

SHEET NO. INDEX

_____	TITLE SHEET
_____	ORIGINAL TITLE SHEET
_____	INDEX OF SHEETS, GENERAL NOTES, AND LISTS OF STANDARDS
_____	TYPICAL SECTION
_____	SUMMARY OF DRAINAGE QUANTITIES
_____	PLAN SHEETS
_____	CROSS SECTIONS
_____	ELECTRICAL PLAN SHEETS
_____	LANDSCAPE PLAN SHEETS

_____	UTILITY PLAN SHEETS
_____	SIGNING PLAN SHEETS
_____	CULVERT PLAN SHEETS
_____	STRUCTURE PLAN SHEETS
_____	COMPUTATION SHEET FOR ITEMS NOT COMPUTED IN PAY RECORD BOOKS

AS CONSTRUCTED PLANS

PROJECT NO. 8. T261306

F.A. NO. NHF-17(22)

T.I.P. NO. U-2107BA

COUNTY ON SLOW

DESCRIPTION BRIDGE OVER NEW RIVER ON PROPOSED JACKSONVILLE BYPASS
(US 17) SOUTH OF JACKSONVILLE

DIVISION NO. (3) THREE

CONTRACTOR JONES BROS., INC.
P.O. BOX 727
MT. JULIET, TN 37122

DIVISION ENGINEER H. A. POPE, P.E.

RESIDENT ENGINEER C. D. MOOREFIELD, P.E.

I HEREBY CERTIFY THAT THIS PROJECT
WAS CONSTRUCTED ACCORDING TO
PLANS EXCEPT AS NOTED HEREIN.

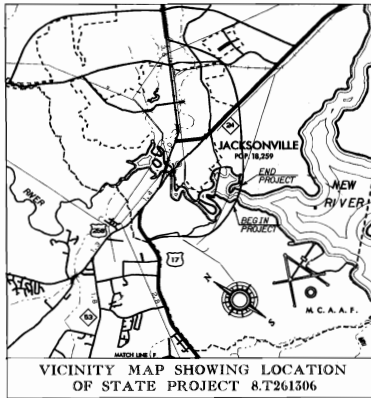
C. D. Moorefield
RESIDENT ENGINEER

FINAL RIGHT OF WAY HAS BEEN CHECKED.

[Signature]
DIVISION RIGHT OF WAY AGENT

U-2107BA

PROJECT: 8.T261306



STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

PLAN AND PROFILE OF PROPOSED STATE HIGHWAY

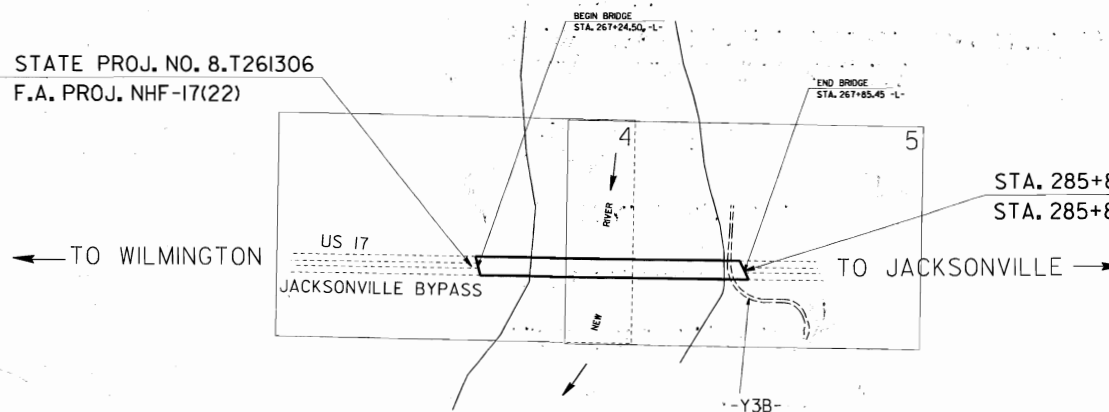
ONSLOW COUNTY

LOCATION: BRIDGE OVER NEW RIVER ON PROPOSED JACKSONVILLE BYPASS (US 17)

TYPE OF WORK: STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	8.T261306		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
6.269001T		P.E.	
8.T261306	NHF-17(22)	CONST.	

STA. 267+00.00 -L- BEGIN STATE PROJ. NO. 8.T261306
STA. 267+00.00 -L- BEGIN F.A. PROJ. NHF-17(22)



STA. 285+85.45 -L- END STATE PROJ. NO. 8.T261306
STA. 285+85.45 -L- END F.A. PROJ. NHF-17(22)

STRUCTURE



DESIGN DATA

ADT 1997 39,400 cpd
ADT 2017 61,800 cpd
DHV 10%
D 60%
DUAL 6%
TTST 4%
V 60 MPH

PROJECT LENGTH

LENGTH ROADWAY STATE PROJECT 8.T261306 = 0.000 MILES
LENGTH STRUCTURES STATE PROJECT 8.T261306 = 0.350 MILES
TOTAL LENGTH STATE PROJECT 8.T261306 = 0.350 MILES

THIS IS A CONTROLLED ACCESS PROJECT WITH
ACCESS BEING LIMITED TO INTERCHANGES

Prepared In the Office of: DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

1995 STANDARDS SPECIFICATION

LETTING DATE: July 21, 1998

Omar R. Aziz, P.E.
PROJECT ENGINEER

Thomas Paul Garrett, P.E.
PROJECT DESIGN ENGINEER

STATE BRIDGE DESIGN ENGINEER



William J. Rogers
8/21/97

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

R. S. Hill, P.E.
STATE HIGHWAY ENGINEER - DESIGN
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED FOR
DIVISION ADMINISTRATION
DATE 4-22-98

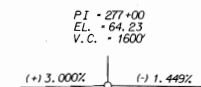
28-JUL-1997 13:42
dl:\user's\will\engenh\2207
rsl

INDEX		
STATION	DESCRIPTION	SHEET NUMBERS
277+50.00 -L-	EROSION CONTROL PLANS	EC1 AND EC2
277+50.00 -L-	STRUCTURE	S1 THRU S170

PROJECT NO. U-2107BA
ONslow COUNTY
 STATION: _____
 SHEET OF _____

STATE OF NORTH CAROLINA					
DEPARTMENT OF TRANSPORTATION					
RALEIGH					
INDEX					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	
1			3		TOTAL SHEETS
2			4		

DRAWN BY: N.M. Ruffin DATE: 4/16/97
 CHECKED BY: _____ DATE: _____



4'-3"

1'-6"

2'-9"

2:1 SLOPE
NORMAL TO CAP

2'-0"

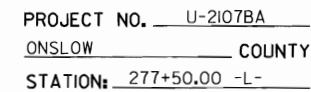
12" PRESTR.
CONC. BRACE
PILES

12" PRESTR.
CONC. PILES

1'-0" MIN.
EARTH BERM

PLAIN RIP RAP
CLASS "B"

DETAIL "A"



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

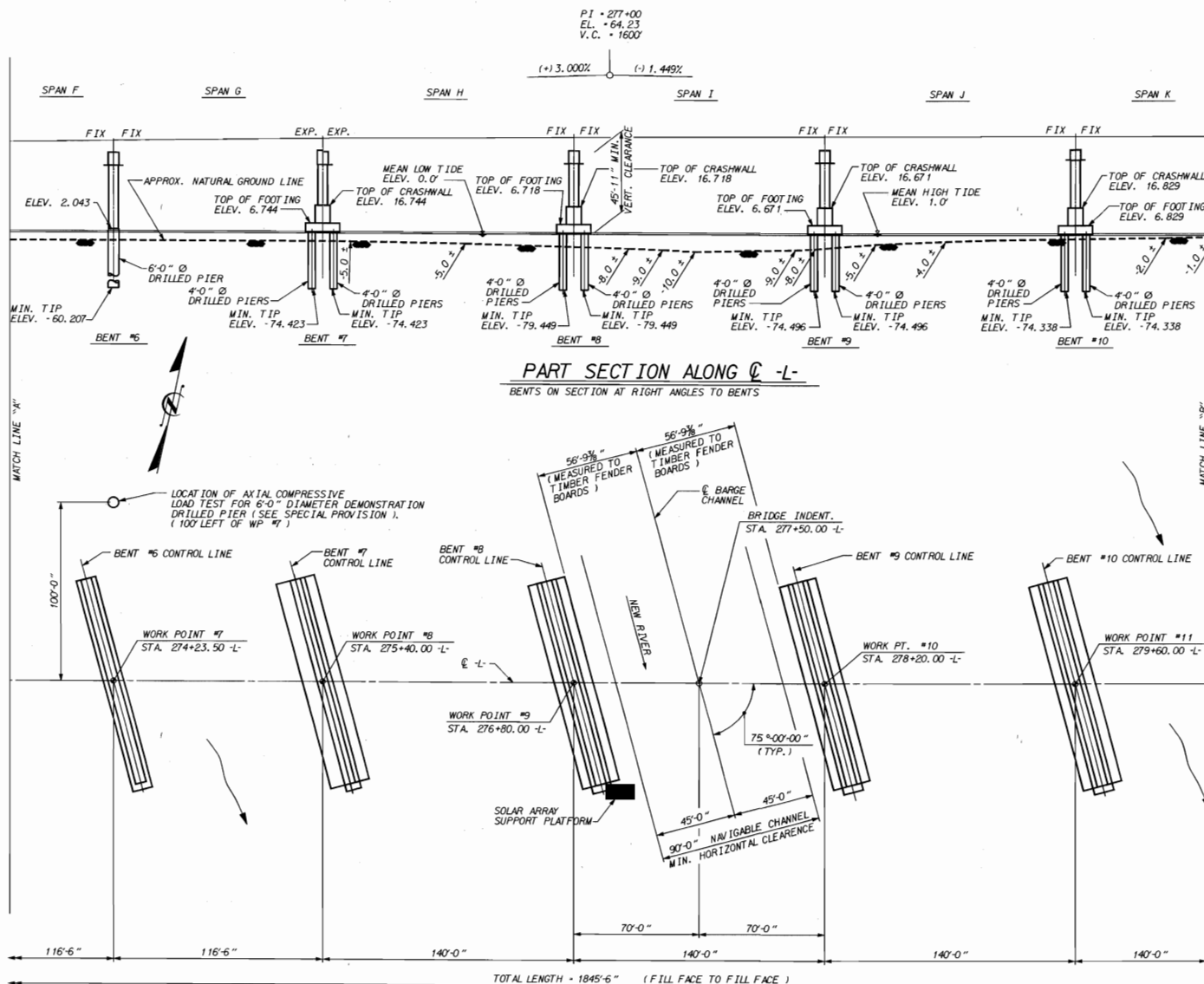
GENERAL DRAWING FOR
BRIDGE ON PROPOSED
US 17 OVER NEW RIVER

REVISIONS						SHEET NO. 5-1
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 170
2			4			

DRAWN BY : Nail M. Ruffin DATE : 2/22/96
CHECKED BY : T. N. CARROLL DATE : 1/14/97



274+00.00 274+50.00 275+00.00 275+50.00 276+00.00 276+50.00 277+00.00 277+50.00 278+00.00 278+50.00 279+00.00 279+50.00 280+00.00



PROJECT NO. U-2107BA
ONSLow COUNTY
STATION: 277+50.00 -L-

SHEET 2 OF 9

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RAILROAD

GENERAL DRAWING FOR
BRIDGE ON PROPOSED
US 17 OVER NEW RIVER



Omar R. Al-Sayid
1/8/2017

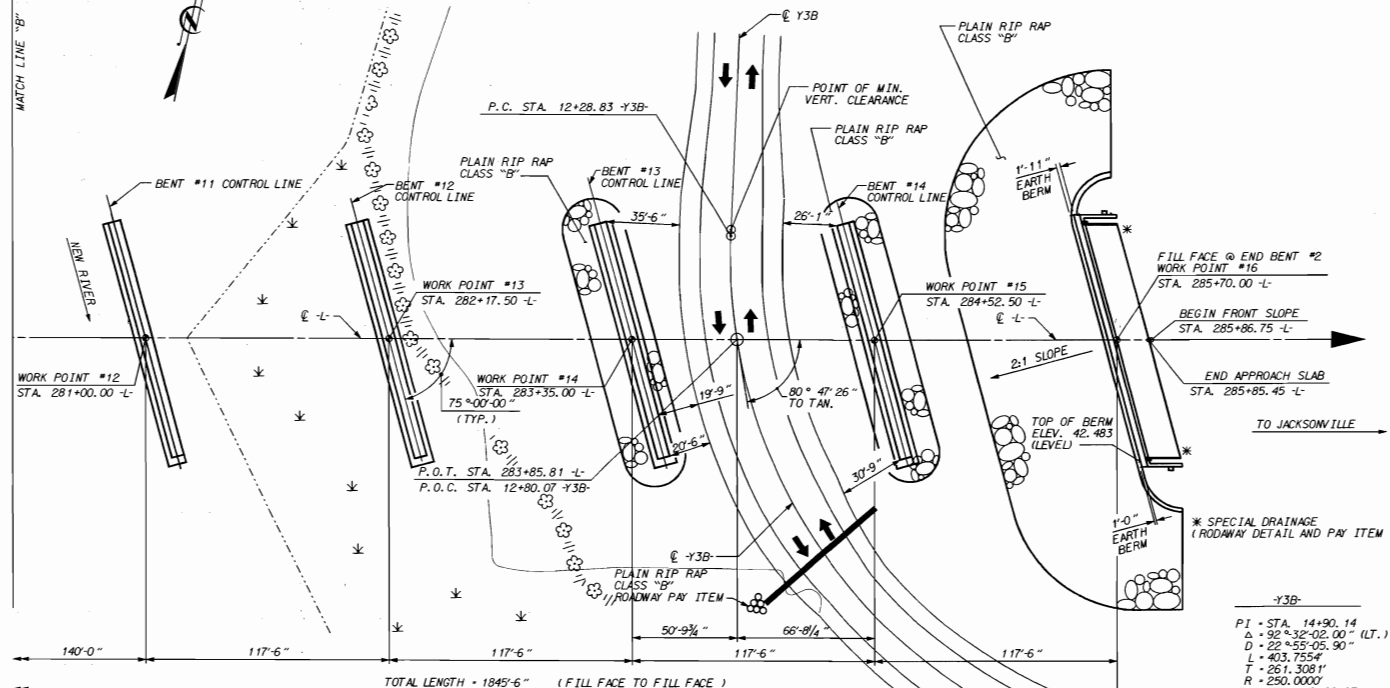
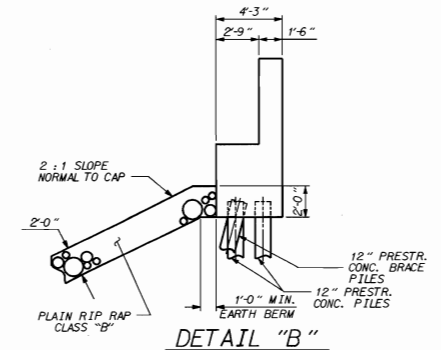
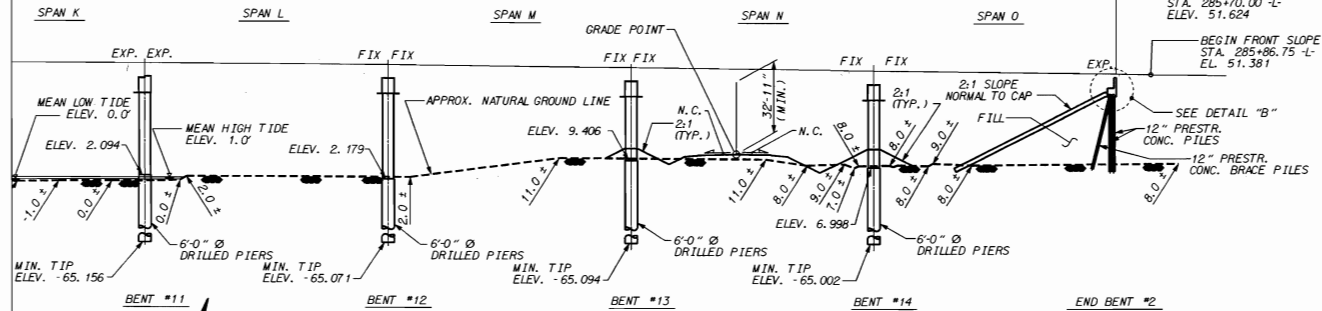
DRAWN BY: JLM/RLH DATE: 2/22/96
CHECKED BY: J. N. CARROLL DATE: 2/14/97

REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	5-2	
1			3			TOTAL	
2			4			SHEETS	170

280+50.00 281+00.00 281+50.00 282+00.00 282+50.00 283+00.00 283+50.00 284+00.00 284+50.00 285+00.00 285+50.00 286+00.00 286+50.00 287+00.00

P1 = 277+00
EL. = 64.23
V.C. = 1600

(+) 3.000% (-) 1.449%



Y3B-
PI = STA. 14+90.14
Δ = 92° 32' 02.00" (LT.)
D = 22° 55' 05.90"
L = 403.7554'
T = 261.3081'
R = 250.0000'
PC = STA. 12+28.83
PT = STA. 16+32.58

PROJECT NO. U-2107BA
ONSLow COUNTY
STATION: 277+50.00 -L-

SHEET 3 OF 9

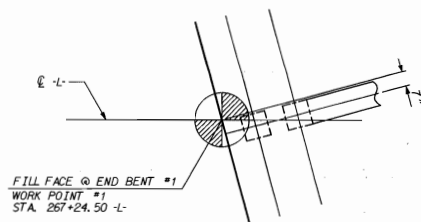
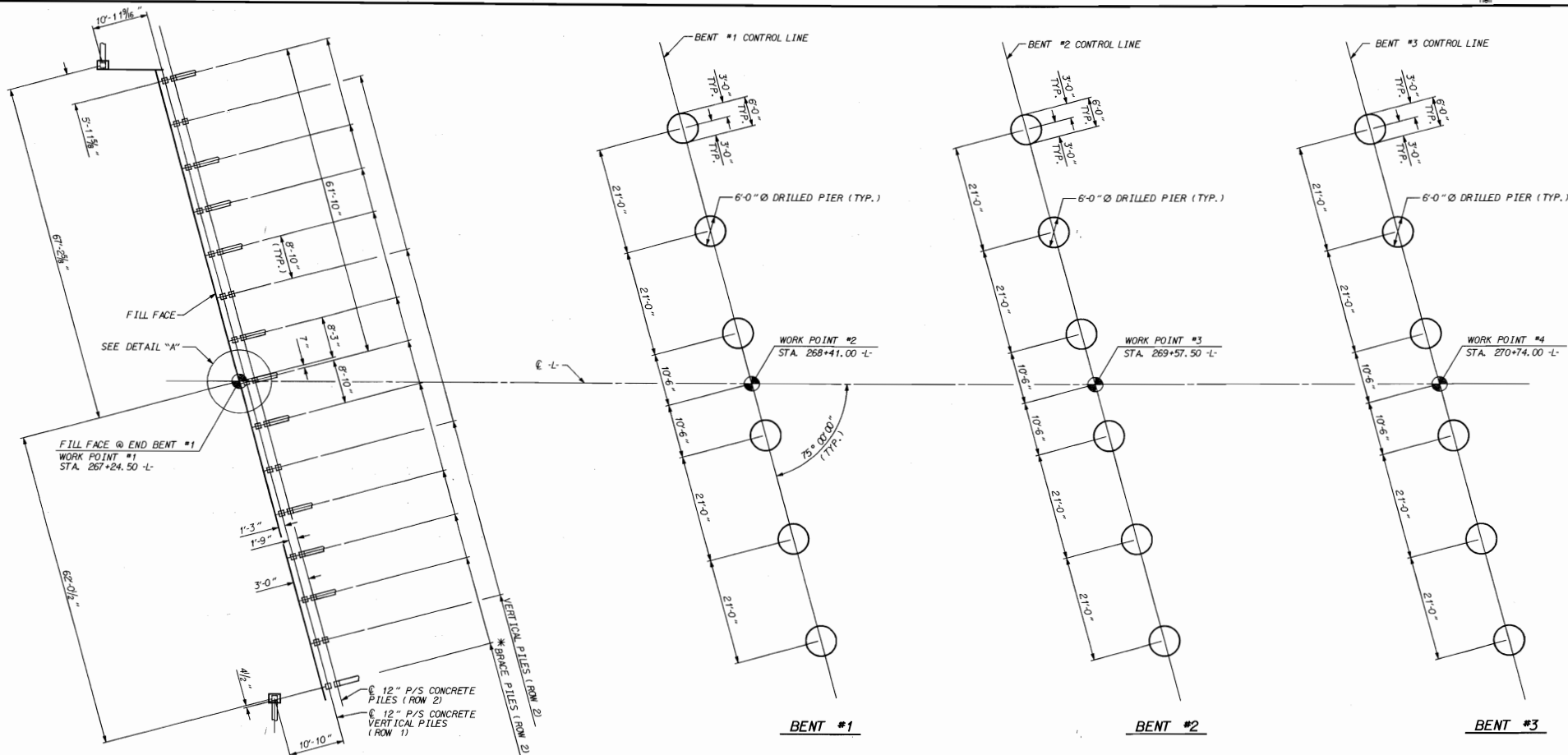
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
BALDWIN

GENERAL DRAWING FOR
BRIDGE ON PROPOSED
US 17 OVER NEW RIVER



DRAWN BY: H.M. Ruff DATE: 2/22/96
CHECKED BY: J. N. CARROLL DATE: 1/14/98

REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	S-3	
1			3			170	
2			4				



FOUNDATION LAYOUT

* PILES ARE TO BE BATTERED AT 3:12 BATTER
 DIMENSIONS LOCATED IN PILES ARE SHOWN TO THE PILE CENTERLINE

PROJECT NO. U-2107BA
ONSLOW COUNTY
 STATION: 277+50.00 -L

SHEET 4 OF 9

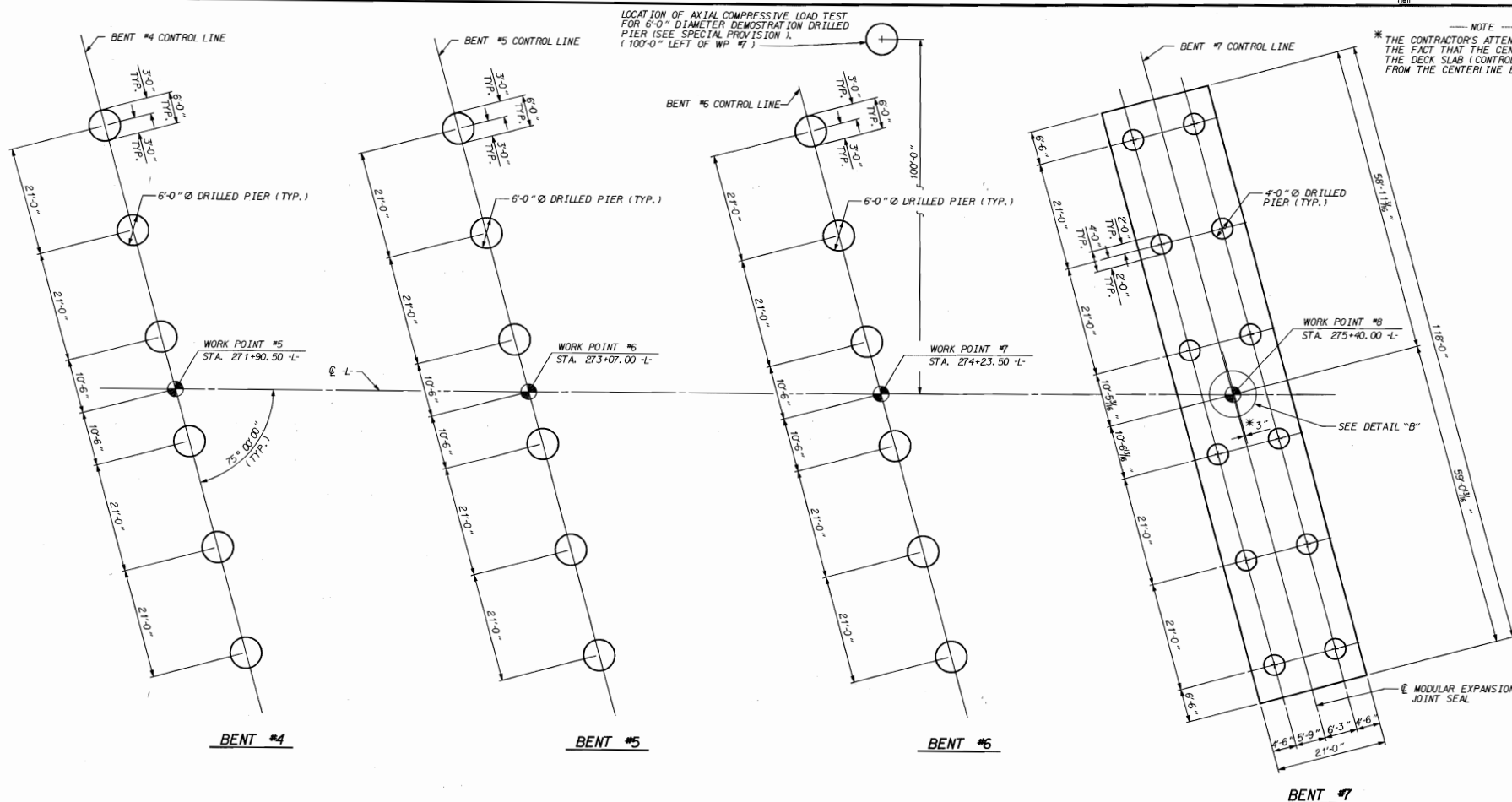
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING FOR
 BRIDGE ON PROPOSED
 US 17 OVER NEW RIVER

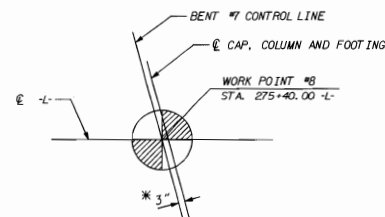


DRAWN BY: M.M.R. DATE: 12/12/96
 CHECKED BY: THAO CARROLL DATE: 1/14/97

REVISIONS						SHEET NO. 5-4 TOTAL SHEETS 170
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			



FOUNDATION LAYOUT



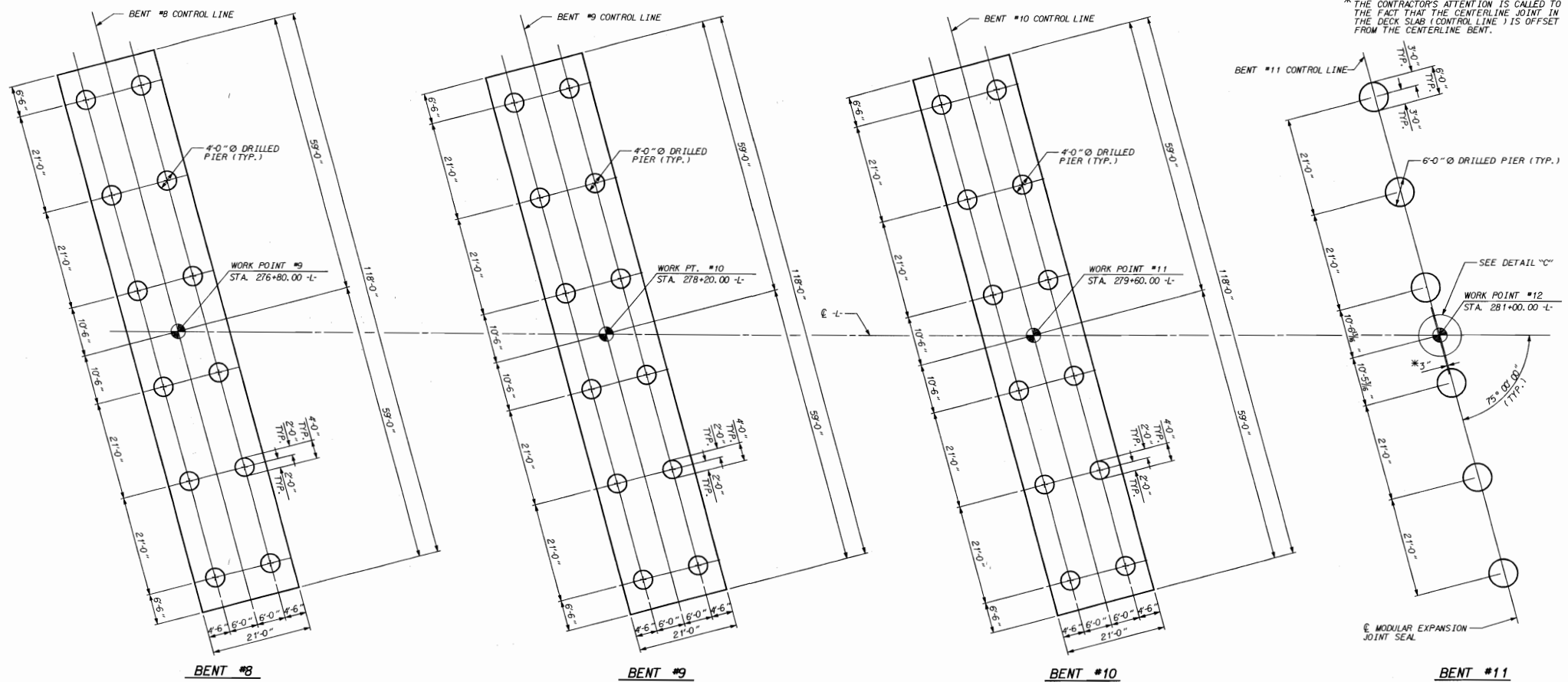
PROJECT NO. U-2107BA
ONSLOW COUNTY
 STATION: 277+50.00 -L-

SHEET 5 OF 9
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**GENERAL DRAWING FOR
 BRIDGE ON PROPOSED
 US 17 OVER NEW RIVER**

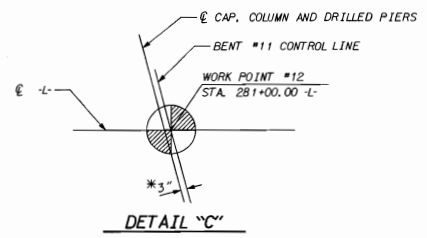
DRAWN BY: W. M. Ruff DATE: 12/12/96
 CHECKED BY: THAO CARROLL DATE: 1/14/97

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			S-5
2			4			170

NOTE
 * THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE CENTERLINE JOINT IN THE DECK SLAB (CONTROL LINE) IS OFFSET FROM THE CENTERLINE BENT.



FOUNDATION LAYOUT



PROJECT NO. U-2107BA
ONSLOW COUNTY
 STATION: 277+50.00 -L

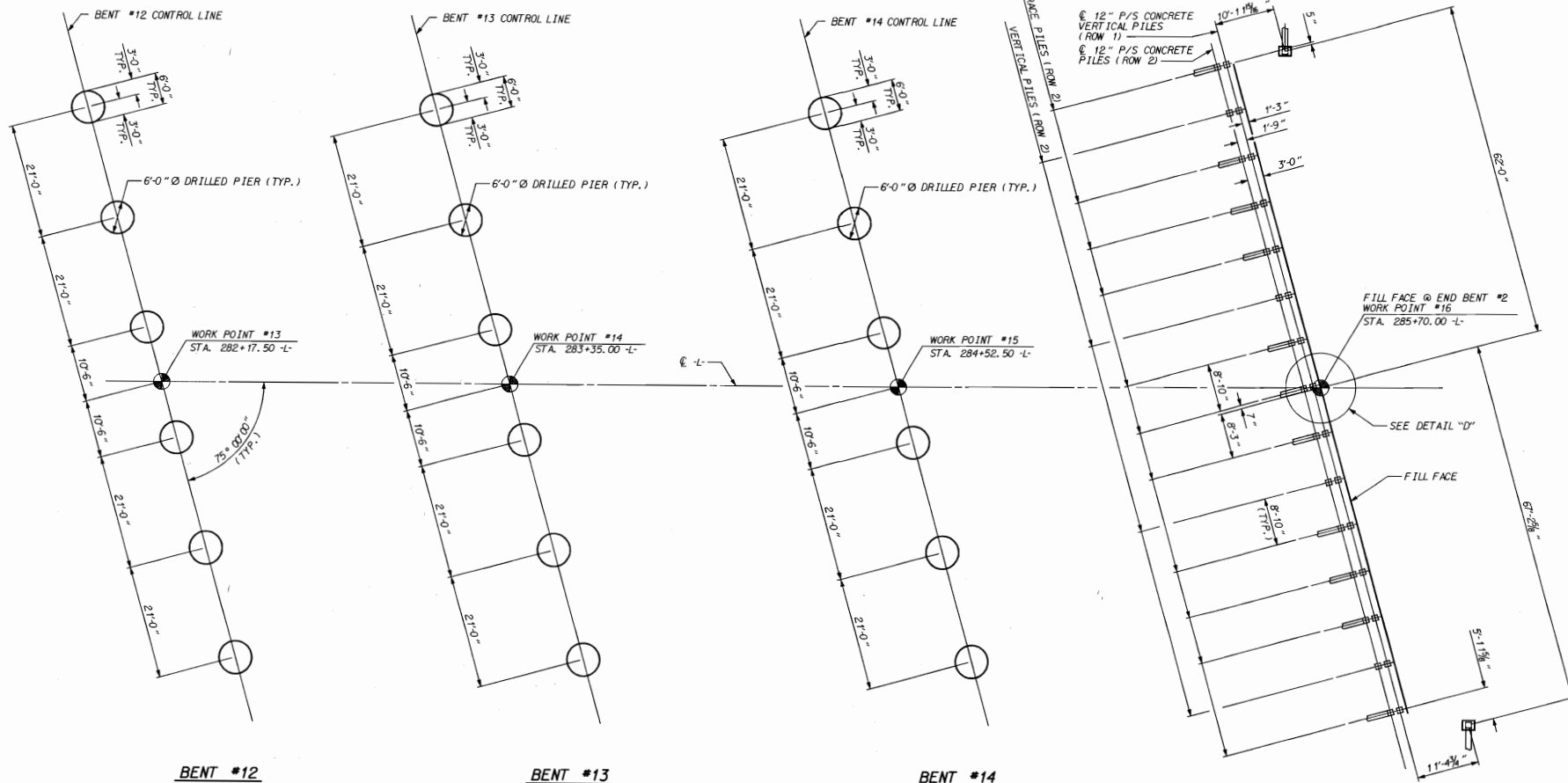
SHEET 6 OF 9



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**GENERAL DRAWING FOR
 BRIDGE ON PROPOSED
 US 17 OVER NEW RIVER**

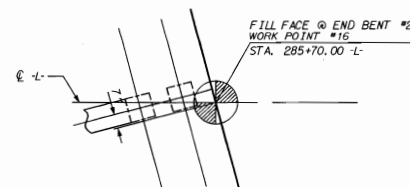
DRAWN BY: Y.M.R. DATE: 12/12/96
 CHECKED BY: THAO CARROLL DATE: 1/14/97

REVISIONS				SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
				5-6	
				TOTAL SHEETS	170



FOUNDATION LAYOUT

* PILES ARE TO BE BATTERED AT 3:12 BATTER
 DIMENSIONS LOCATED IN PILES ARE SHOWN TO THE PILE CENTERLINE



John L. Rife
 April 1997

PROJECT NO. U-2107BA
ONslow COUNTY
 STATION: 277+50.00 -L-

SHEET 7 OF 9

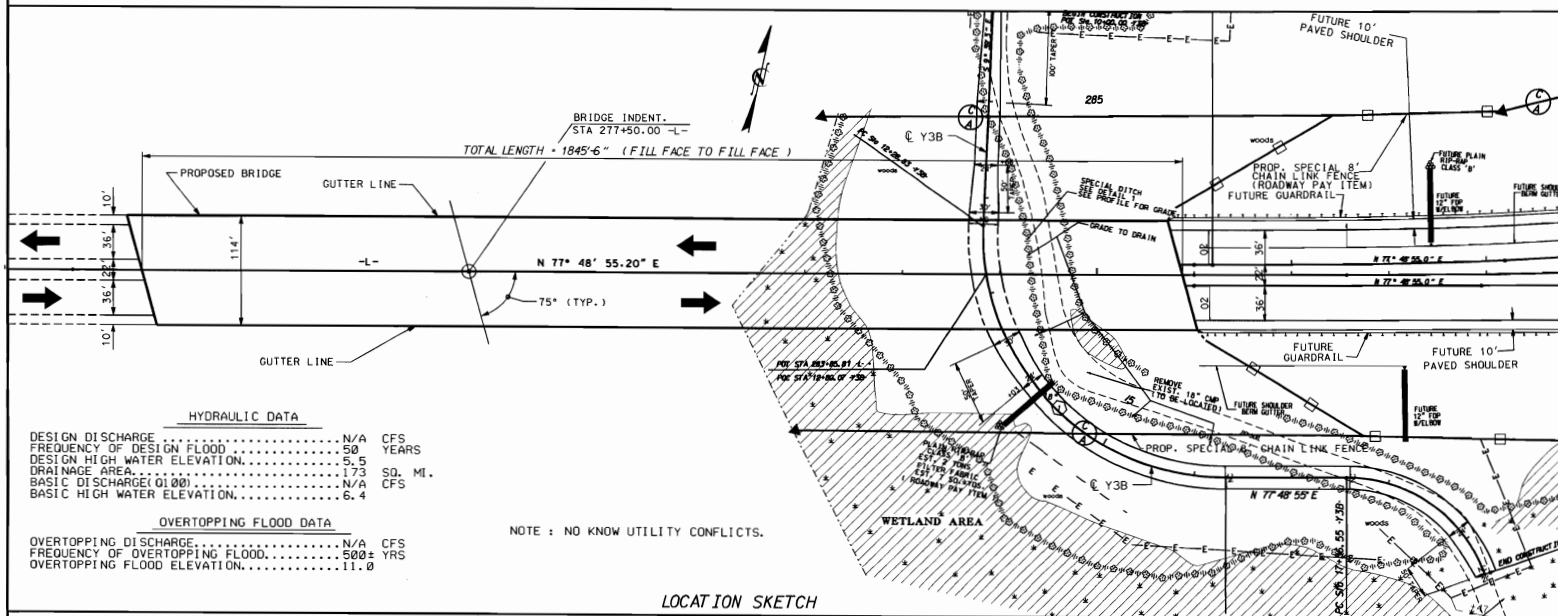
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING FOR
 BRIDGE ON PROPOSED
 US 17 OVER NEW RIVER

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			5-7
2			4			170

DRAWN BY: N.M. Rife DATE: 12/12/96
 CHECKED BY: THAD CARROLL DATE: 12/14/97

B. M. #104 REBAR -L- PTS 264+69.05 ELEV. 2.54' DATUM :NGVD 1929



--- NOTES ---

ASSUMED LIVE LOAD = HS 25-44 OR ALTERNATE LOADING.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE "STANDARD SPECIFICATIONS FOR VESSEL COLLISION DESIGN OF HIGHWAY BRIDGES" FOR SEISMIC PERFORMANCE CATEGORY A.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH AASHTO'S GUIDE SPECIFICATIONS AND COMMENTARY FOR VESSEL COLLISION DESIGN OF HIGHWAY BRIDGES, USING CRITICAL IMPORTANCE CLASSIFICATION METHOD 1 CRITERIA, VESSEL DESIGN FORCES FOR BENT 6 THROUGH 11 ARE AS FOLLOWS:

BENT NO.	* TRANSVERSE FORCE (PERPENDICULAR TO -L-)	* LONGITUDINAL FORCE (PARALLEL TO -L-)	APPLIED @ ELEV.
6	361.57	180.79	13.800
7	616.72	308.36	13.800
8	1010.40	505.20	13.800
9	1010.40	505.20	13.800
10	616.72	308.36	13.800
11	318.21	159.11	13.800

* THESE FORCES ARE NOT APPLIED SIMULTANEOUSLY.

DESIGN WIND VELOCITY = 120 MPH.

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

PILES FOR END BENT #1 & #2 SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 50 TONS EACH.

PILE INTEGRITY TESTING (P.I.T.) WILL BE PERFORMED ON EACH DRILLED PIER.

FOR PILE INTEGRITY TESTING, SEE SPECIAL PROVISIONS.

FOR MASS CONCRETE, SEE SPECIAL PROVISIONS (APPLIES TO FOOTING POURS AT BENT #7 THRU #10).

FOR REINFORCED CONCRETE DECK SLAB, SEE SPECIAL PROVISIONS. (REINFORCED CONCRETE DECK SLAB (SAND-LIGHTWEIGHT CONCRETE)).

FOR SAND-LIGHTWEIGHT CONCRETE, SEE SPECIAL PROVISIONS.

FOR CURING BRIDGE DECK SLAB, SEE THE SPECIAL PROVISIONS (REINFORCED CONCRETE DECK SLAB (SAND-LIGHTWEIGHT CONCRETE)).

FOR MAINTENANCE OF WATER TRAFFIC, SEE SPECIAL PROVISIONS.

FOR CALCIUM NITRITE CORROSION INHIBITOR, SEE SPECIAL PROVISION.

FOR "SOLAR ARRAY SUPPORT PLATFORM/CHAIN LINK FENCE", SEE SPECIAL PROVISIONS.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18, "EVALUATING SCOUR AT BRIDGE", APRIL, 1993. THE SCOUR CRITICAL ELEVATIONS SHOWN IN THIS TABLE ARE FOR USE BY MAINTENANCE FORCES TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THIS STRUCTURE.

BENT NO.	M.N. TIP EL. BOTTOM OF SHAFT	SCOUR CRITICAL ELEVATION
1	-68.112	-25.000
2	-68.140	-25.000
3	-68.217	-25.000
4	-68.171	-25.000
5	-68.253	-25.000
6	-68.253	-25.000
7	-74.423	-30.000
8	-74.449	-30.000
9	-74.496	-30.000
10	-74.338	-25.000
11	-65.156	-25.000
12	-65.071	-25.000
13	-65.094	-25.000
14	-65.002	-25.000

DRILLED PIERS SHALL BE CONSTRUCTED TO A MINIMUM TIP ELEVATION AS SHOWN BELOW.

BENT NO.	M.N. TIP EL. BOTTOM OF SHAFT	DESIGN CAPACITY (TONS)
1	-68.112	625
2	-68.140	625
3	-68.217	600
4	-68.171	600
5	-68.253	600
6	-68.253	640
7	-74.423	530
8	-74.449	530
9	-74.496	530
10	-74.338	530
11	-65.156	740
12	-65.071	660
13	-65.094	660
14	-65.002	660

AN AXIAL COMPRESSIVE LOAD TEST SHALL BE CONDUCTED ON A DEMONSTRATION DRILLED PIER AT THE FOLLOWING LOCATION:

BENT NO.	DRILLED PIER SIZE	DESIGN CAPACITY
6 (100 FT. LEFT)	6'-8" DIA.	640 TONS

FOR LOAD TEST REQUIREMENTS, SEE SPECIAL PROVISION FOR AXIAL COMPRESSIVE LOAD TESTING OF DRILLED PIER.

FOR DRILLED PIERS, SEE SPECIAL PROVISIONS.

FOR DRILLED PIER SLURRY, SEE SPECIAL PROVISIONS FOR DRILLED PIERS.

FOR CONSTRUCTION AND REMOVAL OF TEMPORARY ACCESS FOR STRUCTURE, SEE SPECIAL PROVISIONS.

FOR REQUIRED TEMPORARY WORK BRIDGES, SEE SPECIAL PROVISIONS FOR TEMPORARY ACCESS FOR STRUCTURE.

FOR CONCRETE CRACK REPAIR CRITERIA, SEE SPECIAL PROVISIONS FOR EPOXY RESIN INJECTION.

FOR PILE DRIVING ACCURACY, SEE SPECIAL PROVISIONS.

THE NEW RIVER IN THE AREA OF THIS PROJECT IS A DESIGNATED NURSERY AREA. TO MINIMIZE IMPACTS TO THE NURSERY, NO IN-WATER BRIDGE CONSTRUCTION WILL BE ALLOWED BETWEEN APRIL 1 AND JUNE 30.

--- NOTES ---

FOR SECURING OF VESSELS, SEE SPECIAL PROVISIONS.

FOR WORK IN, OVER, OR ADJACENT TO NAVIGABLE WATER, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMS OVER OR ADJACENT TO TRAFFIC, SEE SPECIAL PROVISIONS.

"FALSEWORK AND FORMS OVER OR ADJACENT TO TRAFFIC" SPECIAL PROVISION SHALL APPLY TO CONSTRUCTION OVER THE NAVIGATIONAL CHANNEL, SPAN I, AND OVER TANK TRAIL.

