B51	30	4	STR	30-2	605
* B1	2	6	9	6-0	18
K4	4	5	STR	22- 0	92
K5	10	4	STR	24- 4	163
K6	4	6	STR	24- 9	147
S1	45	4	7	2- 0	60
S2	138	4	5	4- 2	439
S3	40	4	4	3- 7	96
E2	8	4	STR	3- 5	18

* EPOXY COATED REINFORCING STEEL LBS 12,497
REINFORCING STEEL LBS. 18,737
CLASS AA CONCRETE CU YDS 122.6

BILL OF MATERIAL FOR CONCRETE POSTS & RAIL

E1	128	7	2	3- 5	894
F1	8	7	STR	18- 9	307
F5	32	7	STR	16-11	1,106
F6	4	6	8	5- 8	34
H1	356	2	6	3- 3	193
H2	28	2	6	2-11	14
H3	28	2	6	3- 1	14
H4	28	2	6	3- 2	15
H5	28	2	6	3- 4	16

Reinforcing Steel lbs. 2593
Class AA Concrete Cu Yds. 7.5
Concrete Rail Lin. Ft. 177.50



BAR TYPES

NOTE - ALL DIMENSIONS ARE OUT TO OUT.

* INDICATES EPOXY COATED REINFORCING STEEL. SEE SPECIAL PROVISIONS.

SUMMARY BILL OF MATERIAL

	* EPOXY COATED REINF. STEEL - LBS	Reinforcing Steel lbs.	Class "AA" Concrete Cu. Yds.	Structural Steel Approx. lbs.	Concrete Rail Lin. Ft.
SPAN A	11,520	17,114	112.1	88,600	161.50
SPAN B	11,520	16,801	106.1	90,500	160.00
SPAN C	11,520	16,801	106.1	90,500	160.00
SPAN D	11,520	16,801	106.1	90,500	160.00
SPAN E	11,520	16,801	106.1	90,600	160.00
SPAN F	11,520	16,801	106.1	90,600	160.00
SPAN G	11,520	16,801	106.1	90,600	160.00
SPAN H	11,520	16,801	106.1	90,700	160.00
SPAN I	11,520	16,801	106.1	90,700	160.00
SPAN J	11,520	16,801	106.1	90,700	160.00
SPAN K	11,203	16,439	103.2	91,500	155.99
SPAN L	12,497	18,737	122.6	111,500	177.50
TOTAL	138,900 ✓	203,499 ✓	1232.8 ✓	1107,000 ✓	~~1834.99~~ 1936.15 ✓

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

SUPERSTRUCTURE
BILL OF MATERIAL

Mar. 197

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

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N.C.	8.1511101
		8.1.1102

F. A. PROJECT BRZ-374(3)
BRZ-374(4)

SHEET NO 48 OF 82

SHEET NO. S-13
TOTAL SHEETS 89

8.1511101
PROJECT NO. 8.1511102
CASWELL COUNTY
STATION: 38+02.40 -L-

STD. BY K.G. PRIDGEN 3-71

DRAWN BY [illegible] DATE March 1971
CHECKED BY R.A. Hinson DATE June 72
DISTRICT ENGR. [illegible]

SPAN A

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
* A1	139	6	1	47-6	9,917
A2	138	6	STR	46-2	9,569
B6	87	5	STR	27-3	1,603
B5	138	5	STR	40-6	5,865
* B50	50	4	STR	27-7	553
E2	8	4	STR	3-5	18
K1	4	6	STR	24-1	145
K2	10	4	STR	23-9	159
K3	4	5	STR	21-4	89
S1	44	4	7	2-0	59
S2	140	4	5	4-2	445
S3	40	4	4	3-7	96

* EPOXY COATED REINFORCING STEEL LBS	11,520
Reinforcing Steel lbs.	17,114
Class AA Concrete Cu Yds.	112.1

SPANS B thru J

One (1) Span Shown, Nine (9) Required

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
* A1	139	6	1	47-6	9,917
A2	138	6	STR	46-2	9,569
B6	87	5	STR	27-3	1,603
B5	138	5	STR	40-6	5,865
* B50	50	4	STR	27-7	553
E2	8	4	STR	3-5	18
S2	140	4	5	4-2	445
S3	40	4	4	3-7	96

* EPOXY COATED REINFORCING STEEL LBS	11,520
Reinforcing Steel lbs.	16,801
Class AA Concrete Cu Yds.	106.1

SPAN K

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
* A1	127	6	1	47-6	9,061
A2	126	6	STR	46-2	8,737
A101	1	6	3	43-2	65
A102	1	6	3	40-6	61
A103	1	6	3	37-11	57
A104	1	6	3	35-3	53
A105	1	6	3	32-8	49
A106	1	6	3	30-0	45
A107	1	6	3	27-5	41
A108	1	6	3	24-9	37
A109	1	6	3	22-2	33
A110	1	6	3	19-6	29
A111	1	6	3	16-11	25
A112	1	6	3	14-4	22
A113	1	6	3	11-8	18
A114	1	6	3	9-1	14
A115	1	6	3	6-5	10
A116	1	6	3	4-10	8
A121	1	6	STR	43-9	66
A122	1	6	STR	41-2	62
A123	1	6	STR	38-7	58
A124	1	6	STR	35-11	54
A125	1	6	STR	33-4	50
A126	1	6	STR	30-8	46
A127	1	6	STR	28-1	42
A128	1	6	STR	25-5	38
A129	1	6	STR	22-10	34
A130	1	6	STR	20-2	30
A131	1	6	STR	17-7	26
A132	1	6	STR	14-11	22
A133	1	6	STR	12-4	19
A134	1	6	STR	9-8	15
A135	1	6	STR	7-1	11
A136	1	6	STR	4-5	7
B9	15	4	STR	28-6	284
B10	9	4	STR	28-3	170
B11	9	4	STR	27-11	169
B12	9	4	STR	27-7	166
B13	9	4	STR	27-3	165
B14	9	4	STR	26-11	162
B15	9	4	STR	26-7	160
B16	9	4	STR	26-3	158
B17	9	4	STR	25-11	156
B18	9	4	STR	25-7	154
B19	6	4	STR	25-3	101
B39	15	4	STR	25-2	252
B40	4	5	STR	42-2	176
B41	26	5	STR	42-0	1,139
B42	26	5	STR	41-1	1,114
B43	26	5	STR	40-2	1,089
B44	26	5	STR	39-3	1,064
B45	26	5	STR	38-5	1,042
B46	4	5	STR	37-6	156
G1	2	6	9	6-0	18
K3	4	5	STR	21-4	89
K6	4	5	STR	22-0	92
S2	156	4	5	4-2	436
S3	80	4	4	3-7	191

* EPOXY COATED REINFORCING STEEL LBS	11,203
Reinforcing Steel lbs.	6,439
Class AA Concrete Cu Yds.	103.2

SPAN L

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
* A1	136	6	1	47-6	9,520
A2	133	6	STR	46-2	9,223
A141	1	6	3	43-3	65
A142	1	6	3	40-8	61
A143	1	6	3	38-2	57
A144	1	6	3	35-7	53
A145	1	6	3	33-1	50
A146	1	6	3	30-6	46
A147	1	6	3	28-0	42
A148	1	6	3	25-5	38
A149	1	6	3	22-11	34
A150	1	6	3	20-4	31
A151	1	6	3	17-10	27
A152	1	6	3	15-3	23
A153	1	6	3	12-9	19
A154	1	6	3	10-3	15
A155	1	6	3	7-8	12
A156	1	6	3	5-2	8
A161	1	6	STR	43-10	66
A162	1	6	STR	41-5	62
A163	1	6	STR	38-9	58
A164	1	6	STR	36-3	54
A165	1	6	STR	33-8	51
A166	1	6	STR	31-2	47
A167	1	6	STR	28-7	43
A168	1	6	STR	26-1	39
A169	1	6	STR	23-6	35
A170	1	6	STR	21-0	32
A171	1	6	STR	18-5	28
A172	1	6	STR	15-11	24
A173	1	6	STR	13-4	20
A174	1	6	STR	10-10	16
A175	1	6	STR	8-3	12
A176	1	6	STR	5-9	9
A177	1	6	STR	3-2	5
A181	1	6	3	43-3	65
A182	1	6	3	40-8	61
A183	1	6	3	38-2	57
A184	1	6	3	35-7	53
A185	1	6	3	33-1	50
A186	1	6	3	30-7	46
A187	1	6	3	28-0	42
A188	1	6	3	25-6	38
A189	1	6	3	22-11	34
A190	1	6	3	20-5	31
A191	1	6	3	17-10	27
A192	1	6	3	15-4	23
A193	1	6	3	12-10	19
A194	1	6	3	10-3	15
A195	1	6	3	7-9	12
A196	1	6	3	5-2	8
A197	1	6	3	2-8	4

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
A201	1	6	STR	43-10	66
A202	1	6	STR	41-4	62
A203	1	6	STR	38-9	58
A204	1	6	STR	36-3	54
A235	1	6	STR	33-8	51
A206	1	6	STR	31-2	47
A207	1	6	STR	28-7	43
A208	1	6	STR	26-1	39
A209	1	6	STR	23-7	35
A210	1	6	STR	21-0	32
A211	1	6	STR	18-6	28
A212	1	6	STR	15-11	24
A213	1	6	STR	13-5	20
A214	1	6	STR	10-10	16
A215	1	6	STR	8-4	13
A216	1	6	STR	5-10	9
A217	1	6	STR	3-3	5
B1	30	4	2	5-5	109
B2	4	4	2	4-1	11
B6	87	4	STR	30-2	1,753
B7	138	5	STR	45-3	6,518
B51	30	4	STR	30-2	605
G1	2	6	9	6-0	18
K4	4	5	STR	23-0	92
K5	10	4	STR	24-4	163
K6	4	6	STR	24-9	149
S1	45	4	7	2-0	60
S2	138	4	5	4-2	439
S3	40	4	4	3-7	96
E2	8	4	STR	3-5	18

* EPOXY COATED REINFORCING STEEL LBS	13,497
REINFORCING STEEL LBS.	18,737
CLASS AA CONCRETE CU YDS	122.6

BILL OF MATERIAL FOR CONCRETE POSTS & RAIL

E1	128	7	2	3-5	896
F2	24	7	STR	18-9	307
F5	32	7	STR	16-11	1,106
F6	4	6	8	5-8	34
H1	329	2	6	3-3	174
H2	30	2	6	2-11	15
H3	30	2	6	3-1	15
H4	30	2	6	3-2	16
H5	30	2	6	3-4	17

Reinforcing Steel lbs.	2951
Class "AA" Concrete Cu Yds.	5.0
Concrete Rail Lin. Ft.	161.50

BILL OF MATERIAL FOR CONCRETE POSTS & RAIL

E1	120	7	2	3-5	838
F4	36	7	STR	15-7	1,167
F40	4	7	STR	15-5	126
H1	320	2	6	3-3	174
H2	30	2	6	2-11	15
H3	30	2	6	3-1	15
H4	30	2	6	3-2	16
H5	30	2	6	3-4	17

Reinforcing Steel lbs.	2348
Class "AA" Concrete Cu Yds.	4.8
Concrete Rail Lin. Ft.	160.00

BILL OF MATERIAL FOR CONCRETE POSTS & RAIL

E1	120	7	2	3-5	838
F7	20	7	STR	16-0	654
F70	20	7	STR	16-2	579
H1	310	2	6	3-3	168
H2	30	2	6	2-11	15
H3	30	2	6	3-1	15
H4	30	2	6	3-2	16
H5	30	2	6	3-4	17

Reinforcing Steel lbs.	2302
Class "AA" Concrete Cu Yds.	4.4
Concrete Rail Lin. Ft.	155.99

BILL OF MATERIAL FOR CONCRETE POSTS & RAIL

E1	128	7	2	3-5	896
F1	8	7	STR	18-9	307
F5	32	7	STR	16-11	1,106
F6	4	6	8	5-8	34
H1	366	2	6	3-3	193
H2	28	2	6	2-11	14
H3	28	2	6	3-1	14
H4	28	2	6	3-2	15
H5	28	2	6	3-4	16

Reinforcing Steel lbs.	2593
Class "AA" Concrete Cu Yds.	5.3
Concrete Rail Lin. Ft.	177.50

SUMMARY BILL OF MATERIAL

	* EPOXY COATED REINF. STEEL - LBS.	Reinforcing Steel lbs.	Class "AA" Concrete Cu. Yds.	Structural Steel Approx lbs.	Concrete Rail Lin. Ft.
SPAN A	11,520	17,114	112.1	88,200	161.50
SPAN B	11,520	16,801	106.1	90,500	160.00
SPAN C	11,520	16,801	106.1	90,500	160.00
SPAN D	11,520	16,801	106.1	90,500	160.00
SPAN E	11,520	16,801	106.1	90,600	160.00
SPAN F	11,520	16,801	106.1	90,600	160.00
SPAN G	11,520	16,801	106.1	90,600	160.00
SPAN H	11,520	16,801	106.1	90,700	160.00
SPAN I	11,520	16,801	106.1	90,700	160.00
SPAN J	11,520	16,801	106.1	90,700	160.00
SPAN K	11,203	16,439	103.2	91,500	155.99
SPAN L	12,497	18,737	122.6	111,500	177.50
TOTAL	138,900 ✓	203,499 ✓	1292.8 ✓	1107,000 ✓	~~1337.99~~ 1936.15 ✓

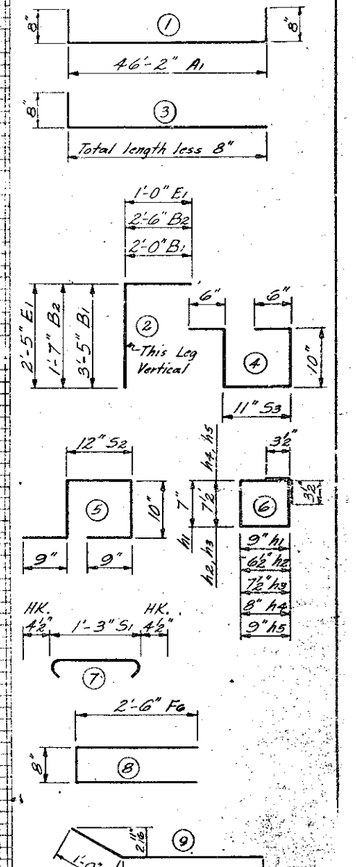
DRAWN BY	H. A. Hollowell
CHECKED BY	R. D. Taylor
DATE	March 1973
DATE	June 73

STL. BY K.G. PRICSEN 3-71

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N.C.	B-1511101
		B-1511102

F. A. PROJECT BRS-374(3) BS-374(4)

SHEET NO 48 OF 82



BAR TYPES

NOTE - ALL DIMENSIONS ARE OUT TO OUT

8.1511101

PROJECT NO. 8.1511102

CASWELL COUNTY

STATION: 38+02.40 -L-

* INDICATES EPOXY COATED REINFORCING STEEL. SEE SPECIAL PROVISIONS.

STATE OF NORTH CAROLINA

STATE HIGHWAY COMMISSION

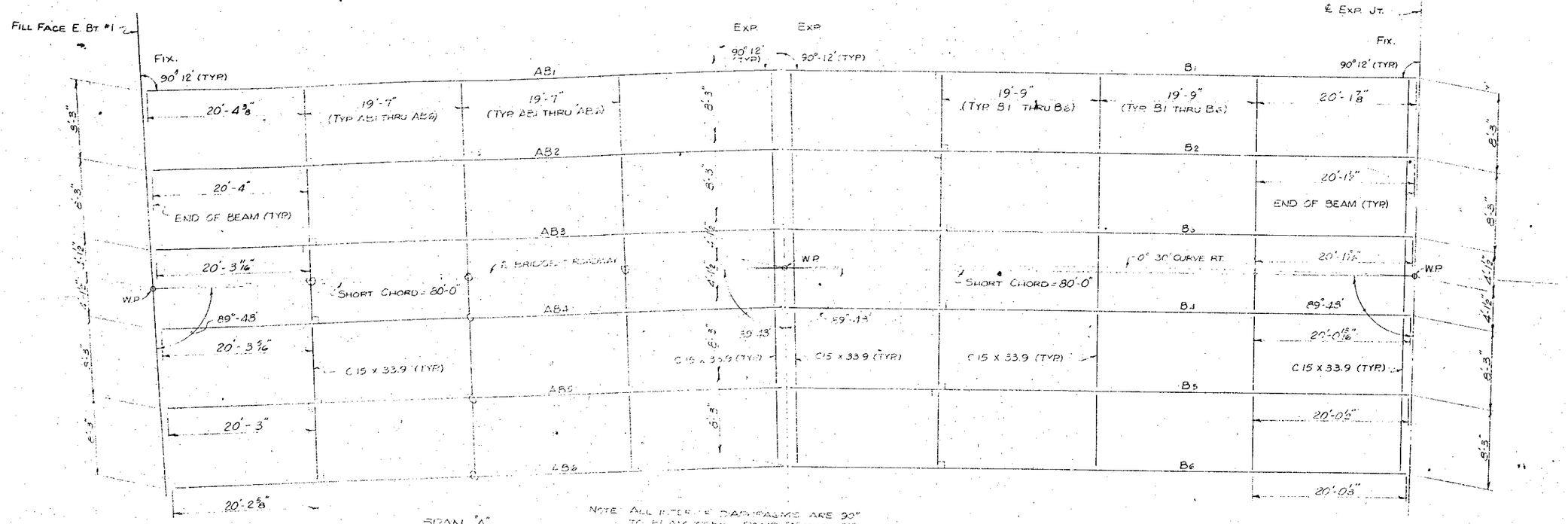
RALEIGH

SUPERSTRUCTURE BILL OF MATERIAL

Mar. 19

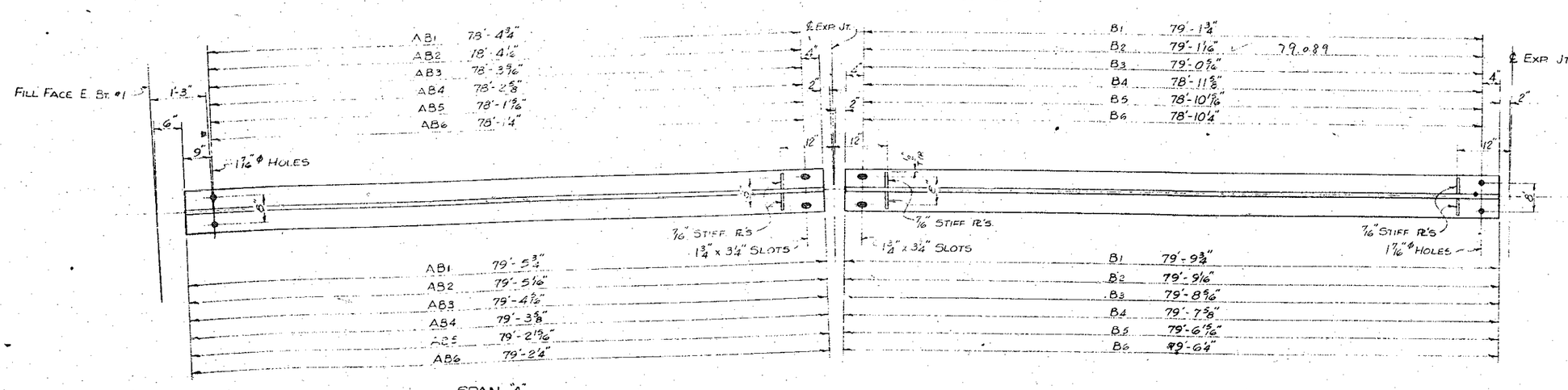
REVISIONS						SHEET NO
NO.	BY	DATE	NO.	BY	DATE	S-
1			3			TOT. SHEETS
2			4			3

Poor Print



Beam Layout

All beams, Spans "A" thru "J" are W36 x 135



Bottom Flange Detail

(Horizontal dimensions shown)

Drawn by:	Glenn Williams
Checked by:	R. F. C. Hall
Date:	Jan. 1973
Date:	June 29

Fed. Road Div. No.	State	Project No.
4	N. C.	8.1511101
		8.1511102
F. A. Project		BRS-274(3)
		BRS-274(4)

Sheet No 49 of 82

Project No. 8.1511101
8.1511102

Caswell County

Station: 38 + 02.40-L-6

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

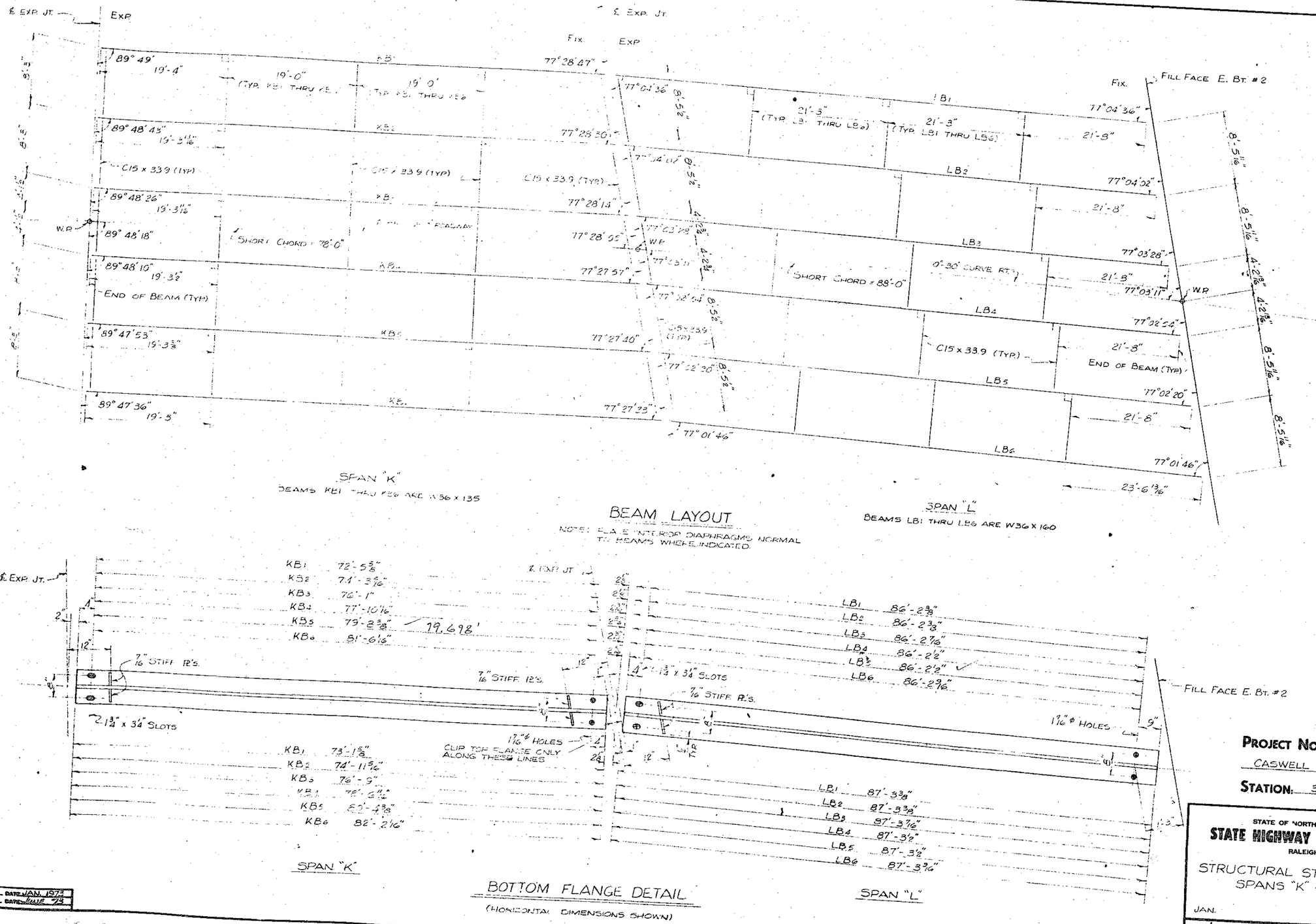
STRUCTURAL STEEL DETAILS
SPANS "A" & "B" THRU "J"

JAN. 1973

Revisions						Sheet No.	Total Sheets
No.	By	Date	No.	By	Date	S-7	39
1			3				
2			4				

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N. C.	8.1511102
F. A. PROJECT	RS-974 (4)	

SHEET No 50 of 82



SPAN "K"

BEAMS KB1 THRU KB6 ARE W36 x 135

SPAN "L"

BEAMS LB1 THRU LB6 ARE W36 x 160

BEAM LAYOUT

NOTE: ELIMINATE INTERIOR DIAPHRAGMS NORMAL TO BEAMS WHERE INDICATED.

