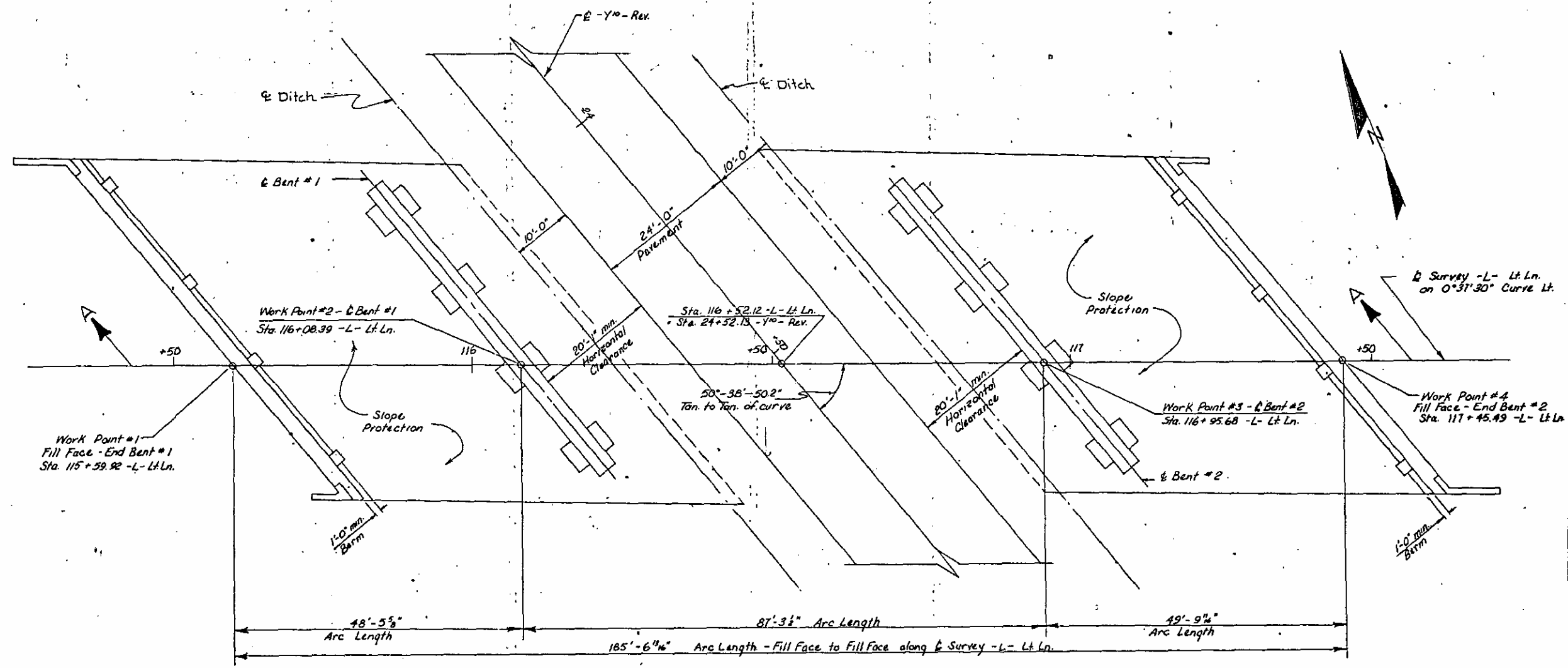


SECTION ALONG SURVEY -L- LT LN.
(Bents on Section A-A)



PLAN VIEW

311-62-15 N

PROJECT No. 8.1743606
FORSYTH COUNTY

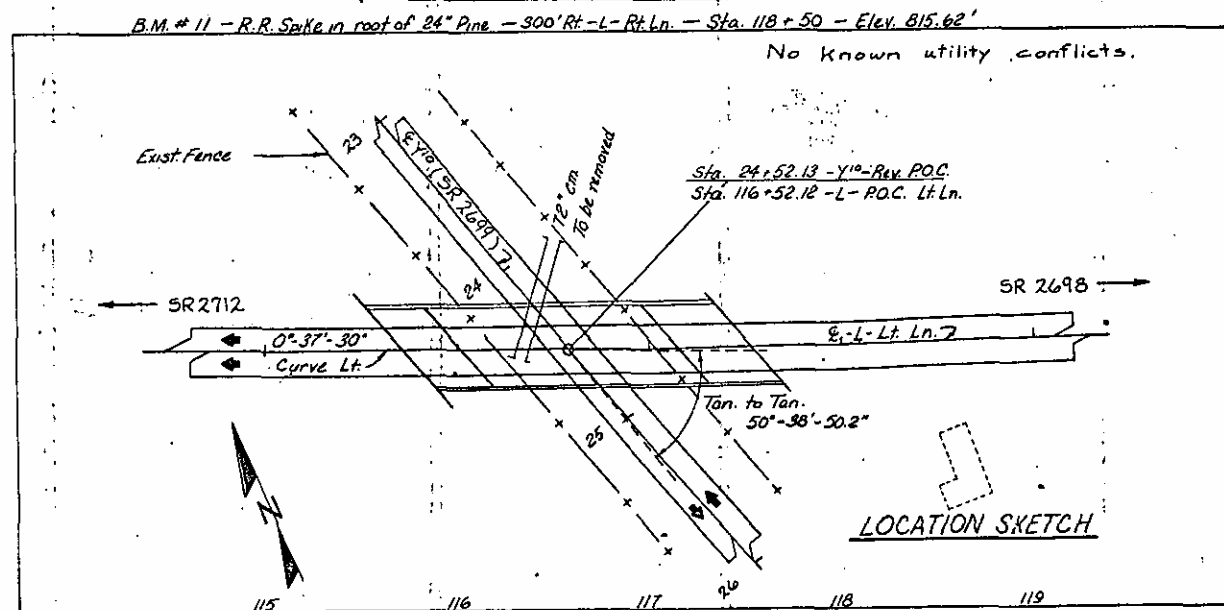
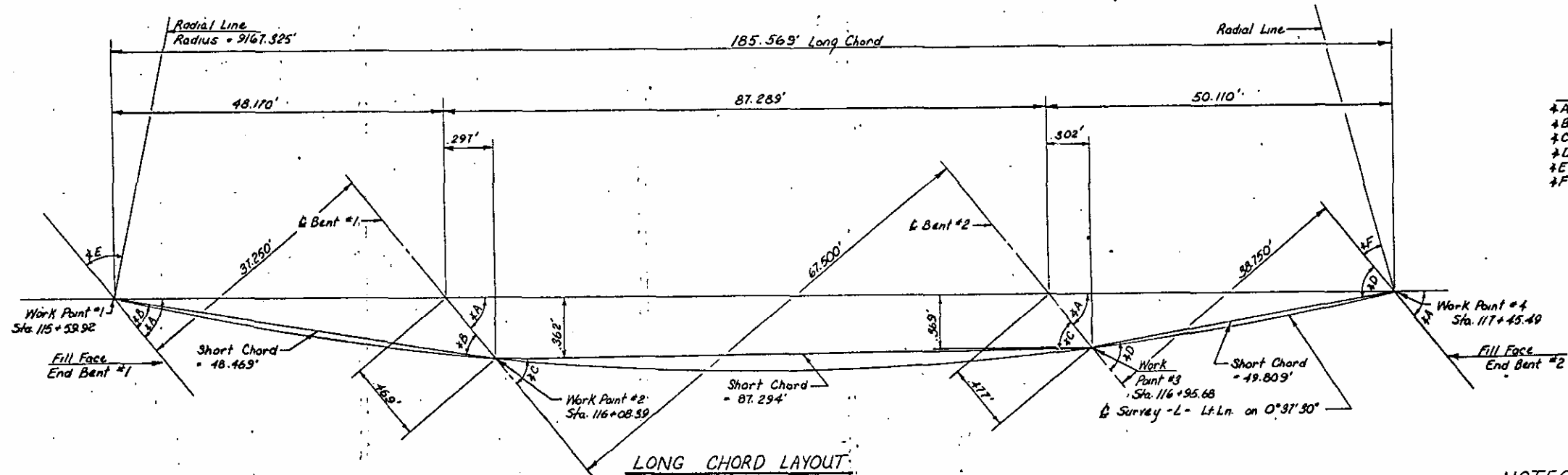
STATION: 116+52.12 -L- Lt Ln.
= 24+52.13 -Y10-REV.

Sheet 1 of 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING FOR BRIDGE
ON US 311 RELOCATION OVER
SR 2699
MAY 1977

REVISIONS						SHEET NO. 5-2
NO.	BY	DATE	NO.	BY	DATE	
1			2			TOTAL SHEETS 149
2			4			



- NOTES**
- Assumed Live Load = HS 20-44 or Alternate Loading.
 - For other Design Data and General Notes, See sheet S-NJ.
 - For Portland Cement Concrete, see Special Provisions.
 - For surface preparation and protection of unpainted structural steel and protection of substructure, see Special Provisions.
 - All Structural Steel ——— shall be unpainted A.S.T.M. - A588 grade with a minimum yield strength of 50,000 psi. The atmospheric corrosion resistance and coloring characteristics of A.S.T.M. - A588 Steel are required for the high strength bolts, nuts, washers, and the weld filler metal for this structure.
 - For Stay-in-Place Metal Forms, see Special Provisions.
 - Work is not to be started on this structure until fill has been placed by the Roadway Contractor, unless otherwise permitted by the Engineer.
 - See Special Provisions for Requirements for Texture of Bridge Deck.
 - Traffic is to be maintained on SR 2698 during construction. See Special Provisions.
 - Piles for E.B. 112, Bt. 112 to be driven to a minimum bearing capacity of 31 tons each.
 - For Elastomeric Bearings, see Special Provisions.
 - For Epoxy Resin Protective Coating for concrete, see Special Provisions.

TOTAL BILL OF MATERIAL

	Foundation Excavation	Class 'AA' Concrete	Class 'A' Concrete	Reinforcing Steel	Structural Steel	HP 12 x 53 Steel Piles	Linseed Oil Concrete Protector	Bridge Approach Slabs at sta. 116+52.12-Lt.Ln.	Elastomeric Bearing	4" Slope Protection	Concrete Barrier Rail	Expansion Joint Seal	Epoxy Resin Protective Coating for Concrete	
	Cu. Yds.	Cu. Yds.	Cu. Yds.	Lbs.	Approx. Lbs.	No. Lin. Ft.	Gallons	Lump Sum	Lump Sum	Sq. Yds.	Lin. Ft.	L.S.	Sq. Ft.	
Superstructure		303.5		66,503	212,800		23		Lump Sum		376.31			
End Bent No. 2			24.6	5,727		13	676			445			169	
Bent No. 1	150		66.3	12,192		24	648						205	
Bent No. 2	145		66.9	12,303		24	528						205	
End Bent No. 1			24.3	5,677		13	683			445			166	
Curved End Blocks		2.9		585										
Total	295	306.4	182.1	102,987	212,800	74	2,535	23	Lump Sum	Lump Sum	890	376.31	Lump Sum	745

PROJECT No. 8.1743606

FORSYTH COUNTY

STATION: 116+52.12-L-LT.LN.

Sheet 2 of 2 24+52.13-Y10-REV #7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING FOR BRIDGE
 ON US 311 RELOCATION OVER
 SR 2699

MAY 1977

REVISIONS				SHEET NO.			
NO.	BY	DATE	NO.	BY	DATE	5-3	
1			2			TOTAL SHEETS	
2			4			149	

BORING NO. EBI-1 BENT NO. 1 COLLAR ELEV. 784.0
BORING LOC. (STA) 115 + 47 L+LN 30 FT. TOTAL DEPTH 27.6

DEPTH ELEV.	BLOW COUNT	NOTES & REMARKS	LOG NO.	SOIL DESCRIPTION
784.0				GROUND SURFACE
780.1	2			0-1' BRN. SILTY CLY. F-CSE
775.1	2			1-2' GRAY SILTY PLAS. CLAY
770.1	2			2-3' GRAY BRN. SILTY ORG. SILTY CLAY. SAND. F-CSE. BLUE-GRAY F-M. SDY SILTY PLAS. CLAY
765.1	1			GRAY-WHT. SKTY F-CSE SD
760.1	1			TAN-BRN. V. MICAS. F-CSE SDY SILT SAPROLITE
				GRAY-BRN. V. MICAS. F-CSE SDY SILT SAPROLITE
				GRAY V. MICAS. F-CSE SDY SILT SAPROLITE

TERMINATE BORING AT ELEV. 760.1 IN WEATHERED ROCK

BORING NO. B1-1 BENT NO. 1 COLLAR ELEV. 784.7
BORING LOC. (STA) 115 + 84 L+LN 30 FT. TOTAL DEPTH 40.3

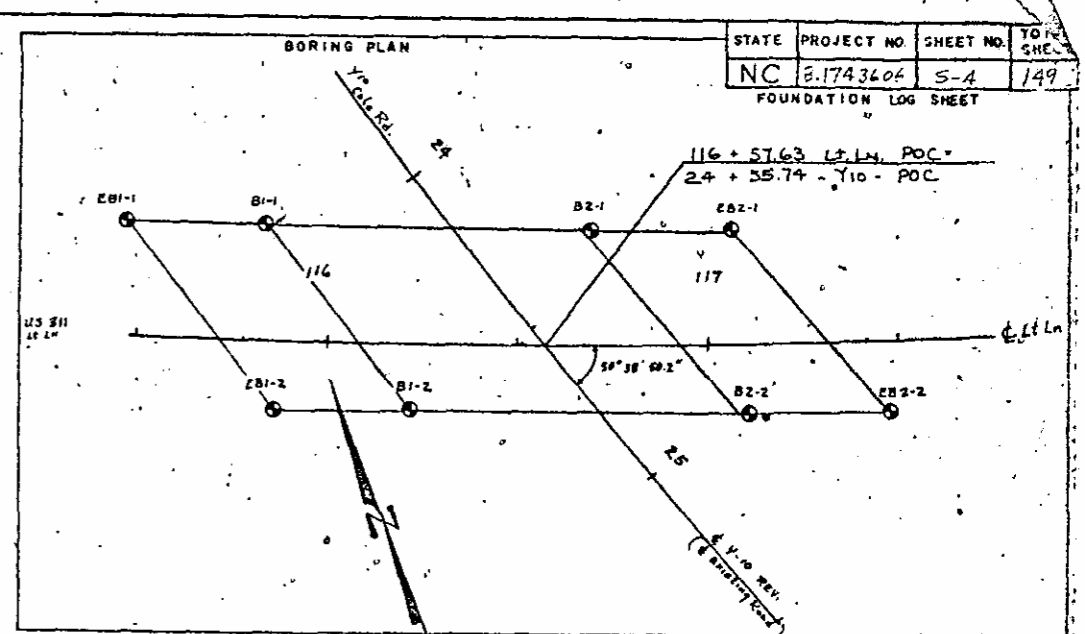
DEPTH ELEV.	BLOW COUNT	NOTES & REMARKS	LOG NO.	SOIL DESCRIPTION
784.7				GROUND SURFACE
780.7	1			0-1' TAN-BRN. SILTY CLY. F-CSE
775.7	2			1-2' BLUE-GRAY SILTY ORG. SILTY CLAY. SD.
771.8	2			GRAY SILTY F-CSE SAND
769.8	2			GRAY SILTY F-CSE SO. W/ CLAY STRIPS
765.7	1			TAN-BRN. MICAS. F-M SDY SILT SAPROLITE
760.7	1			BLK-TAN-WHT. MICAS. F-M SDY SILT SAPROLITE
				AS ABOVE
				GRAY-WHT. V. DENSE SILTY F-SDY SAPROLITE
				SAPROLITE OF HORNEBLENDE GNEISS

TERMINATE BORING AT ELEV. 760.7 IN WEATHERED ROCK

BORING NO. B2-1 BENT NO. 2 COLLAR ELEV. 787.5
BORING LOC. (STA) 116 + 74.5 L+LN 30 FT. TOTAL DEPTH 29.9

DEPTH ELEV.	BLOW COUNT	NOTES & REMARKS	LOG NO.	SOIL DESCRIPTION
787.5				GROUND SURFACE
783.9	2			0-1' RED SILTY F-M SDY SILT
778.9	2			1 WHT-TAN. F-CSE SDY CLAY
775.9	2			2 BLK-WHT-TAN. F-M SDY SILT SAPROLITE
772.9	2			SAME AS ABOVE
768.9	2			AS ABOVE
763.9	2			5 BRN-TAN. BLK. MICAS. F-M SDY SILT SAPROLITE
758.9	2			6 GRAY-BLK. MICAS. SILTY F-CSE SD SAPROLITE
				7 BLK-WHT. SILTY MICAS. SILTY F-CSE SD SAPROLITE

TERMINATE BORING AT ELEV. 758.9 IN WEATHERED ROCK



SAMP	LOCATION	DEPTH	AACHO	N	% SAND	% SILT	% CLAY	L.L.	PL.I.	G _s	VOL.	WET WT	DRY WT
1	EBI-1	3.9-5.4	A-6(6)	2	44	26	30	23	12				
2		8.9-10.4	A-1(6)	9	45	20	20	NP					
3		13.9-15.4	A-2(4)	34	90	4	16	22	NP				
4		18.9-20.4	A-2(4)	44	84	10	6	26	NP				
5		23.9-24.4	A-2(4)	100	86	8	6	20	NP				
1	B1-1	9.2-10.5	A-2(4)	6	86	6	8	21	NP				
2		10.2-12.2	A-1(6)	14	323	24.0	2	21	NP	2.66	69cc	145.5g	138.5g
3		14.2-16.4	A-2(4)	32	329	14.5	4	25	NP	2.99	128cc	327.5g	293.5g
4		19.2-20.5	A-2(4)	31				6	25	NP			
5		24.2-24.9	A-2(4)	100				4	25	NP			
1	B1-2	4.4-5.6	A-2(4)	1	43	45	12	53	12				
2		9.4-10.9	A-2(4)	7	83	13	4	24	NP				
3		11.4-13.9	A-2(4)	39	186	14.1	3	24	NP	2.69	138cc	362.4g	312.8g
4		14.4-15.9	A-2(4)	77	180	18.3	13	25	NP	2.95	69cc	300.9g	274.8g
5		19.4-20.9	A-2(4)	26				2	26	NP			
6		24.4-25.7	A-2(4)	100				4	25	NP			
7		29.4-30.5	A-2(4)	100				4	25	NP			
1	B2-1	4.1-5.6	A-2(4)	5	54	12	34	44	25				
2		9.1-10.6	A-2(4)	7	88	11	1	26	NP				
3		11.6-13.1	A-2(4)	19	82	12	1	25	NP	2.87	69cc	178.7g	150.3g
4		14.1-15.6	A-2(4)	24	201	12.5	15	25	NP	2.87	69cc	181.5g	153.6g
5		19.1-20.6	A-2(4)	61				13	22	NP			
6		24.1-25.2	A-2(4)	100				9	20	NP			
7		29.1-29.9	A-2(4)	100				13	1	NP			

BORING NO. EBI-2 BENT NO. 1 COLLAR ELEV. 785.0
BORING LOC. (STA) 115 + 87 L+LN 18 FT. TOTAL DEPTH 39.8

DEPTH ELEV.	BLOW COUNT	NOTES & REMARKS	LOG NO.	SOIL DESCRIPTION
785.0				GROUND SURFACE
781.0	2			0-1' TAN-BRN. SILTY CLY. F-CSE
776.0	2			1-4' GRAY SILTY SILTY ORG. PLAS. CLAY
771.0	2			6-9' GRAY CLY SILTY F-CSE SD
766.0	2			GRAY SILTY SILTY ORG. F-CSE SAND
761.0	2			BRN-GRAY V. MICAS. SDY SILT SAPROLITE
756.0	2			WHT-GRAY V. MICAS. F-CSE SDY SILT SAPROLITE
751.0	2			WHT-BRN V. MICAS. F-CSE SDY SILT SAPROLITE

TERMINATE BORING AT ELEV. 751.0 IN WEATHERED ROCK

BORING NO. B1-2 BENT NO. 1 COLLAR ELEV. 785.0
BORING LOC. (STA) 116 + 23 L+LN 18 FT. TOTAL DEPTH 30.5

DEPTH ELEV.	BLOW COUNT	NOTES & REMARKS	LOG NO.	SOIL DESCRIPTION
785.0				GROUND SURFACE
780.6	1			1-3' ORG. F-CSE SAND
775.6	2			LAYERS ORG. F-CSE SD, CLAY, & PEAT
773.6	2			BRN-GRAY F-CSE SDY MICAS CLY SILT SAPROLITE
771.6	2			SDY SILT SAPROLITE
769.6	2			BRN-GRAY V. MICAS. F-CSE SDY SILT SAPROLITE
765.6	2			GRAY-BRN MICAS. F-CSE SDY SILT
760.6	2			WHT-BRN-GRAY V. MICAS. F-CSE SDY SILT SAPROLITE
755.6	2			AS ABOVE

TERMINATE BORING AT ELEV. 755.6 IN WEATHERED ROCK

BORING NO. B2-2 BENT NO. 2 COLLAR ELEV. 789.8
BORING LOC. (STA) 117 + 14.5 L+LN 18 FT. TOTAL DEPTH 30.7

DEPTH ELEV.	BLOW COUNT	NOTES & REMARKS	LOG NO.	SOIL DESCRIPTION
789.8				GROUND SURFACE
787.4	2			1 TAN-BRN F-CSE SDY SILTY CLAY
782.4	2			2 BRN SILTY F-CSE SD & TAN SDY CLY SILT
777.4	2			3 TAN LOOSE F-CSE SD
774.7	2			TAN-GRAY-BRN SILTY F-M SD, SILTY MICAS. & CLY
772.4	2			TAN-GRAY V. MICAS. SILTY F-CSE SD
765.6	2			TAN MICAS. F-CSE SDY SILT & SD.
				GRAY MICAS. F-CSE SDY SILT SAPROLITE
				RX HORNEBLENDE GRANITE GNEISS

TERMINATE BORING AT ELEV. 765.6 IN WEATHERED ROCK

SOIL & ROCK LEGEND		SOIL & ROCK LEGEND	
SOILS (INORGANIC)	SOILS (INORGANIC)	SOILS (ORGANIC)	ROCKS
A-1	Well-graded gravels and gravel-sand mixtures...	A-1	Soils of peat or to 10% organic matter...
A-2	Medium to coarse sand...	A-2	Soils with 10-20% organic matter...
A-3	Coarse sand...	A-3	Soils with 20-30% organic matter...
A-4	Well-graded gravelly, silty or clayey sands...	A-4	Soils with 30-40% organic matter...
A-5	Clayey sands and sand-silt mixtures...	A-5	Soils with 40-50% organic matter...
A-6	Silt and silty or clayey fine sand or clayey silt...	A-6	Soils with 50-60% organic matter...
A-7	Clayey silts and silty clays...	A-7	Soils with 60-70% organic matter...
A-8	Clayey silts and silty clays...	A-8	Soils with 70-80% organic matter...
A-9	Clayey silts and silty clays...	A-9	Soils with 80-90% organic matter...
A-10	Clayey silts and silty clays...	A-10	Soils with 90-100% organic matter...
A-11	Clayey silts and silty clays...	A-11	Soils with 100% organic matter...
A-12	Clayey silts and silty clays...	A-12	Soils with 100% organic matter...
A-13	Clayey silts and silty clays...	A-13	Soils with 100% organic matter...
A-14	Clayey silts and silty clays...	A-14	Soils with 100% organic matter...
A-15	Clayey silts and silty clays...	A-15	Soils with 100% organic matter...
A-16	Clayey silts and silty clays...	A-16	Soils with 100% organic matter...
A-17	Clayey silts and silty clays...	A-17	Soils with 100% organic matter...
A-18	Clayey silts and silty clays...	A-18	Soils with 100% organic matter...
A-19	Clayey silts and silty clays...	A-19	Soils with 100% organic matter...
A-20	Clayey silts and silty clays...	A-20	Soils with 100% organic matter...

ABBREVIATIONS

ALUV.	ALLUVIUM	MOT.	MOTTLED
BRN.	BROWN	N	BLOWS PER FOOT
BLDR.	BOULDER	ORG.	ORGANIC
CLY.	CLAYEY	PL. I.	PLASTICITY INDEX
CSE.	COARSE	RES.	RESIDUAL
F.	FINE	SAT.	SATURATED
FRAC.	FRACTURED	SD	SAND
GRVL.	GRAVEL	SDY.	SANDY
GRVLY.	GRAVELLY	SILTY.	SILT
G _s	SPECIFIC GRAVITY	V.	VERY
G.W.	GROUND WATER	W/	WITH
L.L.	LIQUID LIMIT	YEL.	YELLOW
LYD.	LAYERED	W	MOISTURE
MED.	MEDIUM	•	VOID RATIO
MICAS.	MICACEOUS	γ	UNIT WEIGHT

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION & HIGHWAY SAFETY
DIVISION OF HIGHWAYS
LOCATION & SURVEYS UNIT

STATE PROJECT NO. 3-1743606 F.A. No. E-62-1(11)
COUNTY FORSYTH ROUTE US 311
BRIDGE ON US 311 (LEFT LANE)
OVER COLE ROAD (Y10)

INVESTIGATED BY J.M.K. DRAWN BY M.E.R.
CHECKED BY G.L.B. SUBMITTED BY M.E.R.
DATE 11-17-77

ENDING BORING NO. EB2-L BENT NO. 2 COLLAR ELEV. 789.0
BORING LOC. (STA) 17+07 L+L.N. 30 L.F. TOTAL DEPTH 27.5

ELEV.	DEPTH	NOTES & REMARKS	SOIL DESCRIPTION
789.0			GROUND SURFACE
785.4	3.6		0-1/2" RED F-CSE SDY SILTY CLAY
780.4	8.6		1 1/2" SILTY CLAY
775.4	13.6		2 1/2" BRN F-CSE SDY CLAY
770.4	18.6		3 1/2" GRAY-BRN V. MICAS. F-CSE SDY SAPROLITE
765.4	23.6		AS ABOVE

BORING NO. _____ BENT NO. _____ COLLAR ELEV. _____
BORING LOC. (STA) _____ TOTAL DEPTH _____

DEPTH	ELEV.	NOTES & REMARKS	SOIL DESCRIPTION

BORING NO. _____ BENT NO. _____ COLLAR ELEV. _____
BORING LOC. (STA) _____ TOTAL DEPTH _____

DEPTH	ELEV.	NOTES & REMARKS	SOIL DESCRIPTION

BORING PLAN

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NC	B.1743606	6-5	149

FOUNDATION LOG SHEET

See Sheet 1

SAMP	LOCATION	DEPTH	AASHTO	N	6	7	w %	SAND	SILT	CLAY	L.L.	PL.I.	G _s	VOL.	WET WT	DRY WT
1	EB2-2	2.4-3.9	A-1(2)	15				53	31	16	20					
2		7.4-8.9	A-2(6)	11				65	2	33	19					
3		9.9-11.4	A-1(4)	8				90	1	9	23	NP				
4		12.4-13.9	A-2-4(2)	11	555	245		87	6	7	23	NP	5.74	63.5	150.4	151.4
5		15.1-16.6	A-1(4)	100+	113	12.7		90	9	1	20	NP	5.68	63.5	146.7	145.9
6		17.1-17.8	A-2-4(2)	100+				83	16	1	23	NP				
1	EB2-1	2.6-5.1	A-2-6(2)	9				78	6	14	23	NP				
2		8.6-10.1	A-2-5(2)	7				88	10	2	24	NP				
3		13.6-15.1	A-2-4(2)	29				84	10	1	31	NP				
4		18.6-20.1	A-2-4(2)	27				84	15	1	31	NP				
5		23.6-25.1	A-2-4(2)	100+				87	10	1	21	NP				
1	EB2-2	3.7-5.2	A-2-7(2)	10				67	21	12	42	17				
2		8.7-10.2	A-2-7(2)	11				73	8	19	31	22				
3		13.7-15.2	A-2-4(2)	9				73	8	9	22	NP				
4		18.7-20.2	A-2-4(2)	54				87	4	9	30	NP				
5		23.7-25.2	A-2-4(2)	100+				87	11	2	24	NP				
6		28.7-29.6	A-2-4(2)	100+				87	15	1	22	NP				

ENDING BORING NO. EB2-2 BENT NO. 2 COLLAR ELEV. 794.0
BORING LOC. (STA) 17+47 L+L.N. 18 R.F. TOTAL DEPTH 29.6

ELEV.	DEPTH	NOTES & REMARKS	SOIL DESCRIPTION
794.0			GROUND SURFACE
790.3	3.7		RED F-CSE SDY SILTY PLAS CLAY
785.3	8.7		1 1/2" YEL-BRN F-CSE SDY SILTY CLAY
780.3	13.7		2 1/2" RED-BRN SILTY CLAY F-CSE SDY PLAS CLAY
775.3	18.7		3 1/2" WHT-BRN MICAS. SILTY F-CSE SDY TO GRANUL
770.3	23.7		4 1/2" WHT-GRAY MICAS. SILTY F-CSE SDY SAPROLITE
765.3	28.7		5 1/2" TAN-BRN V. MICAS. SILTY F-CSE SDY SAPROLITE
760.3	33.7		6 1/2" GRAY-BRN-WHT V. MICAS. SILTY F-CSE SDY SAPROLITE

BORING NO. _____ BENT NO. _____ COLLAR ELEV. _____
BORING LOC. (STA) _____ TOTAL DEPTH _____

DEPTH	ELEV.	NOTES & REMARKS	SOIL DESCRIPTION

BORING NO. _____ BENT NO. _____ COLLAR ELEV. _____
BORING LOC. (STA) _____ TOTAL DEPTH _____

DEPTH	ELEV.	NOTES & REMARKS	SOIL DESCRIPTION

SOIL & ROCK LEGEND

SYMBOL	AASHTO CLASS	SOILS (INORGANIC)		
		SYMBOL	AASHTO CLASS	
A-1		Well-graded gravel and gravel-sand mixtures, (A-1) or poorly-graded sand mixtures or silty sandy gravel-sand mixtures with fines.	A-6	Levelly, sandy or silty, plastic clays
A-2		PL. 1, L.L. < 20 (A-1-b).	A-7	Mixture of moderate to high plasticity with all properties and/or subject to high expansion
A-3		Poorly graded sands without binders, (e.g. beach and dune sands).	A-7.5	Pl. 1-2, L.L. < 25
A-2.4		Well-graded gravelly, silty or clayey sand	A-7.6	PL. 1-2, L.L. < 25 (A-7.5)
A-2.5		PL. 1, L.L. < 20 (A-2-4)	A-8	
A-2.6		CLAYEY SANDS AND SAND-CLAY MIXTURES		
A-2.7		PL. 1, L.L. < 20 (A-2-6) PL. 1-2, L.L. < 41 (A-2-7)		
A-4		SILTS AND SILTY OR CLAYEY FINE SAND OR CLAYEY SILT (e.g. Weik Flour).		
A-5		CLAYEY SILTY OR FINE SANDY SILTS WITH ELASTIC PROPERTIES.		

ROCKS

SYMBOL	AASHTO CLASS	DESCRIPTION
RS		Hard sedimentary rock (blast rock)
RX		Hard crystalline rock (blast rock)

▽ GROUND WATER - LEVEL IMMEDIATELY AFTER COMPLETION OF BORING.
 ▽ GROUND WATER - STATIC LEVEL AFTER 24 HOURS.
 ⊙ STANDARD PENETRATION BORING
 ⊕ AUGER BORING

ABBREVIATIONS

ALUV.	ALLUVIUM	MOT.	MOTTLED
BRN.	BROWN	N	BLOWS PER FOOT
BLDR.	BOULDER	ORG.	ORGANIC
CLY.	CLAYEY	PL. I.	PLASTICITY INDEX
CSE.	COARSE	RES.	RESIDUAL
F.	FINE	SAT.	SATURATED
FRAC.	FRACTURED	SD.	SAND
GRVL.	GRAVEL	SDY.	SANDY
GRVLY.	GRAVELLY	SLI.	SLIGHTLY
G _s	SPECIFIC GRAVITY	V.	VERY
G.W.	GROUND WATER	W/	WITH
L.L.	LIQUID LIMIT	YEL.	YELLOW
LYD.	LAYERED	w	MOISTURE
MED.	MEDIUM	e	VOID RATIO
MICAS.	MICACEOUS	γ	UNIT WEIGHT

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION & HIGHWAY SAFETY
DIVISION OF HIGHWAYS
LOCATION & SURVEYS UNIT

STATE PROJECT NO. B.1743606 F.A. NO. F-62-1111
COUNTY FORSYTH ROUTE US 311
BRIDGE ON US 311 (LEFT LANE)
OVER COLE ROAD (Y10)

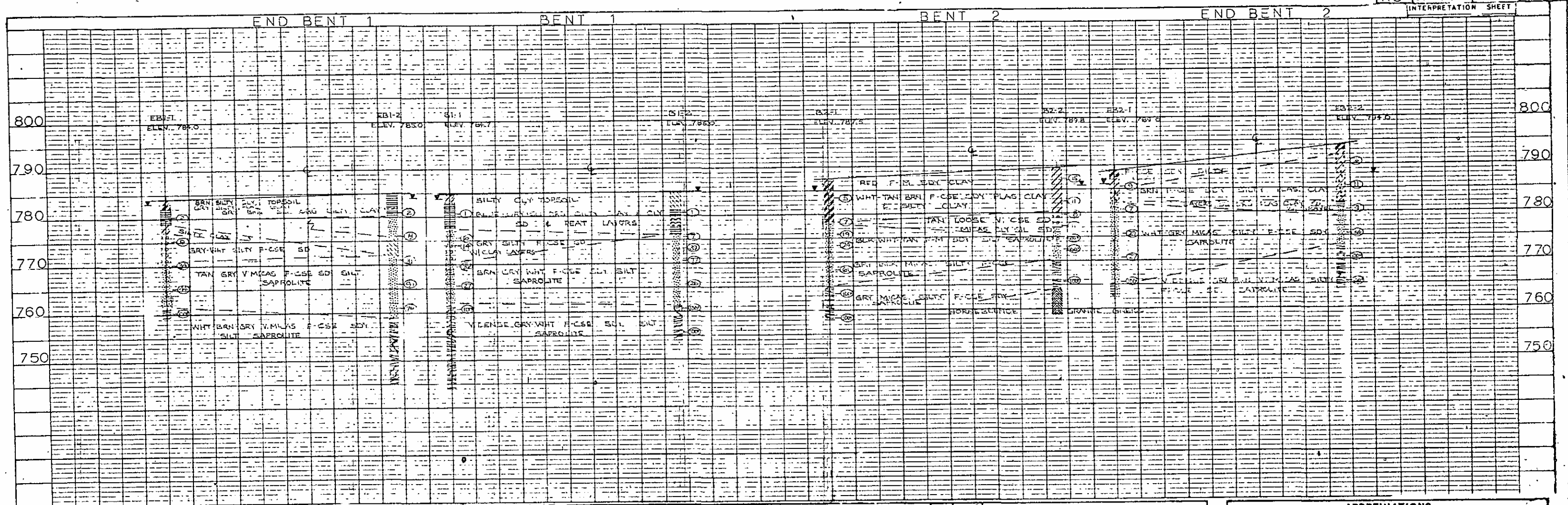
INVESTIGATED BY J.M.K. DRAWN BY M.E.R.
CHECKED BY G.L.B. SUBMITTED BY W.D.B.
DATE: 1-18-77

REVISED: 9-73

STRATIGRAPHIC SECTION

STATE	PROJECT NO	SHEET NO	TOTAL SHEETS
NC	8-1743606	5-6	149

INTERPRETATION SHEET



FOUNDATION DATA INTERPRETATION

PILE FOUNDATION				
BENT NO	PILE TYPE	PILE TIP ELEVATION	DESIGN L.D.	S.F.

BEARING DERIVED FROM

PILE DRIVING CHARACTERISTICS

ABUTMENT PILE (END BENT) CONSIDERATION

TEST PILE

FOOTING FOUNDATION

BENT NO	FOOTING SIZE	BOTTOM FTG. ELEV.	DEPTH OF FOOTING	ALLOWABLE DESIGN LOAD	SAFETY FACTOR	ESTIMATED SETTLEMENT	ULTIMATE BEARING

BEARING DERIVED FROM:

STEP FOOTING REQUIRED:

LOAD TEST:

NOTE: THE SUBSURFACE INFORMATION AND FOUNDATION RECOMMENDATIONS SUPPLIED IN THIS REPORT ARE BASED UPON A PRELIMINARY BRIDGE REPORT FURNISHED BY . A REVIEW OF THE SUBSURFACE AND FOUNDATION RECOMMENDATIONS IS NECESSARY IF SIGNIFICANT CHANGES ARE MADE IN THE DESIGN AND/OR LOCATION OF THE PROPOSED STRUCTURE.

ABOVE REFERENCES TO FOOTINGS OR PILES ARE FOR THE PURPOSE OF DESCRIBING SUBSURFACE CONDITIONS AND ARE NOT INTENDED AS FINAL DESIGN RECOMMENDATIONS.