THE WATER/CEMENT RATIO FOR PRESTRESSED CONCRETE PILES SHALL NOT EXCEED 0.40.

THIS STRUCTURE CONTAINS THE NECESSARY CORROSION PROTECTION REQUIRED FOR A STRUCTURE IN A HIGHLY CORROSIVE AREA.

ALL REINFORCING STEEL SHALL BE GRADE 60.

ALL REINFORCING STEEL IN CAST-IN-PLACE CONCRETE SHALL BE EPOXY COATED.

FOR FABRICATED METAL STAY-IN-PLACE FORMS, SEE SPECIAL PROVISIONS.

FOR EPOXY COATED SPIRAL COLUMN REINFORCING STEEL, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE THIRTY INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO THIRTY INCH SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS.

FOR EXPANSION JOINT SEAL, SEE SPECIAL PROVISIONS.

FOR MODULAR EXPANSION JOINT SEAL, SEE SPECIAL PROVISIONS.

FOR TIMBER FENDER BOARDS AT CHANNEL BENTS, SEE SPECIAL PROVISIONS.

THE CONCRETE USED IN THE BRIDGE RAILS, MEDIAN BARRIER, APPROACH SLAB, AND SUBSTRUCTURE (EXCLUDING PRECAST PILES) SHALL BE CLASS AA CONCRETE, NORMALWEIGHT, AS PER THE STANDARD SPECIFICATIONS.

FOR NEW RIVER NAVIGATIONAL AND AIRCRAFT WARNING LIGHTING SYSTEM, SEE SPECIAL PROVISIONS.

FOR CONCRETE MEDIAN BARRIER, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC BEARING, SEE SPECIAL PROVISIONS.

FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.

FOR THE 72" PRESTRESSED CONCRETE GIRDER, SEE SPECIAL PROVISIONS.

FOR THE 63" PRESTRESSED CONCRETE GIRDER, SEE SPECIAL PROVISIONS.

TURBIDITY CURTAIN WILL BE REQUIRED AT ALL DRILLED PIERS AND TEMPORARY WORK BRIDGES LOCATED IN THE WATER, SEE SPECIAL PROVISION FOR "FLOATING TURBIDITY CURTAIN".

FOR REINFORCED BRIDGE APPROACH FILLS, SEE SPECIAL PROVISIONS.

PERMANENT STEEL CASING IS REQUIRED FOR BENT #1 THROUGH BENT #14 AND DEMO DRILLED PIER, AND PERMANENT STEEL CASING SHOULD EXTEND TO THE ELEVATIONS LISTED BELOW:

BENT NO.	ELEVATIONS (FEET)
1 - 4	-22.000
5 - 7	-24.000
6 - DEMO D.P.	-22.000
8 - 10	-28.000
11 - 14	-24.000
15 - 17	-21.000

PROJECT NO. U-2107BA

ONSLAW COUNTY

STATION: 277+50.00 -L-

SHEET 8 OF 9

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALPH

GENERAL DRAWING FOR
BRIDGE ON PROPOSED
US 17 OVER NEW RIVER



David R. Hays
1/15/12

DRAWN BY: M. M. R. DATE: 7/15/96
CHECKED BY: J. N. CARROLL DATE: 7/14/97

NO.	REV.	DATE	NO.	REV.	DATE	SHEET NO.
1	1		2	1		170

TOTAL BILL OF MATERIAL

	MOBILIZATION	REINFORCED CONCRETE DECK SLAB (SAND-LIGHTWEIGHT CONCRETE)	GROOVING BRIDGE FLOORS	CLASS AA CONCRETE	BRIDGE APPROACH SLABS	EPOXY COATED REINFORCING STEEL	12" PRESTRESSED CONCRETE PILES	2" DIA. GALVANIZED STEEL PIPE RAIL	CONCRETE BARRIER RAIL	CONCRETE MEDIAN BARRIER	PLAIN RIP RAP CLASS B	ELASTOMERIC BEARINGS	EXPANSION JOINT SEALS	MODULAR EXPANSION JOINT SEALS	EPOXY COATED SPIRAL COLUMN REINFORCING STEEL	6'-0" DIA. DRILLED PIERS	4'-0" DIA. DRILLED PIERS	63" PRESTRESSED CONCRETE GIRDERS	72" PRESTRESSED CONCRETE GIRDERS	TIMBER FENDER BOARDS AT CHANNEL BENTS	AXIAL COMPRESSIVE LOAD TEST 6'-0" DIA. DRILLED PIER			
	LUMP SUM	SQ.FT.	SQ.FT.	CYD.S.	LUMP SUM	LBS.	NO.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	TON	LUMP SUM	LUMP SUM	LUMP SUM	LBS.	LIN.FT.	LIN.FT.	NO.	LIN.FT.	NO.	LIN.FT.	LUMP SUM	EACH
SUPERSTRUCTURE	LUMP SUM	215,579	194619		LUMP SUM														121	13,964.2	60	8,330.0	LUMP SUM	EACH
END BENT NO.1				136.5		16,779	32	1600		3694.8	1875													
BENT NO.1				297.1		119,124		1327.5	255.0							20747	37.35							
BENT NO.2				315.0		121,054			255.0							21621	37.35							
BENT NO.3				321.3		121,463			132.5							22433	37.35							
BENT NO.4				344.4		125,346			255.0							23,120	37.35							
BENT NO.5				356.3		127,128			255.0							23745	37.35							
BENT NO.6				365.5		128,559			255.0							24244	37.35							
BENT NO.7				1,069.4	* 246,681	246,069			132.5							27,694		912.0						
BENT NO.8				1,077.1	* 253,228	253,670			255.0							28,994		972.0						
BENT NO.9				1,081.0	* 248,958	248,779			255.0							27,852		912.0						
BENT NO.10				1,080.8	* 249,125	248,029			255.0							27,914		912.0						
BENT NO.11				378.9	** 137,364	135,514			132.5							26,285	40.35							
BENT NO.12				380.7		137,143			255.0			398.78				26,285	40.35							
BENT NO.13				338.4		137,295			255.0			300				25,919	447.0							
BENT NO.14				344.9		135,806			255.0			847.83				25,584	432.0							
DEMO.DRILLED PIER						12,397		1798.5								2734	70.0							1
END BENT NO.2				129.4		16,753	32	2080				2834.57												
TOTAL	LUMP SUM	215,579	194619	8,016.7	LUMP SUM	2,334,246	64	3600	3,202.5	3694.8	1875	5370	LUMP SUM	LUMP SUM	LUMP SUM	355,171	3997.0	3708.0	121	13,964.2	60	8,330.0	LUMP SUM	1

* CHANGE IN QUANTITY DUE TO ERRORS FOUND IN THE FIELD. NO REVISION SHEETS WERE SET. CHANGE IN QUANTITY APPROVED BY C.D.M.

** SEE NOTE 8X*3 PG. 64

	SOLAR ARRAY SUPPORT PLATFORM/ CHAIN LINK FENCE	REINFORCED BRIDGE APPROACH FILL	CONSTRUCTION AND REMOVAL OF TEMPORARY ACCESS	CONSTRUCTION SURVEYING	6'-0" DIAMETER PERMANENT STEEL CASING	4'-0" DIAMETER PERMANENT STEEL CASING
	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	LIN. FT.	LIN. FT.
SUPERSTRUCTURE	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM		
END BENT NO.1						
BENT NO.1					144.83	
BENT NO.2					144.66	
BENT NO.3					144.20	
BENT NO.4					144.47	
BENT NO.5					155.98	
BENT NO.6					444.26 / 43.32	
BENT NO.7						306.93
BENT NO.8						354.62
BENT NO.9						306.05
BENT NO.10						271.95
BENT NO.11					138.56	
BENT NO.12					139.07	
BENT NO.13					182.44	
BENT NO.14					167.99	
DEMO.DRILLED PIER					32.00	
END BENT NO.2						
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	1,538.46	1,239.55

1537.52

REV. #1: REVISED CONCRETE QUANTITIES FOR BENT 7 AND 11 AND THE TOTAL.
BY: NMR DATE: 10-9-98
CHECK BY: SDC DATE: 10-14-98

REV. #2: REVISED CONCRETE QUANTITIES AND EPOXY COATED REINFORCING STEEL FOR END BENT NO.1 AND NO.2 AND THE TOTAL.
BY: TLA DATE: 04-12-00
CHECK BY: JLB DATE: 04-12-00

REV. #3: REVISED LINEAR FEET AND TOTAL QUANTITY FOR 63" PRESTRESSED CONCRETE GIRDERS.
BY: TLA DATE: 05-25-00
CHECK BY: JLB DATE: 05-25-00



PROJECT NO. U-2107BA
ONSLOW COUNTY
STATION: 277+50.00 -L-

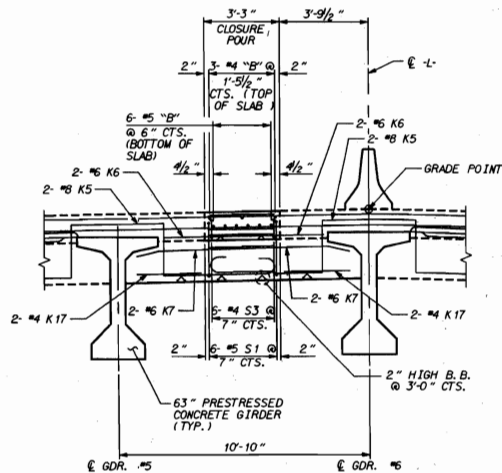
SHEET 9 OF 9

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
HALE

GENERAL DRAWING FOR
BRIDGE ON PROPOSED
US 17 OVER NEW RIVER

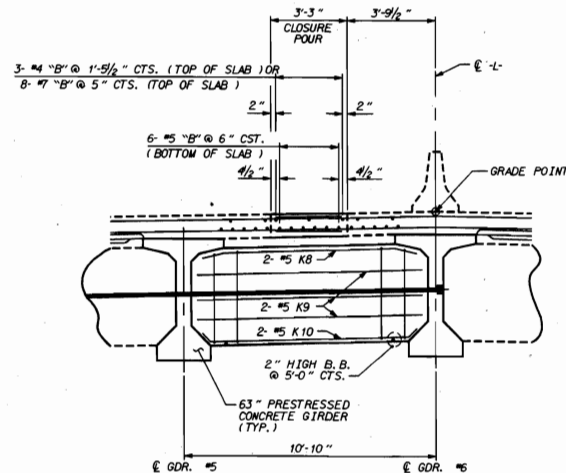
REVISIONS				SHEET NO.	
NO.	BY	DATE	NO.	DATE	S-9
1	NMR	10-9-98	3	TLA	5-25-00
2	TLA	4-12-00	4		170

DRAWN BY: J. M. R. DATE: 12/23/96
CHECKED BY: J. N. CARROLL DATE: 1/4/97



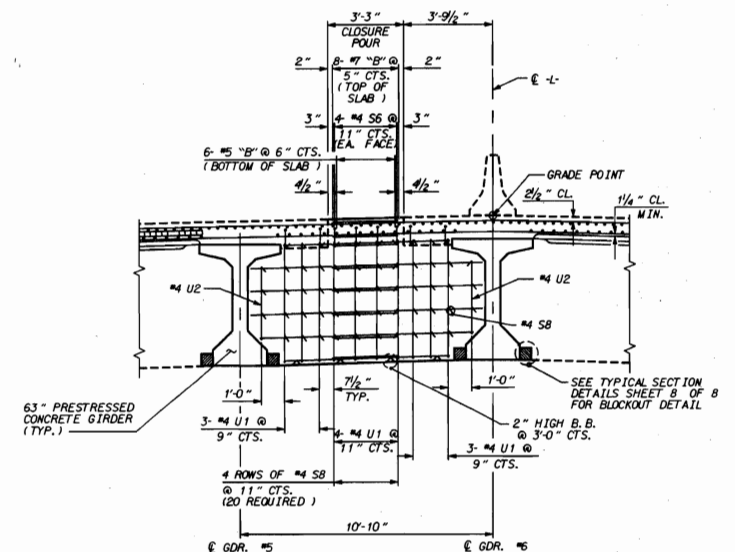
TYPICAL SECTION THRU CLOSURE POUR

SHOWING END BENT #1 & #2
DIAPHRAGMS FOR CLOSURE POUR



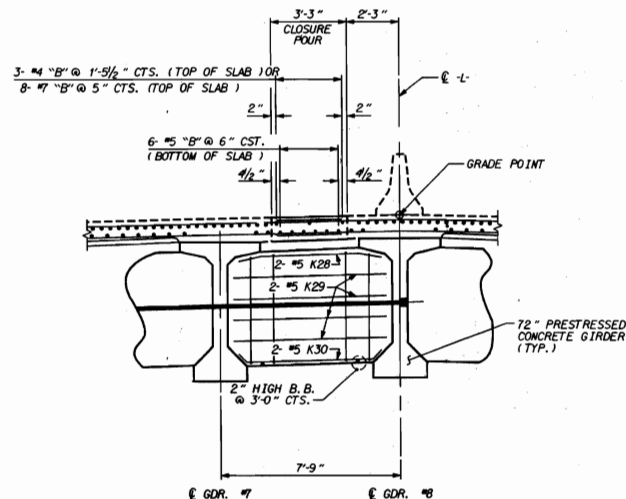
TYPICAL SECTION THRU CLOSURE POUR

SHOWING INTERMEDIATE DIAPHRAGMS
FOR CLOSURE POUR, SPANS A THRU
G AND SPANS L THRU O



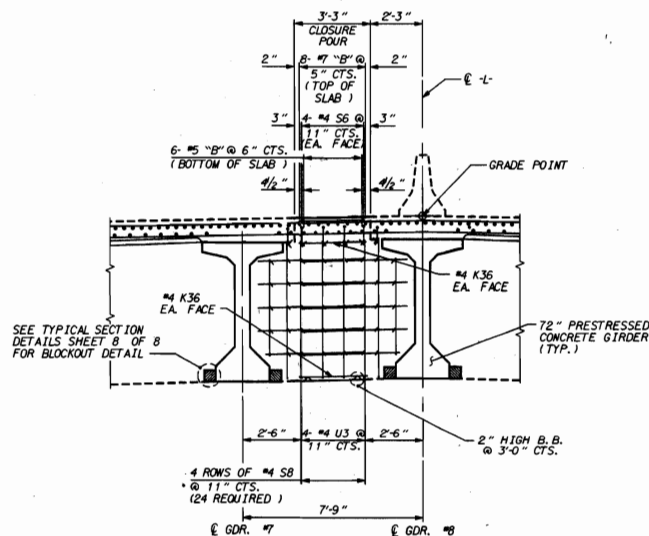
TYPICAL SECTION THRU CLOSURE POUR

SHOWING BENT #1, #2, #4, #5, #6, #12, #13, & #14
DIAPHRAGMS FOR CLOSURE POUR
ALSO SEE DETAIL "C", SHEET 6 OF 8 FOR MORE
DETAILS



TYPICAL SECTION THRU CLOSURE POUR

SHOWING INTERMEDIATE DIAPHRAGMS
FOR CLOSURE POUR, SPANS H THRU K.
ALSO SEE PARTIAL TYPICAL SECTION "J" SHEET 3 OF 8.



TYPICAL SECTION THRU CLOSURE POUR

SHOWING BENT #8, #9, & #10
DIAPHRAGMS FOR CLOSURE POUR.
ALSO SEE DETAIL "D", SHEET 6 OF 8
FOR MORE DETAILS.

DRAWN BY: W.M.B. DATE: 11/7/96
CHECKED BY: T.H. FANG DATE: 12-20-96

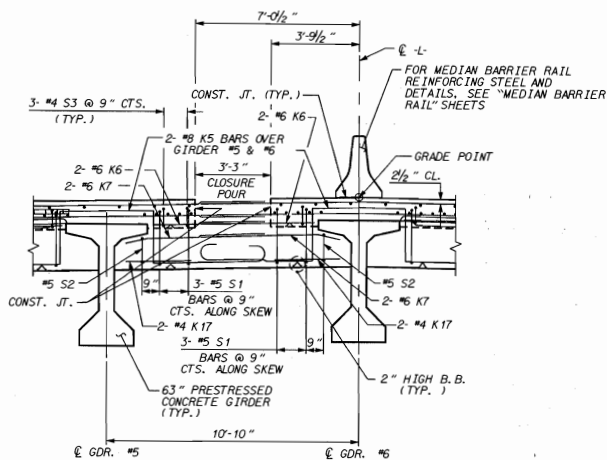


PROJECT NO. U-2107BA
ON NSLOW COUNTY
STATION: 277+50.00 -L-
SHEET 5 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

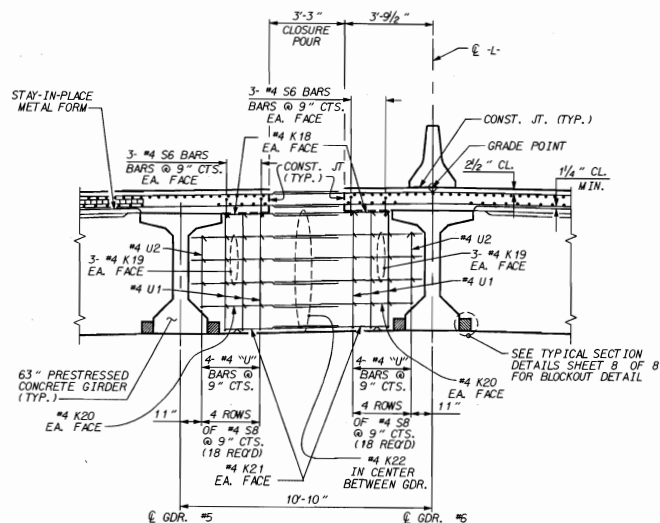
SUPERSTRUCTURE
TYPICAL SECTION

REVISIONS				SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
				5-14	
				170	



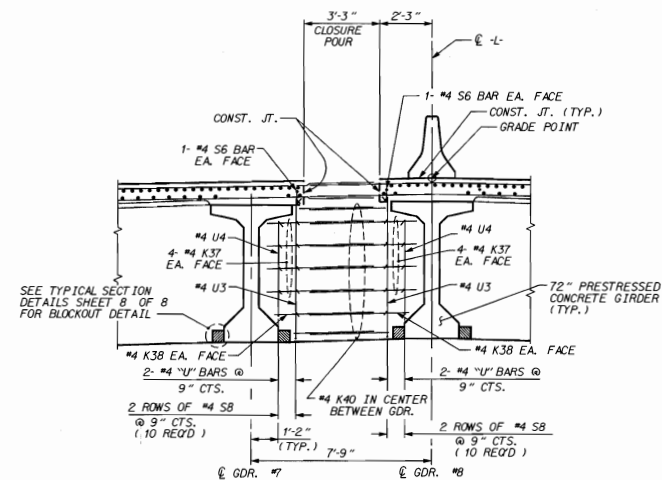
DETAIL "B"

SHOWING END BENT #1 & #2
DIAPHRAGMS AT CLOSURE POUR



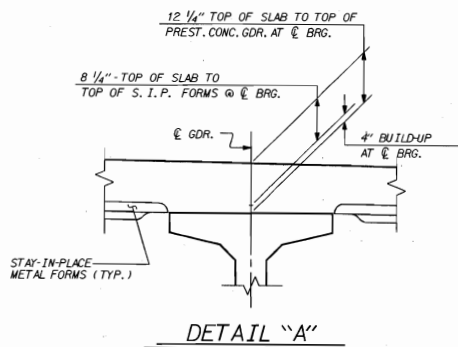
DETAIL "C"

SHOWING BENT #12, #13, & #14
DIAPHRAGMS AT CLOSURE POUR

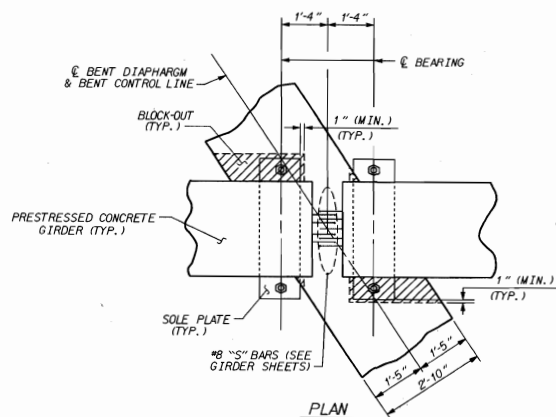


DETAIL "D"

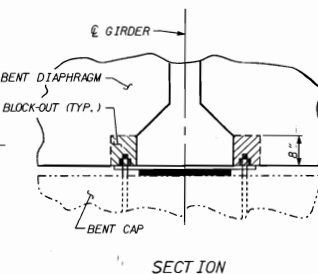
SHOWING BENT #8, #9, & #10
DIAPHRAGMS AT CLOSURE POUR



DETAIL "A"



PLAN



SECTION

BENT DIAPHRAGM BLOCK-OUT DETAIL

PROJECT NO. U-2107BA
ONSLow COUNTY
STATION: 277+50.00 -L-

SHEET 6 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
TYPICAL SECTION

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			2			5-15
3			4			TOTAL SHEETS
5			6			170



DRAWN BY: J.M.R. DATE: 10/24/96
CHECKED BY: L.H. FANG DATE: 12/20/96

10-JUL-1997 0202
C:\USER\A\NORTH\ENGIN\U2107BA\U2107BATS.DGN
RHL

Structural drawing showing the GIRDER LAYOUT ELEVATION. The drawing includes the following details:

- Top Reinforcement:** B.B.U. (Bottom Bar Up) and C.H.C.M. (Continuous Horizontal Concrete Member).
- Stays:** STAY-IN-PLACE METAL FORM.
- Reinforcement Bars:**
 - 2 - #5 K8
 - 2 - #5 K9
 - 2 - #5 K9
 - 2 - #5 K9
 - 2 - #5 K9
 - 2 - #5 K10
- Dimensions:**
 - 1 1/2" CL (Center Line)
 - 1 1/4" D.I.A. TIE ROD
 - 2" CL TO "K" BARS
 - 2" HIGH B.B.
 - 1'-0" (Total Height)
 - 4'-0" (Total Width)
- Labels:** SEE GIRDER SHEETS AND GIRDER LAYOUT ELEVATION SHEET.

SHOWING INTERMEDIATE DIAPHRAGMS (SPANS A THRU G AND L THRU O)

FOR TYPE V AASHTO PRESTRESS CONCRETE GIRDER
SHOWING BENT DIAPHRAGMS (BENT #1, #2, #4, #5, #6, #12, #13, & #14)
SEE SHEET 8 OF 8 FOR SECTION A-A

PLACE ONE (1) # 4 'S' BAR AT EACH SIDE OF MODULAR EXPANSION JOINT SUPPORT BOXES. PLACE REMAINING #4 'S' BARS EQUALLY SPACED BETWEEN SUPPORT BOXES WITH A MAXIMUM SPACING OF 1'-0" CENTER TO CENTER.

THE LONGITUDINAL REINFORCING BARS THAT INTERFERE WITH THE MODULAR EXPANSION JOINT BOXES MAY BE MECHANICALLY FIELD CUT OR BENT TO CLEAR THE SUPPORT BOXES. IF MECHANICAL FIELD CUTTING IS USED, CUT THE LONGITUDINAL REINFORCING ONLY AS MUCH AS NECESSARY TO CLEAR THE SUPPORT BOXES.

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CONST. JT. (LEVEL)

1'-0"

4" OR 7" B.B. BAR

1/4" OR 1 1/8" B.B.U. AT 3'-0" CTS. SEE TYPICAL SECTION

FIELD CUT OR BENT TO CLEAR THE SUPPORT BOXES. MECHANICAL FIELD BENDING IS USED, CUT THE LONG REINFORCING ONLY AS MUCH AS NECESSARY TO CLEAR BOXES.

4 3/8" B.B. HIGH

6 1/2"

3"

5" B.B. BAR @ 6" CTS

4'-3 1/2"

2"

4 1/8" HIGH B.B.

TOP TRANSVERSE BARS THAT INTERFERE WITH THE MODULAR EXPANSION JOINT SUPPORT BOXES MAY BE SHIFTED SLIGHTLY TO CLEAR THE SUPPORT BOXES OR MAY BE PLACED DIRECTLY ON TOP OF THE BOXES. BOTTOM BARS THAT ARE IN CONFLICT MAY BE SHIFTED SLIGHTLY OR MECHANICALLY FIELD CUT AND PLACED BETWEEN THE SUPPORT BOXES. FOR MODULAR EXPANSION JOINT INSTALLATION PROCEDURE, SEE MANUFACTURER'S SHOP DRAWINGS.

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SEALD ONLY FOR ITEMS DENOTED 

Dave + Ruth
8/9/99

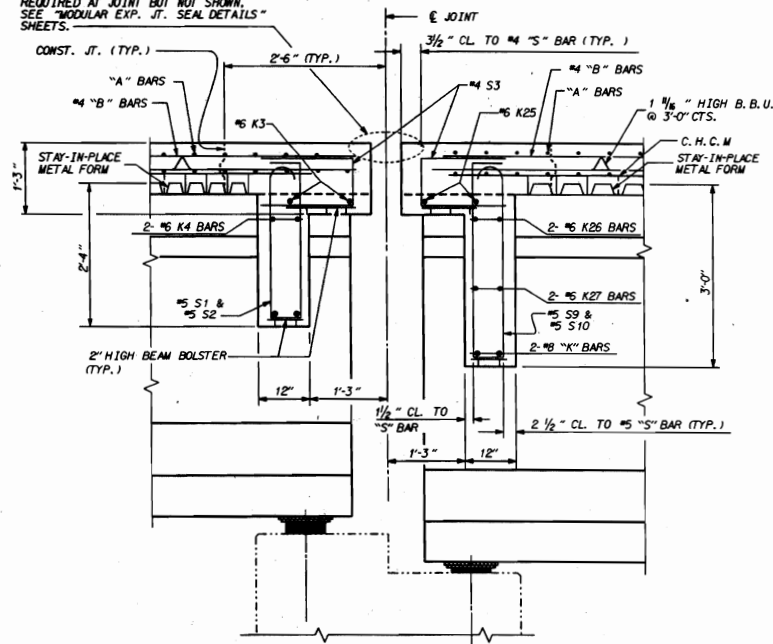
8 K11

SHEET 7 OF 8

**SUPERSTRUCTURE
TYPICAL SECTION
DETAILS**

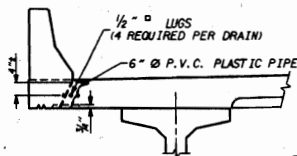
REVISIONS						SHEET NO. 5- 16
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	DFP	8/6/99	3			TOTAL SHEETS 170
2			4			

MODULAR EXPANSION JOINT SEAL IS REQUIRED AT JOINT BUT NOT SHOWN. SEE "MODULAR EXP. JT. SEAL DETAILS" SHEETS.

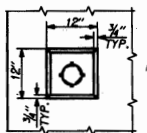


SECTION THRU BENT #7 OR #11 DIAPHRAGM

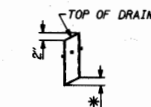
FOR SLAB AT BENT #7 AND #11 DECK POUR AT MODULAR EXPANSION JOINT SEAL SHALL BE MADE IN ONE OPERATION FULL DECK WIDTH (11'-1"). NO LONGITUDINAL CLOSURE POUR PERMITTED.



ELEVATION



PLAN OF RECESS

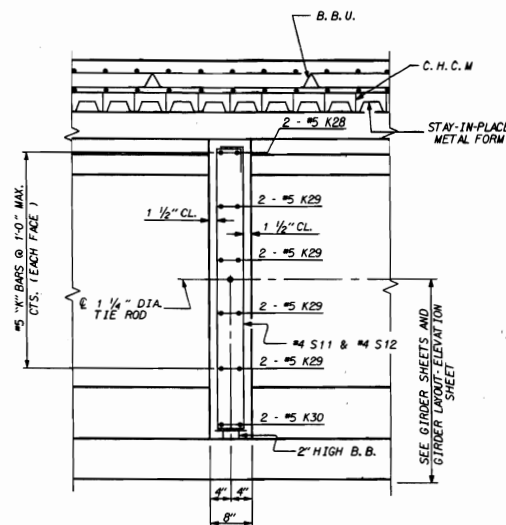


* TO BE SET TO MATCH SLOPE OF BOTTOM OF OVERHANG (DRAINS REQUIRED)

PIPE DETAIL

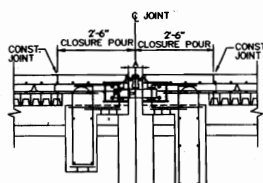
TOP OF FLOOR DRAINS TO BE SET 3/4" BELOW SURFACE OF SLAB.
1/2" LUGS TO BE GLUED TO THE P.V.C. PLASTIC PIPE AT EQUAL SPACES AROUND THE PIPE DRAIN.

DRAIN DETAILS



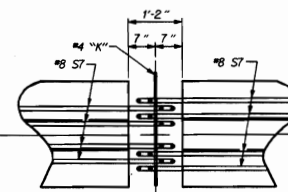
SECTION THRU INTERMEDIATE DIAPHRAGM

SHOWING INTERMEDIATE DIAPHRAGMS (SPANS H THRU K)



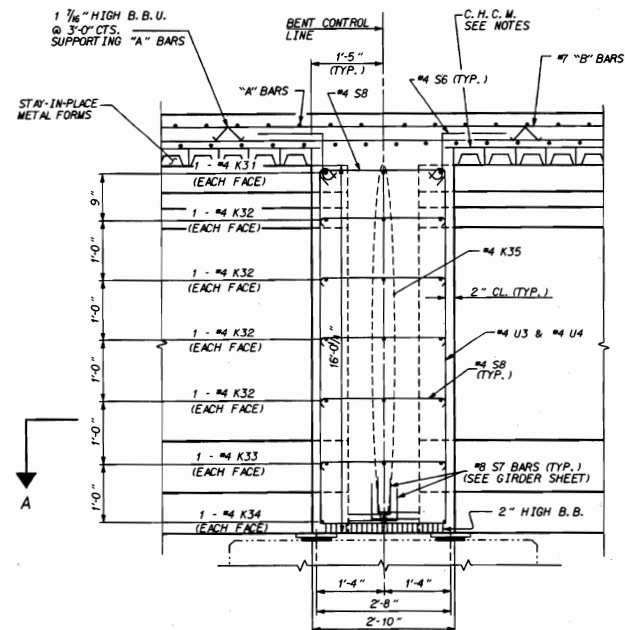
BENT #7 & #11 MODULAR EXPANSION JOINT DETAIL

TABLE OF JOINT OPENINGS				
"A" INCHES				
BENTS	30"	60"	90"	
3,7,11	7 1/8"	5 1/2"	3 7/8"	



SECTION A-A

SEE SECTIONS AND ELEVATION VIEW ON GIRDER SHEETS FOR SPACING OF #8 S7 BAR.



SECTION THRU BENT DIAPHRAGM

FOR TYPE VI AASHTO PRESTRESS CONCRETE GIRDER
SHOWING BENT DIAPHRAGMS (BENT #8, #9, & #10)

SEE SHEET S-17 FOR BENTS #7 & #11 MODULAR EXPANSION JOINT DETAIL.

PLACE ONE (1) #4 S7 BAR AT EACH SIDE OF MODULAR EXPANSION JOINT SUPPORT BOXES. PLACE REMAINING #4 S7 BARS EQUALLY SPACED BETWEEN SUPPORT BOXES WITH A MAXIMUM SPACING OF 1'-0" CENTER TO CENTER.

THE LONGITUDINAL REINFORCING BARS THAT INTERFERE WITH THE MODULAR EXPANSION JOINT BOXES MAY BE MECHANICALLY FIELD CUT OR BENT TO CLEAR THE SUPPORT BOXES. IF MECHANICAL FIELD CUTTING IS USED, CUT THE LONGITUDINAL REINFORCING ONLY AS MUCH AS NECESSARY TO CLEAR THE SUPPORT BOXES.

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SEALED ONLY FOR ITEMS DENOTED



PROJECT NO. U-2107BA
ONSLOW COUNTY
STATION: 277+50.00 -L-

SHEET 8 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
TYPICAL SECTION
DETAILS

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1	DFF	8/6/99	3			170
2			4			

ADD EXP. JOINT DETAIL, REBAR NOTES, & JT. OPENING TABLE

DRAWN BY: J. H. FANG DATE: 11/7/98
CHECKED BY: J. H. FANG DATE: 12/20/98

DRAWN BY : Ned M. Ruffin DATE : 11/29/96
CHECKED BY : TING H. FANG DATE : 1/21/97

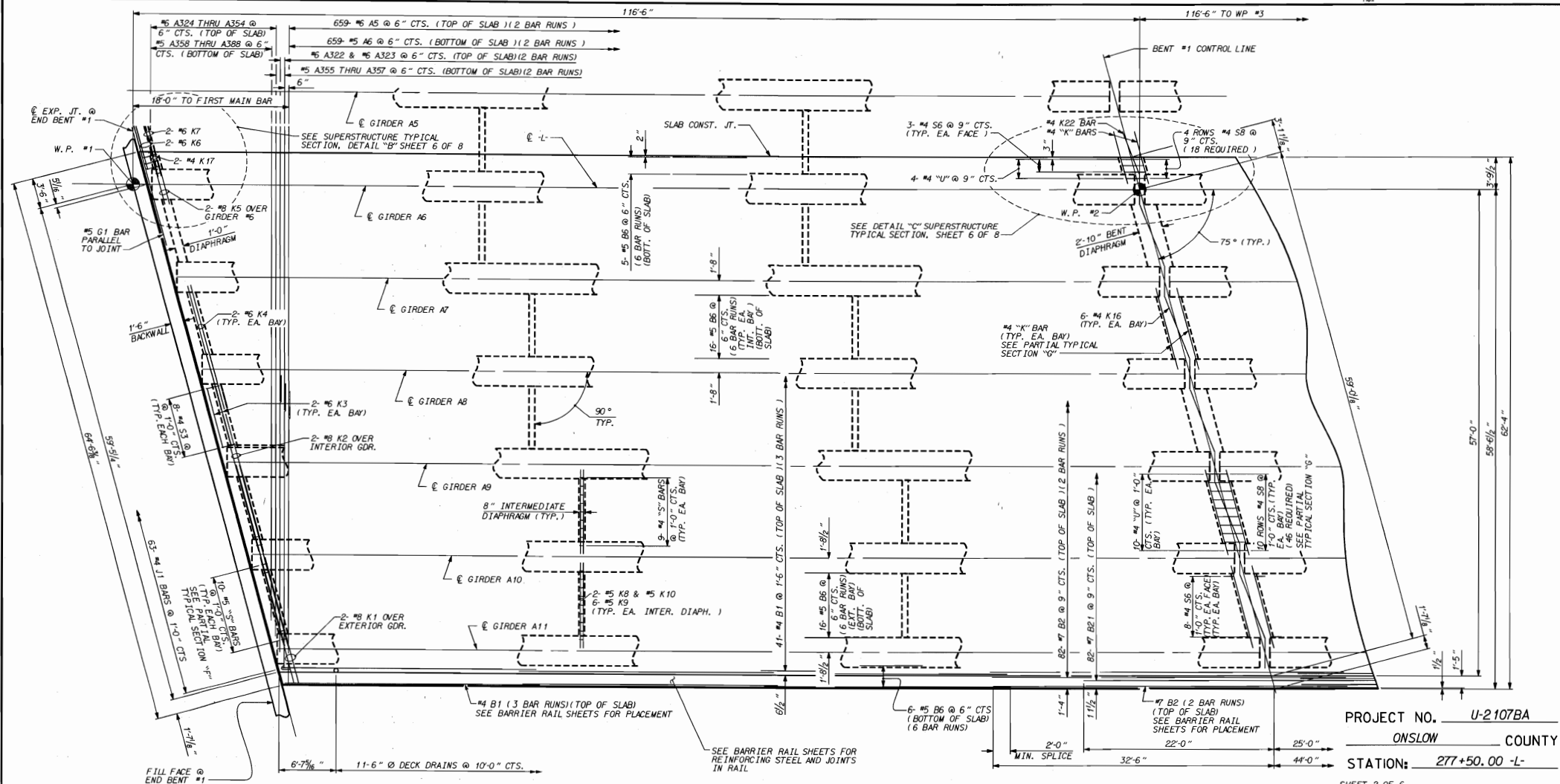
SPAN A

PROJECT NO. U-2107BA
ONslow COUNTY
 STATION: 277+50.00 -L-

SHEET 1 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
PLAN OF SPANS
FOR CONTINUOUS SPANS
A, B, AND C
LEFT SIDE

REVISIONS						SHEET NO. 5- 18
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 170
2			4			



SPAN A

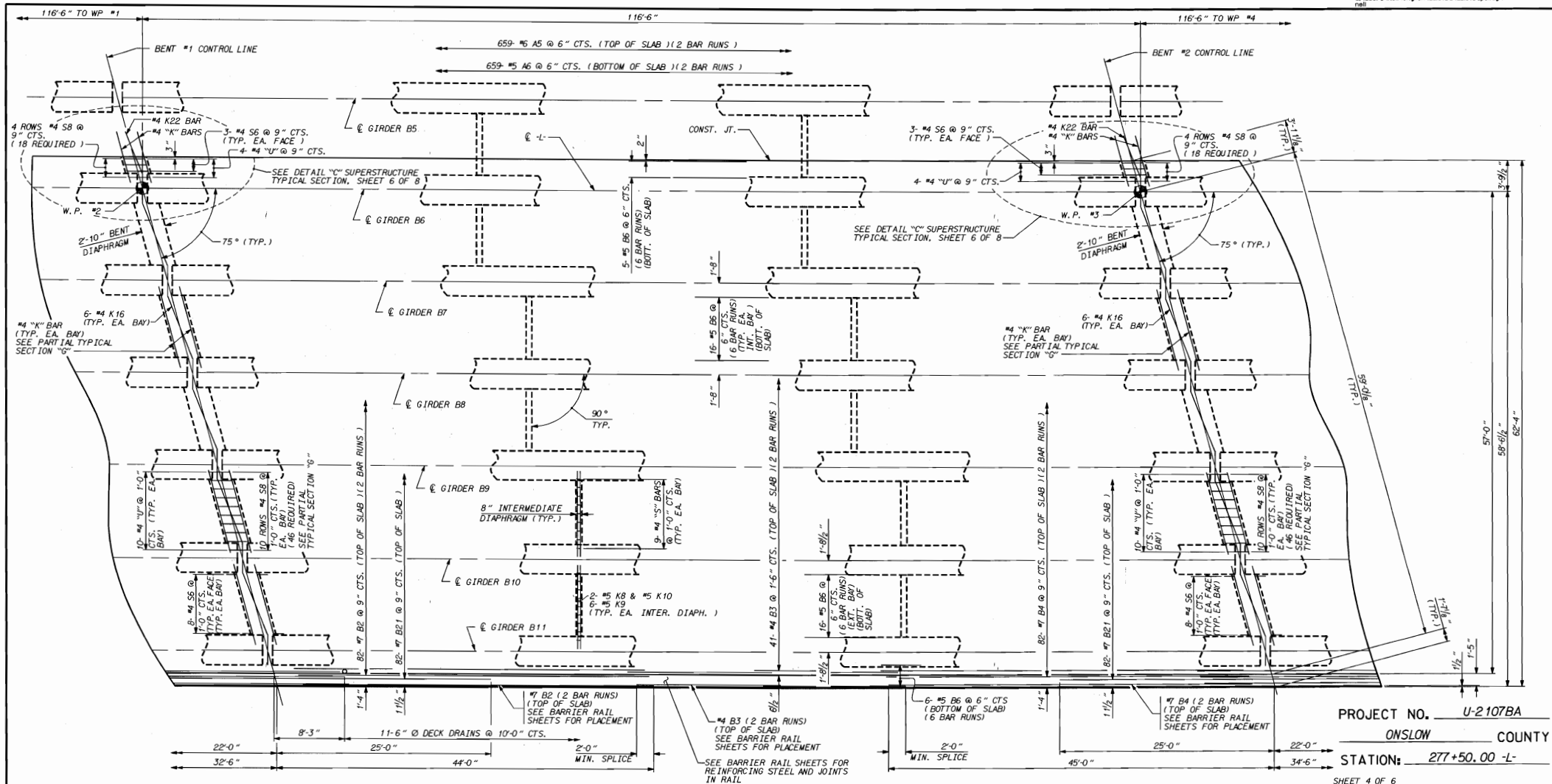
PROJECT NO. U-2107BA
 ONSLOW COUNTY
 STATION: 277+50.00 -L-

SHEET 2 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 SUPERSTRUCTURE
 PLAN OF SPANS
 FOR CONTINUOUS SPANS
 A, B, AND C
 RIGHT SIDE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			5-19
2			4			170

DRAWN BY: N.M.R. DATE: 11/29/96
 CHECKED BY: LING H. FANG DATE: 1/21/97



SPAN B

PROJECT NO. U-2107BA
 ONSLOW COUNTY
 STATION: 277+50.00 -L-

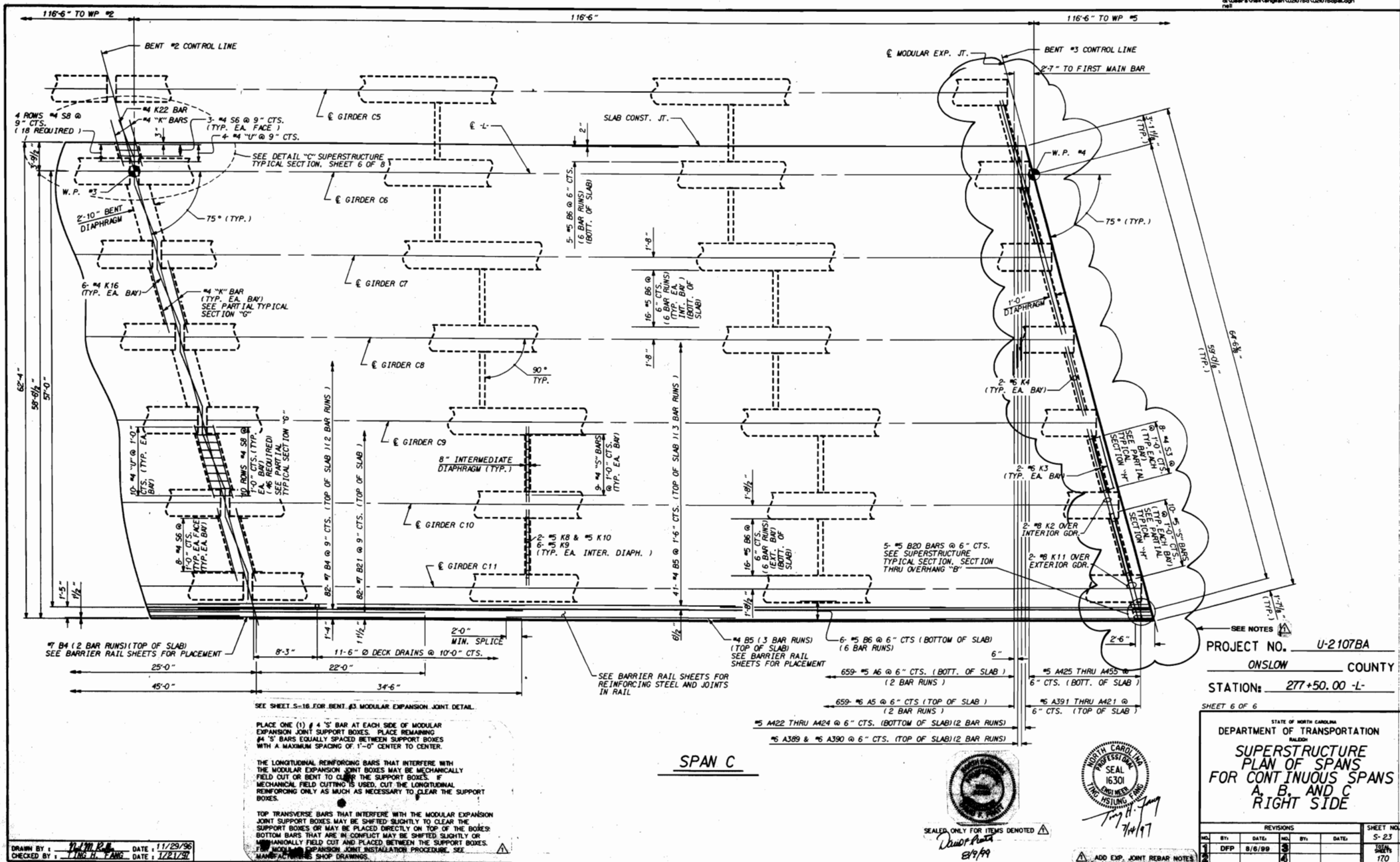
SHEET 4 OF 6

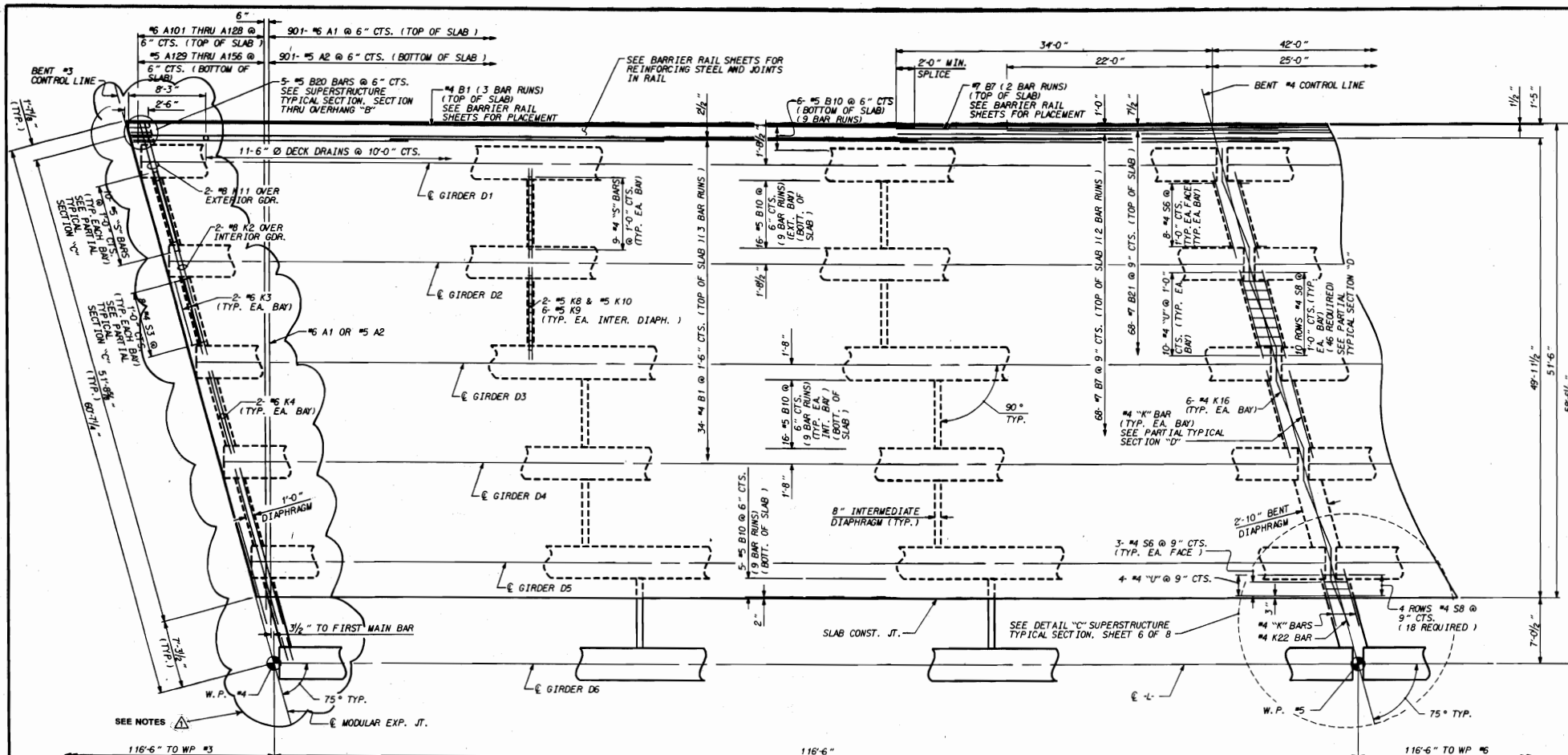


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
**SUPERSTRUCTURE
 PLAN OF SPANS
 FOR CONTINUOUS SPANS
 A, B, AND C
 RIGHT SIDE**

DRAWN BY: W.M. K. DATE: 11/29/96
 CHECKED BY: J.H. F. DATE: 12/21/97

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





SPAN D

SEE SHEET S-16 FOR BENT #3 MODULAR EXPANSION JOINT DETAIL.