SPAN "K"

BOTTOM FLANGE DETAIL

(HORIZONTAL DIMENSIONS SHOWN)

SPAN "L"

DRAWN BY GLENN WILLIAMS DATE JAN. 1973

CHECKED BY [illegible] DATE JUNE 73

PROJECT NO. 8.1511102

CASWELL COUNTY

STATION: 38+02.40 -L-6

STATE OF NORTH CAROLINA

STATE HIGHWAY COMMISSION

RALEIGH

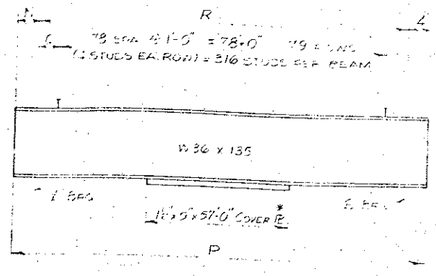
STRUCTURAL STEEL DETAILS SPANS "K" & "L"

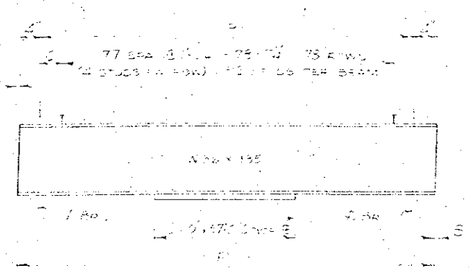
JAN. 1973

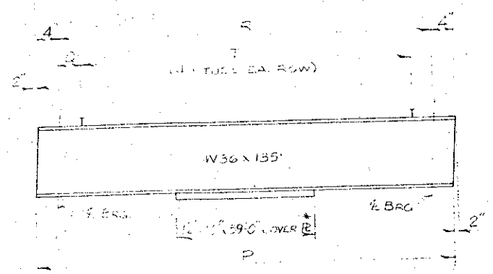
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-15
1			3			TOTAL SHEETS
2			4			39

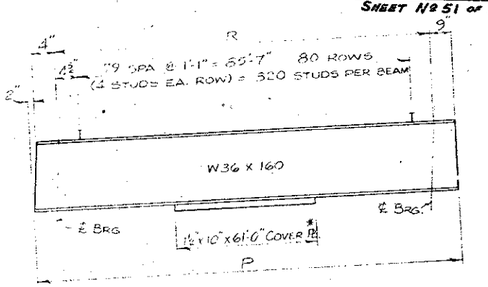
FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N. C.	8.1511101 8.1511102
F. A. PROJECT	BRS-374(3) RS-374(4)	

SHEET No 51 OF 82









SPAN "A"				
BEAM	P	Q	R	N
AB1	79'-5½"	4½"	78'-4¾"	9"
AB2	79'-5⅛"	4"	79'-4⅛"	9"
AB3	79'-4⅝"	1½"	78'-3⅝"	9"
AB4	79'-3⅜"	1⅛"	78'-2⅜"	9"
AB5	79'-2⅛"	1"	78'-1⅛"	9"
AB6	79'-1"	¾"	78'-0"	9"

SPAN B C D				
BEAM	P	Q	R	N
B1	79'-9¾"	6½"	79'-8¾"	4"
B2	79'-9⅛"	6"	79'-8⅛"	4"
B3	79'-8⅜"	5⅝"	79'-7⅜"	4"
B4	79'-7⅝"	5⅛"	79'-6⅝"	4"
B5	79'-6⅞"	4⅝"	79'-6⅛"	4"
B6	79'-6¼"	4⅛"	79'-5⅜"	4"

SPAN E				
BEAM	P	Q	R	S
EB1	79'-10⅛"	3½"	79'-9¼"	1⅜"
EB2	79'-9⅝"	3"	79'-8⅝"	1⅜"
EB3	79'-9⅛"	2½"	79'-8⅛"	1⅜"
EB4	79'-8⅝"	2"	79'-7⅝"	1⅜"
EB5	79'-8⅛"	1½"	79'-7⅛"	1⅜"
EB6	79'-7⅝"	1"	79'-6⅝"	1⅜"

SPAN F				
BEAM	P	Q	R	S
FB1	79'-9⅝"	3½"	79'-8¼"	1⅜"
FB2	79'-9⅛"	3"	79'-7⅝"	1⅜"
FB3	79'-8⅝"	2½"	79'-7⅛"	1⅜"
FB4	79'-8⅛"	2"	79'-6⅝"	1⅜"
FB5	79'-7⅝"	1½"	79'-6⅛"	1⅜"
FB6	79'-7⅛"	1"	79'-5⅝"	1⅜"

SPAN G				
BEAM	P	Q	R	S
GB1	79'-10⅞"	4⅝"	79'-9¾"	1⅜"
GB2	79'-9⅜"	4"	79'-8⅜"	1⅜"
GB3	79'-8⅞"	3½"	79'-7⅞"	1⅜"
GB4	79'-8⅜"	3"	79'-7⅜"	1⅜"
GB5	79'-7⅞"	2½"	79'-6⅞"	1⅜"
GB6	79'-7¼"	2"	79'-6¼"	1⅜"

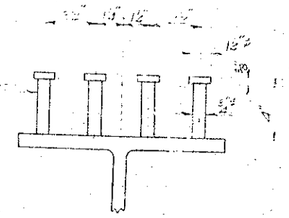
SPAN H				
BEAM	P	Q	R	S
HB1	79'-10⅛"	3½"	79'-9¼"	1⅜"
HB2	79'-10"	3"	79'-8⅝"	1⅜"
HB3	79'-9⅝"	2½"	79'-8⅛"	1⅜"
HB4	79'-9⅛"	2"	79'-7⅝"	1⅜"
HB5	79'-8⅝"	1½"	79'-7⅛"	1⅜"
HB6	79'-8⅛"	1"	79'-6⅝"	1⅜"

SPAN I				
BEAM	P	Q	R	S
IB	79'-10⅛"	3½"	79'-9¼"	1⅜"
IB2	79'-9⅝"	3"	79'-8⅝"	1⅜"
IB3	79'-9⅛"	2½"	79'-8⅛"	1⅜"
IB4	79'-8⅝"	2"	79'-7⅝"	1⅜"
IB5	79'-8¼"	2"	79'-7⅛"	1⅜"
IB6	79'-7⅝"	2"	79'-6⅝"	1⅜"

SPAN J				
BEAM	P	Q	R	S
JB1	79'-11⅛"	4"	79'-10"	2"
JB2	79'-10⅛"	3½"	79'-9"	2"
JB3	79'-9⅛"	3"	79'-8"	2"
JB4	79'-9⅛"	3"	79'-8"	2"
JB5	79'-8⅛"	2½"	79'-7"	2"
JB6	79'-7⅜"	2"	79'-6"	2"

SPAN "K"						
BEAM	P	Q	R	SPACING	RWS	STUDS/BM.
KB1	73'-3"	4"	72'-7"	69 SPA @ 1'-0½" = 71'-10½"	70	280
KB2	75'-0⅜"	5⅛"	74'-4⅜"	72 SPA @ 1'-0¼" = 73'-6"	73	292
KB3	76'-10⅛"	4"	76'-2⅛"	74 SPA @ 1'-0¼" = 75'-6¼"	75	300
KB4	78'-6⅛"	5⅛"	78'-0⅛"	74 SPA @ 1'-0¼" = 77'-1"	75	300
KB5	80'-5⅜"	5"	79'-9⅜"	75 SPA @ 1'-0" = 75'-0"	80	320
KB6	82'-3⅝"	6"	81'-7⅝"	79 SPA @ 1'-0¼" = 80'-7¾"	80	320

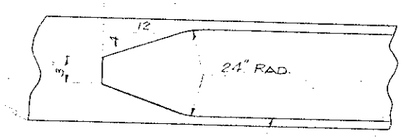
SPAN "L"			
BEAM	P		R
LB1	87'-7"		86'-4"
LB2	87'-7⅛"		86'-4⅛"
LB3	87'-7⅛"		86'-4⅛"
LB4	87'-7⅛"		86'-4⅛"
LB5	87'-7⅛"		86'-4⅜"
LB6	87'-7⅛"		86'-4⅛"



DETAIL - STUDS ON BEAMS

BEAM ELEVATIONS

* COVER PLATES ARE SYMMETRICAL ABOUT ℄ BETWEEN BEARINGS.
BEAM DIMENSIONS SHOWN ARE ALONG SLOPE OF BEAMS.



COVER PLATE DETAIL

NOTE: CAMBERED BEAM LENGTHS SHALL BE ADJUSTED AND BEARINGS ARE TO BE PLACED ON THE CAMBERED BEAM SO AS TO BE ALIGNED WITH THE ANCHORS AFTER THE DEAD LOAD DEFLECTION HAS OCCURED. SHOP PLANS SHALL BE PREPARED ACCORDINGLY.

DEAD LOAD DEFLECTIONS AND BEAM CAMBER	SPAN "A"			SPAN "B" THRU "I"			SPAN "J"			SPAN "K"						SPAN "L"		
	LT. EXT.	INT.	RT. EXT.	LT. EXT.	INT.	RT. EXT.	LT. EXT.	INT.	RT. EXT.	KB1	KB2	KB3	KB4	KB5	KB6	LT. EXT.	INT.	RT. EXT.
DEFLECTION DUE TO WEIGHT OF STEEL	.042	.034	.042	.043	.045	.043	.043	.045	.043	.030	.034	.039	.043	.047	.049	.057	.061	.057
DEFLECTION DUE TO WEIGHT OF SLAB AND PARAPET	.182	.195	.184	.191	.204	.191	.191	.204	.191	.130	.153	.169	.186	.205	.211	.221	.235	.221
DEFLECTION DUE TO WEIGHT OF RAIL AND FUTURE WEARING SURFACE	.021	.019	.021	.022	.020	.022	.022	.020	.022	.015	.015	.017	.016	.020	.024	.027	.025	.027
TOTAL DEAD LOAD DEFLECTION	.247	.259	.247	.256	.269	.256	.256	.269	.256	.175	.202	.225	.247	.272	.284	.305	.321	.305
VERTICAL CURVE ORDINATE (SAG VERTICAL CURVE)	-.030	-.030	-.030	-.061	-.061	-.061	-.015	-.015	-.015	-.000	-.000	-.000	-.000	-.000	-.000	-.000	-.000	-.000
SUPERELEVATION ORDINATE	-.001	-.001	-.001	-.001	-.001	-.001	-.001	-.001	-.001	-.001	-.001	-.001	-.001	-.001	-.001	-.002	-.002	-.002
BEAM CAMBER	2⅝"	2¾"	2⅝"	2⅝"	2¾"	2⅝"	2⅞"	3"	2⅞"	2¼"	2⅞"	2¾"	2⅝"	3¼"	3⅜"	3⅜"	3⅝"	3⅜"

NOTE: CAMBER ORDINATES, VERTICAL CURVE ORDINATES, AND SUPERELEVATION ORDINATES ARE IN FEET.

DRAWN BY GLENN WILLIAMS DATE JAN. 1973
CHECKED BY R.L. Wright DATE JUNE 73

PROJECT NO. 8.1511101
8.1511102
CASWELL COUNTY
STATION: 38+02.40 -L-

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

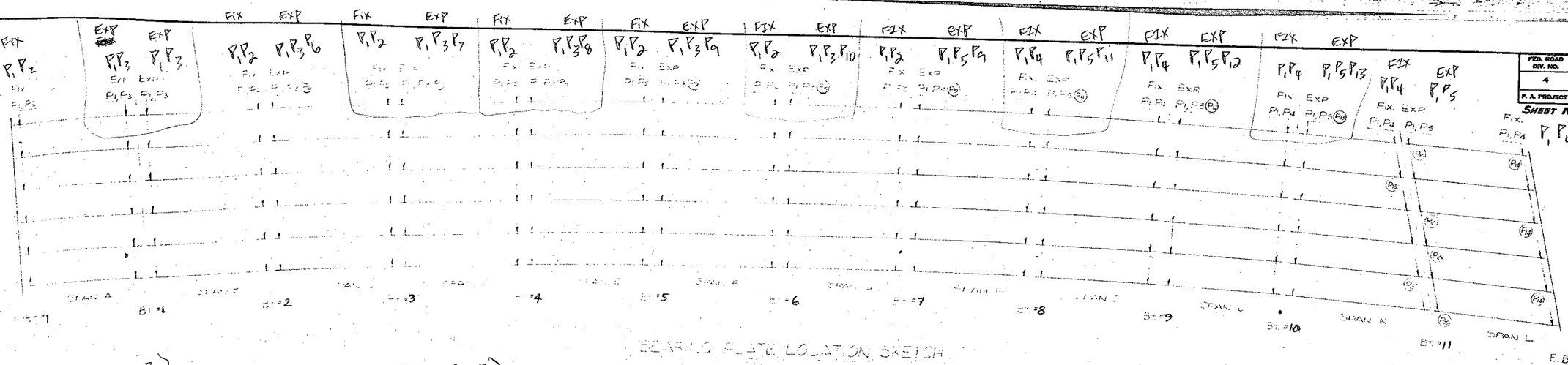
STRUCTURAL STEEL DETAILS

JAN. 1973

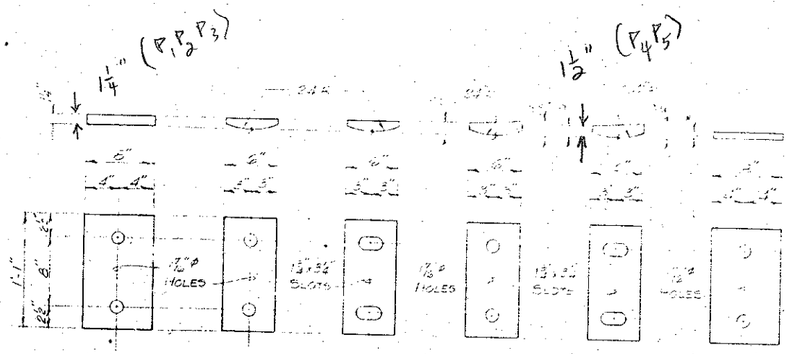
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-16
1			3			TOTAL SHEETS
2			4			39

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N.C.	8.151110
		8.151110
F. A. PROJECT		BRS-3774(3) BRS-3774(4)

SHEET No 52 of 82



BEARING PLATE LOCATION SKETCH

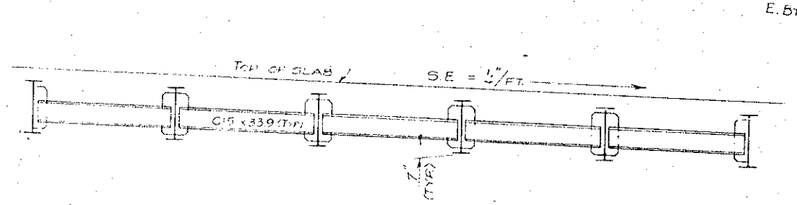


BEARING PLATE DETAILS

NOTE. MASONRY PLATES [illegible] ARE TO BE 36" WIDTH AND STRAIGHT WITH FINE SURFACE FINISH REQUIRED.

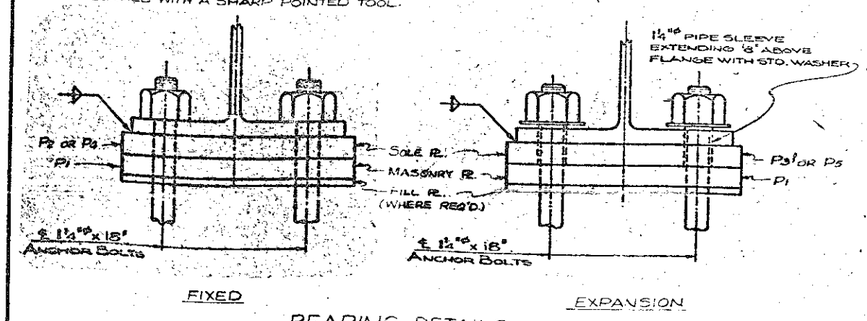
FILL PLATE TABLE

	W	T	NO. REQ'D
P6	12"	1/8"	6
7	12"	3/16"	6
8	12"	5/16"	6
9	12"	3/8"	6
10	12"	7/16"	6
11	12"	9/16"	6
12	12"	5/8"	6
13	12"	11/16"	6
14	12"	3/4"	6
15	12"	13/16"	6

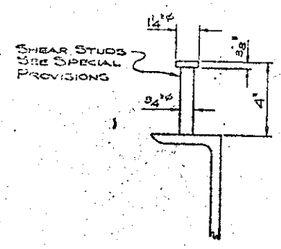


INTERIOR DIAPHRAGM CONNECTIONS

NOTE: AT ALL FIXED POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS ARE TO BE TIGHTENED FINGER TIGHT AND THEN BACKED OFF ½ TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

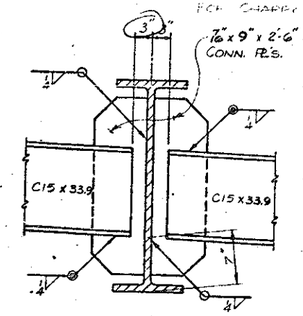


BEARING DETAILS



DETAIL - STUDS ON CHANNELS

DETAIL - BENT DIAPHRAGM CONNECTION



DETAIL - INTERIOR DIAPHRAGM CONNECTION

NOTES

STIFFENERS ARE NOT REQUIRED ON THE END BENT END OF BEAMS NOR ON THE OUTSIDE OF EXTERIOR BEAMS. STIFFENERS ARE TO BE PLACED PARALLEL TO ENDS OF BEAMS.

THE CONTRACTOR MAY AT HIS OPTION, BUT WITHOUT CHANGE IN THE CONTRACT PRICE OF STRUCTURAL STEEL, USE WT 9 x 25 CONNECTIONS BOLTED TO THE BEAM WEB AND WELDED TO THE CHANNEL DIAPHRAGM IN LIEU OF THE WELDED PLATE INTERIOR DIAPHRAGM CONNECTIONS SHOWN.

FOR DESCRIPTION OF STUD SHEAR CONNECTORS, SEE SPECIAL PROVISIONS.

ALL PLATES AND SHEET PLATES SHALL BE OF AASHTO M-270 GRADE 50 STRUCTURAL STEEL WITH A MINIMUM YIELD POINT EQUAL TO 50,000 P.S.I.

FOR LOCATION OF HOLES AND SLOTS IN BEAM WEBS FOR "K" BARS, SEE STRUCTURAL DETAILS.

AT THE CONTRACTOR'S OPTION, FILL PLATES (WHERE REQUIRED) MAY BE COMBINED WITH MASONRY PLATES.

SHOP DETAILS FOR BEAMS AND GIRDERS SHALL BE SUBMITTED FOR APPROVAL INDICATING THE CAMBER LOCATION DURING SHIPMENT, AND IN ALL CASES SHOWING THE ACTUAL METHOD OF SHIPMENT, POSITION OF THE VEHICLE AND ATTACHMENTS TO THE BEAMS OR GIRDERS OF ANY SHIPPING RESTRAINTS SHALL BE CLEARLY DETAILED.

FOR CHARPY V-NOTCH TESTS, SEE SPECIAL PROVISIONS.

8.1511101
PROJECT NO. 8.1511102

CASWELL COUNTY

STATION: 38+02.40 -L-6

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

STRUCTURAL STEEL DETAILS

FEB. 1973

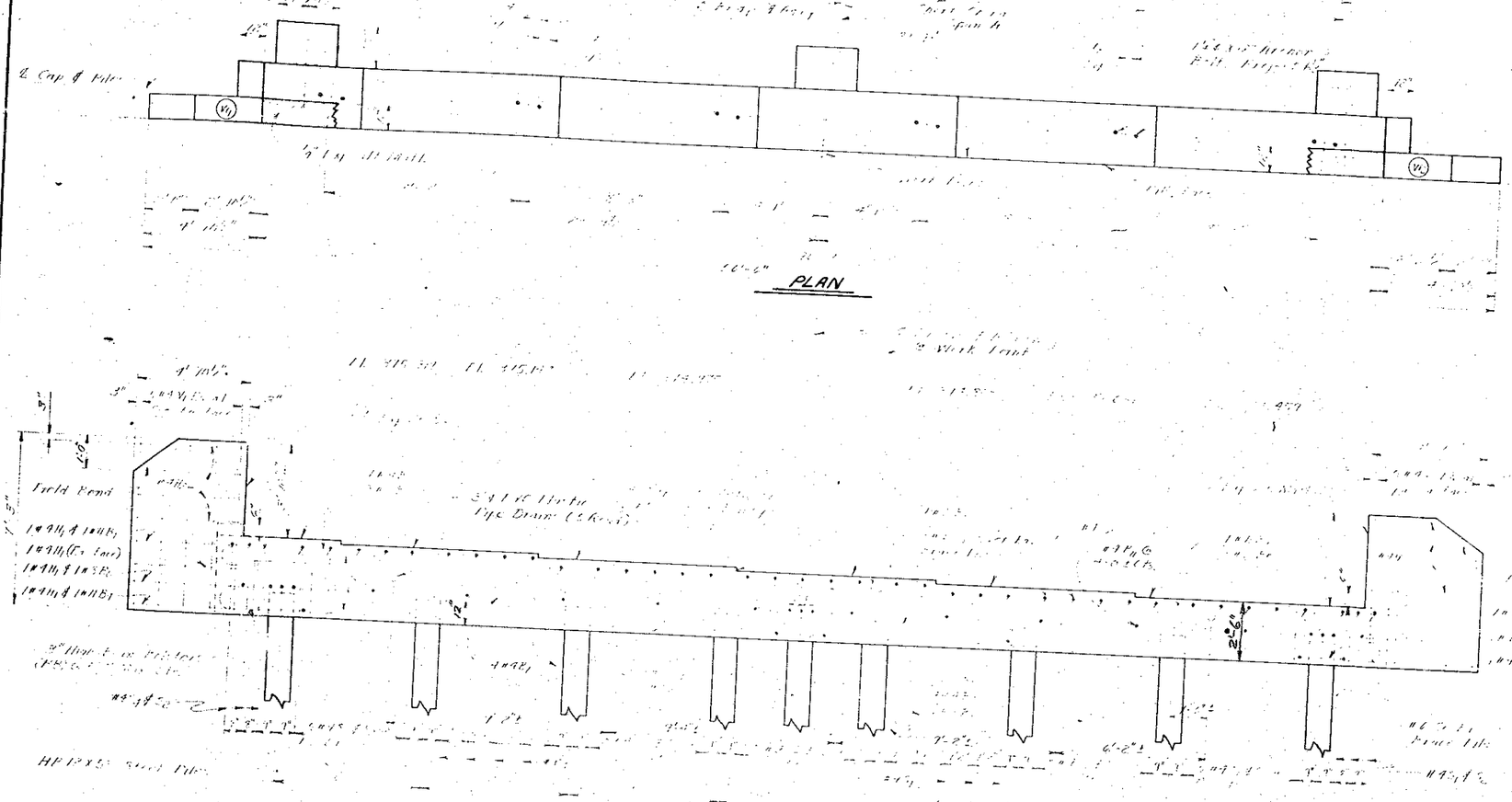
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-17
1			3			TOTAL SHEETS
2			4			39

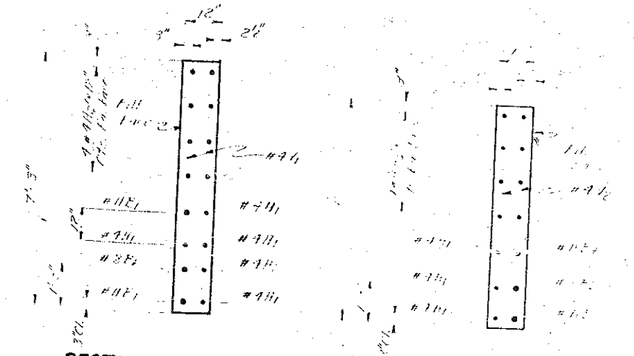
DRAWN BY GENN WILLIAMS DATE FEB. 1973
CHECKED BY [illegible] DATE March 73

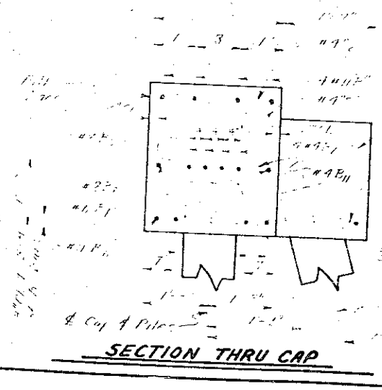
FED. ROAD DIV. NO.	STATE	PROJECT
7	N. C.	B-1511

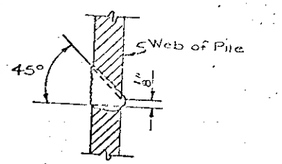
F. A. PROJECT BRS-974 (3

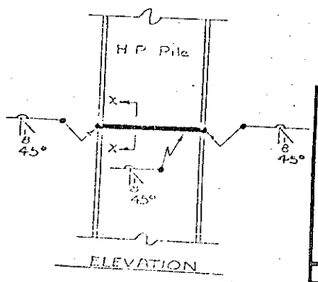
SHEET No 58 OF 82









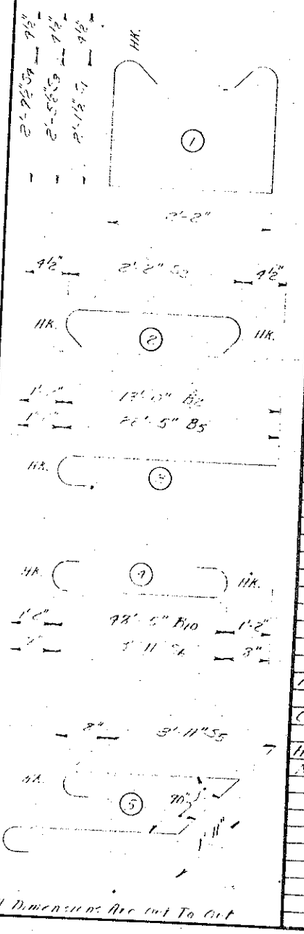


DRAWN BY: G. Lowe DATE: Dec. 1972

CHECKED BY: R. H. Hall DATE: JUNE 73

DIETZGEN 1965

BAR TYPES



BILL OF MATERIAL

END BENT #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGH
F_1	1	#11	Str.	16'-11"	7
F_2	3	#11	3	14'-2"	226
B_1	1	#11	Str.	31'-0"	95
S_1	1	#11	Str.	24'-4"	14
S_2	3	#11	5	23'-7"	376
H_6	1	#8	Str.	36'-2"	15
B_2	3	#9	Str.	29'-10"	13
B_3	1	#3	Str.	97'-5"	12
P_1	1	#11	Str.	16'-2"	27
P_{10}	3	#11	4	50'-9"	1801
H11	12	#9	Str.	2'-2"	1
H_1	8	#9	Str.	5'-3"	2
H_2	16	#9	Str.	4'-6"	4
S_1	16	#9	1	7'-2"	77
S_2	41	#9	2	2'-11"	80
S_3	13	#9	1	1'-10"	6
S_4	12	#7	1	9'-6"	6
S_5	2	#6	5	44'-1"	1
S_6	1	#6	4	5'-3"	7

NOTE: REV. No 2 REVISED TO CHANGE REINF. STEEL WEIGHT IN E.B. #1 DATED JAN. 6, 1976. TOTAL WEIGHT CHANGE 84 LBS.