SITE DESCRIPTION AND GROUND WATER:

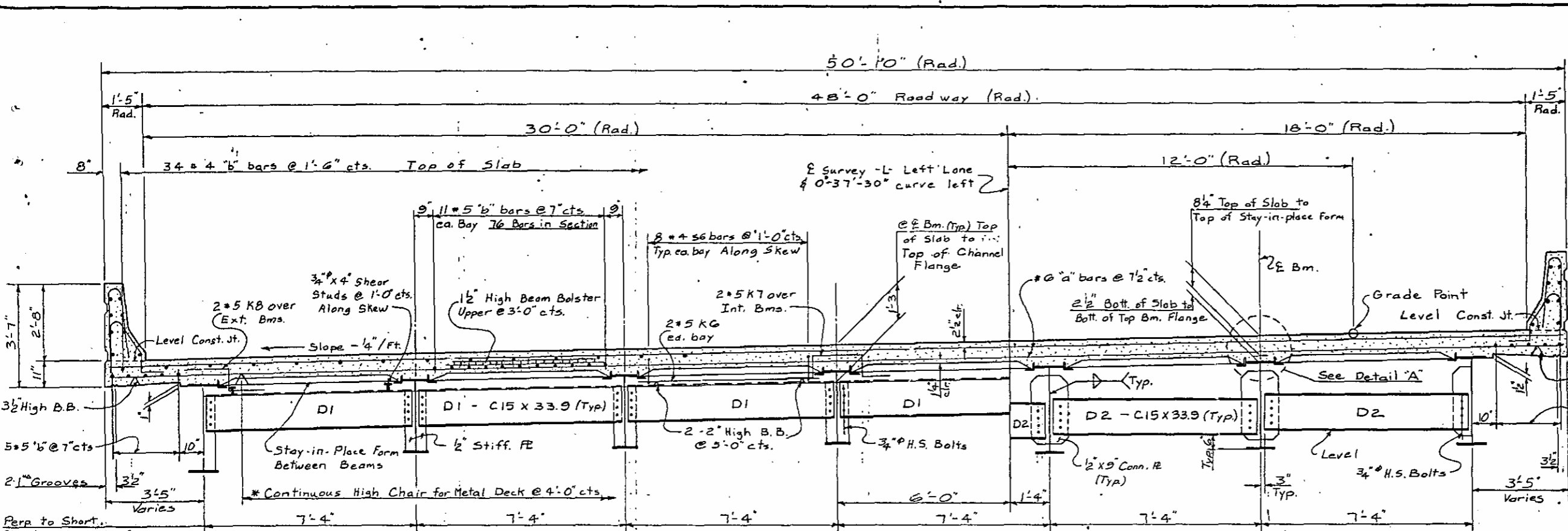
AASHTO SYM. CLASS.		SOIL & ROCK LEGEND	
	LESS THAN 5% PASSING 200	SOILS (INORGANIC)	
A-1		WELL-GRADED GRAVELS & GRAVEL-SAND MIXTURES (A-1-a) POORLY-GRADED GRAVEL & SAND MIXTURES OR SILTY & CLAYEY GRAVEL-SAND MIXTURES WITH FINES. PL. I. ≤ 6. (A-1-b)	
A-3		POORLY GRADED SANDS WITHOUT BINDER; NO PL. I. (e.g. BEACH & DUNE SANDS).	
A-2-4		WELL-GRADED GRAVELLY, SILTY OR CLAYEY SANDS. PL. I. ≤ 10, L.L. ≤ 40 (A-2-4). PL. I. ≤ 10, L.L. ≤ 41 (A-2-5).	
A-2-6		CLAYEY SANDS AND SAND-CLAY MIXTURES. PL. I. ≤ 11, L.L. ≤ 40 (A-2-6). PL. I. ≤ 11, L.L. ≤ 41 (A-2-7).	
A-4	MORE THAN 5% PASSING 200	SILTS AND SILTY OR CLAYEY FINE SAND OR CLAYEY SILT, (e.g. ROCK FLOUR) PL. I. ≤ 10, L.L. ≤ 40 (A-4)	
A-5		MICACEOUS SILTY OR FINE SANDY SOILS WITH ELASTIC PROPERTIES. PL. I. ≤ 10, L.L. ≤ 41.	
A-6		GRAVELLY, SANDY OR SILTY, PLASTIC CLAYS PL. I. ≤ 11, L.L. ≤ 40	
A-7-5		CLAYS OF MODERATE TO HIGH PLASTICITY WITH ELASTIC PROPERTIES AND/OR SUBJECT TO HIGH VOLUME CHANGE PL. I. ≥ 11, L.L. ≥ 41 A-7-5 IF PL. I. ≤ L.L. - 30	
A-7-6		A-7-6 IF PL. I. ≥ L.L. - 30	
		SOILS (ORGANIC)	
A-1		GRANULAR SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER.	
A-2			
A-3			
A-4		SILT-CLAY SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER.	
A-5			
A-6			
A-7			
(A-8)		PEAT, MUCK, HIGHLY ORGANIC SOILS.	
		ROCKS	
		MATERIALS WITH S.P.T. VALUES OF PLUS 100 B.P.F.	
RS		HARD SEDIMENTARY ROCK (BLAST ROCK.)	
RX		HARD CRYSTALLINE ROCK (BLAST ROCK.)	
		MISCELLANEOUS	

ABBREVIATIONS					
ALUV.	ALLUVIUM	G.W.	GROUND WATER	SAT.	SATURATED
BRN.	BROWN	L.L.	LIQUID LIMIT	SD.	SAND
BLOR.	BOULDER	LYD.	LAYERED	SDY.	SANDY
CLY.	CLAYEY	MED.	MEDIUM	SLI.	SLIGHTLY
CSE.	COARSE	MICAS.	MICACEOUS	V	VERY
F.	FINE	MOT.	MOTTLED	W/	WITH
FRAC.	FRACTURED	N.	BLOWS PER FOOT	YEL.	YELLOW
GRVL.	GRAVEL	ORG.	ORGANIC	w	MOISTURE
GRVLY.	GRAVELLY	PL.I.	PLASTICITY INDEX	v	VOID RATIO
Gs.	SPECIFIC GRAVITY	RES.	RESIDUAL	v	UNIT WEIGHT

▽ GROUND WATER-LEVEL IMMEDIATELY AFTER COMPLETION OF BORING.
 ▼ GROUND WATER-STATIC LEVEL AFTER 24 HOURS.

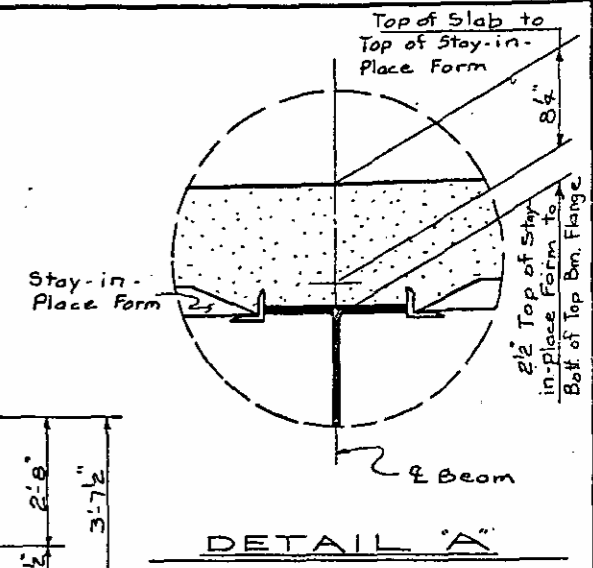
PERSONNEL	SOIL CONSISTENCY			
J. M. KEANE	COHESIVE		GRANULAR	
O. R. DAVIS	VERY SOFT	0-1 BPF	VERY LOOSE	0-4 BPF
F. L. BROWN	SOFT	2-4 BPF	LOOSE	5-10 BPF
S. H. MASSEY	M. STIFF	5-8 BPF	M. DENSE	11-24 BPF
	STIFF	9-15 BPF	DENSE	25-50 BPF
	VERY STIFF	16-30 BPF	VERY DENSE	OVER 50
	HARD	31-60 BPF		
	VERY HARD	OVER 60		

NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION & HIGHWAY SAFETY
 DIVISION OF HIGHWAYS
 LOCATION & SURVEYS UNIT
 STATE PROJECT NO. 8-1743606 F.A. NO. F-62-1(11)
 COUNTY FORSYTH ROUTE US 311
 BRIDGE ON US 311 (LEFT LANE)
 OVER COLE ROAD (Y10)
 INVESTIGATED BY J.M.K. DRAWN BY M.E.R.
 CHECKED BY GLB SUBMITTED BY WJW
 DATE 1-18-77



HALF TYPICAL SECTION
Showing Diaphragms & Bents

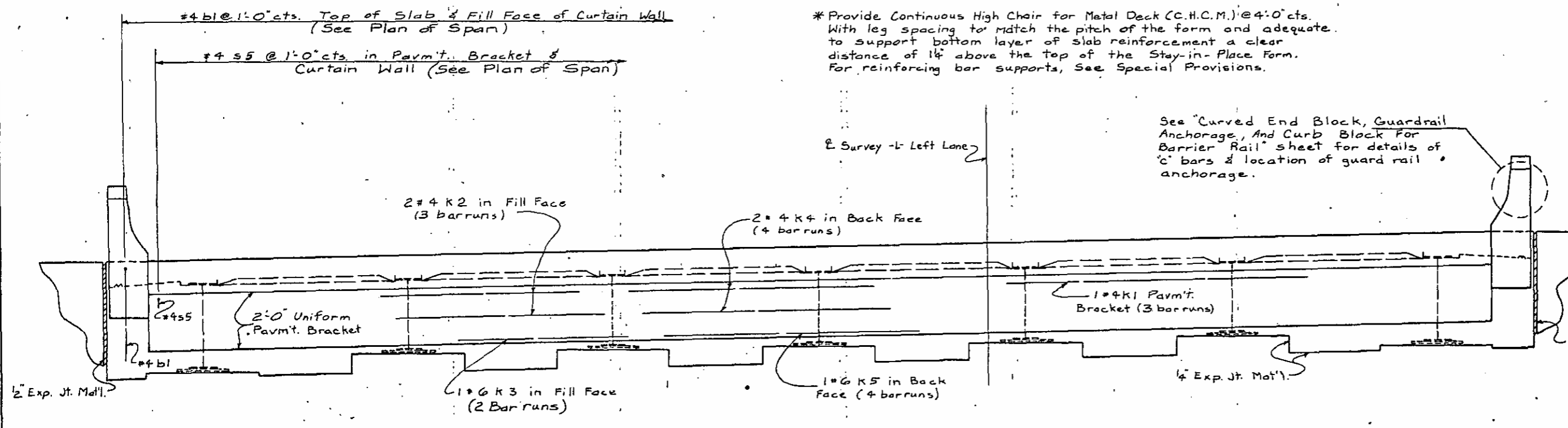
HALF TYPICAL SECTION
Showing Intermediate Diaphragms for Span B



DETAIL A

NOTES

For bars indicated and no bar mark shown, see Plan of Spans.
Stay-in-place metal forms shall have closed tapered ends.



END ELEVATION

End Bent 1 Curt. Wall Shown, End Bent 2 End Similar

PROJECT NO. 8.1743606

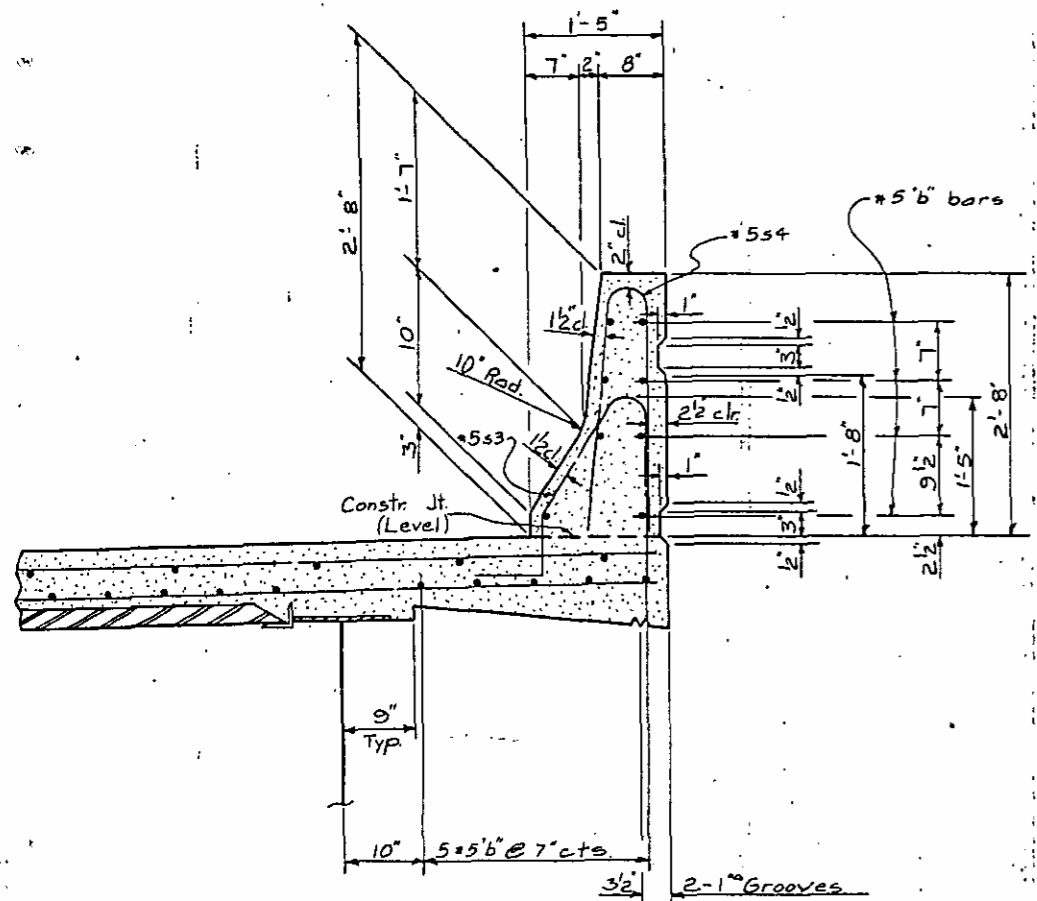
FORSYTH COUNTY

STATION: 116+52.12 - L. Lt. Ln.

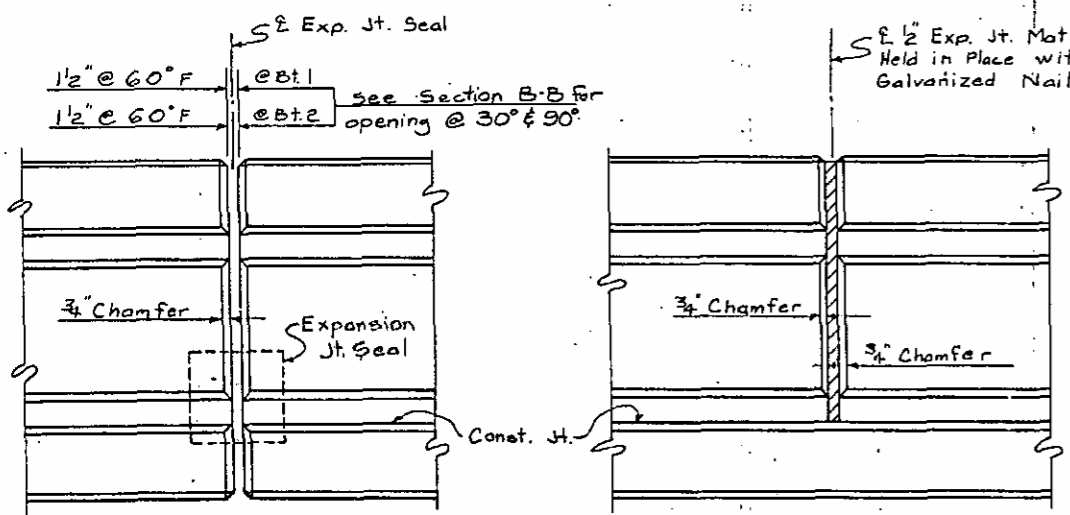
Sheet 1 of 2

STATE OF NORTH CAROLINA					
DEPARTMENT OF TRANSPORTATION					
RALEIGH					
SUPERSTRUCTURE					
TYPICAL SECTIONS					
June 1977					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
					SHEET NO. 5-7
					TOTAL SHEETS 149

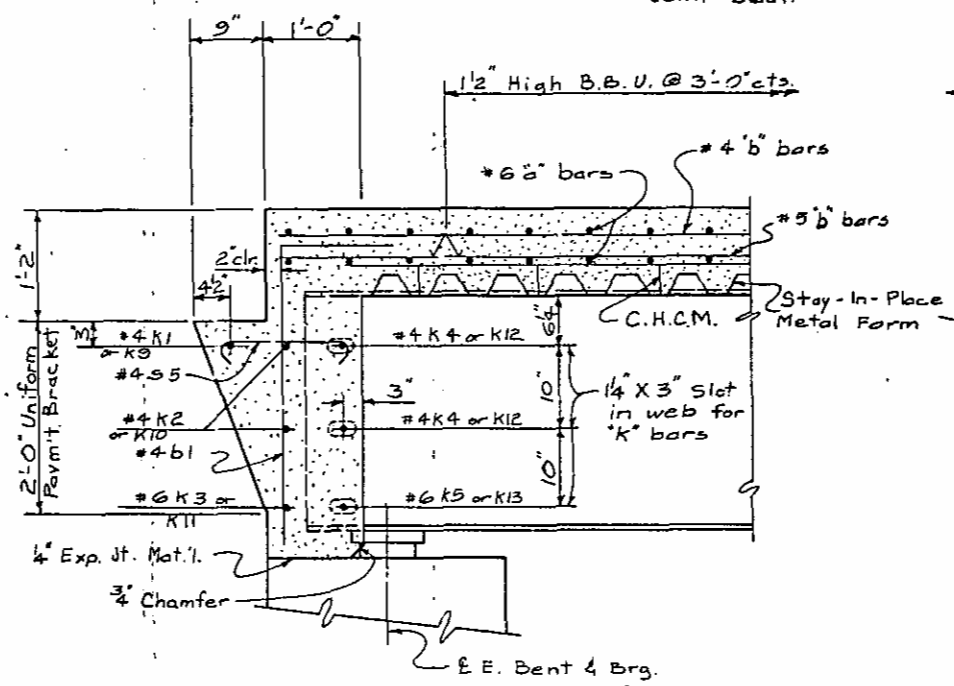
DRAWN BY Jimmy Carps DATE 6-19-77
CHECKED BY R.V. Moore DATE 7-14-77



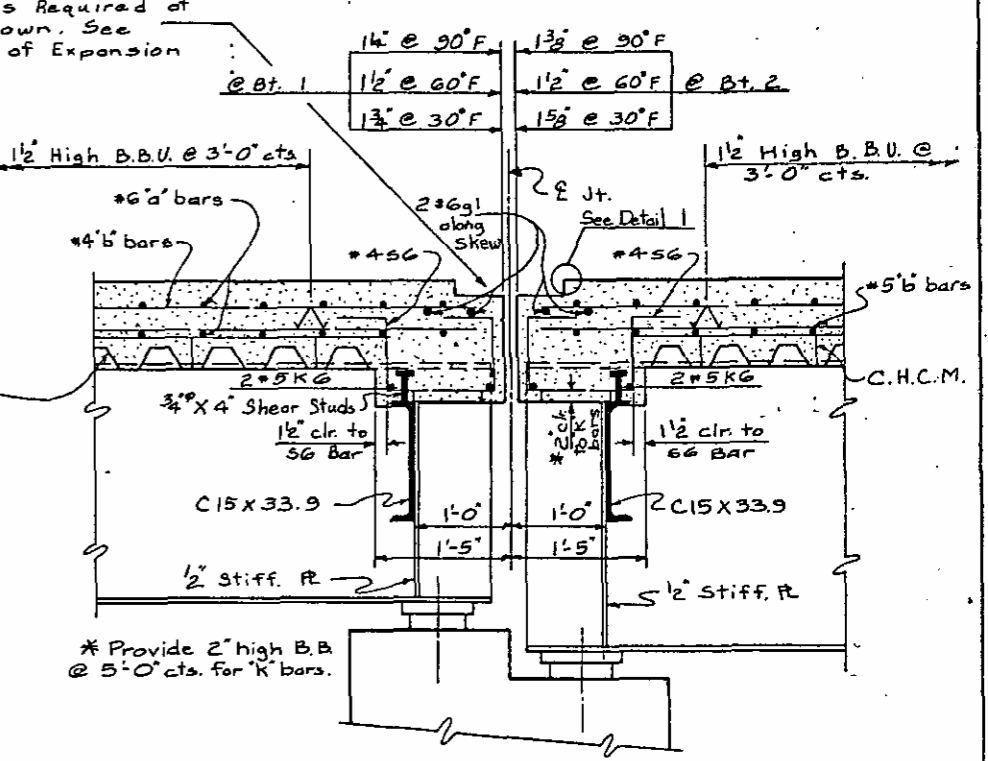
TYPICAL RAIL SECTION



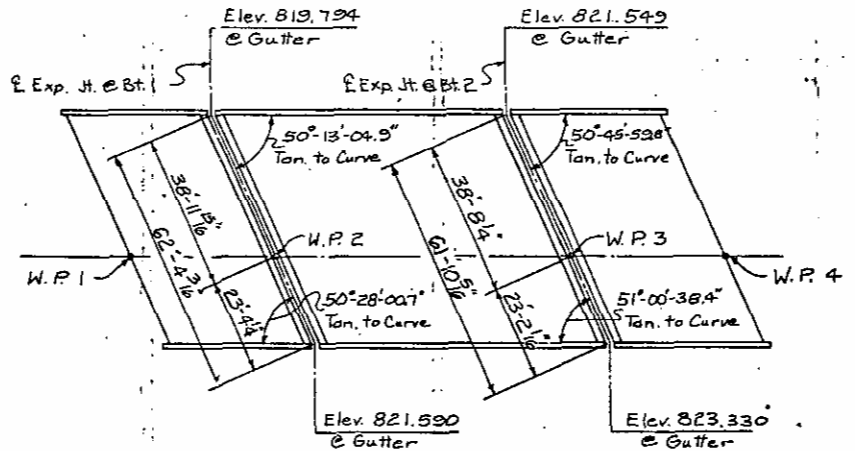
RAIL ELEVATIONS



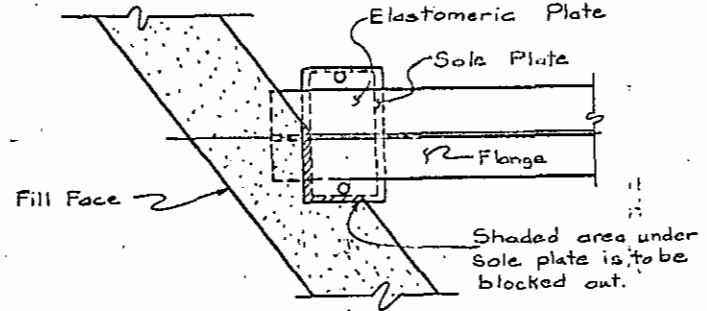
SECTION A-A



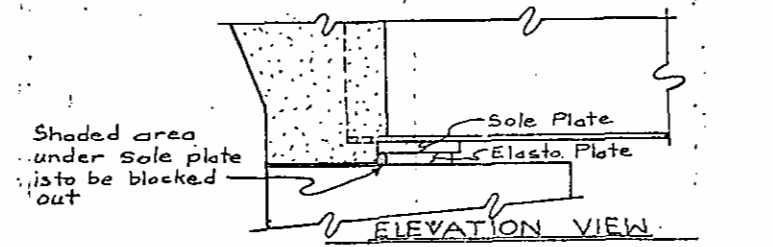
SECTION B-B



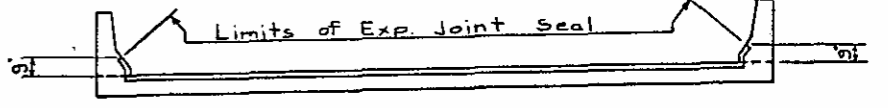
EXPANSION JOINT LAYOUT



PLAN VIEW

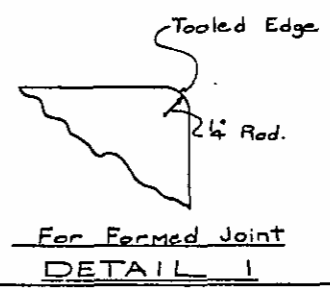


ELEVATION VIEW



SKETCH SHOWING LIMITS OF EXPANSION JOINT SEAL

For Expansion Joint Seal, See Special Provisions



DETAIL 1

Expansion Joint Seal is Required at This Joint but not shown. See Sketch Showing Limits of Expansion Joint Seal.

Notes:
The Expansion Joint Seal at Bent 1 shall be capable of handling a total thermal movement, measured parallel to the E of the roadway, of 1 1/4 inches (5/8" expansion and 3/8" contraction from a mid-point temperature of 60°F.)
The Expansion Joint Seal at Bent 2 shall be capable of handling a total thermal movement, measured parallel to the E of the roadway, of 1/2 inches (1/4" expansion and 1/4" contraction from a mid-point temperature of 60°F.)
The riding surface of the expansion joint seal is to be 1/4" below concrete sub surface.

PROJECT NO. 8.1743606

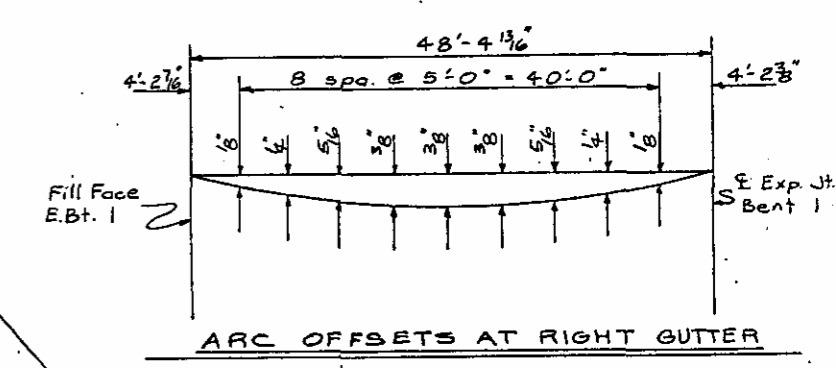
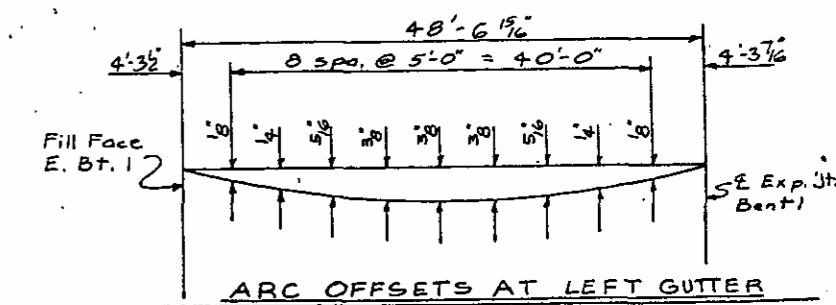
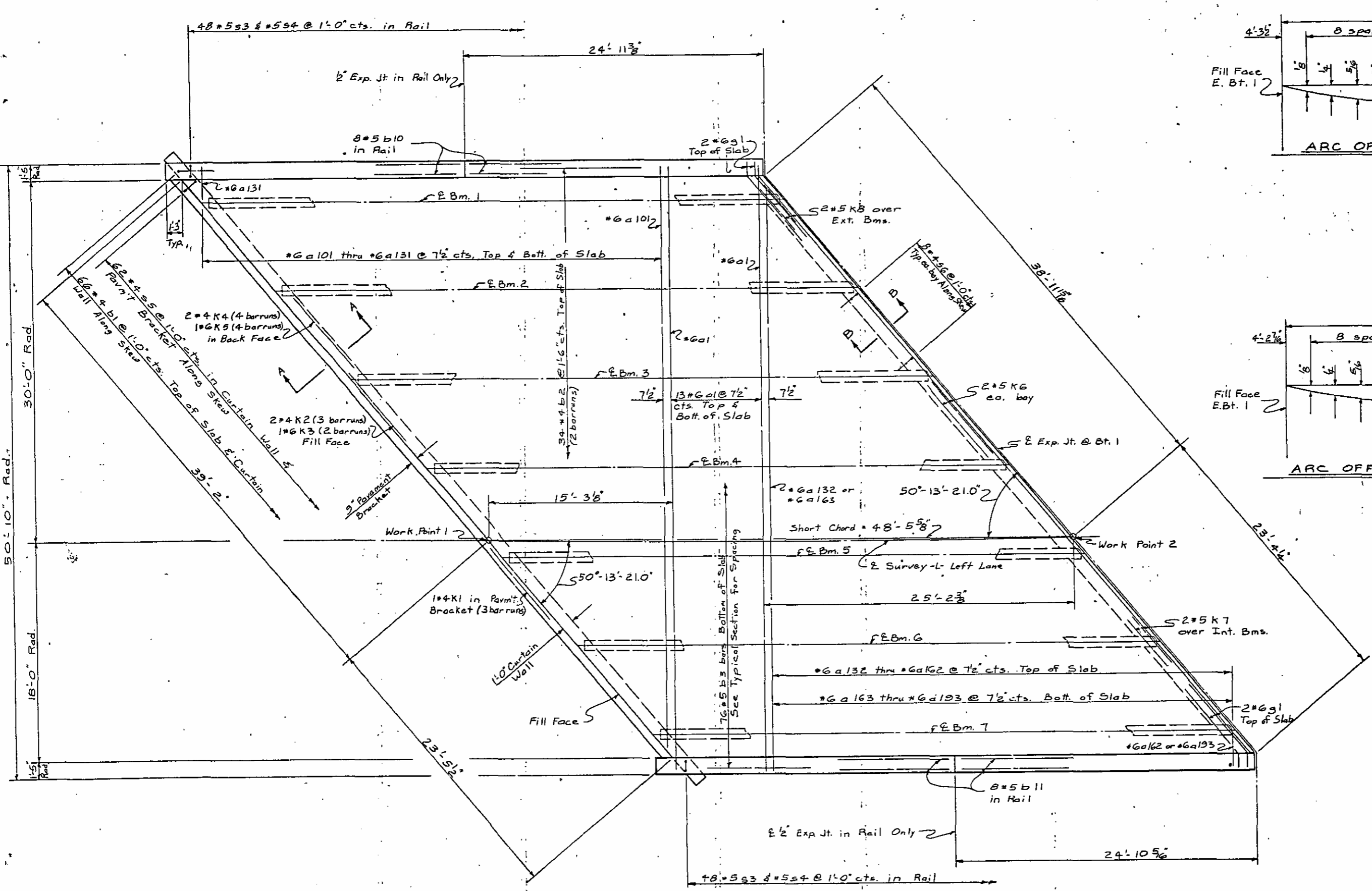
FORSYTH COUNTY

STATION: 116+52.12-1.44.6

Sheet 2 of 2

STATE OF NORTH CAROLINA					
DEPARTMENT OF TRANSPORTATION					
RALEIGH					
SUPERSTRUCTURE					
TYPICAL SECTIONS					
June			1977		
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			2		
2			4		
					SHEET NO. 5-6
					TOTAL SHEETS 149

DRAWN BY Jimmy Capps DATE 6-27-77
CHECKED BY R.L. Moore DATE 7-14-77



PROJECT No. 8.174.3606
 FORSYTH COUNTY
 STATION: 116+52.12-L-L.Ln.

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PLAN OF SPAN 'A'

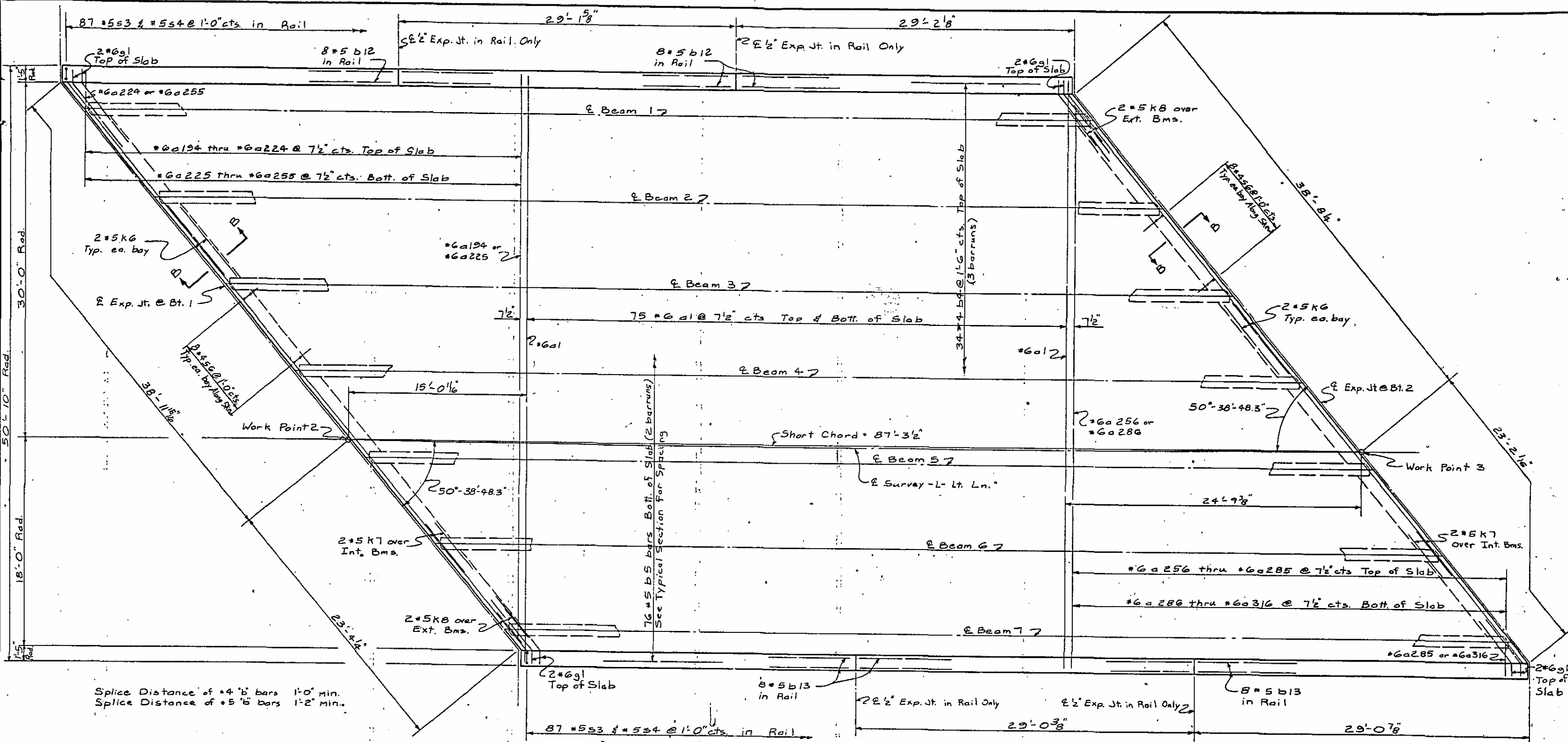
July 1977

REVISIONS						SHEET NO. 5-9
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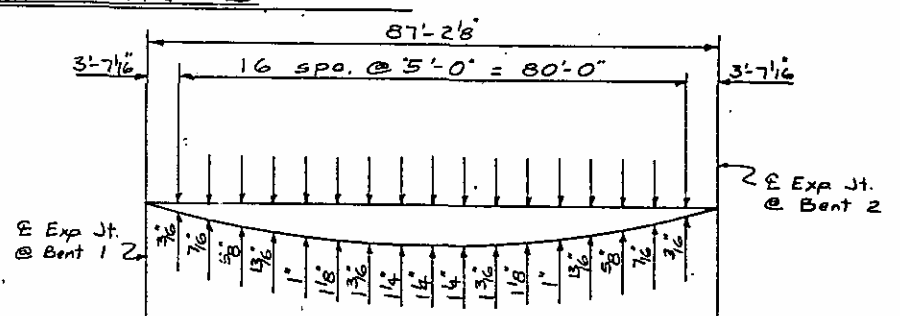
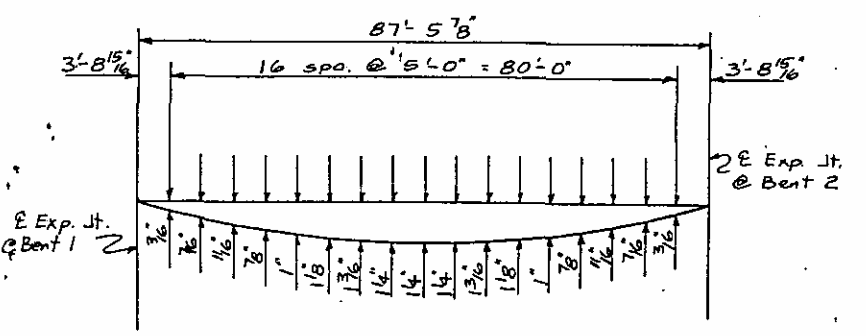
PLAN OF SPAN 'A'

- Splice Distance of #4 "b" bars 1'-0" min.
- Splice Distance of #4 "k" bars 1'-4"
- Splice Distance of #6 "k" bars 1'-4"

DRAWN BY: Jimmy Capps DATE: 7-6-77
 CHECKED BY: R.L. Moore DATE: 9-14-77



Splice Distance of #4 'b' bars 1'-0" min.
 Splice Distance of #5 'b' bars 1'-2" min.