PLACE ONE (1) #4 'S' BAR AT EACH SIDE OF MODULAR EXPANSION JOINT SUPPORT BOXES. PLACE REMAINING #4 'S' BARS EQUALLY SPACED BETWEEN SUPPORT BOXES WITH A MAXIMUM SPACING OF 1'-0" CENTER TO CENTER.

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DRAWN BY: W.M.R. DATE: 11/29/96
CHECKED BY: LINE H. FANG DATE: 1/21/97



SEALED ONLY FOR ITEMS DENOTED



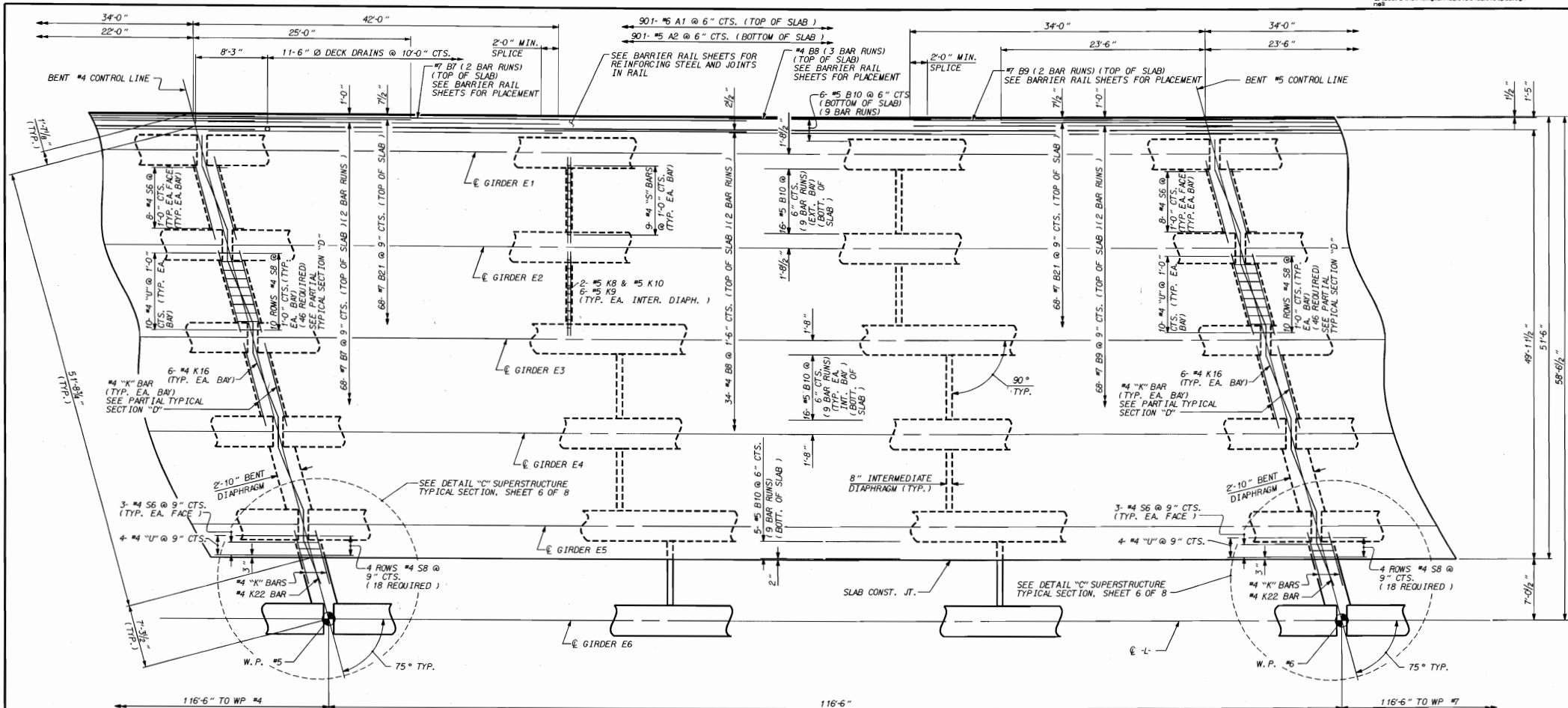
7/14/97

PROJECT NO. U-2107BA
ONSLow COUNTY
STATION: 277+50.00 -L-

SHEET 1 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RAILROAD
**SUPERSTRUCTURE
PLAN OF SPANS
FOR CONTINUOUS SPANS
D, E, F, AND G
LEFT SIDE**

REVISIONS				SHEET NO.	
NO.	BY	DATE	DESCRIPTION	1	2
1	DFP	8/8/99	ADD EXP. JOINT REBAR NOTES	170	170
2					



SPAN E

PROJECT NO. U-2 107BA

ONslow COUNTY

STATION: 277+50.00 -L-

SHEET 3 OF 8

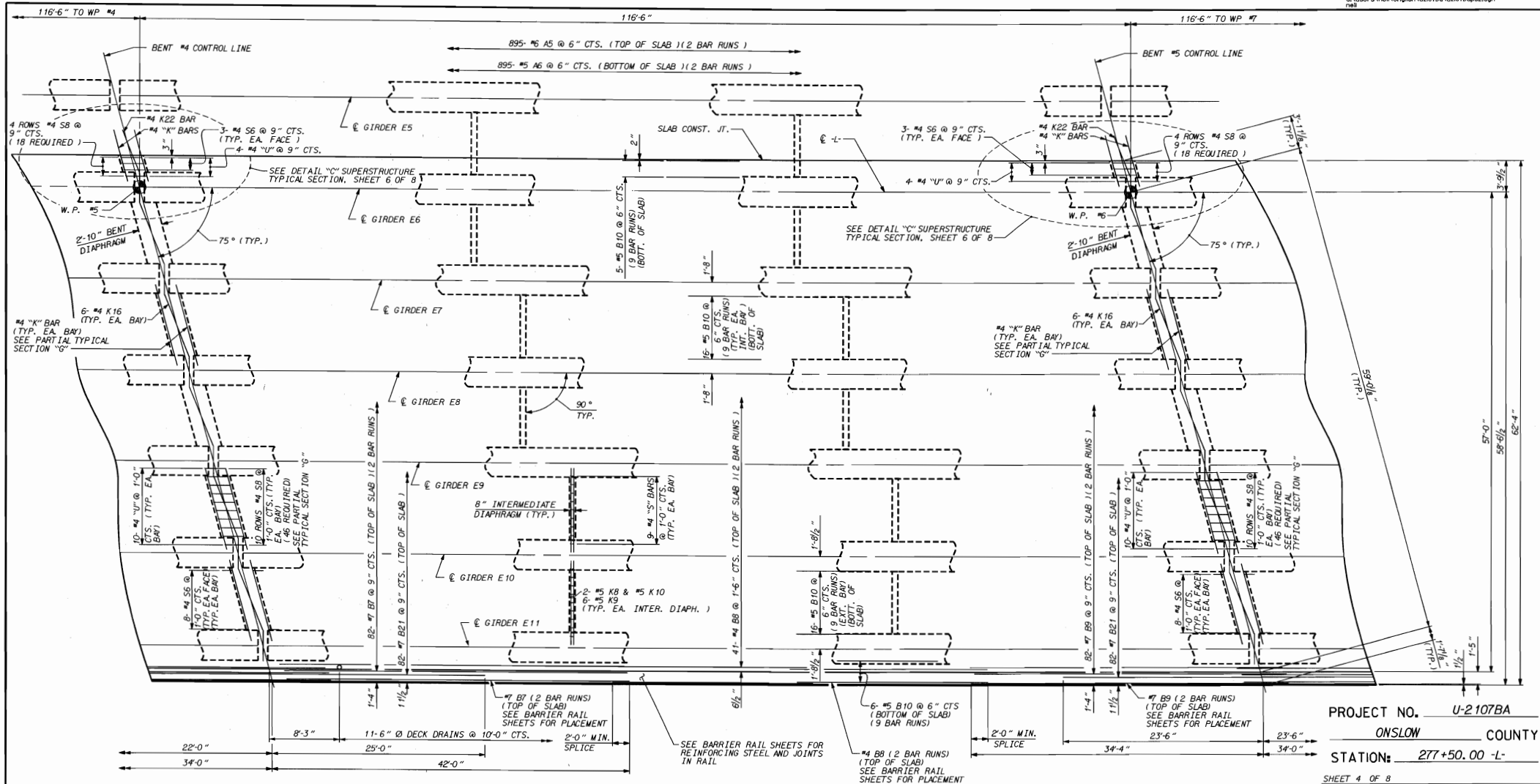
STATE OF NORTH CAROLINA

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

RALPH
SUPERSTRUCTURE
PLAN OF SPANS
FOR CONTINUOUS SPANS
D, E, F, AND G
LEFT SIDE

REVISIONS						SHEET NO. 5- 26
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 170
2			4			

DRAWN BY : Ned M. Ruffin DATE : 11/29/96
CHECKED BY : TING H. FANG DATE : 1/21/97



SPAN E

PROJECT NO. U-2107BA
 ONSLOW COUNTY
 STATION: 277+50.00 -L-

SHEET 4 OF 8



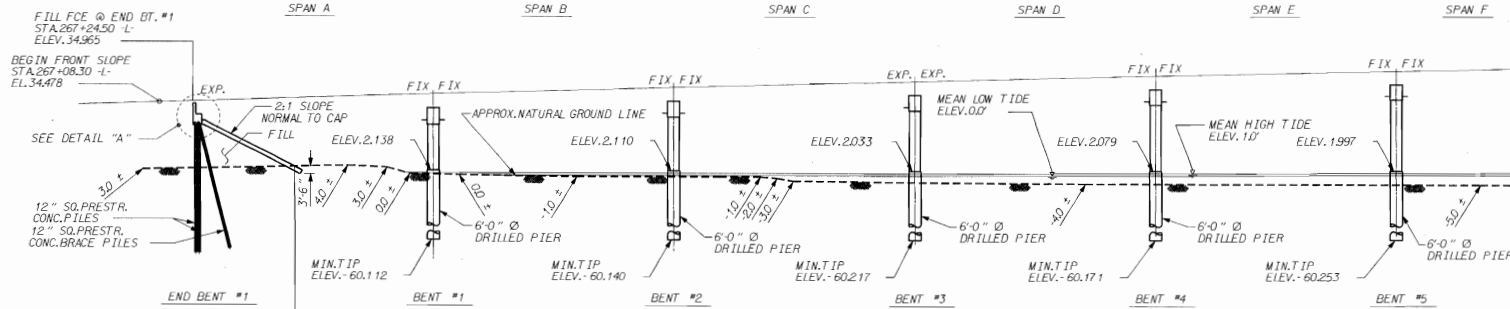
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PLAN OF SPANS
 FOR CONTINUOUS SPANS
 D, E, F, AND G
 RIGHT SIDE

DRAWN BY: *W.M. R...* DATE: 11/23/96
 CHECKED BY: *L.H. FANG* DATE: 1/21/97

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	5-27
1			3			TOTAL
2			4			170

267+00.00 267+50.00 268+00.00 268+50.00 269+00.00 269+50.00 270+00.00 270+50.00 271+00.00 271+50.00 272+00.00 272+50.00 273+00.00 273+50.00

F.A.PROJECT No.NHF-17(22)



EROSION AND SEDIMENT CONTROL MEASURES

Sta #	Description	Symbol
1630.05	Reforestation	XXXX
1630.05	Temporary Silt Ditch	---
1630.05	Temporary Diversion	---
1630.01	Temporary Silt Fence	---
1632.01	Temporary Berms and Slope Drains	---
1630.01	Silt Basin Type A	---
1630.02	Silt Basin Type B	---
1633.01	Temporary Rock Silt Check Type-A	---
1633.02	Temporary Rock Silt Check Type-B	---
1634.01	Temporary Rock Sediment Dam Type-A	---
1634.02	Temporary Rock Sediment Dam Type-B	---
1635.01	Rock Pipe Inlet Sediment Trap Type-A	---
1635.02	Rock Pipe Inlet Sediment Trap Type-B	---
1636.01	Rock Silt Screen	---
1630.04	Stilling Basin	---
1632.01	Rock Inlet Sediment Trap	---
1632.02	Type A	A OR A)
1632.02	Type B	B OR B)
1632.03	Type C	C OR C)

HIGH QUALITY WATER(S) EXIST ON THIS PROJECT
High Quality Water Zone(s) Exist
Refer To R.C. Special Provisions for Special Considerations.

Roadway Standard Drawings
The following roadway engineering standards as appear in "Roadway Standard Drawings", Roadway Design Unit - N.C. Department of Transportation - Raleigh, N.C., dated July 18, 1995 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

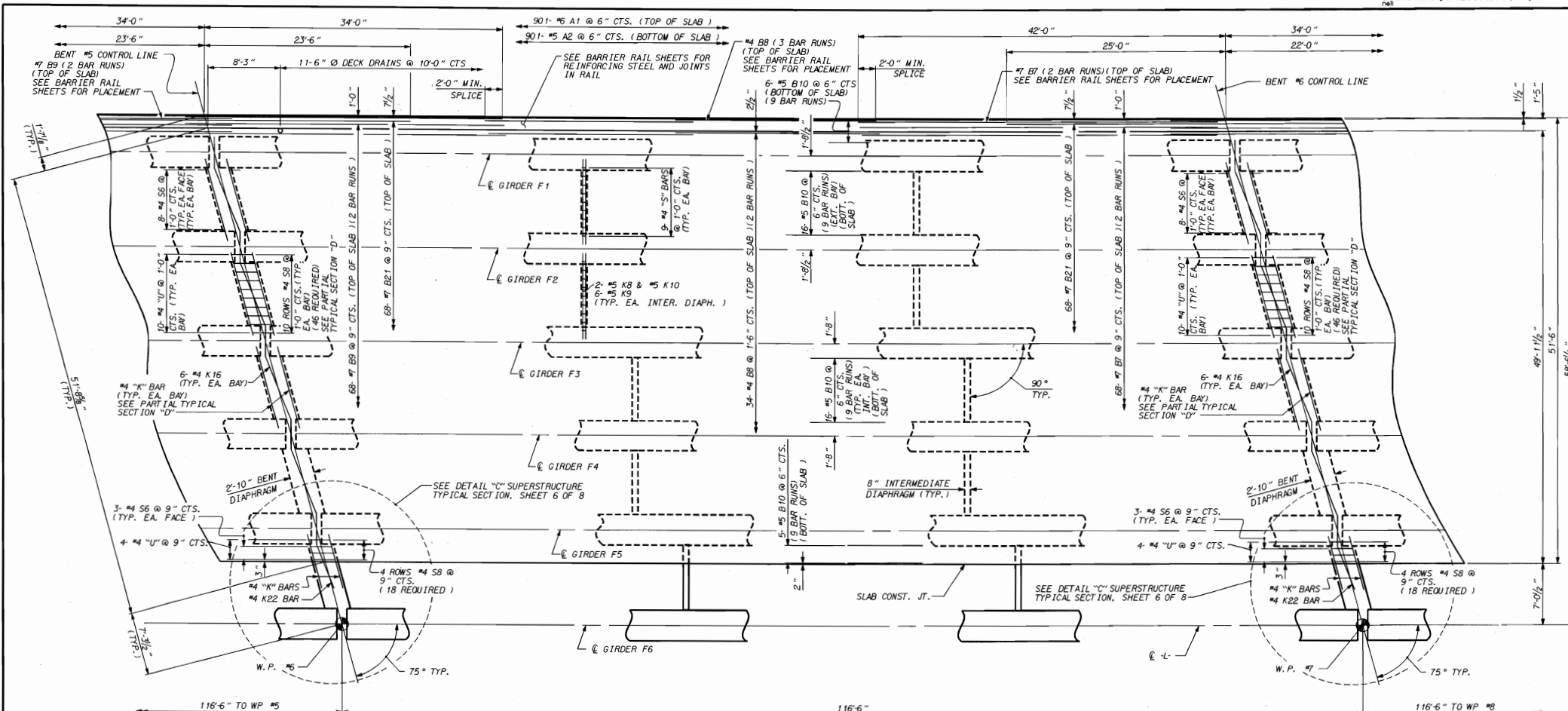
1635.01 Temporary Silt Fence
1633.01 Temporary Rock Silt Check Type A

PROJECT NO. U-2107BA
ONSLow COUNTY

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
EROSION CONTROL PLANS
FOR U-2107BA

REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	EC-1	
1			2			TOTAL SHEETS	
2			3				

STR. #1



SPAN F

PROJECT NO. U-2107BA

ON SLOW COUNTY

STATION: 277+50.00 -L-

SHEET 5 OF 8

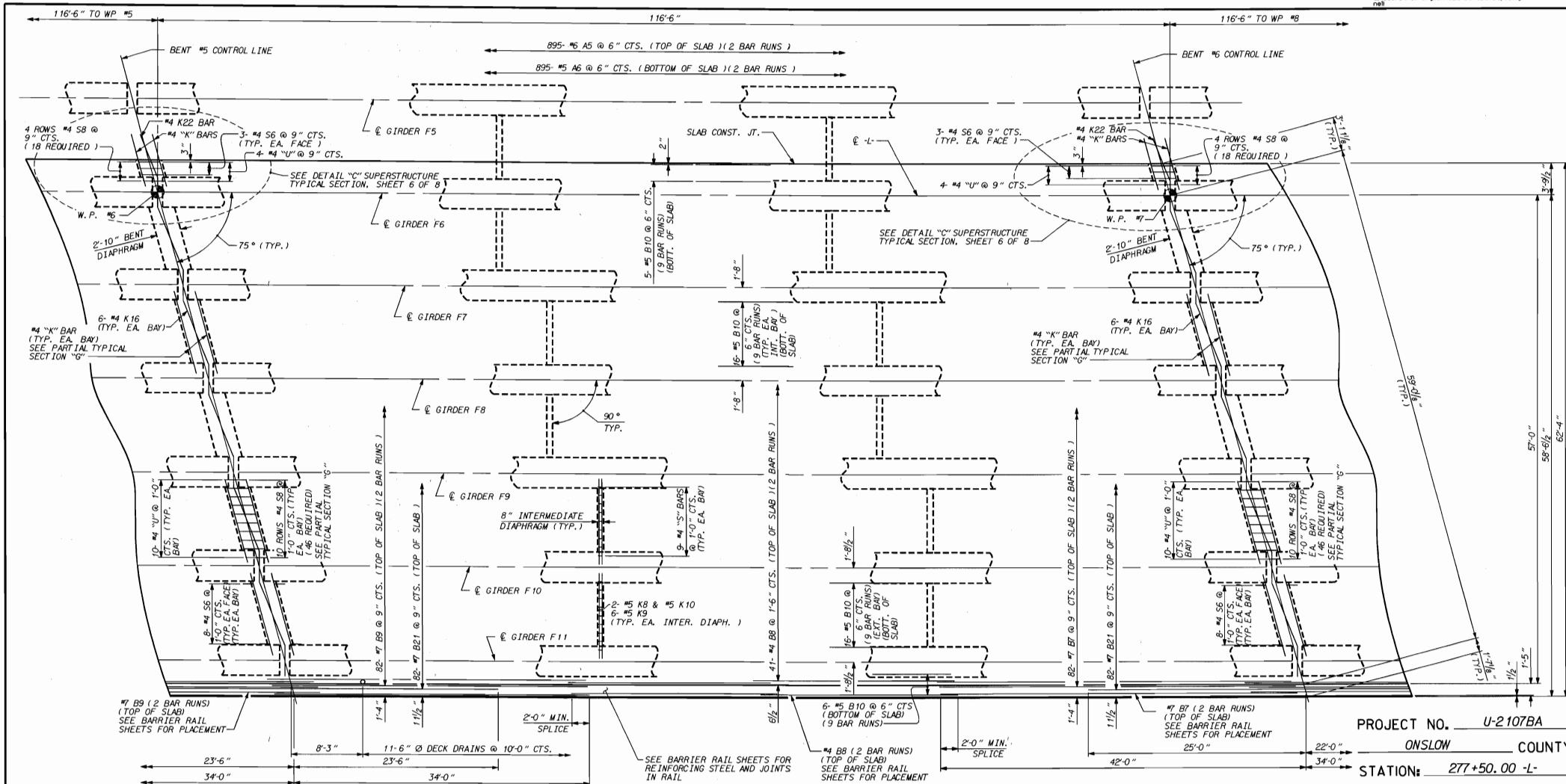
STATE OF NORTH CAROLINA

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

RALPH
SUPERSTRUCTURE
PLAN OF SPANS
FOR CONTINUOUS SPANS
D, E, F, AND G
LEFT SIDE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			5-28 TOTAL SHEETS 170
2			4			

DRAWN BY : N. M. Ruffin DATE : 11/29/96
CHECKED BY : TING H. FANG DATE : 1/21/97



SPAN F

PROJECT NO. U-2107BA
 ONSLOW COUNTY
 STATION: 277+50.00 -L-

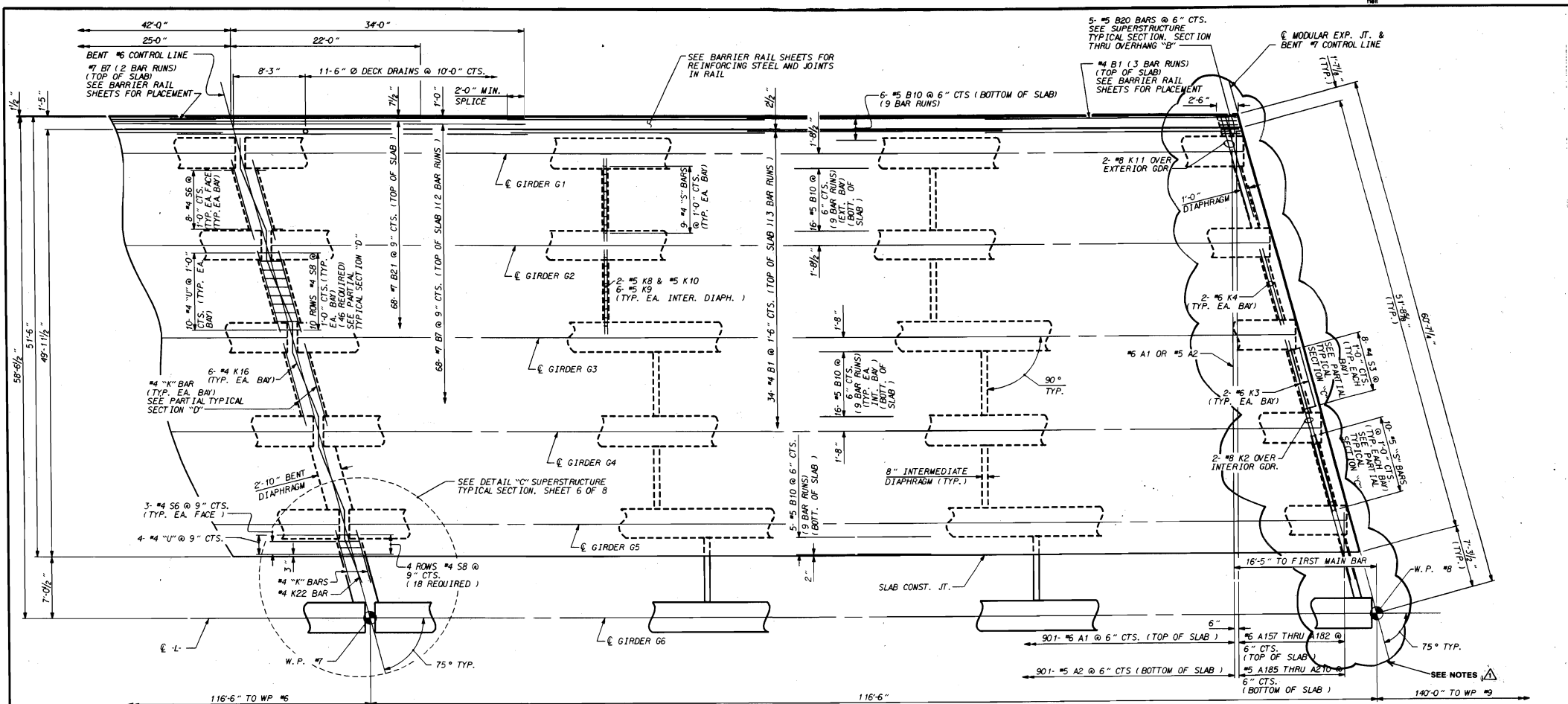
SHEET 6 OF 8

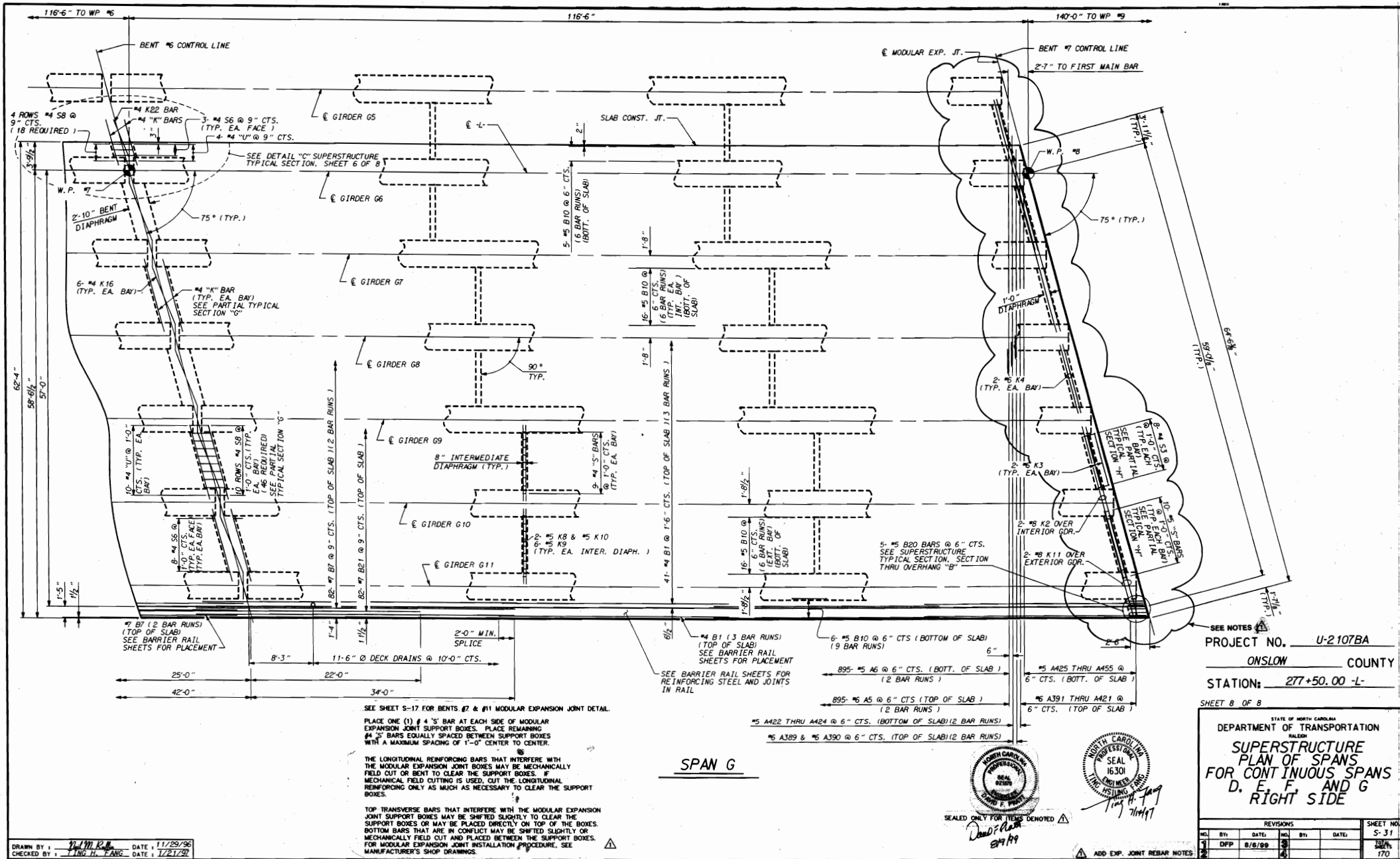


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 SUPERSTRUCTURE
 PLAN OF SPANS
 FOR CONTINUOUS SPANS
 D, E, F, AND G
 RIGHT SIDE

DRAWN BY: T.H. FANG DATE: 11/29/96
 CHECKED BY: T.H. FANG DATE: 1/21/97

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
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2			4			170



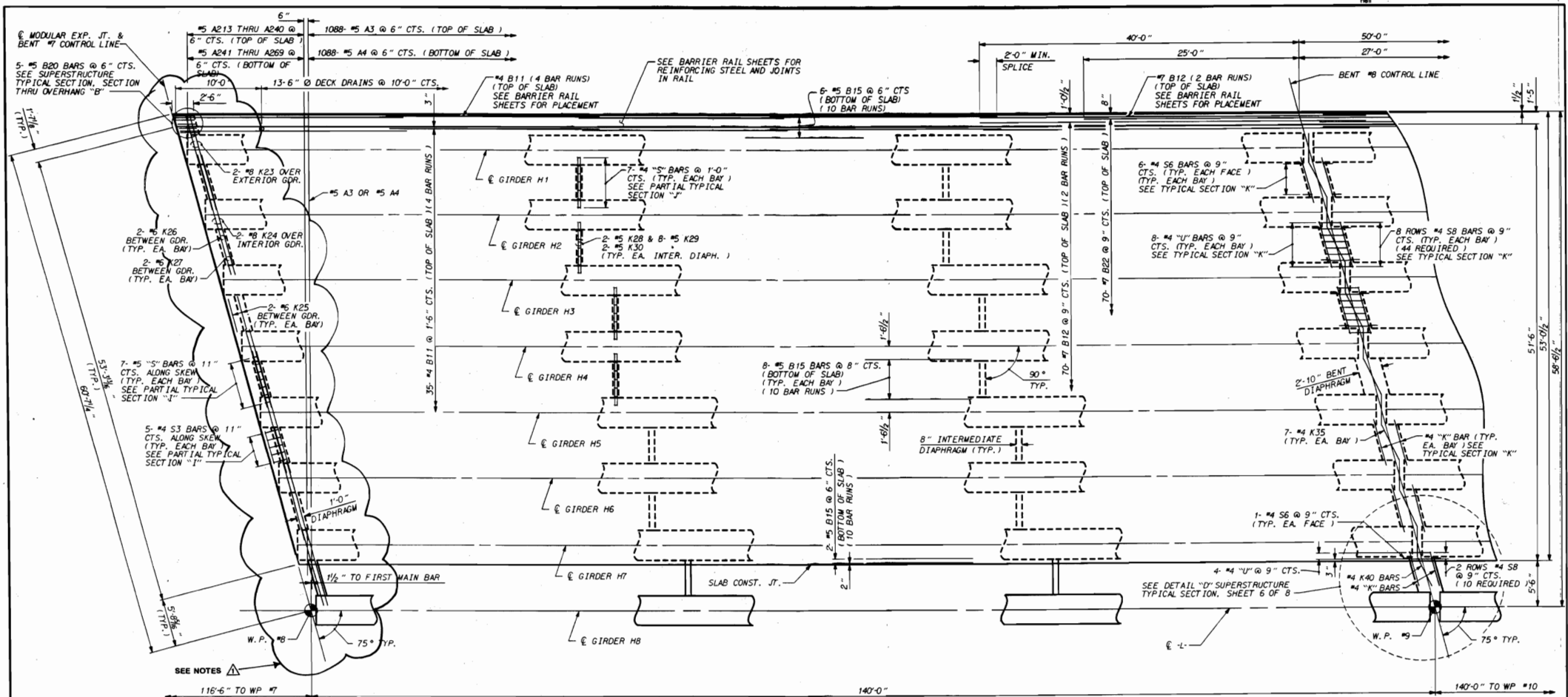


PROJECT NO. U-2107BA
ON SLOW COUNTY
 STATION: 277+50.00 -L-

SHEET 8 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
PLAN OF SPANS
FOR CONTINUOUS SPANS
D, E, F, AND G
RIGHT SIDE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	DFP	8/8/99	3			S-31
2			4			TOTAL SHEETS
						170



SEE SHEET S-17 FOR BENTS #7 & #11 MODULAR EXPANSION JOINT DETAIL.

PLACE ONE (1) #4 "S" BAR AT EACH SIDE OF MODULAR EXPANSION JOINT SUPPORT BOXES. PLACE REMAINING #4 "S" BARS EQUALLY SPACED BETWEEN SUPPORT BOXES WITH A MAXIMUM SPACING OF 1'-0" CENTER TO CENTER.

THE LONGITUDINAL REINFORCING BARS THAT INTERFERE WITH THE MODULAR EXPANSION JOINT SUPPORT BOXES MAY BE MECHANICALLY FIELD CUT OR BENT TO CLEAR THE SUPPORT BOXES. IF MECHANICAL FIELD CUTTING IS USED, CUT THE LONGITUDINAL REINFORCING ONLY AS MUCH AS NECESSARY TO CLEAR THE SUPPORT BOXES.

TOP TRANSVERSE BARS THAT INTERFERE WITH THE MODULAR EXPANSION JOINT SUPPORT BOXES MAY BE SHIFTED SLIGHTLY TO CLEAR THE SUPPORT BOXES OR MAY BE PLACED DIRECTLY ON TOP OF THE BOXES. BOTTOM BARS THAT ARE IN CONFLICT MAY BE SHIFTED SLIGHTLY OR MECHANICALLY FIELD CUT AND PLACED BETWEEN THE SUPPORT BOXES. FOR MODULAR EXPANSION JOINT INSTALLATION PROCEDURE, SEE MANUFACTURER'S SHOP DRAWINGS.

SPAN H

DRAWN BY: W.M.R. DATE: 11/29/96
CHECKED BY: LING H. FANG DATE: 1/21/97



SEALED ONLY FOR ITEMS DENOTED

David R. Rouse
8/9/97



Ling H. Fang
7/14/97

PROJECT NO. U-2107BA

ONSLON COUNTY

STATION: 277+50.00 -L-

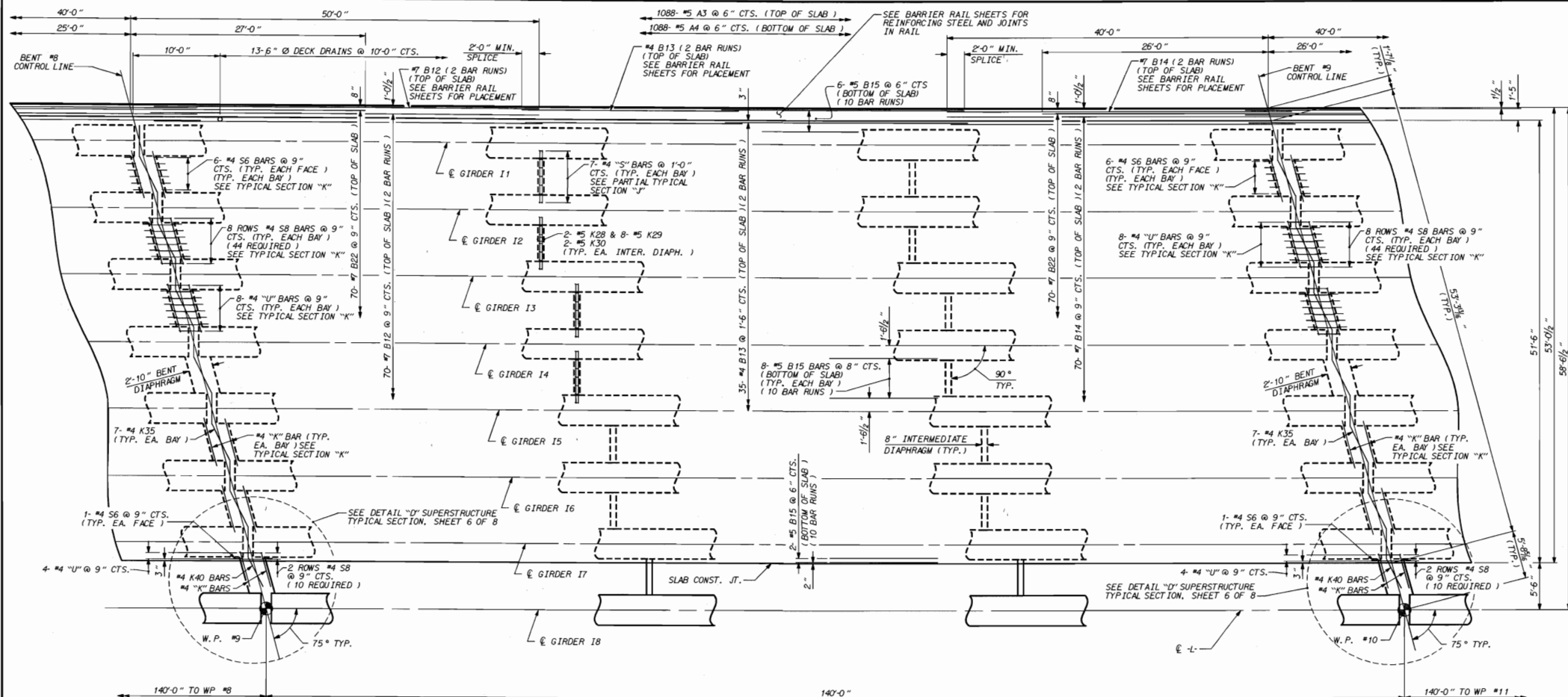
SHEET 1 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

RALPH
**SUPERSTRUCTURE
PLAN OF SPANS
FOR CONTINUOUS SPANS
H, I, J, AND K
LEFT SIDE**

REVISIONS				SHEET NO.	
NO.	BY	DATE	DESCRIPTION	32	5
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2				4	

ADD EXP. JOINT REBAR NOTES



SPAN I

PROJECT NO. U-2107BA

ONSLAW COUNTY

STATION: 277+50.00 -L-

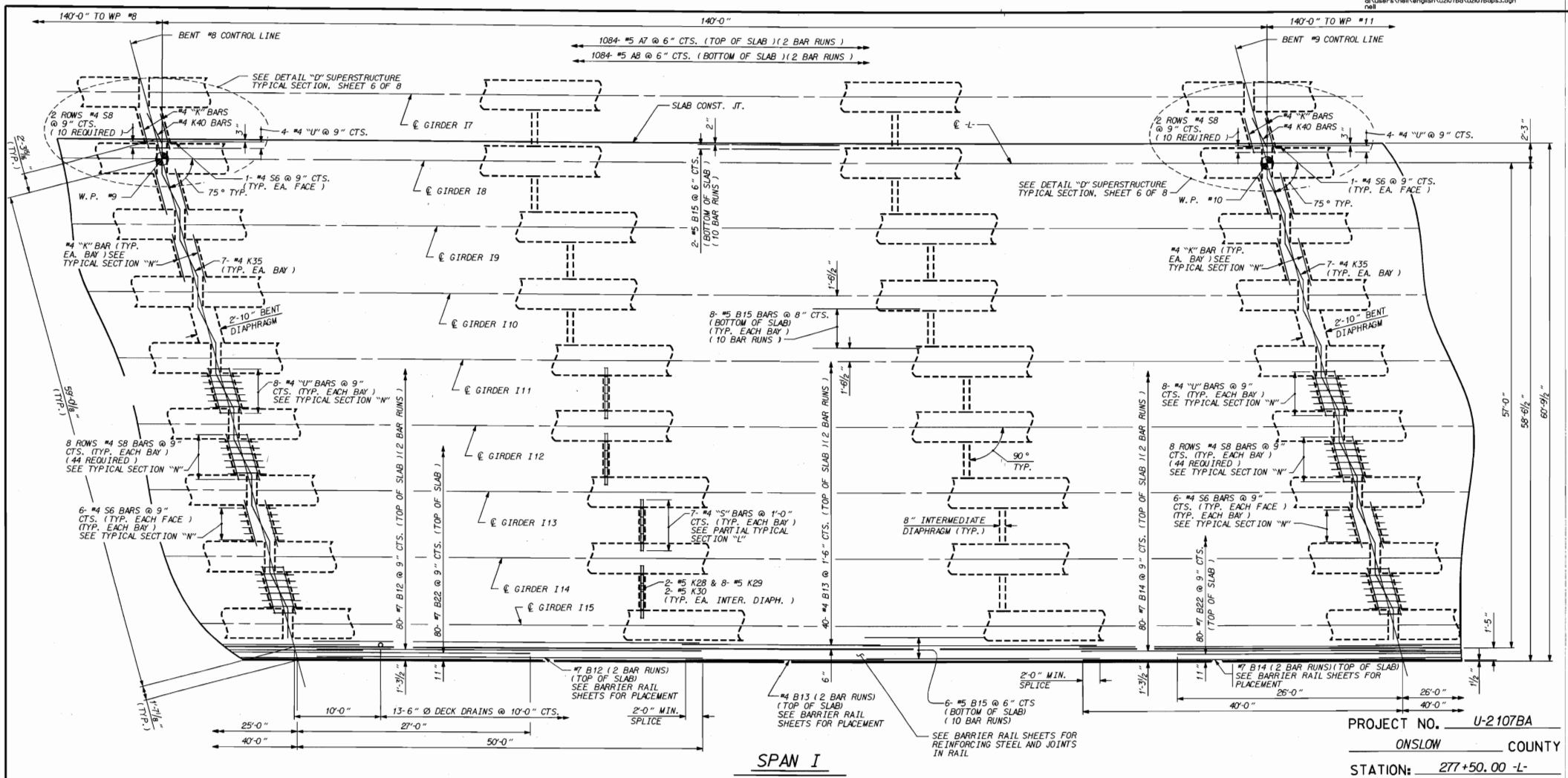
SHEET 3 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
**SUPERSTRUCTURE
PLAN OF SPANS
FOR CONTINUOUS SPANS
H, I, J, AND K
LEFT SIDE**



DRAWN BY: T.M. R. DATE: 11/29/96
CHECKED BY: TING H. FANG DATE: 1/21/97

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
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2			3			170



PROJECT NO. U-2107BA
 ONSLOW COUNTY
 STATION: 277+50.00 -L-

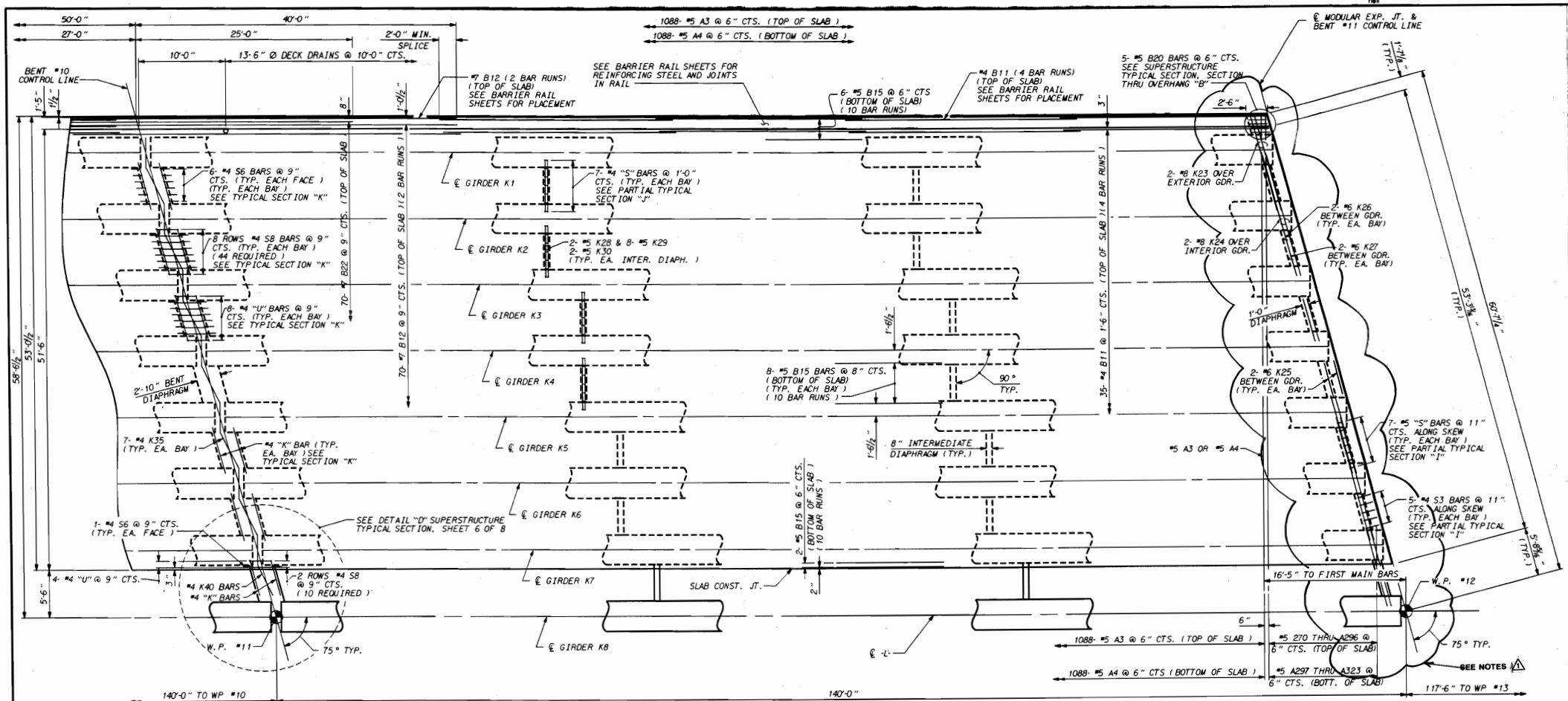
SHEET 4 OF 8

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 PLAN OF SPANS
 FOR CONTINUOUS SPANS
 H, I, J, AND K
 RIGHT SIDE**

REVISIONS						SHEET NO.	
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DRAWN BY: W.M.R. DATE: 11/29/96
 CHECKED BY: ING. H. FANG DATE: 1/21/97



SEE SHEET S-17 FOR BENTS #7 & #11 MODULAR EXPANSION JOINT DETAIL.