Reinforcing Steel Lbs.	3369
Class "A" Conc. Cu. Yds.	18.7
HP 12 x 53 Steel Piles No. 11 Lin. Ft.	351.32

PROJECT NO. 8.1511101

CASWELL COUNTY

STATION: 32+02.90-L-

STATE OF NORTH CAROLINA

STATE HIGHWAY COMMISSION

RALEIGH

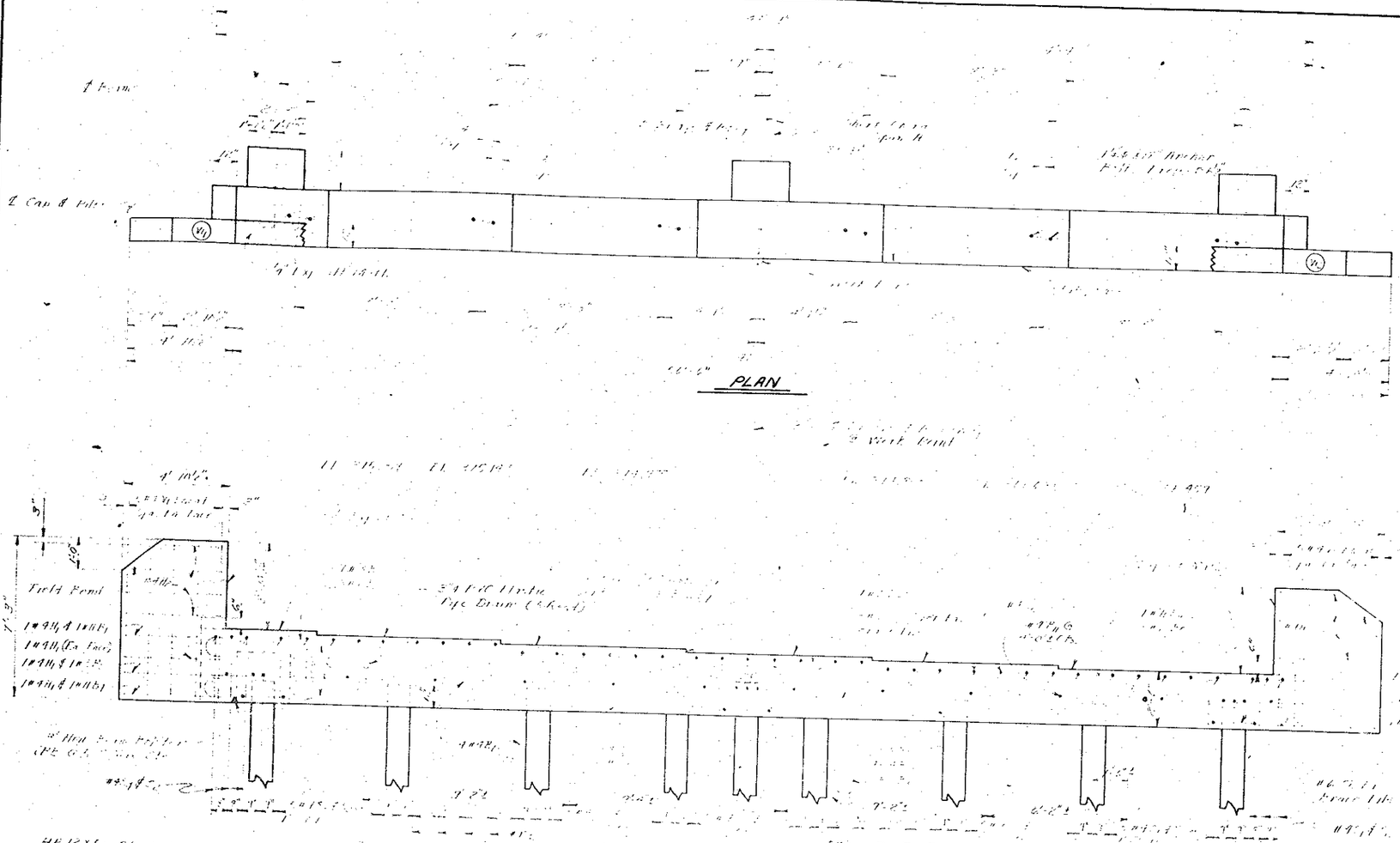
END BENT #1

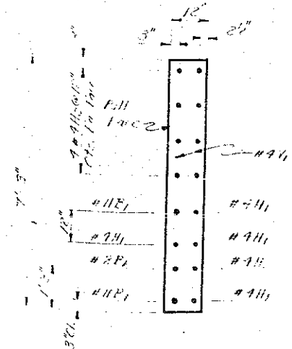
Dec. 1972

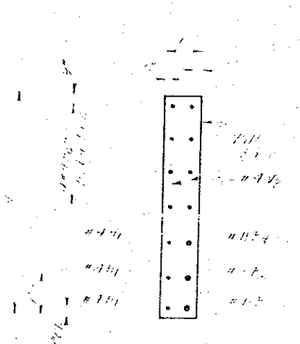
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-13
1			3			TOTAL SHEETS
2			4			82

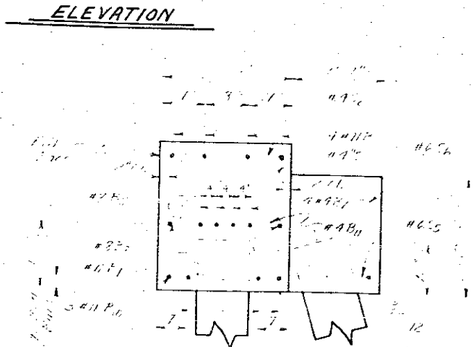
FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N. C.	B-1511101
F. A. PROJECT	BRS-974(3)	

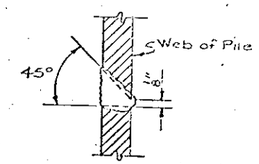
SHEET No 58 of 82

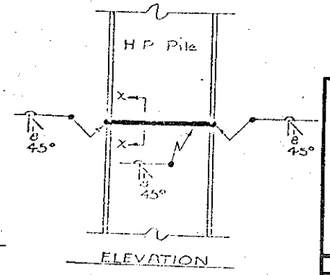








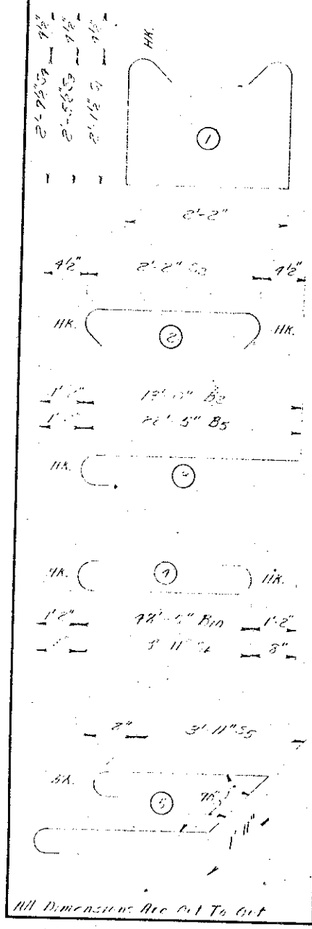




DRAWN BY G. Lane DATE Oct. 1972
CHECKED BY K. H. Hall DATE June 73

DIETZGEN 13384

BAR TYPES



BILL OF MATERIAL

END BENT #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
P_1	1	#11	Str.	16'-11"	90
P_2	3	#11	3	14'-2"	226
P_3	9	#11	Str.	26'-0"	425
P_4	1	#11	Str.	12'-4"	140
P_5	3	#11	5	23'-7"	376
P_6	1	#8	Str.	56'-2"	150
B_1	3	#9	Str.	29'-10"	133
P_8	1	#8	Str.	47'-5"	129
P_9	1	#11	Str.	16'-2"	298
P_{10}	3	#11	9	58'-7"	809
P_{11}	12	#9	Str.	2'-2"	17
H_1	8	#9	Str.	5'-3"	28
H_2	16	#9	Str.	4'-6"	48
S_1	16	#9	1	7'-3"	77
S_2	41	#7	2	2'-11"	80
S_3	13	#9	1	7'-10"	28
S_4	12	#7	1	3'-6"	68
S_5	3	#6	5	11'-1"	50
S_6	1	#6	7	5'-3"	71

NOTE: Rev. No 2 Revised To Change Rein. Steel Weight in E.B. #1 Dated Jan. 6, 1976. Total Weight Change 86 LBS.

Reinforcing Steel Lbs. ~~3283~~ 3369

Class "A" Conc. Cu. Yds. 18.7

HP 12x53 Steel Piles
No. 11 Lin. Ft. ~~335~~ 351.52

PROJECT No. 8.1511101

CALDWELL COUNTY

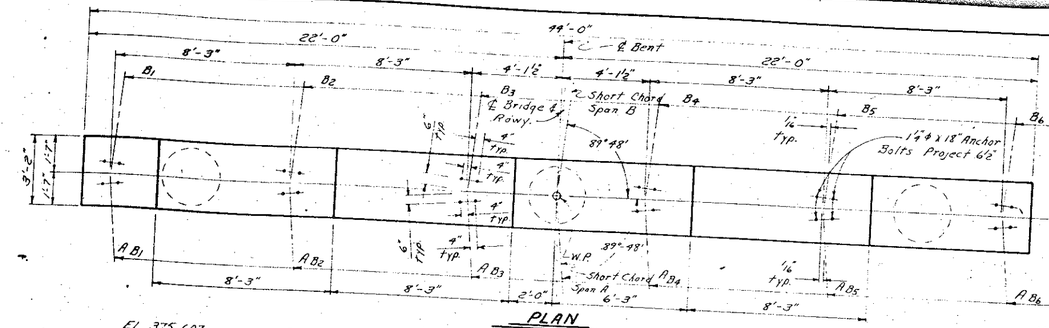
STATION: 97+02.90-L-

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

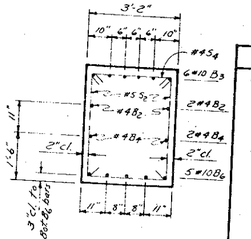
END BENT #1

Dec. 1972

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-18
1			3			TOTAL SHEETS
2			4			59

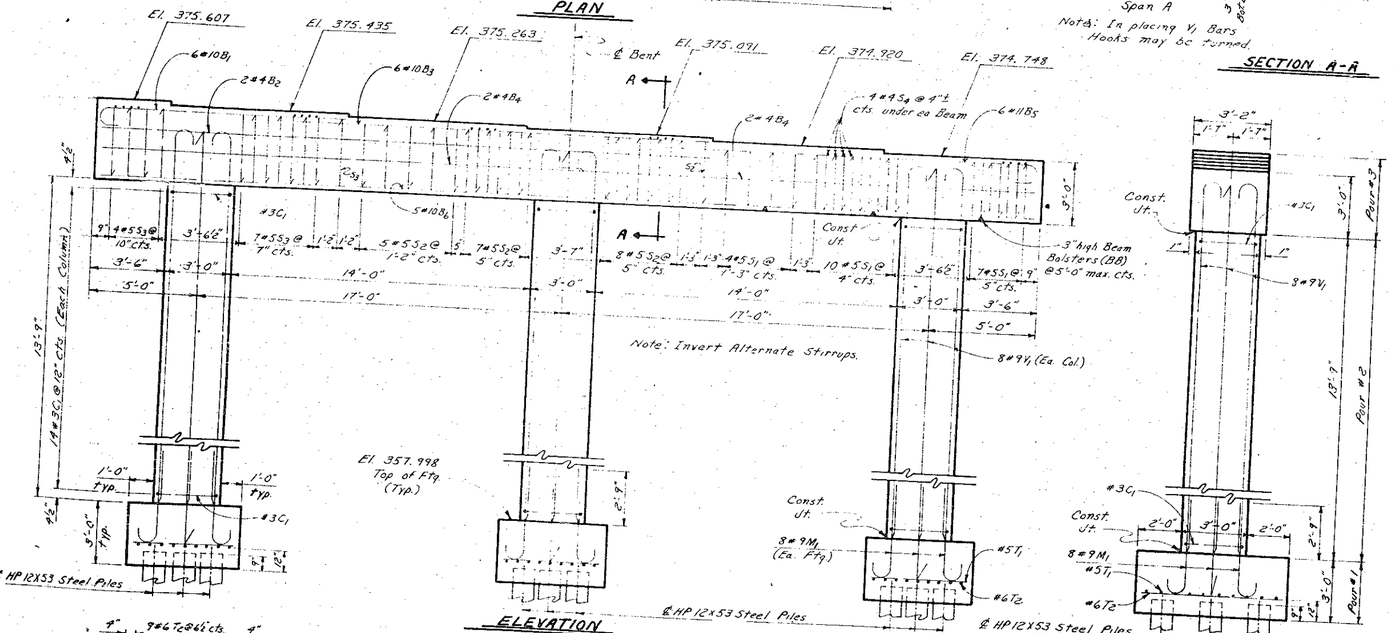


PLAN



SECTION A-A

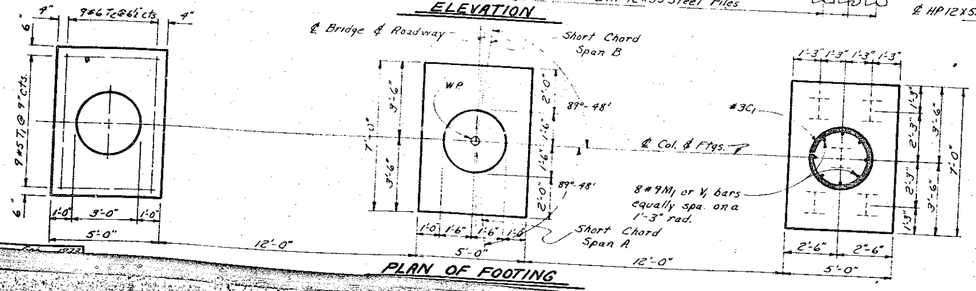
Note: In placing V_1 Bars Hooks may be turned.



ELEVATION

END ELEVATION

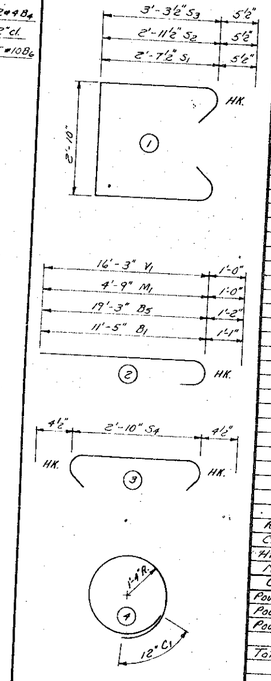
Note: All Footings Are Identical.



PLAN OF FOOTING

BAR TYPES

All dimensions are out to out.



BILL OF MATERIAL

BENT # 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B_1	6	#10	2	12'-6"	323
B_2	2	#4	Str.	27'-11"	37
B_3	6	#10	Str.	19'-9"	510
B_4	4	#4	Str.	22'-6"	60
B_5	6	#11	2	20'-5"	651
B_6	5	#10	Str.	43'-8"	939
C_1	42	#3	4	9'-5"	199
M_1	24	#9	2	5'-9"	469
S_1	21	#5	1	9'-0"	197
S_2	21	#5	1	9'-8"	212
S_3	12	#5	1	10'-9"	129
S_4	24	#4	3	3'-7"	57
T_1	27	#5	Str.	9'-6"	127
T_2	27	#6	Str.	6'-6"	264
V_1	24	#9	2	17'-3"	1408

Reinforcing Steel Lbs. 5,532
Class "A" Concrete Cu. Yds. 40.0
HP 12x53 Steel Piles
No. 15 Lin. Ft. ~~300~~ 316.0

CONCRETE BREAKDOWN

Pour # 1 (Fty.)	11.7 Cu. Yds.
Pour # 2	10.8 Cu. Yds.
Pour # 3	17.5 Cu. Yds.
Total	40.0 Cu. Yds.

FED. ROAD DIV. NO.	STATE	PROJECT NO.
7	N.C.	B-1511101

F. A. PROJECT BRS-974(3)

SHEET No 54 of 82

PROJECT No. B-1511101

CASWELL COUNTY

STATION: 38+02.40 -L- 6

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

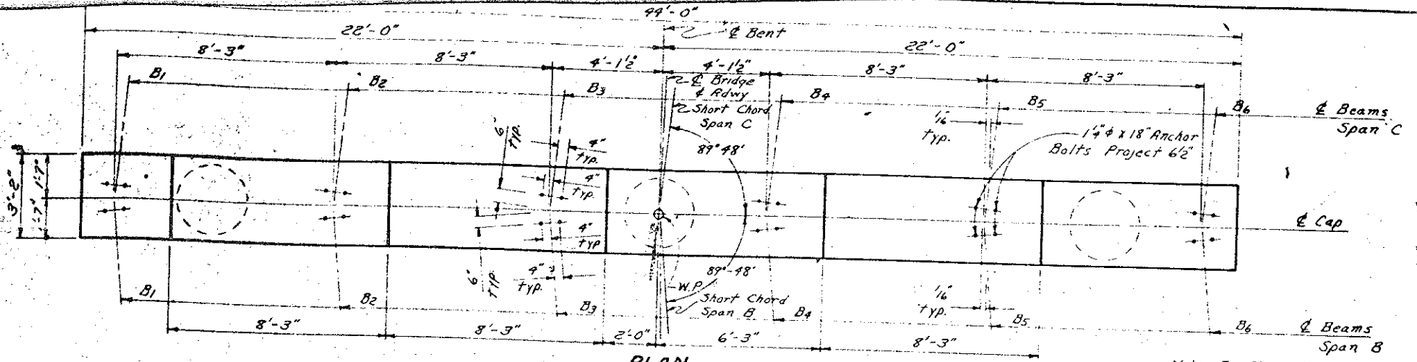
BENT # 1

February 1979

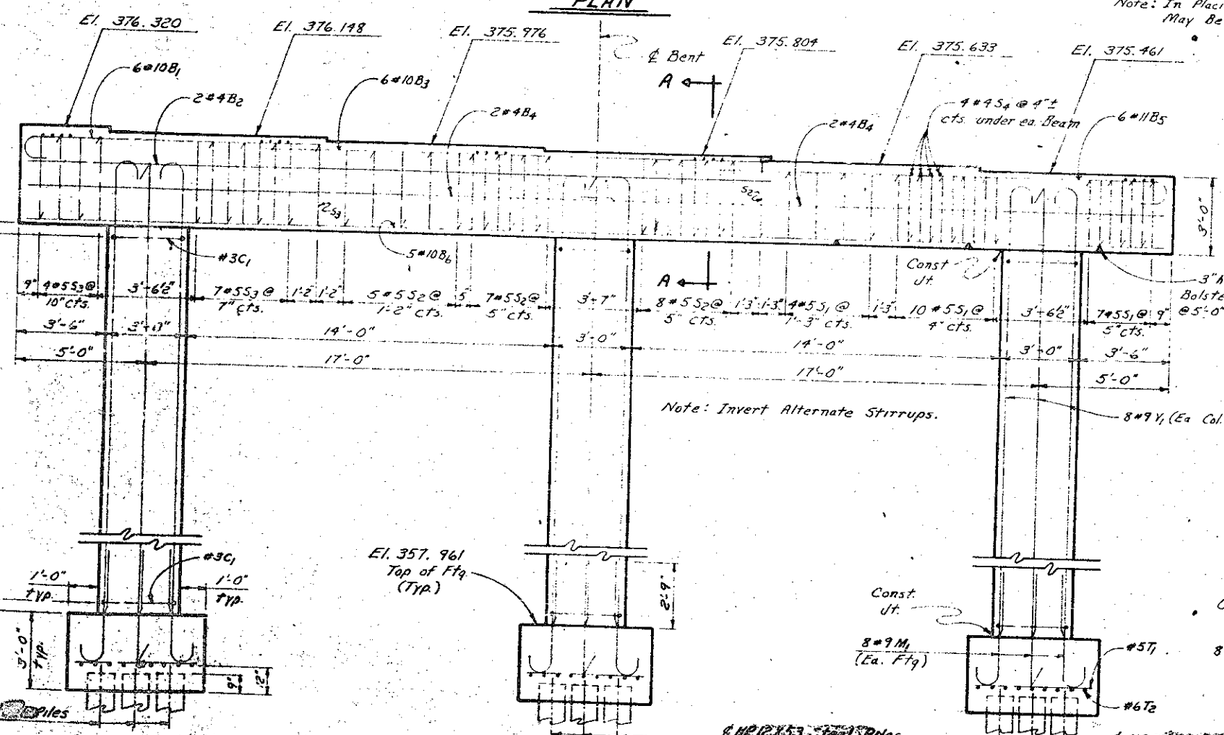
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-19
1			3			TOTAL SHEETS
2			4			39

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N. C.	8.1511101
F. A. PROJECT	BRS-974 (3)	

SHEET NO 38 OF 82



PLAN



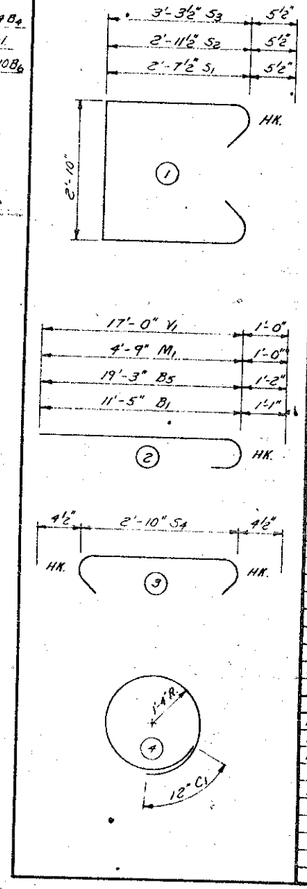
Note: In Placing V1 Bars Hooks May Be Turned.

SECTION A-A

Note: All Footings Are Identical.

BAR TYPES

All dimensions are out to out.



BILL OF MATERIAL

BENT # 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#10	2	12'-6"	323
B2	2	#4	Str.	27'-0"	55
B3	6	#10	Str.	19'-9"	510
B4	1	#4	Str.	22'-6"	50
B5	6	#11	2	20'-5"	777
B6	5	#10	Str.	43'-8"	939
C1	45	#3	4	9'-5"	159
M1	21	#9	2	5'-9"	469
S1	28	#5	1	9'-0"	197
S2	21	#5	1	9'-8"	212
S3	12	#5	1	10'-4"	129
S4	24	#4	3	3'-7"	57
T1	27	#5	Str.	4'-6"	127
T2	27	#6	Str.	9'-6"	264
V1	24	#9	2	18'-0"	1767

Reinforcing Steel Lbs.	5,603
Class "A" Concrete Cu. Yds.	70.6
HP 12x53 Steel Piles No.	15
Lin. Ft.	300

CONCRETE BREAKDOWN

Pour # 1 (Ftg.)	11.7 Cu. Yds.
Pour # 2	11.4 Cu. Yds.
Pour # 3	17.5 Cu. Yds.
Total	70.6 Cu. Yds.

PROJECT NO. 8.1511101

CASWELL COUNTY

STATION: 38+05 -L-

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

BENT # 2

February 1973

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

SHEET NO. S-20

TOTAL SHEETS 39

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N. C.	8.1511101
F. A. PROJECT	BRS-974(3)	

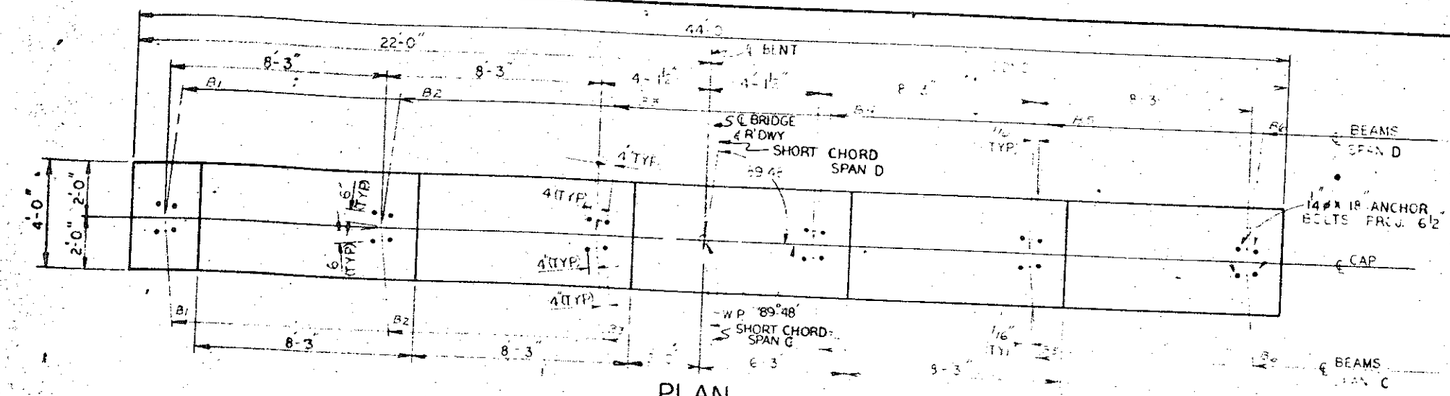
SHEET NO 56 OF 82

NOTE:

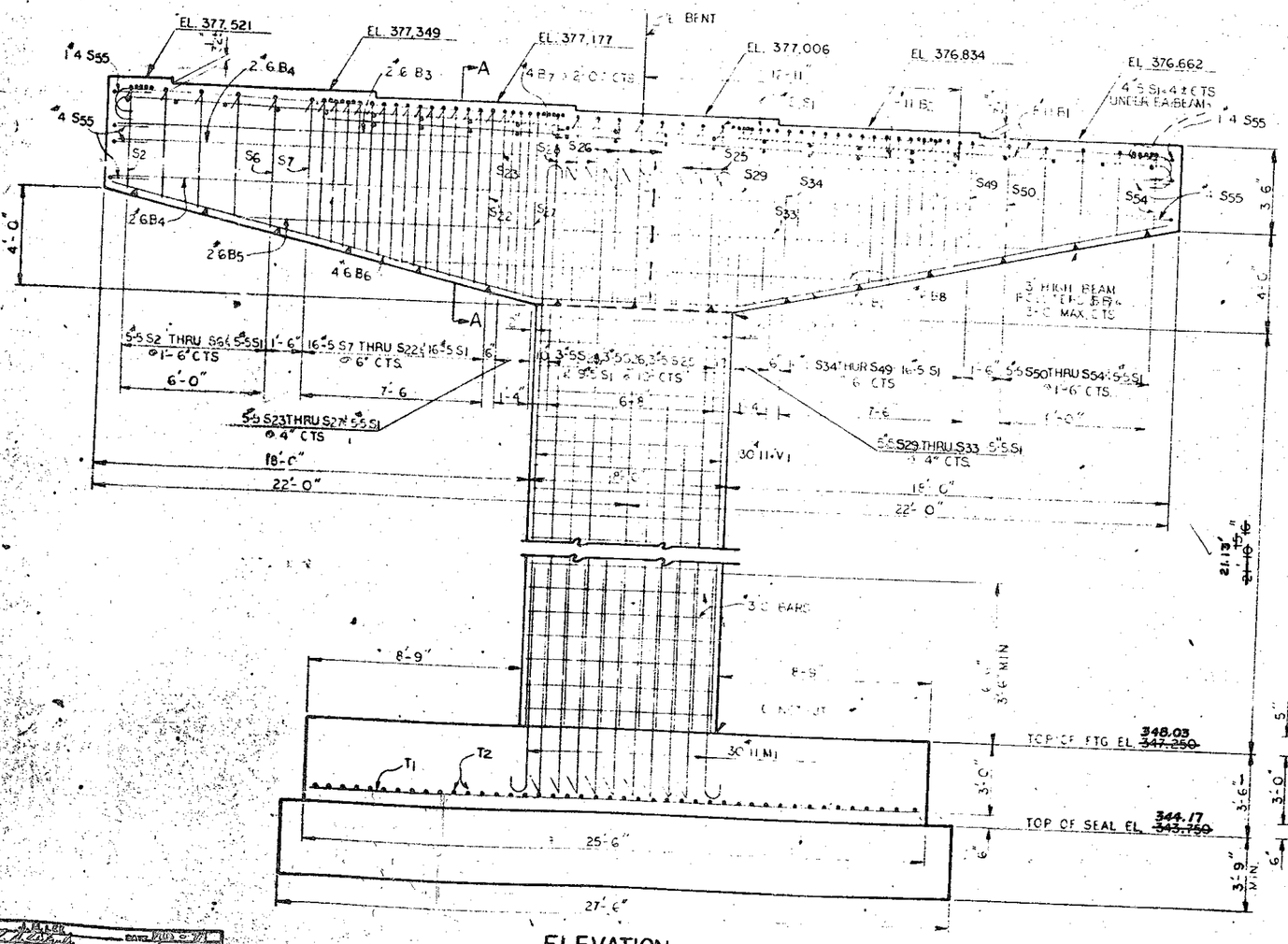
PLANS FOR REINFORCING STEEL AND BARS FOR THIS BENT CAP SHALL BE SUBMITTED. SEE S-N SHEET.

REINFORCING STEEL BARS, HOOKS MAY BE TURNED.