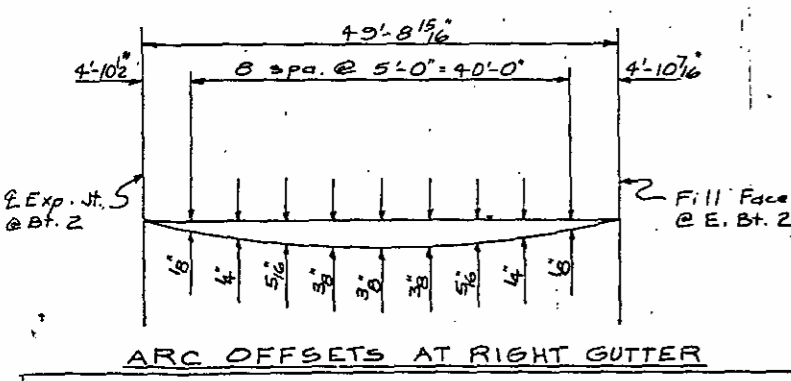
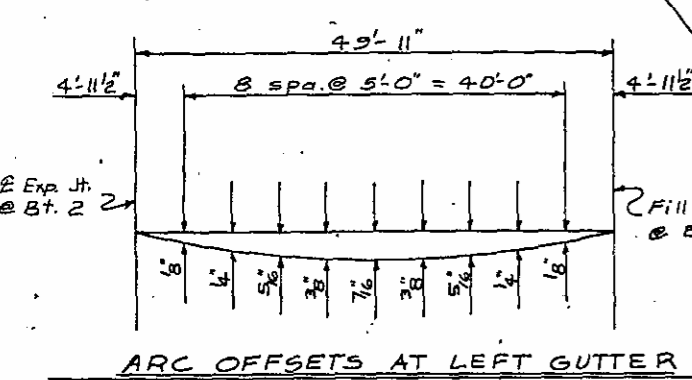
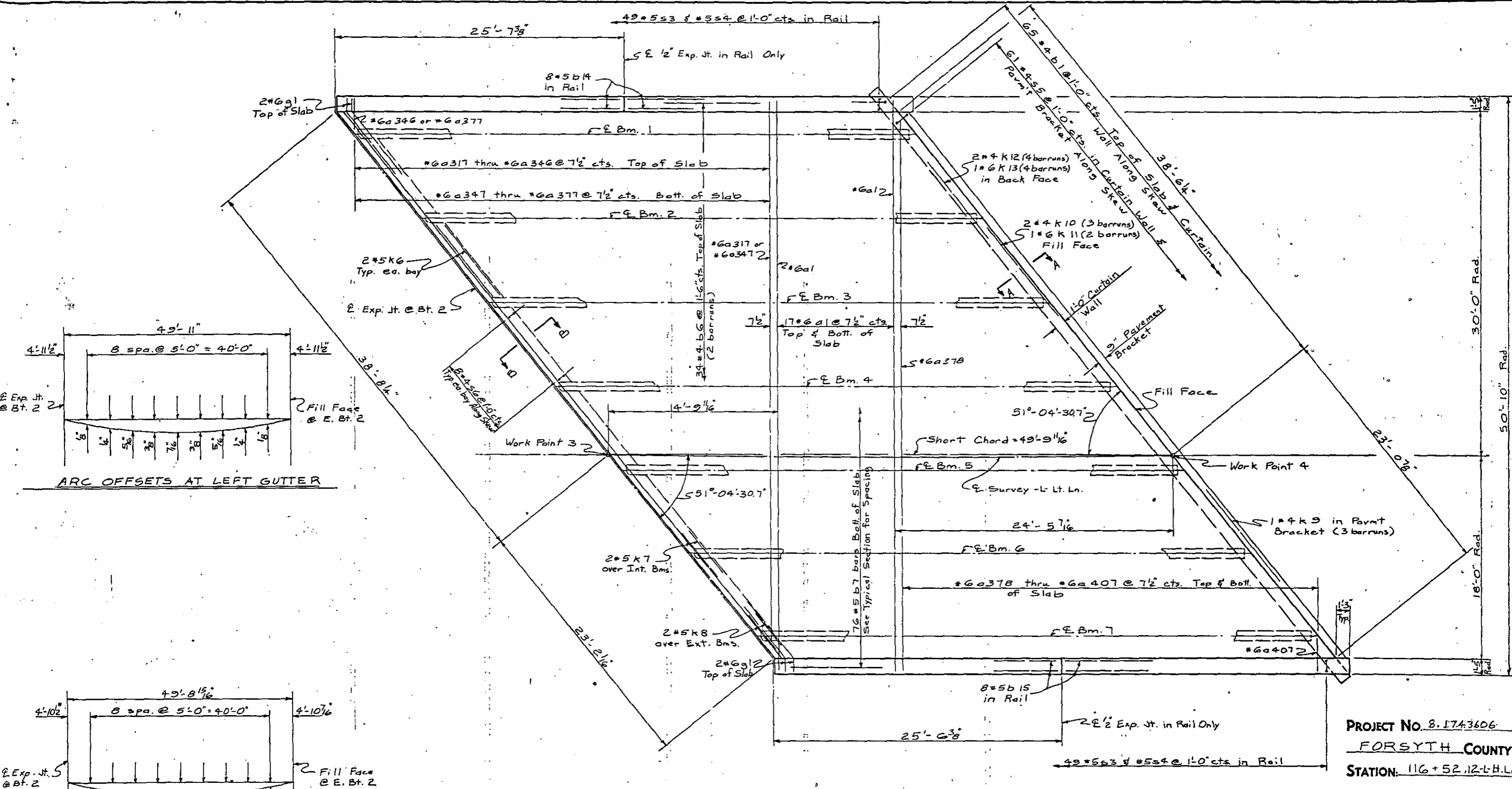
PROJECT NO. 8.1743606
 FORSYTH COUNTY
 STATION: 116+52.12-Lt. Ln.

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PLAN OF SPAN "B"

July 1977

REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	5-70	
1			2			TOTAL SHEETS	
2			4			149	

DRAWN BY: Jimmy Capps DATE: 7-7-77
 CHECKED BY: R. J. Moore DATE: 9-18-77



PLAN OF SPAN "C"

Splice Distance of #4 "L" bars 1'-0" min.
 Splice Distance of #4 "K" bars 1'-4"
 Splice Distance of #6 "K" bars 1'-4"

PROJECT NO. 8.17A.3606
 FORSYTH COUNTY
 STATION: 116+52.12-L.H.Ln.

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

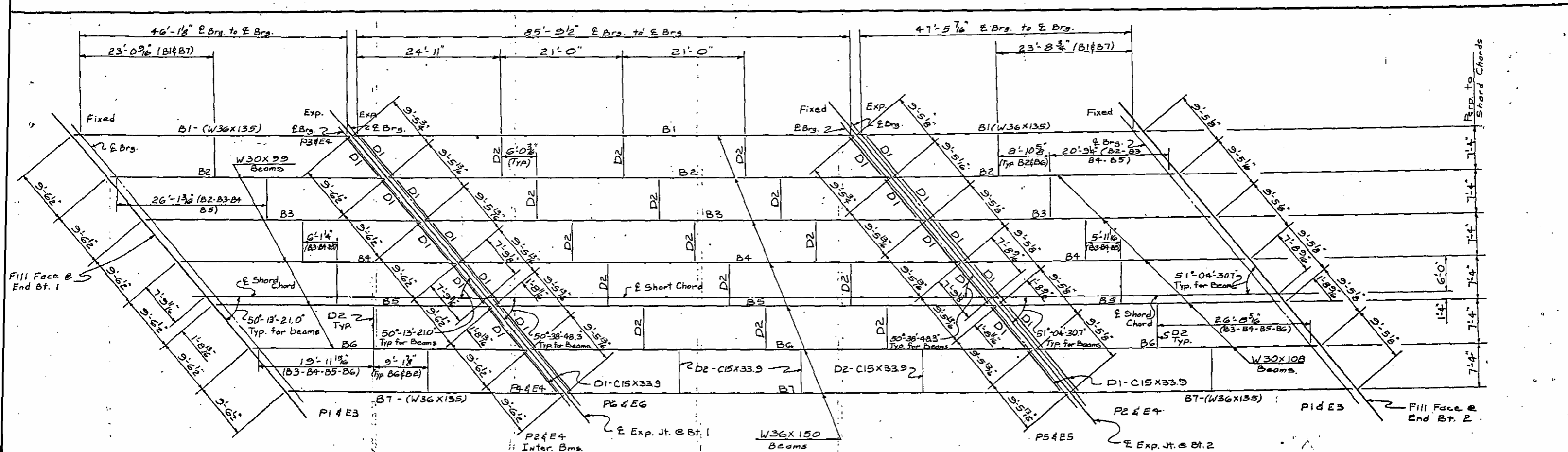
**SUPER STRUCTURE
 PLAN OF SPAN "C"**

July 1977

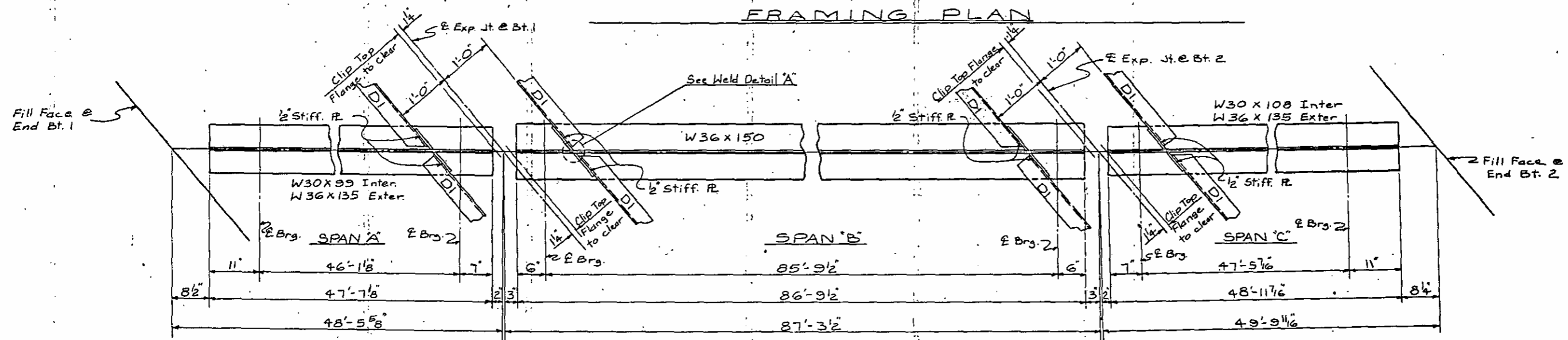
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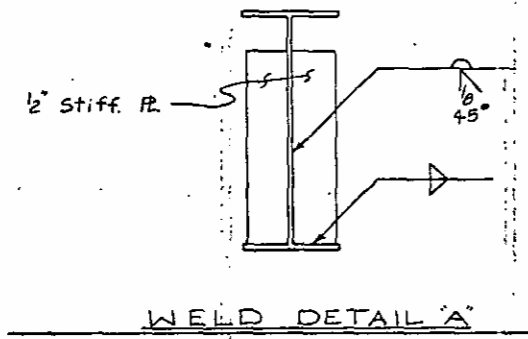
DRAWN BY: Jimmy Capps DATE: 7-7-77
 CHECKED BY: E. L. Wood DATE: 9-14-77



FRAMING PLAN



BOTTOM FLANGE DETAIL

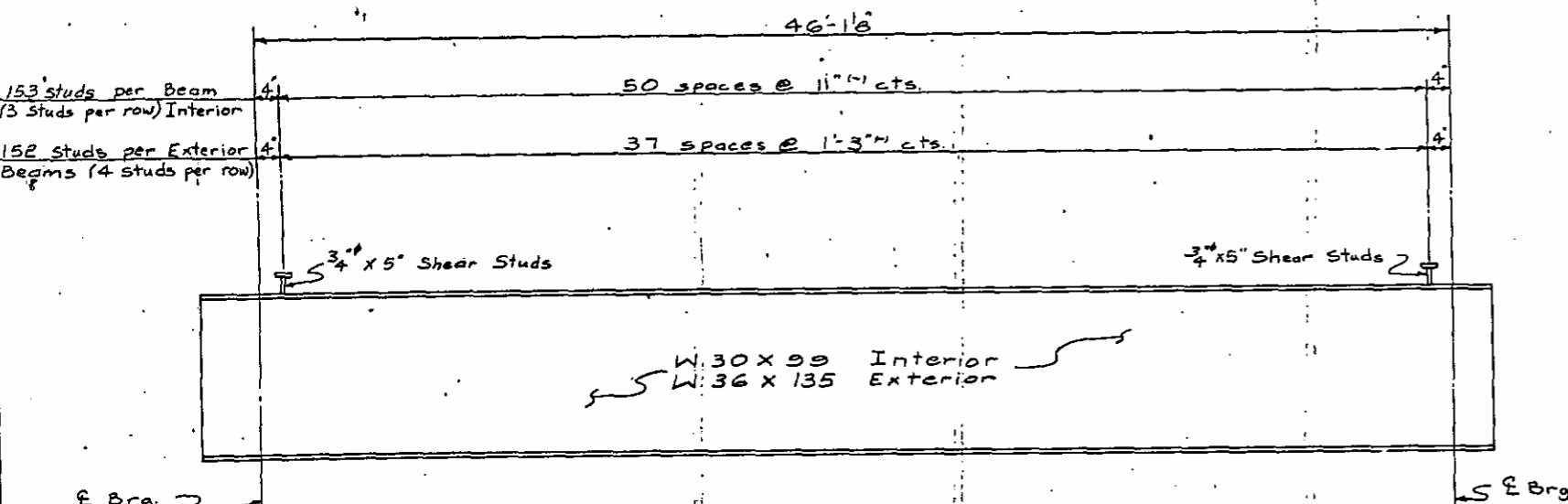


WELD DETAIL 'A'

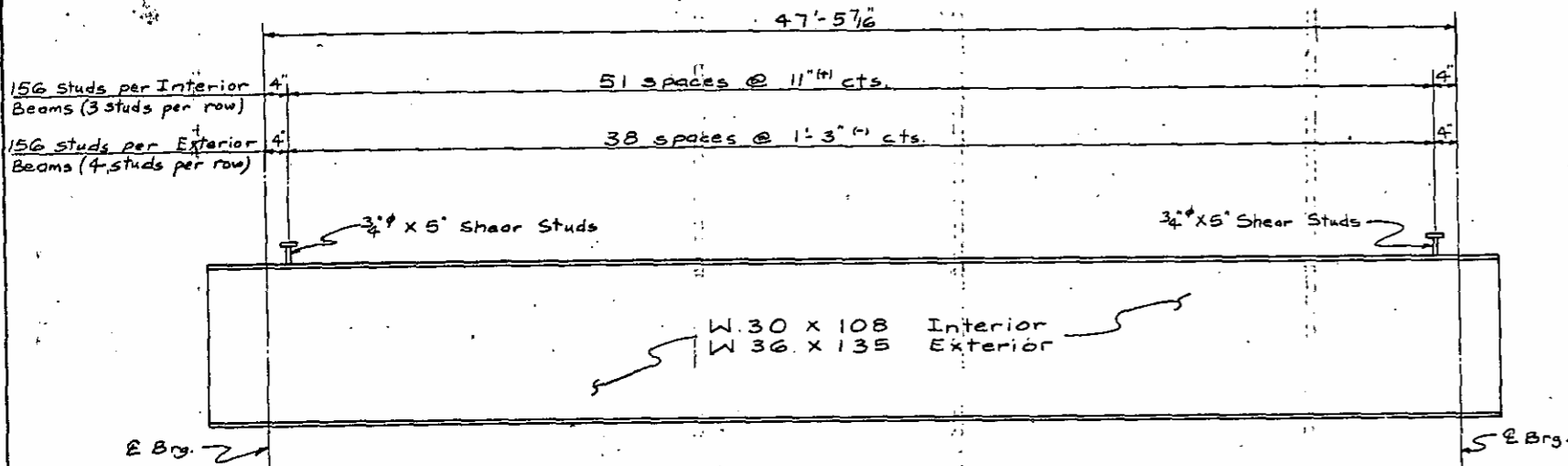
PROJECT No. 8.1743606
 FORSYTH COUNTY
 STATION: 116 + 52.12-Lt. Lt.

STATE OF NORTH CAROLINA					
DEPARTMENT OF TRANSPORTATION					
RALEIGH					
SUPERSTRUCTURE					
STRUCTURAL STEEL					
July					1977
REVISIONS					
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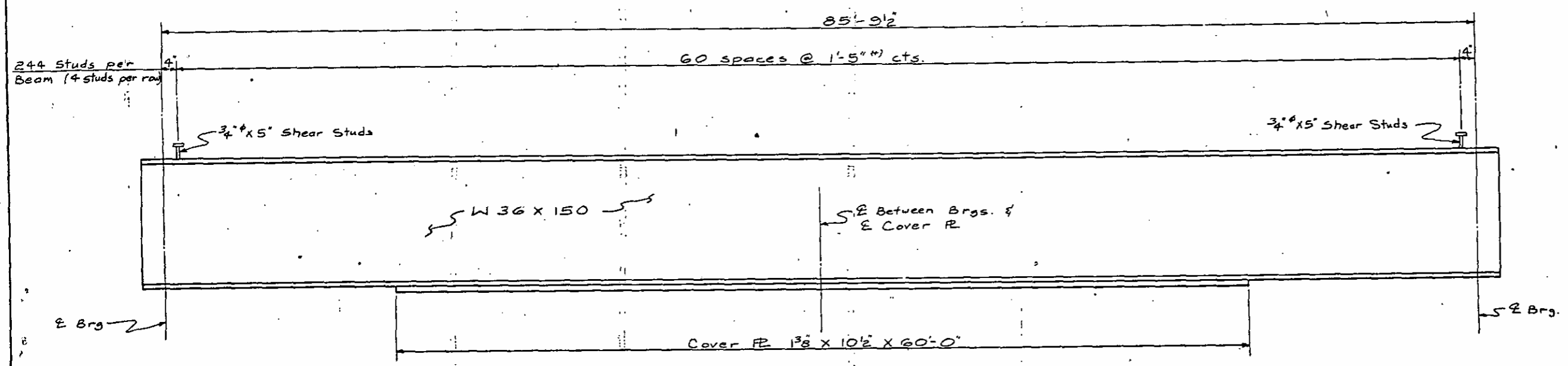
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 CHECKED BY R. J. Moore DATE 7-14-77



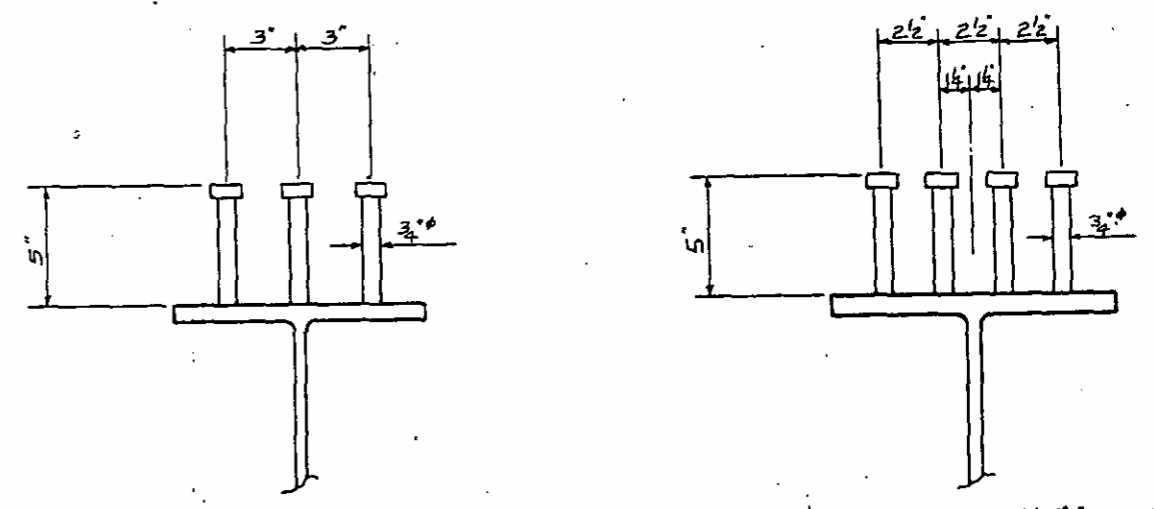
BEAM ELEVATION SPAN "A"



BEAM ELEVATION SPAN "C"

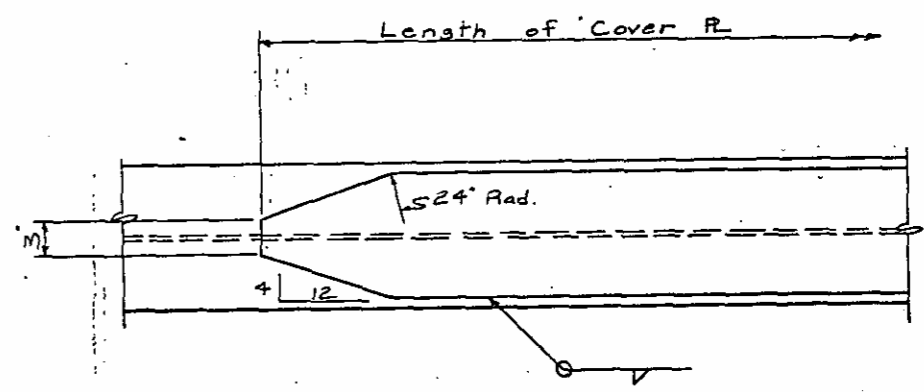


BEAM ELEVATION SPAN "B"



For Interior Beams Span "A" & "C" SHEAR STUD DETAILS

For Exterior Beams Span "A", "B", & "C", Interior Beams Span "B"



COVER PLATE DETAIL

PROJECT NO. B.1743606.

FORSYTH COUNTY

STATION: 116 + 52.12 - L.Lt. Ln.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
STRUCTURAL STEEL

July 1977

REVISIONS						SHEET NO. S-73
NO.	BY	DATE	NO.	BY	DATE	
1			2			TOTAL SHEETS 149
2			4			

DRAWN BY Jimmy Carps DATE 7-13-77

CHECKED BY R.J. Moore DATE 7-14-77

NOTES

Specifications: Design — A.A.S.H.T.O. (1973)
Welding — A.W.S. (Current)

All Structural Steel Shall be Unpainted
ASTM A588 Grade with a Minimum Yield Strength of 50,000psi.

The Atmospheric Corrosion Resistance And Coloring Characteristics of ASTM A588 Steel Are Required For the High Strength Bolts, Nuts, Washers, And The Weld Filler Metal For This Structure.

At Fixed Points of Support, Nuts For Anchor Bolts Are To be Tightened Finger Tight And Then Backed off One Half Turn. The Thread of The Nut And Bolt Shall Then Be Burred With A Sharp Pointed Tool.

Shipping Details for Beams Shall be Submitted For Approval, Indicating The Top Flange Location During Shipment, And in All Cases Showing the Web Vertical. The Method of Shipment, Position On The Vehicle, And Attachments to The Beams of Any Shipping Restraints Shall Be Clearly Detailed.

Stiffeners Are Not Required On End Bt. End of Beams, Nor on Outside of Exterior Beams At Bents.

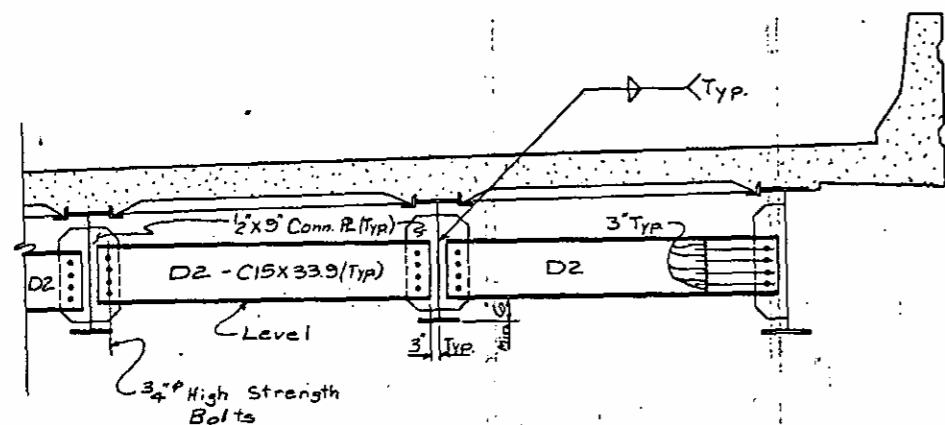
See Superstructure Typical Sections For Location of Holes in Beam Web For 'K' Bars.

All Dimensions Shown Are Horizontal or Vertical Unless Otherwise Noted.

Charpy 'V' Notch Test is Required for all Cover Plates And Beams, See Special Provisions.

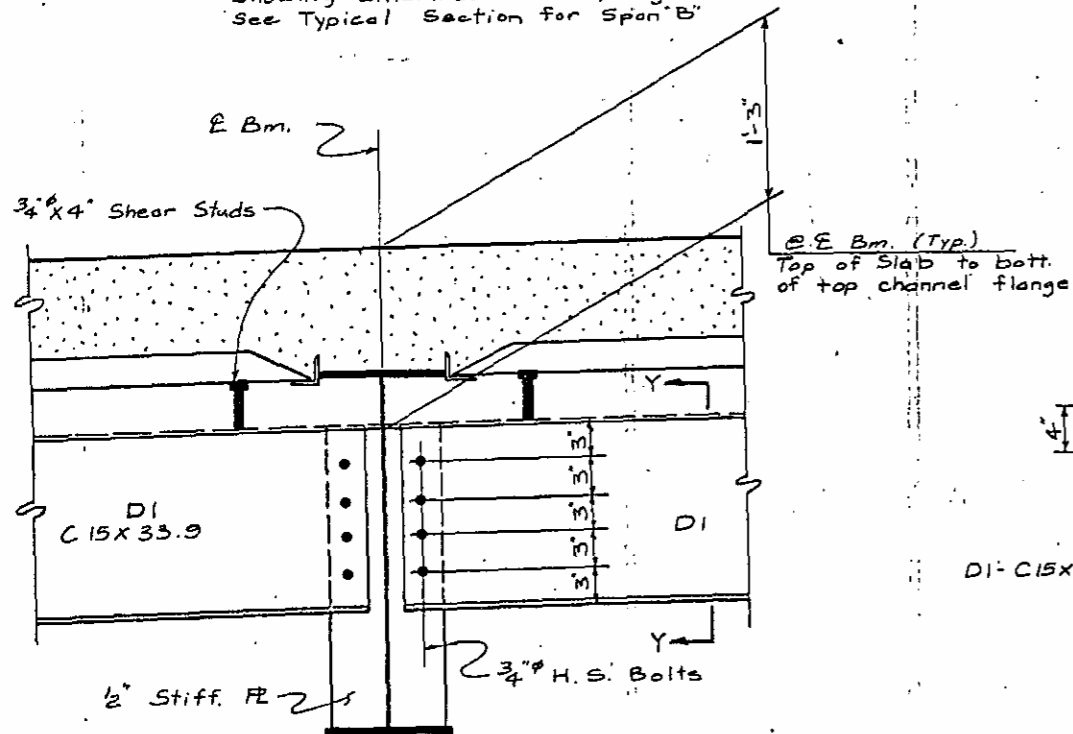
For Description of The Shear Studs, See Special Provisions.

No Shop Camber Required for Exterior Beams Span 'A' and 'C'. Turn Natural Mill Camber Up.

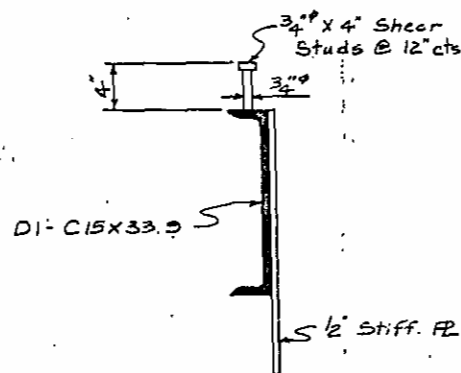


PART TYPICAL SECTION

Showing Intermediate Diaphragms for Span 'A' & 'C'
See Typical Section for Span 'B'



BENT DIAPHRAGM DETAIL



SECTION Y-Y

DEAD LOAD DEFLECTIONS AND CAMBER

	SPAN 'A'		SPAN 'B'		SPAN 'C'	
	Interior	Exterior	Interior	Exterior	Interior	Exterior
Deflection due to weight of steel	.008	.005	.059	.057	.009	.006
Deflection due to weight of slab	.066	.034	.252	.254	.067	.038
Deflection due to weight of Rail & F.W.S.	.007	.004	.033	.033	.008	.005
Total Dead Load Deflection	.081	.043	.344	.344	.084	.049
Ordinate due to Superelevation	4.001	4.001	4.002	4.002	4.001	4.001
Required Beam Camber	1"	—	4/8"	4/8"	1"	—

Values Are Given in Feet (Decimal Form) At Midpoint Between E Bearings Except "Required Beam Camber", which is Given in Inches (Fraction Form).

PROJECT No. B.1743606

FORSYTH COUNTY

STATION: 116+52.12-56.60

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
STRUCTURAL STEEL

July 1977

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NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			2			5-14
2			4			149

NOTES

Elastomer in all bearings shall have a Grade 50 durometer hardness. See Special Provisions.

Steel plates in laminated bearings shall conform to A.S.T.M. A36.

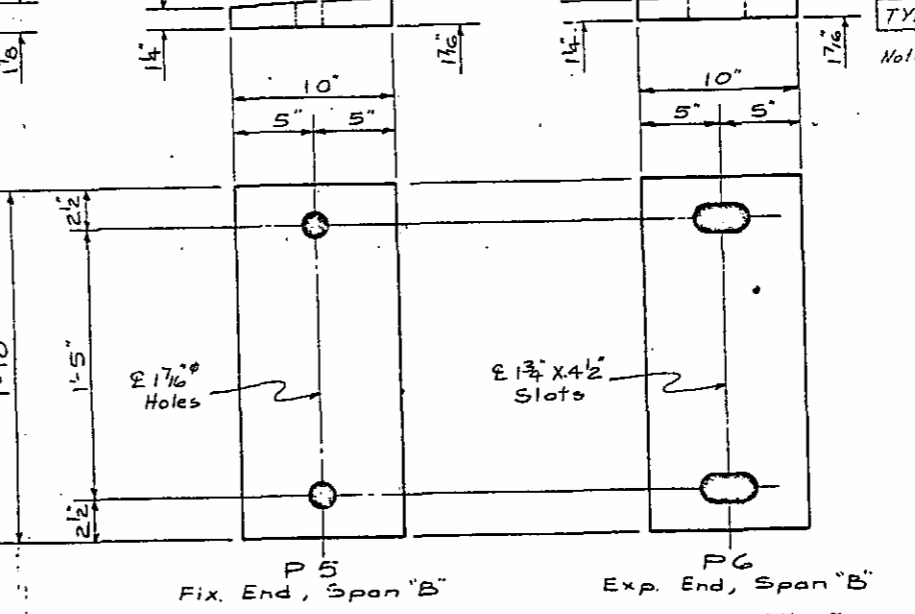
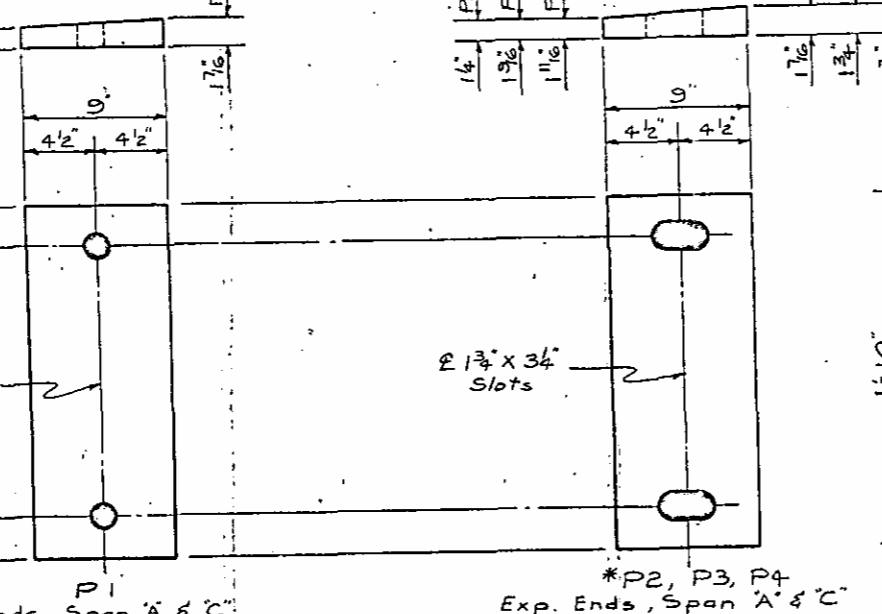
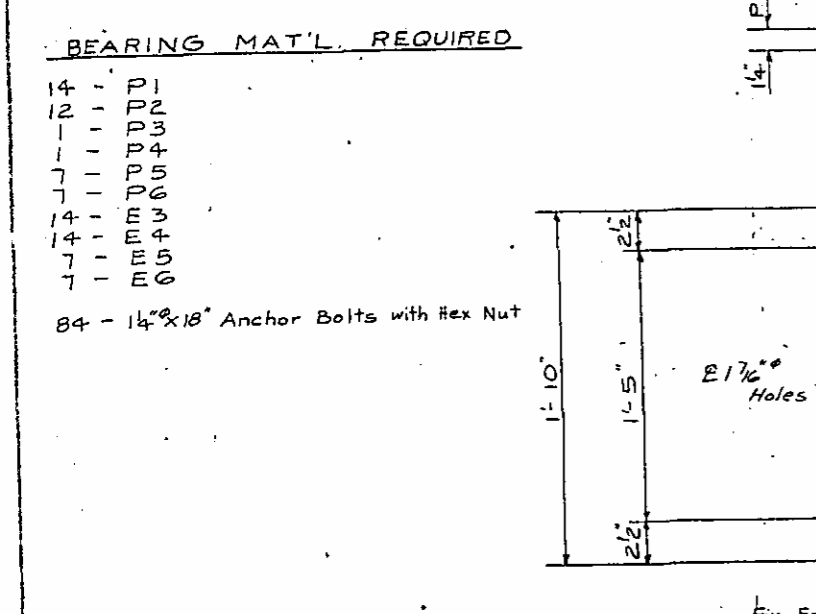
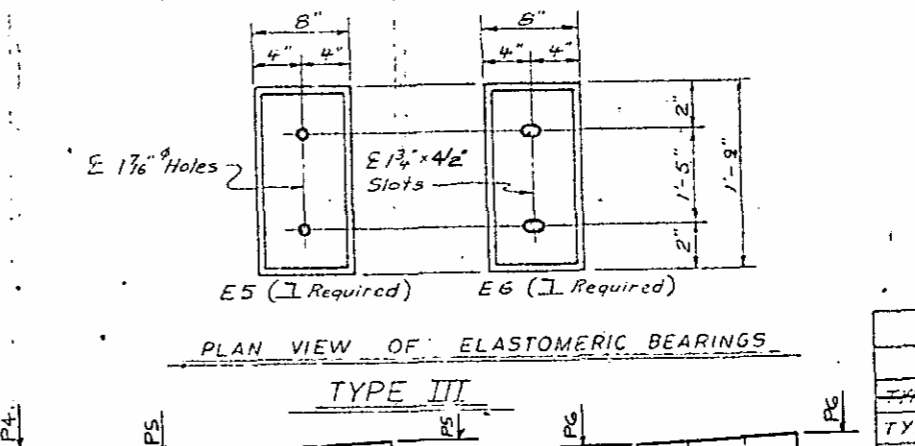
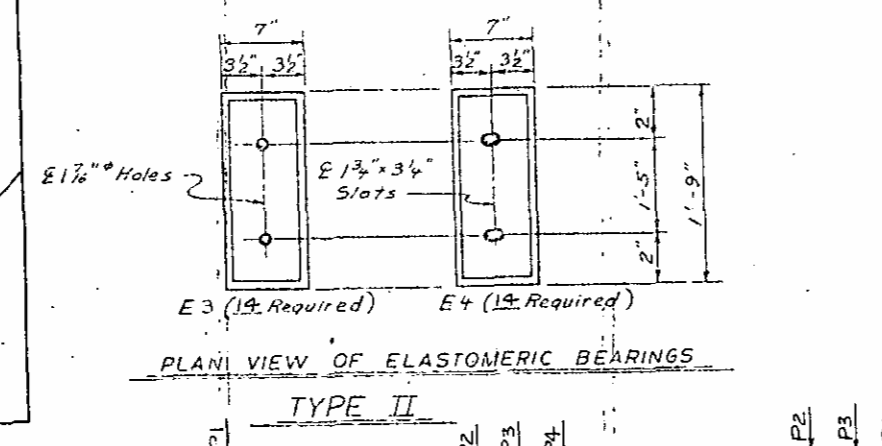
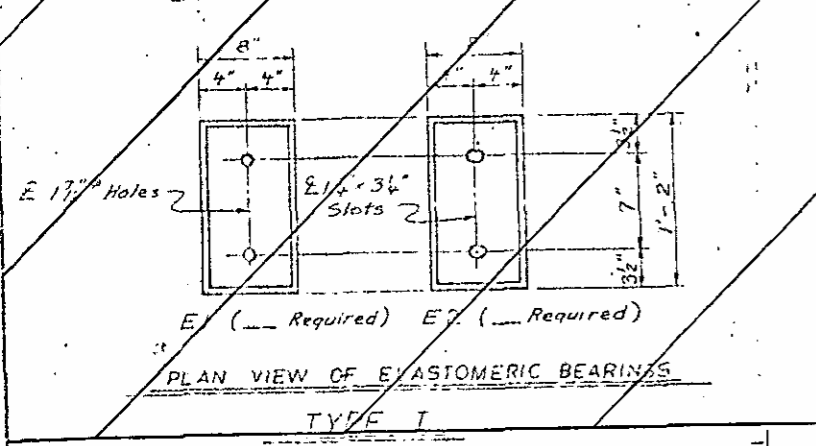
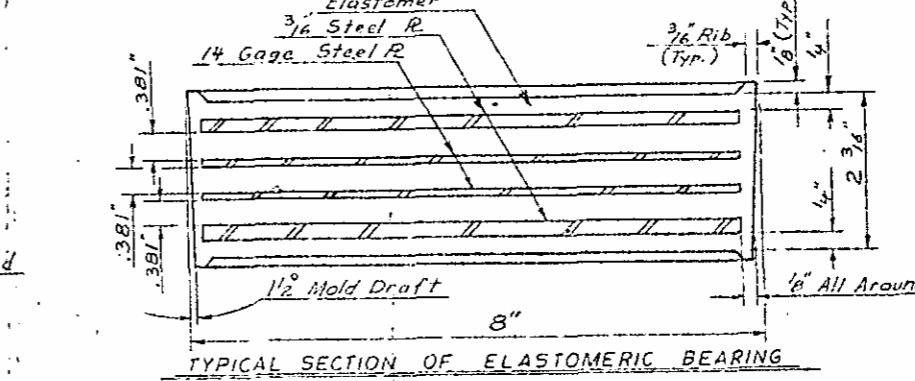
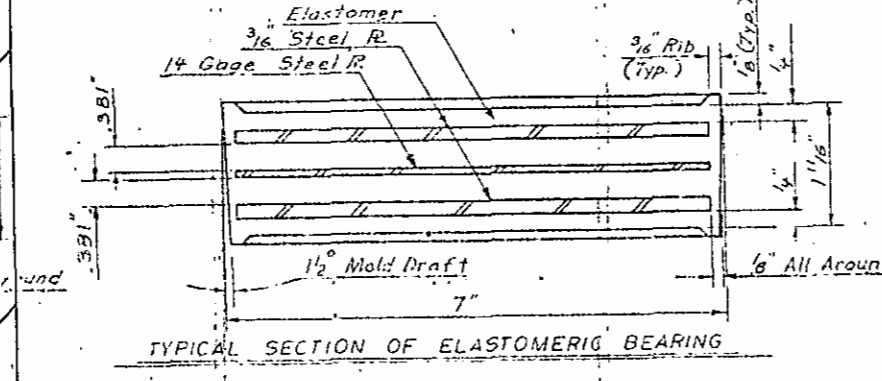
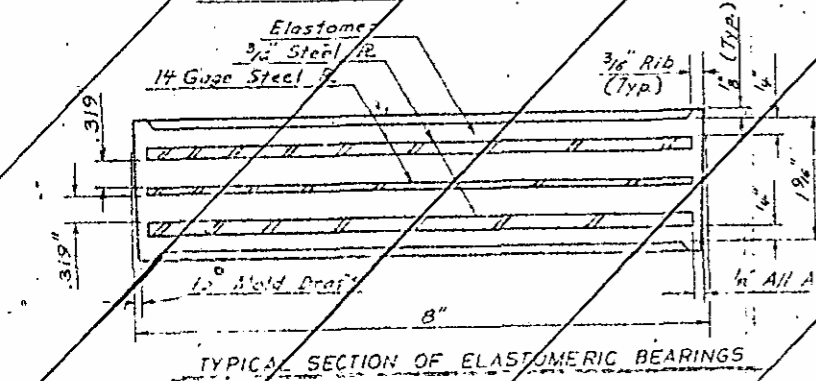
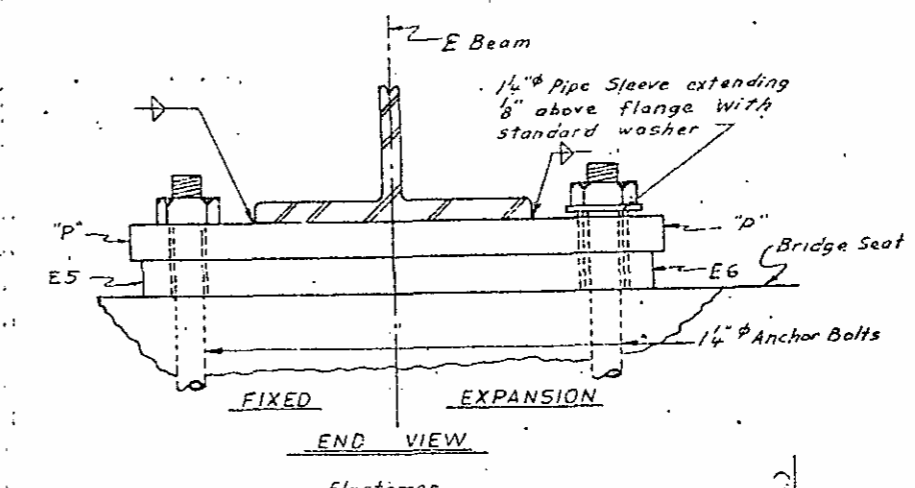
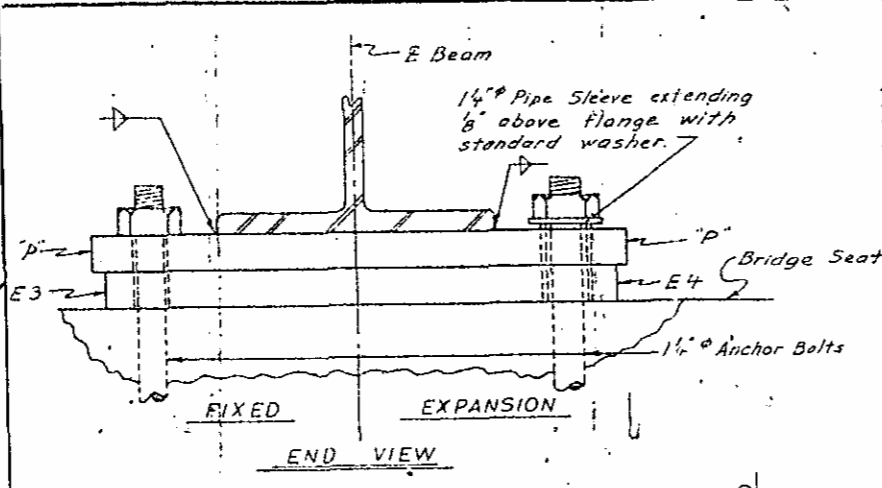
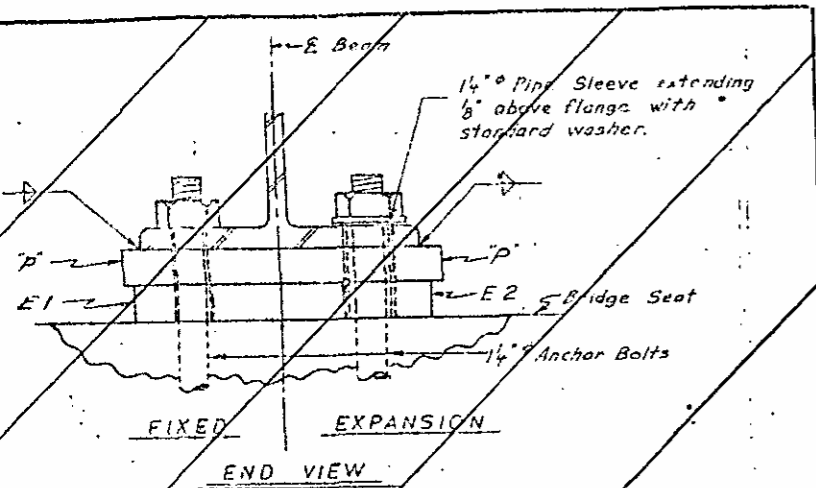
At all fixed points of support, nuts for anchor bolts are to be tightened finger tight and then backed off 1/2 turn. The thread of the nut and bolt shall then be burred with a sharp pointed tool.