PLACE ONE (1) #4 'S' BAR AT EACH SIDE OF MODULAR EXPANSION JOINT SUPPORT BOXES. PLACE REMAINING #4 'S' BARS EQUALLY SPACED BETWEEN SUPPORT BOXES WITH A MAXIMUM SPACING OF 1'-0\"

THE LONGITUDINAL REINFORCING BARS THAT INTERFERE WITH THE MODULAR EXPANSION JOINT BOXES MAY BE MECHANICALLY FIELD CUT OR BENT TO CLEAR THE SUPPORT BOXES. IF MECHANICAL FIELD CUTTING IS USED, CUT THE LONGITUDINAL REINFORCING ONLY AS MUCH AS NECESSARY TO CLEAR THE SUPPORT BOXES.

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SPAN K

DRAWN BY: W.M. R. DATE: 11/29/96
CHECKED BY: T.H. FANG DATE: 1/21/97



SEALED ONLY FOR ITEMS DENOTED
3/9/99



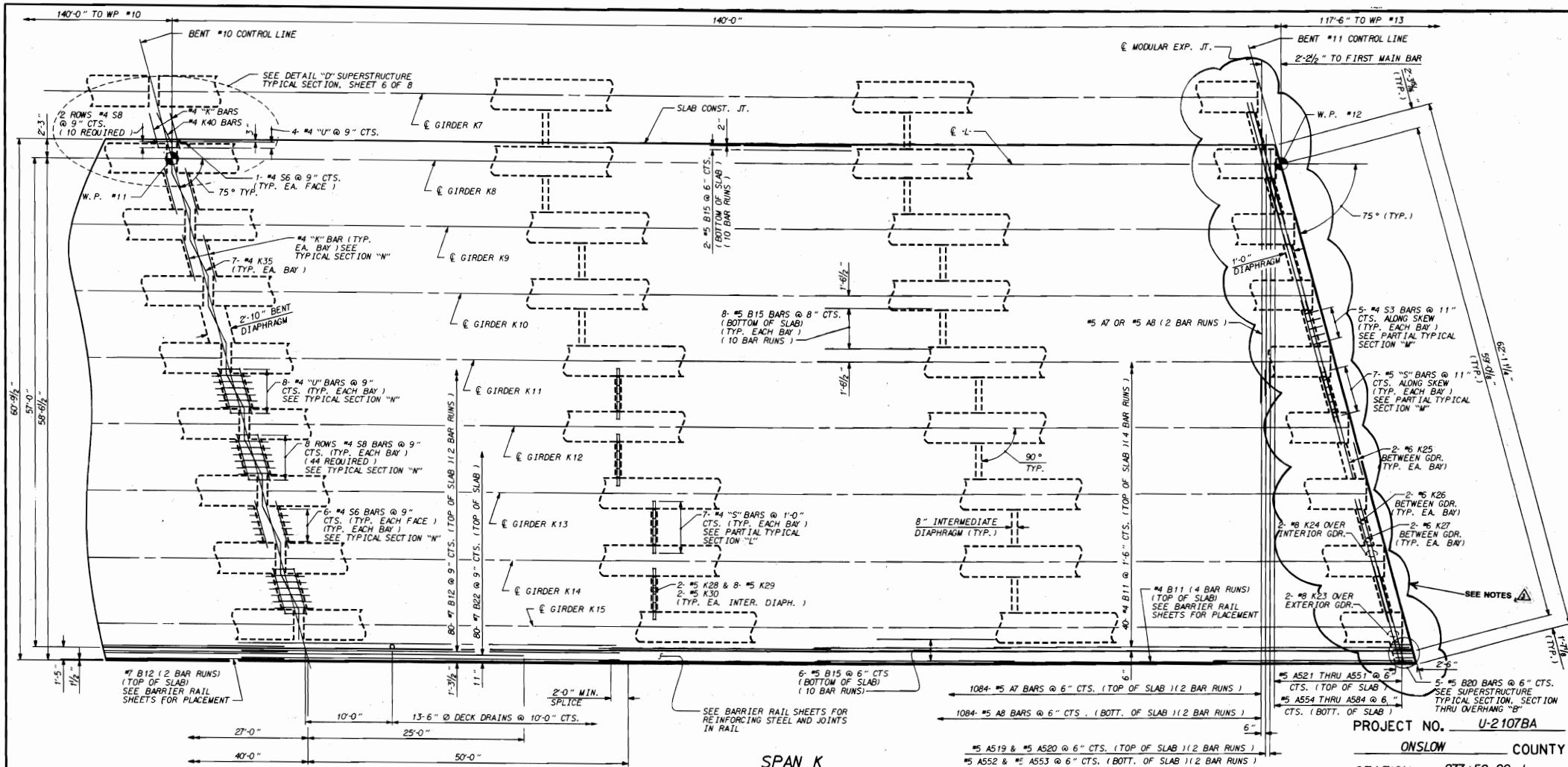
7/14/97

PROJECT NO. U-2107BA
ON NSLOW COUNTY
STATION: 277+50.00 -L-
SHEET 7 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RAILROAD
SUPERSTRUCTURE
PLAN OF SPANS
FOR CONTINUOUS SPANS
H, I, J, AND K
LEFT SIDE

REVISIONS				SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE
1	DFP	8/6/99	3		
2			4		

ADD EXP. JOINT REBAR NOTES



SPAN K

SEE SHEET S-17 FOR BENTS #7 & #11 MODULAR EXPANSION JOINT DETAIL

PLACE ONE (1) #4 \"S\" BAR AT EACH SIDE OF MODULAR EXPANSION JOINT SUPPORT BOXES. PLACE REMAINING #4 \"S\" BARS EQUALLY SPACED BETWEEN SUPPORT BOXES WITH A MAXIMUM SPACING OF 1'-0\" CENTER TO CENTER.

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DRAWN BY: Y. M. E. A. DATE: 11/29/96
CHECKED BY: Y. M. E. A. DATE: 12/21/97



SEALED ONLY FOR ITEMS INDICATED
8/9/99



7/14/97

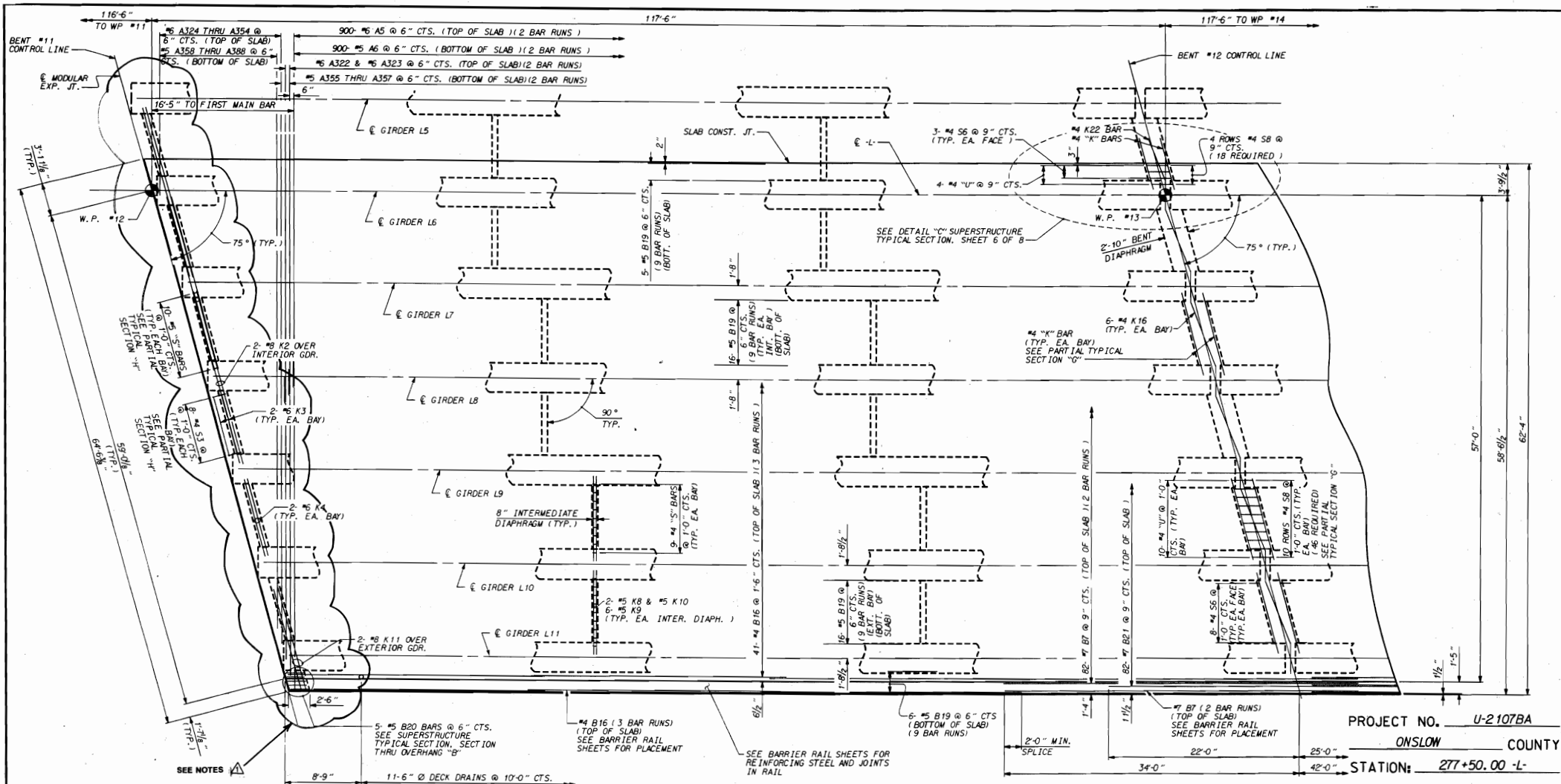
PROJECT NO. U-2107BA
ONSLow COUNTY
STATION: 277+50.00 -L-

SHEET 8 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RAILROAD
SUPERSTRUCTURE
PLAN OF SPANS
FOR CONTINUOUS SPANS
H, I, J, AND K
RIGHT SIDE

REVISIONS				SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE
1	DFP	8/8/99	3		
2			4		

ADD EXP. JOINT REBAR NOTES



SPAN L

PROJECT NO. U-2107BA
ONSLow COUNTY
STATION: 277+50.00 -L-

SHEET 2 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RAILROAD
SUPERSTRUCTURE
PLAN OF SPANS
FOR CONTINUOUS SPANS
L, M, N, AND O
RIGHT SIDE

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
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DRAWN BY: *LMR* DATE: 11/29/96
CHECKED BY: *ING. H. FANG* DATE: 1/21/97

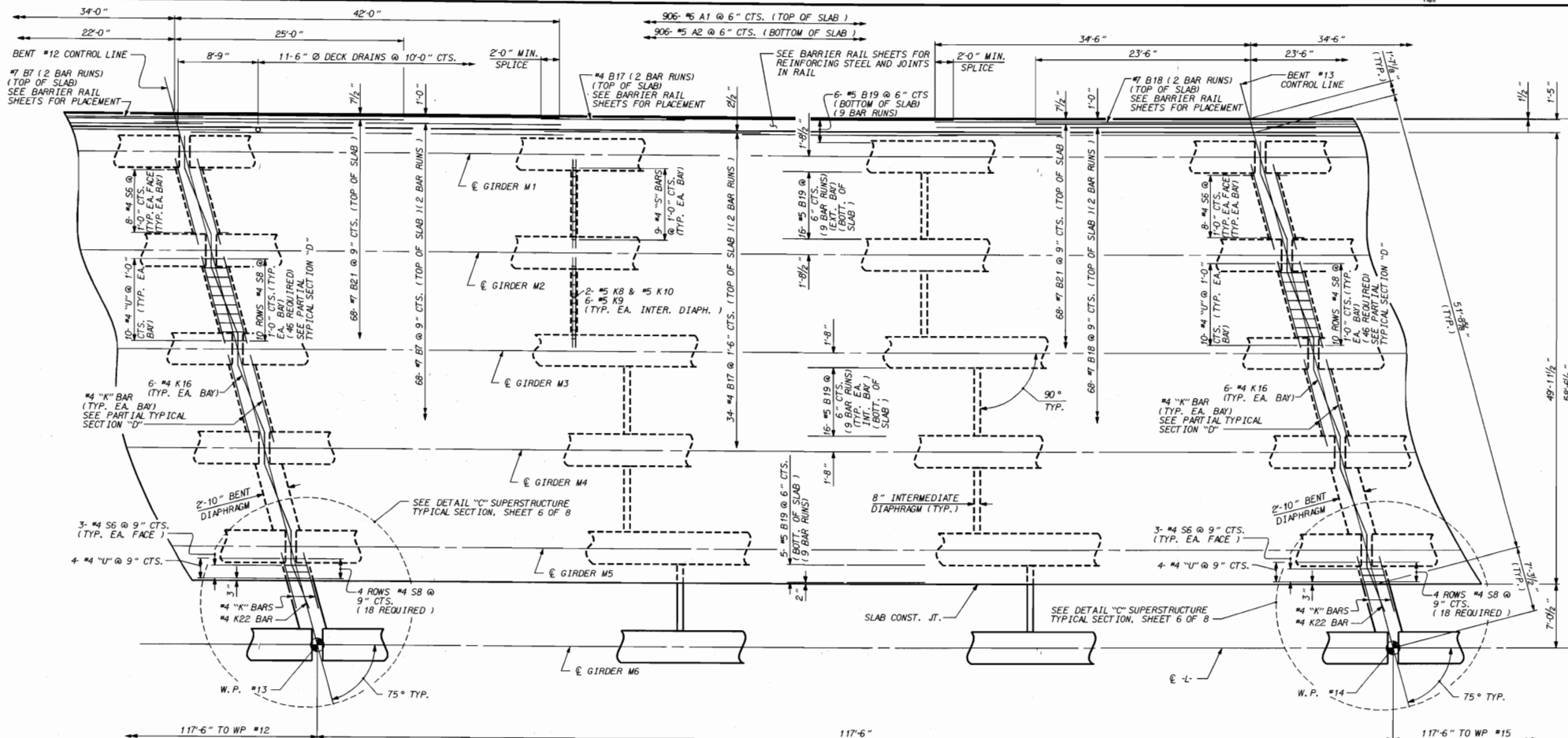
* TOP TRANSVERSE BARS THAT INTERFERE WITH THE MODULAR EXPANSION JOINT SUPPORT BOXES MAY BE SHIFTED SLIGHTLY TO CLEAR THE SUPPORT BOXES OR MAY BE PLACED DIRECTLY ON TOP OF THE BOXES. BOTTOM BARS THAT ARE IN CONFLICT MAY BE SHIFTED SLIGHTLY OR MECHANICALLY FIELD CUT AND PLACED BETWEEN THE SUPPORT BOXES. FOR MODULAR EXPANSION JOINT INSTALLATION PROCEDURE, SEE MANUFACTURER'S SHOP DRAWINGS.



SEALED ONLY FOR ITEMS INDICATED
David P. Pugh
8/8/99

10/11/97

ADD EXP. JOINT REBAR NOTES



SPAN M

PROJECT NO. U-2 107BA

ON SLOW COUNTY

STATION: 277+50.00 -L-

SHEET 3 OF 8

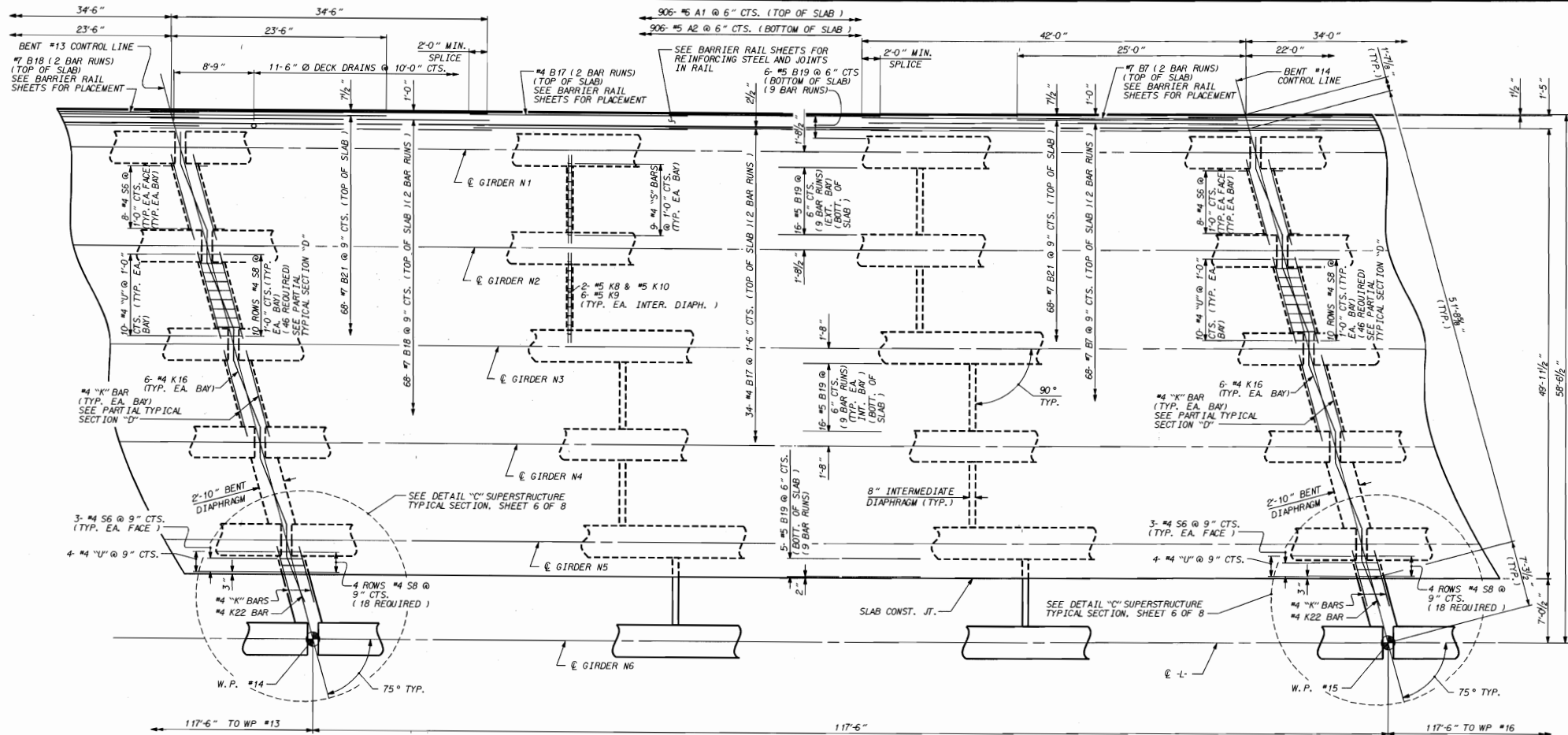


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
PLAN OF SPANS
FOR CONTINUOUS SPAN
L, M, N, AND O
LEFT SIDE

REVISIONS						SHEET NO. 5-42
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2			4			

DRAWN BY : Ned M. Ruffin DATE : 11/29/96
CHECKED BY : TING H. FANG DATE : 1/21/97

REVISIONS						SHEET NO. 5-43
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SPAN N

PROJECT NO. U-2107BA
 ONSLOW COUNTY
 STATION: 277+50.00 -L-

SHEET 5 OF 8

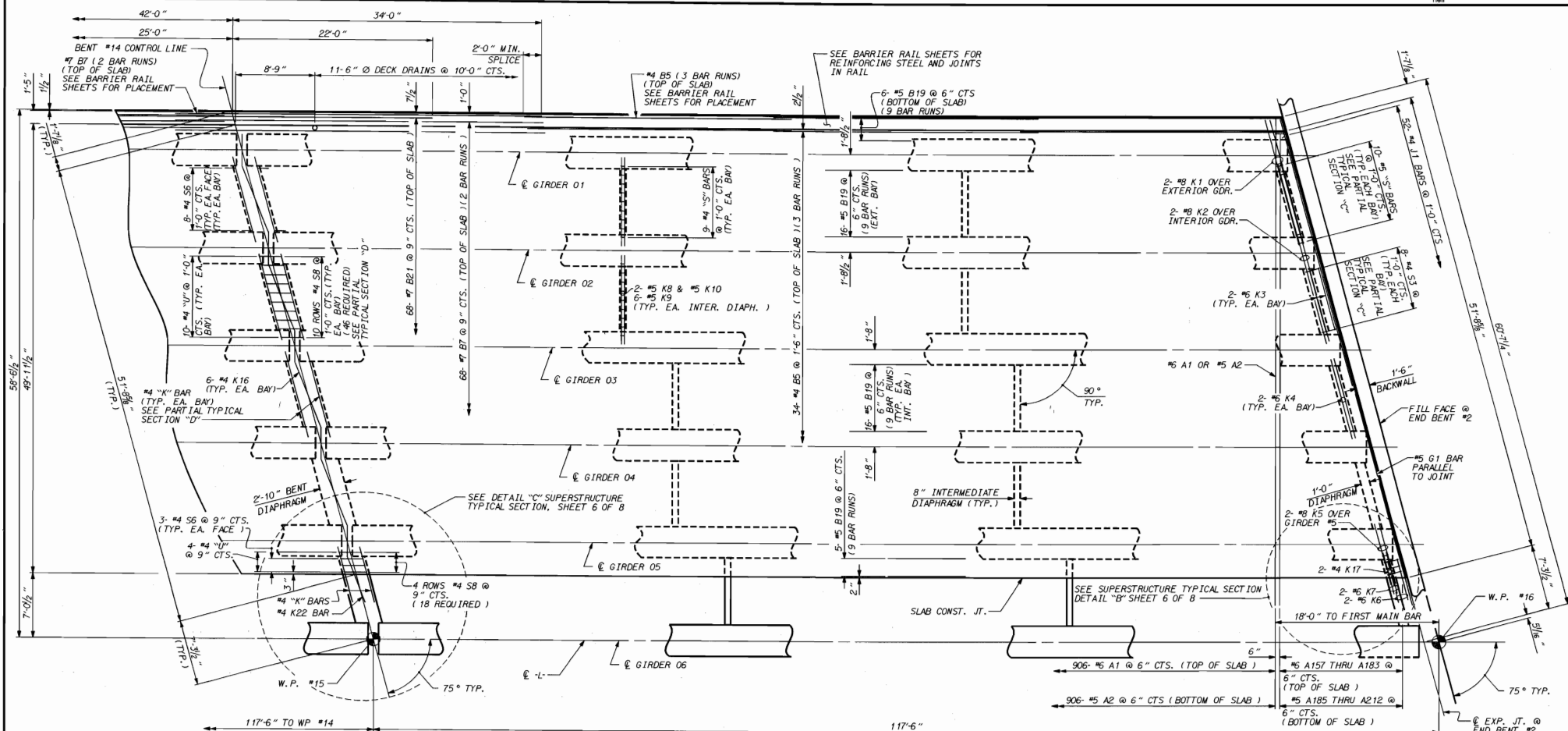


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALPH
 SUPERSTRUCTURE
 PLAN OF SPANS
 FOR CONTINUOUS SPANS
 L. M. N. AND O
 LEFT SIDE

DRAWN BY: 11-111-111 DATE: 11/29/96
 CHECKED BY: 11-111-111 DATE: 12/21/97

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
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2			4			170

REVISIONS						SHEET NO. S- 45
NO.	BY:	DATE:	NO.	BY:	DATE:	
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2			4			



SPAN 0

PROJECT NO. U-2107BA
ONslow COUNTY
 STATION: 277+50.00 -L-

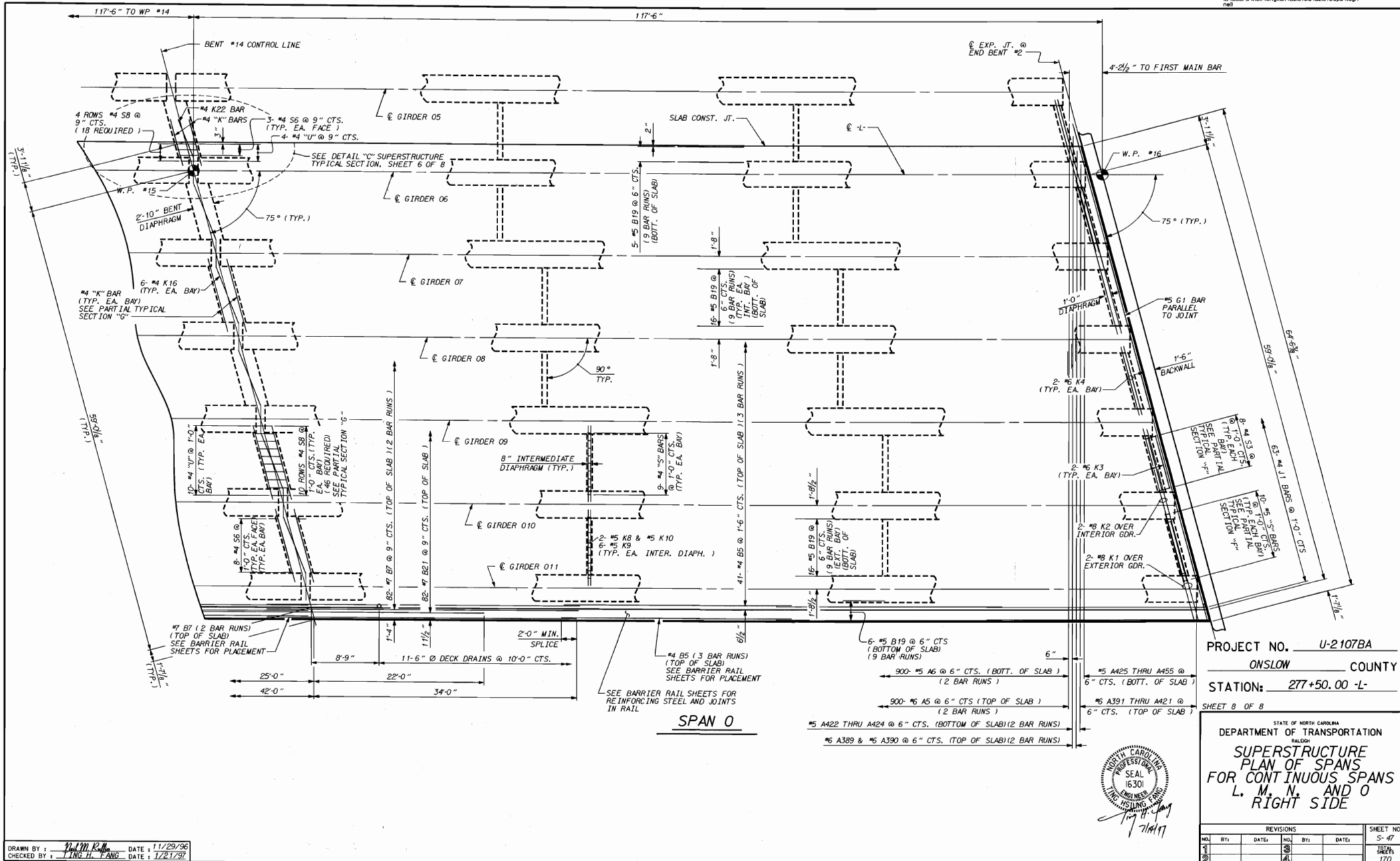
SHEET 7 OF 8



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
PLAN OF SPANS
FOR CONTINUOUS SPANS
L, M, N, AND O
LEFT SIDE

REVISIONS						SHEET NO. 5-46
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DRAWN BY : Neil M. Ruffin DATE : 11/29/96
CHECKED BY : TING H. FANG DATE : 1/21/97



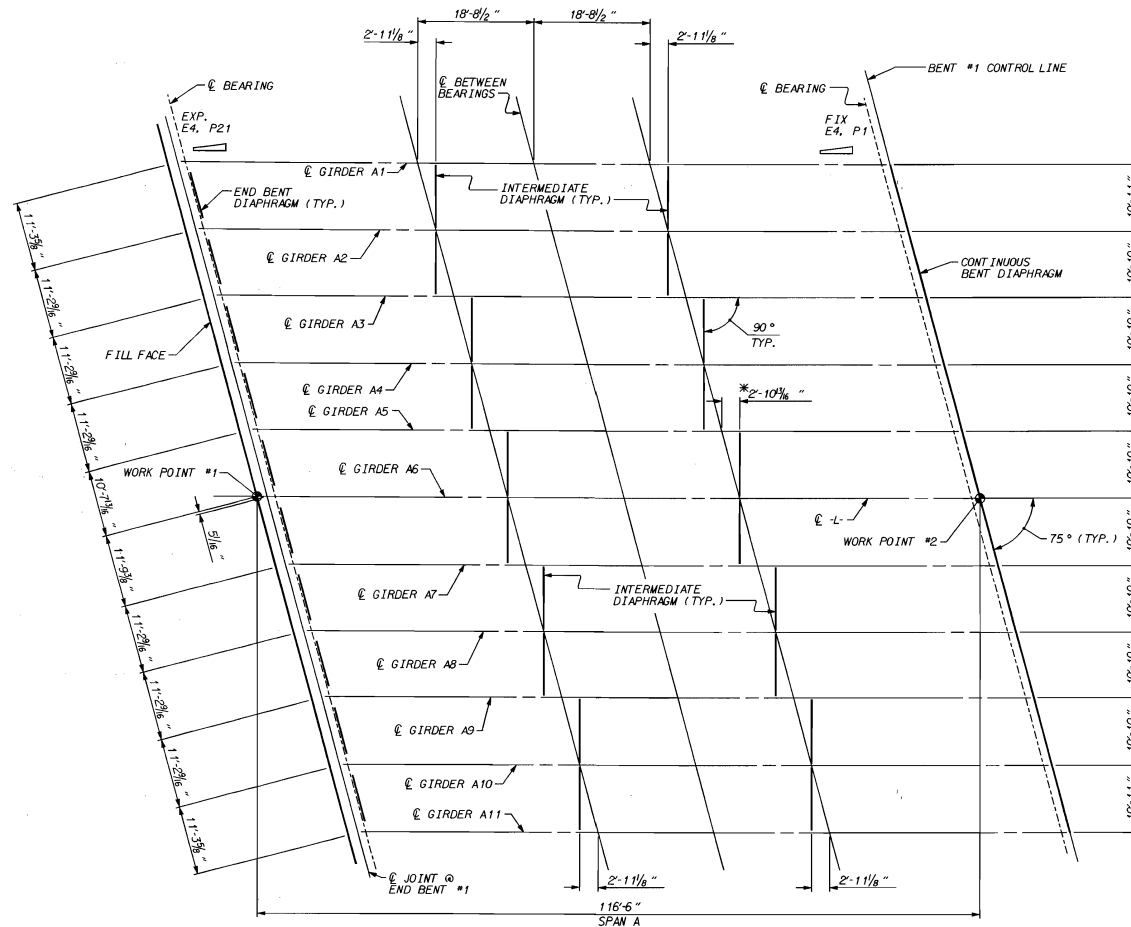
PROJECT NO. U-2107BA
 ONSLOW COUNTY
 STATION: 277+50.00 -L-
 SHEET 8 OF 8

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 Raleigh
**SUPERSTRUCTURE
 PLAN OF SPANS
 FOR CONTINUOUS SPANS
 L, M, N, AND O
 RIGHT SIDE**

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	5-47
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2			4			

DRAWN BY: M.M.R. DATE: 11/29/96
 CHECKED BY: LING H. FANG DATE: 1/21/97

* TYPICAL, EXCEPT FOR EXTERIOR GIRDERS.



FRAMING PLAN

FOR 2" Ø TIE ROD HOLE LOCATIONS.
SEE GIRDER LAYOUT - ELEVATION.

PROJECT NO. U-2107BA
ONSLOW COUNTY
 STATION: 277+50.00 -L-

SHEET 1 OF 8

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
FRAMING PLAN
 SPAN A

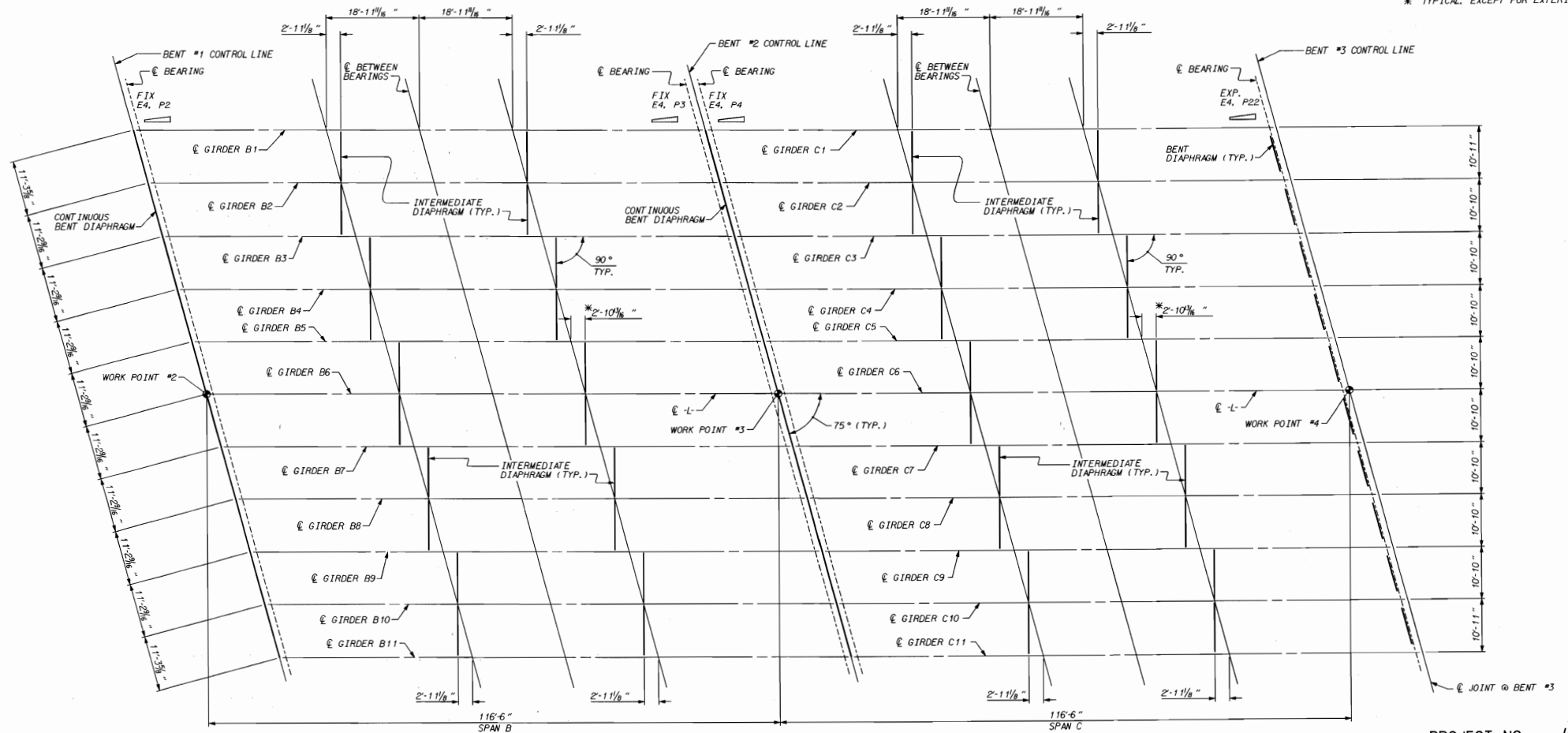


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REVISIONS						SHEET NO.
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* TYPICAL, EXCEPT FOR EXTERIOR GIRDERS.



FRAMING PLAN

FOR 2" Ø TIE ROD HOLE LOCATIONS,
SEE GIRDER LAYOUT - ELEVATION.

PROJECT NO. U-2107BA

ONslow COUNTY

STATION: 277+50.00 -L-

SHEET 2 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
FRAMING PLAN
SPANS B AND C

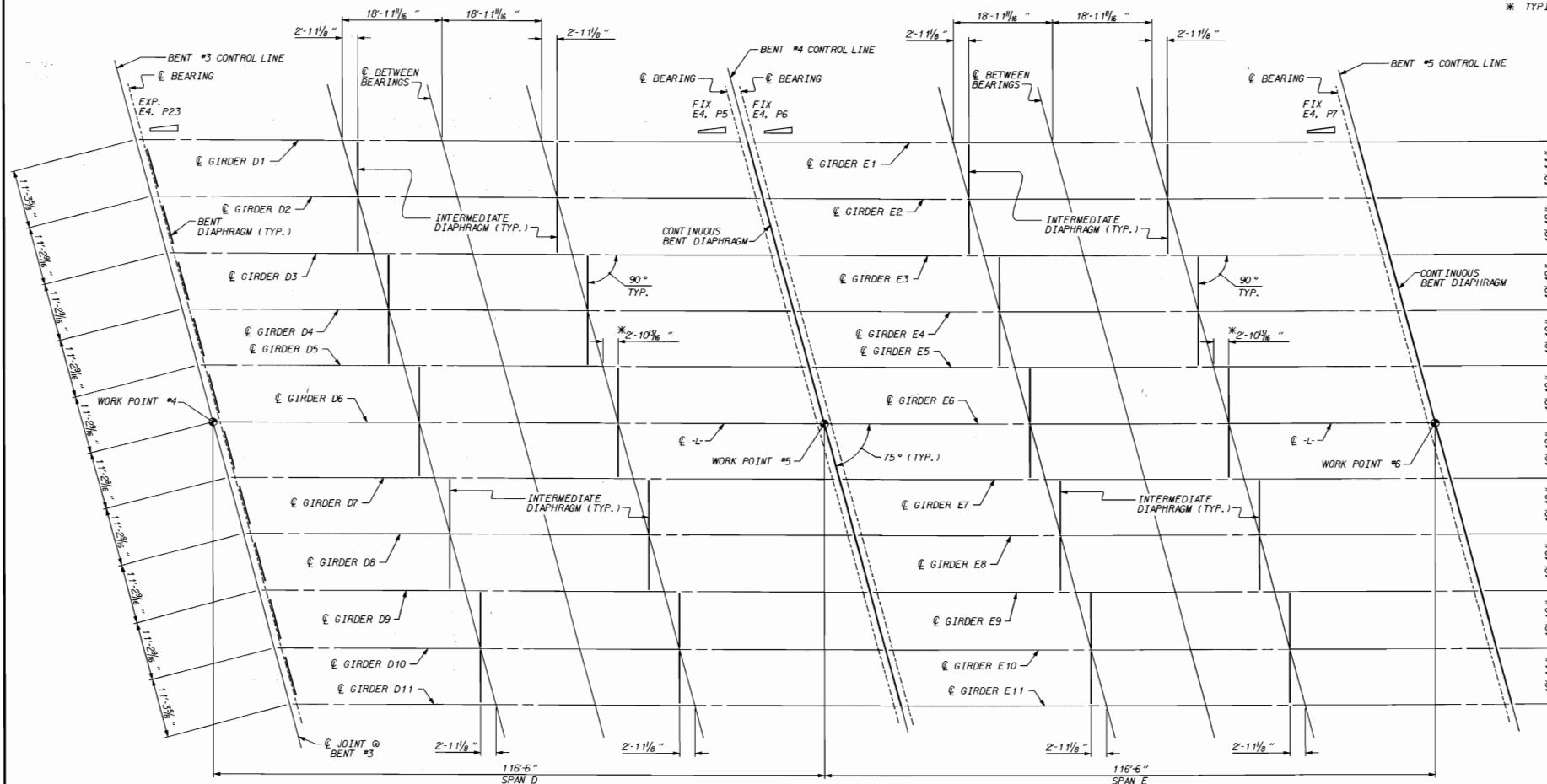
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DRAWN BY: J.M.R. DATE: 7/25/96
CHECKED BY: J.H. FANG DATE: 12/20/96

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* TYPICAL, EXCEPT FOR EXTERIOR GIRDERS.