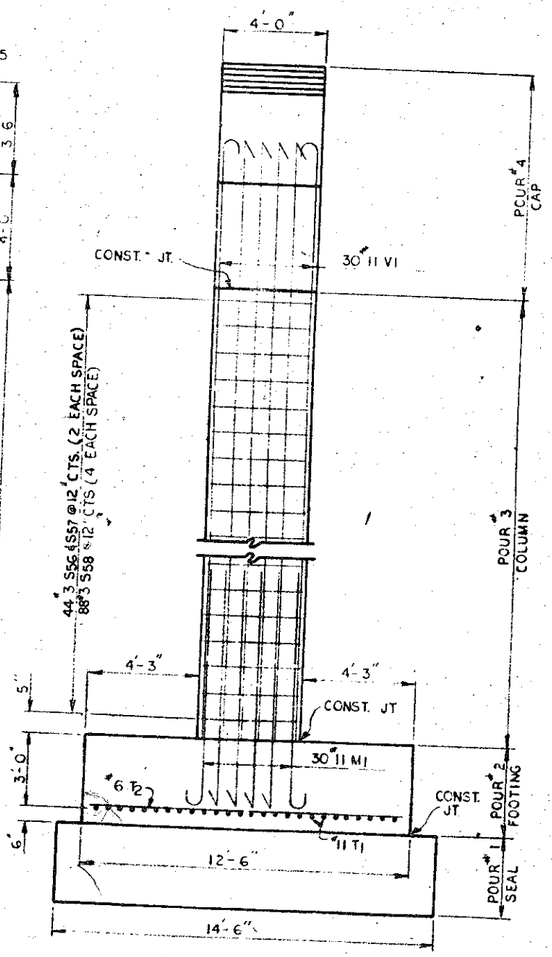
DEPTH OF SEAL SHOWN ON PLANS IS BASED ON AN ASSUMED WATER SURFACE ELEVATION = 349.0



PLAN



ELEVATION



END ELEVATION

PROJECT NO. 8.1511101

CASWELL COUNTY

STATION: 38+02.40 -L-6

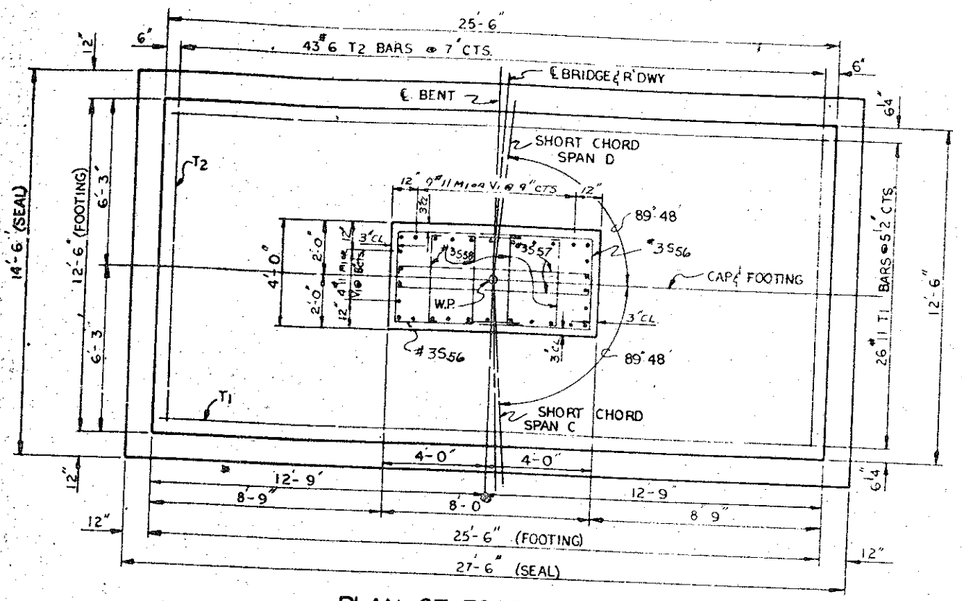
SHEET 1 OF 2

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

BENT # 3

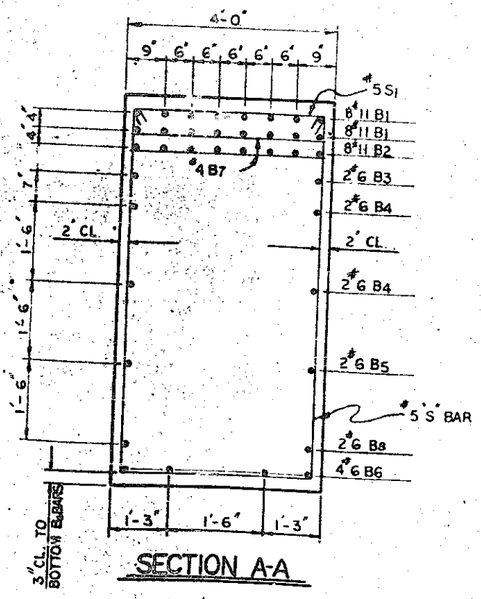
FEB. 1973

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-21
1			3			
2			4			39



PLAN OF FOOTING

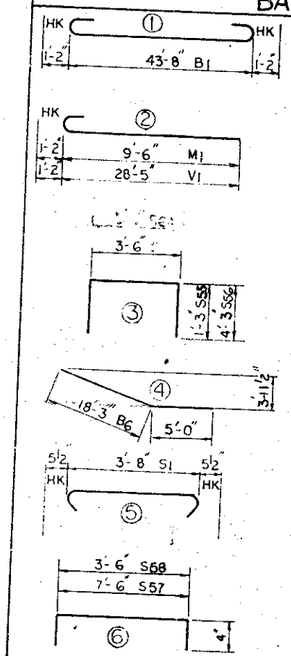
℄ SECTION THRU COLUMN



SECTION A-A

DRAWN BY: [illegible] DATE: [illegible]
CHECKED BY: [illegible] DATE: June, 73

BAR - TYPES



4'-1"	S2
4'-5	S3
4'-8½"	S4
5'-0"	S5
5'-3½"	S6
5'-7½"	S7
5'-8½"	S8
5'-10"	S9
5'-11"	S10
6'-0"	S11
6'-1"	S12
6'-2½"	S13
6'-4"	S14
6'-5"	S15
6'-6"	S16
6'-7"	S17
6'-8½"	S18
6'-10"	S19
6'-11"	S20
7'-0"	S21
7'-1½"	S22
7'-2½"	S23
7'-3½"	S24
7'-4½"	S25
7'-5"	S26
7'-6"	S27
7'-5½"	S28
7'-4"	S29
7'-3"	S30
7'-2"	S31
7'-1"	S32
6'-11½"	S33
6'-10½"	S34
6'-9"	S35
6'-7½"	S36
6'-6½"	S37
6'-4½"	S38
6'-3"	S39
6'-1½"	S40
6'-0½"	S41
5'-10½"	S42
5'-9"	S43
5'-8"	S44
5'-6½"	S45
5'-5"	S46
5'-3"	S47
5'-2"	S48
5'-0½"	S49
4'-8"	S50
4'-4"	S51
3'-11½"	S52
3'-7"	S53
3'-3"	S54

CONCRETE BREAKDOWN	
POUR NO.	CU. YDS.
1 (SEAL)	~~55.4~~ 55.38
2 (FTG)	~~41.3~~ 45.75
3 (COL.)	~~26.0~~ 25.04
4 (CAP)	40.80
TOTAL CLASS 'A' CONCRETE	~~108.1~~ 111.59
TOTAL CLASS 'AA' CONCRETE	~~55.4~~ 55.38

NOTE: ALL BAR DIMENSIONS ARE OUT TO OUT.

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N. C.	8.1511101

F. A. PROJECT BRS-974(3)

SHEET NO 57 OF 82

BILL OF MATERIAL
FOR BENT #3

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	16	#11	1	46'-0"	3910
B2	8	#11	STR	25'-10"	1098
B3	2	#6	STR	15'-0"	135
B4	4	#6	STR	43'-8"	262
B5	2	#6	STR	35'-8"	107
B6	8	#6	4	23'-3"	279
B7	35	#4	STR	3'-8"	86
B8	2	#6	STR	21'-10"	66
M1	30	#11	2	10'-8"	1,700
S1	85	#5	5	4'-7"	406
S2	1	"	7	12'-9"	13
S3	"	"	"	13'-5"	14
S4				14'-0"	15
S5				14'-7"	15
S6				15'-2"	16
S7				15'-10"	17
S8				16'-0"	17
S9				16'-3"	17
S10				16'-5"	17
S11				16'-7"	17
S12				16'-9"	17
S13				17'-0"	18
S14				17'-3"	18
S15				17'-5"	18
S16				17'-7"	18
S17				17'-9"	19
S18				18'-0"	19
S19				18'-3"	19
S20				18'-5"	19
S21				18'-7"	19
S22				18'-10"	20
S23	9			19'-0"	20
S24	1			19'-2"	20
S25	4			19'-4"	81
S26	4			19'-5"	81
S27	1			19'-7"	20
S28	3			19'-6"	61
S29	1			19'-3"	20
S30	1			19'-1"	20
S31	1			18'-11"	20
S32	1			18'-9"	20
S33	1	#5	7	18'-6"	19
S34	1	#5	7	18'-4"	19
S35	1	1	1	18'-1"	19
S36				17'-10"	19
S37				17'-8"	18
S38				17'-4"	18
S39				17'-1"	18
S40				16'-10"	18
S41				16'-8"	17
S42				16'-4"	17
S43				16'-1"	17
S44				15'-11"	17
S45	1	1	1	15'-8"	16
S46				15'-5"	16
S47				15'-1"	16
S48				14'-11"	16
S49				14'-8"	15
S50				13'-11"	15
S51				13'-3"	14
S52				12'-6"	13
S53	1	1	1	11'-9"	12
S54	1	#5	7	11'-1"	12
S55	7	#4	3	6'-0"	28
S56	44	#3	3	12'-0"	199
S57	44	#3	6	8'-2"	135
S58	88	#3	6	4'-2"	138
T1	26	#11	STR	25'-0"	3,453
T2	43	#6	STR	12'-0"	775
V1	30	#11	2	29'-7"	4715

REINFORCING STEEL LBS.	18,406
CLASS AA CONCRETE CU. YDS.	55.2
CLASS A CONCRETE CU. YDS.	~~108.1~~ 111.59

PROJECT NO. 8.1511101

CASWELL COUNTY

STATION: 38+02.40 - L-6

SHEET NO 2 of 2

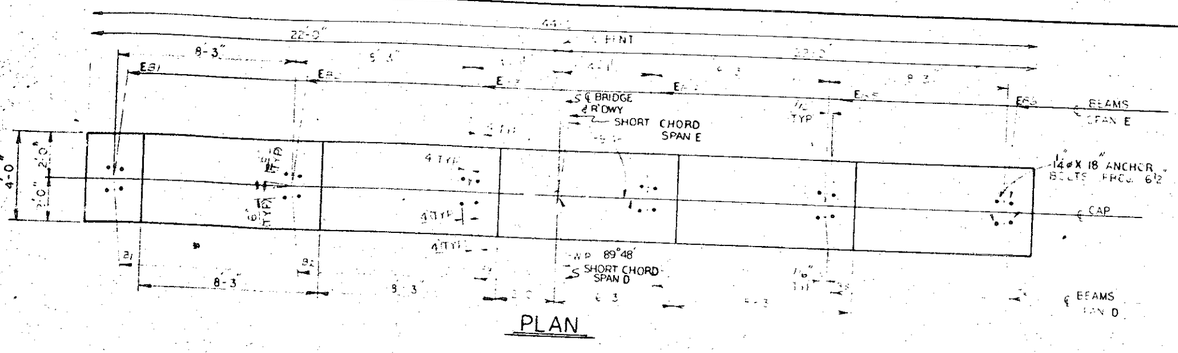
STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

BENT #3

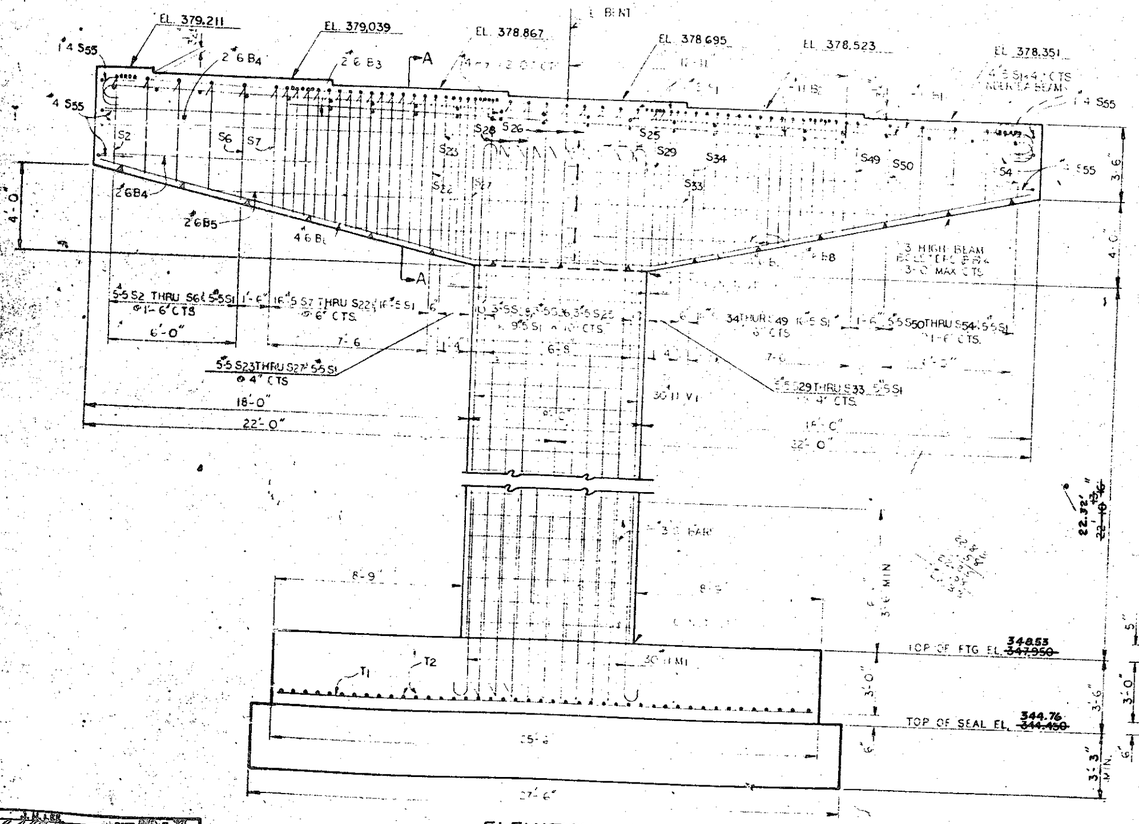
FEB 1973

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

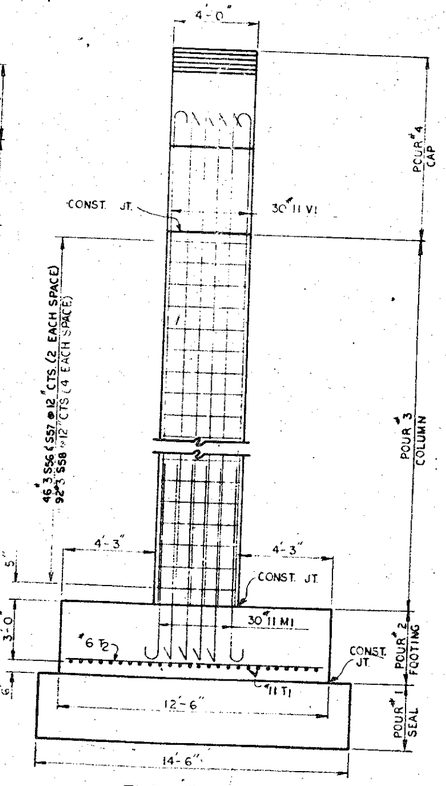
S-22



PLAN



ELEVATION



END ELEVATION

PLAN FOR REINFORCING AND FORMS FOR THIS BENT CAP SHALL BE SUBMITTED. SEE S-N SHEET.

ALL REFERENCES TO PARS, BOOKS MAY BE TURNED

DEPTH OF SEAL SHOWN ON PLANS IS BASED ON AN ASSUMED WATER SURFACE ELEVATION = 349.0

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N.C.	B-1511101

F. A. PROJECT BRS-974(3)

SHEET No 50 of 62

PROJECT NO. B-1511101

CASWELL COUNTY

STATION: 38+02.40-L-6

SHEET 1 of 2

STATE OF NORTH CAROLINA

STATE HIGHWAY COMMISSION

RALEIGH

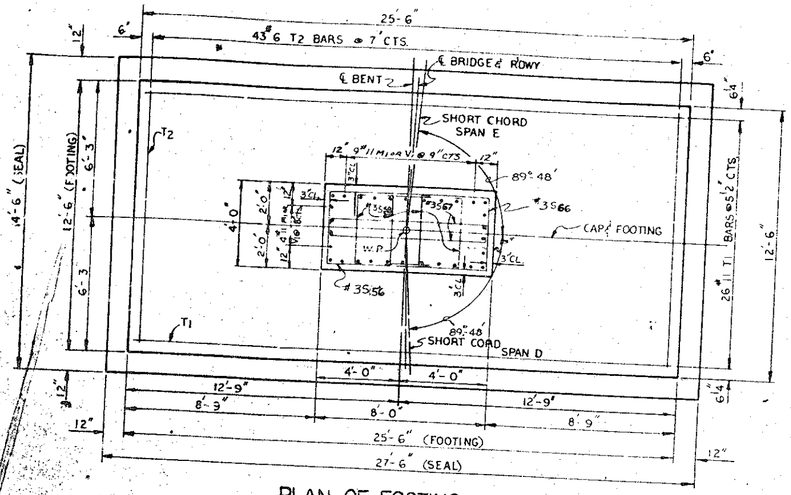
BENT #4

FEB 1975

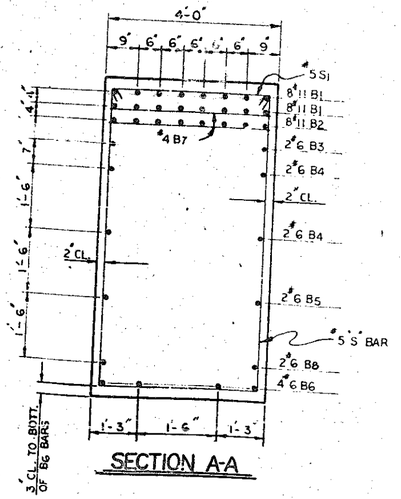
REVISIONS						
NO.	BY	DATE	NO.	BY	DATE	
1			3			
2			4			

S-23

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N. C.	8.1511101
F. A. PROJECT	BRS-974(3)	
SHEET NO. 59 OF 82.		

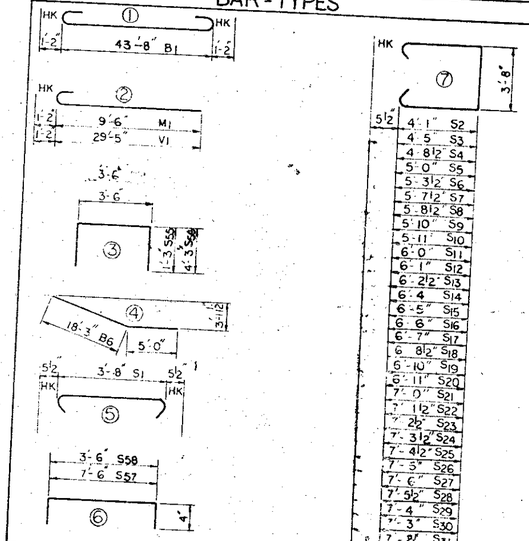


PLAN OF FOOTING
℄ SECTION THRU COLUMN



SECTION A-A

BAR-TYPES



BILL OF MATERIAL
FOR BENT # 4

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	16	#11	1	46'-0"	3910
B2	8	#11	STR	25'-10"	1098
B3	2	#6	STR	15'-0"	45
B4	4	#6	STR	43'-8"	262
B5	2	#6	STR	35'-8"	107
B6	8	#6	4	23'-3"	279
B7	35	#4	STR	3'-8"	86
B8	2	#6	STR	21'-10"	66
M1	30	#11	2	10'-8	1,700
S1	85	#5	5	4'-7"	408
S2	1		7	12'-9"	13
S3			7	13'-5"	14
S4				14'-0"	15
S5				14'-7"	15
S6				15'-2"	16
S7				15'-10"	17
S8				16'-0"	17
S9				16'-3"	17
S10				16'-5"	17
S11				16'-7"	17
S12				16'-9"	17
S13				17'-0"	18
S14				17'-3"	18
S15				17'-5"	18
S16				17'-7"	18
S17				17'-9"	19
S18				18'-0"	19
S19				18'-3"	19
S20				18'-5"	19
S21				18'-7"	19
S22				18'-10"	20
S23				19'-0"	20
S24				19'-2"	20
S25	4			19'-4"	81
S26	4			19'-5"	81
S27	1			19'-7"	20
S28	3			19'-6"	61
S29	1			19'-3"	20
S30	1			19'-1"	20
S31	1			18'-11"	20
S32	1			18'-9"	20
S33	1	#5	7	18'-6"	19
S34	1	#5	7	18'-4"	19
S35				18'-1"	19
S36				17'-10"	19
S37				17'-8"	18
S38				17'-4"	18
S39				17'-1"	18
S40				16'-10"	18
S41				16'-8"	17
S42				16'-4"	17
S43				16'-1"	17
S44				15'-11"	17
S45				15'-8"	16
S46				15'-5"	16
S47				15'-1"	16
S48				14'-11"	16
S49				14'-8"	15
S50				13'-11"	15
S51				13'-3"	14
S52				12'-6"	13
S53				11'-9"	12
S54	1	#5	7	11'-1"	12
S55	7	#4	3	6'-0"	28
S56	46	#3	3	12'-0"	208
S57	46	#3	6	8'-2"	141
S58	92	#3	6	4'-2"	144
T1	26	#11	STR	25'-0"	3,453
T2	43	#6	STR	12'-0"	775
V1	30	#11	2	30'-7"	4875

REINFORCING STEEL LBS. 18,669
CLASS 'AA' CONCRETE CU. YDS. ~~48.0~~ 55.20
CLASS 'A' CONCRETE CU. YDS. ~~109.2~~ 111.74

CONCRETE BREAKDOWN	
POUR NO.	CU. YDS.
1 (SEAL)	~~48.0~~ 55.20
2 (FTG)	~~41.3~~ 44.49
3 (COL)	~~27.1~~ 26.45
4 (CAP)	40.80
TOTAL CLASS 'A' CONCRETE	~~109.2~~ 111.74
TOTAL CLASS 'AA' CONCRETE	~~48.0~~ 55.20

NOTE: ALL BAR DIMENSIONS ARE OUT TO OUT.

PROJECT NO. 8.1511101
CASWELL COUNTY
STATION: 38+02.40 -L-
SHEET NO 2 of 2

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

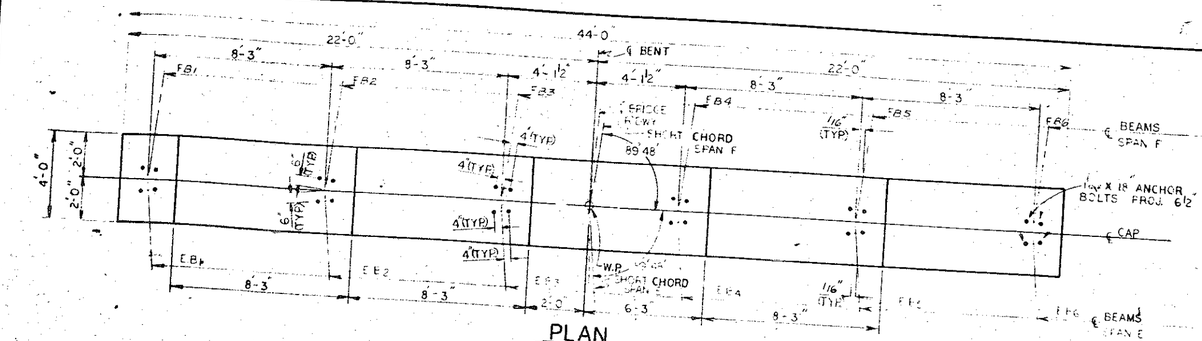
BENT # 4

FEB 1973

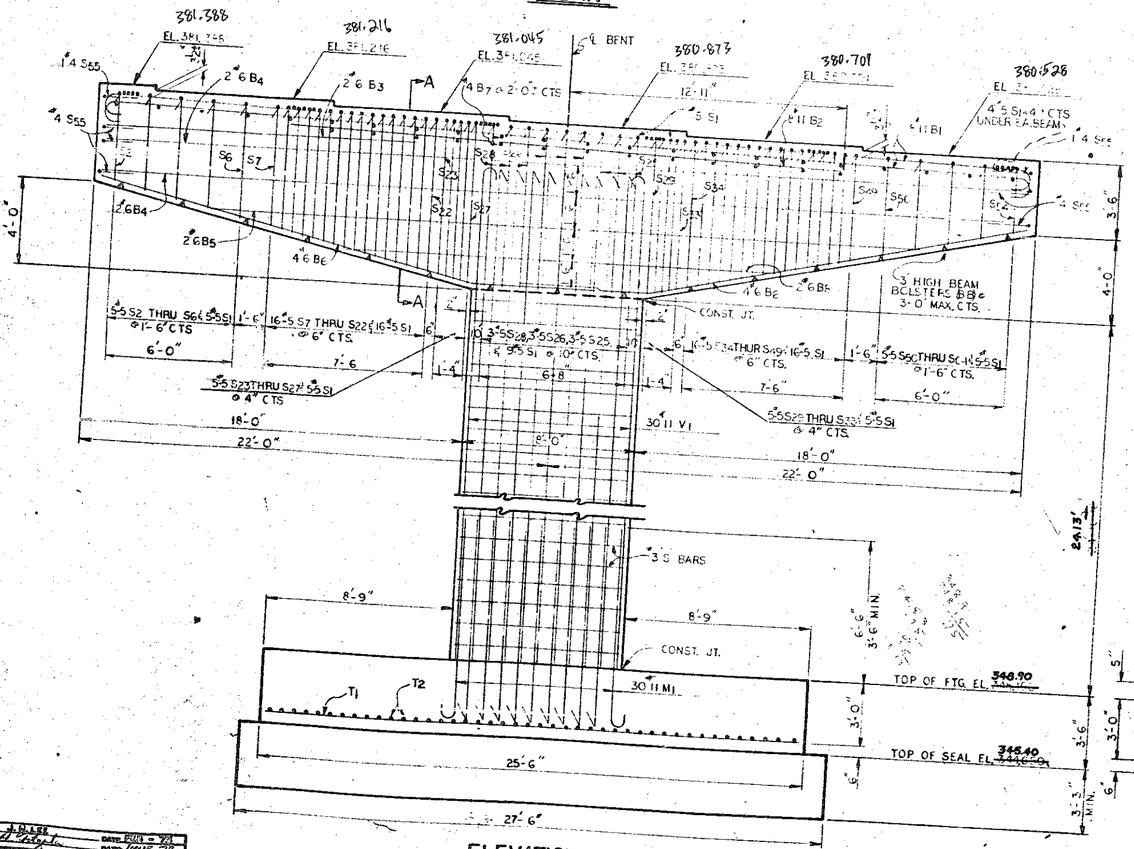
REVISIONS						
NO.	BY	DATE	NO.	BY	DATE	SHEET NO. S-24
1			3			TOTAL SHEETS 39
2			4			

DRAWN BY: [illegible] DATE: FEB - 73
CHECKED BY: [illegible] DATE: June 73

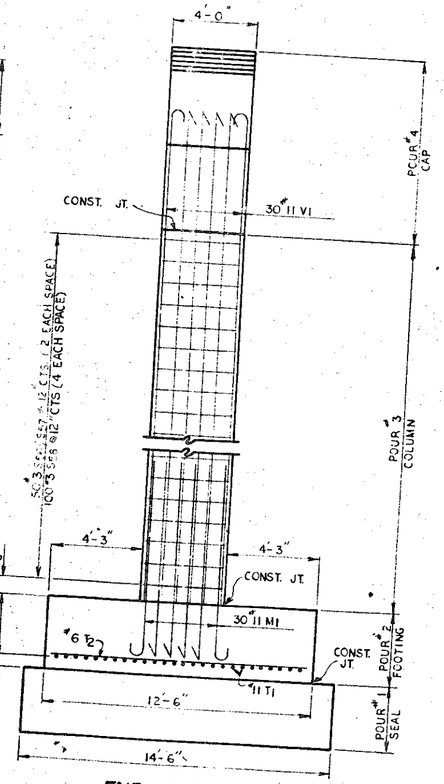
0-171
0-172 ✓✓



PLAN



ELEVATION



END ELEVATION

NOTES -

PLANS FOR FALSEWORK AND FORMS FOR THIS BENT CAP SHALL BE SUBMITTED. SEE S-N SHEET.