The 1 1/4" pipe sleeve shall be cut from schedule 40 P.V.C. pipe. The P.V.C. pipe shall be light gray in color meeting the requirements of A.S.T.M. D1785. The payment for the pipe sleeves shall be included in the several pay items.

For painted structural steel, anchor bolts, nuts and washers shall be in accordance with the Standard Specifications.

For unpainted A.S.T.M. A-588 structural steel, anchor bolts shall be A-588 and nuts and washers shall be A.S.T.M. A-325 Type 3. Anchor bolts, nuts, washers and bearing plates shall not be galvanized.

Bearing Plates shall be of ASTM A-588 steel.



Type	LOAD RATINGS			
	Max. D.L. + L.L.	Max. D.L.	Min. D.L.	Max. Defl.
TYPE I	60.91K	50.07K	21.75K	7.0%
TYPE II	82.16K	68.47K	28.75K	7.0%
TYPE III	114.51K	78.97K	32.95K	7.0%

Note: Physical properties of the Elastomeric Bearings shall be in accordance with the special provisions and shall meet the above tabulated requirements.

PROJECT NO. 8: 1743606
 FORSYTH COUNTY
 STATION: 116 + 52.12 - L - L - L

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 STANDARD
 ELASTOMERIC BEARING DETAILS
 FOR
 ROLLED BEAMS

JANUARY 1977

REVISIONS			
NO.	BY	DATE	DESCRIPTION
1			
2			

STD. NO. EB1

ASSEMBLED BY J. E. Copps DATE 7-21-77
 CHECKED BY R. J. Moore DATE 7-14-77
 SPECIAL
 STANDARD

SOLE PLATE DETAILS
 * P2, P3, P4 - N.S. @ Bent 1 Beams 2 thru G, And F.S. @ Bent 2 Beams 1 thru 7.
 P3 - N.S. @ Bent 1 Beam 1
 P4 - N.S. @ Bent 1 Beam 7

REINFORCING STEEL BAR SCHEDULE

Table with columns: BAR NO., SIZE, TYPE, LENGTH, WEIGHT. Section: SPAN "A". Rows include items a1 to a174.

Table with columns: BAR NO., SIZE, TYPE, LENGTH, WEIGHT. Section: SPAN "A" (CONT.). Rows include items a175 to a193 and b1 to b3.

Reinforcing Steel Lbs. 17,628

Table with columns: BAR NO., SIZE, TYPE, LENGTH, WEIGHT. Section: SPAN "B". Rows include items a1 to a267.

Table with columns: BAR NO., SIZE, TYPE, LENGTH, WEIGHT. Section: SPAN "B" (CONT.). Rows include items a268 to a390.

Reinforcing Steel Lbs. 30,799

Table with columns: BAR NO., SIZE, TYPE, LENGTH, WEIGHT. Section: SPAN "C". Rows include items a1 to a390.

Table with columns: BAR NO., SIZE, TYPE, LENGTH, WEIGHT. Section: SPAN "C" (CONT.). Rows include items a391 to a407 and b1 to b7.

Reinforcing Steel Lbs. 18,076

DRAWN BY: Jimmy Capps DATE: 7-19-77
CHECKED BY: R.L. Moore DATE: 9-14-77

PROJECT NO. B.1743606
FORSYTH COUNTY

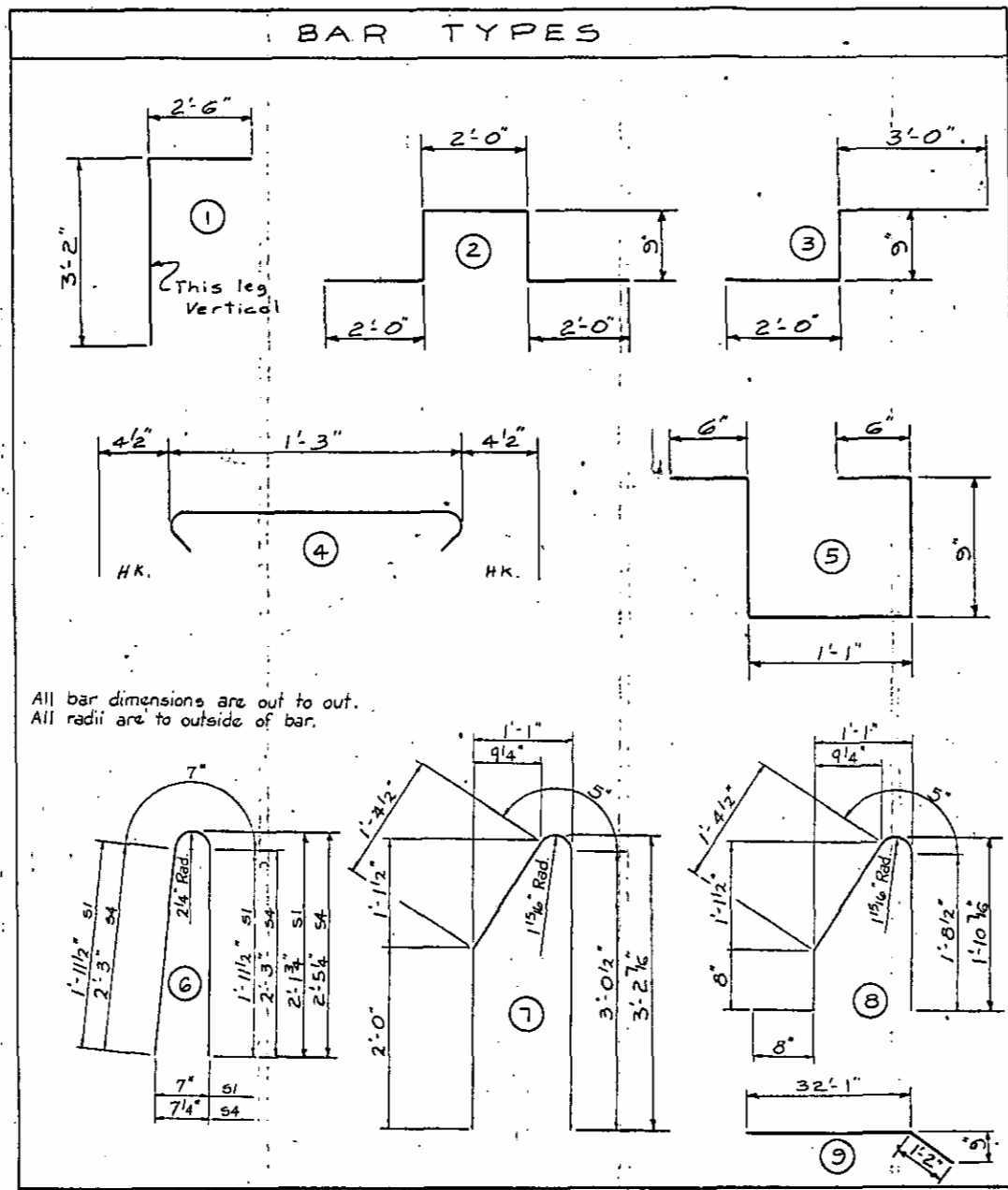
STATION: 116+52.12-L-LL

Sheet 1 of 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
BILL OF MATERIAL

Table with columns: REVISIONS, NO., BY, DATE, NO., BY, DATE.

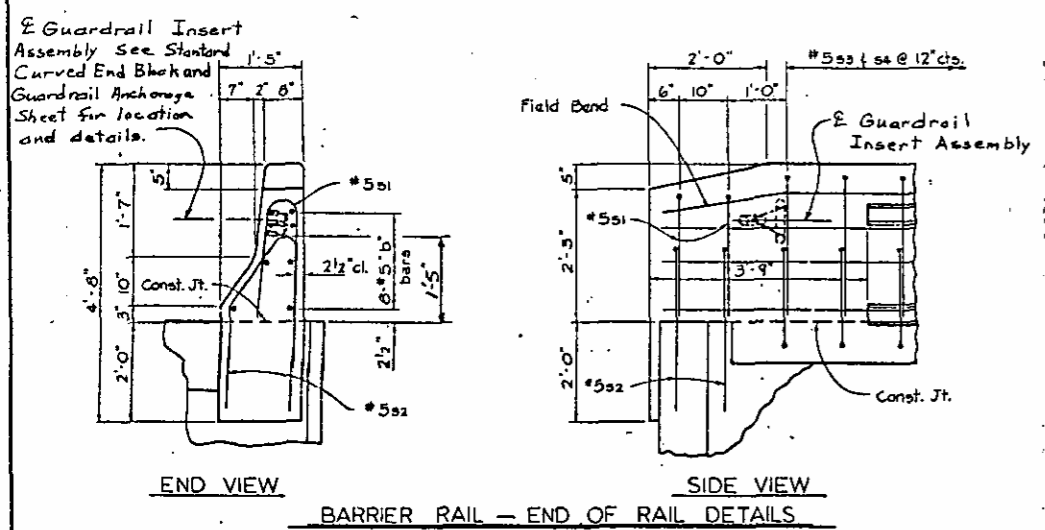
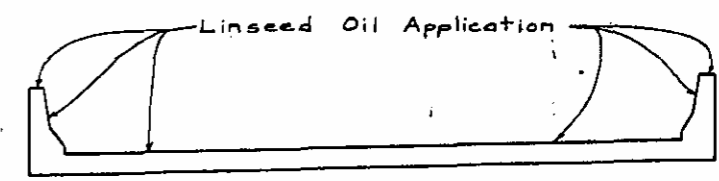
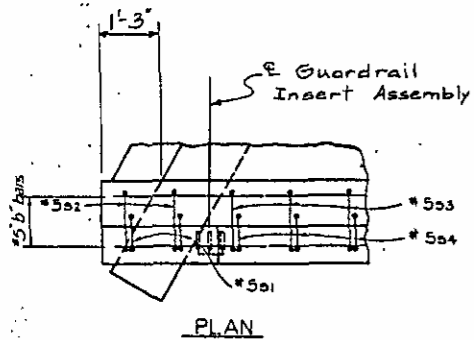
CONCRETE BARRIER RAIL QUANTITIES					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
b10	16	#5	str.	24'-6"	409
b11	16	#5	str.	24'-5"	407
b12	24	#5	str.	28'-8"	718
b13	24	#5	str.	28'-7"	715
b14	16	#5	str.	25'-2"	420
b15	16	#5	str.	25'-1"	419
S1	8	#5	G	4'-6"	38
S2	8	#5	7	6'-10"	57
S3	368	#5	8	4'-10"	1855
S4	368	#5	6	5'-1"	1951
Reinforcing Steel Lbs.					6,989
CLASS AA CONCRETE					
Span 'A'		9.0 C.Y.			
Span 'B'		15.7 C.Y.			
Span 'C'		9.2 C.Y.			
Total		33.9 C.Y.			
Total Lin. Ft.		376.31			



DIVISION OF CLASS AA CONCRETE		
SPAN 'A'	Cu. Yds.	84.6
SPAN 'B'	Cu. Yds.	132.6
SPAN 'C'	Cu. Yds.	86.3
TOTAL	Cu. Yds.	303.5

SUPERSTRUCTURE TOTAL QUANTITIES		
Class AA Concrete	303.5 C.Y.	
Reinforcing Steel	66,503 Lbs.	
Structural Steel	212,800	Approx. Lbs.
Linseed Oil Concrete Protection	23	Gal.
Expansion Joint Seal	Lump Sum	
Concrete Barrier Rail *	376.31	Lin. Ft.

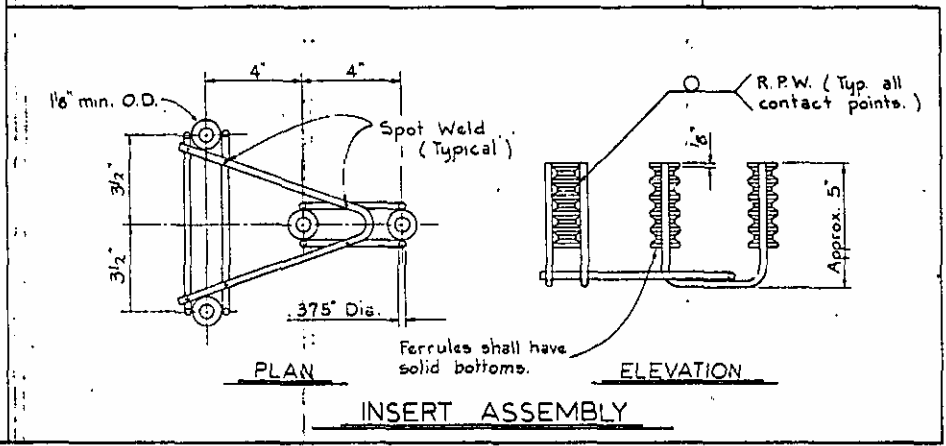
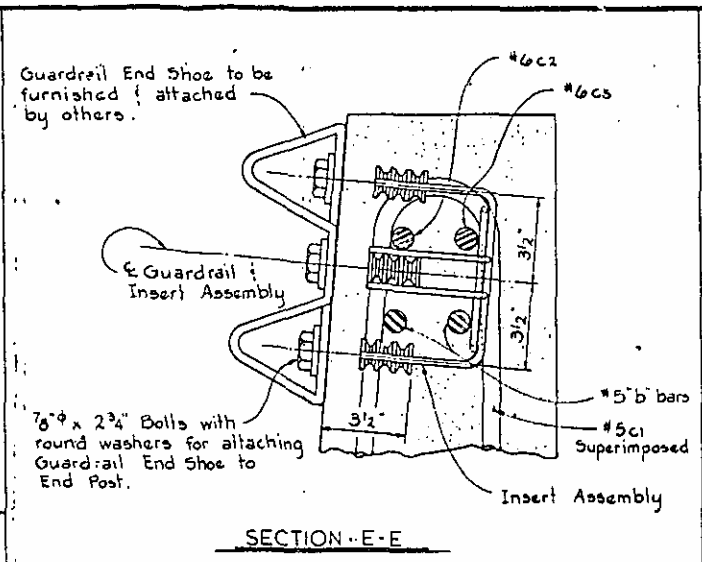
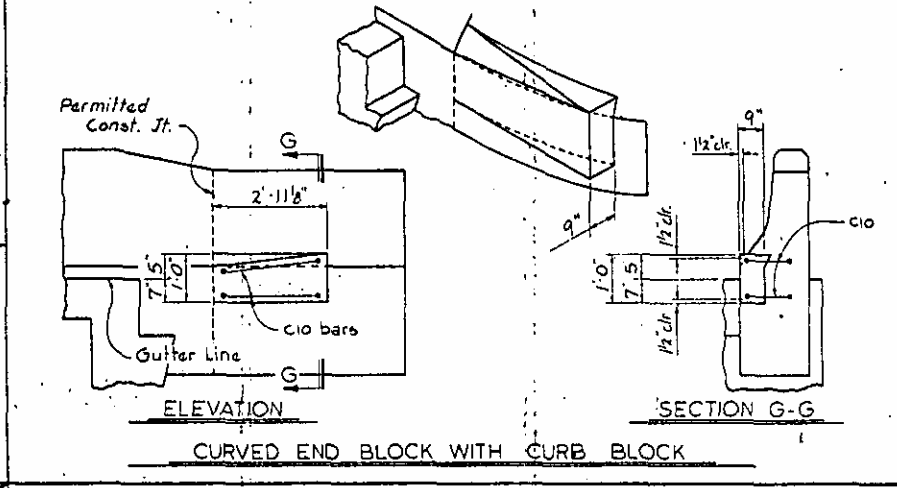
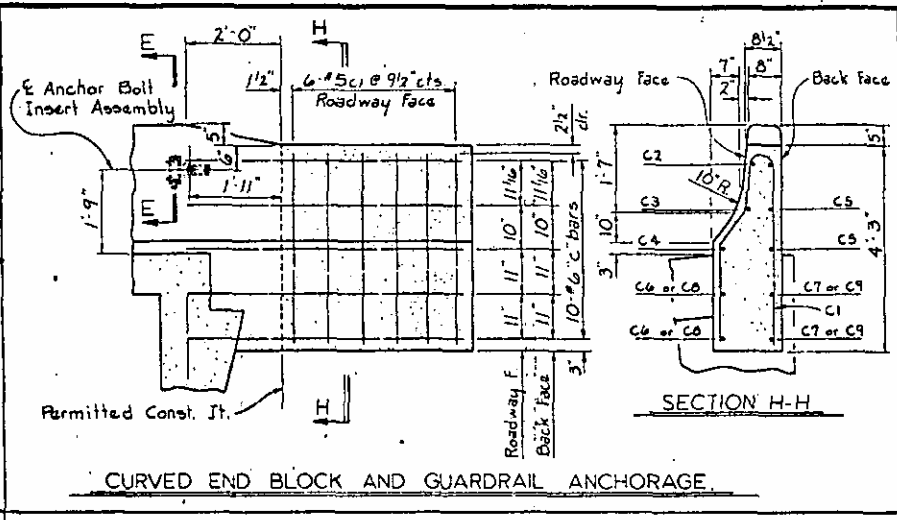
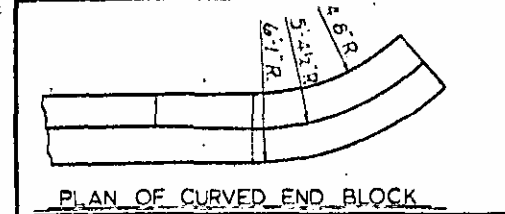
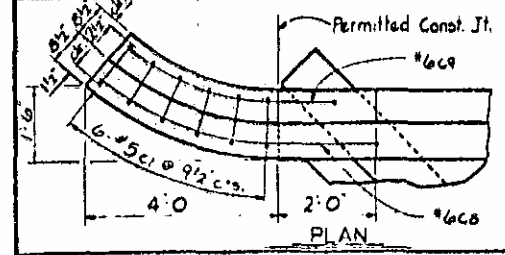
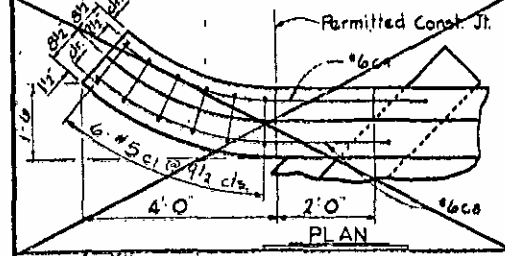
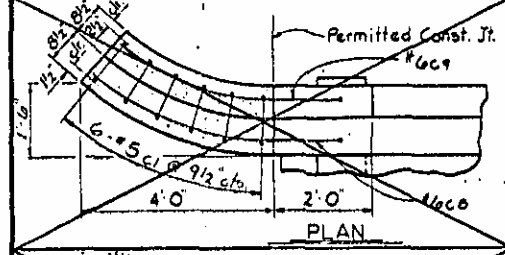
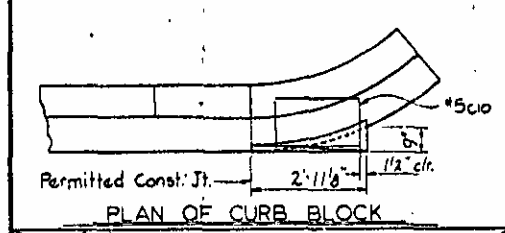
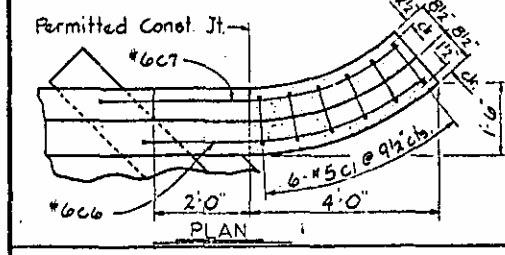
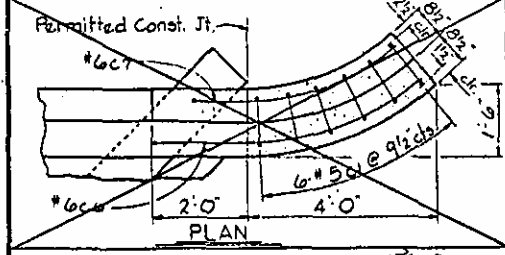
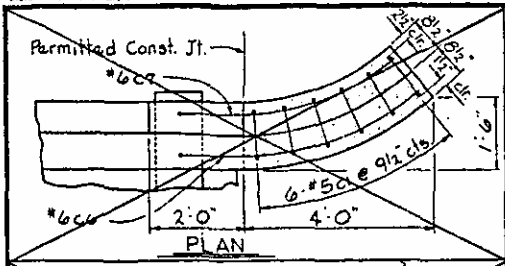
* For Method Of Payment For Concrete Barrier Rail, See Special Provisions.



DRAWN BY: Jimmy Capps DATE: 7-20-77
CHECKED BY: R. L. Moore DATE: 2-4-77

PROJECT No. 8.1743606
FORSYTH COUNTY
STATION: 116+52.12-6 Ln. L
Sheet 2 of 2

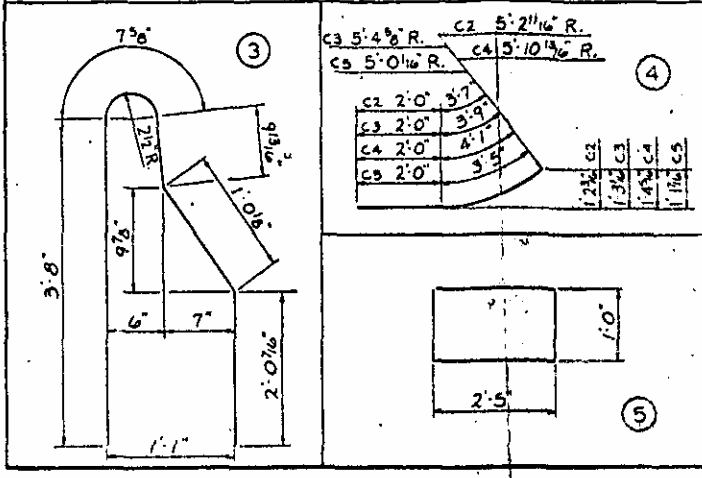
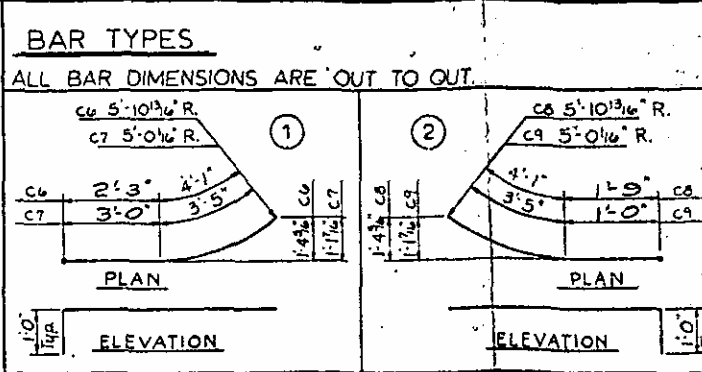
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
BILL OF MATERIAL					
July 1977					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			2		
3			4		



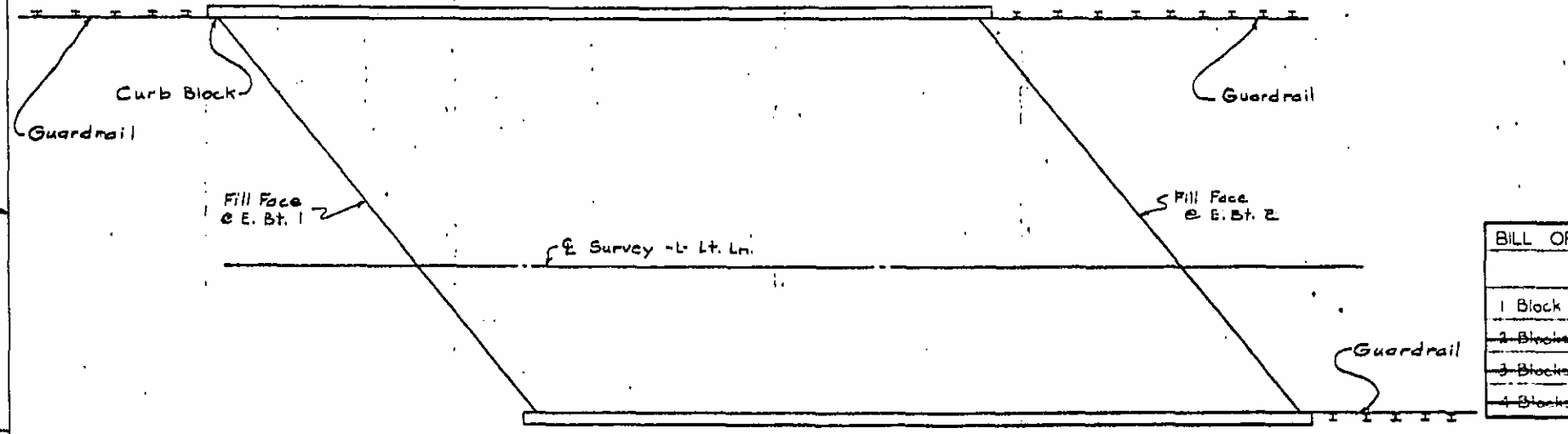
BILL OF MATERIAL FOR FOUR CURVED END BLOCKS

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
C1	24	#5	3	6'-2"	204
C2	4	#6	4	5'-7"	34
C3	4	#6	4	5'-9"	35
C4	4	#6	4	6'-1"	37
C5	12	#6	4	5'-5"	98
C6	4	#6	1	7'-4"	44
C7	4	#6	1	7'-5"	45
C8	4	#6	2	6'-10"	41
C9	4	#6	2	5'-5"	33

Reinforcing Steel Lbs. 571
Class A-A Concrete Cu. Yds. 2.9



- NOTES
- THE 4 - BOLT INSERT ASSEMBLY UNIT SHALL CONSIST OF THE FOLLOWING COMPONENTS:
 - FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF A.S.T.M. A108, GRADE 12L14.
 - 4 - 7/8" x 2 3/4" BOLTS WITH WASHERS. BOLTS SHALL CONFORM TO THE REQUIREMENTS OF A.S.T.M. A307. BOLTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8" x 2 3/4" GALVANIZED BOLTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF A.S.T.M. A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)
 - WIRE STRUTS SHOWN IN THE INSERT ASSEMBLY DETAIL ARE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 P.S.I.
 - THE INSERT ASSEMBLY WITH BOLTS SHALL BE ASSEMBLED IN THE SHOP. BOLT THREADS MAY BE RE CUT AS NECESSARY TO INSURE FIT.
 - THE COST OF THE 4-BOLT INSERT ASSEMBLY UNIT COMPLETE IN PLACE, SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CLASS "AA" CONCRETE.
 - THE 4 - BOLT INSERT ASSEMBLY UNIT IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END POSTS. FOR POINTS OF ATTACHMENT, SEE PLANS.
 - CURVED END BLOCKS ARE REQUIRED AT ALL END POSTS.
 - THE COST OF THE EXCAVATION AND BACKFILL FOR THE CURVED END BLOCKS SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CLASS "AA" CONCRETE.



BILL OF MATERIAL FOR CURB BLOCK

	Reinforcing Steel - Lbs.					
	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
1 Block	c.10	2	#5	5	6'-10"	14
2 Blocks	c.10	4	#5	5	6'-10"	28
3 Blocks	c.10	6	#5	5	6'-10"	42
4 Blocks	c.10	8	#5	5	6'-10"	56

TOTAL BILL OF MATERIAL

Reinforcing Steel - Lbs. - 585

Class 'A A' Concrete - Cu. Yds. - 2.9

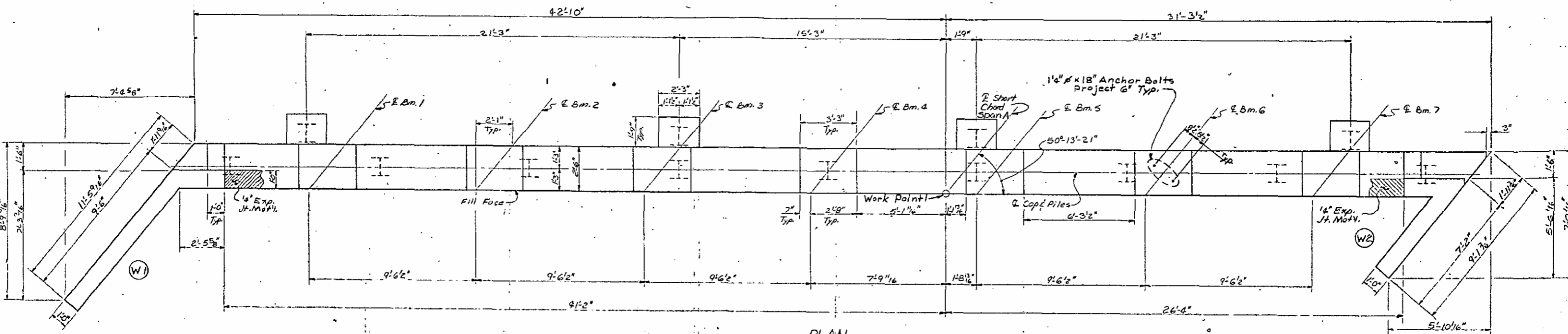
PROJECT No. 81743606
 FORSYTH COUNTY
 STATION: 116+52.12 - Lt. Lt. Ln.