FRAMING PLAN

FOR 2" Ø TIE ROD HOLE LOCATIONS,
SEE GIRDER LAYOUT - ELEVATION.

PROJECT NO. U-2107BA

ONSLOW COUNTY

STATION: 277+50.00 -L-

SHEET 3 OF 8



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

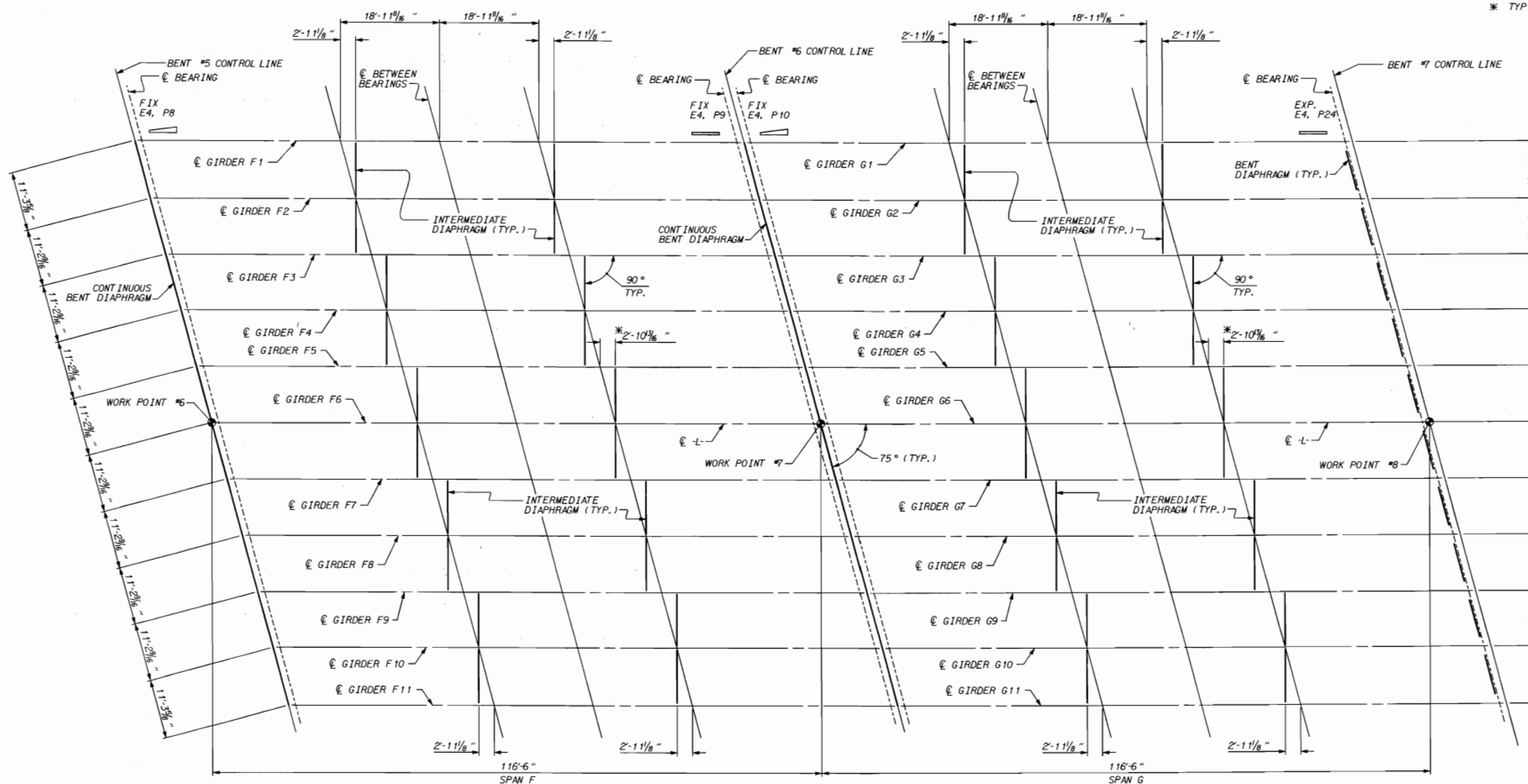
SUPERSTRUCTURE
FRAMING PLAN
SPANS D AND E

DRAWN BY: T.H.F. DATE: 7/25/96
CHECKED BY: T.H.F. DATE: 12/20/96

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
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* TYPICAL, EXCEPT FOR EXTERIOR GIRDERS.



FRAMING PLAN

FOR 2" Ø TIE ROD HOLE LOCATIONS,
SEE GIRDER LAYOUT - ELEVATION.

PROJECT NO. U-2107BA

ONSLOW COUNTY

STATION: 277+50.00 -L-

SHEET 4 OF 8



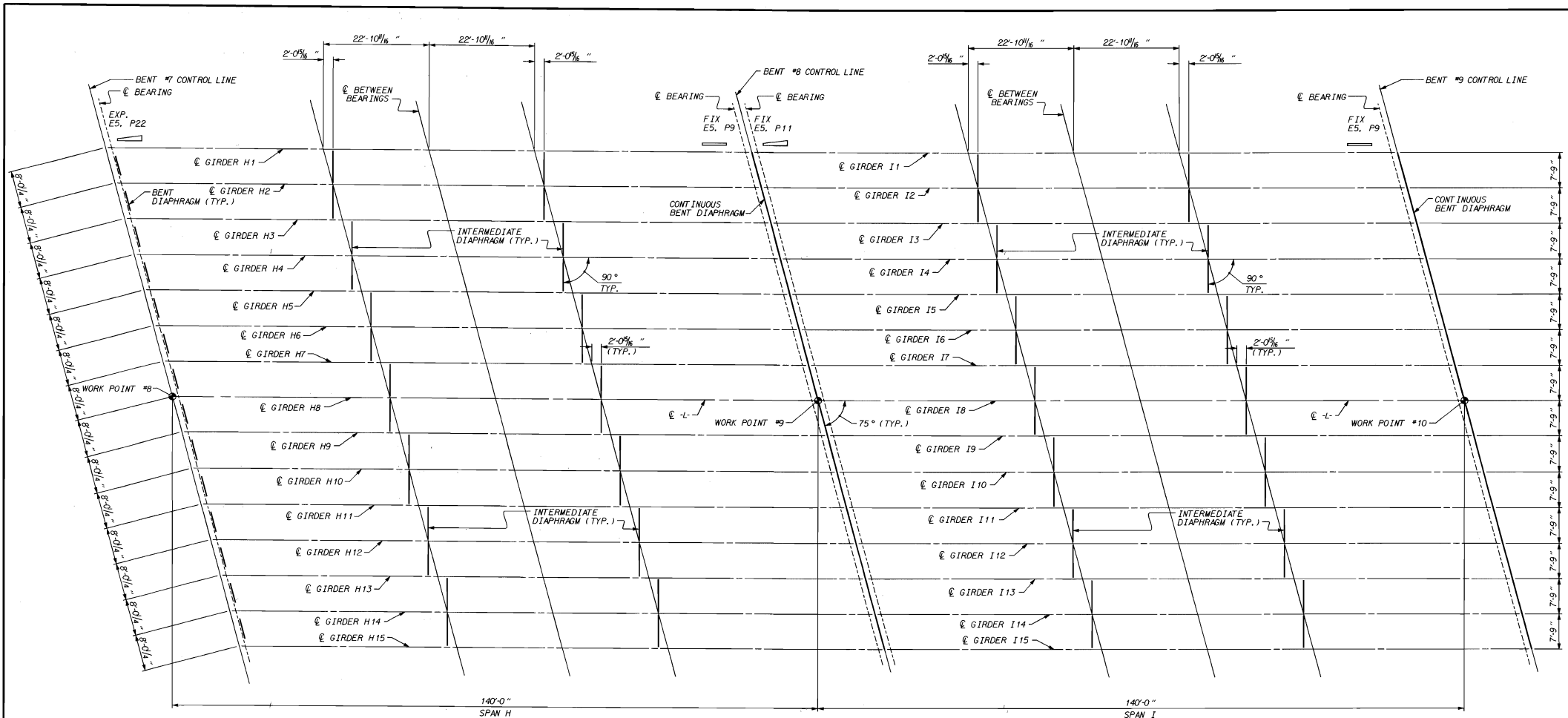
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
FRAMING PLAN
SPANS F AND G

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			5-51
2			4			TOTAL 170

DRAWN BY: H. M. Ruff DATE: 7/25/96
CHECKED BY: T. H. FANG DATE: 12/20/96

09-APR-99 15:55
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FRAMING PLAN

FOR 2" Ø TIE ROD HOLE LOCATIONS,
SEE GIRDER LAYOUT - ELEVATION.

PROJECT NO. U-2107BA

ONslow COUNTY

STATION: 277+50.00 -L-

SHEET 5 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

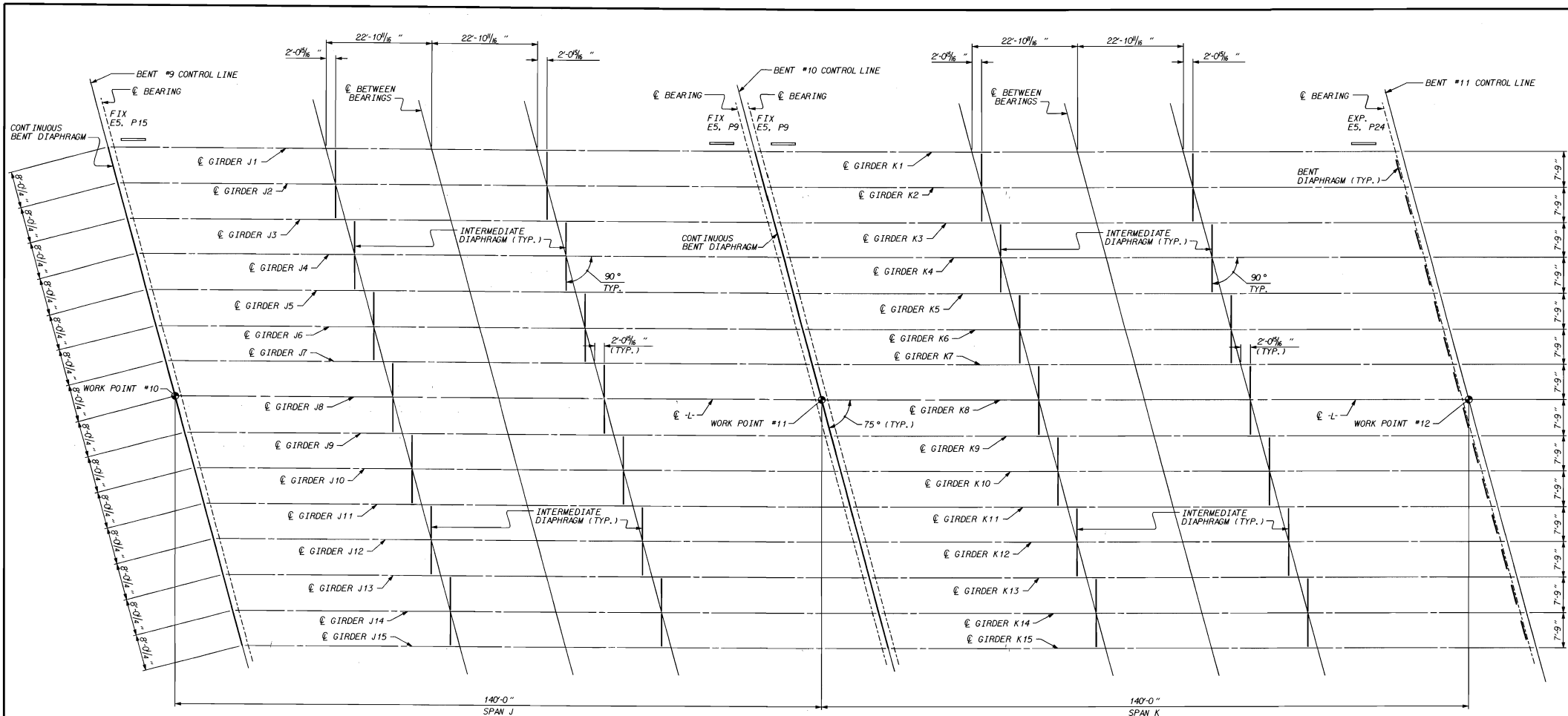
SUPERSTRUCTURE
FRAMING PLAN
SPANS H AND I



DRAWN BY: T. H. Fang DATE: 7/25/96
CHECKED BY: T. H. Fang DATE: 12/20/96

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			S-52
2			4			

09-APR-1997 15:55
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FRAMING PLAN

FOR 2" Ø TIE ROD HOLE LOCATIONS,
SEE GIRDER LAYOUT - ELEVATION.

PROJECT NO. **U-2107BA**
ONSLOW COUNTY
 STATION: **277+50.00 -L-**

SHEET **6** OF **8**



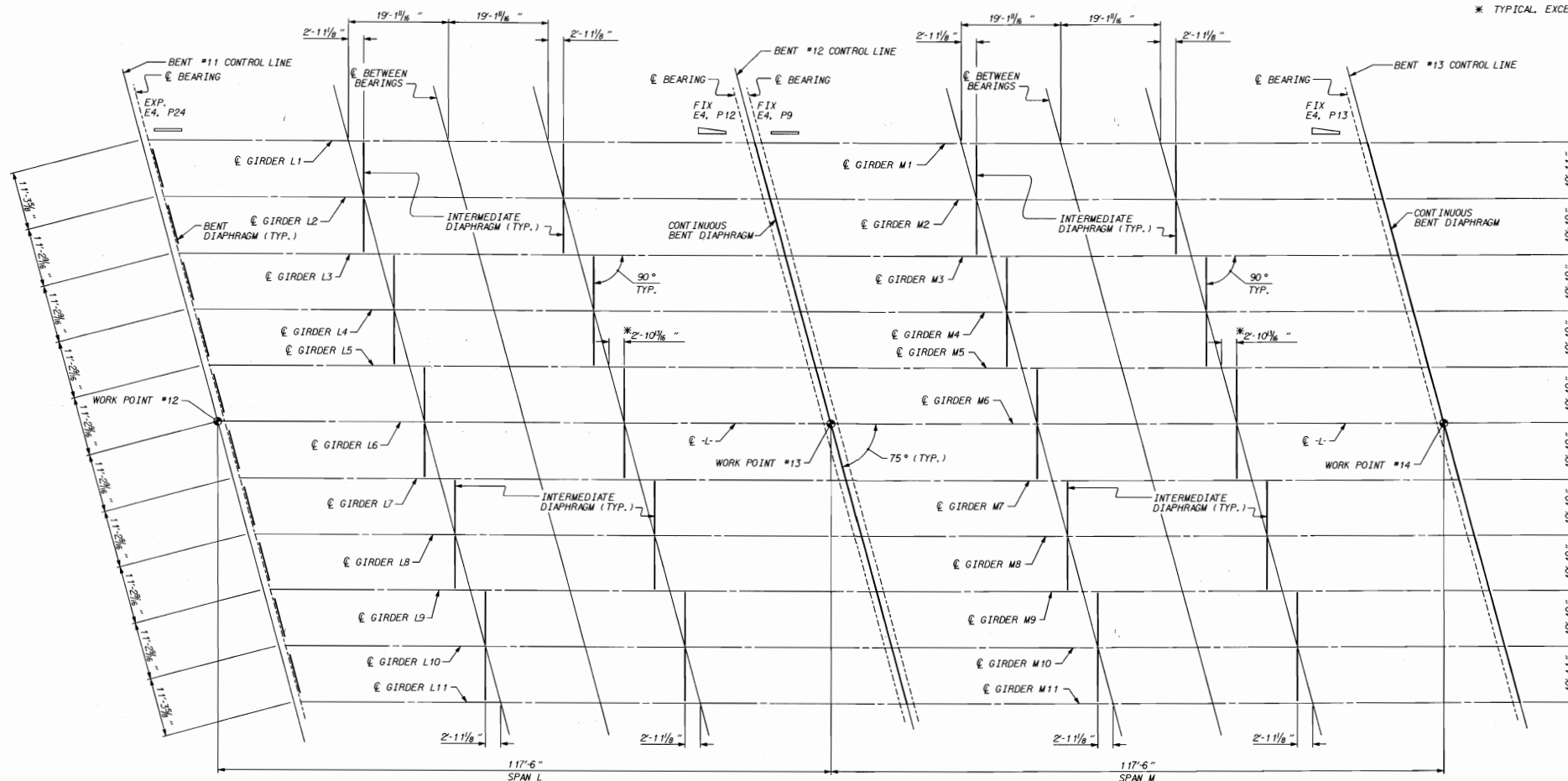
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUPERSTRUCTURE
FRAMING PLAN
SPANS J AND K

DRAWN BY: **Paul M. Ruff** DATE: **7/25/96**
 CHECKED BY: **T.H. FANG** DATE: **12/20/96**

REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	5-53	
1			3			TOTAL	170
2			4			SHEET	

09-APR-1997 15:55
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 mll

* TYPICAL, EXCEPT FOR EXTERIOR GIRDERS.



FRAMING PLAN

FOR 2" Ø TIE ROD HOLE LOCATIONS.
SEE GIRDER LAYOUT - ELEVATION.

PROJECT NO. U-2107BA
ONSLOW COUNTY
 STATION: 277+50.00 -L-

SHEET 2 OF 8

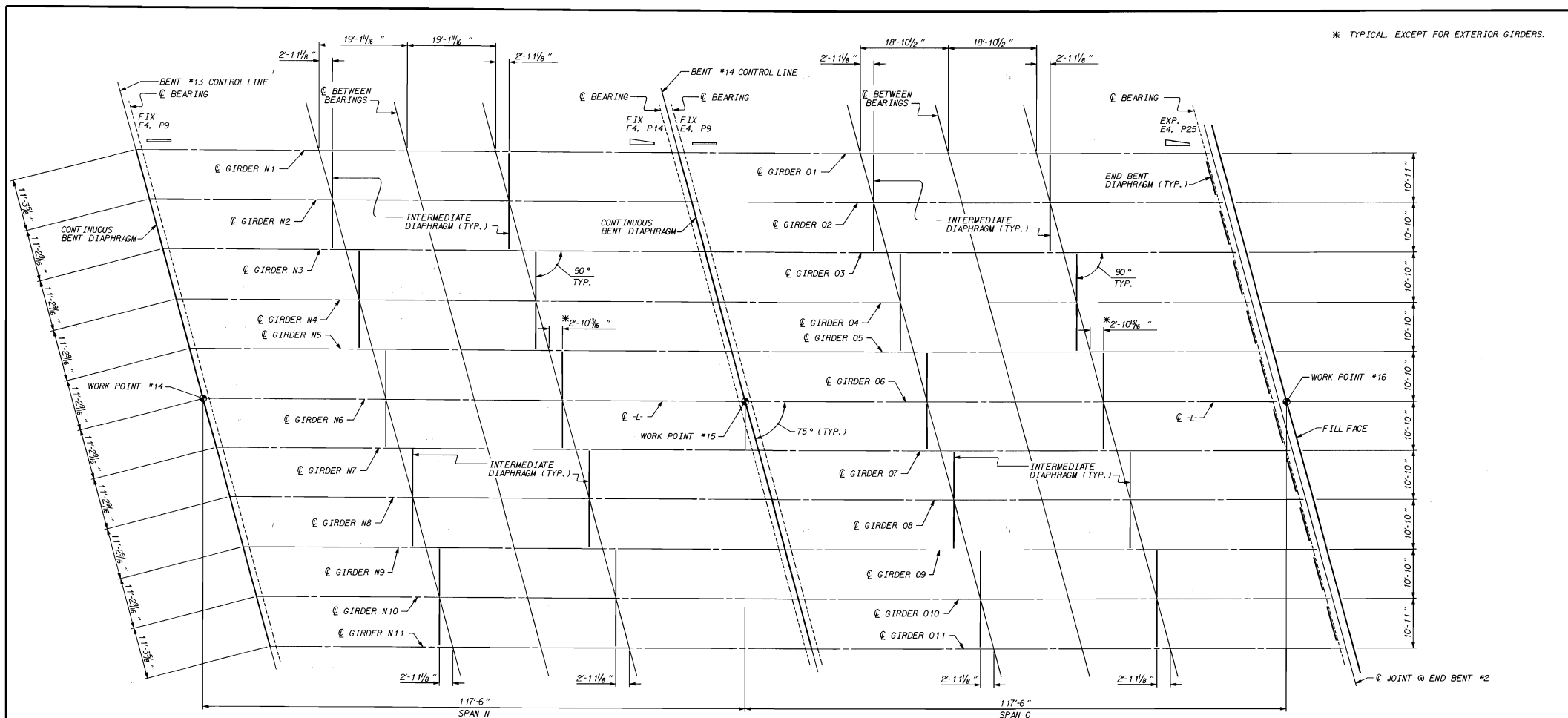


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 SUPERSTRUCTURE
 FRAMING PLAN
 SPANS L AND M

DRAWN BY: T.H. FANG DATE: 7/25/96
 CHECKED BY: T.H. FANG DATE: 12/20/96

REVISIONS					SHEET NO.
NO.	BY	DATE	NO.	DATE	
1			3		S-54
2			4		
					TOTAL SHEETS
					170

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FRAMING PLAN

FOR 2" Ø TIE ROD HOLE LOCATIONS,
SEE GIRDER LAYOUT - ELEVATION.

PROJECT NO. U-2107BA
ONSLow COUNTY
 STATION: 277+50.00 -L-

SHEET 2 OF 2

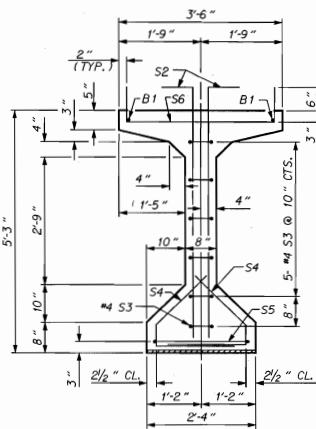
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUPERSTRUCTURE
FRAMING PLAN
 SPANS N AND O



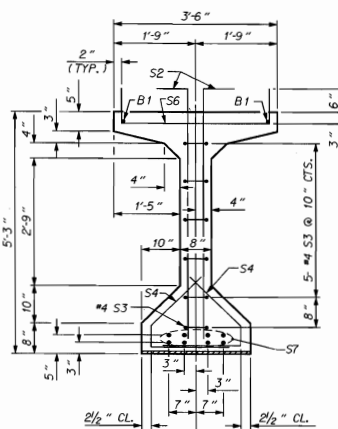
DRAWN BY: N.M. R.A. DATE: 7/25/96
 CHECKED BY: L.H. FANG DATE: 12/20/96

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			S-55
2			4			
TOTAL SHEETS						170

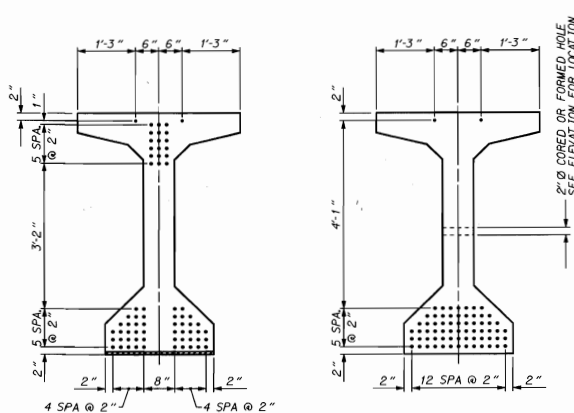
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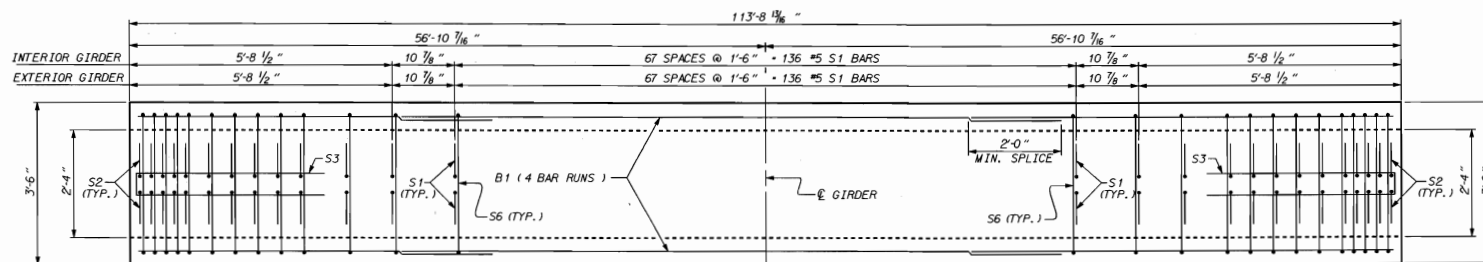
SECTION A-A



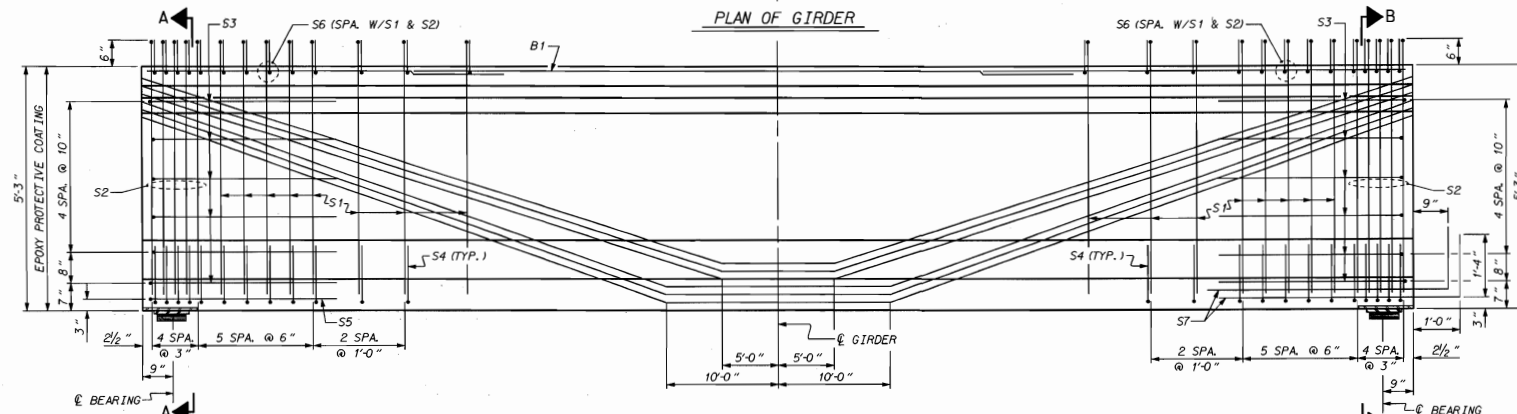
SECTION B-B



AT END OF GIRDER
68 - 1/2" Ø LOW RELAXATION STRAND LAYOUT
AT C. OF GIRDER



PLAN OF GIRDER



ELEVATION OF GIRDER

FOR 2" Ø TIE ROD HOLE LOCATIONS,
SEE GIRDER LAYOUT - ELEVATION.

1/2" Ø L. R. GRADE 270 STRANDS

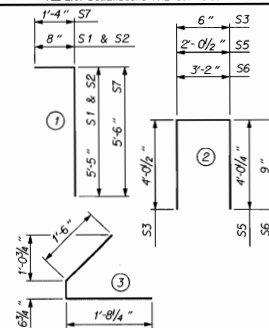
AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED STRESS (LBS. PER STRAND)
0.153	41,300	30,980

REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#4	STR	29'-11"	160
S1	164	#5	1	6'-1"	1041
S2	20	#5	1	6'-1"	183
S3	12	#4	2	8'-7"	169
S4	48	#5	3	3'-9"	188
S5	1	#5	2	10'-1"	11
S6	92	#5	2	4'-8"	448
S7	8	#8	1	6'-10"	146

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL	8,000 PSI CONCRETE	1/2" Ø L.R. STRANDS
	LB.	C.Y.	No.
INTERIOR GIRDER	2246	29.6	68
EXTERIOR GIRDER	2246	29.6	68

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
9	113'-8 1/4"	1023'-7 3/4"
2	113'-8 1/4"	227'-5 3/4"

PROJECT NO. U-2107BA

ONSLow COUNTY

STATION: 277+50.00 -L-

SHEET 1 OF 6

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

STANDARD

AASHTO TYPE V

PRESTRESSED CONCRETE GIRDER

CONTINUOUS FOR LIVE LOAD

SPAN A

JUNE 1996

REVISIONS

NO.	BY	DATE	NO.	BY	DATE
1			2		

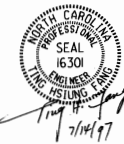
SHEET NO. 5-56

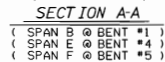
170

ASSEMBLED BY: T.H. FANG
CHECKED BY: T.H. FANG
DATE: 7/29/96
DATE: 12/20/96

DRAWN BY: EEM
CHECKED BY: VAP

EXP.



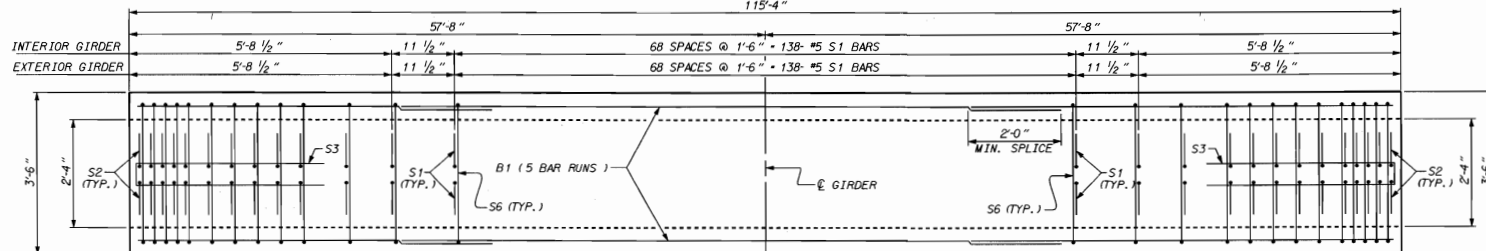


SECTION B-B

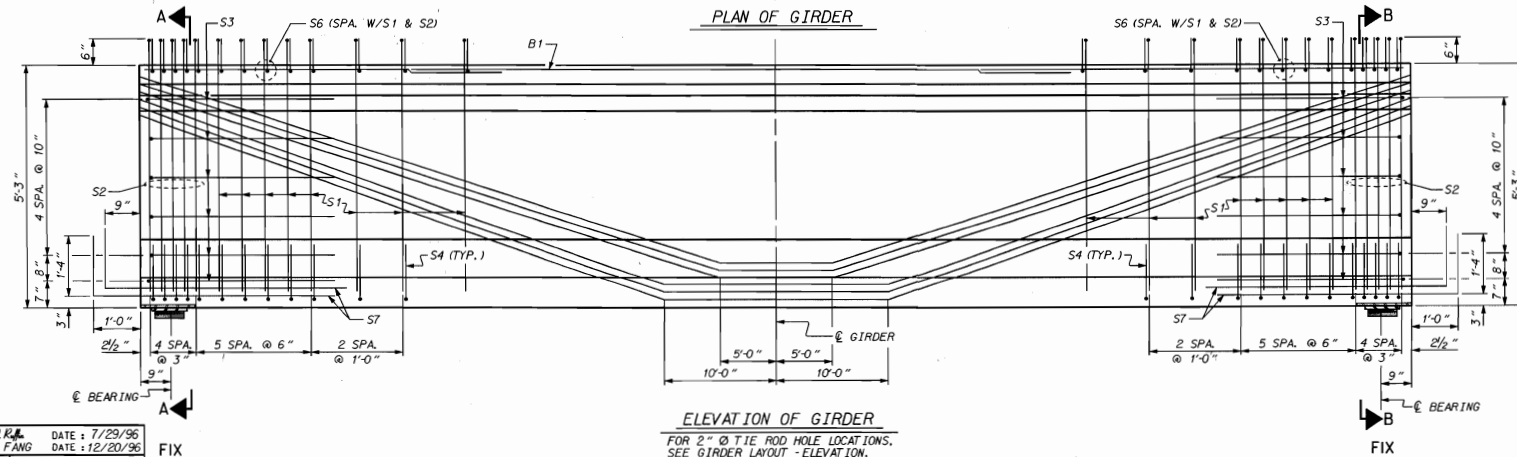
(SPAN B @ BENT #2)
(SPAN E @ BENT #5)
(SPAN F @ BENT #6)



68 - 1/2" Ø LOW RELAXATION STRAND LAYOUT



PLAN OF GIRDER



ELEVATION OF GIRDER

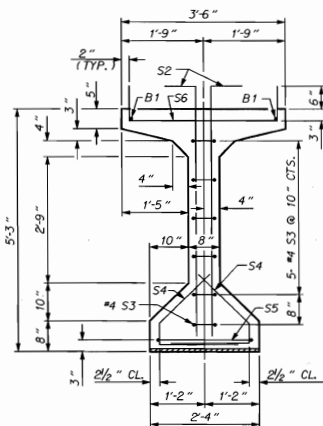
FOR 2" Ø TIE ROD HOLE LOCATIONS,
SEE GIRDER LAYOUT - ELEVATION.

REVISIONS						SHEET NO. 5-57
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 170
2			4			

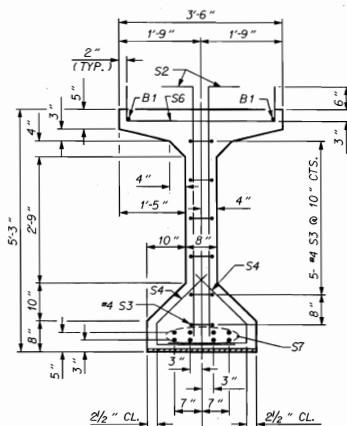
ASSEMBLED BY :	<i>N.M.R.</i>	DATE :	7/29/96
CHECKED BY :	<i>T.H. FANG</i>	DATE :	12/20/96
DRAWN BY :	EEM	6/96	
CHECKED BY :	VAP	6/96	

FIX

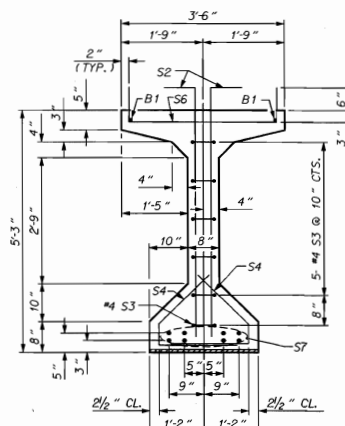
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nelli



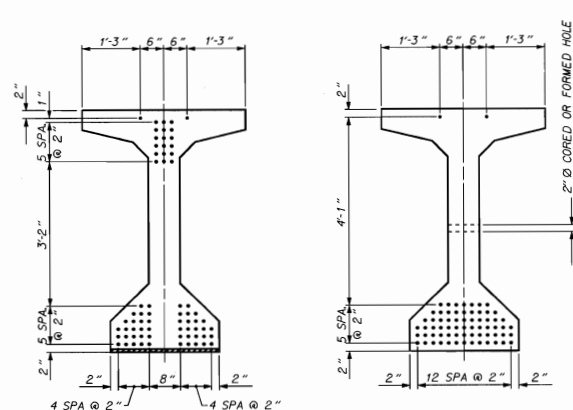
SECTION A-A
SPAN C, D, & G



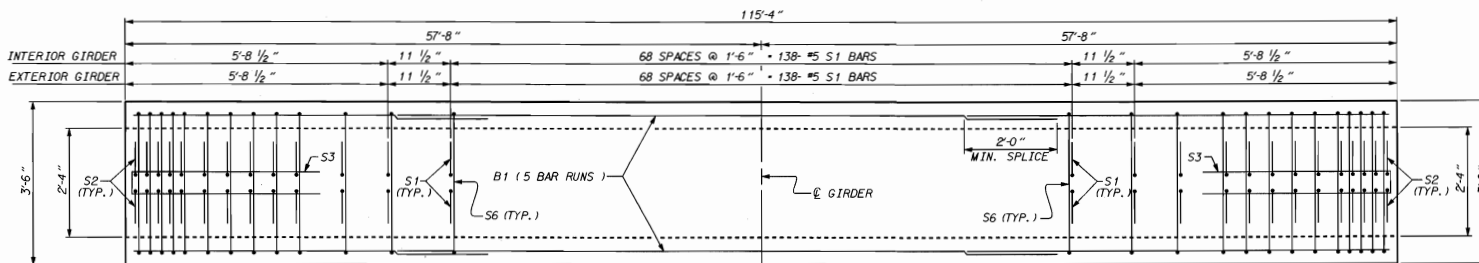
SECTION B-B
SPAN D ONLY



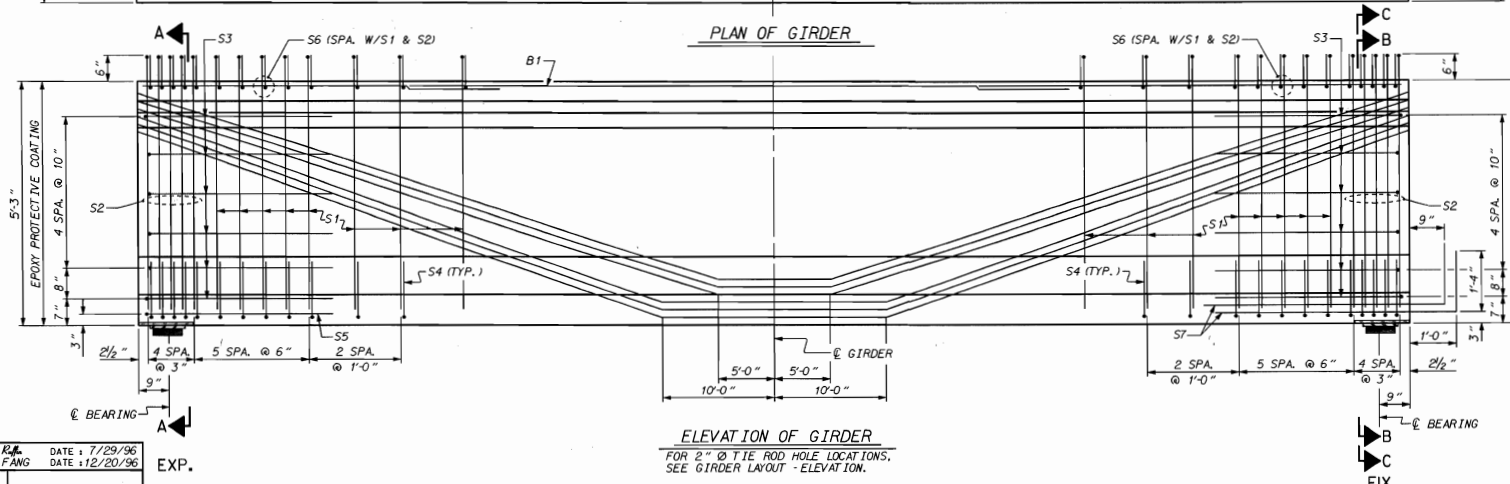
SECTION C-C
SPAN C & G ONLY



AT END OF GIRDER
68 - 1/2" Ø LOW RELAXATION STRAND LAYOUT
AT C. OF GIRDER



PLAN OF GIRDER



ELEVATION OF GIRDER

FOR 2" Ø TIE ROD HOLE LOCATIONS,
SEE GIRDER LAYOUT ELEVATION.

ASSEMBLED BY: JLM/RL DATE: 7/29/96
CHECKED BY: T.H. FANG DATE: 12/20/96
DRAWN BY: EEM 6/96
CHECKED BY: VAP 6/96

EXP.

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1/2" Ø L.R. GRADE 270 STRANDS

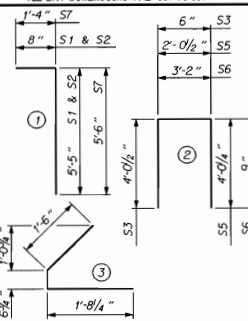
AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.153	41,300	30,980

REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
B1	10	#4	STR	24'-8"	165
S1	166	#5	1	6'-1"	1053
S2	20	#6	1	6'-1"	183
S3	12	#4	2	8'-7"	69
S4	48	#5	3	3'-5"	188
S5	1	#5	2	10'-5"	11
S6	93	#5	2	4'-8"	453
S7	8	#8	1	6'-10"	146

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL	8,000 PSI CONCRETE	1/2" Ø L.R. STRANDS
	L.B.	C.Y.	No.
INTERIOR GIRDER	2268	30.0	68
EXTERIOR GIRDER	2268	30.0	68

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
INTERIOR GDR.	27	115'-4"
EXTERIOR GDR.	6	311'-0"
		692'-0"

PROJECT NO. U-2107BA

ONSLow COUNTY

STATION: 277+50.00 -L-

SHEET 3 OF 6

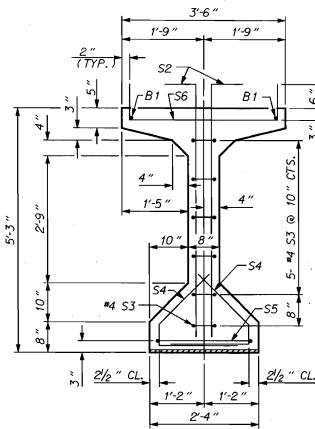
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
AASHTO TYPE V
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
SPANS C, D, & G

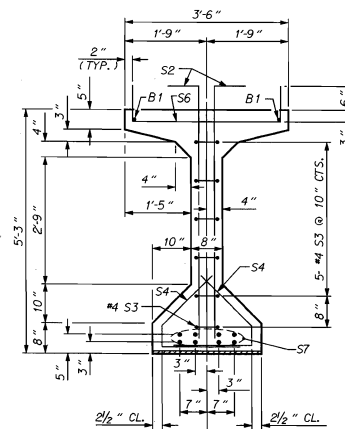
JUNE 1996

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	5-58
1			3			TOTALS
2			4			170

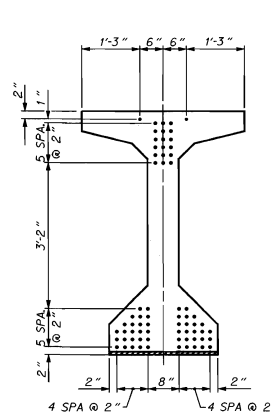




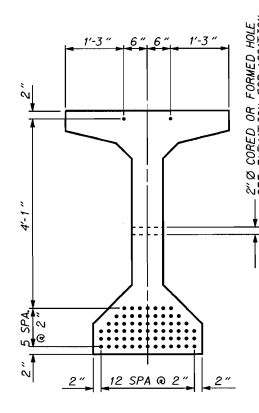
SECTION A-A



SECTION B-B

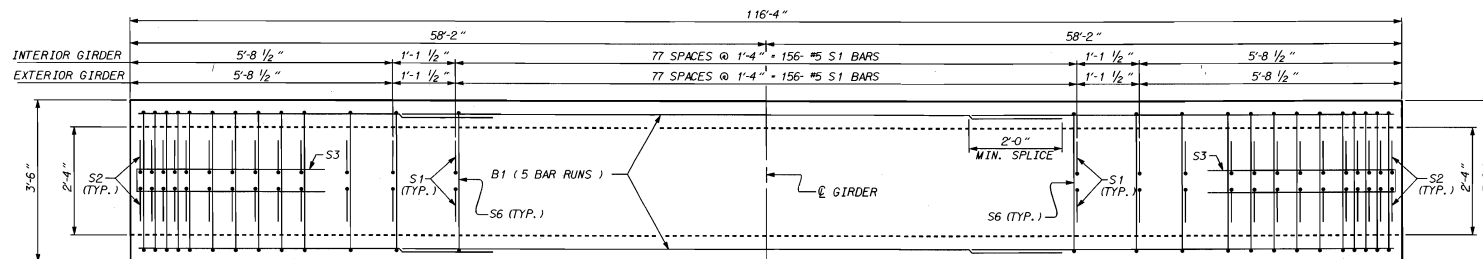


AT END OF GIRDER

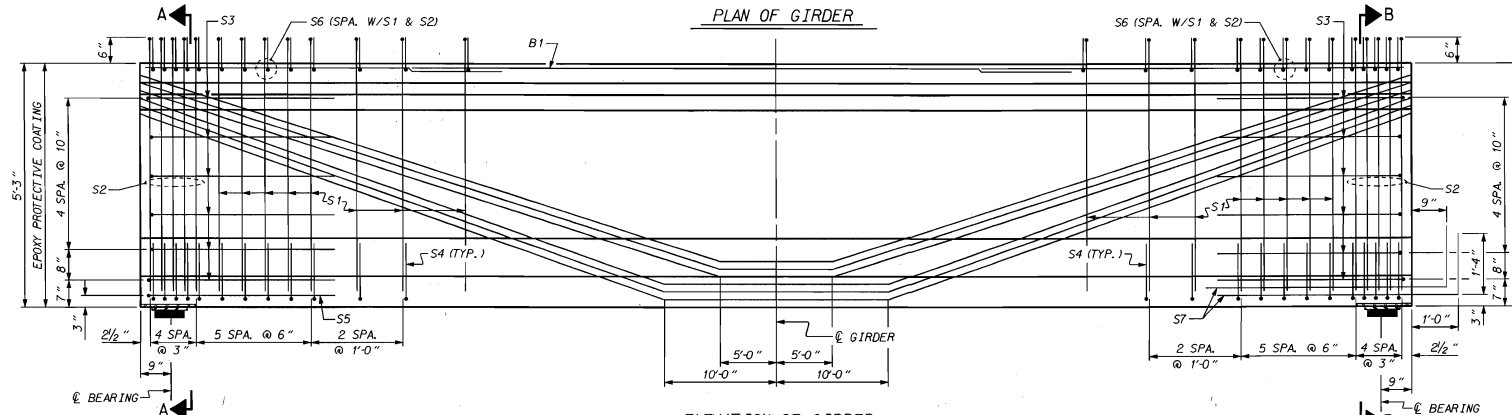


AT C OF GIRDER

68 - 1/2" Ø LOW RELAXATION STRAND LAYOUT



PLAN OF GIRDER



ELEVATION OF GIRDER

FOR 2" Ø TIE ROD HOLE LOCATIONS, SEE GIRDER LAYOUT ELEVATION.