IN EL-CONC VI BARS, HOOKS MAY BE TURNED.

DEPTH OF SEAL SHOWN ON PLANS IS BASED ON AN ASSUMED WATER SURFACE ELEVATION = 349.0

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N. C.	B-1511101
F. A. PROJECT BRS - 974(3)		

SHEET NO 60 OF 82

PROJECT NO. B-1511101
CASWELL COUNTY
STATION: 38+02.40 - L6
SHEET 1 of 2

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

BENT #5

FEB 1973

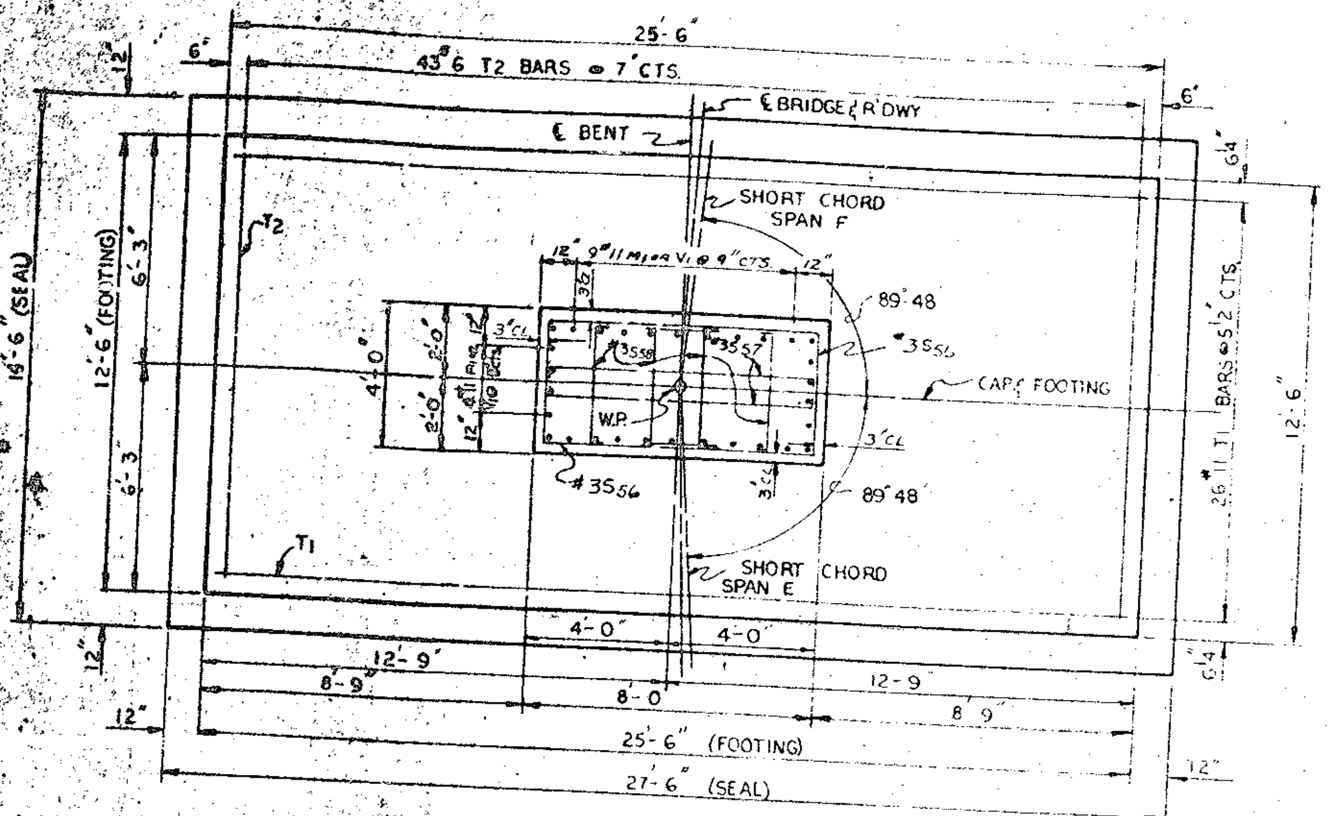
REVISIONS						SHEET NO.	TOTAL SHEETS
NO.	BY	DATE	NO.	BY	DATE	S-25	39
1			3				
2			4				

DRAWN BY D.L.B. DATE JUNE 72
CHECKED BY [illegible] DATE JUNE 73

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N.C.	8.1511101

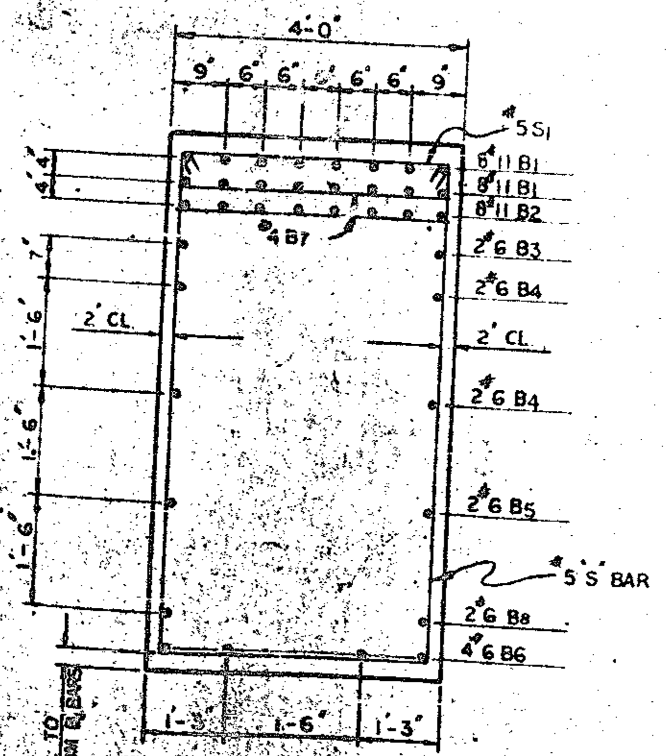
F. A. PROJECT BRS-974 (3)

SHEET NO 61 OF 82



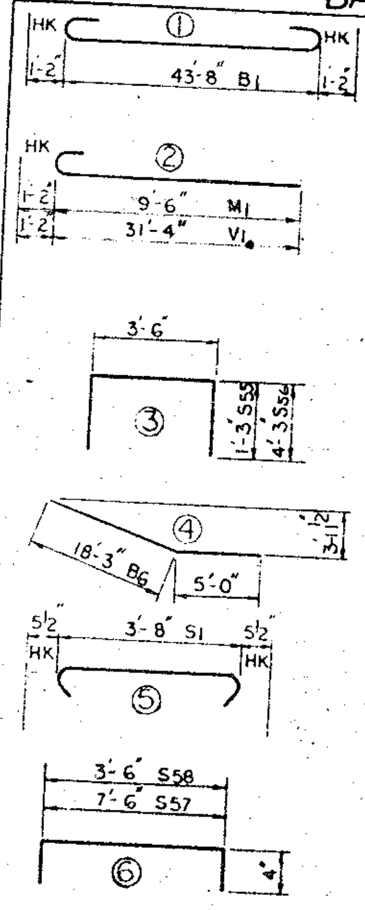
PLAN OF FOOTING

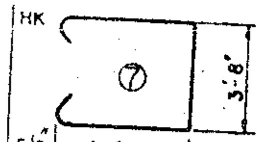
& SECTION THRU COLUMN



SECTION A-A

BAR-TYPES





5½"

4'-1"	S2
4'-5"	S3
4'-8½"	S4
5'-0"	S5
5'-3½"	S6
5'-7½"	S7
5'-8½"	S8
5'-10"	S9
5'-11"	S10
6'-0"	S11
6'-1"	S12
6'-2½"	S13
6'-4"	S14
6'-5"	S15
6'-6"	S16
6'-7"	S17
6'-8½"	S18
6'-10"	S19
6'-11"	S20
7'-0"	S21
7'-1½"	S22
7'-2½"	S23
7'-3½"	S24
7'-4½"	S25
7'-5"	S26
7'-6"	S27
7'-5½"	S28
7'-4"	S29
7'-3"	S30
7'-2"	S31
7'-1"	S32
6'-11½"	S33
6'-10½"	S34
6'-9"	S35
6'-7½"	S36
6'-6½"	S37
6'-4½"	S38
6'-3"	S39
6'-1½"	S40
6'-0½"	S41
5'-10½"	S42
5'-9"	S43
5'-8"	S44
5'-6½"	S45
5'-5"	S46
5'-3"	S47
5'-2"	S48
5'-0½"	S49
4'-8"	S50
4'-4"	S51
3'-11½"	S52
3'-7"	S53
3'-3"	S54

BILL OF MATERIAL

FOR BENT #5

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	16	#11	1	46'-0"	3910	S34	1	#5	7	18'-4"	19
B2	8	#11	STR	25'-10"	1098	S35				18'-1"	19
B3	2	#6	STR	15'-0"	45	S36				17'-10"	19
B4	4	#6	STR	43'-8"	262	S37				17'-8"	18
B5	2	#6	STR	35'-8"	107	S38				17'-4"	18
B6	8	#6	4	23'-3"	279	S39				17'-1"	18
B7	35	#4	STR	3'-8"	86	S40				16'-10"	18
B8	2	#6	STR	21'-10"	66	S41				16'-8"	17
						S42				16'-4"	17
M1	30	#11	2	10'-8"	1,700	S43				16'-1"	17
						S44				15'-11"	17
S1	85	#5	5	4'-7"	406	S45				15'-8"	16
S2	1		7	12'-9"	13	S46				15'-5"	16
S3				13'-5"	14	S47				15'-1"	16
S4				14'-0"	15	S48				14'-11"	16
S5				14'-7"	15	S49				14'-8"	15
S6				15'-2"	16	S50				13'-11	15
S7				15'-10"	17	S51				13'-3"	14
S8				16'-0"	17	S52				12'-6"	13
S9				16'-3"	17	S53				11'-9"	12
S10				16'-5"	17	S54	1	#5	7	11'-1"	12
S11				16'-7"	17	S55	7	#4	3	6'-0"	28
S12				16'-9"	17	S56	50	#3	3	12'-0"	226
S13				17'-0"	18	S57	50	#3	6	[illegible]	154
S14				17'-3"	18	S58	100	#3	6	4'-2"	157
S15				17'-5"	18	T1	26	#11	STR	25'-[illegible]	[illegible]
S16				17'-7"	18	T2	43	#6	STR	12'-[illegible]	[illegible]
S17				17'-9"	19						
S18				18'-0"	19						
S19				18'-3"	19	V1	30	#11	2	32'-6"	5,180
S20				18'-5"	19						
S21				18'-7"	19						
S22				18'-10"	20						
S23				19'-0"	20						
S24	1			19'-2"	20						
S25	4			19'-4"	81						
S26	4			19'-5"	81						
S27	1			19'-7"	20						
S28	3			19'-6"	61						
S29	1			19'-3"	20						
S30	1			19'-1"	20						
S31	1			18'-11"	20						
S32	1			18'-9"	20						
S33	1	#5	7	18'-6"	19						

REINFORCING STEEL LBS. 19,018

CLASS "AA" CONCRETE CU. YD. ~~48.0~~ 56.12

CLASS "A" CONCRETE CU. YD. ~~[illegible]~~ 110.70

CONCRETE BREAKDOWN

POUR NO.	CU. YDS.
1 (SEAL)	~~48.0~~ 56.12
2 (FTG)	41.30
3 (COL)	~~29.5~~ 28.60
4	40.80
TOTAL CLASS "A" CONCRETE	~~111.6~~ 110.70
TOTAL CLASS "AA" CONCRETE	~~48.0~~ 56.12

NOTE: ALL BAR DIMENSIONS ARE OUT TO OUT.

PROJECT No. 8.1511101

CASWELL COUNTY

STATION: 38+02.40-L

SHEET NO 2 of 2

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

BENT #5

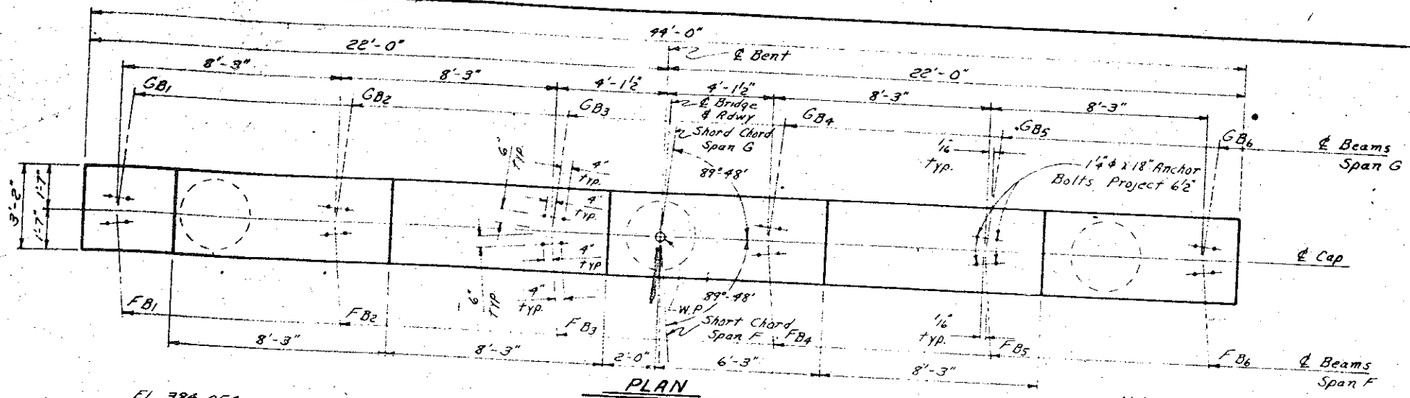
FEB

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

S-26

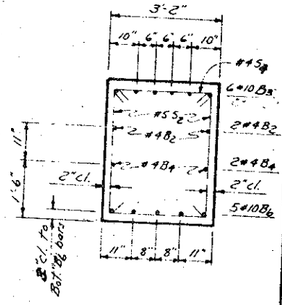
FED. ROAD DIV. NO.	STATE	PROJECT NO.
9	N. C.	8.1511101
F. A. PROJECT	BRS-974 (3)	

SHEET No 62 of 82

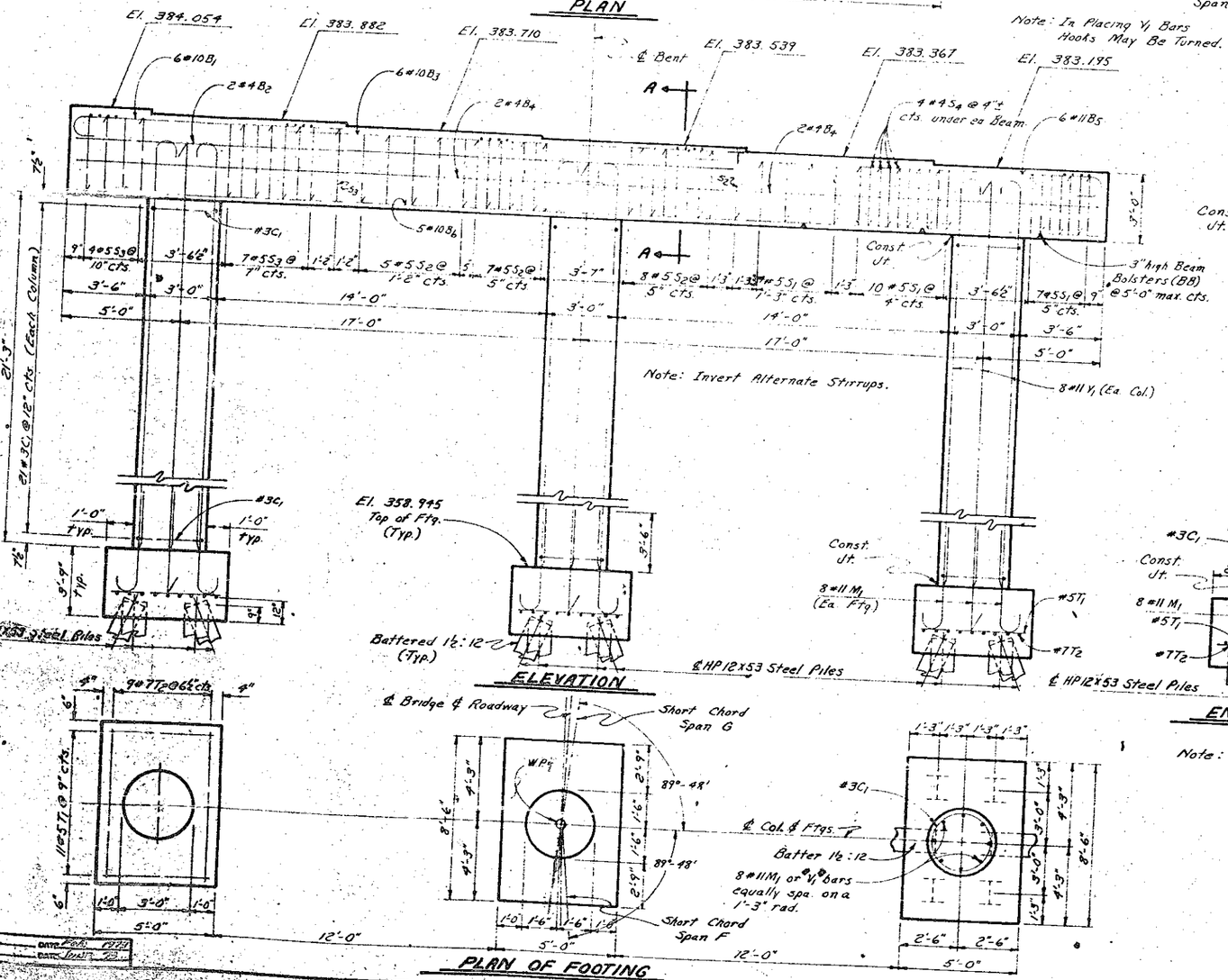


PLAN

Note: In Placing Y1 Bars Hooks May Be Turned.



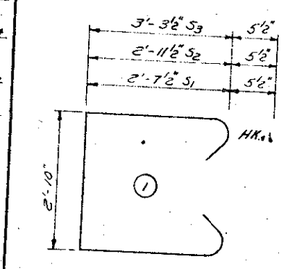
SECTION A-A



PLAN OF FOOTING

BAR TYPES

All dimensions are out to out.



BILL OF MATERIAL

BENT # 6

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#10	2	12'-6"	323
B2	2	#4	Str.	27'-11"	187
B3	6	#10	Str.	19'-9"	510
B4	4	#4	Str.	22'-6"	60
B5	6	#11	2	20'-5"	665
B6	5	#10	Str.	43'-8"	939
C1	63	#3	4	9'-5"	223
M1	24	#11	2	7'-5"	746
S1	21	#5	1	9'-0"	197
S2	21	#5	1	9'-8"	212
S3	12	#5	1	10'-8"	129
S4	24	#4	3	3'-7"	57
T1	33	#5	Str.	4'-6"	155
T2	27	#7	Str.	8'-0"	442
V1	24	#11	2	27'-11"	3177

Reinforcing Steel Lbs.	8,058#	
Class "A" Concrete Cu. Yds.	*51.9	
HP 12x53 Steel Piles	No. 18	Lin. Ft. 342.0

CONCRETE BREAKDOWN

Pour # 1 (Ftg.)	17.7	Cu. Yds.
Pour # 2	16.7	Cu. Yds.
Pour # 3	17.5	Cu. Yds.
Total	*51.9	Cu. Yds.

PROJECT NO. 8.1511101

CASWELL COUNTY

STATION: 38+02.40 -℄-

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

BENT # 6

February 1973

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

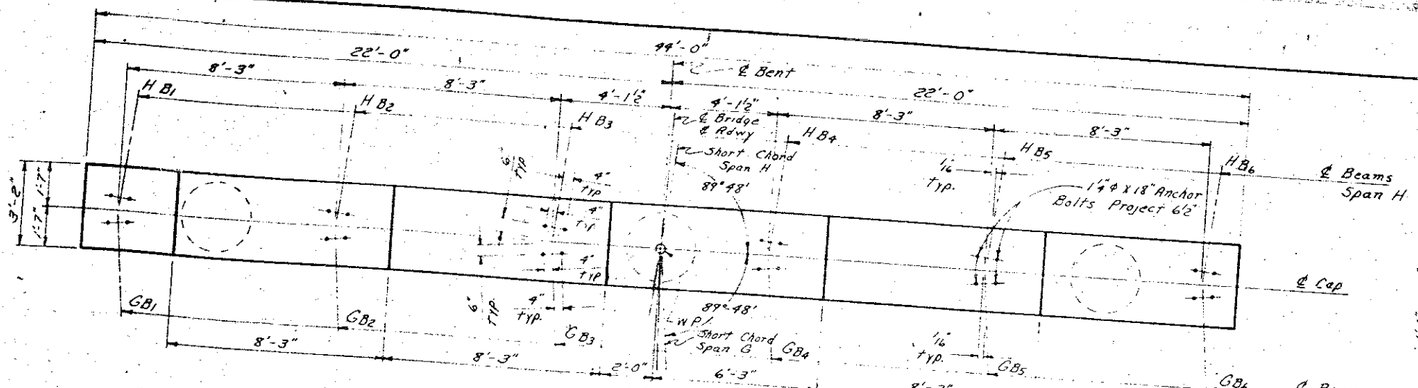
CHECKED ALL 5-27
TOTAL SHEETS 36

DRAWN BY: [illegible] DATE: Feb. 1973
CHECKED BY: [illegible] DATE: [illegible]

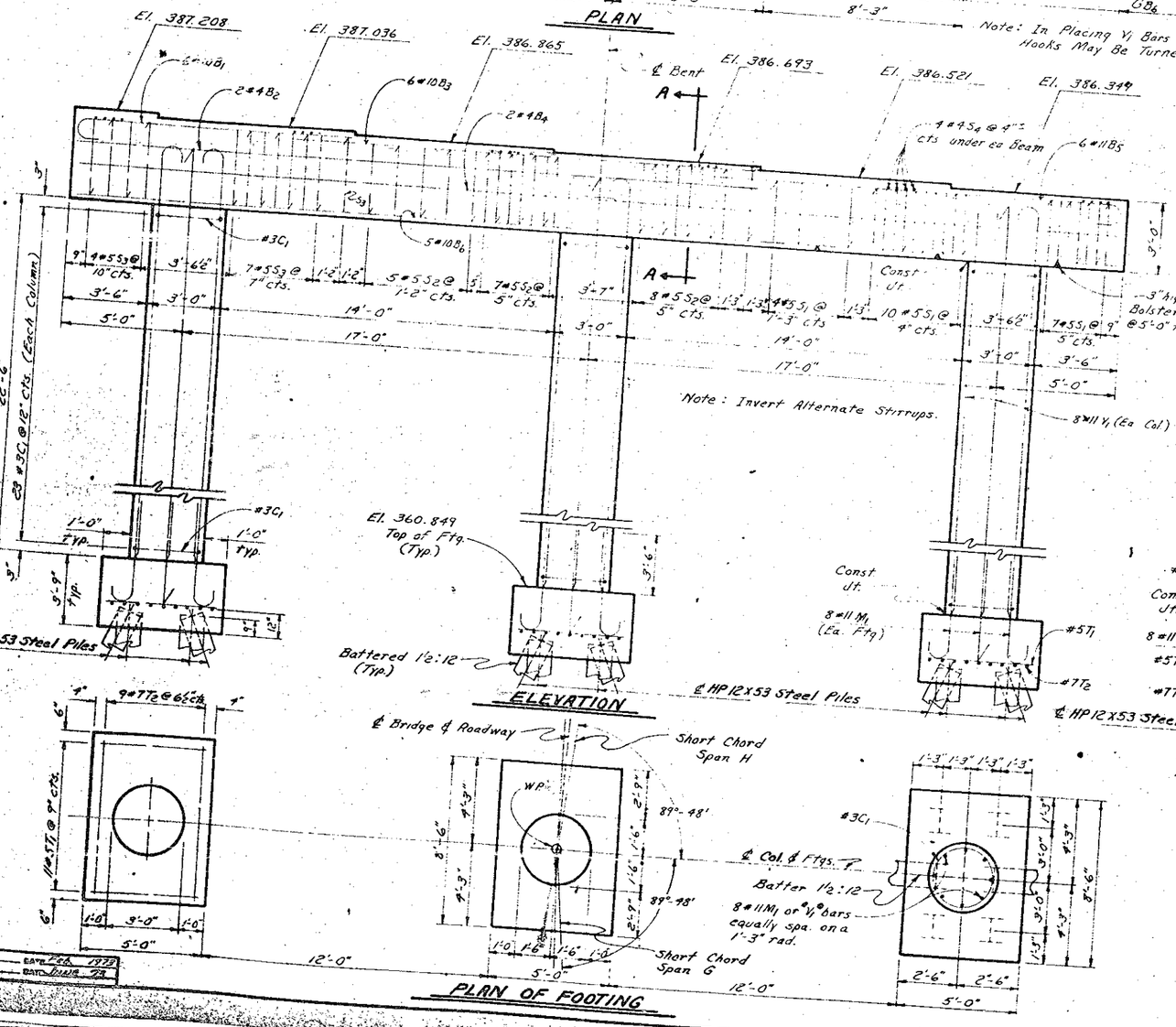
FED. ROAD DIV. NO.	STATE	PROJECT NO.
7	N. C.	B-1511101

P. A. PROJECT BRS-974 (3)

SHEET No 68 of 82



PLAN

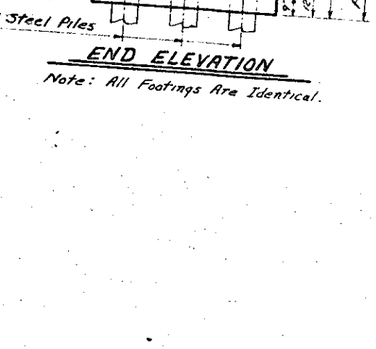


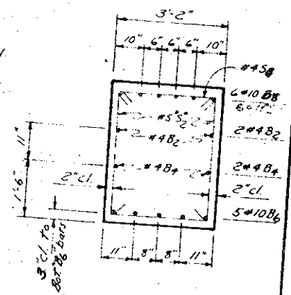
ELEVATION

END ELEVATION

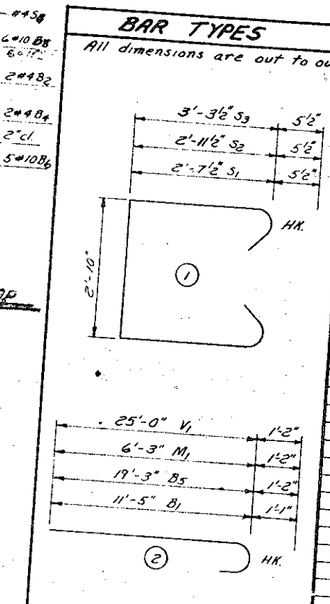
Note: All Footings Are Identical.