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

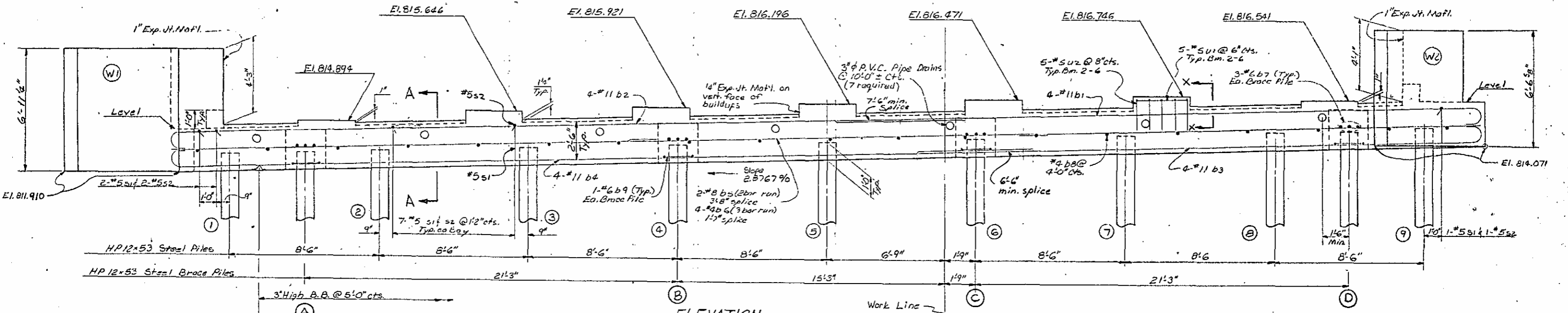
STANDARD
 CURVED END BLOCK, GUARDRAIL ANCHORAGE, AND CURB BLOCK
 JUNE FOR BARRIER RAIL 1976

REVISIONS						SHEET NO. 5-12	TOTAL SHEETS 149
NO.	BY	DATE	NO.	BY	DATE		
1			2				
2			4				

DRAWN BY: ROSS EDWARD AURENY DATE: 6-10-76
 CHECKED BY: R.C. Martin DATE: June 76
 ASSEMBLED BY: J.E. Capps DATE: 7-20-77
 CHECKED BY: R.V. Moore DATE: 9-14-77



PLAN

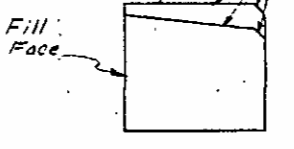


ELEVATION

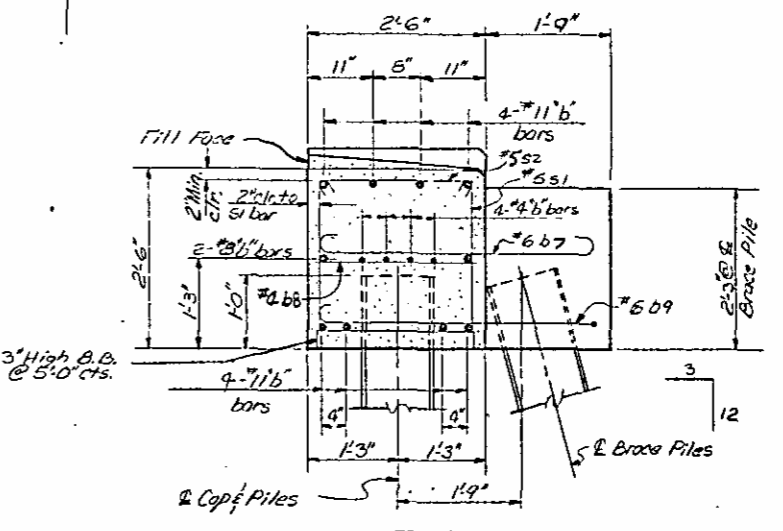
TOP OF PILE ELEVATIONS	
1	.813.006
2	.813.251
3	.813.495
4	.813.739
5	.813.984
6	.814.229
7	.814.474
8	.814.712
9	.814.963
A	.813.129
B	.813.739
C	.814.229
D	.814.841

- NOTES**
- Cap steel may be shifted as necessary to clear anchor bolts.
 - Pipe drains may be shifted as necessary to clear reinforcing steel and anchor bolts.
 - Coat all sur face areas of the top of the cap including chamfers, with Epoxy Resin Protective Coating. Do not coat the area under the elastomeric bearing.
 - The top surface areas of the End Bent 1 cap shall be cured in accordance with the Standard Specifications except, the Membrane Curing Compound Method shall not be used.
 - Piles to be driven to a minimum bearing capacity of 31 tons each.

For limits of Epoxy Resin Protective Coating See Notes.



SECTION X-X

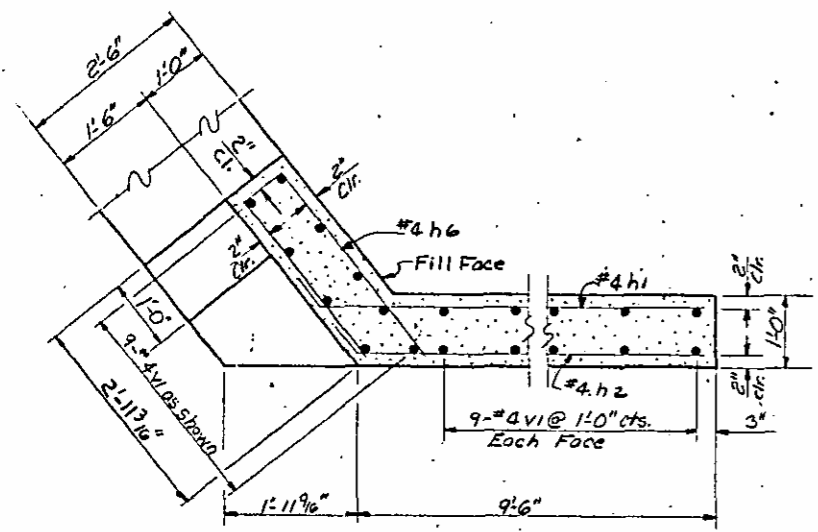


SECTION A-A

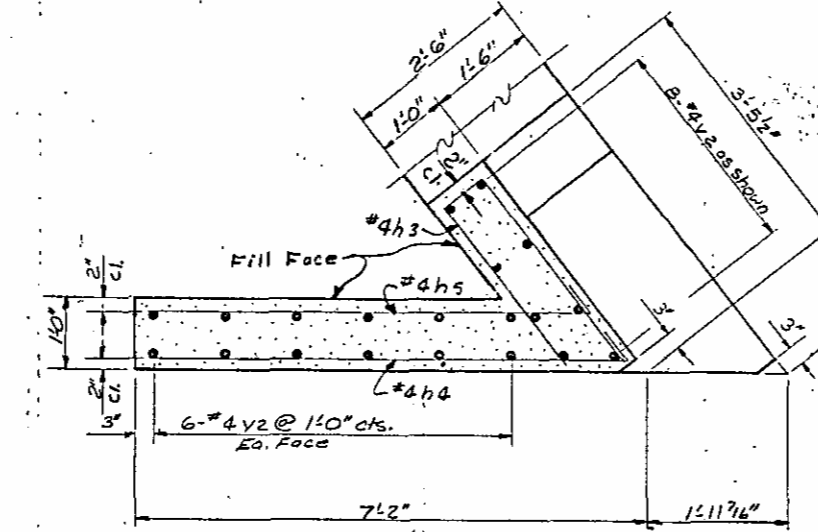
PROJECT No. 8.1743606
 FORSYTH COUNTY
 STATION: 116+52.12 - L - Lt. Ln
 Street 1 of 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT 1					
June 1977					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			2		
2			3		
3			4		

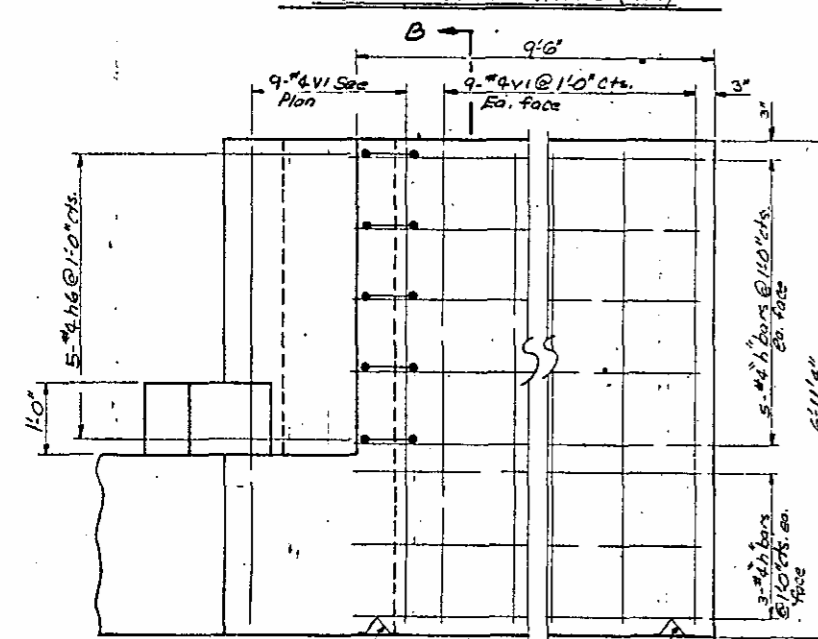
SHEET NO. 5.19
 TOTAL SHEETS 149



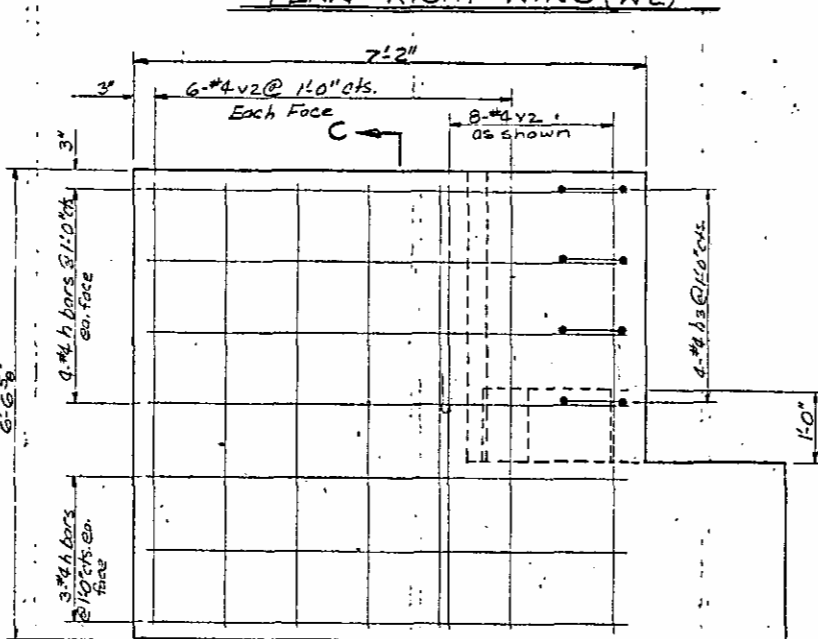
PLAN-LEFT WING (W1)



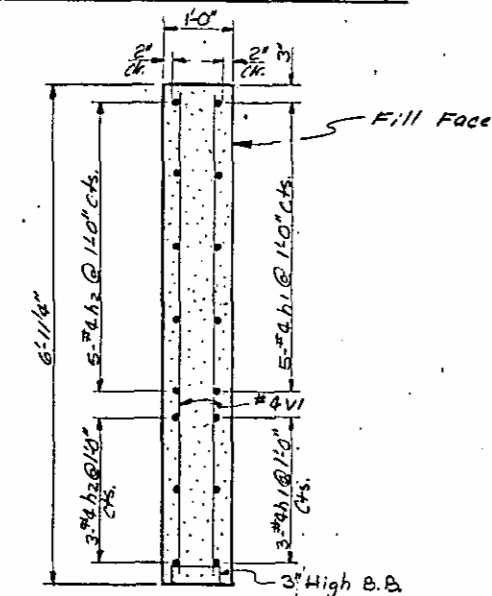
PLAN-RIGHT WING (W2)



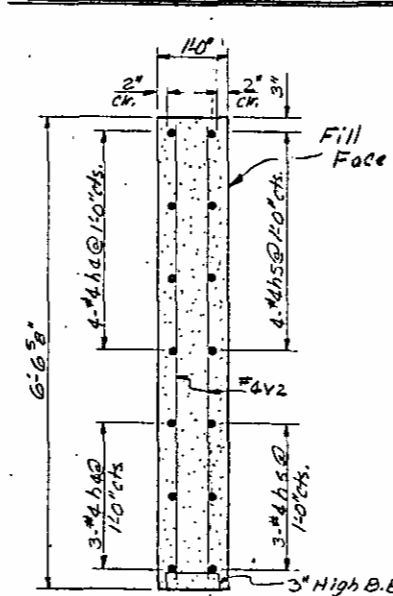
ELEVATION OF LEFT WING (W1)



ELEVATION OF RIGHT WING (W2)

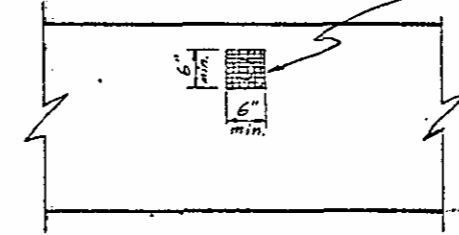


SECTION B-B



SECTION C-C

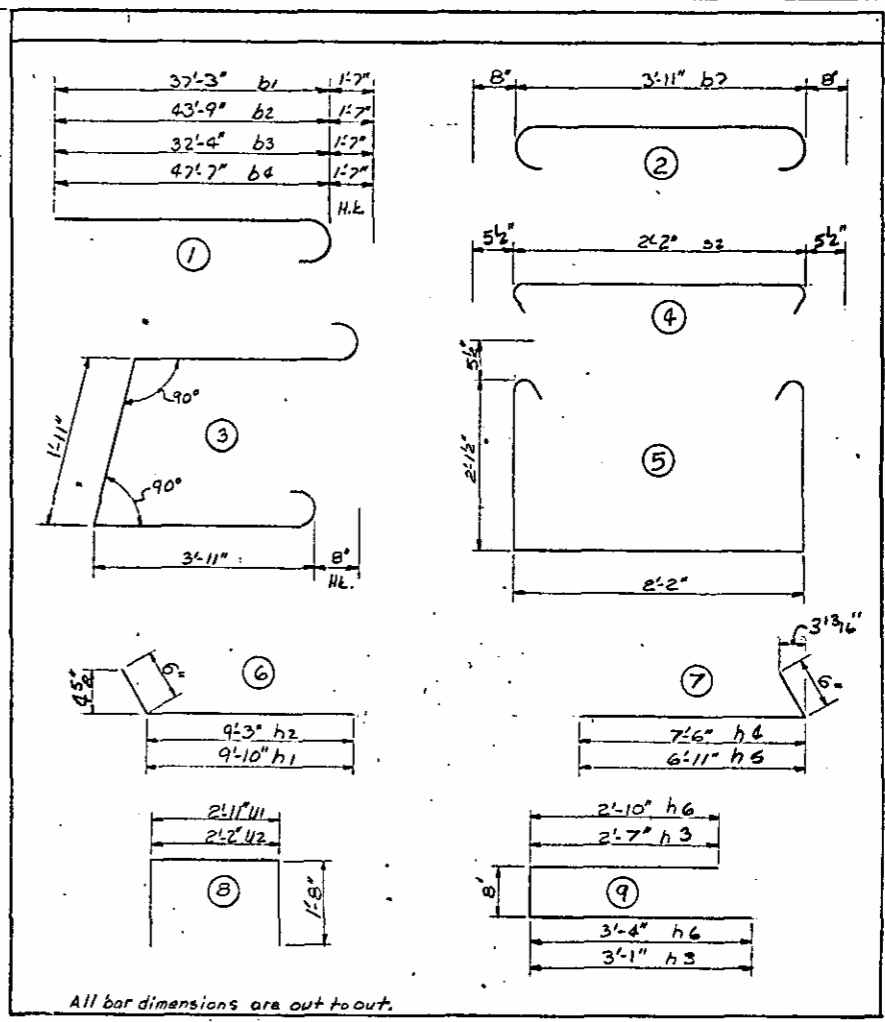
6" Square aluminum or galvanized steel wire mesh hardware cloth of commercial quality. Anchor firmly to Fill Face.



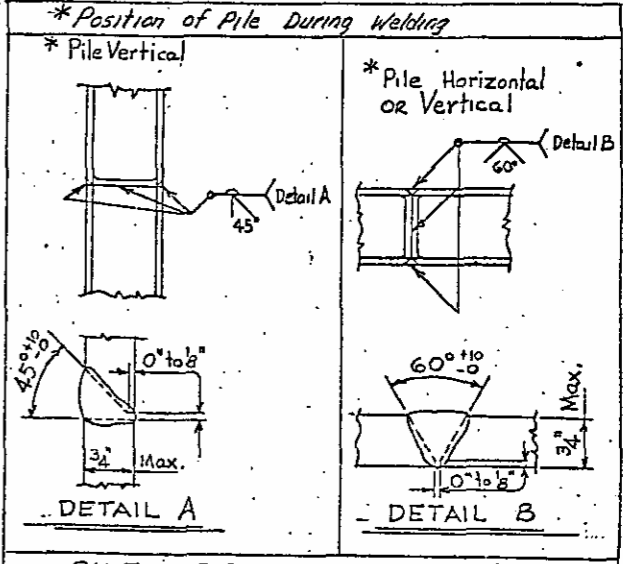
VIEW Y-Y

Note: No separate payment will be made for furnishing and installing the P.V.C. 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.

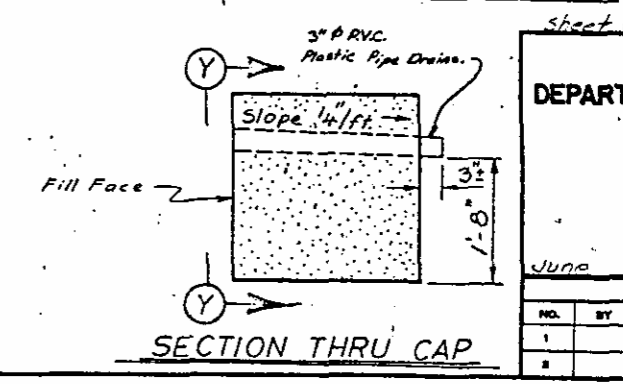
PIPE DRAIN DETAILS



All bar dimensions are out to out.



PILE SPLICE DETAILS



SECTION THRU CAP

BILL OF MATERIAL

End Bent 1

BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
b1	4	#11	1	38'-10"	82
b2	4	#11	1	45'-4"	96
b3	4	#11	1	33'-11"	72
b4	4	#11	1	49'-2"	104
b5	4	#8	Str.	38'-7"	412
b6	12	#4	Str.	25'-7"	205
b7	12	#6	2	5'-3"	9
b8	19	#4	Str.	2'-2"	2
b9	4	#6	3	1'-1"	6
h1	8	#4	6	10'-4"	5
h2	8	#4	6	9'-9"	5
h3	4	#4	9	6'-4"	1
h4	7	#4	7	8'-0"	3
h5	7	#4	7	7'-5"	3
h6	5	#4	9	6'-10"	2
s1	59	#5	5	7'-4"	43
s2	59	#5	4	3'-1"	19
u1	25	#5	8	6'-3"	16
u2	25	#5	8	5'-6"	14
y1	27	#4	Str.	6'-7"	11
y2	20	#4	Str.	6'-2"	9

Reinforcing Steel - lbs. = 5,722
 Class 'A' Conc. - cu. Yds. = 24.6
 HP 12x53 Steel Piles
 No. 13 Lin. Ft. 676
 Epoxy Resin Protective Coating
 for Concrete 169 sq. ft.

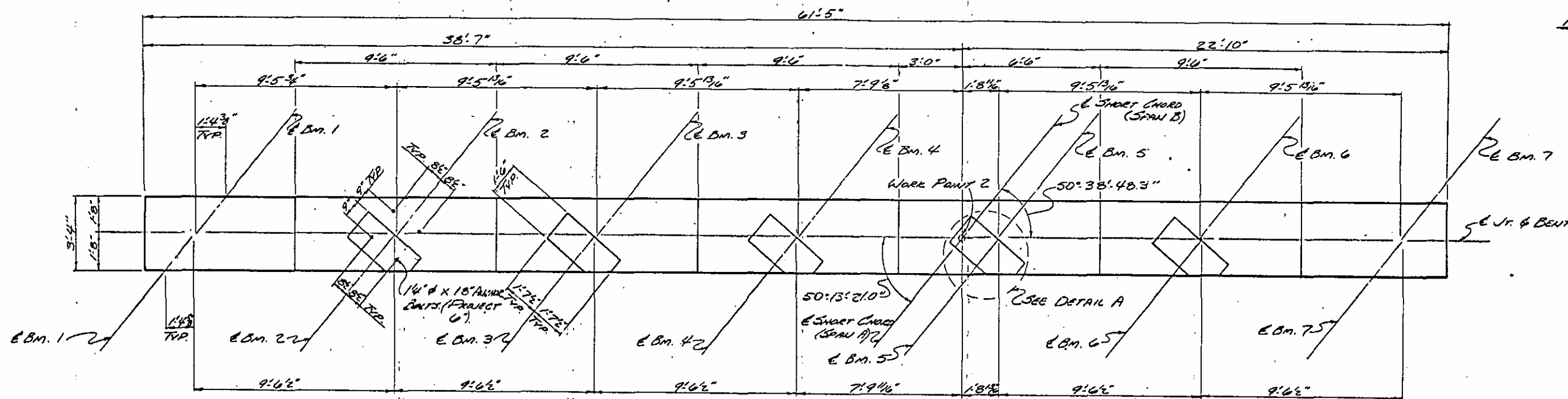
PROJECT No. 8.1743606

FORSYTH COUNTY

STATION: 116+52.12 -1-

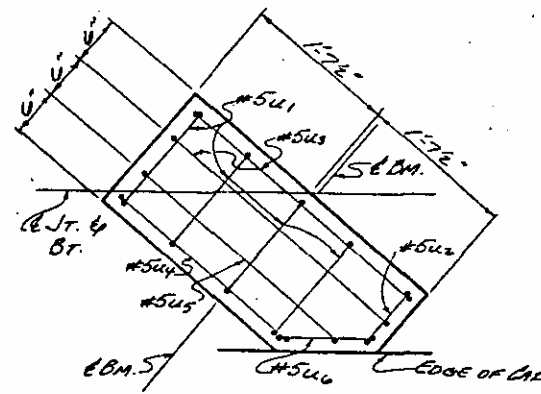
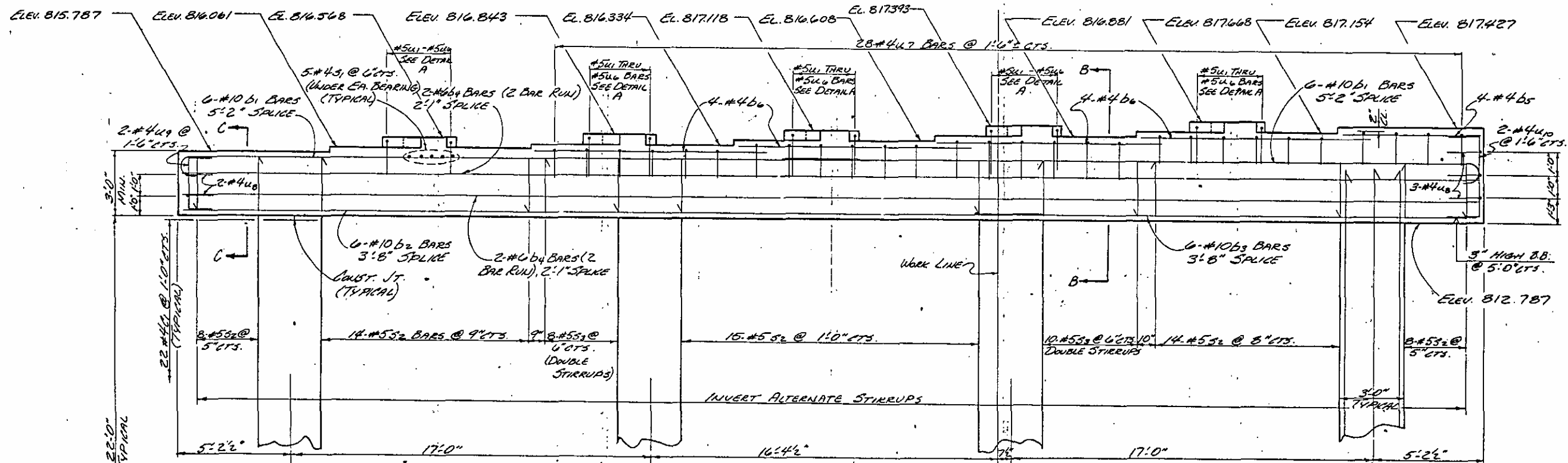
Sheet 2 of 2 Lt. Ln.

STATE OF NORTH CAROLINA					
DEPARTMENT OF TRANSPORTATION					
RALEIGH					
SUBSTRUCTURE					
END BENT 1					
June 1977					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			2		
2			3		
3			4		
SHEET NO. 5-20					TOTAL SHEETS 149



- NOTES:**
- THE TOP SURFACE AREAS OF THE BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.
 - COAT ALL SURFACE AREAS OF THE TOP OF THE CAP INCLUDING CHAMFERS WITH EPOXY RESIN PROTECTIVE COATING. DO NOT COAT THE AREA UNDER THE ELASTOMERIC BEARING.
 - FOR PILE SPICE DETAIL, SEE END BT. 1.
 - REINFORCING STEEL IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
 - HOOK ON "U" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFOR. STEEL.
 - PILES TO BE DRIVEN TO MINIMUM BEARING CAPACITY OF 31 TONS EACH.

PLAN OF CAP

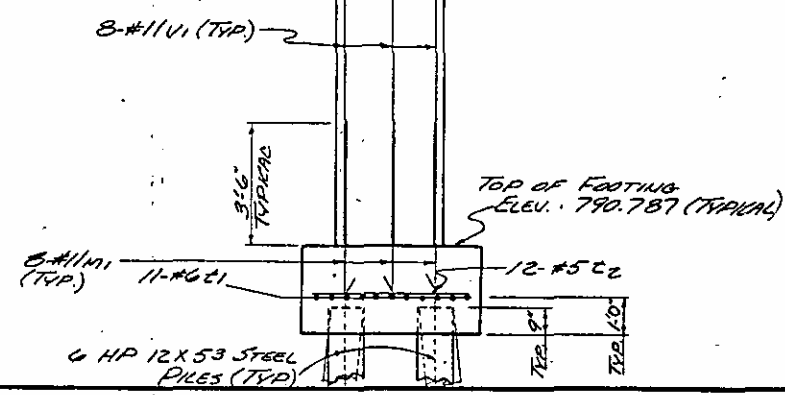


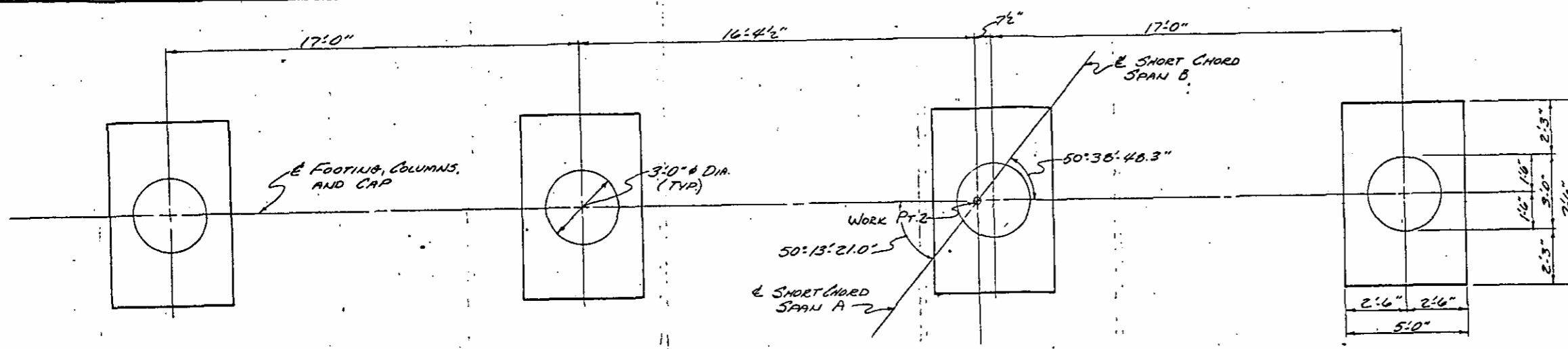
DETAIL A
 TYPICAL FOR BEAMS 2 THRU 6 - SPAN A
 PROJECT No. 8.1743606
 FORSYTH COUNTY
 STATION: 116+52.12-6 LT.
 SHEET 1 OF 2 LN.

DRAWN BY G.L. BENSON DATE JULY 77
 CHECKED BY R.L. MOORE DATE 8-23-77

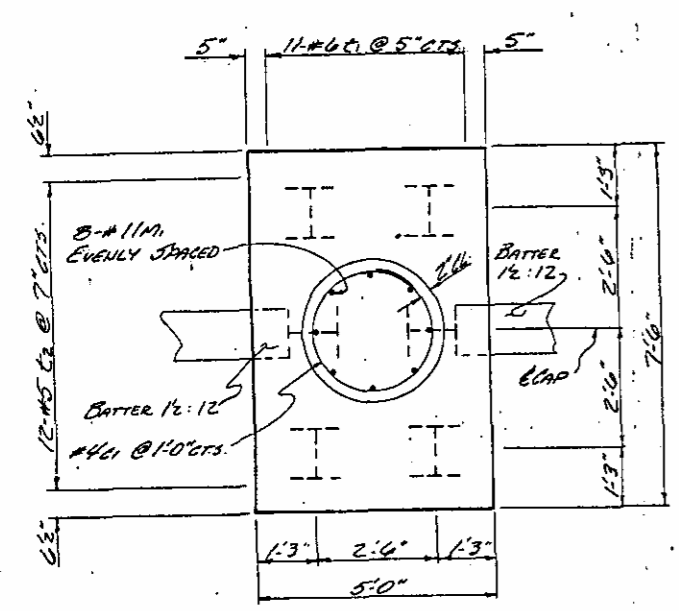
STATE OF NORTH CAROLINA					
DEPARTMENT OF TRANSPORTATION					
RALEIGH					
SUBSTRUCTURE					
BENT 1					
JULY 1977					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
SHEET NO. 5-21					TOTAL SHEETS 149

ELEVATION

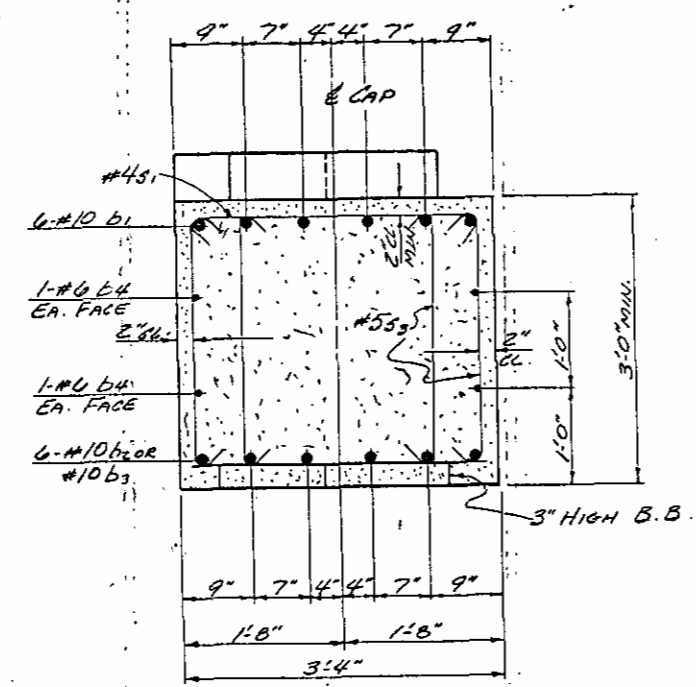




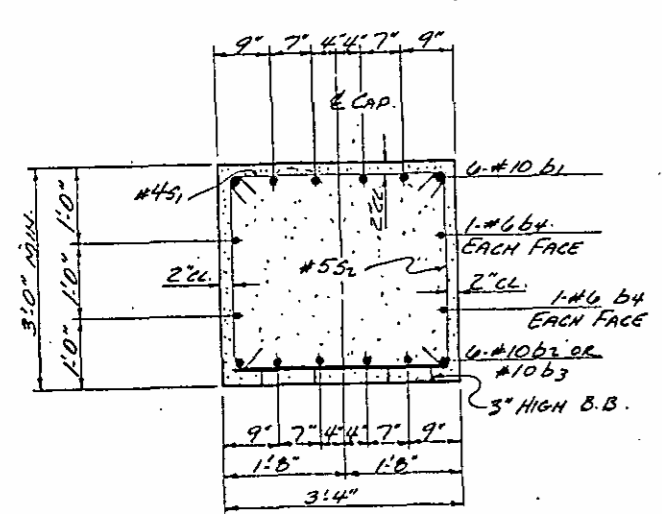
FOOTING LAYOUT



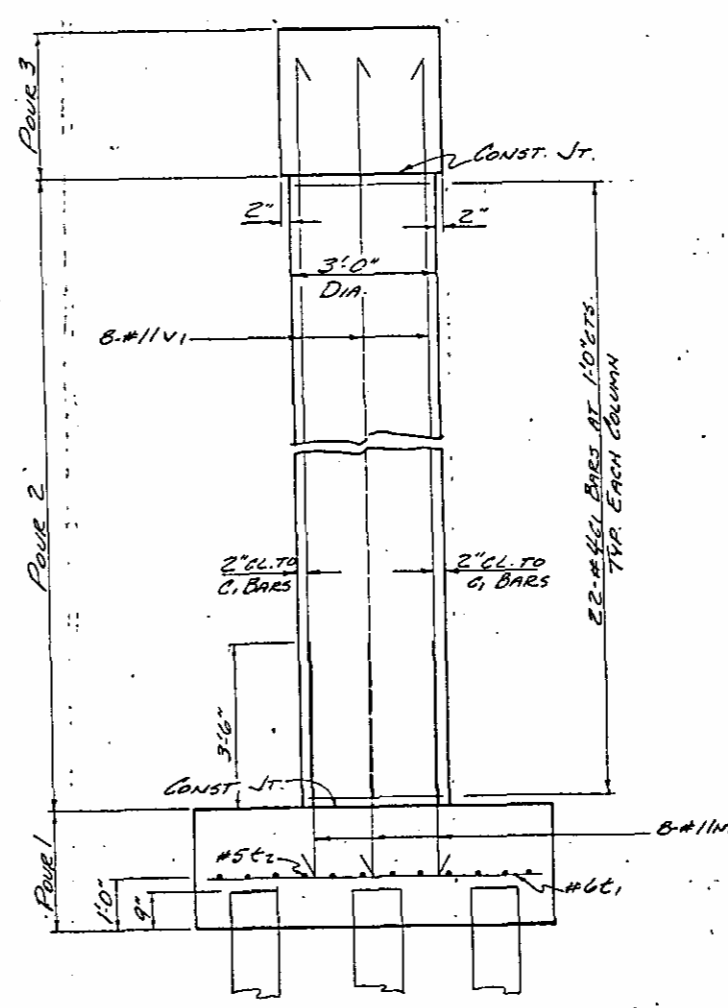
TYPICAL PILE FOOTING



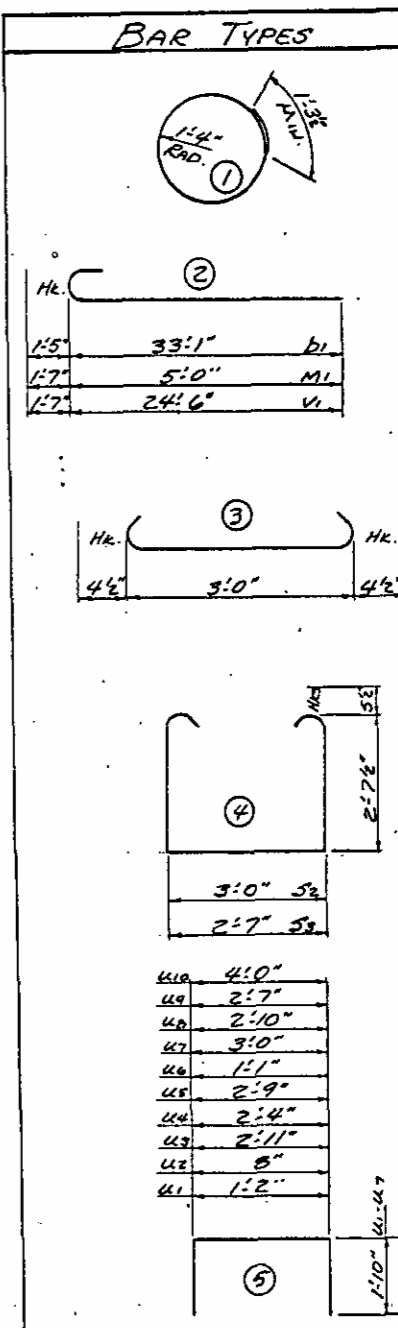
SECTION B-B



SECTION C-C



END ELEVATION



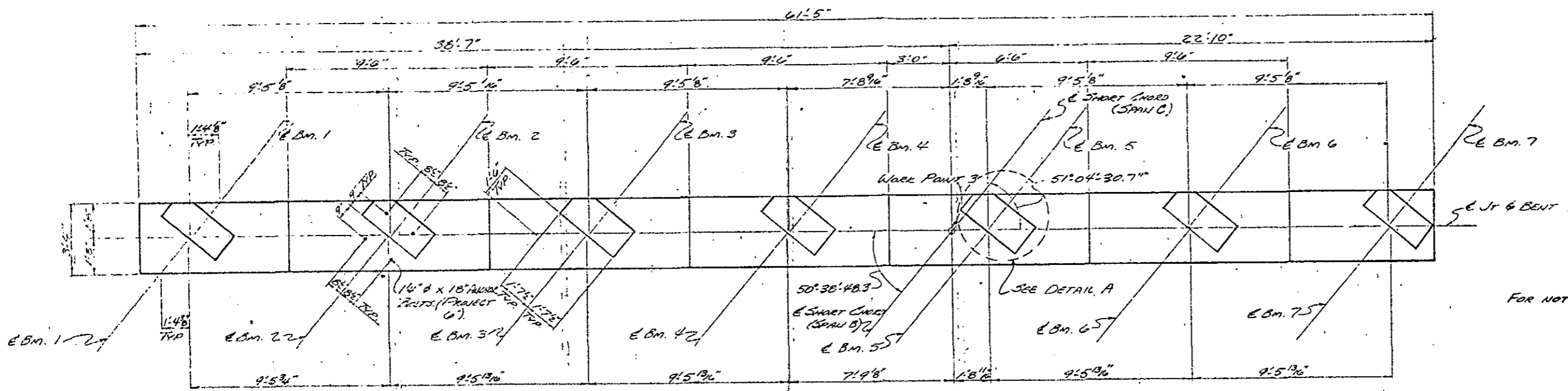
ALL BAR DIMENSIONS ARE OUT TO OUT.