ASSEMBLED BY: W.M. R.M. DATE: 7/29/96
CHECKED BY: T.H. FANG DATE: 12/20/96
DRAWN BY: EM 6/96
CHECKED BY: VAP 6/96

EXP.

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1/2" Ø L. R. GRADE 270 STRANDS

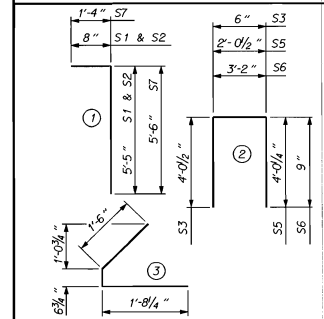
AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.153	41,300	30,980

REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
B1	10	#4	STR	24'-10"	166
S1	184	#5	1	6'-1"	1167
S2	20	#5	1	6'-1"	183
S3	12	#4	2	8'-7"	69
S4	48	#5	3	3'-9"	188
S5	1	#5	2	10'-1"	11
S6	102	#5	2	4'-8"	496
S7	8	#8	1	6'-10"	146

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL	8,000 PSI CONCRETE	1/2" Ø L.R. STRANDS
	LB.	C.Y.	No.
INTERIOR GIRDER	2426	30.3	68
EXTERIOR GIRDER	2426	30.3	68

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
9	116'-4"	1047'-0"
2	116'-4"	232'-8"

PROJECT NO. U-2107BA

ONslow COUNTY

STATION: 277+50.00 -L-

SHEET 4 OF 6

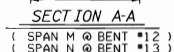
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
AASHTO TYPE II
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
SPAN L

JUNE 1996

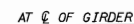
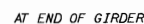
REVISIONS				SHEET NO.
NO.	BY	DATE	NO.	DATE
1			3	
2			4	

TOTAL
SHEETS
170

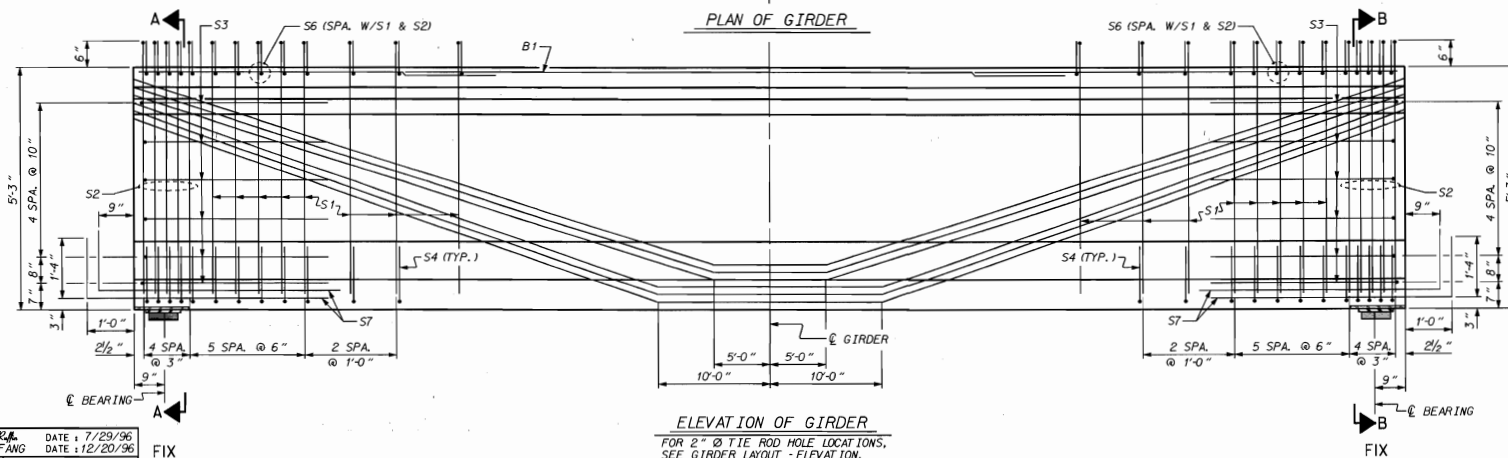
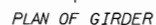




THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT, IN ORDER FOR THE S7 BARS TO FIT IN THE DIAPHRAGM PROPERLY, THE CONTRACTOR SHALL PAY EXTRA ATTENTION TO THE GIRDER ORIENTATION.



68 - 1/2" Ø LOW RELAXATION STRAND LAYOUT

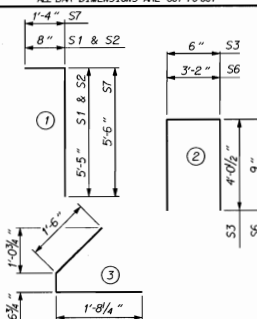


ELEVATION OF GIRDER

FOR 2" Ø TIE ROD HOLE LOCATIONS,
SEE GIRDER LAYOUT - ELEVATION.

	BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
	<i>B1</i>	10	#4	<i>STR</i>	24'-10"	166
R.	<i>S1</i>	184	#5	1	6'-1"	1167
R.	<i>S1</i>	184	#5	1	6'-1"	1167
	<i>S2</i>	20	#6	1	6'-1"	183
	<i>S3</i>	12	#4	2	8'-7"	69
	<i>S4</i>	48	#5	3	3'-9"	188
	<i>S6</i>	102	#5	2	4'-8"	496
	<i>S7</i>	16	#8	1	6'-10"	292

ALL BAR DIMENSIONS ARE OUT-TO-OUT



	REINFORCING STEEL	8,000 PSI CONCRETE	1/2" Ø L.R. STRANDS
	LB.	C.Y.	No.
INTERIOR GIRDER	2561	30.3	68
EXTERIOR GIRDER	2561	30.3	68

	NUMBER	LENGTH	TOTAL LENGTH
NR.	18	116'-4"	2094'-0"
NR.	4	116'-4"	465'-4"

SHEET 5 OF 6

STANDARD
AASHTO TYPE V
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
SPANS M & N

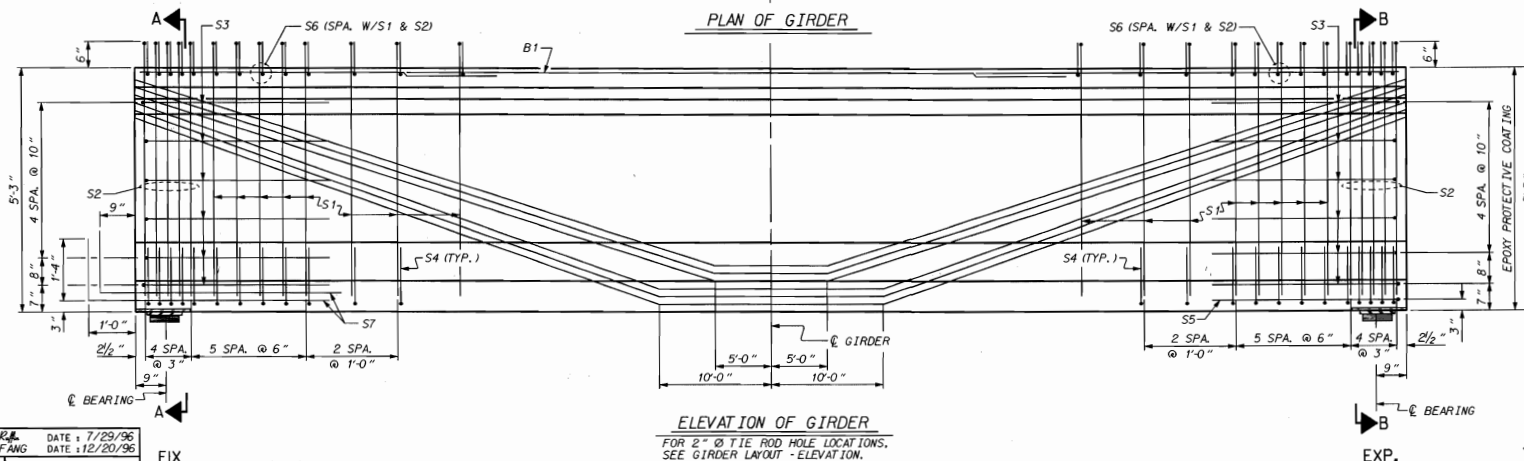
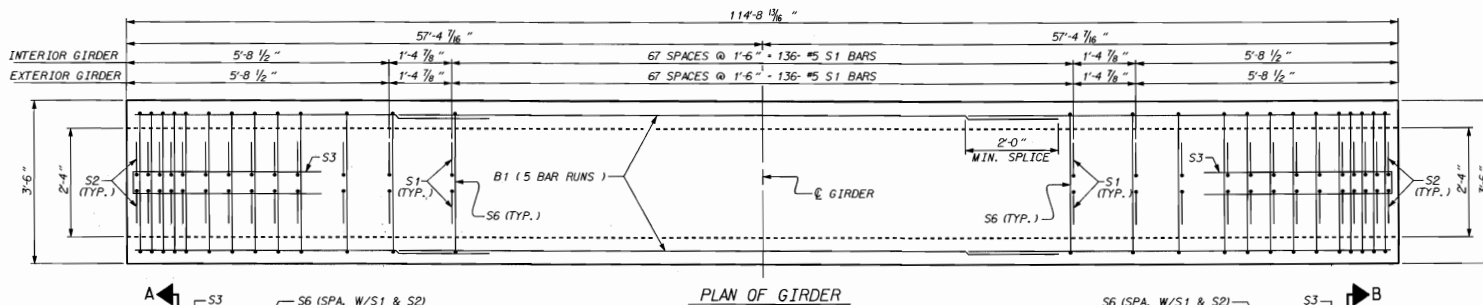
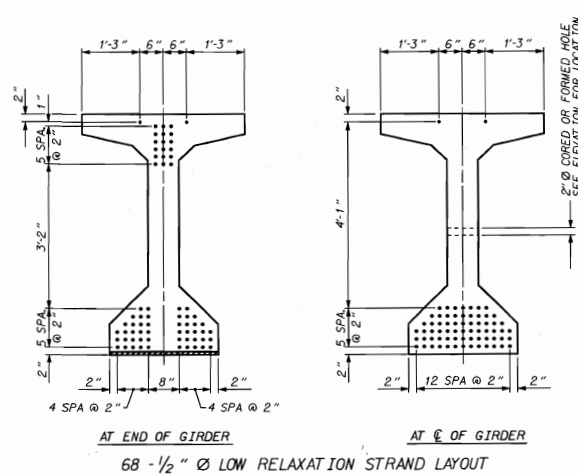
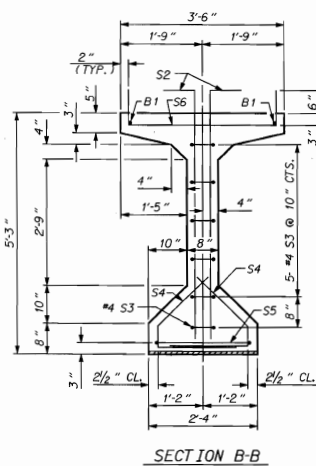
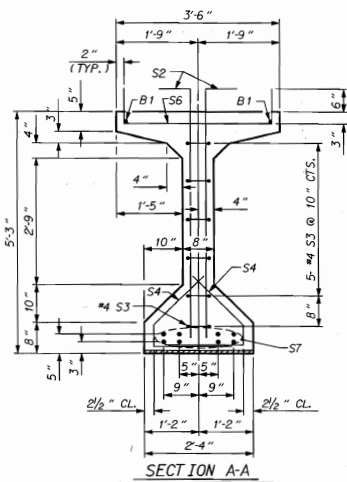
JUNE SPANS M & N 1996

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5-60 TOTAL SHEETS 170
1			3			
2			4			

ASSEMBLED BY :	<i>N.M.R.A.</i>	DATE :	7/29/96
CHECKED BY :	<i>T.H. FANG</i>	DATE :	12/20/96
DRAWN BY :	EEM	6/96	
CHECKED BY :	VAP	6/96	

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nell





ASSEMBLED BY: W.M. R. DATE: 7/29/96
 CHECKED BY: T.H. FANG DATE: 12/20/96
 DRAWN BY: EEM 6/96
 CHECKED BY: VAP 6/96

10-88-1997 12:00
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 neil

1/2" Ø L. R. GRADE 270 STRANDS

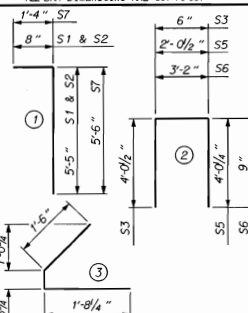
AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.153	41,300	30,980

REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
B1	10	#4	STR	24'-7"	164
S1	164	#5	1	6'-1"	1041
S2	164	#5	1	6'-1"	1041
S2	20	#5	1	6'-1"	183
S3	12	#4	2	8'-7"	69
S4	48	#5	3	3'-9"	188
S5	1	#5	2	10'-1"	11
S6	92	#5	2	4'-8"	448
S7	8	#8	1	6'-10"	146

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL	8,000 PSI CONCRETE	1/2" Ø L.R. STRANDS
	L.B.	C.Y.	No.
INTERIOR GIRDER	2250	29.9	68
EXTERIOR GIRDER	2250	29.9	68

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
9	114'-8 1/8"	1032'-7 1/8"
2	114'-8 1/8"	229'-5 1/8"

PROJECT NO. U-2107BA

ONSLow COUNTY

STATION: 277+50.00 -L-

SHEET 6 OF 6

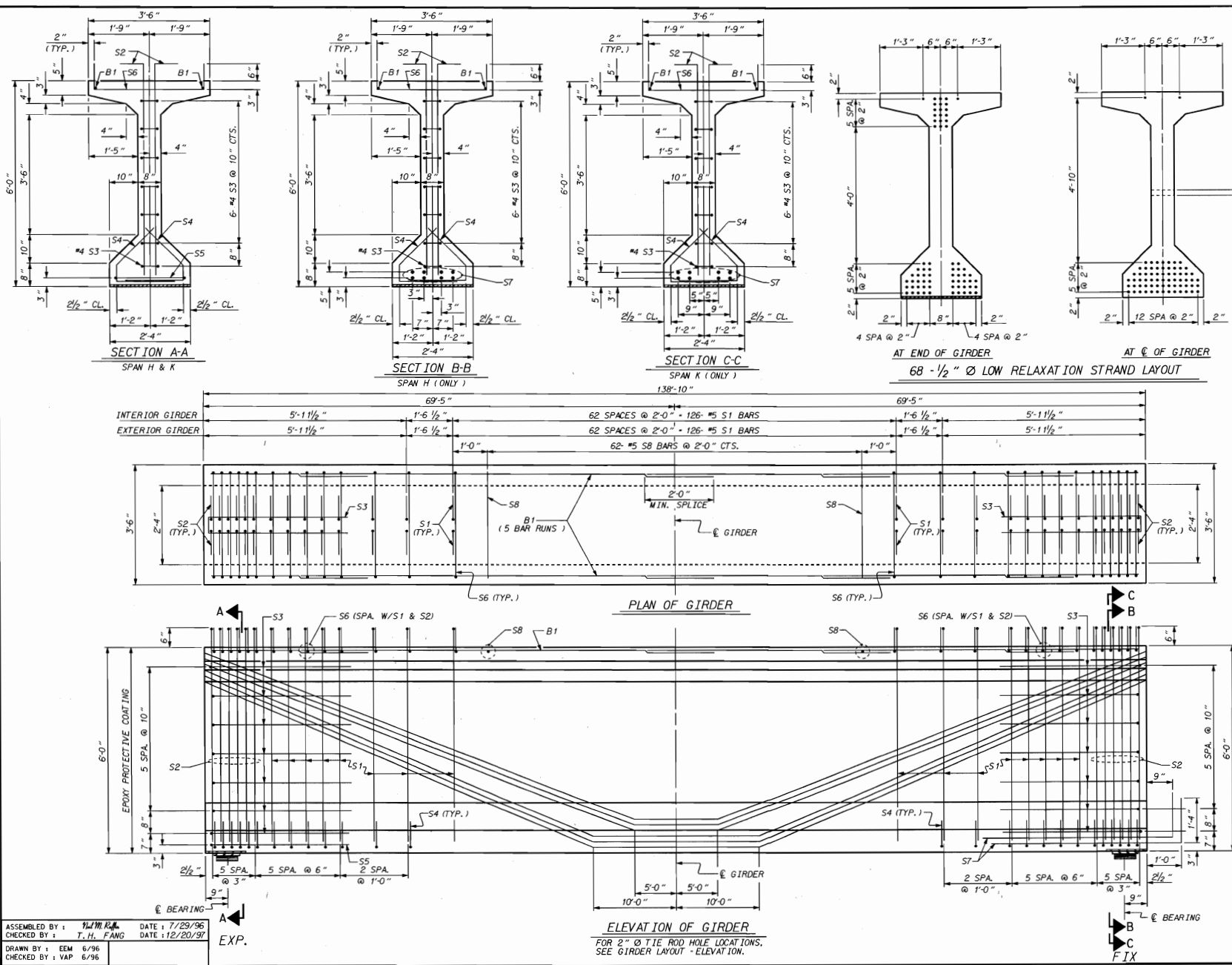
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION

STANDARD
 AASHTO TYPE II
 PRESTRESSED CONCRETE GIRDER
 CONTINUOUS FOR LIVE LOAD
 SPAN 0

JUNE 1996

NO.	BY	DATE	NO.	BY	DATE	SHEET NO.
1			2			S-61
2			3			TOTAL SHEETS 170





1/2" Ø L.R. GRADE 270 STRANDS		
AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED STRESS (LBS. PER STRAND)
0.153	41,300	30,980

REINFORCING STEEL FOR ONE GIRDER						
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	
B1	10	#4	STR	29'-4"	196	
S1	154	#5	1	6'-10"	1098	
S2	24	#5	1	6'-10"	246	
S3	14	#4	2	8'-7"	80	
S4	52	#5	3	3'-9"	203	
S5	1	#5	2	10'-1"	11	
S6	89	#5	2	4'-8"	433	
S7	8	#8	1	6'-10"	146	
S8	62	#5	STR	3'-2"	205	

BAR TYPES		
ALL BAR DIMENSIONS ARE OUT-TO-OUT		
S7	1'-4"	S3
S1 & S2	8"	S5
	6'-2"	S6
	4'-0 1/2"	
	1'-0 3/4"	
	6 3/4"	
	1'-8 1/4"	

QUANTITIES FOR ONE GIRDER			
REINFORCING STEEL	8,000 PSI CONCRETE	1/2" Ø L.R. STRANDS	
LB.	C.Y.	No.	
INTERIOR GIRDER	26.18	38.8	68
EXTERIOR GIRDER	26.18	38.8	68

GIRDERS REQUIRED		
NUMBER	LENGTH	TOTAL LENGTH
26	138'-10"	3609'-8"
4	138'-10"	555'-4"

PROJECT NO. **U-2107BA**

ONSLOW COUNTY

STATION: **277+50.00 -L-**

SHEET 1 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION					
STANDARD AASHTO TYPE VI PRESTRESSED CONCRETE GIRDER CONTINUOUS FOR LIVE LOAD SPANS H & K					
JUNE 1996					
REVISIONS			SHEET NO.		
NO.	BY	DATE	NO.	BY	DATE
1			2		
2			3		

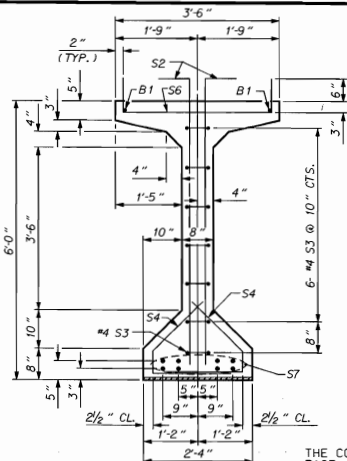
11/9 H. H. Fang

170

STD.No.PCG9

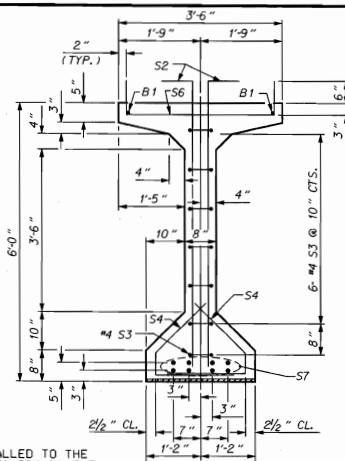
ASSEMBLED BY: **W.M.R.** DATE: **7/29/96**
 CHECKED BY: **T.H. FANG** DATE: **12/20/97**
 DRAWN BY: **EEM** 6/96
 CHECKED BY: **VAP** 6/96

10-JUL-1997 12:00
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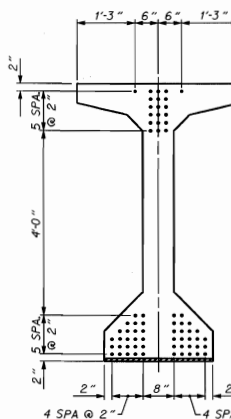


SECTION A-A
(SPAN I @ BENT #8)
(SPAN J @ BENT #9)

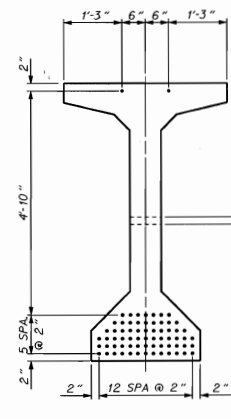
THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT, IN ORDER FOR THE S7 BARS TO FIT IN THE DIAPHRAGM PROPERLY, THE CONTRACTOR SHALL PAY EXTRA ATTENTION TO THE GIRDER ORIENTATION.



SECTION B-B
(SPAN I @ BENT #8)
(SPAN J @ BENT #9)

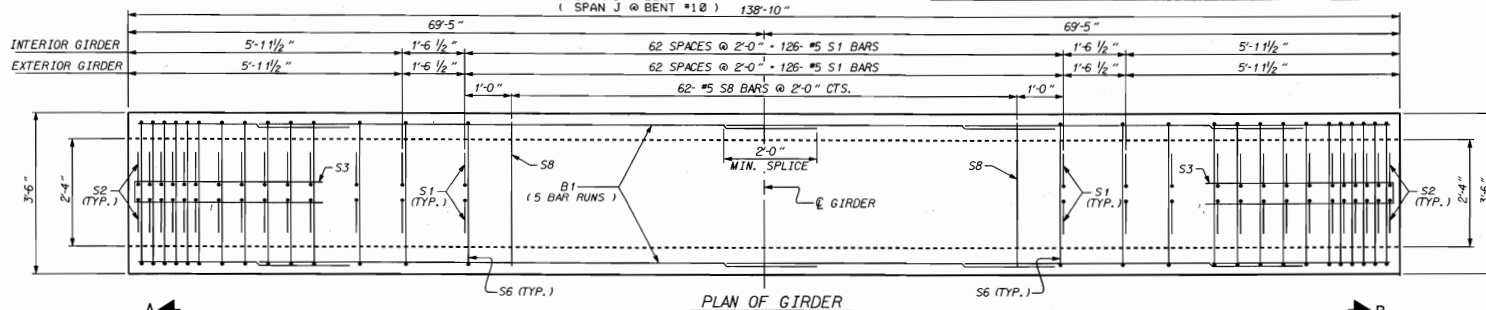


AT END OF GIRDER
68 - 1/2" Ø LOW RELAXATION STRAND LAYOUT

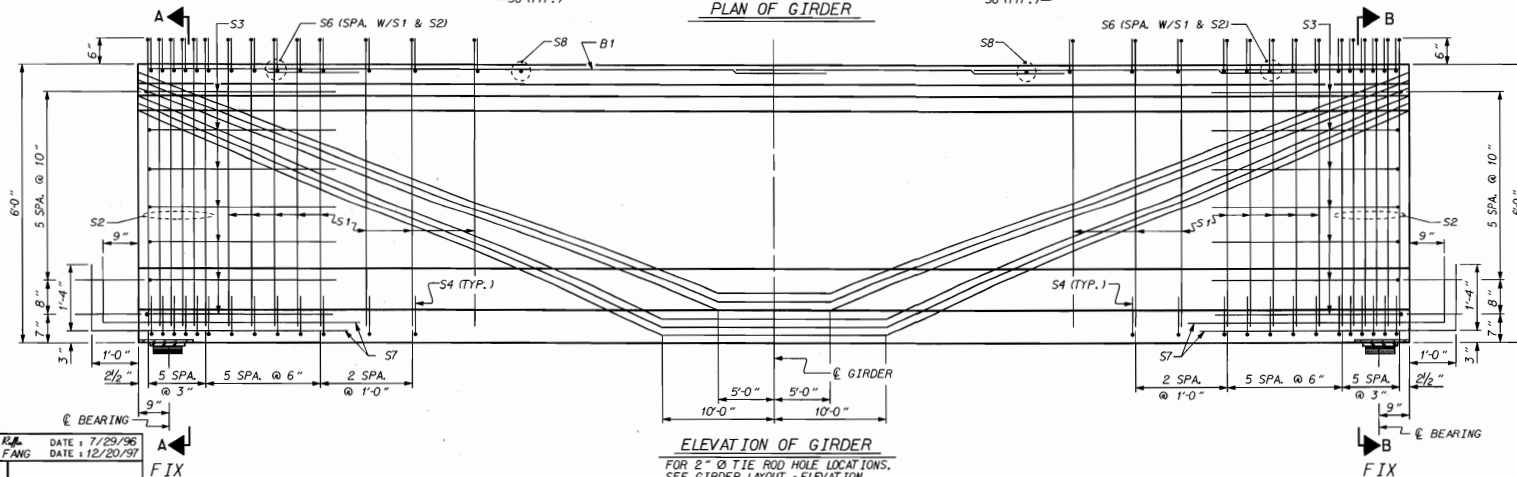


AT C OF GIRDER

2" Ø CORED OR FORMED HOLE
SEE ELEVATION FOR LOCATION



PLAN OF GIRDER



ELEVATION OF GIRDER

FOR 2" Ø TIE ROD HOLE LOCATIONS,
SEE GIRDER LAYOUT - ELEVATION.

ASSEMBLED BY: T.M. FANG
CHECKED BY: T.M. FANG
DATE: 7/29/96
DATE: 12/20/97
DRAWN BY: EEM
CHECKED BY: VAP
DATE: 6/96

FIX

10-JUL-1997 12:00
@ User: d:\w\h\eng\m\2807ba\2807ba\g3.dgn
nfl

1/2" Ø L. R. GRADE 270 STRANDS

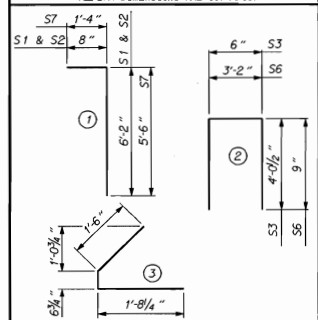
AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.153	41,300	30,980

REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
B1	10	#4	STR	29'-4"	196
S1	154	#5	1	6'-10"	1098
S1	154	#5	1	6'-10"	1098
S2	24	#6	1	6'-10"	246
S3	14	#4	2	8'-7"	80
S4	52	#5	3	3'-9"	203
S6	89	#5	2	4'-8"	433
S7	16	#8	1	6'-10"	292
S8	62	#5	STR	3'-2"	205

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL	8,000 PSI CONCRETE	1/2" Ø L.R. STRANDS
	LB.	C.Y.	No.
INTERIOR GIRDER	2753	38.8	68
EXTERIOR GIRDER	2753	38.8	68

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
26	138'-10"	3609'-8"
4	138'-10"	555'-4"

PROJECT NO. U-2107BA

ONSLow COUNTY

STATION: 277+50.00 -L-

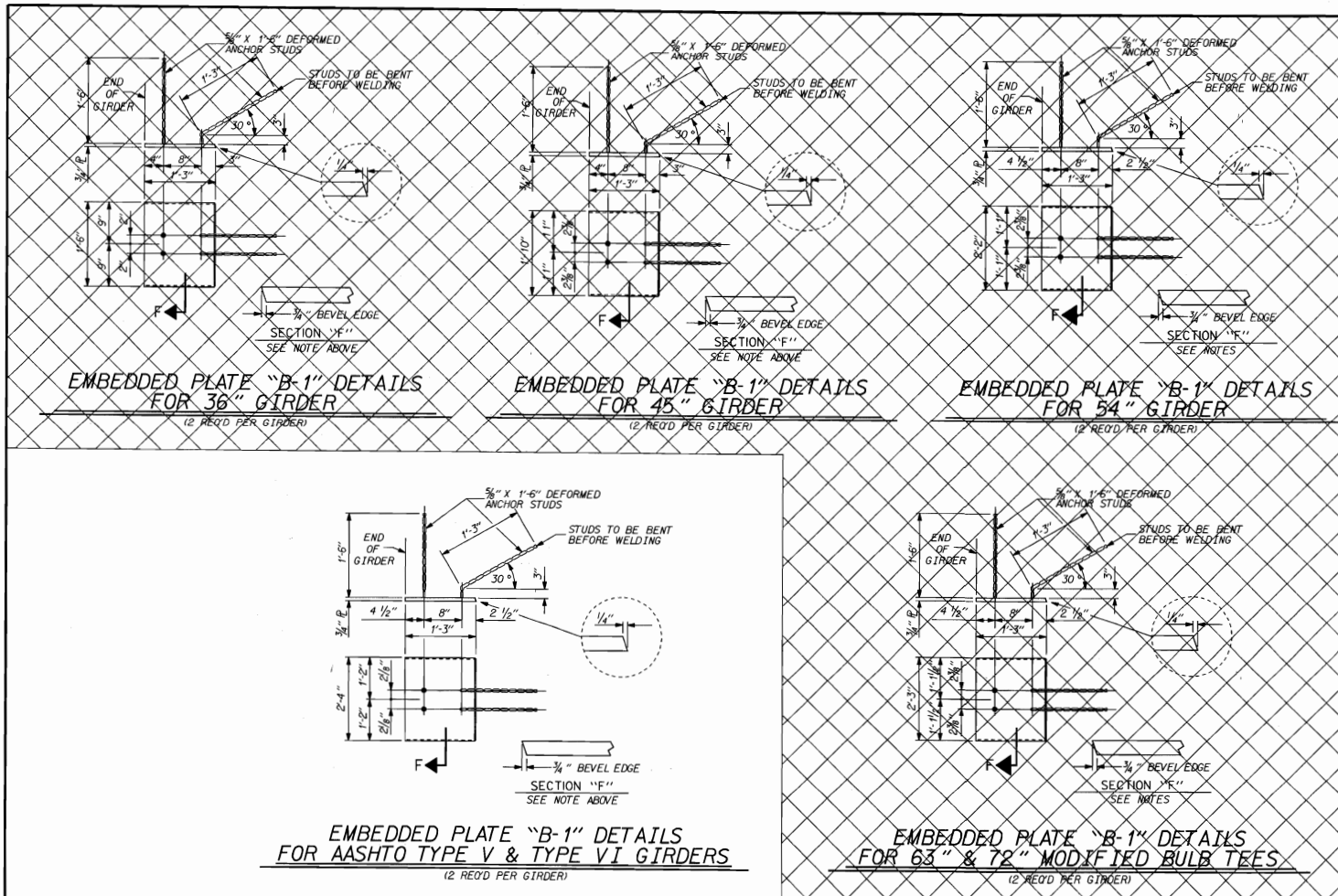
SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
AASHTO TYPE VI
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
SPANS I & J

JUNE	REVISIONS	SHEET NO.
1	NO. 1	5-63
2	NO. 2	170

STD.No.PCG9





NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW-RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO ASTM A-416 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

TIE ROD ASSEMBLY SHALL BE AASHTO M270 GRADE 36 STRUCTURAL STEEL.

ALL REINFORCING STEEL SHALL BE GRADE 60.

APPLY EPOXY PROTECTIVE COATING TO END OF GIRDER SURFACES INDICATED IN ELEVATION VIEW FOR EPOXY PROTECTIVE COATING. SEE SPECIAL PROVISIONS.

EMBEDDED PLATE "B-1" SHALL BE GALVANIZED IN ACCORDANCE WITH THE SPECIFICATIONS.

STEEL SOLE PLATES, BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE SPECIFICATIONS.

BEVEL EDGES OF PLATE "B-1" TO GIVE CLOSE FIT BUT NOT TIGHT FIT TO STEEL CASTING FORM.

DEFORMED ANCHOR STUDS SHALL CONFORM TO ASTM A-96. WELDING PROCEDURE QUALIFICATION TEST FOR DEFORMED ANCHOR STUDS MAY BE REQUIRED.

AT FIXED ENDS OF GIRDERS TO BE EMBEDDED IN CONCRETE DIAPHRAGMS OR END WALLS, PRESTRESSING STRANDS MAY EXTEND A MAXIMUM OF 2" BEYOND THE GIRDER ENDS. AT EXPANSION ENDS OF GIRDERS, PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE GIRDER ENDS.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE GIRDER SHALL BE DONE WHEN CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 6000 PSI.

DEPENDING ON THE TYPE OF SYSTEM USED TO SUPPORT THE DECK SLAB FORMS, PRESET ANCHORS MAY BE NECESSARY IN THE PRESTRESSED CONCRETE GIRDER.

THE TOP SURFACE OF THE GIRDER SHALL BE RAKED TO A DEPTH OF 1/4" EXCEPT IN THE AREA BETWEEN THE STIRRUP AND THE EDGE OF THE GIRDER.

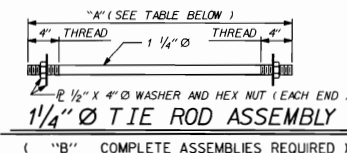
WHEN DRAPED STRANDS ARE DETAILED, THE LONGITUDINAL LOCATION OF THE HOLD DOWN DEVICES SHALL BE WITHIN 6" OF THE LOCATION SHOWN AND THE CENTER OF GRAVITY OF THE GROUP OF DRAPED STRANDS SHALL BE LOCATED WITHIN 1/2" OF THE THEORETICAL LOCATION SHOWN.

FOR HIGH STRENGTH PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

PRESTRESSED CONCRETE GIRDERS SHALL CONTAIN CALCIUM NITRITE CORROSION INHIBITOR. SEE SPECIAL PROVISIONS FOR "CALCIUM NITRITE CORROSION INHIBITOR."

FOR GROUTED RECESS FOR END OF TIE ROD DETAIL, SEE SUPERSTRUCTURE "GIRDER LAYOUT - ELEVATION."

FOR GROUT FOR ENDS OF TIE RODS FOR PRESTRESSED GIRDERS, SEE SPECIAL PROVISIONS.



SPANS	"A" (LENGTH)	"B" (QUANTITIES)
H. 16'-0" K	16'-0"	96
A THRU G AND L THRU O (EXT. GDR.)	22'-3"	66
A THRU G AND L THRU O (INT. GDR.)	22'-2"	44

PROJECT NO. U-2107BA

ONSLow COUNTY

STATION: 277+50.00 -L-



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD PRESTRESSED CONCRETE GIRDER CONTINUOUS FOR LIVE LOAD DETAILS					
NOVEMBER 1991					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
					SHEET NO. S-64
					TOTAL SHEETS 170

ASSEMBLED BY: T.H. FANG DATE: 7/29/96

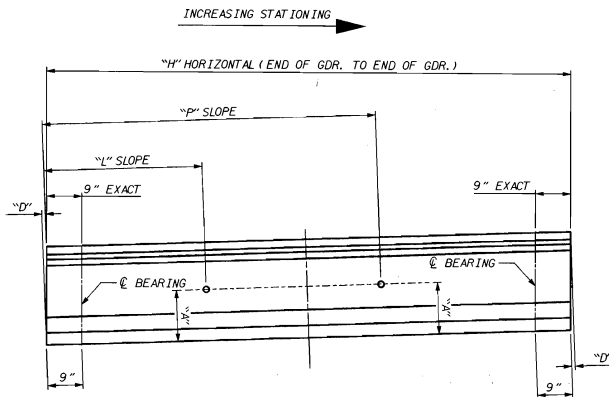
CHECKED BY: T.H. FANG DATE: 12/20/96

DRAWN BY: ELR 11/91 REV. 6/1/94 EEM/GRP

CHECKED BY: GRP 11/91 REV. 6/16/95RR EEM/ROW

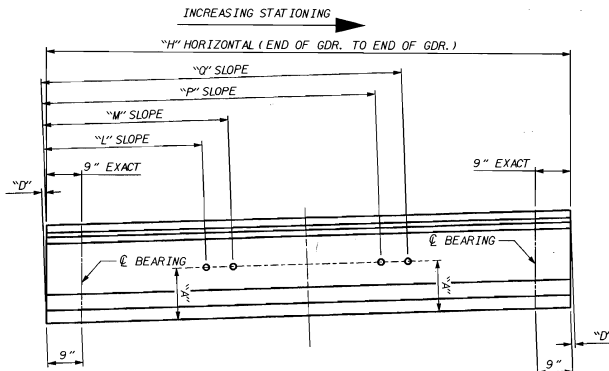
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STD. No. PCG7



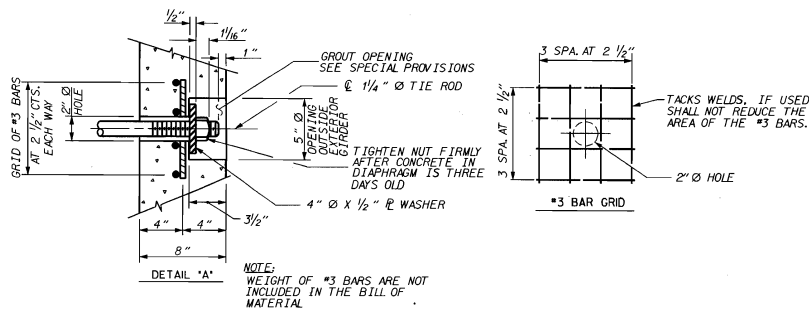
GIRDER LAYOUT - ELEVATION

FOR SPANS A THROUGH J



GIRDER LAYOUT - ELEVATION

FOR SPANS A THROUGH J

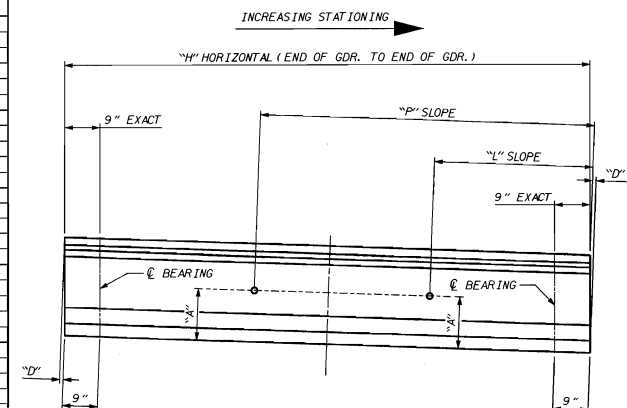


GROUTED RECESS FOR END OF TIE ROD

DRAWN BY: NLM/KRM DATE: 8/2/96
CHECKED BY: T.H. LANG DATE: 12/20/96

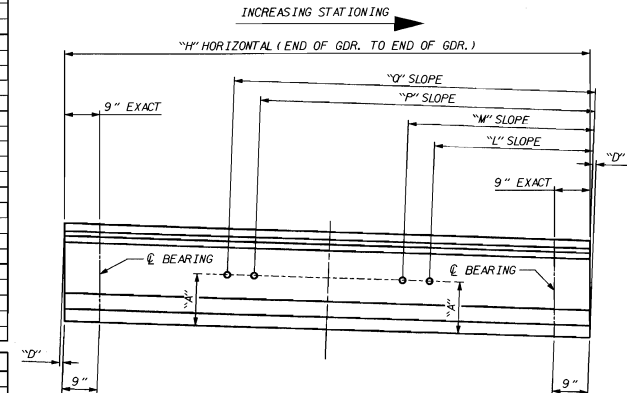
SPAN	GIRDER #	"A"	"D"	"L"	"M"	"P"	"Q"
A	2, 4, 8, 10	2'-9"	1 1/8"	113'-8 1/8"	38'-1 1/4"	75'-6 1/2"	
A	6	2'-6 3/8"	1 1/8"	113'-8 1/8"	38'-1 1/4"	75'-6 1/2"	
A	1	2'-9"	1 1/8"	113'-8 1/8"	41'-0 1/8"	78'-5 1/2"	
A	11	2'-9"	1 1/8"	113'-8 1/8"	35'-2 1/8"	72'-7 1/4"	
A	3, 5, 7, 9	2'-9"	1 1/8"	113'-8 1/8"	35'-2 1/8"	72'-7 1/4"	78'-5 1/4"
B	2, 4, 8, 10	2'-9"	1 1/8"	115'-4"	38'-7 1/8"	76'-7 1/8"	
B	6	2'-6 3/8"	1 1/8"	115'-4"	38'-7 1/8"	76'-7 1/8"	
B	1	2'-9"	1 1/8"	115'-4"	41'-6 1/2"	79'-6 1/8"	
B	11	2'-9"	1 1/8"	115'-4"	35'-8 1/2"	73'-8"	
B	3, 5, 7, 9	2'-9"	1 1/8"	115'-4"	35'-8 1/2"	73'-8 1/8"	79'-6"
C	2, 4, 8, 10	2'-9"	1 1/8"	115'-4"	38'-7 1/8"	76'-7 1/8"	
C	6	2'-6 3/8"	1 1/8"	115'-4"	38'-7 1/8"	76'-7 1/8"	
C	1	2'-9"	1 1/8"	115'-4"	41'-6 1/2"	79'-6 1/8"	
C	11	2'-9"	1 1/8"	115'-4"	35'-8 1/2"	73'-8 1/8"	
C	3, 5, 7, 9	2'-9"	1 1/8"	115'-4"	35'-8 1/2"	73'-8 1/8"	79'-6"
D	2, 4, 8, 10	2'-9"	1 1/8"	115'-4"	38'-7 1/8"	76'-7 1/8"	
D	6	2'-6 3/8"	1 1/8"	115'-4"	38'-7 1/8"	76'-7 1/8"	
D	1	2'-9"	1 1/8"	115'-4"	41'-6 1/2"	79'-6 1/8"	
D	11	2'-9"	1 1/8"	115'-4"	35'-8 1/2"	73'-8 1/8"	
D	3, 5, 7, 9	2'-9"	1 1/8"	115'-4"	35'-8 1/2"	73'-8 1/8"	79'-6 1/8"
E	2, 4, 8, 10	2'-9"	1 1/8"	115'-4"	38'-7 1/8"	76'-7 1/8"	
E	6	2'-6 3/8"	1 1/8"	115'-4"	38'-7 1/8"	76'-7 1/8"	
E	1	2'-9"	1 1/8"	115'-4"	41'-6 1/2"	79'-6 1/8"	
E	11	2'-9"	1 1/8"	115'-4"	35'-8 1/2"	73'-8 1/8"	
E	3, 5, 7, 9	2'-9"	1 1/8"	115'-4"	35'-8 1/2"	73'-8 1/8"	79'-6 1/8"
F	2, 4, 8, 10	2'-9"	1 1/8"	115'-4"	38'-7 1/8"	76'-7 1/8"	
F	6	2'-6 3/8"	1 1/8"	115'-4"	38'-7 1/8"	76'-7 1/8"	
F	1	2'-9"	1 1/8"	115'-4"	41'-6 1/2"	79'-6 1/8"	
F	11	2'-9"	1 1/8"	115'-4"	35'-8 1/2"	73'-8 1/8"	
F	3, 5, 7, 9	2'-9"	1 1/8"	115'-4"	35'-8 1/2"	73'-8 1/8"	79'-6 1/8"
G	2, 4, 8, 10	2'-9"	1 1/8"	115'-4"	38'-7 1/8"	76'-7 1/8"	
G	6	2'-6 3/8"	1 1/8"	115'-4"	38'-7 1/8"	76'-7 1/8"	
G	1	2'-9"	1 1/8"	115'-4"	41'-6 1/2"	79'-6 1/8"	
G	11	2'-9"	1 1/8"	115'-4"	35'-8 1/2"	73'-8 1/8"	
G	3, 5, 7, 9	2'-9"	1 1/8"	115'-4"	35'-8 1/2"	73'-8 1/2"	79'-6 1/8"
H	2, 4, 6, 10, 12, 14	3'-1 1/2"	3/4"	138'-10"	46'-6"	92'-3 1/2"	
H	8	2'-11 1/8"	3/4"	138'-10"	46'-5 1/8"	92'-3 1/8"	
H	1	3'-1 1/2"	3/4"	138'-10"	48'-6 1/8"	94'-4 1/8"	
H	15	3'-1 1/2"	3/4"	138'-10"	44'-5 1/8"	90'-2 1/2"	
H	3, 5, 7, 9, 11, 13	3'-1 1/2"	3/4"	138'-10"	44'-5 1/8"	90'-2 1/8"	94'-4 1/4"
I	2, 4, 6, 10, 12, 14	3'-1 1/2"	3/4"	138'-10"	46'-6 1/8"	92'-3 1/8"	
I	8	2'-11 1/8"	3/4"	138'-10"	46'-6 1/8"	92'-3 1/8"	
I	1	3'-1 1/2"	3/4"	138'-10"	48'-7"	94'-4 1/8"	
I	15	3'-1 1/2"	3/4"	138'-10"	44'-5 1/8"	90'-2 1/8"	
I	3, 5, 7, 9, 11, 13	3'-1 1/2"	3/4"	138'-10"	44'-5 1/8"	90'-2 1/8"	94'-4 1/8"
J	2, 4, 6, 10, 12, 14	3'-1 1/2"	3/4"	138'-10"	46'-6 1/4"	92'-3 1/8"	
J	8	2'-11 1/8"	3/4"	138'-10"	46'-6 1/4"	92'-3 1/8"	
J	1	3'-1 1/2"	3/4"	138'-10"	48'-7 1/8"	94'-4 1/2"	
J	15	3'-1 1/2"	3/4"	138'-10"	44'-5 1/8"	90'-2 1/8"	
J	3, 5, 7, 9, 11, 13	3'-1 1/2"	3/4"	138'-10"	44'-5 1/8"	90'-2 1/8"	94'-4 1/2"