PLAN OF FOOTING





SECTION THRU CAP



BAR TYPES

All dimensions are out to out.

BILL OF MATERIAL

BENT # 7

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#10	2	12'-6"	323
B2	2	#4	Str.	27'-3½"	37
B3	6	#10	Str.	19'-9"	510
B4	1	#4	Str.	22'-6"	30
B5	6	#11	2	20'-5"	466
B6	5	#10	Str.	43'-8"	939
C1	69	#3	4	9'-5"	299
M1	29	#11	2	7'-5"	946
S1	21	#5	1	9'-0"	197
S2	21	#5	1	9'-8"	212
S3	12	#5	1	10'-4"	129
S4	24	#4	3	3'-7"	57
T1	33	#5	Str.	4'-6"	155
T2	27	#7	Str.	8'-8"	492
V1	24	#11	2	26'-2"	3,537

Reinforcing Steel Lbs.	8,239*
Class "A" Concrete Cu. Yds.	*52.9*
HP 12x53 Steel Piles No. 18 Lin. Ft.	360

CONCRETE BREAKDOWN

Pour # 1 (Ftg.)	17.7 Cu. Yds.
Pour # 2	17.7 Cu. Yds.
Pour # 3	17.5 Cu. Yds.
Total	*52.9* Cu. Yds.

PROJECT No. B-1511101

CASWELL COUNTY

STATION: 38+02.90

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

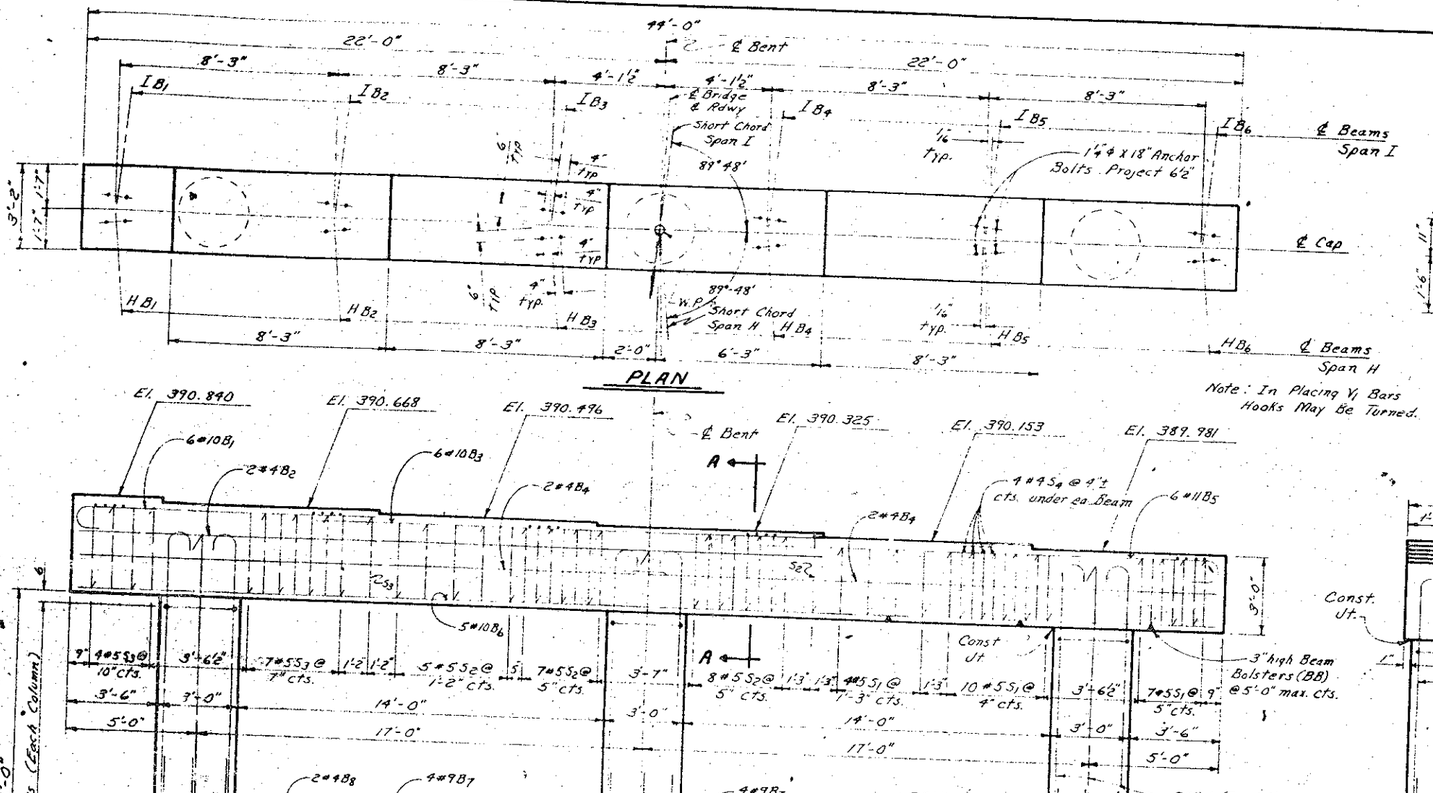
BENT # 7

February 1973

REVISIONS						
NO.	BY	DATE	NO.	BY	DATE	
1			3			SHEET NO. S-28
2			4			

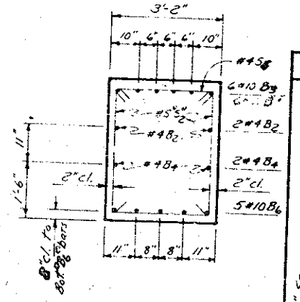
DRAWN BY: G. Sills DATE: Feb. 1973
CHECKED BY: M. Wright DATE: June 73
CHECKED BY:

FED. ROAD CIV. NO.	STATE	PROJECT NO.
9	N. C.	8.1511101
F. A. PROJECT	BRS-974 (3)	
SHEET NO 64 OF 82		



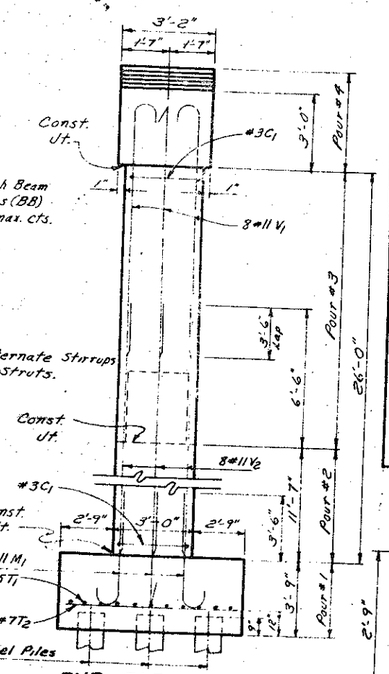
PLAN

Note: In Placing V_1 Bars Hooks May Be Turned.



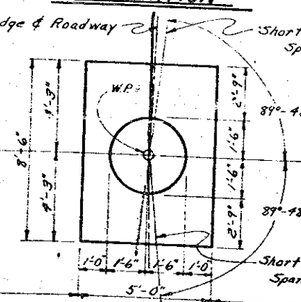
SECTION THRU CAP

ELEVATION

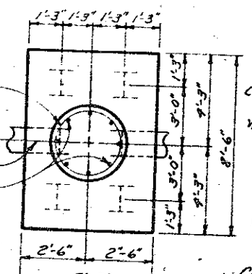


END ELEVATION

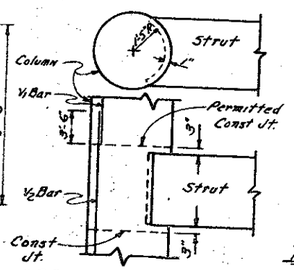
Note: All Footings Are Identical.

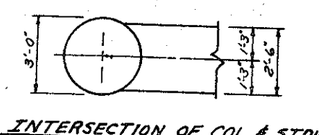


PLAN OF FOOTING



OPTIONAL PRECAST STRUT



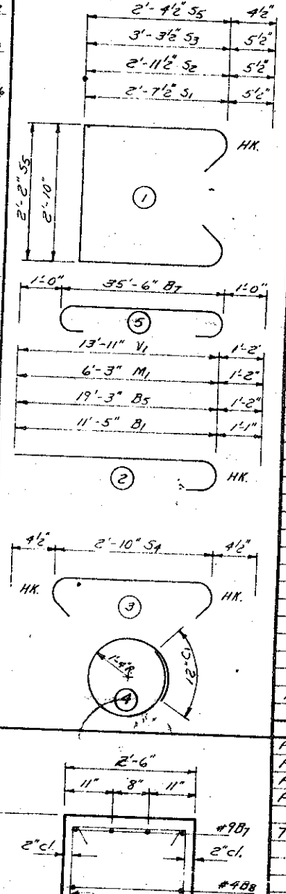


INTERSECTION OF COL. & STRUT

Note: Reinforcing Steel shown in the Bill of Matl. is based on cast in place strut. If the optional precast strut is used, any additional cost must be absorbed by the contractor.

BAR TYPES

All dimensions are out to out.



BILL OF MATERIAL

BENT # 8

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B_1	6	#10	2	18'-6"	323
B_2	2	#4	Str.	[illegible]	[illegible]
B_3	6	#10	Str.	19'-9"	510
B_4	4	#4	Str.	22'-6"	60
B_5	6	#11	2	20'-5"	[illegible]
B_6	5	#10	Str.	43'-8"	939
B_7	8	#9	5	37'-6"	1020
B_8	4	#4	Str.	11'-6"	49
C_1	78	#3	4	9'-5"	276
M_1	27	#11	2	7'-5"	946
S_1	28	#5	1	9'-0"	197
S_2	21	#5	1	9'-8"	212
S_3	12	#5	1	10'-4"	129
S_4	24	#4	3	3'-7"	57
S_5	22	#4	1	7'-8"	113
T_1	33	#5	Str.	4'-6"	155
T_2	27	#7	Str.	8'-6"	442
V_1	24	#11	2	15'-1"	4,923
V_2	24	#11	Str.	18'-1"	2,306

Reinforcing Steel Lbs. 10,345
Class "A" Concrete Cu. Yds. 463.3
HP 12 x 53 Steel Piles No. 18
Lin. Ft. 540

CONCRETE BREAKDOWN

Pour # 1 (Ftg.)	177 Cu. Yds.
Pour # 2	9.1 Cu. Yds.
Pour # 3	190 Cu. Yds.
Pour # 4	175 Cu. Yds.
Total	* 463.3 Cu. Yds.

PROJECT NO. 8.1511101

CASWELL COUNTY

STATION: 38+08.40 -L-

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

BENT # 8

February 1973

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

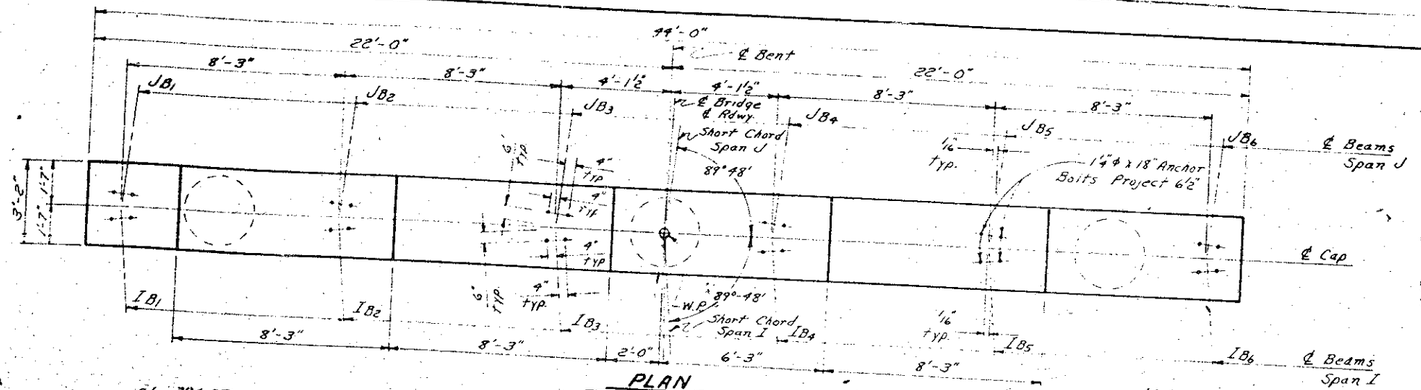
SHEET NO. S-22
TOTAL SHEETS 39

DRAWN BY: C. L. Lee DATE: Feb. 1973
CHECKED BY: D. H. Dilday Jr. DATE: Feb. 73

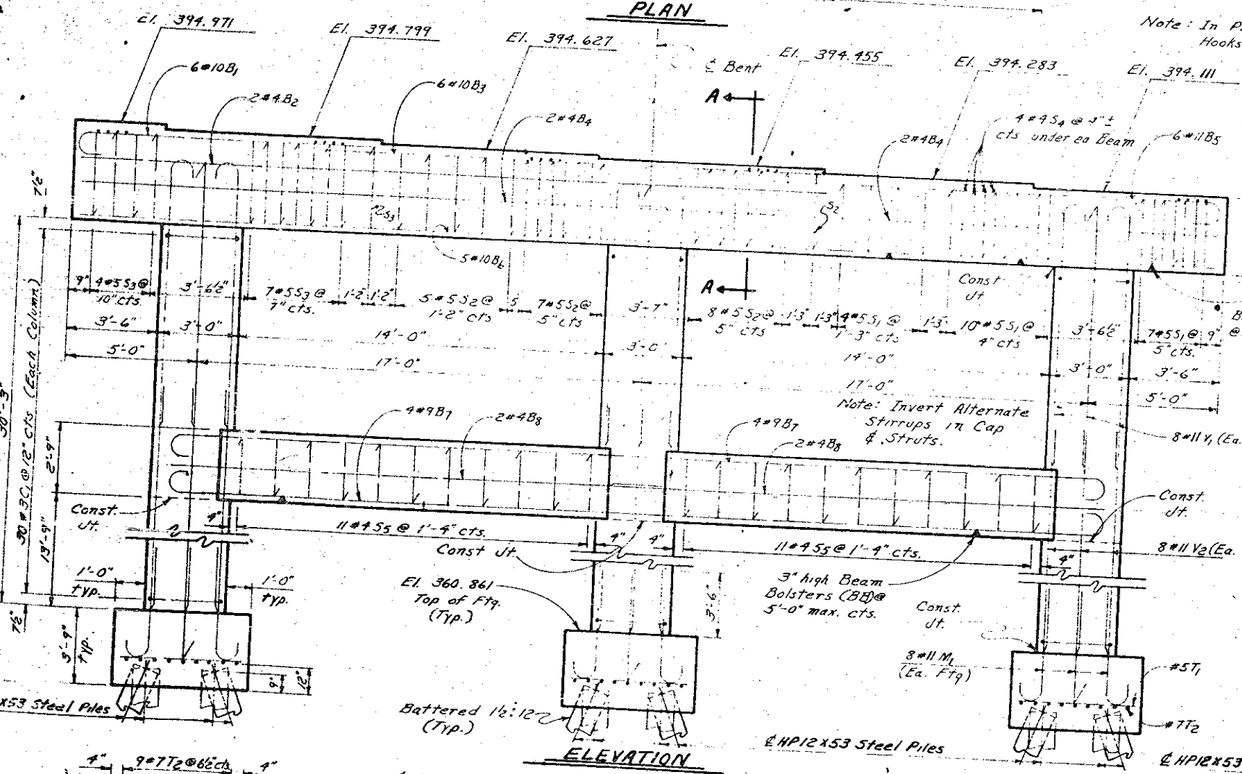
FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N. C.	8.1511101

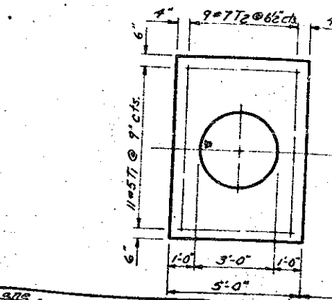
F. A. PROJECT BRS-974(3)

SHEET No 65 of 82

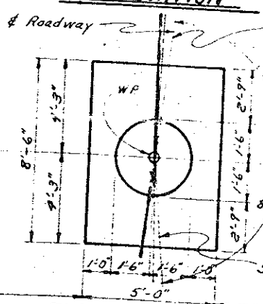


PLAN

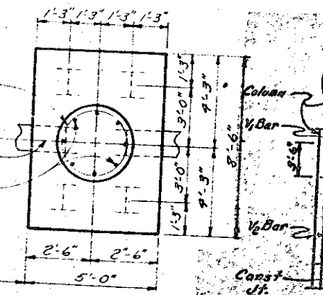


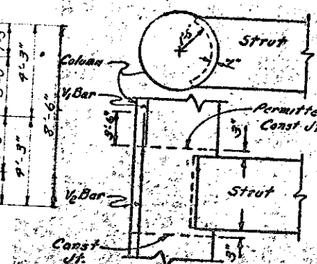


Note: All Footings Are Identical



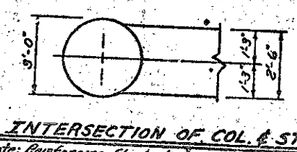
PLAN OF FOOTING





OPTIONAL PRECAST STRUT

Note: For Section Thru Strut Details See Bent # 8.

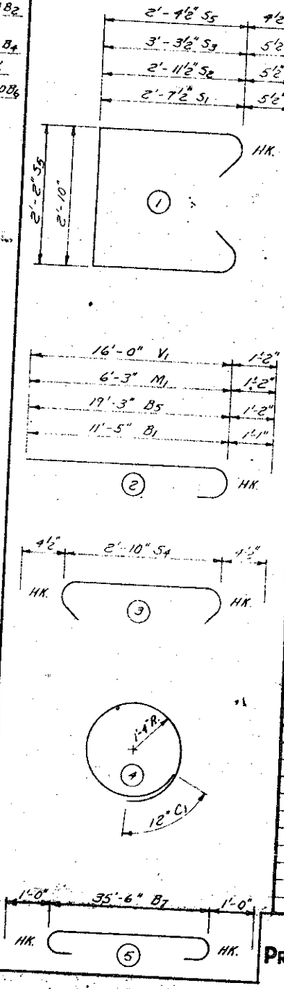


INTERSECTION OF COL. & STRUT

Note: Reinforcing Steel shown in the Bill of Mat'l is based on cast in place strut. If the optional precast strut is used, any additional cost must be absorbed by the Contractor.

BAR TYPES

All dimensions are out to out.



BILL OF MATERIAL

BENT # 9

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#10	2	12'-6"	329
B2	2	#4	Str.	27'-1"	77
B3	6	#10	Str.	19'-9"	510
B4	4	#4	Str.	22'-6"	60
B5	6	#11	2	20'-5"	613
B6	5	#10	Str.	43'-8"	1127
B7	8	#9	5	37'-6"	1020
B8	4	#4	Str.	18'-5"	49
C1	90	#3	4	9'-5"	319
M1	24	#11	2	7'-5"	996
S1	21	#5	1	9'-0"	197
S2	21	#5	1	9'-8"	212
S3	12	#5	1	10'-9"	129
S4	24	#4	3	3'-7"	57
S5	22	#4	1	7'-8"	113
T1	33	#5	Str.	4'-6"	155
T2	27	#7	Str.	16'-0"	442
V1	24	#11	2	47'-2"	2,189
V2	24	#11	Str.	20'-3"	2,582

Reinforcing Steel Lbs. 10,930

Class A Concrete Cu. Yds. # 66.6

HP 12 x 53 Steel Piles No. 13

L/N P-270

CONCRETE BREAKDOWN

Pour # 1 (Ftg.)	17.7	Cu. Yds.
Pour # 2	10.8	Cu. Yds.
Pour # 3	20.6	Cu. Yds.
Pour # 4	17.5	Cu. Yds.
Total	# 66.6	Cu. Yds.

PROJECT No. 8.1511101

CASWELL COUNTY

STATION: 38+02.40-L

STATE OF NORTH CAROLINA

STATE HIGHWAY COMMISSION

RALEIGH

BENT # 9

February 1979

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

SHEET NO. S-30

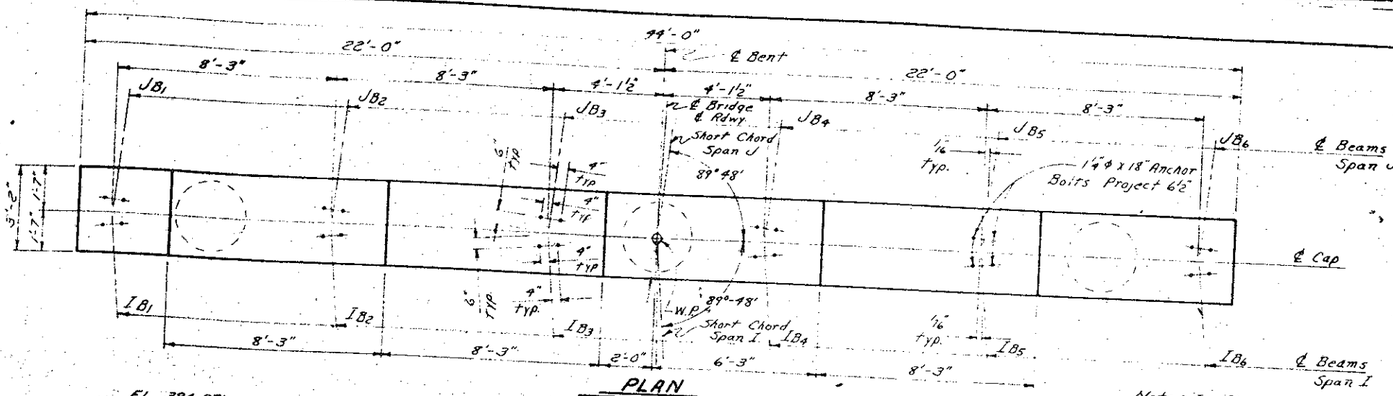
TOTAL SHEETS 89

DRAWN BY: C. Sage DATE: Feb. 1979

CHECKED BY: W. A. Udy Jr. DATE: June 79

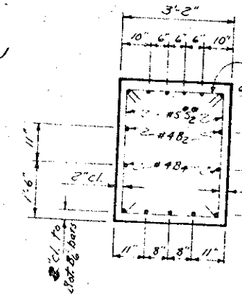
FED. ROAD DIV. NO.	STATE	PROJECT NO.
9	N. C.	8.1511101
F. A. PROJECT	BRS-974(3)	

SHEET No 65 OF 82

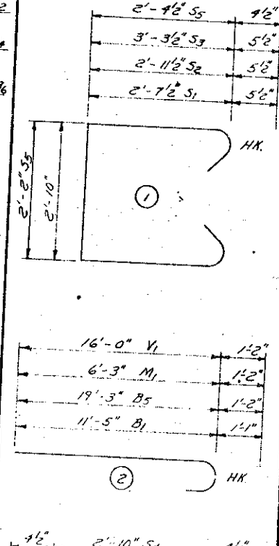


PLAN

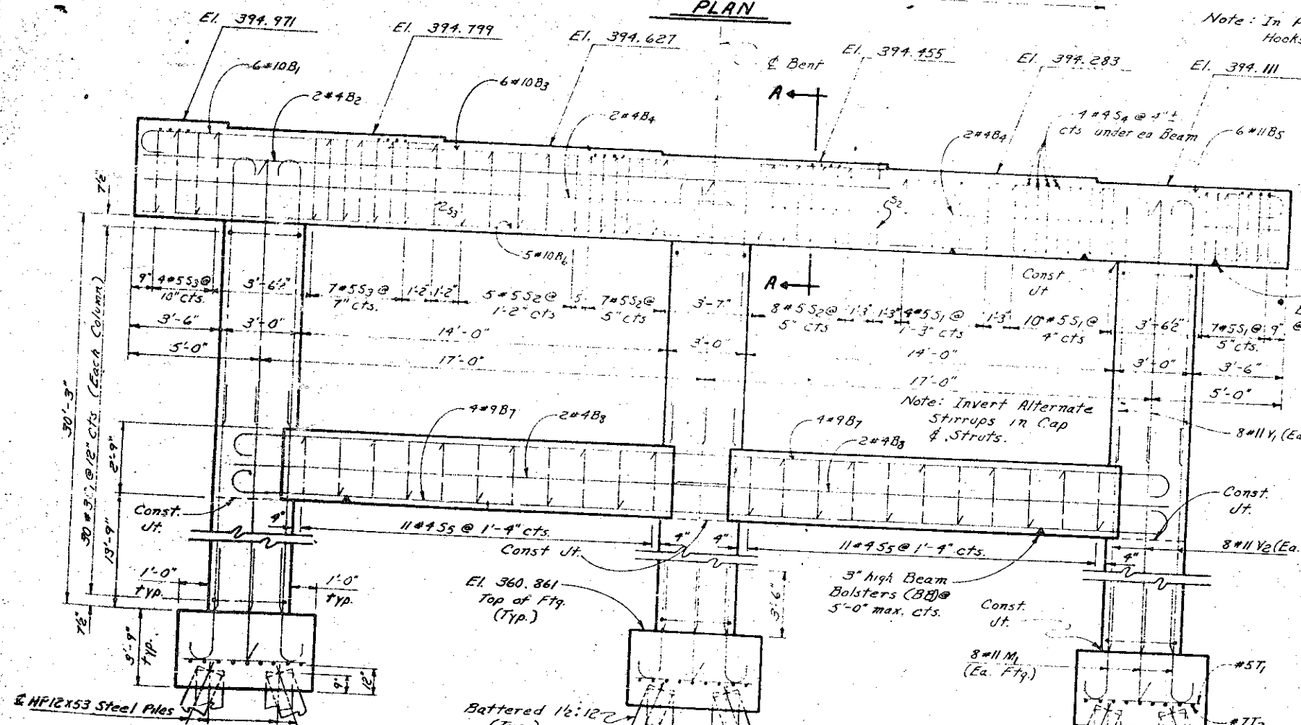
Note: In Placing V_1 Bars Hooks May Be Turned.