BAR TYPES					BILL OF MATERIAL FOR BENT 1						
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR NO.	SIZE	TYPE	LENGTH	WEIGHT		
b1	12	#10	2	34'-6"	1781	b1	12	#10	2	34'-6"	1781
b2	6	#10	5	40'-10"	1054	b2	6	#10	5	40'-10"	1054
b3	6	#10	5	23'-10"	615	b3	6	#10	5	23'-10"	615
b4	8	#6	5	31'-6"	379	b4	8	#6	5	31'-6"	379
b5	4	#4	5	6'-6"	17	b5	4	#4	5	6'-6"	17
b6	16	#4	5	10'-8"	114	b6	16	#4	5	10'-8"	114
c1	44	#6	5	7'-0"	463	c1	44	#6	5	7'-0"	463
c2	48	#5	5	4'-6"	225	c2	48	#5	5	4'-6"	225
u1	88	#4	1	9'-8"	568	u1	88	#4	1	9'-8"	568
s1	35	#4	3	3'-9"	88	s1	35	#4	3	3'-9"	88
s2	59	#5	4	9'-2"	564	s2	59	#5	4	9'-2"	564
s3	36	#5	4	8'-9"	329	s3	36	#5	4	8'-9"	329
m1	32	#11	2	6'-7"	1119	m1	32	#11	2	6'-7"	1119
u1	32	#11	2	26'-1"	4435	u1	32	#11	2	26'-1"	4435
u1	20	#5	5	4'-10"	101	u1	20	#5	5	4'-10"	101
u2	5	#5	5	4'-4"	23	u2	5	#5	5	4'-4"	23
u3	10	#5	5	6'-7"	69	u3	10	#5	5	6'-7"	69
u4	5	#5	5	6'-0"	31	u4	5	#5	5	6'-0"	31
u5	5	#5	5	6'-5"	33	u5	5	#5	5	6'-5"	33
u6	5	#5	5	4'-9"	25	u6	5	#5	5	4'-9"	25
u7	28	#4	5	6'-8"	125	u7	28	#4	5	6'-8"	125
u8	5	#4	5	5'-4"	18	u8	5	#4	5	5'-4"	18
u9	2	#4	5	5'-1"	7	u9	2	#4	5	5'-1"	7
u10	2	#4	5	6'-6"	9	u10	2	#4	5	6'-6"	9
u10	4'-0"										
u9	2'-7"										
u8	2'-10"										
u7	3'-0"										
u6	1'-1"										
u5	2'-9"										
u4	2'-4"										
u3	2'-11"										
u2	8"										
u1	1'-2"										

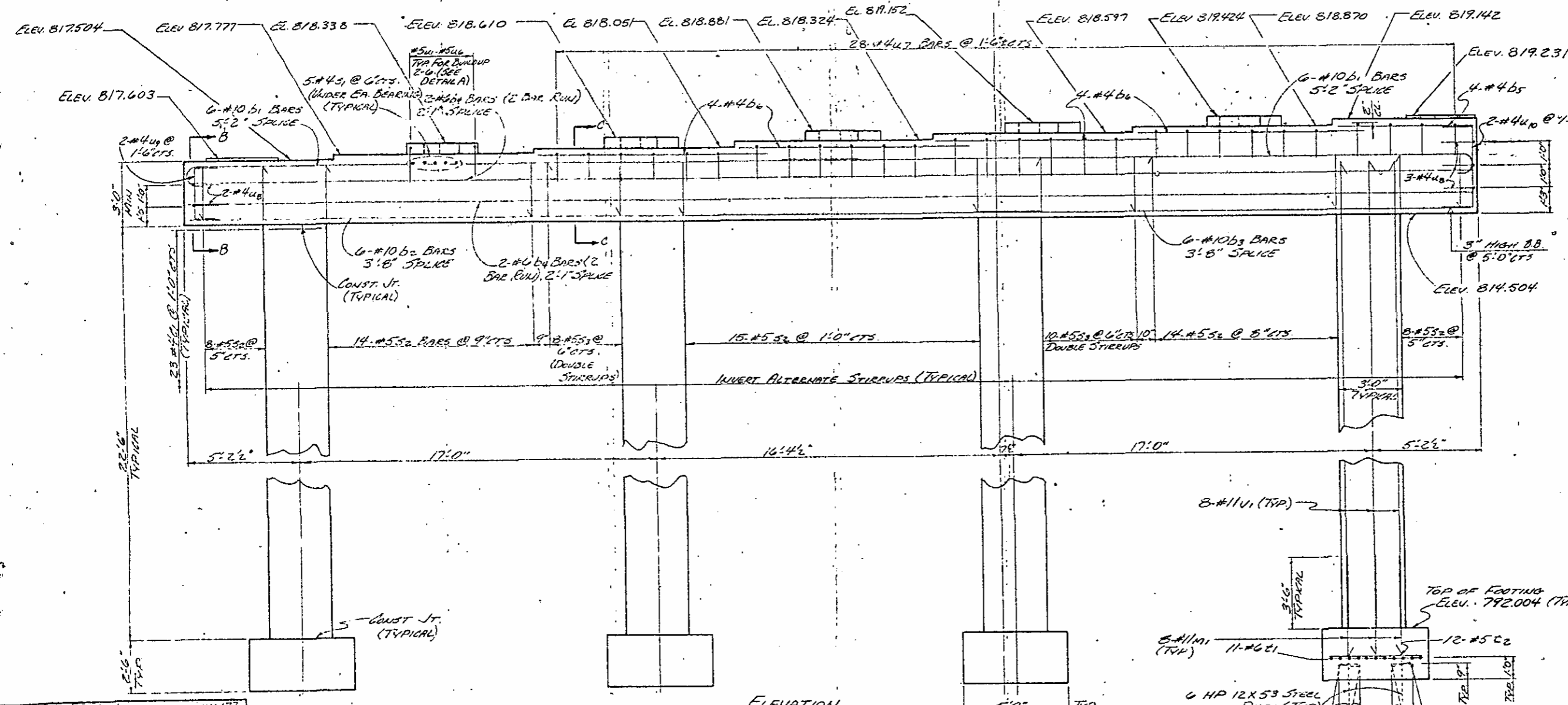
EPOXY RESIN PROTECTIVE COATING FOR CONCRETE = 205.36 LB
 REINFORCING STEEL = 12,192 LB
 CLASS A CONCRETE:
 FOOTING: POUR 1 = 139 CY.
 COLUMNS: POUR 2 = 23.06 CY.
 CAP: POUR 3 = 29.46 CY.
 TOTAL = 66.36 CY
 HP 12 x 53 STEEL PILES
 NO. = 24 LIN. FT. = 648
 FOUNDATION EXCAVATION = 1500

PROJECT No. 8,1743,606,
 FORSYTH COUNTY
 STATION: 116+52.12-6
 SHEET 2 OF 2 CT LN.

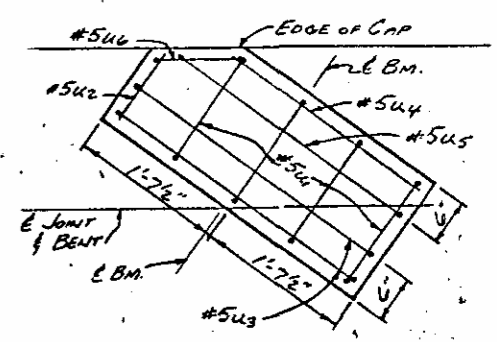
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT 1					
JULY 1977					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			2		
2			4		
SHEET NO. 5-22					TOTAL SHEETS 149



PLAN OF CAP



ELEVATION

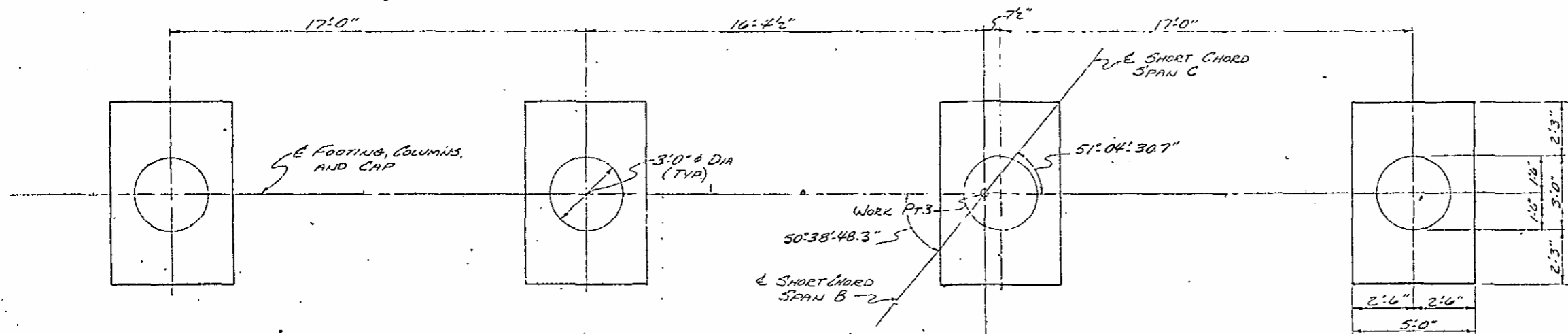


DETAIL A

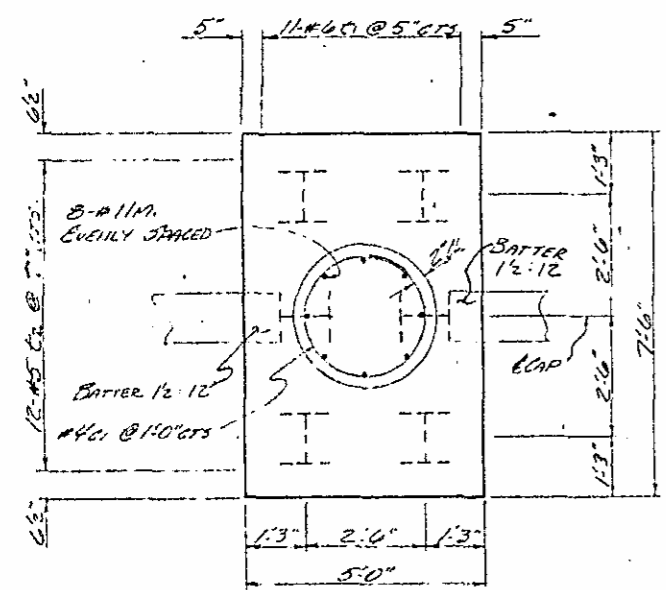
TYPICAL FOR Bm. 2 THRU Bm. 6 SPRAW
 PROJECT NO. 8.1743606
 FORSYTH COUNTY
 STATION: 116+52.12-6-LT
 SHEET 1 OF 2 LN.

STATE OF NORTH CAROLINA					
DEPARTMENT OF TRANSPORTATION					
RALEIGH					
SUBSTRUCTURE					
BENT 2					
JULY 1977					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			2		
2			4		
					149

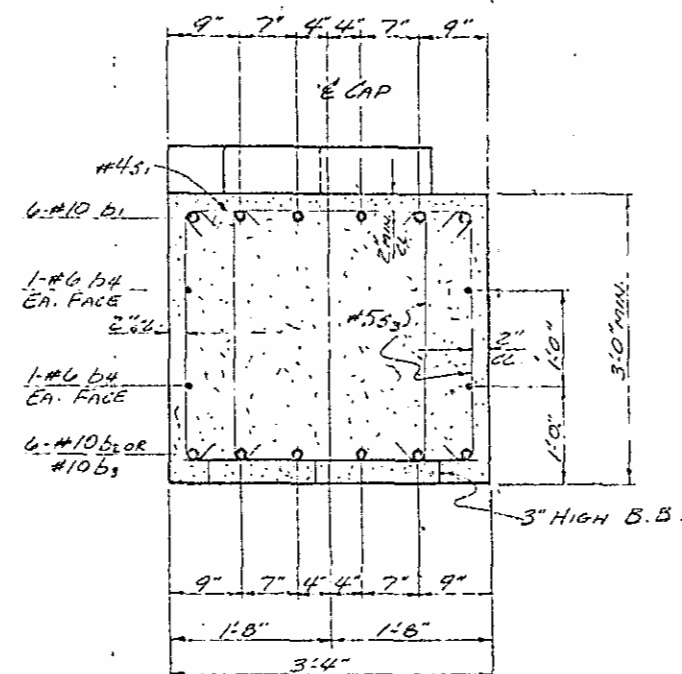
DRAWN BY: [Signature] DATE: JULY 1977
 CHECKED BY: R.V. Moore DATE: 8-23-77



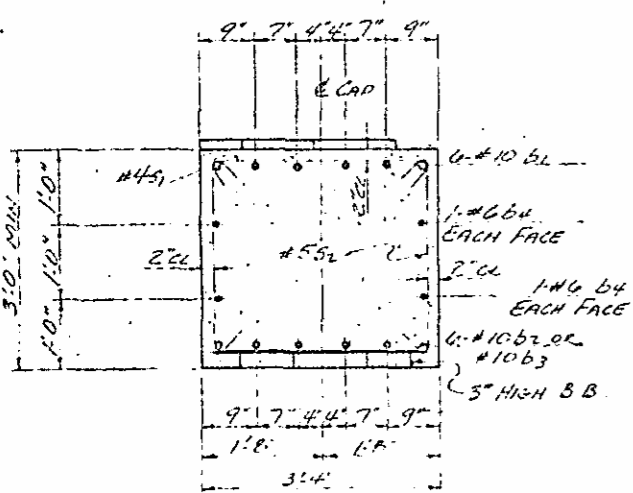
FOOTING LAYOUT



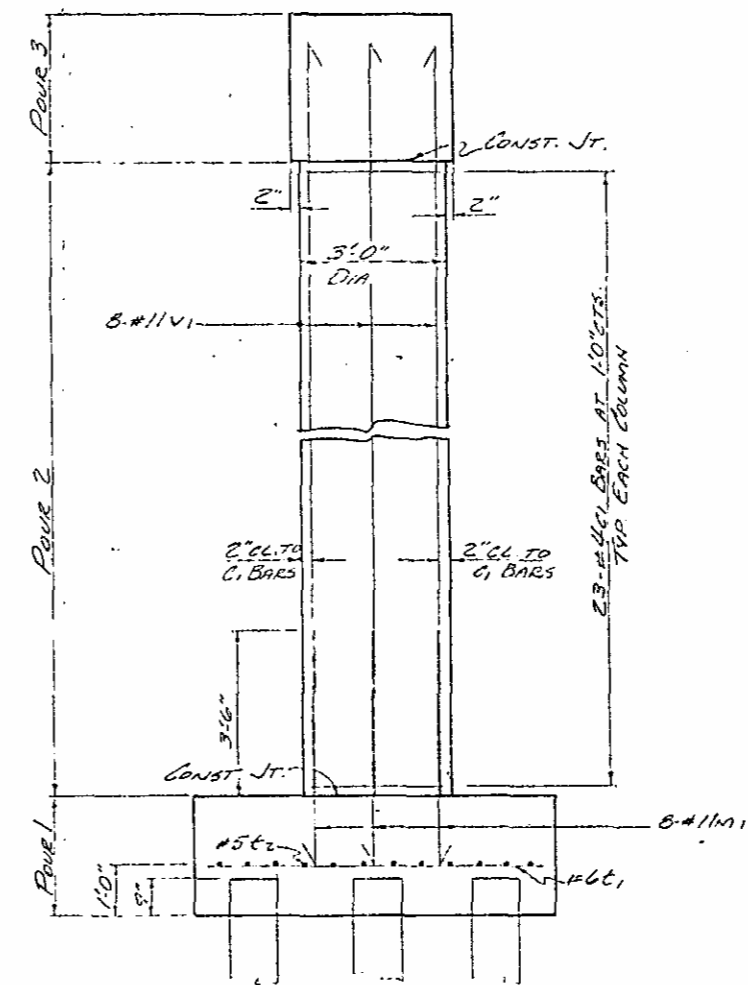
TYPICAL PILE FOOTING



SECTION C-C



SECTION B-B



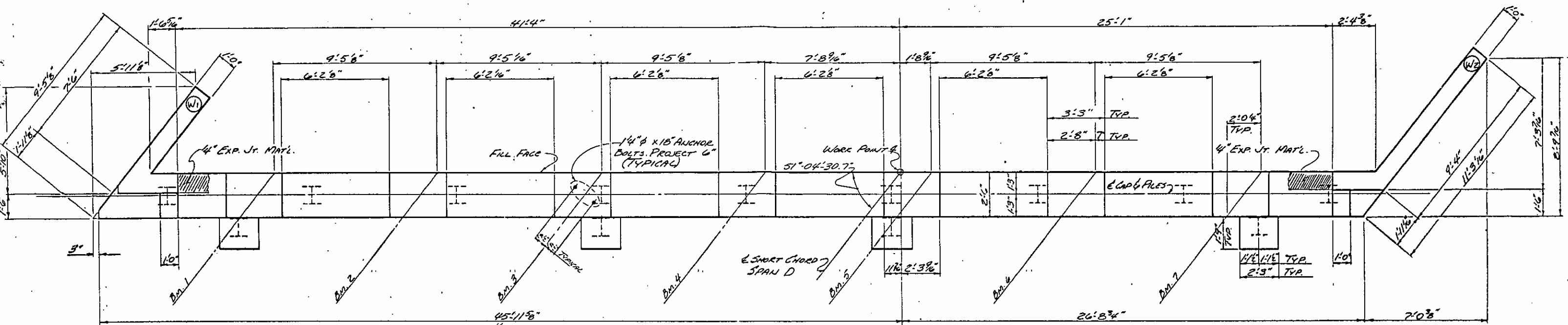
END ELEVATION

BAR TYPES		BILL OF MATERIAL	
		FOR BENT 2	
BAR NO.	SIZE TYPE	LENGTH	WEIGHT
b1	12 #10	52'-6"	172
b2	6 #10 STR	40'-10"	105.4
b3	6 #10 STR	23'-10"	61.5
b4	8 #6 STR	31'-6"	37.9
b5	4 #4 STR	6'-6"	17
b6	16 #4 STR	10'-0"	114
c1	44 #6 STR	7'-0"	463
c2	48 #5 STR	4'-6"	225
d1	92 #4	1 9'-8"	594
e1	35 #4	3 7'-9"	80
e2	59 #5	4 9'-2"	56.4
e3	36 #5	4 8'-9"	32.9
e4	52 #11	2 6'-7"	111.9
f1	32 #11	2 20'-7"	452.0
u1	20 #5	5 4'-10"	10
u2	5 #5	5 4'-11"	2.8
u3	10 #5	5 6'-7"	6.7
u4	5 #5	5 6'-0"	3.1
u5	5 #5	5 6'-5"	3.7
u6	5 #5	5 4'-9"	3.5
u7	2 #4	5 6'-8"	12.5
u8	5 #4	5 5'-4"	18
u9	2 #4	5 5'-7"	7
u10	2 #4	5 6'-0"	9
u11	4'-0"		
u12	2'-7"		
u13	2'-10"		
u14	3'-0"		
u15	1'-7"		
u16	2'-9"		
u17	2'-4"		
u18	2'-11"		
u19	8"		
u20	1'-2"		

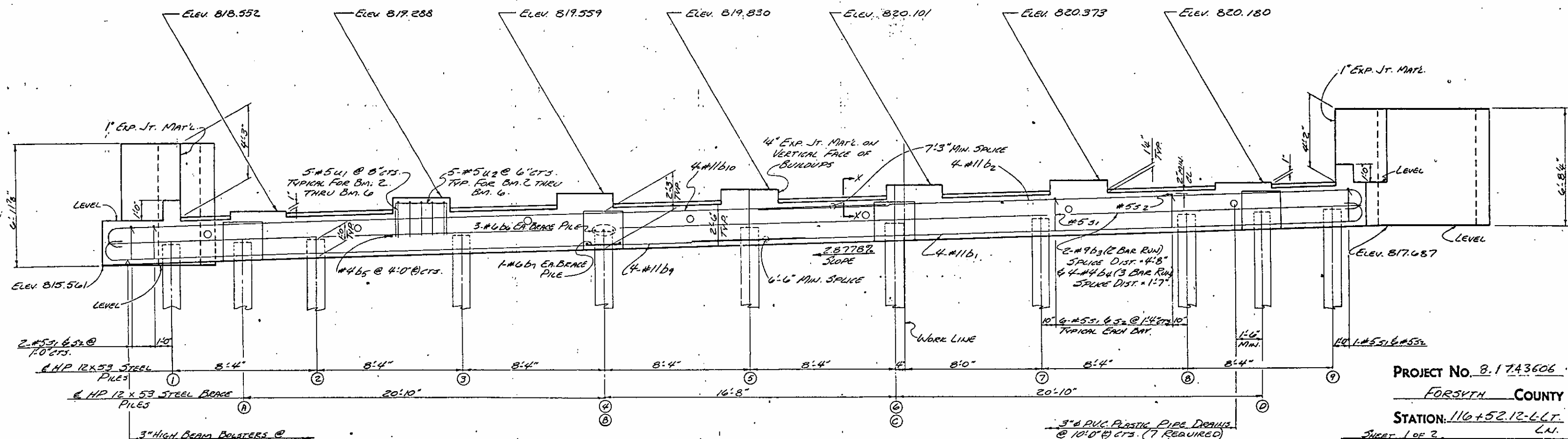
ALL BAR DIMENSIONS ARE OUT TO OUT

PROJECT NO. 8.1743606
 FORSYTH COUNTY
 STATION: 116+52.12 L
 SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 P. 2



PLAN

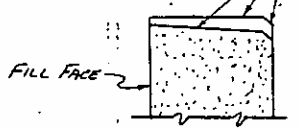


ELEVATION

TOP OF PILE ELEVATION	
PILE NO.	ELEVATION
1	816.683
A	816.802
2	816.922
3	817.162
4 & B	817.402
5	817.642
6 & C	817.882
7	818.121
8	818.361
D	818.482
9	818.401

NOTE A:
 COAT ALL SURFACE AREAS OF THE TOP OF CAP INCLUDING CHAMFERS. DO NOT COAT THE AREA UNDER THE ELASTOMERIC BEARING.

FOR LIMITS OF EPOXY RESIN PROTECTIVE COATING, SEE NOTE A.



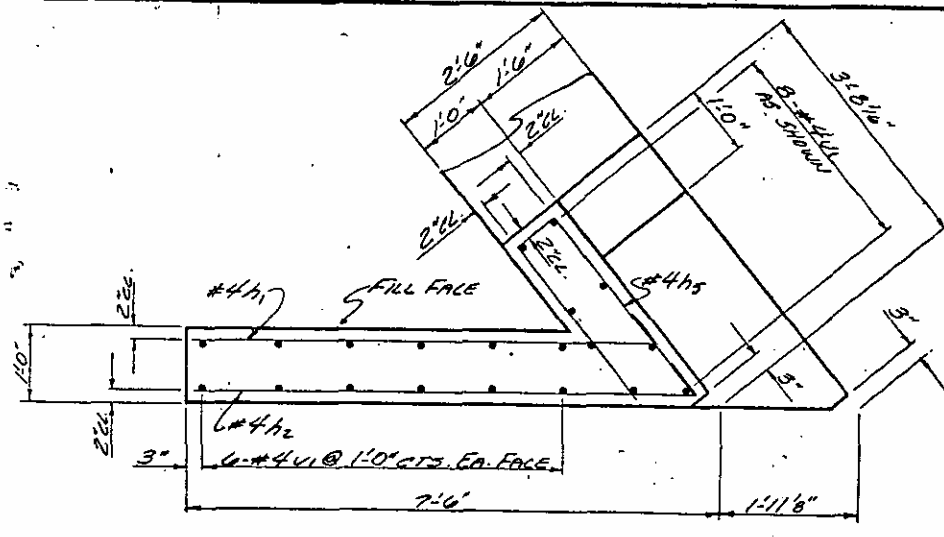
SECTION X-X

- FOR DETAIL OF P.V.C. PLASTIC PIPE DRAINS SEE SHEET 2 OF 2 OF END BT. 1.
- CAP STEEL MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
- PIPE DRAINS MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS AND REINFORCING STEEL.
- PILES TO BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 31 TONS.
- THE TOP SURFACE AREAS OF THE END BENT 2 CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.
- FOR PILE SPIKE DETAILS SEE SHEET 2 OF 2 OF END BENT 1.

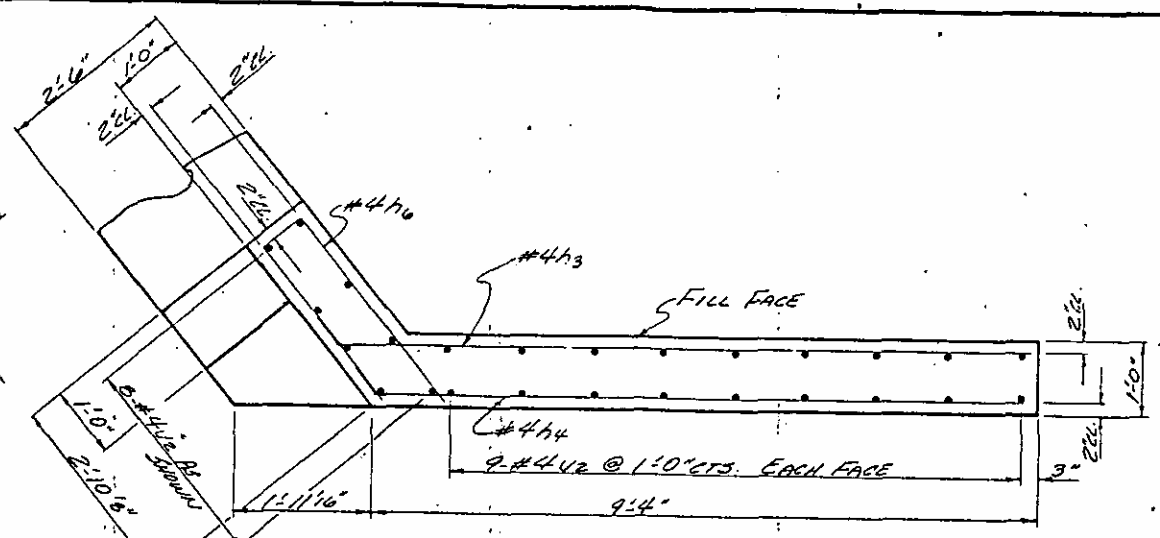
PROJECT No. 8.1743606
 FORSYTH COUNTY
 STATION: 116+52.12-LLT.
 SHEET 1 OF 2

STATE OF NORTH CAROLINA						1977	
DEPARTMENT OF TRANSPORTATION						SHEET NO. 5-25	
RALEIGH						TOTAL SHEETS 149	
SUBSTRUCTURE							
END BENT 2							
JUNE							
REVISIONS							
NO.	BY	DATE	NO.	BY	DATE		
1			2				
3			4				

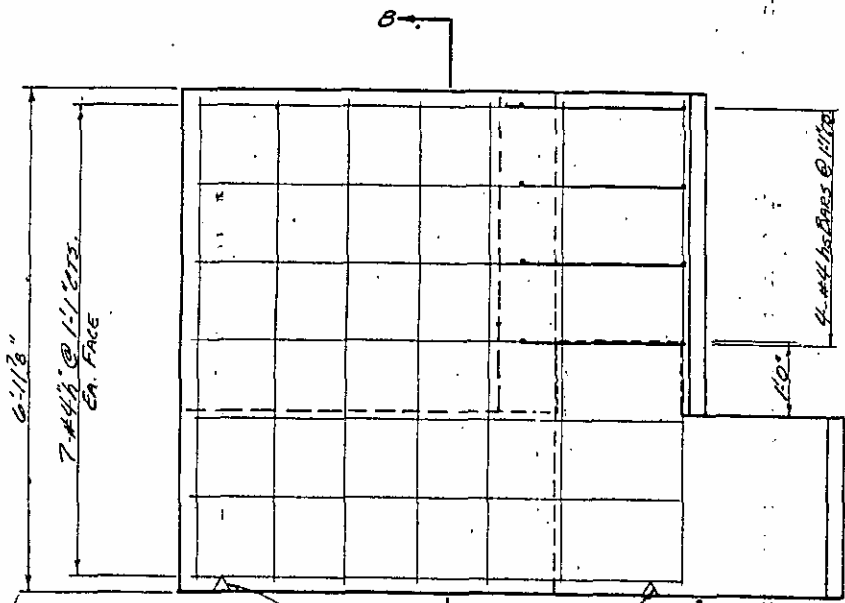
DRAWN BY G.L. DENSON DATE: JUNE 177
 CHECKED BY R.V. MOORE DATE: 8-29-77



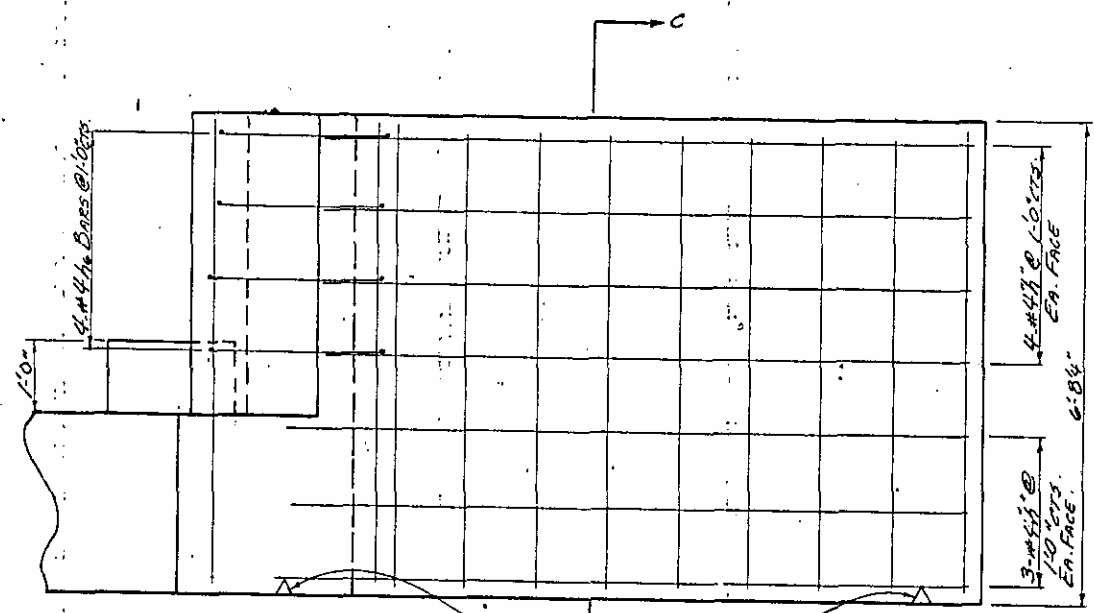
PLAN-LEFT WING-W1



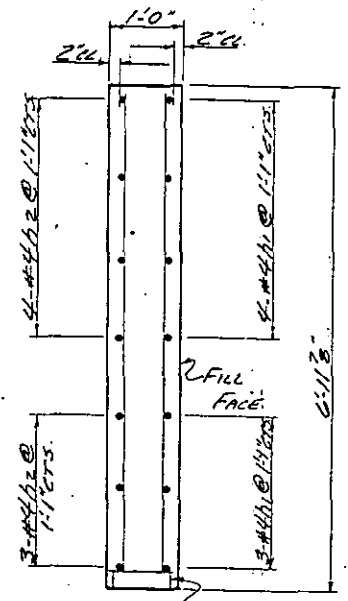
PLAN-RIGHT WING-W2



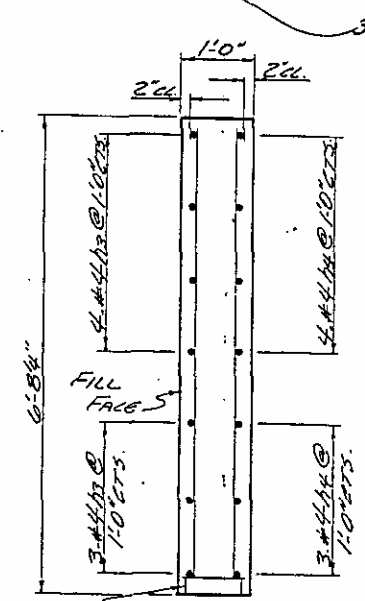
ELEVATION-LEFT WING-W1



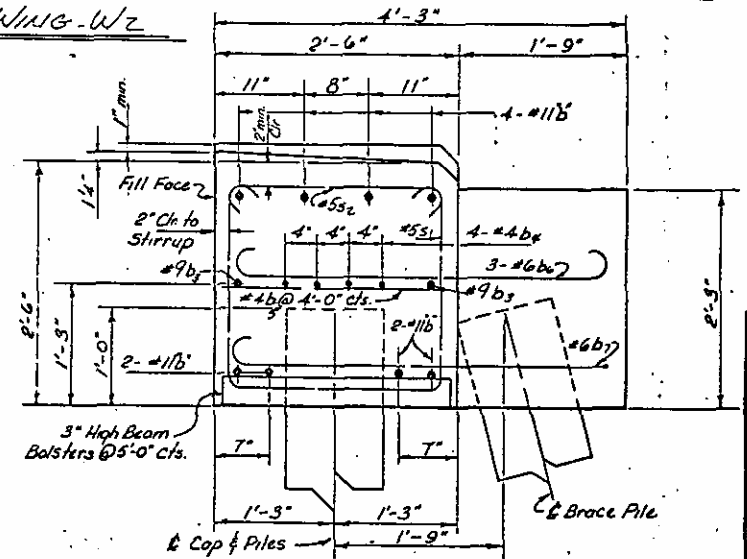
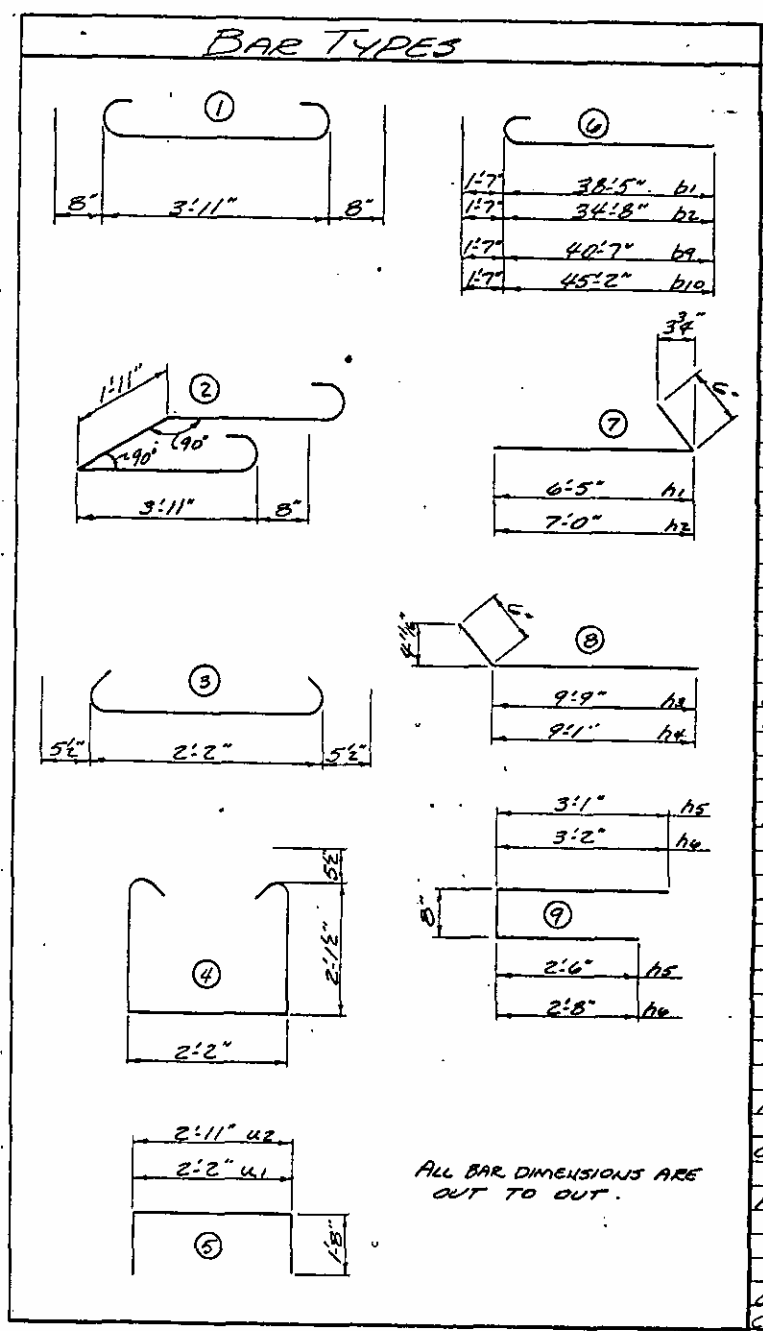
ELEVATION-RIGHT WING-W2



SECTION B-B



SECTION C-C



TYPICAL SECTION THRU SLOPED CAP WITH BRACE PILES

BILL OF MATERIAL

END BENT 2

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	
b1	4	#11	6	40'-0"	850
b2	4	#11	6	36'-3"	770
b3	4	#9	STR	38'-7"	525
b4	12	#4	STR	25'-3"	202
b5	18	#4	STR	2'-2"	26
b6	12	#6	1	5'-3"	95
b7	4	#6	2	11'-1"	67
b8	4	#11	6	42'-2"	896
b9	7	#4	7	6'-11"	32
b10	7	#4	7	7'-6"	35
b11	7	#4	8	10'-3"	48
b12	7	#4	8	9'-7"	45
b13	4	#4	9	6'-3"	17
b14	4	#4	9	6'-6"	17
b15	51	#5	4	7'-4"	390
b16	51	#5	3	3'-1"	164
b17	25	#5	5	5'-6"	143
b18	25	#5	5	6'-3"	163
b19	20	#4	STR	6'-7"	88
b20	26	#4	STR	6'-4"	110
b21	4	#11	6	46'-9"	994

REINFORCING STEEL-5677lbs

CLASS 75 CONCRETE - 24.3 cu yds

HP 12 x 53 STEEL PILES
No. 13 LIN. FT. 683

EPOXY RESIN PROTECTIVE COATING FOR CONCRETE - 166.3 gal

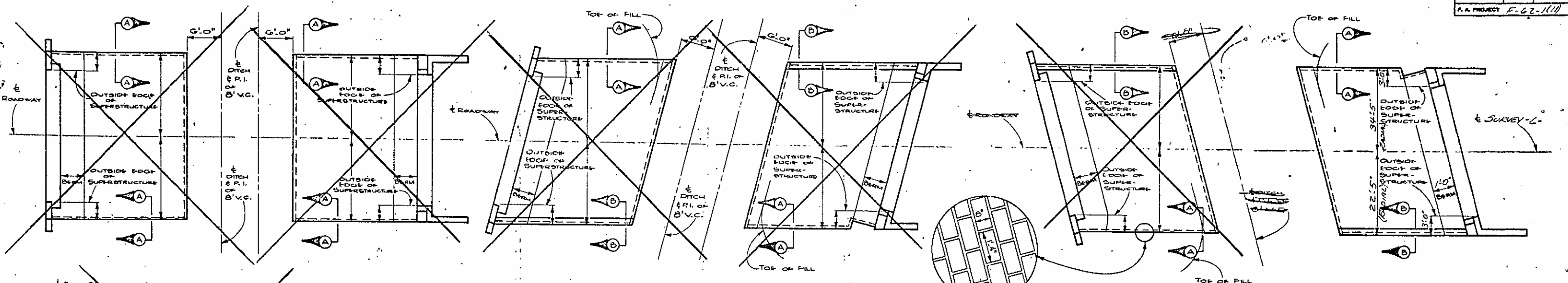
ALL BAR DIMENSIONS ARE OUT TO OUT.