SPAN	GIRDER #	"A"	"D"	"L"	"M"	"P"	"Q"
K	2, 4, 6, 10, 12, 14	3'-1 1/2"	3/4"	138'-10"	46'-6 1/8"	92'-3 1/2"	
K	8	2'-11 1/8"	3/4"	138'-10"	46'-6 1/8"	92'-3 1/2"	
K	1	3'-1 1/2"	3/4"	138'-10"	44'-5 1/8"	90'-2 1/8"	
K	15	3'-1 1/2"	3/4"	138'-10"	48'-7 1/8"	94'-4 1/8"	
K	3, 5, 7, 9, 11, 13	3'-1 1/2"	3/4"	138'-10"	44'-5 1/8"	90'-2 1/8"	94'-4 1/8"
L	2, 4, 8, 10	2'-9"	1 1/8"	116'-4"	38'-1 1/8"	77'-3 1/4"	
L	6	2'-6 3/8"	1 1/8"	116'-4"	38'-1 1/8"	77'-3 1/4"	
L	1	2'-9"	1 1/8"	116'-4"	36'-0 1/8"	74'-4 1/8"	
L	11	2'-9"	1 1/8"	116'-4"	41'-11"	80'-2 1/8"	
L	3, 5, 7, 9	2'-9"	1 1/8"	116'-4"	36'-1 1/8"	74'-4 1/8"	80'-1 3/4"
M	2, 4, 8, 10	2'-9"	1 1/8"	116'-4"	38'-1 1/8"	77'-3 1/4"	
M	6	2'-6 3/8"	1 1/8"	116'-4"	38'-1 1/8"	77'-3 1/4"	
M	1	2'-9"	1 1/8"	116'-4"	36'-0 1/2"	74'-3 1/8"	
M	11	2'-9"	1 1/8"	116'-4"	41'-10 1/8"	80'-2"	
M	3, 5, 7, 9	2'-9"	1 1/8"	116'-4"	36'-0 1/2"	74'-4 1/8"	80'-1 3/4"
N	2, 4, 8, 10	2'-9"	1 1/8"	116'-4"	38'-1 1/8"	77'-3 1/4"	
N	6	2'-6 3/8"	1 1/8"	116'-4"	38'-1 1/8"	77'-3 1/4"	
N	1	2'-9"	1 1/8"	116'-4"	36'-0 1/8"	74'-3 1/8"	
N	11	2'-9"	1 1/8"	116'-4"	41'-10 1/8"	80'-1 1/8"	
N	3, 5, 7, 9	2'-9"	1 1/8"	116'-4"	36'-0 1/8"	74'-3 1/8"	80'-1 1/8"
O	2, 4, 8, 10	2'-9"	1 1/8"	114'-8 1/8"	38'-4 1/8"	76'-1 1/8"	
O	6	2'-6 3/8"	1 1/8"	114'-8 1/8"	38'-4 1/8"	76'-1 1/8"	
O	1	2'-9"	1 1/8"	114'-8 1/8"	35'-5 1/2"	73'-2 1/2"	
O	11	2'-9"	1 1/8"	114'-8 1/8"	41'-3 1/8"	79'-0 1/8"	
O	3, 5, 7, 9	2'-9"	1 1/8"	114'-8 1/8"	35'-5 1/8"	73'-2 1/8"	79'-0 1/8"



GIRDER LAYOUT - ELEVATION

FOR SPANS K THROUGH O



GIRDER LAYOUT - ELEVATION

FOR SPANS K THROUGH O

PROJECT NO. U-2107BA
ONSLow COUNTY
STATION: 277+50.00 -L-



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RAILROAD
SUPERSTRUCTURE
= GIRDER LAYOUT - ELEVATION =

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			5-65
2			4			TOTAL SHEETS 170

10-APR-1997 10:36
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NOTES

FOR ELASTOMERIC BEARINGS, SEE SPECIAL PROVISIONS.

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 BURIED WITH A SHARP POINTED TOOL.

THE 2" Ø PIPE SLEEVE SHALL BE CUT FROM SCHEDULE 40 P.V.C. PLASTIC PIPE. THE P.V.C. PLASTIC PIPE SHALL MEET THE REQUIREMENTS OF A.S.T.M. D1785.

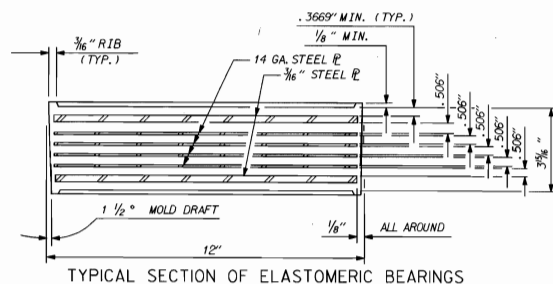
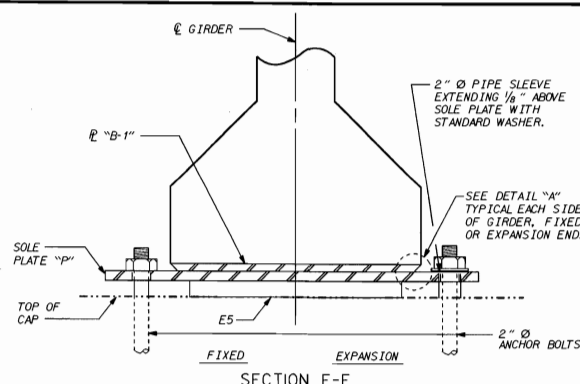
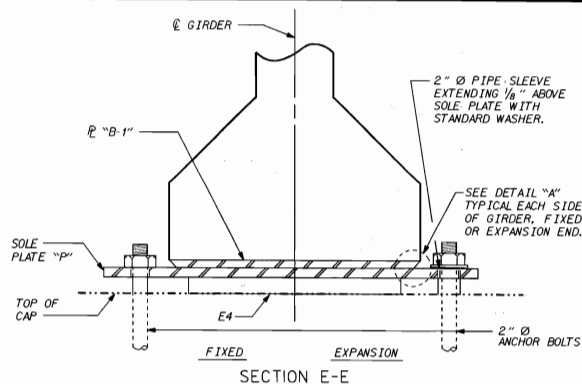
STEEL SOLE PLATES, BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE SPECIFICATIONS.

PRIOR TO WELDING, GRIND THE GALVANIZED SURFACE OF THE PORTION OF THE EMBEDDED PLATE AND SOLE PLATE THAT ARE TO BE WELDED. AFTER WELDING, DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED IN ACCORDANCE WITH THE SPECIFICATIONS.

WHEN WELDING THE SOLE PLATE TO THE EMBEDDED PLATE IN THE GIRDER, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE SOLE PLATE DOES NOT EXCEED 300 °F. TEMPERATURES ABOVE THIS MAY DAMAGE THE ELASTOMER.

SOLE PLATE "P", BOLTS, NUTS, WASHERS, AND PIPE SLEEVE SHALL BE INCLUDED IN THE PAY ITEM FOR PRESTRESSED CONCRETE GIRDERS.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

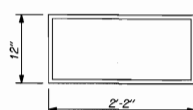
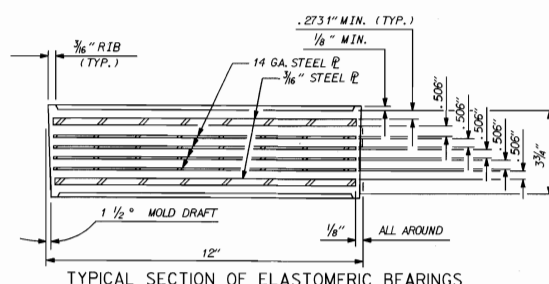


E4 (242 REQ'D)

PLAN VIEW OF ELASTOMERIC BEARING

AASHTO TYPE V GIRDER

(63' PCG)

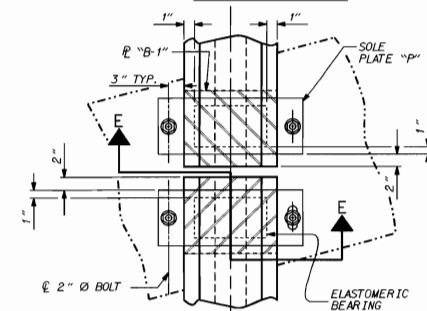
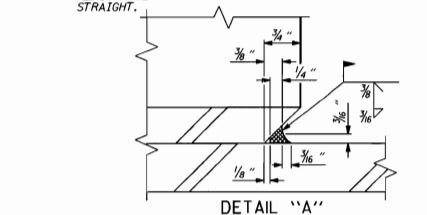


E5 (120 REQ'D)

PLAN VIEW OF ELASTOMERIC BEARING

AASHTO TYPE VI GIRDER

(72' PCG)



TYPICAL HALF-PLAN
(SHOWING CONTINUOUS BENT)

TYPICAL HALF-PLAN
(SHOWING SIMPLE SPAN BENT)

PROJECT NO. **U-2107BA**
ON **NSLOW** COUNTY
STATION: **277+50.00 -L-**

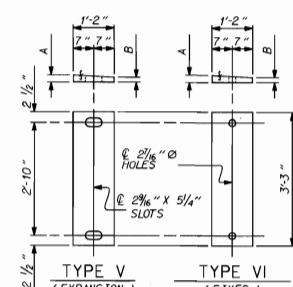
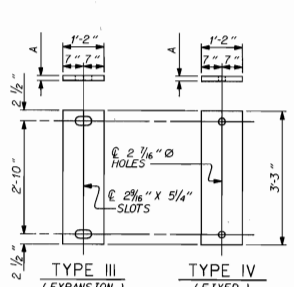
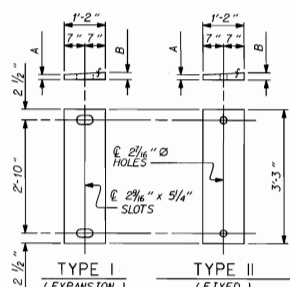


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
HALEIGH

ELASTOMERIC BEARING DETAILS
PRESTRESSED CONCRETE GIRDER
JULY SUPERSTRUCTURE 1996

LOAD RATINGS	
ASSHTO GIRDER	MAX. D.L. + L.L.
63' PCG - TYPE V	251.0 K
72' PCG - TYPE VI	248.0 K

SOLE PLATES				
SOLE PLATE	NO. REQ'D	TYPE	A	B
P1	11	II	1 1/4"	1 1/8"
P2	11	II	2 1/8"	2 1/8"
P3	11	II	1 1/4"	1 1/2"
P4	11	II	2 1/8"	2 1/8"
P5	11	II	1 1/4"	1 1/8"
P6	11	II	1 1/8"	2 1/4"
P7	11	II	1 1/4"	1 1/8"
P8	11	II	1 1/4"	2 1/8"
P9	104	IV	1 1/4"	1 1/2"
P10	11	II	1 1/8"	1 1/8"
P11	15	II	1 1/8"	1 1/8"
P12	11	VI	1 1/8"	1 1/8"
P13	11	VI	1 1/8"	1 1/8"
P14	11	VI	1 1/8"	1 1/2"
P15	15	IV	1 1/8"	1 1/8"
P21	11	I	1 1/4"	1 1/8"
P22	26	I	1 1/4"	1 1/8"
P23	11	I	1 1/8"	2 1/8"
P24	37	III	1 1/4"	1 1/4"
P25	11	V	1 1/8"	1 1/4"



SOLE PLATE DETAILS ("P")

SEE CHART FOR DIMENSIONS A AND B

ASSEMBLED BY: **T.H. FANG** DATE: **7/1/96**
CHECKED BY: **T.H. FANG** DATE: **12/20/96**

REVISIONS				SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE
1			4		
2			5		

5-66
TWIN
SHEETS
170

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																																			
1/2" ϕ LOW RELAXATION	SPAN A											SPAN A											SPAN A												
	GIRDERS 1 & 11											GIRDERS 2, 3, 9 & 10											GIRDERS 4, 5, 7, 8												
	TENTH POINTS	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	
CAMBER (GIRDER ALONE IN PLACE) $\uparrow$	0	0.138	0.262	0.358	0.420	0.441	0.420	0.358	0.262	0.138	0	0	0.138	0.262	0.358	0.420	0.441	0.420	0.358	0.262	0.138	0	0	0.138	0.262	0.359	0.420	0.441	0.420	0.359	0.262	0.138	0		
* DEFLECTION DUE TO SUPERIMPOSED D.L. $\downarrow$	0	0.050	0.094	0.129	0.151	0.159	0.151	0.129	0.094	0.050	0	0	0.051	0.097	0.133	0.156	0.164	0.156	0.133	0.097	0.051	0	0	0.051	0.097	0.133	0.155	0.163	0.155	0.133	0.097	0.051	0		
FINAL CAMBER $\uparrow$	0	1/16"	2"	2 3/4"	3 1/4"	3 3/8"	3 1/4"	2 3/4"	2"	1 1/16"	0	0	1/16"	1 5/16"	2 1/16"	3 3/8"	3 3/8"	3 3/8"	2 1/16"	1 5/16"	1 1/16"	0	0	1/16"	2"	2 1/16"	3 3/8"	3 3/8"	3 3/8"	2 1/16"	2"	1 1/16"	0		

* INCLUDES FUTURE WEARING SURFACE
 ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																																	
1/2" Ø LOW RELAXATION	SPAN A											SPANS B THRU G											SPANS B THRU G										
	GIRDER 6											GIRDERS 1 & 11											GIRDERS 2, 3, 9 & 10										
	TENTH POINTS	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9
CAMBER (GIRDER ALONE IN PLACE) ↑	0	0.138	0.262	0.359	0.420	0.441	0.420	0.359	0.262	0.138	0	0	0.139	0.264	0.361	0.423	0.444	0.423	0.361	0.264	0.139	0	0	0.139	0.264	0.361	0.423	0.444	0.423	0.361	0.264	0.139	0
* DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0	0.053	0.101	0.138	0.162	0.170	0.162	0.138	0.101	0.053	0	0	0.053	0.100	0.136	0.160	0.168	0.160	0.136	0.100	0.053	0	0	0.054	0.103	0.141	0.165	0.173	0.165	0.141	0.103	0.054	0
FINAL CAMBER ↑	0	1"	1 5/8"	2 5/8"	3 1/8"	3 1/4"	3 1/8"	2 5/8"	1 5/8"	1"	0	0	1/16"	1 5/16"	2 1/16"	3 1/8"	3 3/8"	3 1/8"	2 1/16"	1 5/16"	1 1/16"	0	0	1"	1 5/8"	2 5/8"	3 1/8"	3 1/4"	3 1/8"	2 5/8"	1 5/8"	1"	0

* INCLUDES FUTURE WEARING SURFACE
 ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																																			
1/2" Ø LOW RELAXATION	SPANS B THRU G GIRDERS 4, 5, 7 & 8																		SPANS B THRU G GIRDER 6										SPANS H, I, J & K GIRDERS 1, 15						
	TENTH POINTS																																		
	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0		
CAMBER (GIRDER ALONE IN PLACE) ↑	0	0.139	0.264	0.361	0.423	0.444	0.423	0.361	0.264	0.139	0	0	0.139	0.264	0.361	0.423	0.444	0.423	0.361	0.264	0.139	0	0	0.126	0.238	0.325	0.381	0.400	0.381	0.325	0.238	0.126	0		
* DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0	0.054	0.102	0.140	0.164	0.172	0.164	0.140	0.102	0.054	0	0	0.056	0.107	0.146	0.171	0.179	0.171	0.146	0.107	0.056	0	0	0.069	0.130	0.178	0.208	0.218	0.208	0.178	0.130	0.069	0		
FINAL CAMBER ↑	0	1"	1 5/8"	2 5/8"	3 1/8"	3 1/4"	3 1/8"	2 5/8"	1 5/8"	1"	0	0	1"	1 5/8"	2 5/8"	3"	3 3/8"	3"	2 5/8"	1 5/8"	1"	0	0	1/16"	1 5/8"	1 3/4"	2 1/16"	2 5/8"	2 1/4"	1 3/4"	1 5/8"	1 1/8"	0		

* INCLUDES FUTURE WEARING SURFACE
 ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																																				
1/2" Ø LOW RELAXATION	SPANS H, I, J & K											SPANS H, I, J & K											SPANS H, I, J & K													
	GIRDERS 2, 3, 13, 14											GIRDERS 4, 5, 6, 7, 9, 10, 11, 12											GIRDER 8													
	TENTH POINTS	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0		
CAMBER (GIRDER ALONE IN PLACE) ↓	0	0.126	0.238	0.325	0.381	0.400	0.381	0.325	0.238	0.126	0	0	0.126	0.238	0.325	0.381	0.400	0.381	0.325	0.238	0.126	0	0	0.126	0.238	0.325	0.381	0.400	0.381	0.325	0.238	0.126	0			
* DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0	0.062	0.118	0.161	0.189	0.198	0.189	0.161	0.118	0.062	0	0	0.061	0.116	0.159	0.186	0.195	0.186	0.159	0.116	0.061	0	0	0.065	0.123	0.169	0.198	0.208	0.198	0.169	0.123	0.065	0			
FINAL CAMBER ↓	0	3/4"	1 1/8"	1 5/8"	2 5/8"	2 5/8"	2 5/8"	1 5/8"	1 1/8"	3/4"	0	0	3/4"	1 1/8"	2"	2 5/8"	2 5/8"	2 5/8"	2"	1 1/8"	3/4"	0	0	3/4"	1 1/8"	1 1/8"	2 5/8"	2 5/8"	2 5/8"	1 1/8"	1 1/8"	3/4"	0			

* INCLUDES FUTURE WEARING SURFACE
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PROJECT NO. U-2107BA
ONSLow COUNTY
 STATION: 277+50.00 -L-

SHEET 1 OF 2																											
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH																											
DEAD LOAD DEFLECTIONS																											
REVISIONS																								SHEET NO.			
NO.		BY		DATE		NO.		BY		DATE		5-67												TOTAL			
1						3																		170			
2						4																					

DRAWN BY: M.M. R. DATE: 8/5/96
 CHECKED BY: L.H. F. DATE: 12/16/96

DEAD LOAD DEFLECTION TABLE FOR GIRDERS

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																																				
$\frac{1}{2}$ " ϕ LOW RELAXATION	SPANS L, M, & N											SPANS L, M, & N											SPANS L, M, & N													
	GIRDERS 1 & 11											GIRDERS 2, 3, 9, 10											GIRDERS 4, 5, 7 & 8													
	TENTH POINTS	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0		
CAMBER (GIRDER ALONE IN PLACE)	↑	0	0.140	0.265	0.362	0.424	0.446	0.424	0.362	0.265	0.140	0	0	0.140	0.265	0.362	0.424	0.446	0.424	0.362	0.265	0.140	0	0	0.140	0.265	0.362	0.424	.446	0.424	0.362	0.265	0.140	0		
* DEFLECTION DUE TO SUPERIMPOSED D.L.	↓	0	0.055	0.103	0.141	0.165	0.174	0.165	0.141	0.103	0.055	0	0	0.056	0.107	0.146	0.171	0.179	0.171	0.146	0.107	0.056	0	0	0.056	0.106	0.145	0.169	0.178	0.169	0.145	0.106	0.056	0		
FINAL CAMBER	↑	0	1"	1 $\frac{1}{8}$ "	2 $\frac{1}{8}$ "	3 $\frac{1}{8}$ "	3 $\frac{1}{4}$ "	3 $\frac{1}{8}$ "	2 $\frac{1}{8}$ "	1 $\frac{1}{8}$ "	1"	0	0	1"	1 $\frac{1}{8}$ "	2 $\frac{1}{8}$ "	3 $\frac{1}{8}$ "	3 $\frac{1}{4}$ "	3 $\frac{1}{8}$ "	2 $\frac{1}{8}$ "	1 $\frac{1}{8}$ "	1"	0	0	1"	1 $\frac{1}{8}$ "	2 $\frac{1}{8}$ "	3 $\frac{1}{8}$ "	3 $\frac{1}{4}$ "	3 $\frac{1}{8}$ "	2 $\frac{1}{8}$ "	1 $\frac{1}{8}$ "	1"	0		

* INCLUDES FUTURE WEARING SURFACE
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																																					
$\frac{1}{2}$ " ϕ LOW RELAXATION	SPANS L, M & N											SPAN 0											SPAN 0														
	GIRDER 6											GIRDERS 1 & 11											GIRDERS 2, 3, 9, 10														
	TENTH POINTS	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0			
CAMBER (GIRDER ALONE IN PLACE)	↑	0	0.140	0.265	0.362	0.424	0.446	0.424	0.362	0.265	0.140	0	0	0.139	0.263	0.360	0.422	0.443	0.422	0.360	0.263	0.139	0	0	0.139	0.263	0.360	0.422	0.443	0.422	0.360	0.263	0.139	0			
* DEFLECTION DUE TO SUPERIMPOSED D. L.	↓	0	0.058	0.110	0.151	0.177	0.186	0.177	0.151	0.110	0.058	0	0	0.052	0.098	0.134	0.156	0.164	0.156	0.134	0.098	0.052	0	0	0.053	0.101	0.138	0.162	0.170	0.162	0.138	0.101	0.053	0			
FINAL CAMBER	↑	0	1"	1 $\frac{1}{8}$ "	2 $\frac{1}{8}$ "	2 $\frac{1}{8}$ "	3 $\frac{1}{8}$ "	2 $\frac{1}{8}$ "	2 $\frac{1}{8}$ "	1 $\frac{1}{8}$ "	1"	0	0	1 $\frac{1}{16}$ "	2"	2 $\frac{1}{16}$ "	3 $\frac{3}{16}$ "	3 $\frac{3}{16}$ "	3 $\frac{3}{16}$ "	2 $\frac{1}{16}$ "	2"	1 $\frac{1}{16}$ "	0	0	1 $\frac{1}{16}$ "	1 $\frac{1}{8}$ "	2 $\frac{1}{8}$ "	3 $\frac{1}{8}$ "	3 $\frac{1}{4}$ "	3 $\frac{1}{8}$ "	2 $\frac{1}{8}$ "	1 $\frac{1}{8}$ "	1 $\frac{1}{16}$ "	0			

* INCLUDES FUTURE WEARING SURFACE
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																																	
1/2" Ø LOW RELAXATION	SPAN 0												SPAN 0										SPAN										
	GIRDERS 4, 5, 7, 8												GIRDER 6										GIRDERS										
	TENTH POINTS	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9
CAMBER (GIRDER ALONE IN PLACE) ↓	0	0.139	0.263	0.360	0.422	0.443	0.422	0.360	0.263	0.139	0	0	0.139	0.263	0.360	0.422	0.443	0.422	0.360	0.263	0.139	0											
* DEFLECTION DUE TO SUPERIMPOSED D.L.	0	0.053	0.100	0.137	0.160	0.168	0.160	0.137	0.100	0.053	0	0	0.055	0.104	0.143	0.167	0.176	0.167	0.143	0.104	0.055	0											
FINAL CAMBER ↑	0	1/16"	1/8"	2 1/8"	3/8"	3 3/16"	3/8"	2 1/16"	1 1/8"	1/16"	0	0	1"	1 1/8"	2 3/8"	3 1/8"	3 3/16"	3 1/8"	2 3/8"	1 1/8"	1"	0											

* INCLUDES FUTURE WEARING SURFACE
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).



PROJECT NO. U-2107BA
ONSLow COUNTY
STATION: 277+50.00 -L-

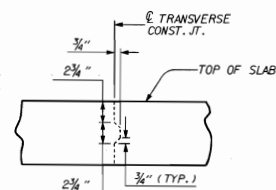
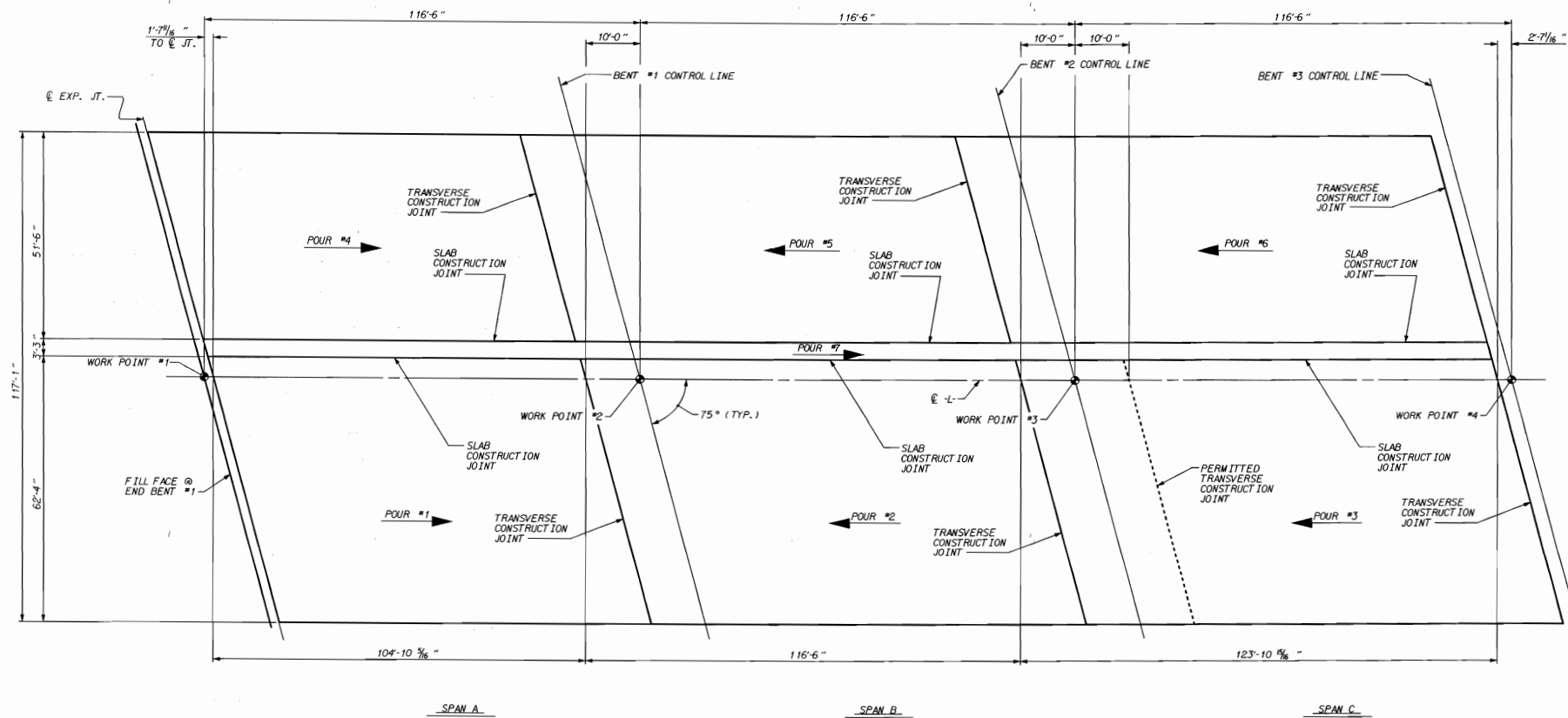
SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DEAD LOAD
DEFLECTIONS

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			5-68
2			4			TOTAL SHEETS 170

DRAWN BY: J. H. Fung DATE: 8/5/96
CHECKED BY: J. H. Fung DATE: 12/16/96



TRANSVERSE & PERMITTED TRANSVERSE CONSTRUCTION JOINT DETAIL

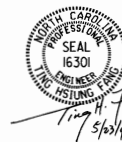
NOTE: SLAB REINFORCING STEEL SHALL BE CONTINUOUS THRU JOINT

PROJECT NO. U-2107BA
ONSLow COUNTY
 STATION: 277+50.00 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

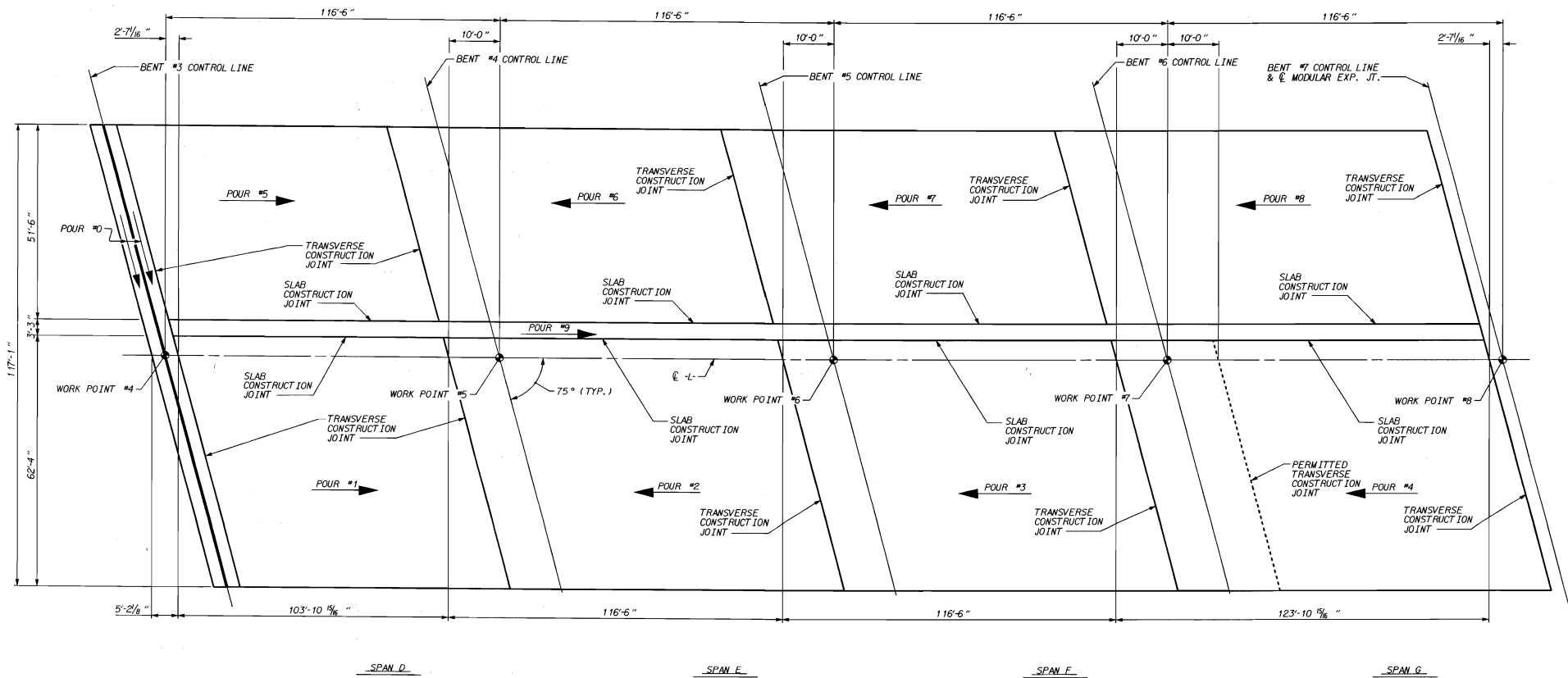
OPTION #1
WITH CLOSURE POUR
LAYOUT OF POURING
SEQUENCE



DRAWN BY: N.M.R.M. DATE: 8/5/96
 CHECKED BY: T.H. FANG DATE: 1/31/97

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	5-69
1			3			TOTAL
2			4			170

15-APR-1997 16:22
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 nll



PROJECT NO. U-2107BA
ONSLow COUNTY
 STATION: 277+50.00 -L-

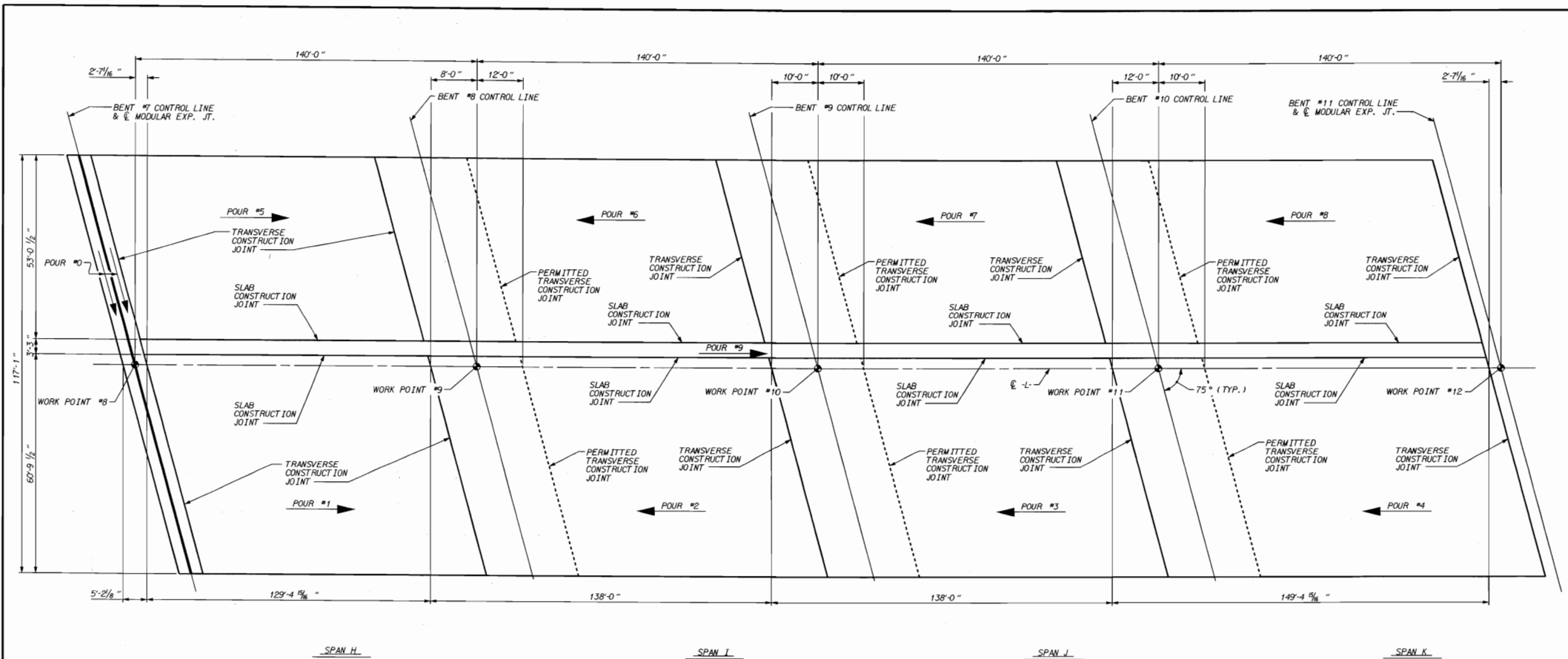
SHEET 2 OF 4



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
OPTION #1
WITH CLOSURE POUR
LAYOUT OF POURING
SEQUENCE

DRAWN BY: T. H. Fang DATE: 8/5/96
 CHECKED BY: T. H. Fang DATE: 7/31/97

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-70
1			3			TOTAL
2			4			170



DRAWN BY: Y.H. Fang DATE: 8/5/96
 CHECKED BY: Y.H. Fang DATE: 1/31/97



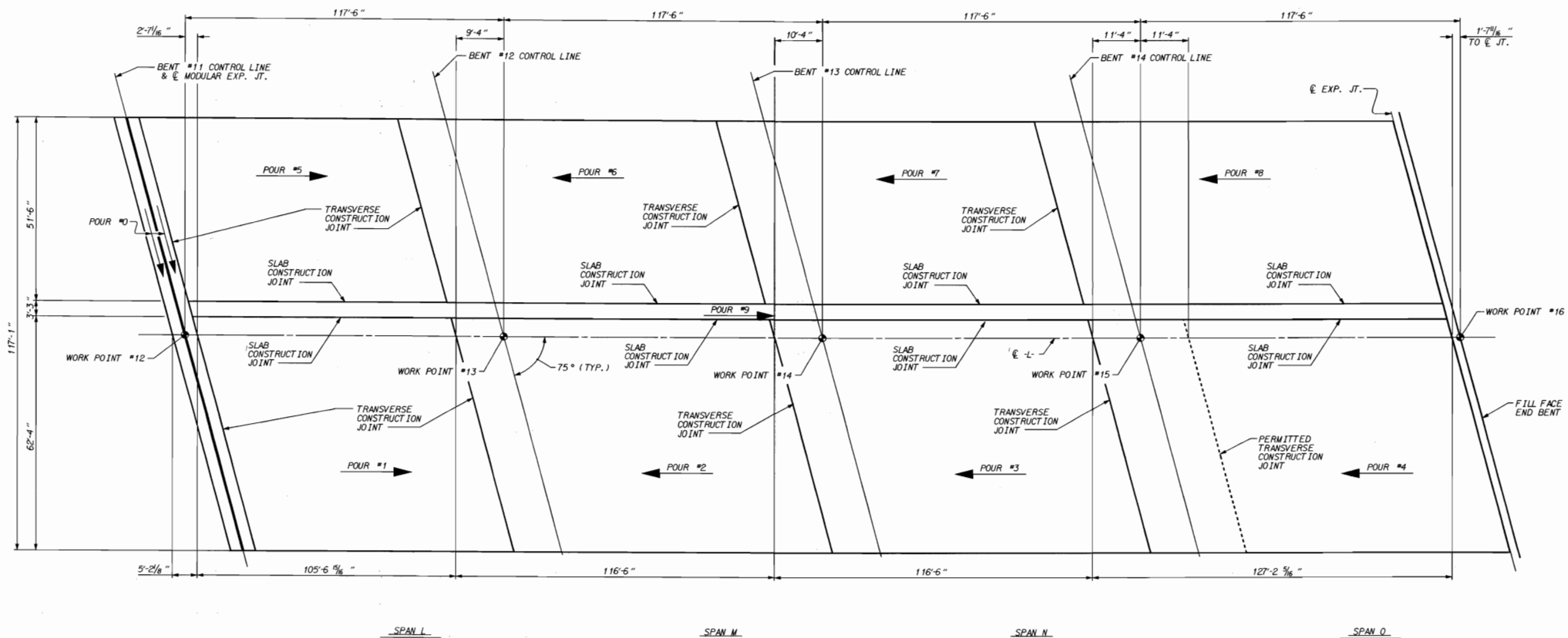
PROJECT NO. U-2107BA
ONSLow COUNTY
 STATION: 277+50.00 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 Raleigh

OPTION #1
WITH CLOSURE POUR
LAYOUT OF POURING
SEQUENCE

REVISIONS				SHEET NO.	
NO.	DATE	BY	DATE	5-71	
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2		4		170	



PROJECT NO. U-2107BA
ONSLow COUNTY
 STATION: 277+50.00 -L-

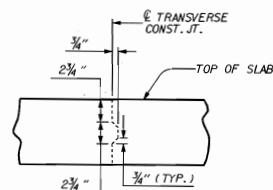
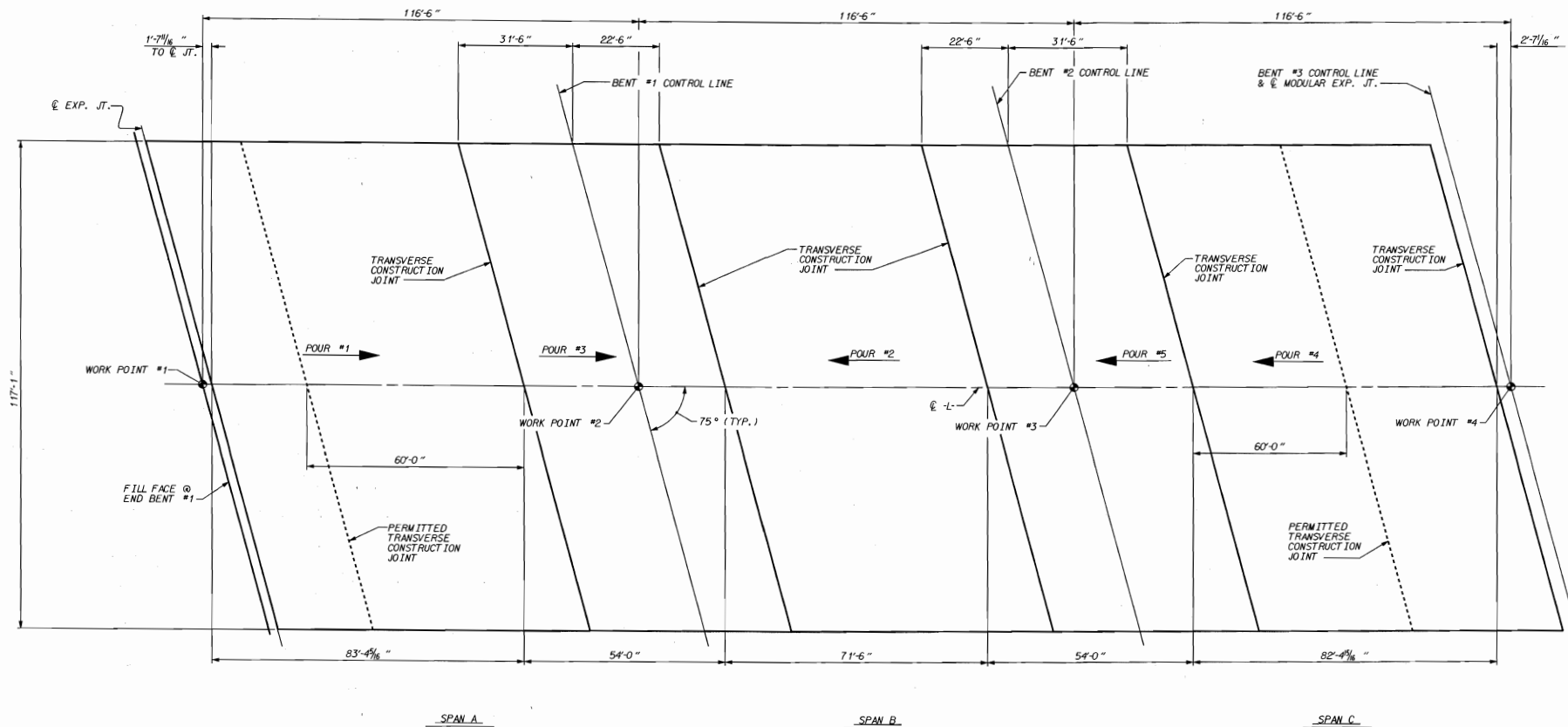
SHEET 4 OF 4