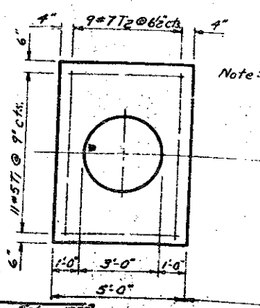
SECTION A-A CAP



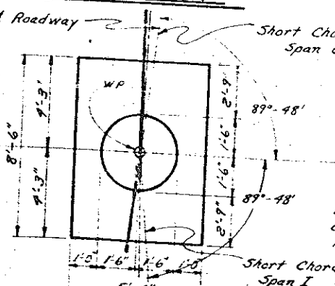
END ELEVATION



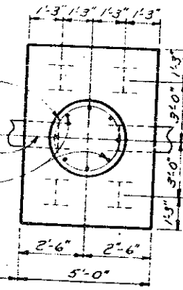
ELEVATION

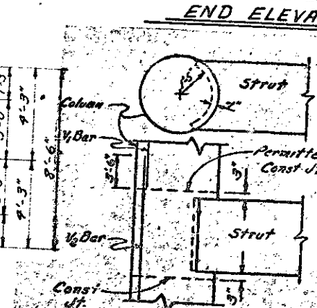


Note: All Footings Are Identical



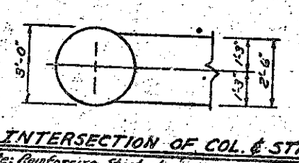
PLAN OF FOOTING





OPTIONAL PRECAST STRUT

Note: For Section Thru Strut Details See Bent # 8.



INTERSECTION OF COL. & STRUT

Note: Reinforcing Steel shown in the Bill of Mat'l is based on cast in place strut. If the optional precast strut is used, any additional cost must be absorbed by the Contractor.

BAR TYPES

All dimensions are out to out.

BILL OF MATERIAL

BENT # 9

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B_1	6	#10	2	12'-5"	329
B_2	2	#4	Str.	27'-10"	37
B_3	6	#10	Str.	19'-9"	510
B_4	4	#4	Str.	22'-6"	60
B_5	6	#11	2	20'-5"	638
B_6	5	#10	Str.	43'-8"	1388
B_7	8	#9	5	37'-6"	1020
B_8	4	#8	Str.	18'-8"	49
C_1	90	#3	4	9'-5"	319
M_1	24	#11	2	7'-5"	946
S_1	22	#5	1	9'-0"	197
S_2	21	#5	1	9'-9"	212
S_3	12	#5	1	10'-9"	129
S_4	24	#4	3	3'-7"	57
S_5	22	#4	1	7'-8"	113
T_1	33	#5	Str.	9'-6"	155
T_2	27	#7	Str.	8'-6"	442
V_1	24	#11	2	17'-2"	2,789
V_2	24	#11	Str.	20'-3"	2,582

Reinforcing Steel Lbs. 10,930

Class "A" Concrete Cu. Yds. # 66.6

HP12x53 Steel Piles No. 18

LIN. FT. 378

CONCRETE BREAKDOWN

Pour # 1 (Ftg.)	17.7	Cu. Yds.
Pour # 2	10.8	Cu. Yds.
Pour # 3	20.6	Cu. Yds.
Pour # 4	17.5	Cu. Yds.
Total	# 66.6	Cu. Yds.

PROJECT NO. 8.1511101

CASWELL COUNTY

STATION: 38+02.40-L-#

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

BENT # 9

February 1973

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

SHEET NO. S-30

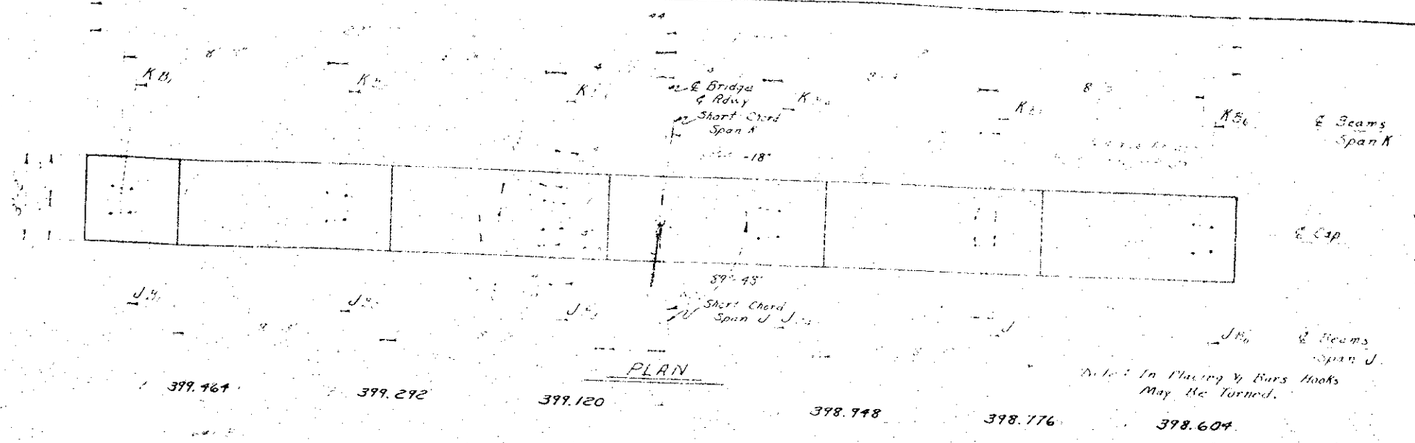
TOTAL SHEETS 30

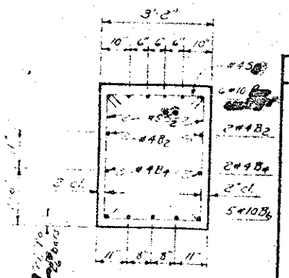
DRAWN BY: C. Lane DATE: Feb. 1973
CHECKED BY: J. A. Oliver Jr. DATE: March 73

DR. #7

FED. ROAD DIV. NO.	STATE	PROJECT NO.
7	N.C.	8.1511102
F. A. PROJECT	RS-974(4)	

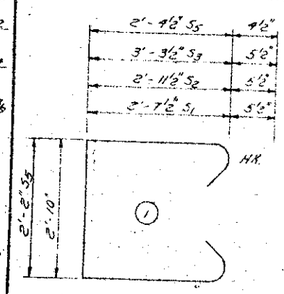
SHEET No 66 OF 82





BAR TYPES

All dimensions are out to out.



BILL OF MATERIAL

BENT # 10

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#10	2	12'-6"	323
B2	2	#4	Str.	[illegible]	[illegible]
B3	6	#10	Str.	19'-4"	310
B4	4	#4	Str.	22'-6"	60
B5	6	#11	2	20'-5"	[illegible]
B6	5	#10	Str.	43'-8"	939
B7	8	#7	5	[illegible]	[illegible]
B8	4	[illegible]	5	[illegible]	492
C1	99	#3	4	9'-5"	351
M1	24	#11	2	7'-5"	946
S1	21	#5	1	9'-0"	118
S2	[illegible]	#5	1	9'-8"	[illegible]
S3	12	#5	4	10'-4"	129
S4	24	#4	3	3'-7"	57
S5	22	#4	1	7'-8"	113
T1	[illegible]	#5	Str.	[illegible]	[illegible]
T2	21	#7	Str.	[illegible]	[illegible]
V1	24	#11	2	18'-5"	2398
V2	24	#11	Str.	21'-6"	2742

Note: See Sheet S-31A For Additional Bill of Mat'l.

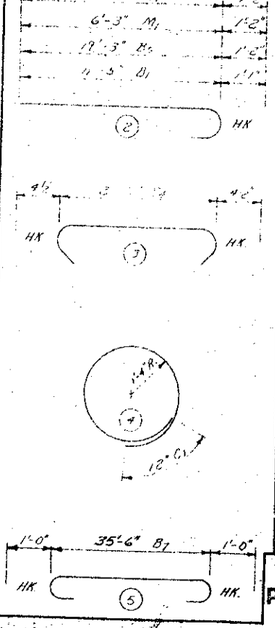
Reinforcing Steel Lbs. [illegible]

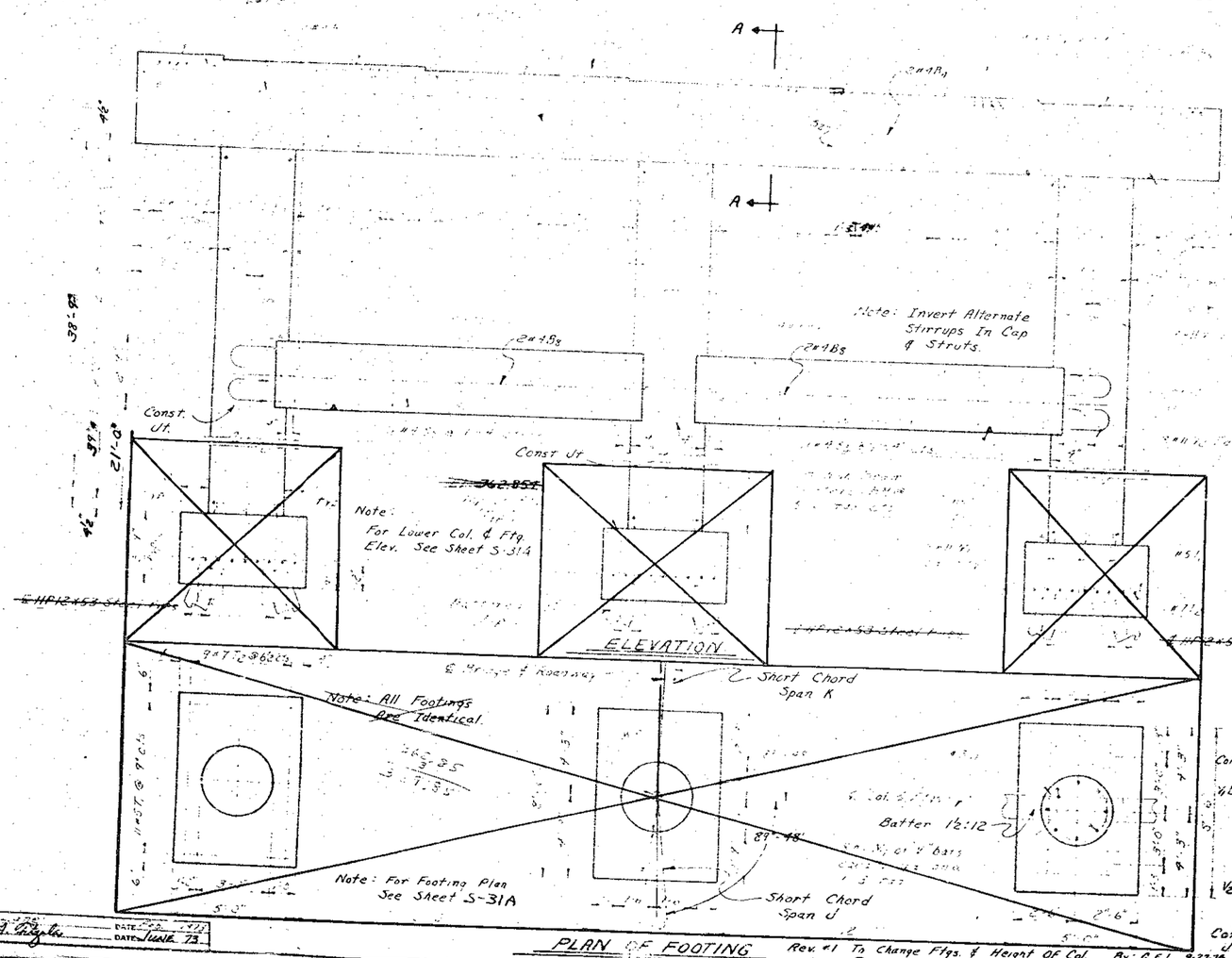
Class "A" Concrete Cu. Yds. [illegible]

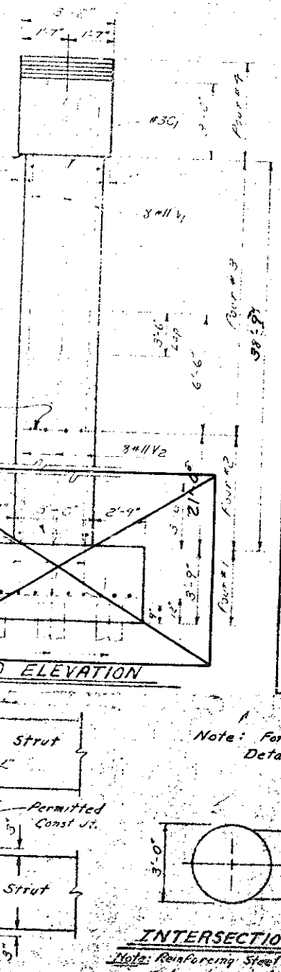
CONCRETE BREAKDOWN

Pour # 1 (Ftg.)	[illegible]	Cu. Yds.
Pour # 2	[illegible]	Cu. Yds.
Pour # 3	[illegible]	Cu. Yds.
Pour # 4	[illegible]	Cu. Yds.
Total	[illegible]	Cu. Yds.

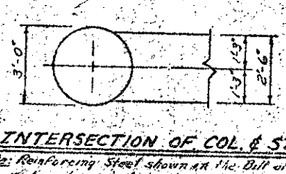
SEE SHEET S-[illegible] FOR COMBINED TOTALS. BENT # 10







Note: For Section Thru Strut Details See Bent # 8.



INTERSECTION OF COL. & STRUT

Note: Reinforcing Steel shown on the Bill of Mat'l is based on cast in place strut. If the optional precast strut is used, any additional cost must be absorbed by the contractor.

PROJECT No. 8.1511102

CASWELL COUNTY

STATION: 38+02.40 -L-

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

BENT # 10

February 1973

REVISIONS					
BY	DATE	NO.	BY	DATE	
GFL	9-27-74	3			
		4			

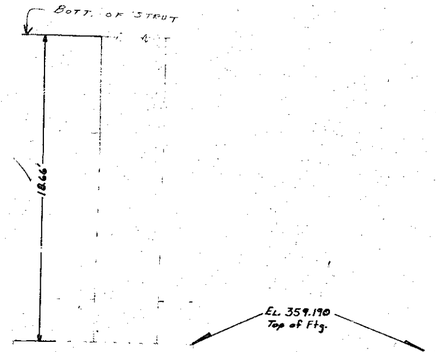
SHEET NO. S-31 TOTAL

DRAWN BY [illegible] DATE [illegible]
CHECKED BY Z. A. Ziegler DATE June 73

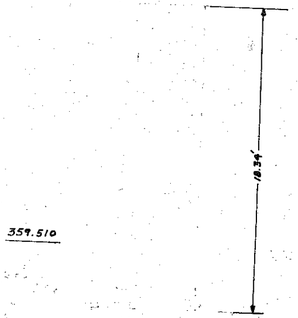
FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N. C.	B-1511102

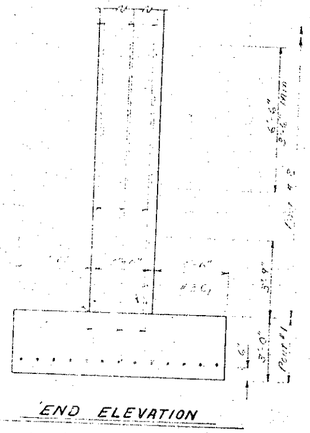
F. A. PROJECT

SHEET NO 69 OF 82



ELEVATION





END ELEVATION

PLAN OF FOOTING

ADDITIONAL BILL OF MATERIAL

Reinforcing Steel

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
C1	13	#3	4	9'-5"	47
T1	1	#5	Str.	9'-6"	5
T2	21	#5	Str.	6'-0"	131
T4	12	#7	Str.	9'-6"	233
V2	29	#11	Str.	12'-6"	1594

Total Additional Reinf. Steel Required (Lbs.) 2,009

CLASS "A" CONCRETE

Foot # 1 (Ftg.) Cu. Yds.

Foot # 2 Cu. Yds.

Total Additional Class "A" Concrete Req'd Cu. Yds.

See Sheet No S-3B for Combined Totals Bent # 10

Note: This Is A New Sheet Representing A Revision of Bent # 10 For Lowering Footings & Changing From Pile to Spread Footings.

PROJECT NO. B-1511102

Caswell COUNTY

STATION: 38+02.40-L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT # 10
COL. & FTG. DETAIL

Sept 1974

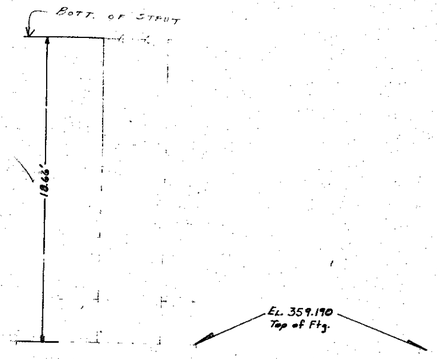
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-91A
1			3			
2			4			

DRAWN BY: [illegible] DATE: Sept 1974
CHECKED BY: [illegible] DATE: Sept 1974

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N.C.	B-1511102

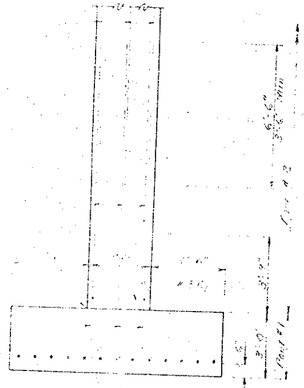
F. A. PROJECT

SHEET No 67 OF 82

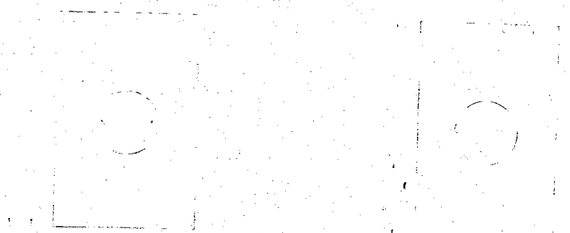


ELEVATION

359.510



END ELEVATION



PLAN OF FOOTING

ADDITIONAL BILL OF MATERIAL

Reinforcing Steel

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
C1	12	#3	9	9'-5"	67
T1	1	#5	Str.	8'-6"	5
T3	21	#5	Str.	6'-0"	131
T9	12	#7	Str.	9'-6"	233
V3	29	#11	Str.	12'-6"	1594
Total Additional Reinf. Steel to be Required (Lbs.)					2030

CLASS "A" CONCRETE

Pour # 1 (Ftg.)	4.4 Cu. Yds.
Pour # 2	4.4 Cu. Yds.
Total Additional Class "A" Concrete Reqd.	8.8 Cu. Yds.

SEE SHEET No S-3B FOR CONTINUED TOTALS BENT # 10

Note: This Is A New Sheet Representing A Revision Of Bent # 10 For Lowering Footings & Changing From Pile To Spread Footings.

PROJECT No. B-1511102

Caswell COUNTY

STATION: 38+02.40 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT # 10
COL. & FTG. DETAIL

Sept 1974

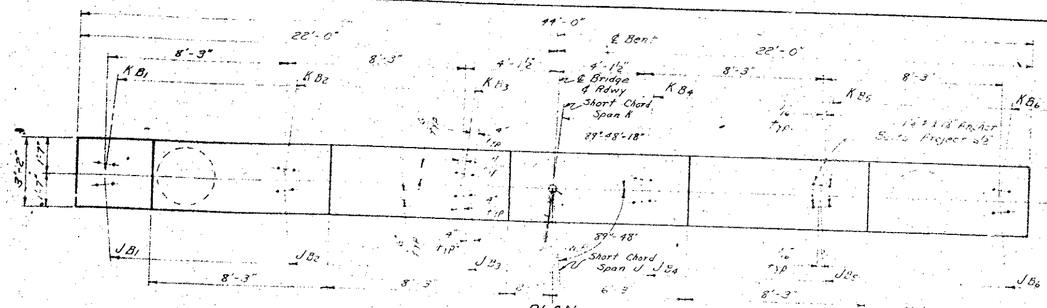
REVISIONS						SHEET
NO.	BY	DATE	NO.	BY	DATE	S-3A
1			3			TOTAL SHEETS
2			4			82

DRAWN BY: G. SAYRE DATE: Sept 1974
CHECKED BY: C. A. Lewis DATE: Oct 1974

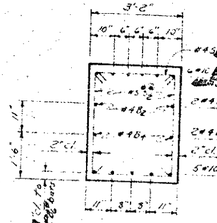
FED. ROAD DIV. NO.	STATE	PROJECT NO.
9	N. C.	8.1511102

F. A. PROJECT RS-974(4)

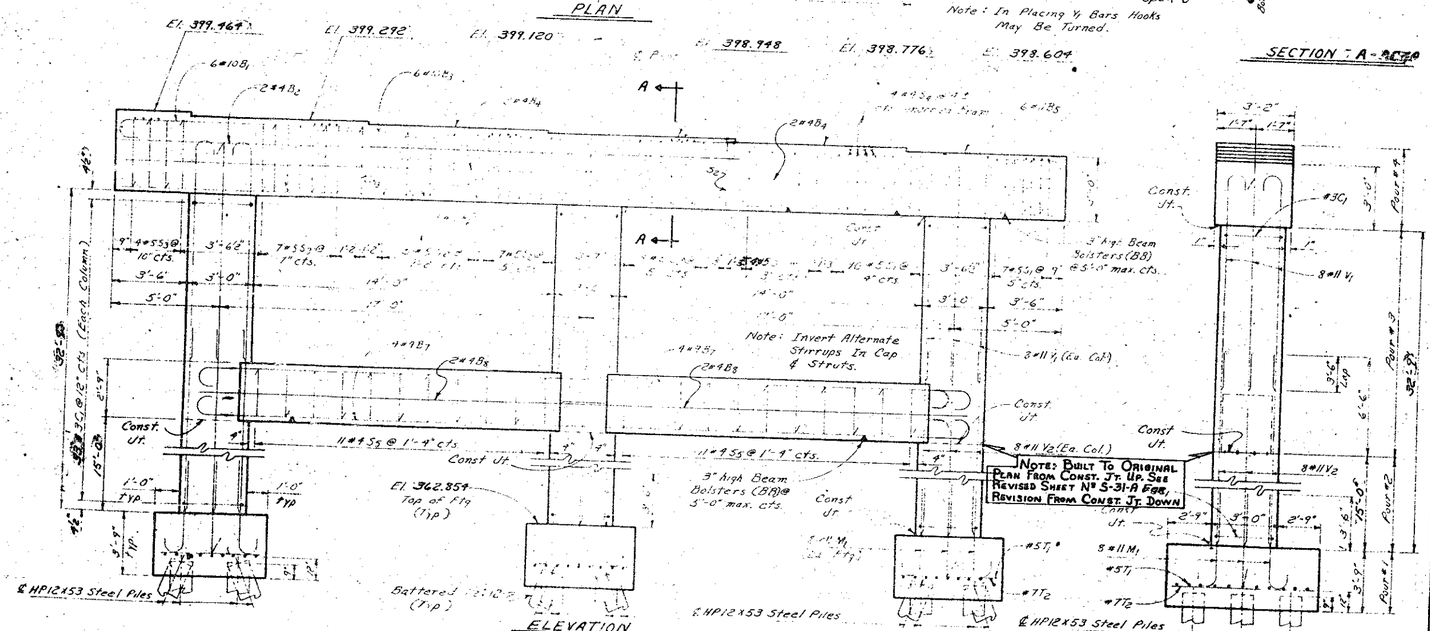
SHEET No 60 of 82



PLAN

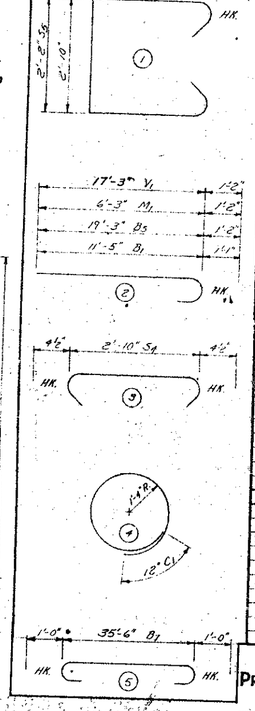


SECTION A-A



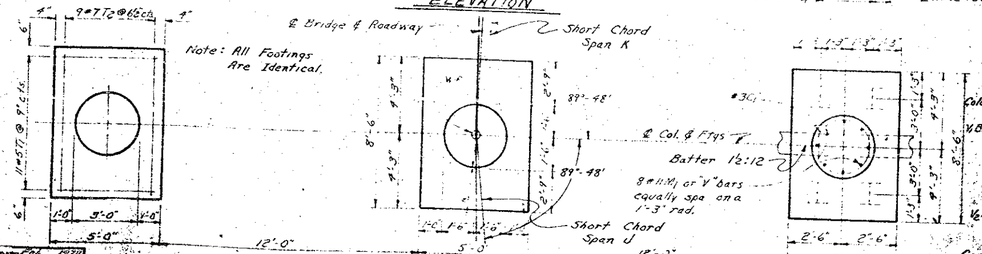
ELEVATION

END ELEVATION

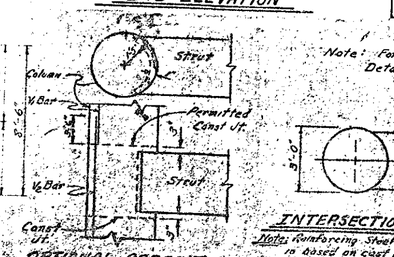


BAR TYPES

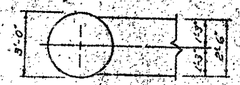
All dimensions are out to out.



PLAN OF FOOTING



OPTIONAL PRECAST STRUT



INTERSECTION OF COL. & STRUT

Note: For Section Thru Strut Details See Bent # 8.

Note: Reinforcing Steel shown on the Bill of Mat'l is based on cast in place struts. If the optional precast strut is used, any additional cost must be absorbed by the contractor.

BILL OF MATERIAL

BENT # 10

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B_1	6	#10	2	12'-6"	329
B_2	2	#4	Str.	89'-10"	60
B_3	6	#10	Str.	19'-9"	510
B_4	4	#4	Str.	22'-6"	60
B_5	6	#11	2	20'-5"	613
B_6	5	#10	Str.	93'-8"	939
B_7	8	#7	5	41'-5"	1141
B_8	4	#3	Str.	45'-5"	91
C_1	99	#3	4	9'-5"	351
M_1	24	#11	2	7'-5"	996
S_1	21	#5	1	9'-0"	82
S_2	12	#5	1	9'-8"	50
S_3	12	#5	1	10'-9"	129
S_4	24	#4	3	3'-7"	57
S_5	22	#4	1	7'-8"	113
T_1	42	#5	Str.	65'-0"	171
T_2	21	#7	Str.	65'-0"	299
V_1	24	#11	2	18'-5"	2398
V_2	24	#11	Str.	21'-6"	2792

No. Piles Used: See Note No S-31A And S.A. 03

Reinforcing Steel Lbs.