PROJECT NO. 8.1743606
FORSYTH COUNTY
STATION: 116+52.12-66.1
SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 2

REVISIONS						1977	
NO.	BY	DATE	NO.	BY	DATE	SHEET NO. 5-26	
1			2			TOTAL SHEETS 149	
2			3				



PLAN

DETAIL A

NOTES

GENERAL NOTES:

A 4" CONCRETE SLOPE PROTECTION PAVING SHALL BE PLACED UNDER THE ENDS OF THE BRIDGE. LIMITS OF THE PROTECTION SHALL BE AS SHOWN IN THE DETAILS. THE CONTRACTOR, AT HIS OPTION, MAY PLACE EITHER TYPE, ALTERNATE "A" OR "B", AS DESCRIBED BELOW. IMMEDIATELY BEFORE PLACING THE PAVING, THE SLOPE SHALL BE PROPERLY SHAPED AND FIRMLY COMPACTED SO THAT IT CONFORMS TO THE LINES AND GRADES SHOWN. THE FINISHED SURFACE SHALL BE REASONABLY SMOOTH AND UNIFORM AND SHALL NOT VARY MORE THAN 1/2 INCH IN A DISTANCE OF 10 FEET. STRAIGHT EDGING WILL NOT BE REQUIRED UNLESS, IN THE OPINION OF THE ENGINEER, VISUAL INSPECTION INDICATES A NEED FOR IT. METHOD OF MEASUREMENT AND BASIS OF PAYMENT SHALL BE AS PRESCRIBED IN SECTION 870 OF THE STANDARD SPECIFICATIONS.

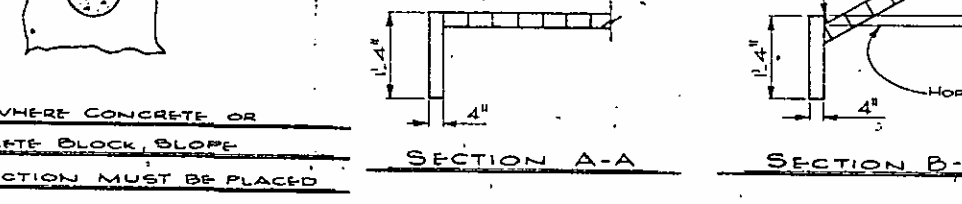
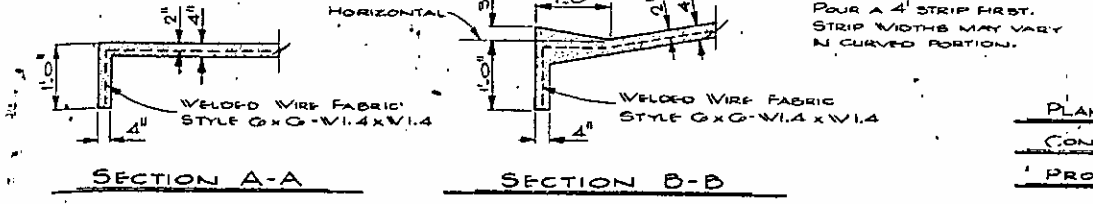
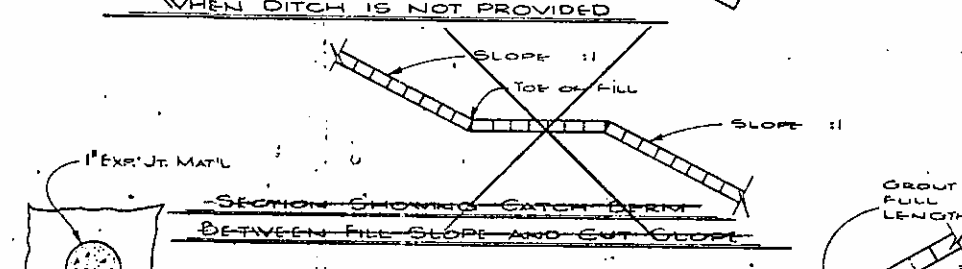
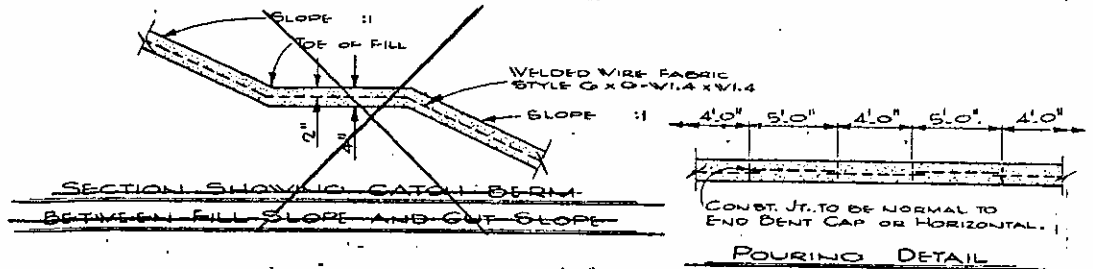
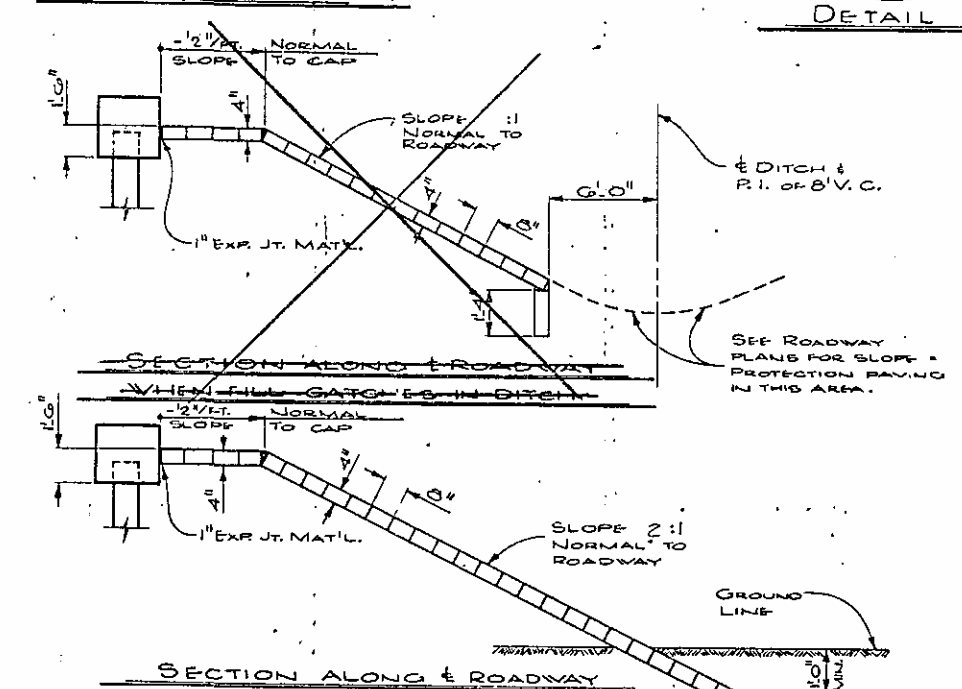
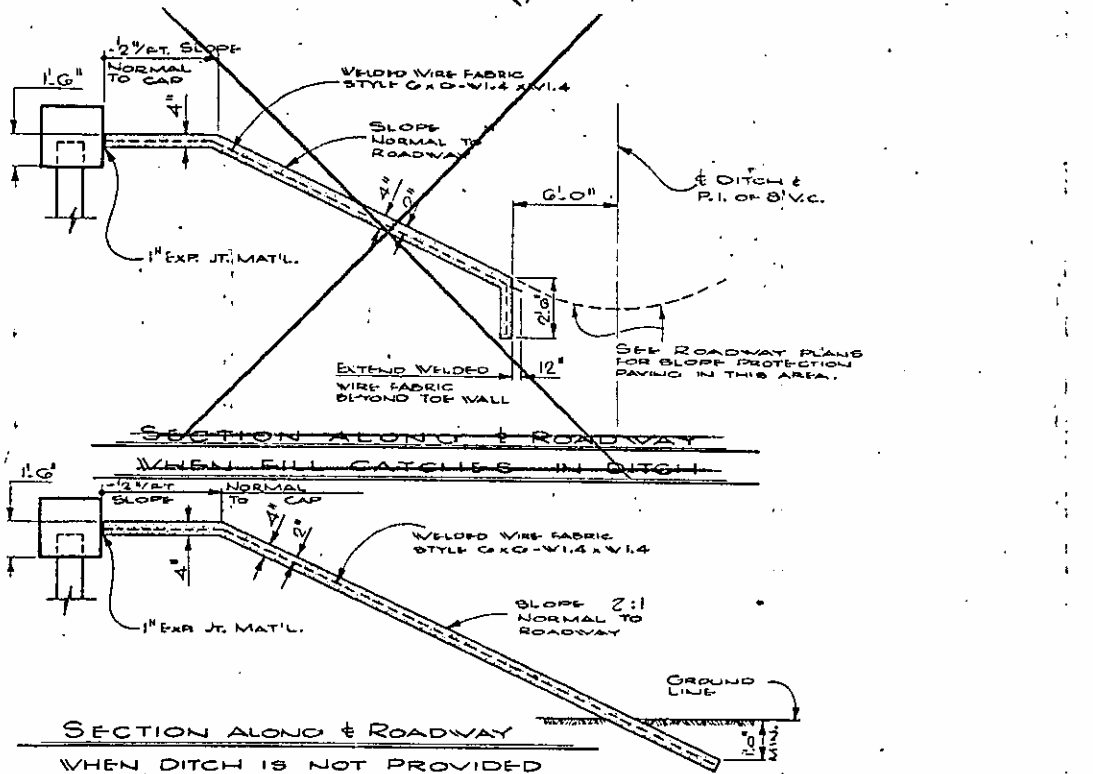
THE SAME TYPE OF SLOPE PROTECTION SHALL BE USED UNDER BOTH ENDS OF ANY ONE BRIDGE.

ALTERNATE "A":

ALTERNATE "A" SHALL CONSIST OF 4" POURED IN PLACE CONCRETE PAVING AS SHOWN IN DETAILS ON THIS SHEET. CONCRETE SHALL BE CLASS B. THE CONCRETE SURFACE SHALL BE FLOATED WITH A WOODEN FLOAT AND FINISHED. ALTERNATE "A" WELDED WIRE FABRIC REINFORCING TO BE STYLE G X O - W1.4 X V1.4 @ 6" WIDE. ADJACENT RUNS OF WELDED WIRE FABRIC TO LAP AT LEAST 6". SLOPE PROTECTION TO BE POURED IN ALTERNATE "A" AND "B" STRIPS AS SHOWN IN POURING DETAIL. THE COST OF THE WELDED WIRE FABRIC TO BE INCLUDED IN THE CONTRACT UNIT PRICE BID PER SQUARE YARD FOR 4" CONCRETE SLOPE PROTECTION.

ALTERNATE "B":

ALTERNATE "B" SHALL CONSIST OF SOLID CONCRETE BLOCKS 4" X 8" X 16" LAID IN HORIZONTAL COURSES SUCH THAT THOSE IN SUCCESSIVE COURSES WILL BREAK JOINTS WITH UNITS IN THE PRECEDING ONE. BLOCKS ARE TO BE LAID WITH THEIR LONG AXIS PARALLEL TO THE END BENT CAP WITH JOINTS PREFERABLY 3/4" BUT NOT LESS THAN 1/2" NOR MORE THAN 1 1/4" WIDE BETWEEN SUCCESSIVE COURSES AND ENDS OF BLOCKS. JOINTS SHALL BE GROUTED BY POURING A MIXTURE OF ONE PART PORTLAND CEMENT TO THREE PARTS SAND MIXED WITH SUFFICIENT WATER TO ENABLE THE MIXTURE TO BE Poured THROUGH A SHOUT. THE CONCRETE BLOCKS SHALL BE CAST TO ACCURATE DIMENSIONS, SHALL HAVE UNIFORM SURFACE COLOR AND TEXTURE, AND SHALL BE MANUFACTURED OF MATERIALS TO PRODUCE A COMPRESSIVE STRENGTH OF NOT LESS THAN 3,000 P.S.I. AT AGE OF 28 DAYS. NO BROKEN BLOCKS SHALL BE USED EXCEPT IN CONSTRUCTING A STRAIGHT LINE ALONG EACH SIDE OF THE PAVING DOWN THE SLOPE. CARE SHALL BE TAKEN TO BREAK THE BLOCKS SO AS TO GIVE A UNIFORM WORKMANLIKE JOINT AND SURFACE.



DETAILS FOR ALTERNATE "A"

DETAILS FOR ALTERNATE "B"

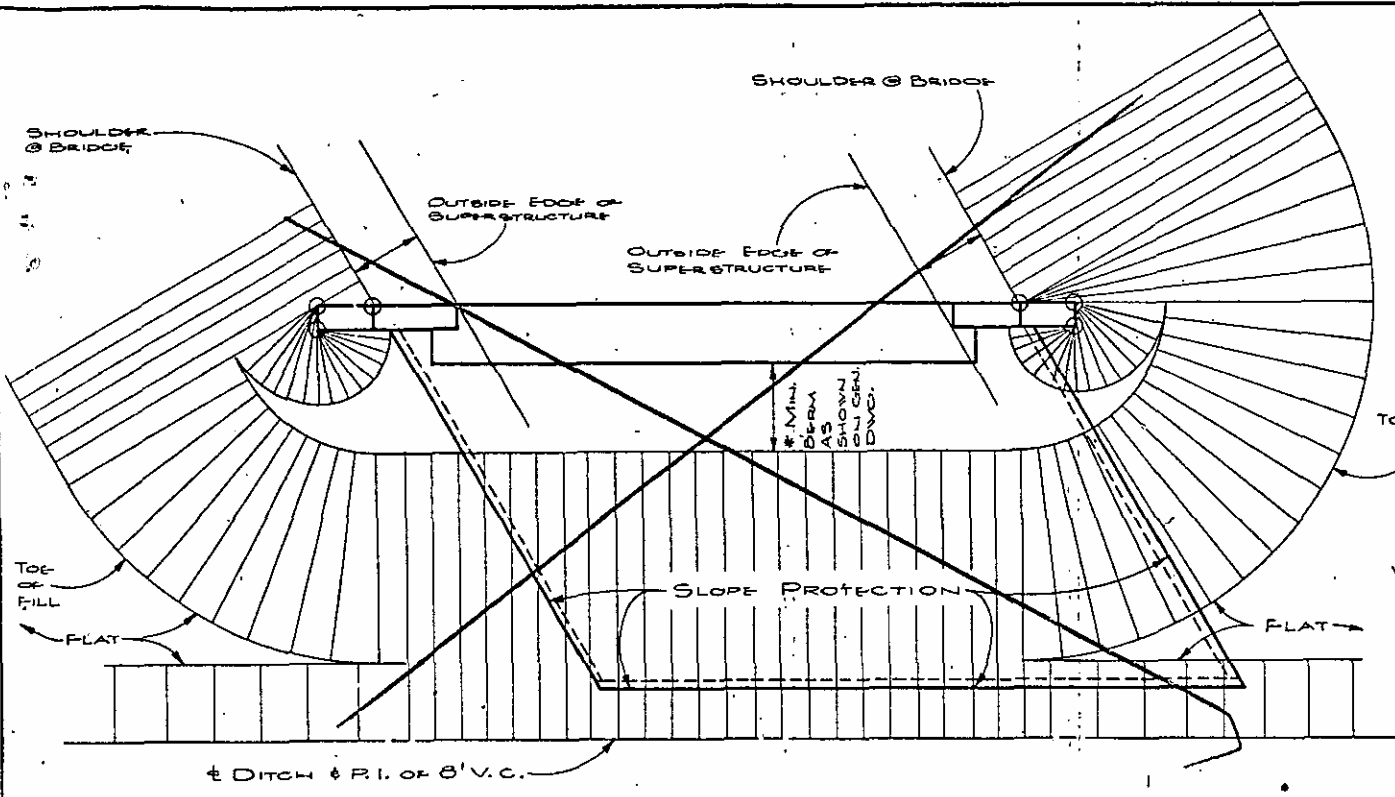
PROJECT No. 8.1743606
 Forsyth COUNTY
 STATION: 116+52.12-L
 SHEET 1 OF 2
 LT. LN.

BRIDGE @ STA.	4" CONG. SLOPE PROTECTION OR 4" CONG. BLOCK SLOPE PROTECTION S.Y.		WELDED WIRE FABRIC 60" WIDE APPROX. L.F.
	END BENT 1	END BENT 2	
116+52.12-L L.T. LN.	445'	445'	1780

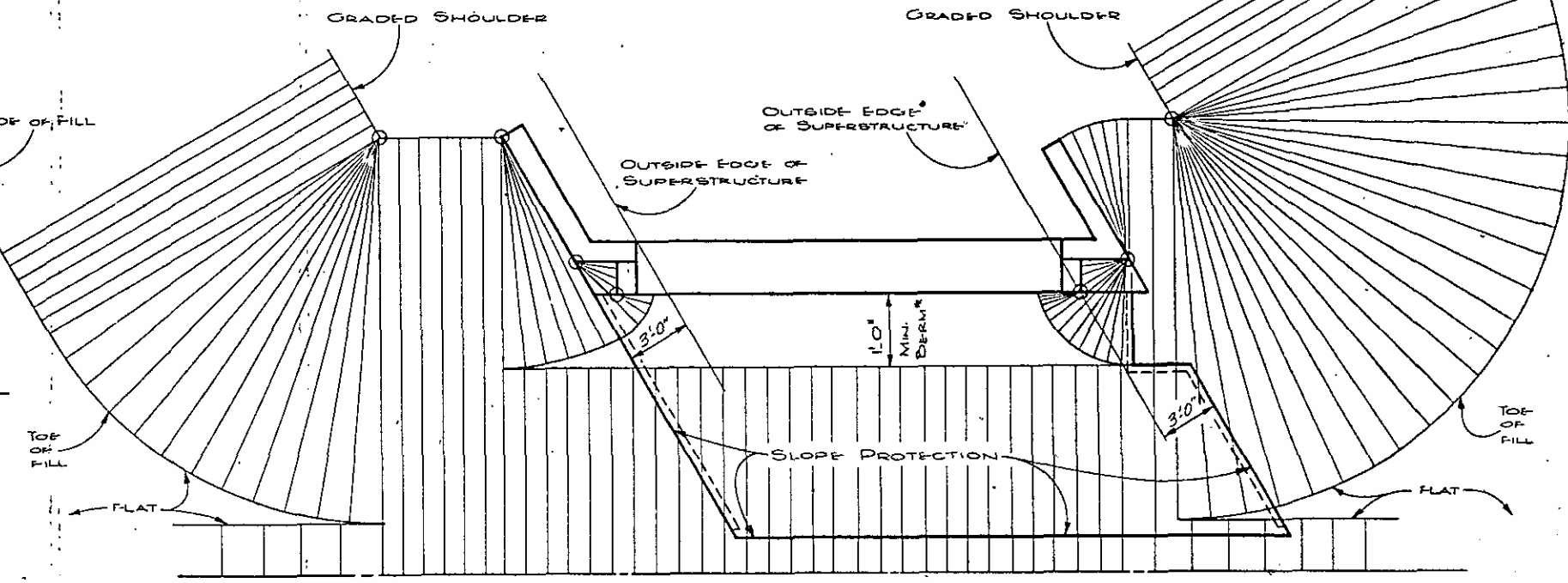
STATE OF NORTH CAROLINA				1975	
DEPARTMENT OF TRANSPORTATION					
RALEIGH					
STANDARD SLOPE PROTECTION PAVING DETAILS					
AUGUST					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			2		
2			4		
SHEET NO. 5-87					TOTAL SHEETS 149

ASSEMBLED BY G. L. BENSON DATE 2-7-77
 CHECKED BY B. R. [unclear] DATE 10-17-77
 DRAWN BY C. C. MITCHNER DATE AUG 1975
 CHECKED BY William J. Rogers DATE Aug 29 1975

REVISION No. 1: REVISED TO CHANGE BERM SLOPE FROM 1/2" VERT. TO 1/4" VERT. BY CON. 5-24-70 BY W.U.R.

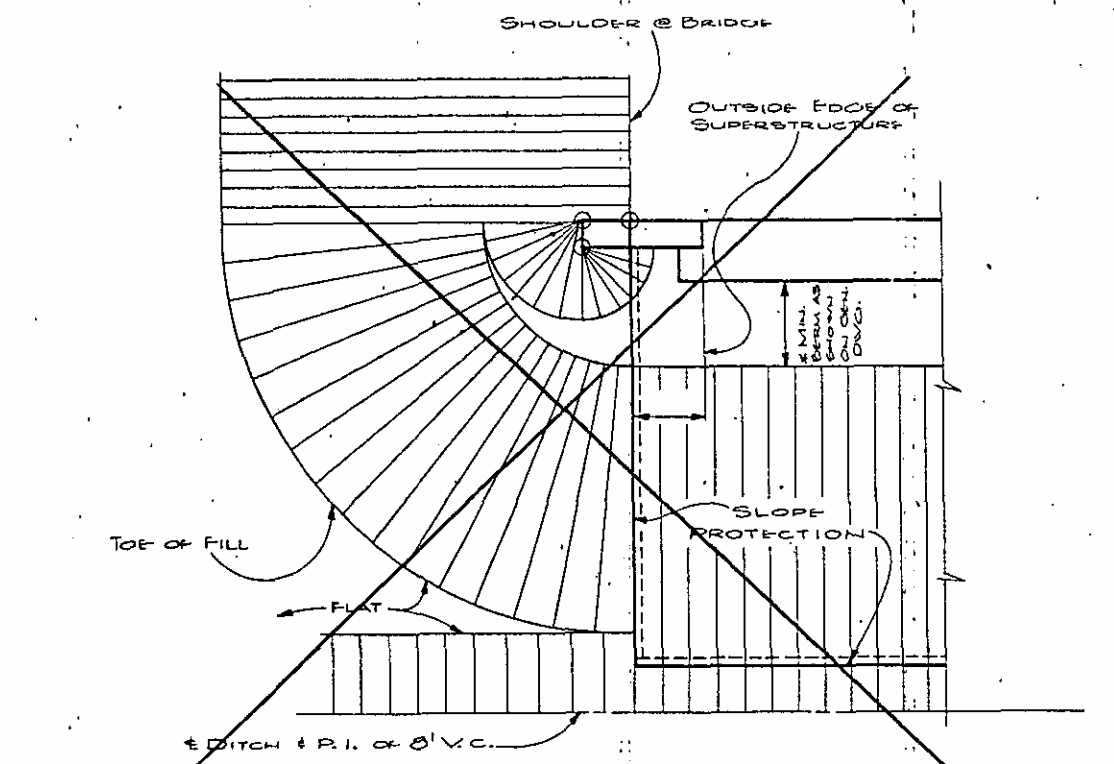


END BENT WITH EAR WALLS SKEWED

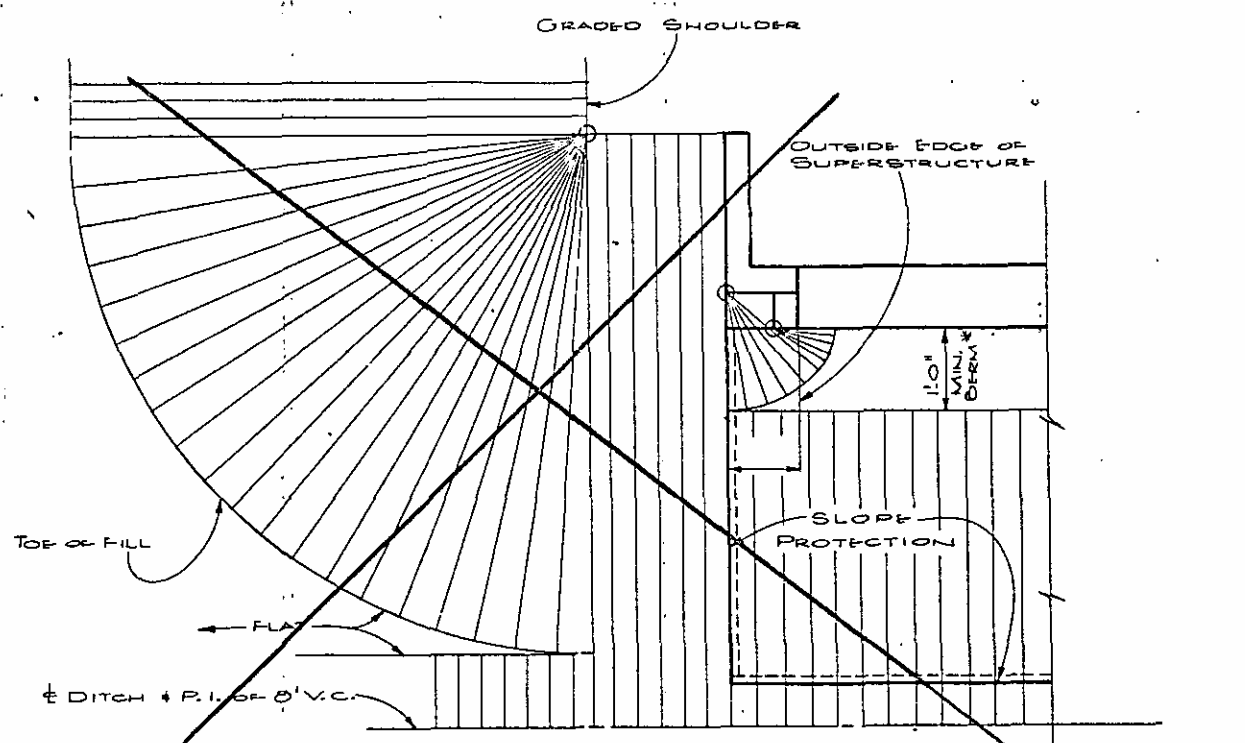


END BENT WITH SWEEP-BACK WINGS - SKEWED

* NOTE: VARY BEAM WIDTH AS NECESSARY TO FIT DITCH ALIGNMENT.



HALF PLAN END BENT WITH EAR WALLS 90°
NOTE: OTHER SIDE SIMILAR



HALF PLAN END BENT WITH SWEEP BACK WINGS 90°
NOTE: OTHER SIDE SIMILAR

PROJECT No. 8.1743600
FORSYTH COUNTY
STATION: 116+52.12-L-L.L.L.

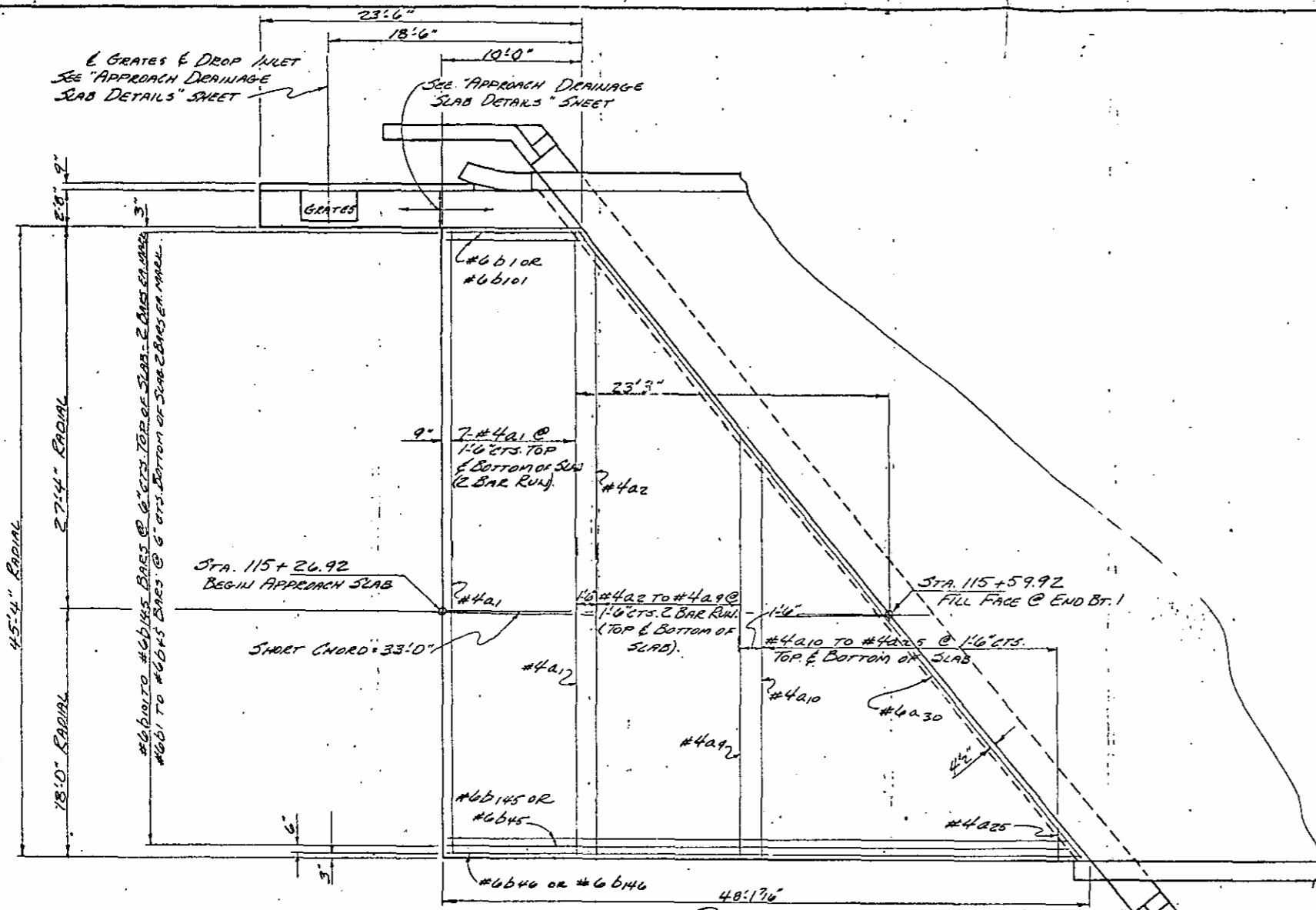
SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
SLOPE PROTECTION
PAVING DETAILS
SEPTEMBER 1975

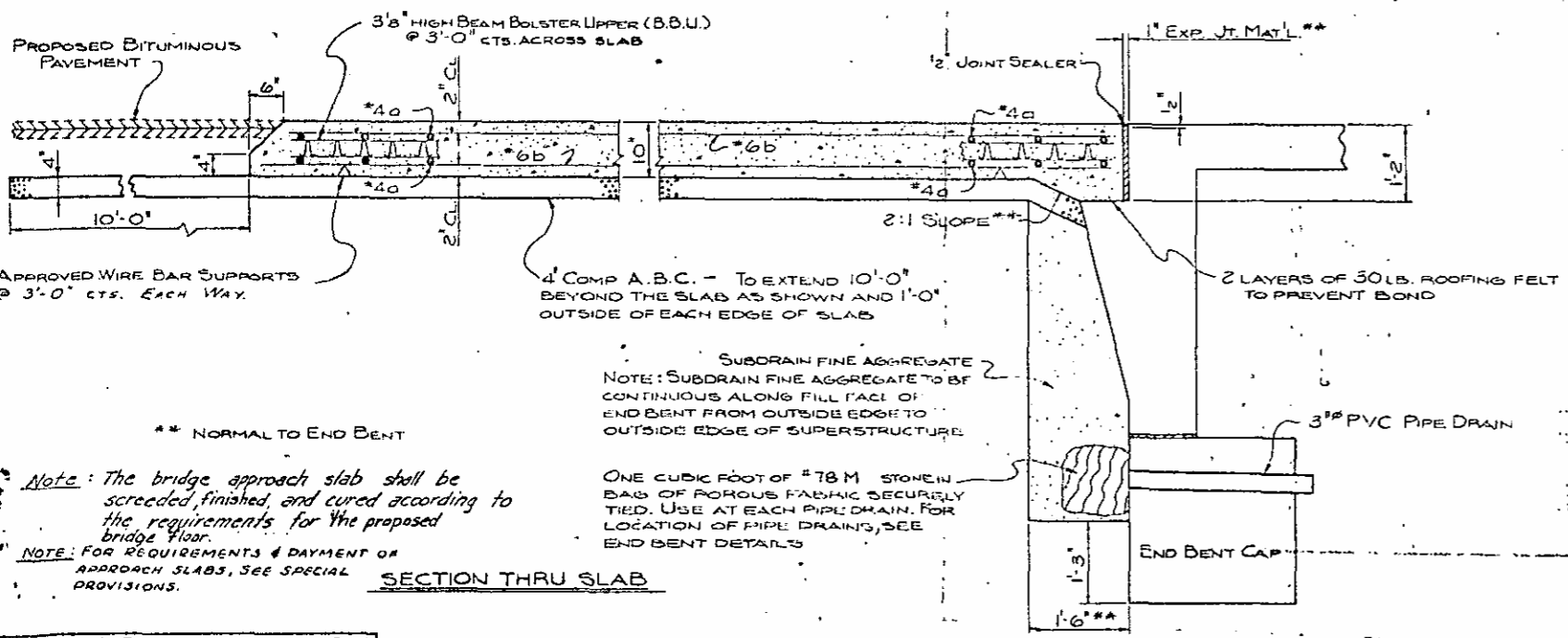
REVISIONS						SHEET NO. 5-20
NO.	BY	DATE	NO.	BY	DATE	
1			2			TOTAL SHEETS 149
2			4			

ASSEMBLED BY G. F. BENSON DATE Oct. 1977
CHECKED BY B. R. H. DATE 10-17-77
DRAWN BY C. C. MITCHELL DATE 9-1-75
CHECKED BY William J. Rogers DATE 4-10-75

L O R



PLAN
 #4 BARS ARE TO HAVE A MINIMUM SPlice DISTANCE OF 1'-0"



Approved Wire Bar Supports @ 3'-0" cts. Each Way.

4" Comp A.B.C. - To extend 10'-0" beyond the slab as shown and 1'-0" outside of each edge of slab.

2 LAYERS OF 30 LB. ROOFING FELT TO PREVENT BOND.

3" PVC PIPE DRAIN.

END BENT CAP.

NOTE: The bridge approach slab shall be screeded, finished, and cured according to the requirements for the proposed bridge floor.

NOTE: FOR REQUIREMENTS & PAYMENT OF APPROACH SLABS, SEE SPECIAL PROVISIONS.