Class "A" Concrete Cu. Yds.

HP 12x53 Steel Piles No: Lin. Ft. 2760

CONCRETE BREAKDOWN

Pour # 1 (Ftg.)	110	Cu. Yds.
Pour # 2	110	Cu. Yds.
Pour # 3	21.6	Cu. Yds.
Pour # 4	17.5	Cu. Yds.
Total	76.4%	Cu. Yds.

PROJECT NO. 8.1511102

CASWELL COUNTY

STATION: 38+02.90 -L-

STATE OF NORTH CAROLINA

STATE HIGHWAY COMMISSION

RALEIGH

BENT # 10

February 1971

REVISIONS						
NO.	BY	DATE	NO.	BY	DATE	S 31
1			3			
2			4			59

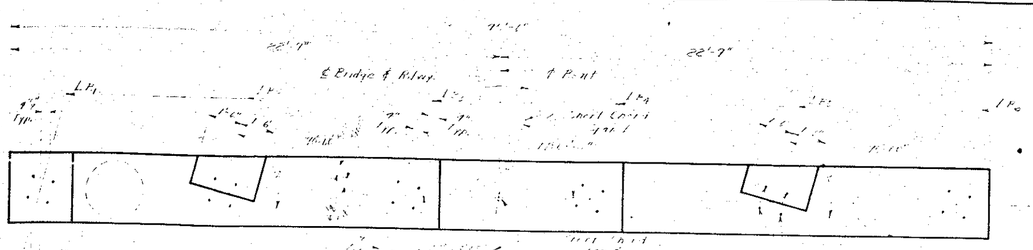
DESIGNED By Latta DATE Feb. 1971

CHECKED By R. A. Wright DATE March 71

FED. ROAD DIV. NO.	STATE	PROJECT NO.
7	N. C.	8.1511102
F. A. PROJECT	RS-974(4)	

SHEET NO 64 OF 82

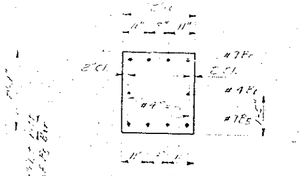
NOTE: See Bent #10 for details on Optional Precast Strut & Intersection of Col. & Strut.



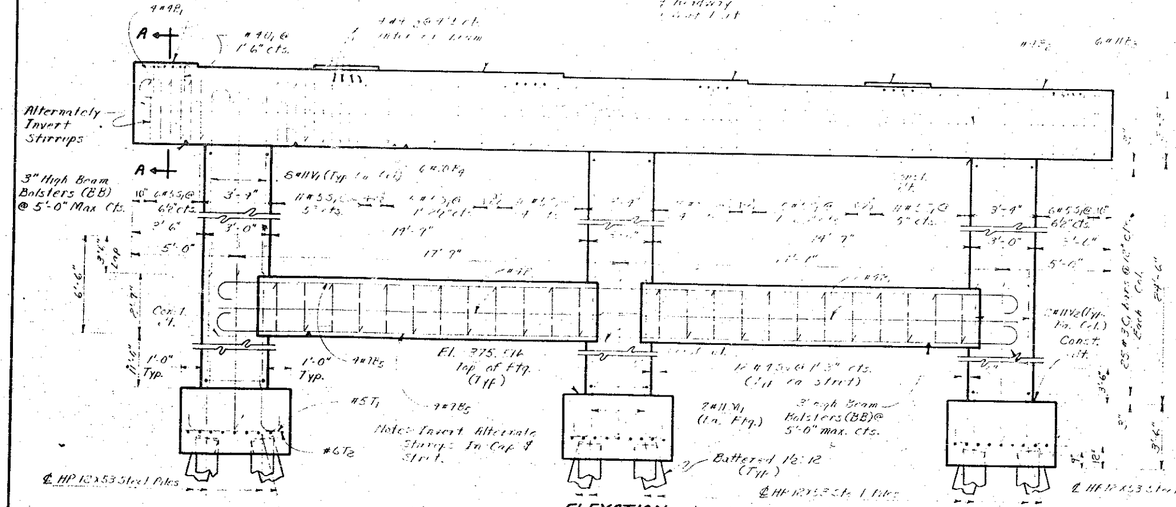
PLAN

L_{P_1}	P_1 to P_2
L_{P_2}	P_2 to P_3
L_{P_3}	P_3 to P_4
L_{P_4}	P_4 to P_5
L_{P_5}	P_5 to P_6
L_{P_6}	P_6 to P_7

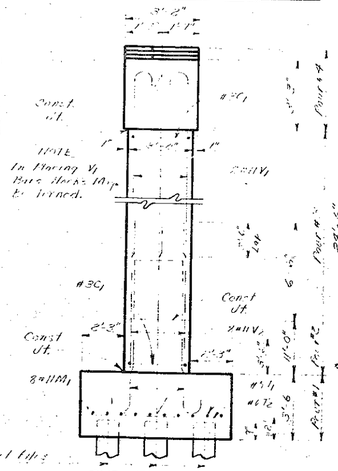
TABLE SHOWING DIMENSION FROM ANCHOR BOLTS (SPAN L) TO ℄ CAP



SECTION THRU STRUT



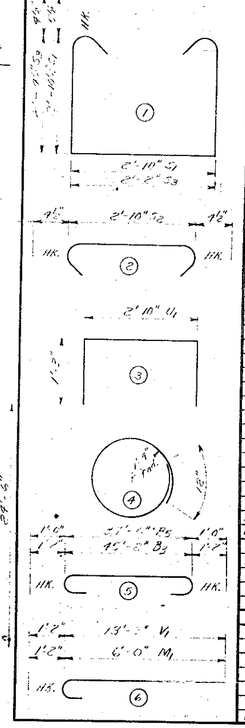
ELEVATION



END ELEVATION

BAR TYPES

all dimensions are c. to c.



BILL OF MATERIAL

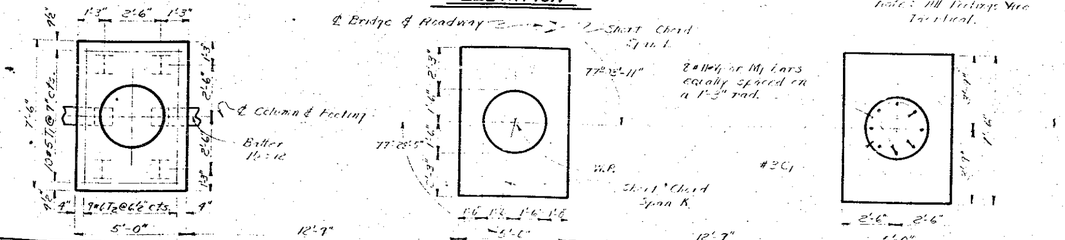
BENT # 11

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B_1	9	#7	Str.	2'-11"	8
B_2	9	#7	Str.	29'-3"	62
B_3	6	#11	S	97'-6"	1519
L_{P_1}	6	#10	Str.	95'-2"	1146
L_{P_2}	8	#7	S	[illegible]	1061
L_{P_3}	2	#7	Str.	17'-0"	51
C_1	76	#3	7	7'-5"	266
M_1	24	#11	6	7'-2"	719
S_1	64	#5	1	9'-6"	634
S_2	24	#7	3	3'-7"	57
S_3	24	#7	1	1'-8"	123
I_1	30	#5	Str.	4'-0"	191
I_2	27	#6	Str.	7'-0"	284
U_1	2	#9	3	5'-9"	7
V_1	24	#11	6	17'-5"	1899
V_2	24	#11	Str.	17'-6"	2231

Reinforcing Steel Lbs. 13,257
Class "A" Concrete Cu. Yds. 57.8
HP 12x53 Steel Piles
No. 14 Lin. Ft. ~~450~~ 302.68

CONCRETE BREAKDOWN

Pour #	Cu. Yds.
1 (Ftg.)	19.6
2	3.6
3	19.6
4	18.0
Total	# 57.8



PLAN OF FOOTING

SECTION A-A

PROJECT NO. 8.1511102

CASWELL COUNTY

STATION: 38+02.90-L-

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

BENT # 11

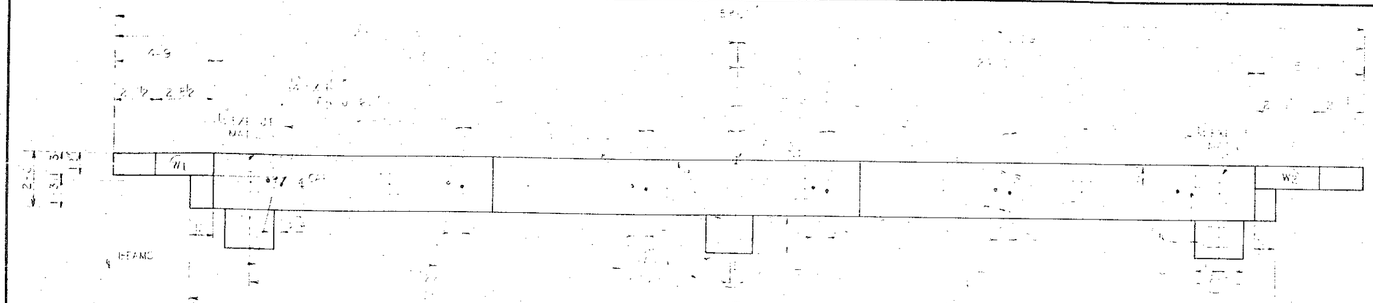
February 1973

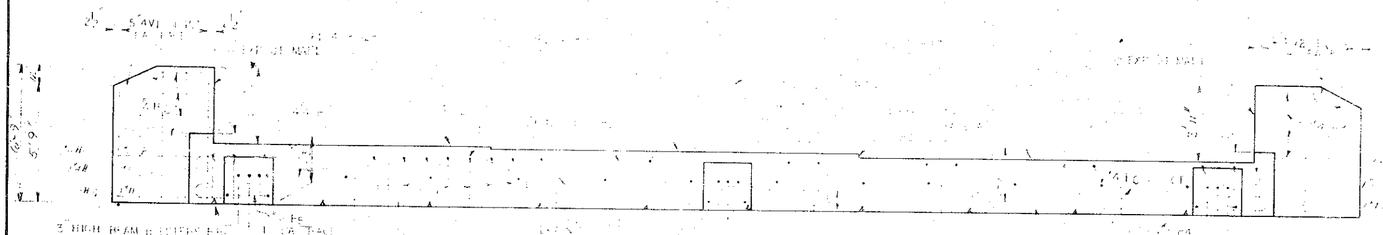
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-32
1			3			TOTAL SHEETS
2			4			59

DRAWN BY: E. Lane DATE: Feb. 1972
CHECKED BY: [illegible] DATE: July 73

FED. ROAD DIV. NO.	STATE	PROJECT NO.
	N. C.	8.1511102
F. A. PROJECT	RS-974(4)	

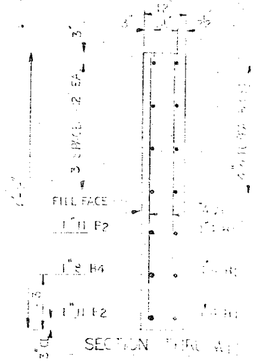
SHEET NO 70 OF 82

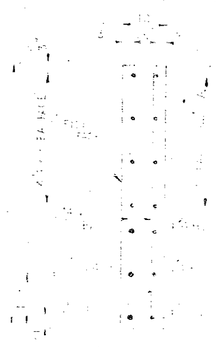




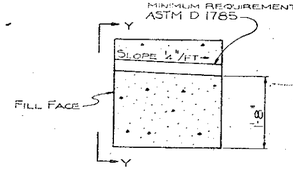
NOTES

- PIPE DRAINS MAY BE SHIFTED TO CLEAR ANCHOR BOLTS & REINFORCING STEEL IN CAP.
- FOR PILE SPLICE DETAILS, SEE END BENT "1"

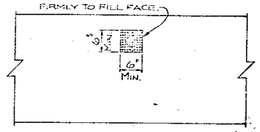




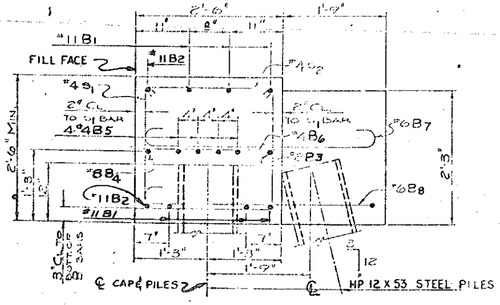
3"ø PVC Plastic Pipe Drains This pipe shall meet the minimum requirements of ASTM D 1785



6" SQUARE ALUMINUM OR GALVANIZED STEEL WIRE 4 MESH HARDWARE CLOTH OF COMMERCIAL QUALITY. ANCHOR FIRMLY TO FILL FACE.



NOTE: NO SEPARATE PAYMENT WILL BE MADE FOR FURNISHING AND INSTALLING THE PVC PLASTIC PIPE DRAINS, HARDWARE CLOTH AND FASTENERS. THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.



PIPE DRAIN DETAILS

BILL OF MATERIAL

END BENT NO. 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1		#11	1	36'-1"	1659
B2	2	#11	STR	57'-6"	11
B3	1	#6		19'-9"	173
B4	1	#6		57'-6"	154
B5	4	#4		19'-9"	133
P	12	#6	STR	2'-2"	17
P	9	#6	1	5'-2"	71
P	5	#6	4	11'-1"	50
W1	4	#4	STR	6'-3"	21
W2	4	#4	STR	4'-8"	24
W3	4	#4	STR	4'-8"	25
C1	40	#4		7'-2"	220
C2	4	#4	C	12'-11"	90
V1	10	#4	STR	6'-6"	43
V2	10	#4	STR	8'-1"	41

TOTAL REINF. STEEL LBS. 3283 #

TOTAL A CONCRETE CU YDS 15.5 #

TOTAL EXP. STEEL PILES NO. 11 LIN. FT. = 495456.69

PROJECT NO. 8.1511102

CALDWELL COUNTY

STATION: 34+24.16

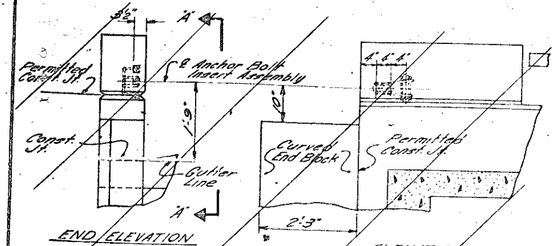
STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

END BENT NO. 2

JAN. 1973

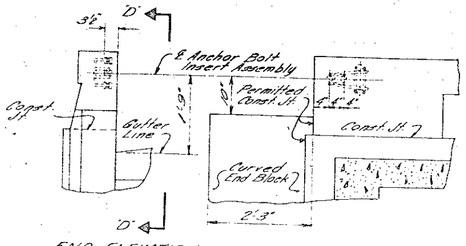
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-33
1			3			TOTAL SHEETS
2			4			39

DRAWN BY: [illegible] DATE:
CHECKED BY: [illegible] DATE: JULY 73



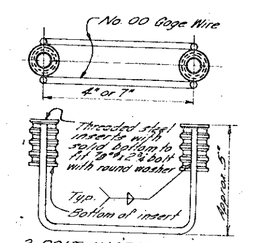
END ELEVATION — ELEVATION A-A

GUARD RAIL ANCHORAGE - TYPE 1



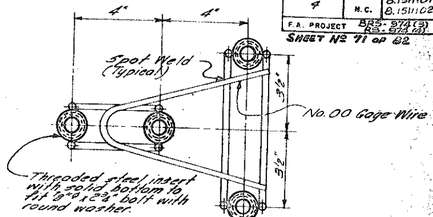
END ELEVATION — ELEVATION D-D

GUARD RAIL ANCHORAGE - TYPE 4



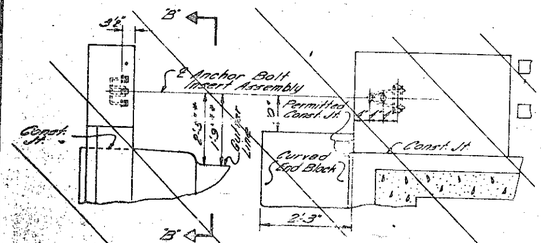
2 BOLT INSERT ASSEMBLY

(ELEVATION VIEW)



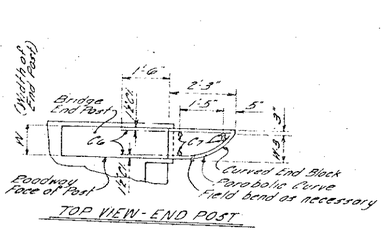
4 BOLT INSERT ASSEMBLY

(Made up of 2 2 Bolt Insert Assemblies)

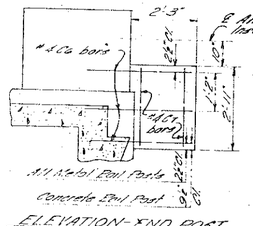


END ELEVATION — ELEVATION B-B

GUARD RAIL ANCHORAGE - TYPE 2



TOP VIEW - END POST



ELEVATION - END POST SHOWING CURVED END BLOCK

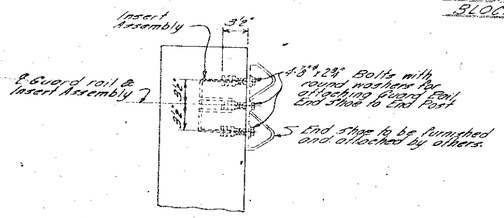
BILL OF MATERIAL FOR CURVED END BLOCK

Bar	No.	Size	Length	Weight
Cu	6	#4	3'-7"	8
C1	4	#4	2'-7"	7

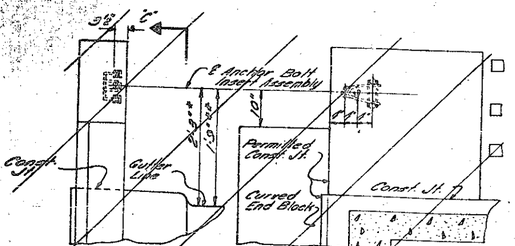
Quantities for a Curved End Blocks	Reinforcing Steel	21 lbs
	Class A Concrete	2 C.Y.
Quantities for a Curved End Blocks	Reinforcing Steel	45 lbs
	Class A Concrete	2 C.Y.
Quantities for a Curved End Blocks	Reinforcing Steel	66 lbs
	Class A Concrete	4 C.Y.

NOTE: CURVED END BLOCKS TO BE CAST ONLY AT END POSTS WHERE GUARDRAIL IS TO BE ATTACHED.

NOTE: GUARDRAIL TO BE ATTACHED TO ALL FOUR CORNERS OF THIS BRIDGE.



PART END VIEW OF END POST WITH GUARD RAIL END SHOE ATTACHED



END ELEVATION — ELEVATION C-C

GUARD RAIL ANCHORAGE - TYPE B

2'-3" * For 2" Curb & Gutter approaching bridge when offset distance from bridge end post to face of curb if over 9".

1'-5" * For no Curb & Gutter and 2" Curb & Gutter approaching bridge when offset distance from bridge end post to face of curb 1'-5" or less.

GENERAL NOTES

The cost of the 4 Bolt Insert Assembly Unit consisting of the insert assembly and ⅝"-11 x 2½" bolts with washers complete in place shall be included in the unit contract price bid for Class AA Concrete.

The excavation and backfill for curved end block will not be measured or paid for as a separate item. The entire cost of this work shall be included in the unit price bid for Class AA concrete.

The anchor unit shall be assembled in the shop. Bolt threads may be recut as necessary to insure fit.

The ⅝" bolts and washers shall conform to the requirements of ASTM A307 Grade A and be galvanized to conform to the requirements of ASTM A153.

At the contractors option structural steel bolts and washers, A325 the correct and alternate for the ¾" galvanized bolts and washers they shall conform to or exceed the mechanical requirements of ASTM A307. The use of this alternate shall be approved by the Engineer.

The threaded steel inserts shall conform to the requirements of ASTM A108 with a minimum tensile strength of 60000 psi.

Rev. 8/- revised to change notes concerning height of Anchor Bolt Insert Assembly. Version No 5

No change May 1972

ASSEMBLED BY	B.A. THOMPSON	4-13-72
CHECKED BY	D.H. Ward Jr.	June 72
DRAWN	[illegible]	DATE 10-70
CHECKED	[illegible]	DATE 10-70

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N.C.	8.1511101
		8.1511102
F.A. PROJECT		BRS-5741(3) BRS-5741(4)

SHEET NO 71 OF 82

PROJECT No. 8.1511101
8.1511102

CASWELL COUNTY

STATION: 38+02.40-L-6

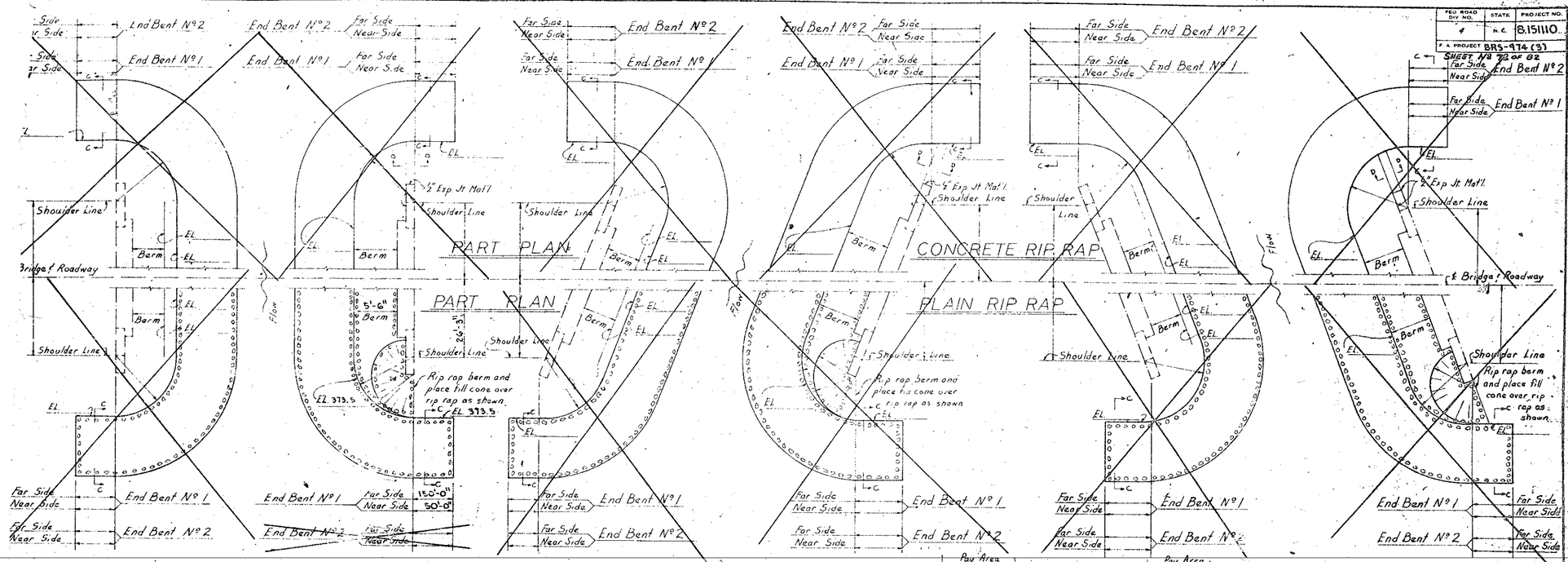
STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

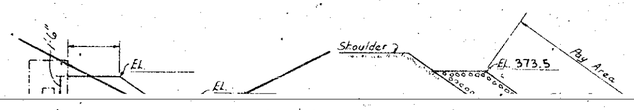
STANDARD GUARD RAIL ANCHORAGE FOR BRIDGE END POST

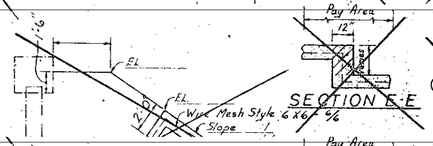
OCTOBER 1970

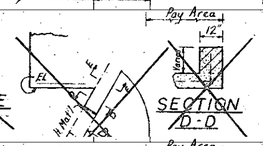
REVISIONS						
NO.	BY	DATE	NO.	BY	DATE	
1	M.L.H.	12-11-70	3			
2			4			

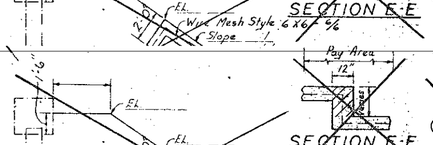
SHEET NO. S-34
TOTAL SHEETS 59

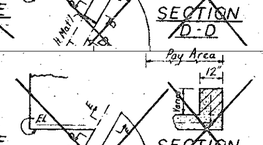


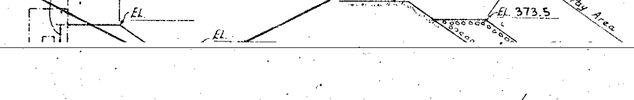


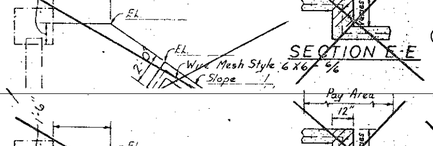


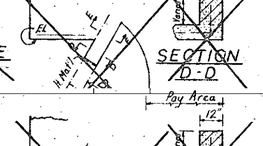


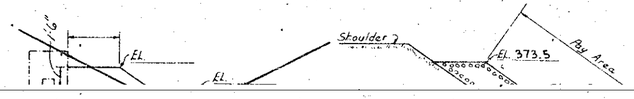


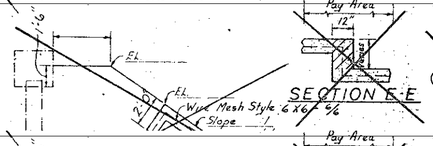


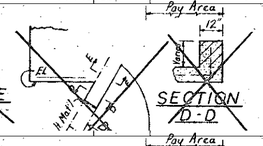


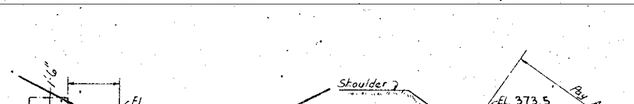


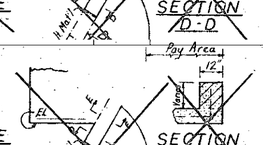












FED ROAD DIV NO.	STATE	PROJECT NO.
4	N.C.	8.151110
F. A. PROJECT	BRS-974 (3)	

SHEET Nº 72 OF 82

NOTES

Concrete Rip Rap shall be Class "B" Concrete.
Wire mesh reinforcing to be Style 6×6-6/6-60" wide. Adjacent runs of wire mesh to lap at least 6". Concrete Rip Rap to be poured in alternate 4' & 5' strips as shown in Pouring Detail. Toe walls shall be constructed at ends of rip rap similar to that shown for the top of the rip rap. (FOR Concrete Rip Rap

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