SECTION THRU SLAB

STD. DRAWN BY: K.G.P. DATE: 2-71 CHECKED BY: J.A.W.
 DRAWN BY: G.L. BENSON DATE: 2-3-77
 CHECKED BY: W.C. [Signature] DATE: 10-26-77

BILL OF MATERIAL																	
FOR APPROACH SLAB END BT. 1																	
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
b1	28	#4	STR.	23'-0"	430	b1	2	#4	STR.	9'-8"	29	b100	2	#6	STR.	13'-4"	40
b2	4			22'-3"	59	b2				10'-6"	32	b107				14'-2"	43
b3	1			21'-4"	57	b3				11'-4"	34	b108				15'-0"	45
b4	1			20'-5"	55	b4				12'-2"	37	b109				15'-10"	48
b5	1			19'-7"	52	b5				13'-0"	39	b110				16'-8"	50
b6	1			18'-8"	50	b6				13'-10"	42	b111				17'-6"	53
b7	1			17'-9"	47	b7				14'-8"	44	b112				18'-4"	55
b8	1			16'-10"	45	b8				15'-6"	47	b113				19'-3"	58
b9	4			16'-0"	43	b9				16'-4"	49	b114				20'-1"	60
b10	2			29'-1"	39	b10				17'-2"	52	b115				20'-11"	63
b11	1			27'-4"	37	b11				18'-0"	54	b116				21'-9"	65
b12	1			25'-6"	34	b12				18'-10"	57	b117				22'-7"	68
b13	1			23'-9"	32	b13				19'-9"	59	b118				23'-5"	70
b14	1			21'-11"	29	b14				20'-7"	62	b119				24'-5"	73
b15	1			20'-2"	27	b15				21'-5"	64	b120				25'-1"	75
b16	1			18'-4"	24	b16				22'-3"	67	b121				25'-11"	78
b17	1			16'-7"	22	b17				23'-1"	69	b122				26'-9"	80
b18	1			14'-9"	20	b18				23'-11"	72	b123				27'-7"	83
b19	1			13'-0"	17	b19				24'-9"	74	b124				28'-5"	85
b20	1			11'-2"	15	b20				25'-7"	77	b125				29'-3"	88
b21	1			9'-5"	13	b21				26'-5"	79	b126				30'-1"	90
b22	1			7'-7"	10	b22				27'-3"	82	b127				30'-11"	93
b23	1			5'-10"	8	b23				28'-1"	84	b128				31'-9"	95
b24	1			4'-0"	5	b24				28'-11"	87	b129				32'-7"	98
b25	2	#4	STR.	2'-3"	3	b25				29'-9"	89	b130				33'-5"	100
b26	2	#6	STR.	58'-8"	176	b26				30'-7"	92	b131				34'-3"	103
b27						b27				31'-5"	94	b132				35'-1"	105
b28						b28				32'-3"	97	b133				35'-11"	108
b29						b29				33'-1"	99	b134				36'-10"	111
b30						b30				33'-11"	102	b135				37'-8"	113
b31						b31				34'-9"	104	b136				38'-6"	116
b32						b32				35'-7"	107	b137				39'-4"	118
b33						b33				36'-5"	109	b138				40'-2"	121
b34						b34				37'-4"	112	b139				40'-10"	123
b35						b35				38'-2"	115	b140				41'-8"	125
b36						b36				39'-0"	117	b141				42'-6"	128
b37						b37				39'-10"	120	b142				43'-4"	130
b38						b38				40'-8"	122	b143				44'-2"	133
b39						b39				41'-4"	124	b144				45'-0"	135
b40						b40				42'-2"	127	b145	2			45'-10"	138
b41						b41				43'-0"	129	b146	1	#6	STR.	46'-8"	70
b42						b42				43'-10"	132	REINFORCING STEEL - 9,010 LBS.					
b43						b43				44'-8"	134	CLASS AA CONCRETE - 41.5 CY.					
b44						b44	2			45'-6"	137	CLASS A CONC. DRAINAGE SLAB - 1.7 CY.					
b45	2					b45	2			46'-4"	139						
b46	1	#6	STR.	47'-2"	71	b46	1	#6	STR.	47'-2"	71						
b101	2	#6	STR.	9'-2"	28	b101	2	#6	STR.	9'-2"	28						
b102	2	#6	STR.	10'-0"	30	b102	2	#6	STR.	10'-0"	30						
b103	2	#6	STR.	10'-10"	33	b103	2	#6	STR.	10'-10"	33						
b104	2	#6	STR.	11'-8"	35	b104	2	#6	STR.	11'-8"	35						
b105	2	#6	STR.	12'-8"	38	b105	2	#6	STR.	12'-8"	38						

PROJECT NO. 8.1743606
 FORSYTH COUNTY

STATION: 116+52.12-1.1 L.T.L.M.
 SHEET 1 OF 4 - 24+52.13 4" REV.

STATE OF NORTH CAROLINA STATE HIGHWAY COMMISSION RALEIGH									
BRIDGE APPROACH SLAB FOR FLEXIBLE PAVEMENT									
END BENT 1									
SEPTEMBER 1977									
REVISIONS					DATE				
NO.	BY	DATE	NO.	BY	DATE	NO.	BY	DATE	NO.
1			3						5-29
2			4						149

REV. NO. 10 - TO CHANGE BELT TO FINISHED AND ADD PROPOSED IN FINISH NOTE. BY: K.G.P. ✓ BY: NMS 5-4-76

REV. NO. 9 - TO REMOVE LOCATION FOR APPROACH SLAB AREA. BY: K.G.P. ✓ BY: DMW 3-15-76

REV. NO. 8 - TO CHANGE DESIGNATION OF AGGREGATE SIZE AND TO PROVIDE LOCATION FOR APPROACH SLAB AREA. BY: K.G.P. ✓ BY: NMS 1-9-76

REV. NO. 7 - TO CHANGE DESIGNATION OF AGGREGATE SIZE. BY: CCM ✓ BY: W.J.R. 5-7-75

REV. NO. 6 - TO OMIT MAXIMUM FROM BAR SUPPORT SPACING. BY: K.G.P. ✓ BY: NMS 1-14-75

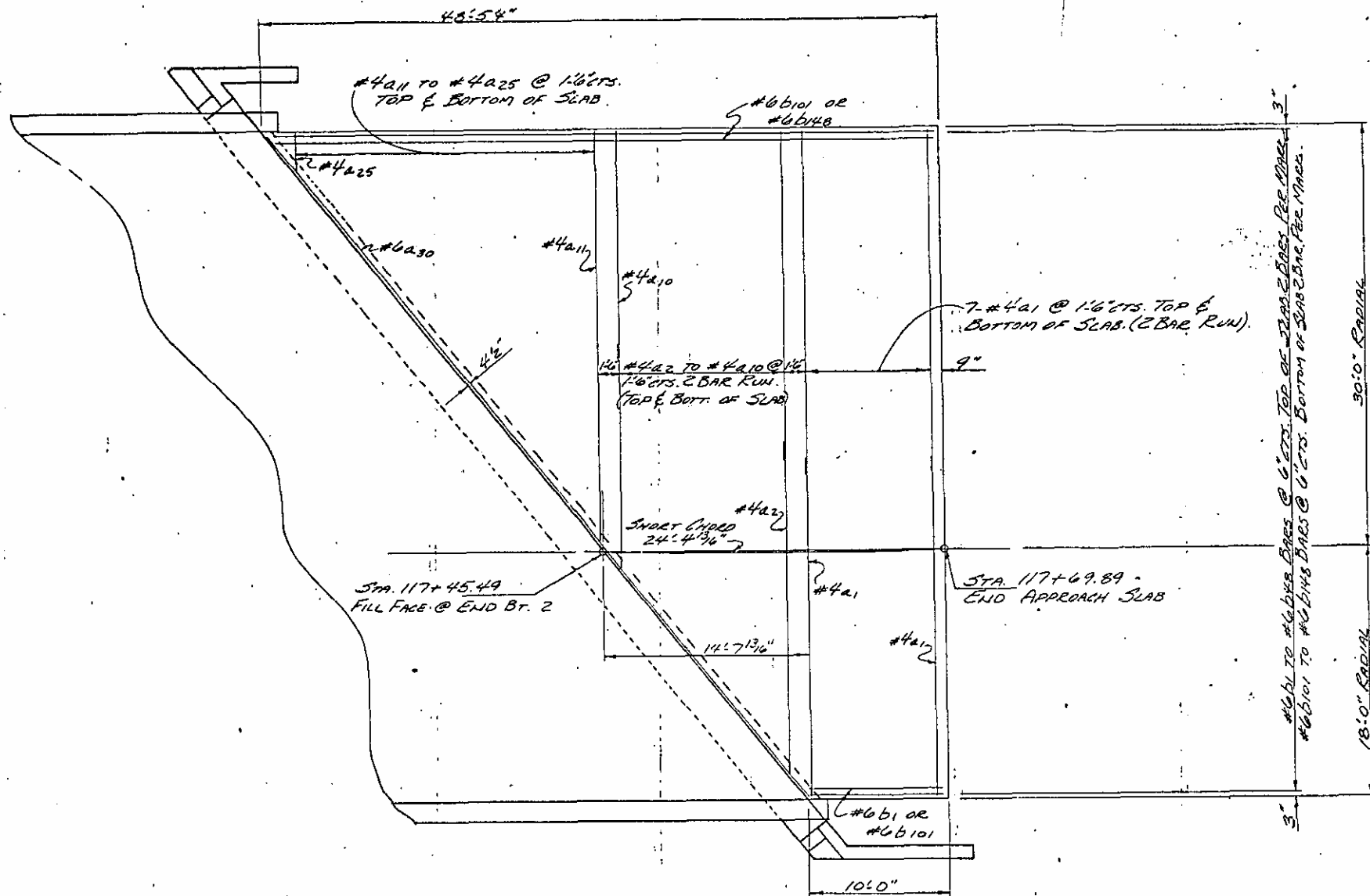
REV. NO. 5 - TO CHANGE POT-POURED RUBBER ASPHALT JOINT SEALER TO JOINT SEALER. BY: K.G.P. ✓ BY: DMW 8-15-74

REV. NO. 4 - TO CHANGE UPPER BEAM BOLUSTER TO BEAM BOLUSTER UPPER. BY: K.G.P. ✓ BY: NMS 11-20-73

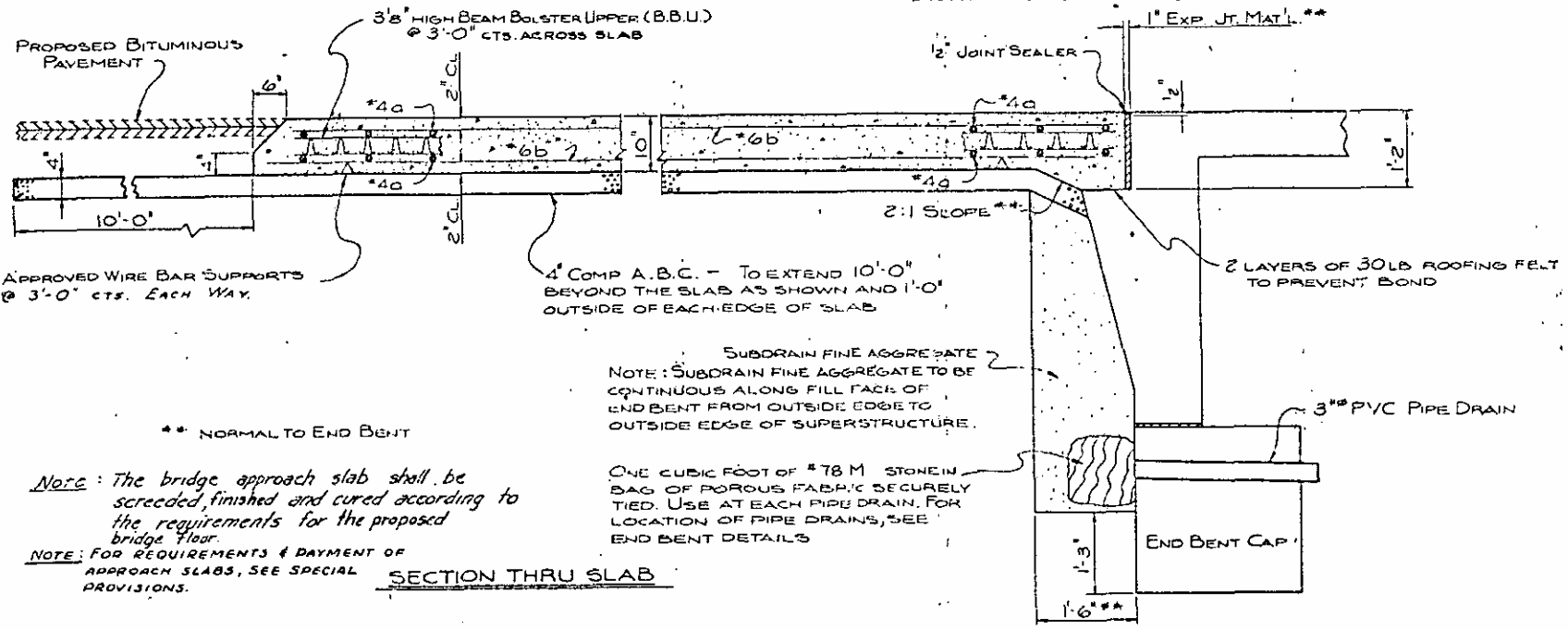
REV. NO. 3 - NOTE REFERRING TO REQUIREMENTS & PAYMENT OF APPROACH SLABS. BY: RCM ✓ BY: D.W.R. 10/1/72

REV. NO. 2 - TO CHANGE BAR SUPPORT DESIGNATION. BY: K.G.P. ✓ BY: DMW 12-15-71

REV. NO. 1 - TO ADD FINISHING REQUIREMENTS. BY: K.G.P. ✓ BY: DMW 10-1-70



PLAN
 ALL #4 & #6 BARS ARE TO HAVE A MINIMUM SPACED DISTANCE OF 1'-0". #6 BARS TO HAVE A MIN. SPACED DIST. OF 1'-10".



Note: The bridge approach slab shall be screeded, finished and cured according to the requirements for the proposed bridge floor.
 NOTE: FOR REQUIREMENTS & PAYMENT OF APPROACH SLABS, SEE SPECIAL PROVISIONS.

SUBDRAIN FINE AGGREGATE
 NOTE: SUBDRAIN FINE AGGREGATE TO BE CONTINUOUS ALONG FILL FACE OF END BENT FROM OUTSIDE EDGE TO OUTSIDE EDGE OF SUPERSTRUCTURE.

ONE CUBIC FOOT OF #78 M STONE IN BAG OF POROUS FABRIC SECURELY TIED. USE AT EACH PIPE DRAIN. FOR LOCATION OF PIPE DRAINS, SEE END BENT DETAILS.

STD. DRAWN BY: K.G.P. DATE: 2-71 CHECKED BY: J.A.W.
 DRAWN BY: G.L. BENSON DATE: 1-12-77
 CHECKED BY: W.C. FORT DATE: 10-26-77

BILL OF MATERIAL FOR APPROACH SLAB (END BENT 2)

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
a1	28	#4	STR. 24'-4"	455	b2a	2	#6	STR. 30'-9"	92
a2	4	#4	STR. 23'-6"	63	b2b			31'-7"	95
a3			22'-6"	60	b2c			32'-5"	97
a4			21'-7"	58	b2d			33'-2"	100
a5			20'-8"	55	b2e			34'-0"	102
a6			19'-9"	53	b2f			34'-9"	104
a7			18'-10"	50	b2g			35'-7"	107
a8			17'-10"	48	b2h			36'-5"	109
a9			16'-11"	45	b2i			37'-2"	112
a10	4		16'-0"	43	b2j			38'-0"	114
a11	2		29'-2"	39	b2k			38'-10"	117
a12			27'-4"	37	b2l			39'-7"	119
a13			26'-5"	34	b2m			40'-5"	121
a14			23'-7"	32	b2n			41'-3"	124
a15			21'-8"	29	b2o			42'-0"	126
a16			19'-10"	26	b2p			42'-10"	129
a17			17'-11"	24	b2q			43'-7"	131
a18			16'-1"	21	b2r			44'-5"	133
a19			14'-3"	19	b2s			45'-3"	136
a20			12'-4"	16	b2t			46'-0"	138
a21			10'-6"	14	b2u	2	#6	STR. 46'-10"	141
a22			8'-7"	11					
a23			6'-9"	9	b2v	2	#6	STR. 9'-7"	29
a24			4'-11"	7	b2w			10'-5"	31
a25	2	#4	STR. 3'-0"	7	b2x			11'-2"	34
a30	4	#6	STR. 31'-5"	189	b2y			12'-0"	36
					b2z			12'-10"	39
b1	2	#6	STR. 9'-1"	27	b2aa			13'-7"	41
b2			9'-11"	30	b2ab			14'-5"	43
b3			10'-8"	32	b2ac			15'-3"	46
b4			11'-6"	35	b2ad			16'-0"	48
b5			12'-4"	37	b2ae			16'-10"	51
b6			13'-1"	39	b2af			17'-7"	53
b7			13'-11"	42	b2ag			18'-5"	55
b8			14'-9"	44	b2ah			19'-3"	58
b9			15'-6"	47	b2ai			20'-0"	60
b10			16'-4"	49	b2aj			20'-10"	63
b11			17'-1"	51	b2ak			21'-8"	65
b12			17'-11"	54	b2al			22'-5"	67
b13			18'-9"	56	b2am			23'-3"	70
b14			19'-6"	59	b2an			24'-1"	72
b15			20'-4"	61	b2ao			24'-10"	75
b16			21'-2"	64	b2ap			25'-8"	77
b17			21'-11"	66	b2aq			26'-5"	79
b18			22'-9"	68	b2ar			27'-3"	82
b19			23'-7"	71	b2as			28'-1"	84
b20			24'-4"	73	b2at			28'-10"	87
b21			25'-2"	76	b2au			29'-8"	89
b22			25'-11"	78	b2av			30'-6"	92
b23			26'-9"	80	b2aw			31'-3"	94
b24			27'-7"	83	b2ax			32'-1"	96
b25			28'-4"	85	b2ay			32'-11"	99
b26			29'-2"	88	b2az			33'-8"	101
b27	2	#6	STR. 30'-0"	90	b2ba	2	#6	STR. 34'-6"	104

REINFORCING STEEL: 9577 LB.
 CLASS AA CONCRETE: 439 CU. YD.

PROJECT NO. 8.17436067
 FORSYTH COUNTY
 STATION: 116+52.12-67.67
 SHEET 2 OF 4

STATE OF NORTH CAROLINA			
STATE HIGHWAY COMMISSION			
RALEIGH			
BRIDGE APPROACH SLAB FOR FLEXIBLE PAVEMENT			
END BENT 2			
SEPTEMBER 1977			
REVISIONS			
NO.	BY	DATE	DESCRIPTION
1			
2			

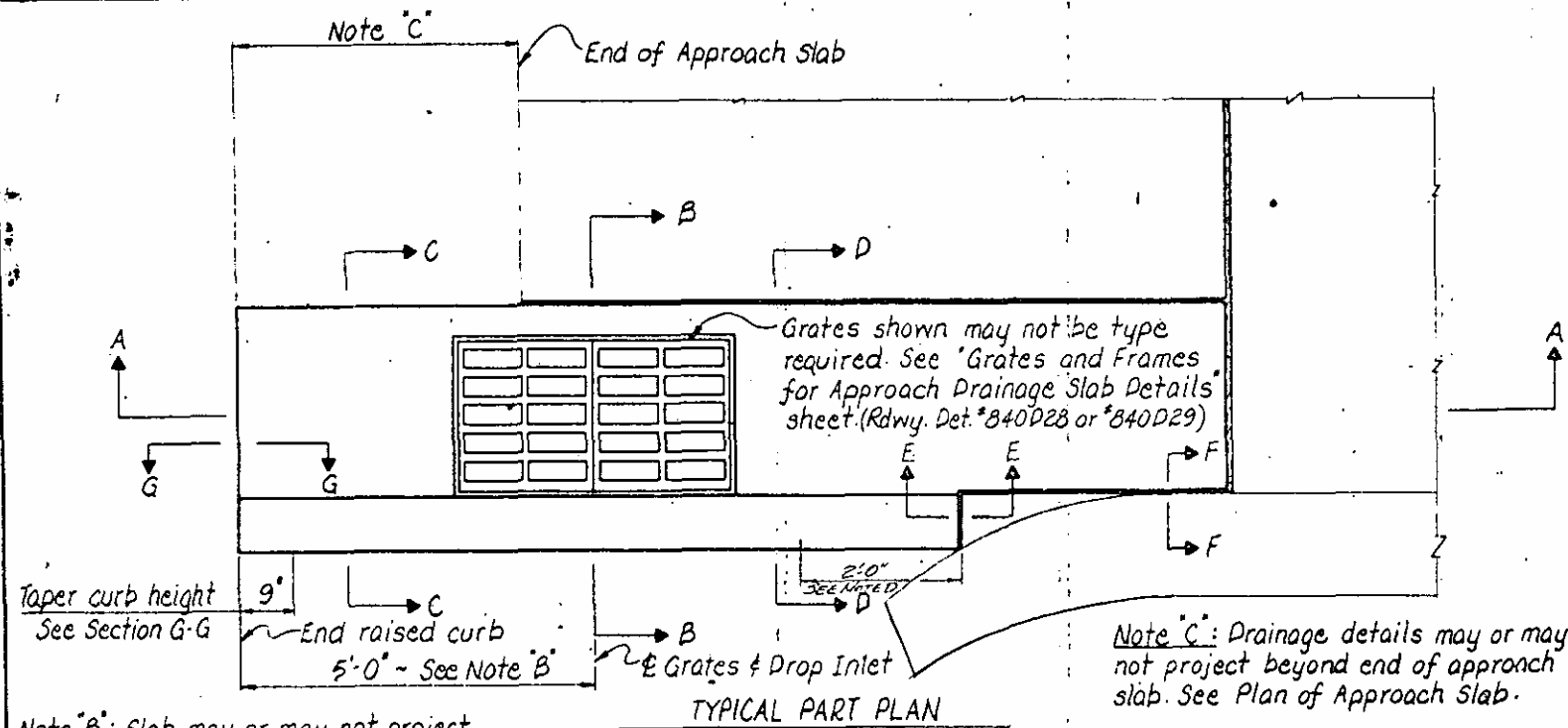
REV. NO. 10 - TO CHANGE BELT TO FINISHED AND ADD PROPOSED IN FINISH NOTE. BY K.G.P. / BY NMS 5-4-76
 REV. NO. 9 - TO REMOVE LOCATION FOR APPROACH SLAB AREA. BY K.G.P. / BY: 2-11-76
 REV. NO. 8 - TO CHANGE DESIGNATION OF AGGREGATE SIZE AND TO PROVIDE LOCATION FOR APPROACH SLAB AREA. BY: K.G.P. / BY NMS 1-9-76
 REV. NO. 7 - TO CHANGE DESIGNATION OF AGGREGATE SIZE. BY CCM / BY W.J.R. 5-7-75
 REV. NO. 6 - TO OMIT MAXIMUM FROM BAR SUPPORT SPACING. BY K.G.P. / NMS 1-14-75
 REV. NO. 5 - TO CHANGE HOT-POURED RUBBER ASPHALT JOINT SEALER TO JOINT SEALER. BY K.G.P. / NMS 8-15-74
 REV. NO. 4 - TO CHANGE UPPER BEAM BOLSTER TO BEAM BOLSTER UPPER. BY K.G.P. / NMS 11-20-73
 REV. NO. 3 - NOTE REFERRING TO REQUIREMENTS & PAYMENT OF APPROACH SLABS. BY RCM / BY D.W.R. 10-11-72
 REV. NO. 2 - TO CHANGE BAR SUPPORT DESIGNATION. BY K.G.P. / D.M.W. 12-25-72
 REV. NO. 1 - TO ADD FINISHING REQUIREMENTS. BY JKP / BY D.M.W. 10-1-71

NOTES

For requirements and payment for Approach Drainage Slab Details, see Special Provisions for Bridge Approach Slabs.

1/2" Expansion joint material shall be used in Approach Drainage Slab to limit the length of pours to a maximum of 35 feet. The location of joints, where required, shall be approved by the Engineer. The expansion joint shall be sealed with joint sealer as shown in Section E-E.

The Engineer will be responsible for establishing the elevations for the Approach Drainage Slab.

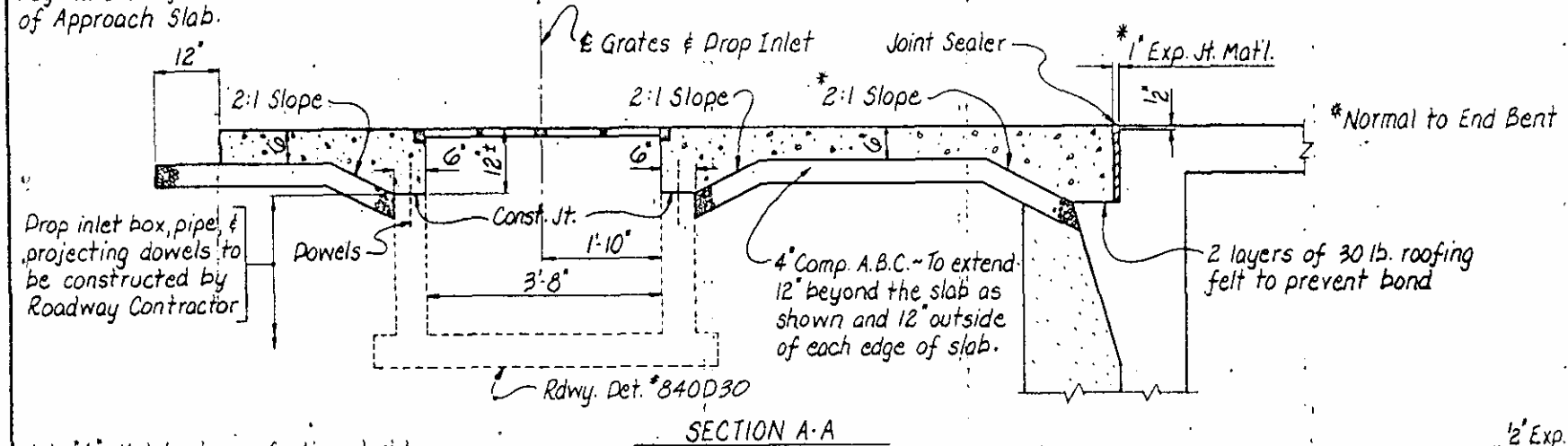


Taper curb height
See Section G-G

Note B: Slab may or may not project beyond end of raised curb. See Plan of Approach Slab.

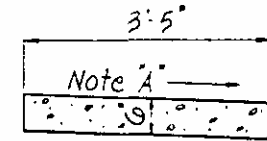
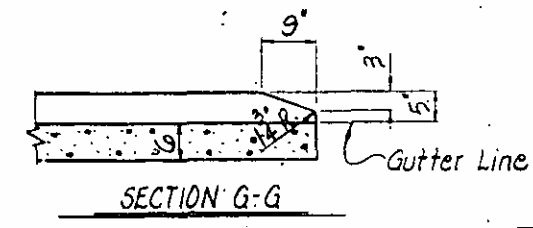
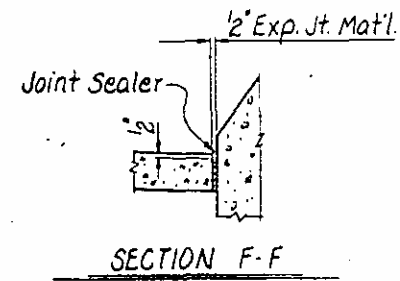
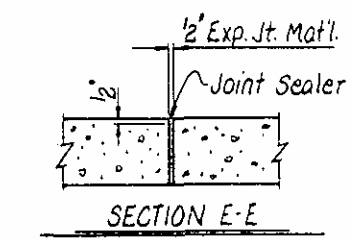
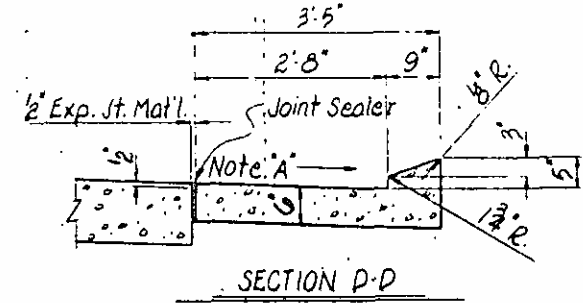
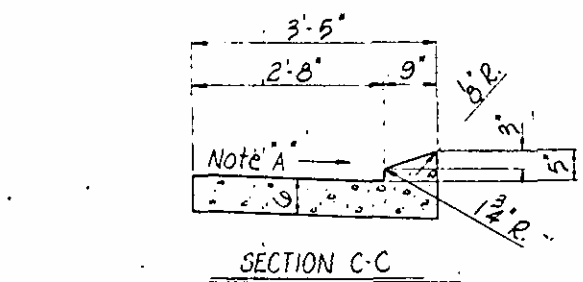
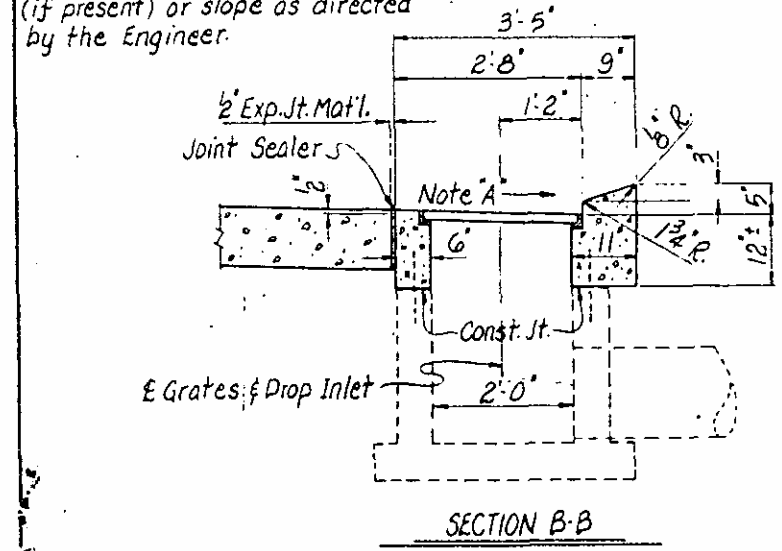
Note C: Drainage details may or may not project beyond end of approach slab. See Plan of Approach Slab.

Note D: RAISED CURB SECTION SHALL BE TRANSITIONED WITHIN THIS LENGTH TO MATCH WITH THE CURB BLOCK ON THE CURVED END BLOCK.



Drop inlet box, pipe, & projecting dowels to be constructed by Roadway Contractor

Note A: Match slope of adjacent slab (if present) or slope as directed by the Engineer.

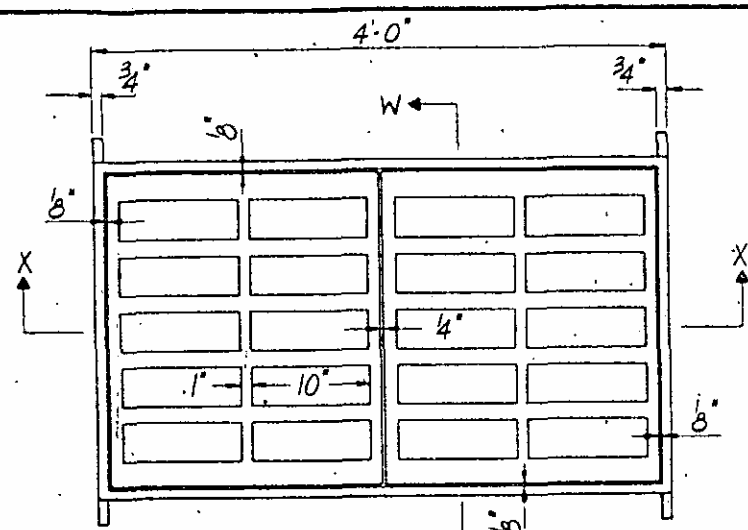


SECTION WHERE SLAB PROJECTS BEYOND END OF RAISED CURB

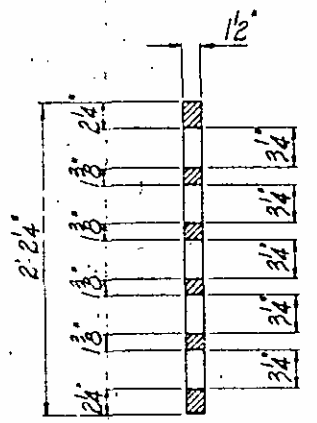
STANDARD DRAWN BY K. P. ... DATE Feb 5, 74
STANDARD CHECKED BY ... DATE 6/6/74
DRAWN BY G. L. BENSON DATE 4-6-77
CHECKED BY G. L. BENSON DATE 10-25-77

PROJECT No. 8.1743606
FORSYTH COUNTY
STATION: 116+52.12-6
SHEET 3 OF 4

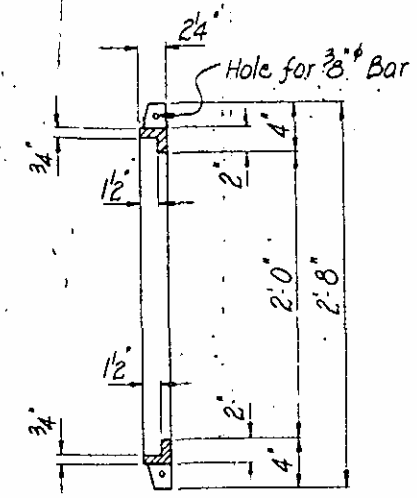
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. 5-31
APPROACH DRAINAGE SLAB DETAILS END BENT 1						
REVISIONS						TOTAL SHEETS 149
NO.	BY	DATE	NO.	BY	DATE	
1			2			
2			3			



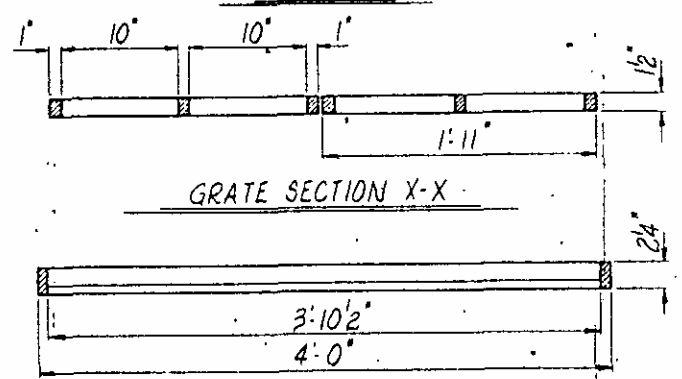
PLAN



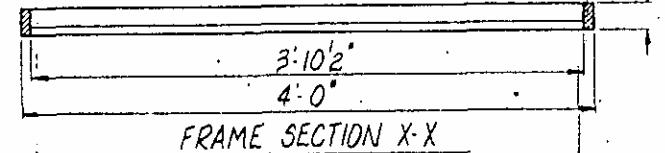
GRATE SECTION W-W



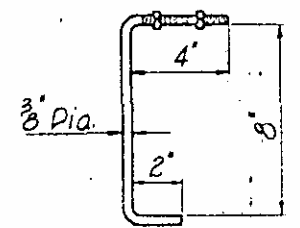
FRAME SECTION W-W



GRATE SECTION X-X



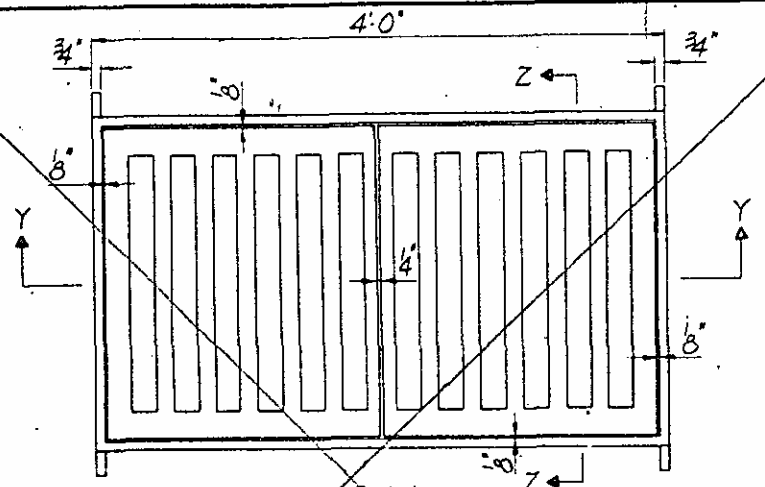
FRAME SECTION X-X



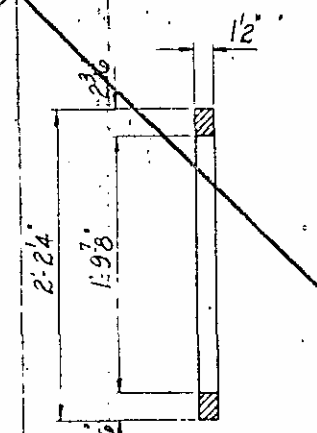
CONCRETE ANCHOR

3/8" Bent Bar

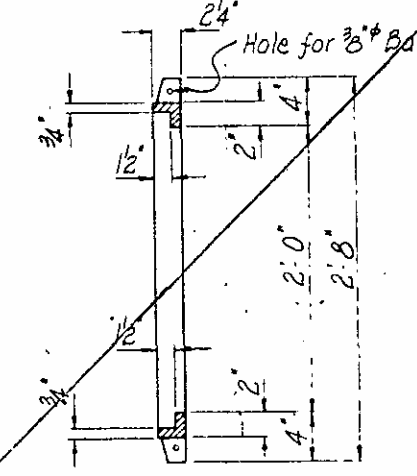
STANDARD FLAT GRATES AND FRAME (RDWY. DET. 840D28)



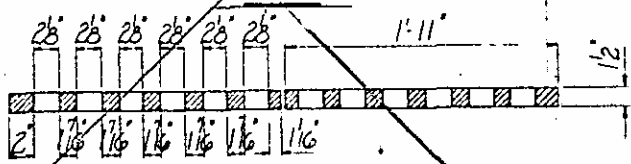
PLAN



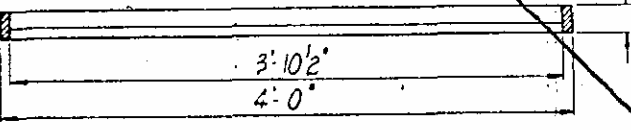
GRATE SECTION Z-Z



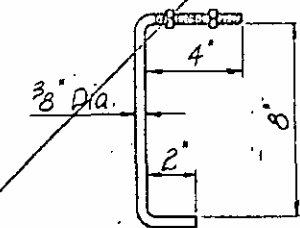
FRAME SECTION Z-Z



GRATE SECTION Y-Y



FRAME SECTION Y-Y



CONCRETE ANCHOR

3/8" Bent Bar

NARROW SLOT FLAT GRATES AND FRAME (RDWY. DET. 840D29)

PROJECT No. 8.1743606
 FORSYTH COUNTY
 STATION: 116+52.12-L-
 Sheet 4 of 4 Lt. Ln.

STATE OF NORTH CAROLINA						1977
DEPARTMENT OF TRANSPORTATION						
RALEIGH						
GRATES AND FRAMES FOR						
APPROACH DRAINAGE SLAB						
END BENT X2						
REVISIONS						
NO.	BY	DATE	NO.	BY	DATE	SHEET NO.
1			2			5-32
2			3			TOTAL SHEETS
						149

STD DRAWN BY: D.X. Daniel 2-19-76 BY: K.G.P.
 DRAWN BY: G.L. Benson DATE: 11-3-77
 CHECKED BY: P.L. Maud DATE: 11-8-77