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
OPTION #1
WITH CLOSURE POUR
LAYOUT OF POURING
SEQUENCE

DRAWN BY: T.H. Fang DATE: 8/5/96
 CHECKED BY: T.H. Fang DATE: 1/31/97

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			5-72
2			4			TOTAL SHEETS 170



TRANSVERSE & PERMITTED TRANSVERSE CONSTRUCTION JOINT DETAIL

NOTE: SLAB REINFORCING STEEL SHALL BE CONTINUOUS THRU JOINT

PROJECT NO. U-2107BA
ONSLOW COUNTY
 STATION: 277+50.00 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 Raleigh

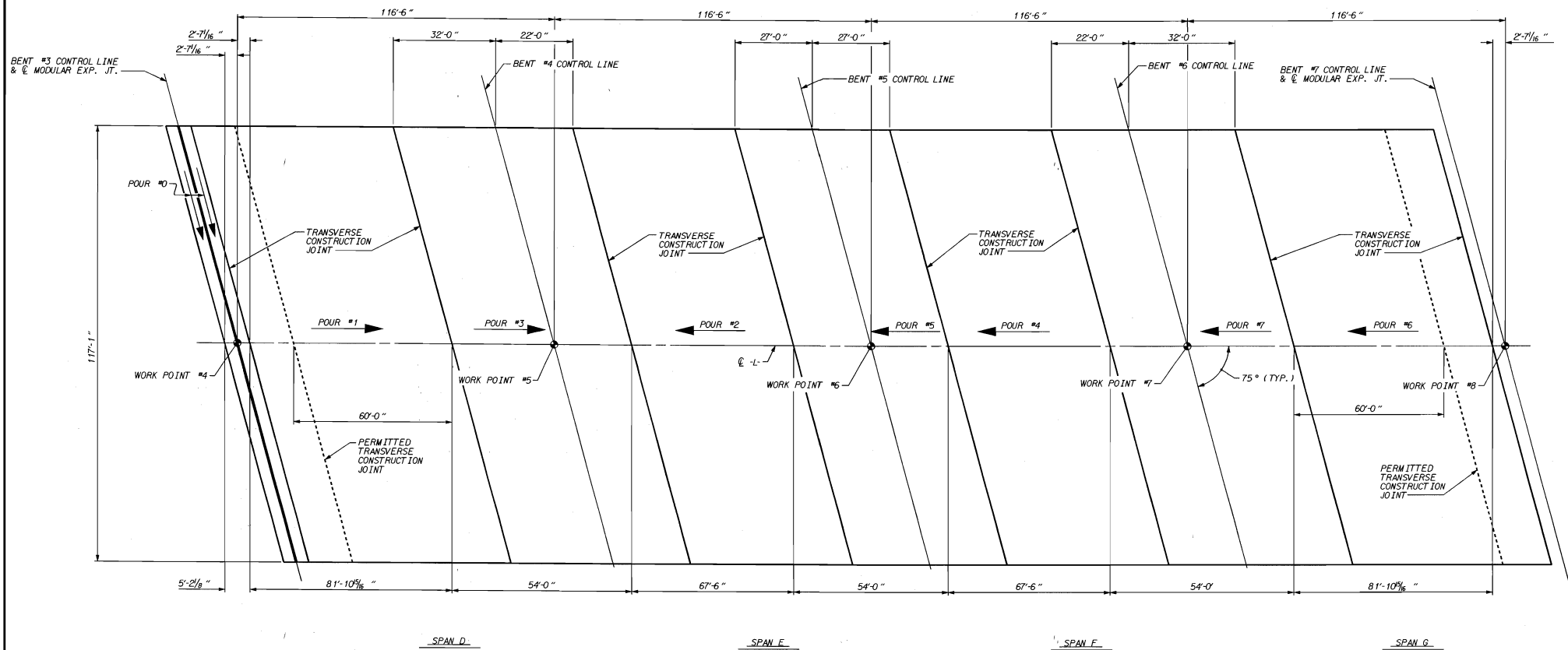
OPTION #2
WITHOUT CLOSURE POUR
LAYOUT OF POURING
SEQUENCE



DRAWN BY: Tim M. Ruffin DATE: 12/11/96
 CHECKED BY: L.H. LANG DATE: 1/23/97

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

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PROJECT NO. U-2107BA
ONslow COUNTY
 STATION: 277+50.00 -L-

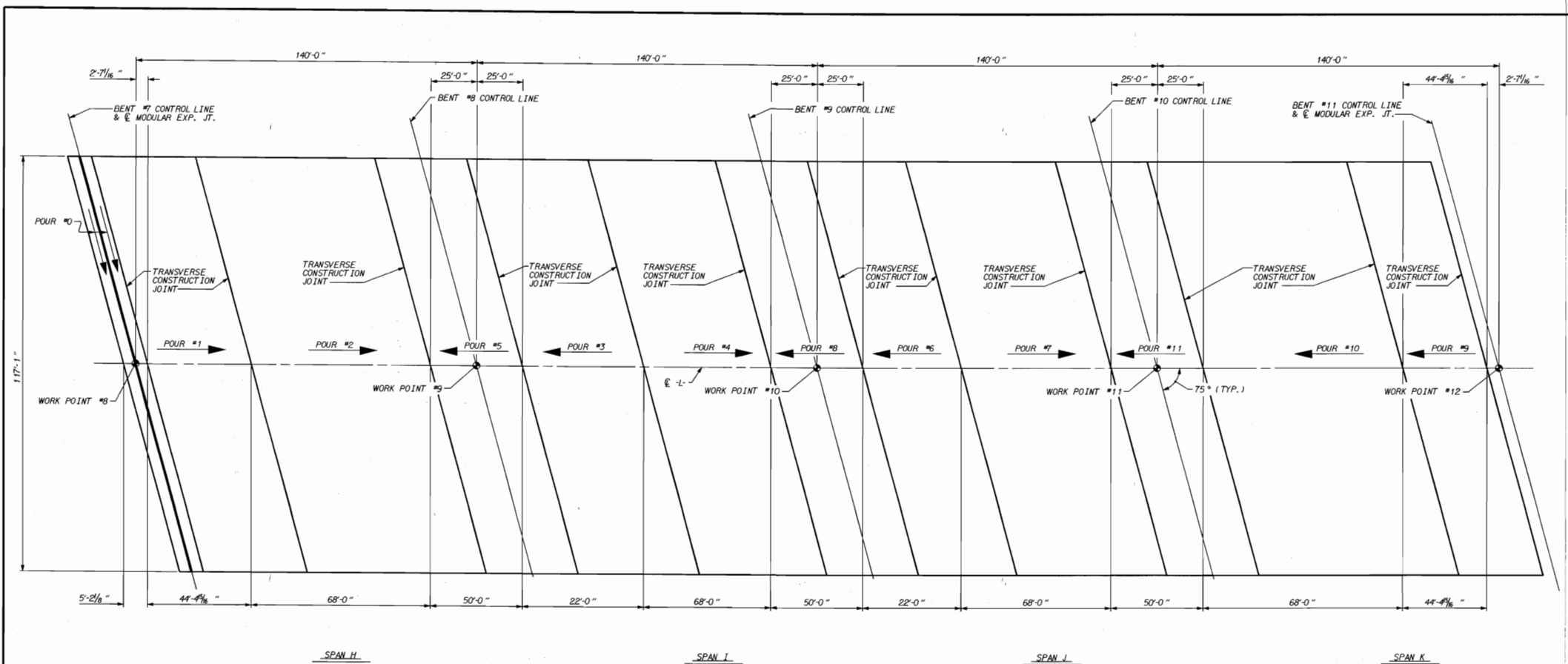
SHEET 2 OF 4



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5-74
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DRAWN BY: N.M.R. DATE: 12/11/96
 CHECKED BY: L.H. ENG DATE: 1/31/97

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PROJECT NO. U-2107BA
ONSLOW COUNTY
 STATION: 277+50.00 -L-

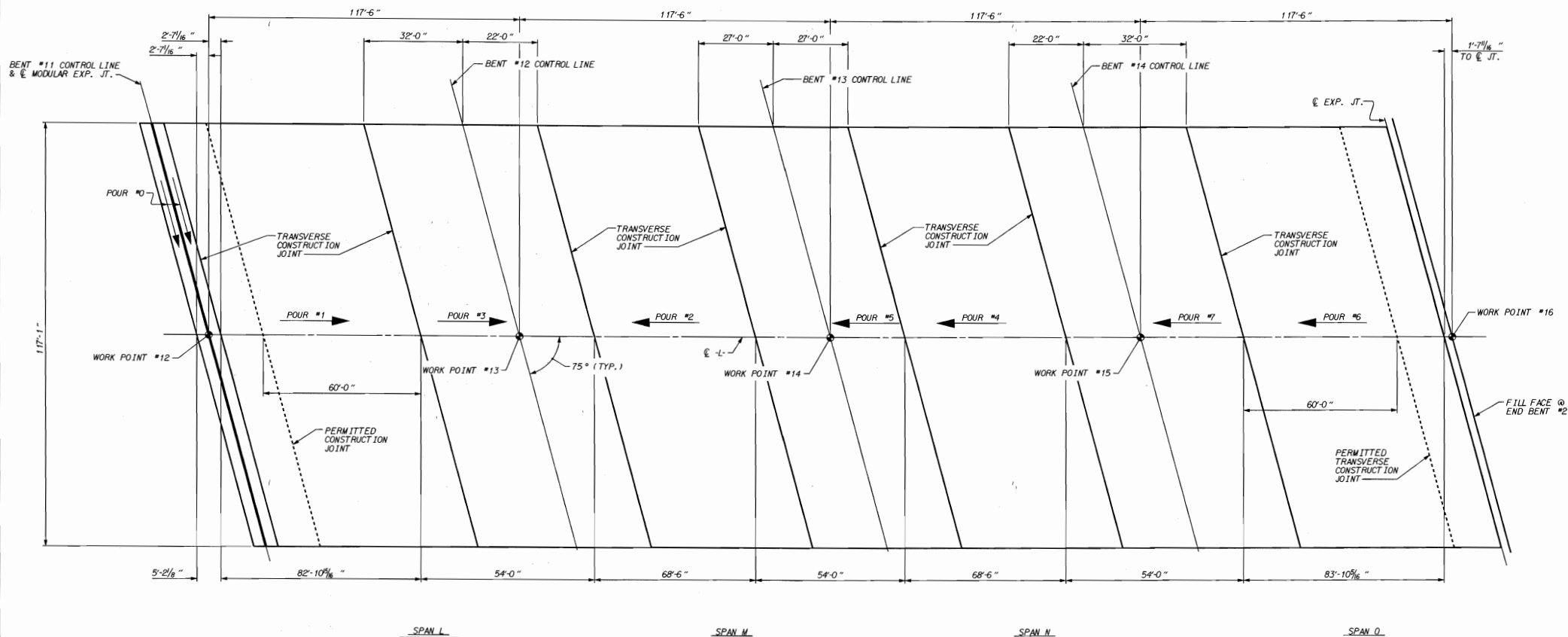
SHEET 3 OF 4



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
OPTION #2
WITHOUT CLOSURE POUR
LAYOUT OF POURING
SEQUENCE

DRAWN BY: T.H. Fang DATE: 12/11/96
 CHECKED BY: T.H. Fang DATE: 1/23/97

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
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2			4			170



DRAWN BY: T.H. FANG DATE: 12/11/96
 CHECKED BY: T.H. FANG DATE: 1/31/97



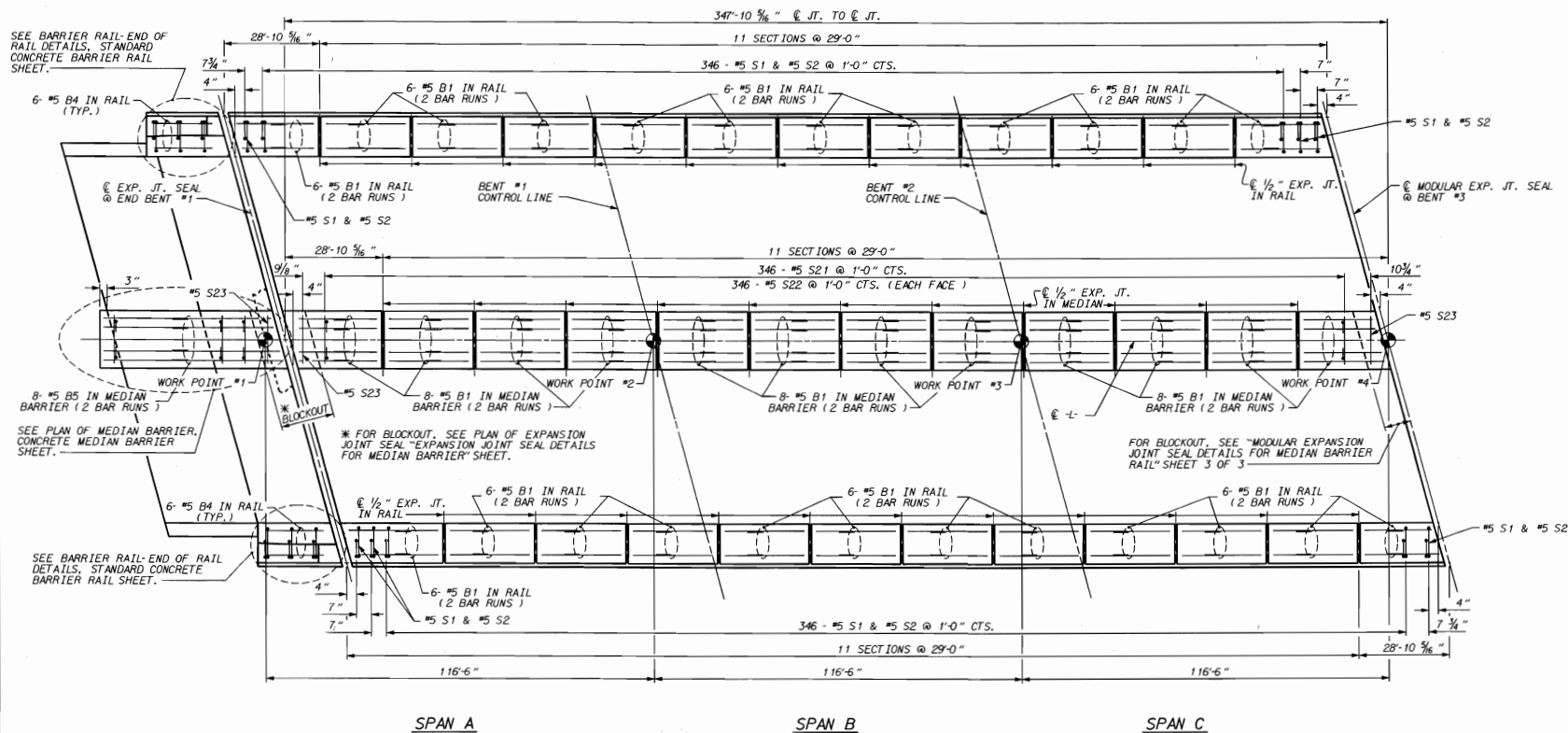
PROJECT NO. U-2107BA
ONSLOW COUNTY
 STATION: 277+50.00 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

OPTION #2
WITHOUT CLOSURE POUR
LAYOUT OF POURING
SEQUENCE

REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	5-76	
1			3			TOTAL	
2			4			SHEETS	170



SPAN A

SPAN B

SPAN C

PLAN

PROJECT NO. U-2107BA
ONSLow COUNTY
 STATION: 277+50.00 -L-

SHEET 1 OF 4

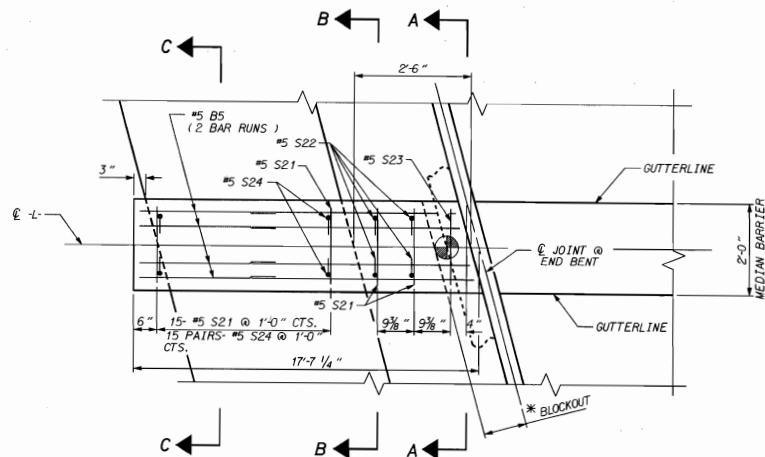


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**CONCRETE BARRIER RAIL
 & MEDIAN BARRIER
 CONTINUOUS SPANS
 A, B, AND C**

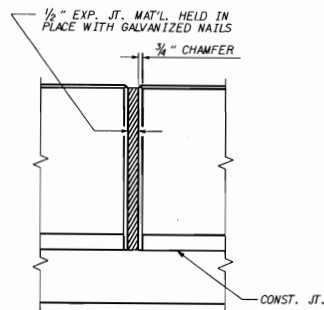
DRAWN BY: N.M. Ruff DATE: 5/18/16
 CHECKED BY: L. H. FARG DATE: 12/30/16

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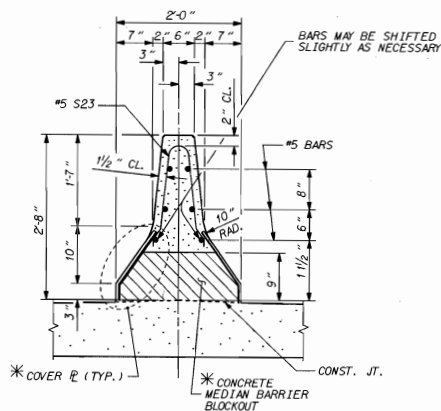
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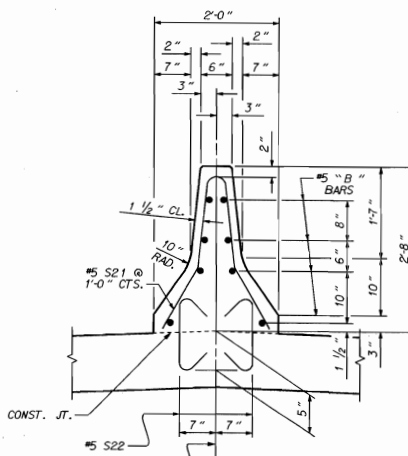
PLAN OF MEDIAN BARRIER



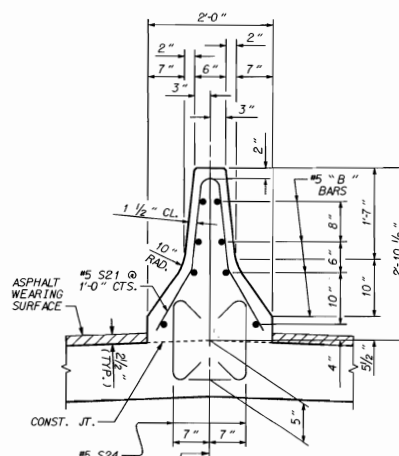
ELEVATION AT MEDIAN BARRIER
SHOWING EXPANSION JOINT MATERIAL
ON CONTINUOUS SLAB



SECTION A-A



SECTION B-B



SECTION C-C
(ON APPROACH SLAB ONLY)

NOTES

THE MEDIAN BARRIER RAIL IN A CONTINUOUS UNIT SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THE SPAN HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

THE MEDIAN BARRIER RAIL ON THE APPROACH SLABS SHALL NOT BE CAST UNTIL ALL CONCRETE FOR APPROACH SLABS HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

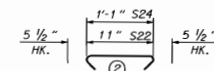
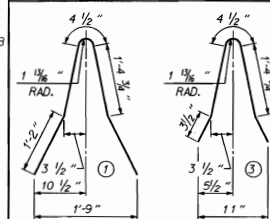
ALL REINFORCING STEEL IN CONCRETE MEDIAN SHALL BE EPOXY COATED.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE MEDIAN BARRIER RAIL SHALL BE CONSTRUCTED PLUMB.

* FOR BLOCKOUT IN CONCRETE MEDIAN BARRIER FOR COVER PLATE AT END BENTS. SEE PLAN OF EXPANSION JOINT SEAL "EXPANSION JOINT SEAL DETAILS FOR MEDIAN BARRIER" SHEET 4 OF 4.

* FOR BLOCKOUT IN CONCRETE MEDIAN BARRIER FOR COVER PLATE AT BENTS. SEE PLAN OF MODULAR EXPANSION JOINT SEAL "MODULAR EXPANSION JOINT SEAL DETAILS FOR MEDIAN BARRIER" SHEET 3 OF 3.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

FOR CONCRETE MEDIAN BARRIER ONLY

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	608	#5 STR	16- 1	10,199
B2	96	#5 STR	16- 7	1,660
B3	320	#5 STR	15- 7	5,201
B5	32	#5 STR	10- 5	348
S21	1869	#5	5- 6	10,722
S22	3678	#5	1-10	7,033
S23	10	#5	3- 9	39
S24	60	#5	2- 0	125

EPOXY COATED REINFORCING STEEL 35, 327 LBS.
CLASS A-A CONCRETE 190.5 CU. YDS.
CONC. MEDIAN BARR. RAIL 1876.0 LTN. FT.

PROJECT NO. U-2107BA
ON SLOW COUNTY
STATION: 277+50.00 -L-

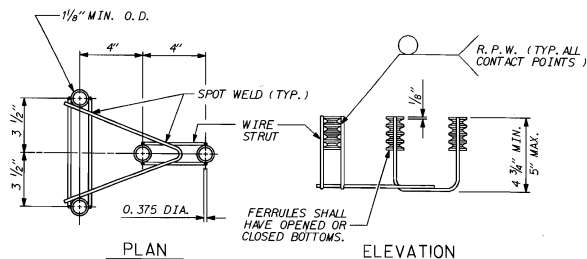
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

CONCRETE
MEDIAN BARRIER

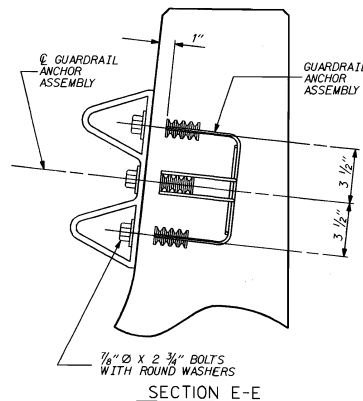
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
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2			4			170

DRAWN BY: J.H. FANG DATE: 5/3/96
CHECKED BY: J.H. FANG DATE: 12/20/96

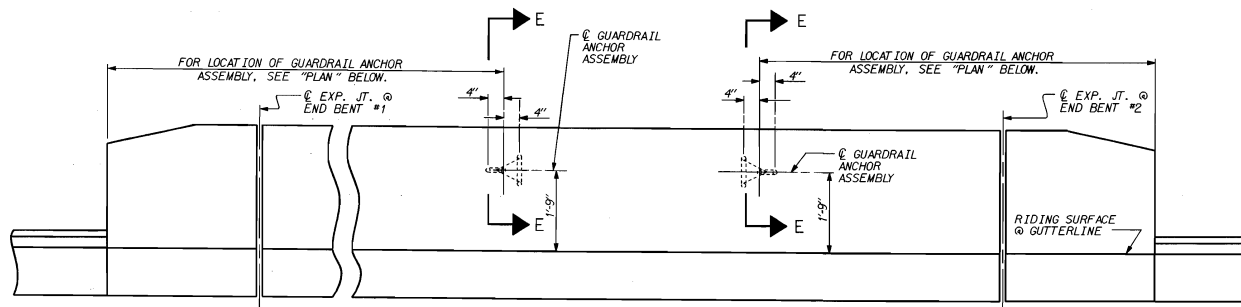
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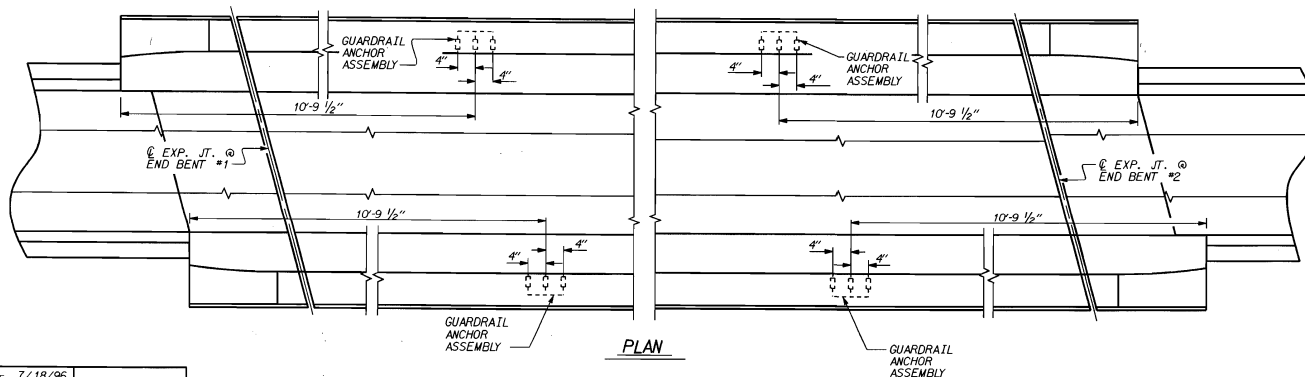
GUARDRAIL ANCHOR ASSEMBLY



SECTION E-E



ELEVATION



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS:

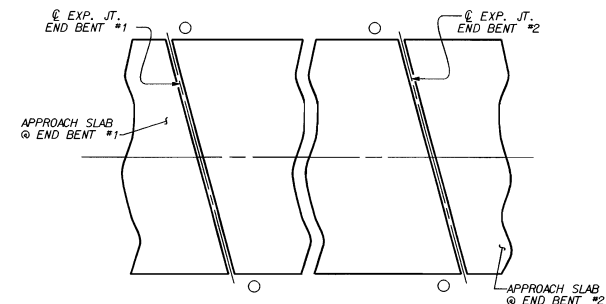
- FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF ASTM A108, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 1 1/2".
- 4 - 7/8" Ø X 2 3/4" BOLTS WITH WASHERS FOR GUARDRAIL ANCHOR ASSEMBLY SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS WITH WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8" Ø X 2 3/4" 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.)
- WIRE STRUTS SHOWN IN THE ANCHOR ASSEMBLY ARE THE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 PSI.

THE GUARDRAIL ANCHOR ASSEMBLIES WITH BOLTS SHALL BE ASSEMBLED IN THE SHOP. BOLT THREADS MAY BE RECUT AS NECESSARY.

THE COST OF THE GUARDRAIL ANCHOR ASSEMBLIES WITH BOLTS AND WASHERS COMPLETE IN PLACE, SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

THE CONTRACTOR MAY, AT HIS OPTION, USE ADHESIVELY ANCHORED ANCHOR BOLTS IN PLACE OF GUARDRAIL ANCHOR ASSEMBLY. SEE SPECIAL PROVISIONS FOR "ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS". THE YIELD LOAD OF THE 7/8" Ø BOLT IS 16.6 KIPS. FIELD TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.



○ - DENOTES GUARDRAIL ANCHOR ASSEMBLY

SKETCH SHOWING POINTS OF ATTACHMENTS

PROJECT NO. U-2107BA
 ONSLOW COUNTY
 STATION: 277+50.00 -L-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 STANDARD
 GUARDRAIL ANCHORAGE
 FOR BARRIER RAIL

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

STD. No. GRA1

ASSEMBLED BY: Mike Britt DATE: 7/18/96
 CHECKED BY: J.H. Fang DATE: 12/20/96
 DRAWN BY: MIKE BRITT DATE: DEC. 1987
 CHECKED BY: RANDY BISSALLE DATE: DEC. 1987

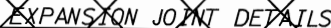
SPECIAL
 STANDARD

REV. 6/1/94 EEM (A) GRP

10-APR-1997 C28
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 rail



SECTION NORMAL TO JOINT -- PRESTRESSED GIRDER SUPERSTRUCTURE



~~SECTION NORMAL TO JOINT AT END BENT~~

-
- The image contains two technical drawings of a bolted joint. The left drawing is a cross-section showing a bolt passing through a plate. A neoprene sealant is applied around the bolt head and nut. The right drawing is a plan view showing the bolt hole and the sealant application. Labels include: NEOPRENE SEALANT, BOLT, BOLT HOLE, CROSS SECTION, and PLAN VIEW.

INSTALLATION SKETCH

$\frac{1}{2}$ " $\varnothing$ WEEP HOLE
 $\pm 1'-0"$ CTS.

$\frac{1}{4}$ " $\varnothing$ HOLE FOR $\frac{3}{4}$ " $\varnothing$
 HEX BOLT AND $\frac{1}{4}$ " FERRULE.

$\frac{3}{16}$ " MIN. (TYP.)

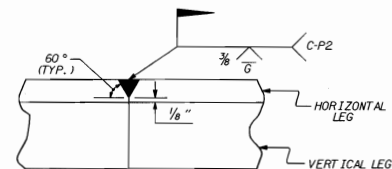
$\frac{1}{2}$ " $\varnothing$ STUD ANCHOR BOLT, MIN. 5" LONG
 $\varnothing 1'-0"$ CTS. MAX.

$1 \frac{1}{2}$ " MIN. LONG CLOSED END FERRULE $\varnothing 1'-0"$ CTS.
 FOR $\frac{3}{4}$ " $\varnothing$ BOLT. THREAD LENGTH OF BOLT IN
 FERRULE TO BE $1 \frac{1}{4}$ " MIN.

$\frac{1}{2}$ " $\varnothing$ STUD ANCHOR BOLT, MIN. 6" LONG
 $\varnothing 1'-0"$ CTS.

TYPICAL SECTION OF BASE ANGLE ASSEMBLY

- ## GENERAL NOTES
1. ALL PLATES AND ANGLES SHALL CONFORM TO A570 W670 GRADE 36 STEEL OR APPROVED EQUAL. ALL HOLD-DOWN BOLTS SHALL CONFORM TO ASTM F593 TYPE 304 STAINLESS STEEL AND WASHERS SHALL CONFORM TO ASTM F438 EXCEPT THEY SHALL CONFORM TO ASTM A108. STUD ANCHORS SHALL CONFORM TO ASTM A108, GRADES 100 THRU 1020 OR APPROVED EQUAL. ALL CONCRETE INSERTS SHALL BE CLOSURE EMBED AND SHALL CONFORM TO ASTM A108, GRADE 12L14. TENSILE CAPACITY SHALL BE 3000 LBS. MIN.
 2. A PREWELDED CORRUGATED OR NON-CORRUGATED GLAND SHALL BE USED FOR JOINTS SKEWED BETWEEN 50° THRU 130°. FOR JOINTS SKEWED LESS THAN 50° OR MORE THAN 130°, ONLY A CORRUGATED GLAND SHALL BE USED.
 3. CLOSED END FERRULES AND STUD ANCHORS SHALL BE SHOP WELDED AND ALL HOLES DRILLED AS SHOP DRILLED AS SHOWN ON PLANS. STUD ANCHORS SHALL BE ELECTRIC ARC END WELDED WITH COMPLETE FUSION.
 4. SURFACES COMING IN CONTACT WITH NEOPRENE SHALL BE GROUND SMOOTH PRIOR TO METALLIZING.
 5. UPON COMPLETION OF SHOP FABRICATION, ALL STEEL PARTS, EXCLUDING STAINLESS STEEL BOLTS, SHALL BE COMMERCIAL BALT CLEANED AND METALLIZED TO A MINIMUM THICKNESS OF 4 MILS. SEE SPECIAL PROVISIONS FOR THERMAL SPRAYED COATINGS (METALLIZING).
 6. BASE ANGLE ASSEMBLY SHALL BE CONTINUOUS FOR THE LENGTH OF THE JOINT. END BREAKS SHALL BE END BREAKS. END BREAKS SHALL BE CUT PARALLEL TO THE BRIDGE CENTERLINE FOR SKEWS LESS THAN 80' AND GREATER THAN 100'. FINISHED WELD SHALL BE GROUND SMOOTH AND COATED WITH A MINIMUM THICKNESS OF 4 MILS OF ZINC-RICH PAINT IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
 7. FIELD SPLICES OF HOLD-DOWN BOLTS SHALL BE KEPT TO A MINIMUM. CONTRACTOR SHALL FURNISH DETAILED PLANS SHOWING PROPOSED SPLICE LOCATIONS FOR ALL HOLD-DOWN BOLTS. SPLICES SHALL BE KEPT TO THE MINIMUM LENGTH ALLOWED BY THE ENGINEER. SEE SPECIAL PROVISIONS FOR EXPANSION JOINT SEALS.
 8. NO ALTERNATE JOINT DETAILS SHALL BE PERMITTED IN LIEU OF THOSE SHOWN ON THESE PLANS.
 9. THE CONTRACTOR MAY, AT HIS OPTION, USE ADHESIVELY ANCHORED ANCHOR BOLTS IN PLACE OF CONCRETE INSERTS FOR COVER PLATES. SEE SPECIAL PROVISIONS FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR COVER PLATES. THE TENSILE LOAD OF THE ¾" Ø BOLT IS 10 KIPS. FIELD TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.
 10. FOR EXPANSION JOINT SEALS, SEE SPECIAL PROVISIONS.
 11. NO SEPARATE PAYMENT WILL BE MADE FOR FURNISHING AND INSTALLING THE COVER PLATES. THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE LUMP SUM FOR EXPANSION JOINT SEALS.



DETAIL- FIELD WELD
SPLICE OF BASE ANGLE



PROJECT NO. U-2107BA
ON SLOW COUNTY
 STATION: 277+50.00 -L-

SHEET 1 OF 4

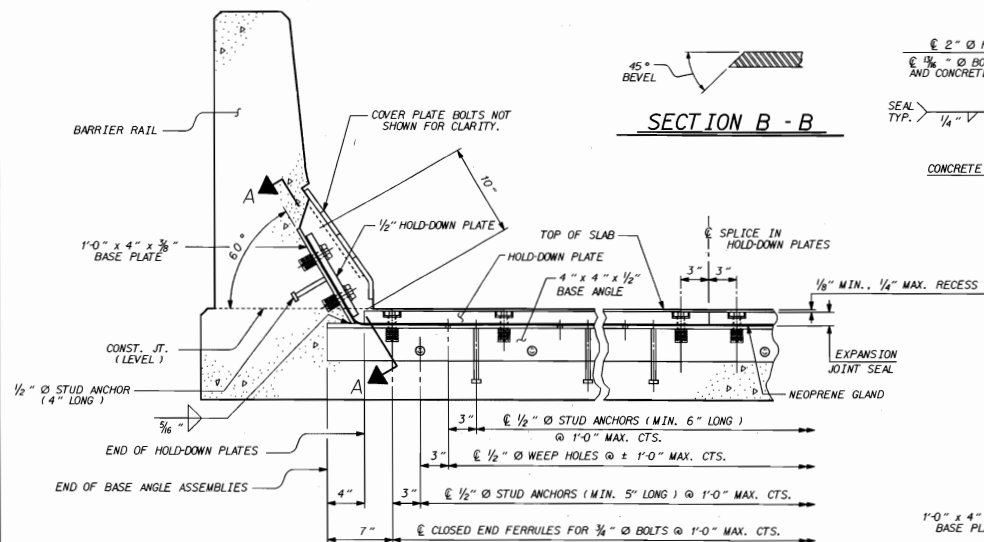
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
EXPANSION JOINT
SEAL DETAILS
Q END BENT #1 AND

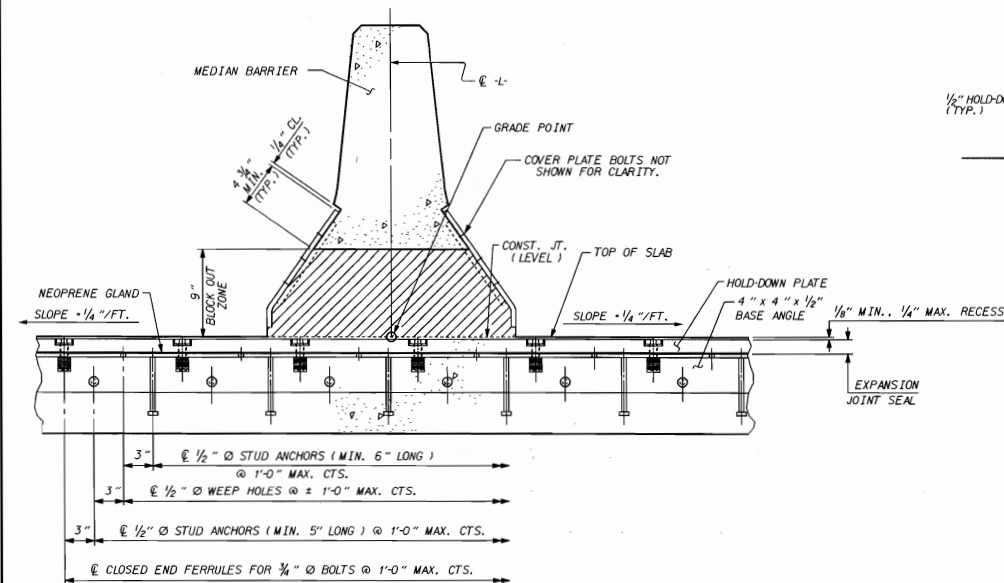
FEBRUARY 1988

REVISIONS						SHEET N° S-84 TOTAL SHEETS 170
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
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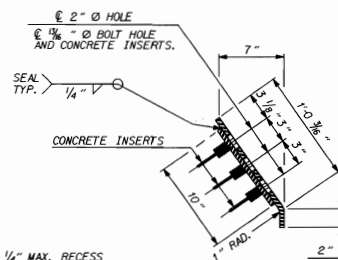
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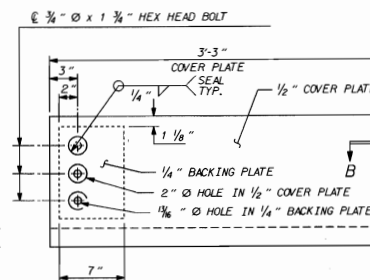
SECTION THRU RAIL NORMAL TO JOINT



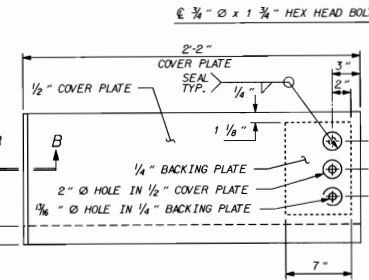
SECTION THRU MEDIAN BARRIER NORMAL TO JOINT



END VIEW

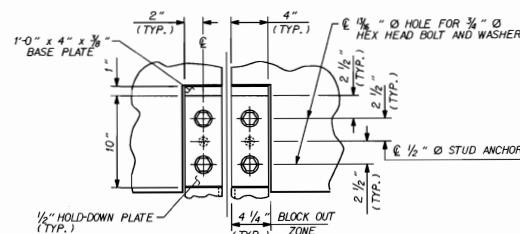


**TYPE I - ELEVATION VIEW
FOR MEDIAN BARRIER**

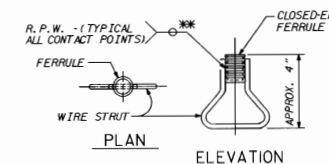


**TYPE II - ELEVATION VIEW
FOR BARRIER RAIL**

COVER PLATE DETAILS

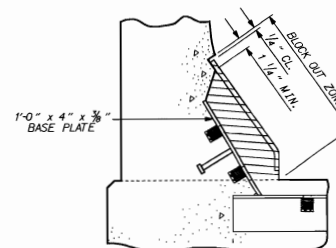


SECTION A - A



CONCRETE INSERT

*** EACH WELDED ATTACHMENT OF WIRE TO FERRULE SHALL DEVELOP THE TENSILE STRENGTH OF THE WIRE.



BLOCK OUT DETAIL

SEE "SECTION A - A" FOR OTHER DETAILS.



PROJECT NO. U-2107BA
ONSLow COUNTY
STATION: 277+50.00 -L-

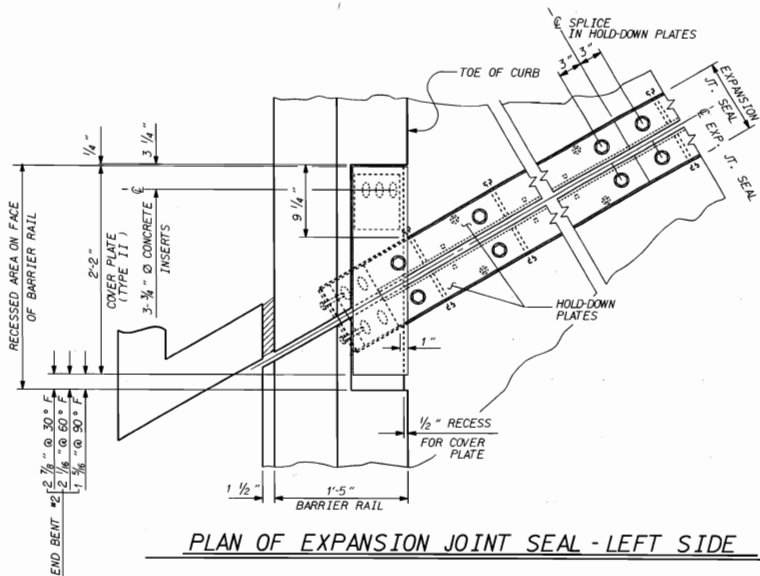
SHEET 2 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD EXPANSION JOINT SEAL DETAILS FOR BARRIER RAIL END BENT #1 AND #2					
FEBRUARY 1988					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
					SHEET NO. S-85
					TOTAL SHEETS 170

ASSEMBLED BY: N.H.M. Ruffin DATE: 6/1/96 SPECIAL
CHECKED BY: T.H. FANG DATE: 12/20/96
DRAWN BY: ROSS E. KUBERT DATE: 9-18-87 STANDARD
CHECKED BY: CHERYL R. KING DATE: 10-2-87

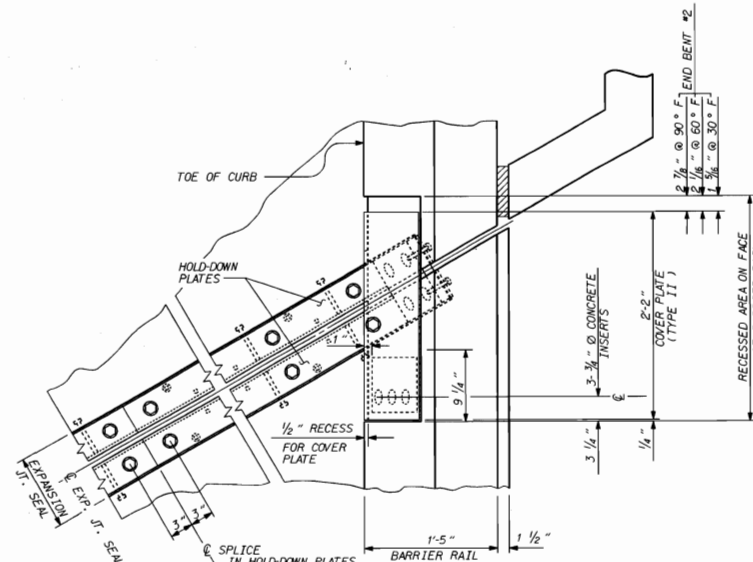
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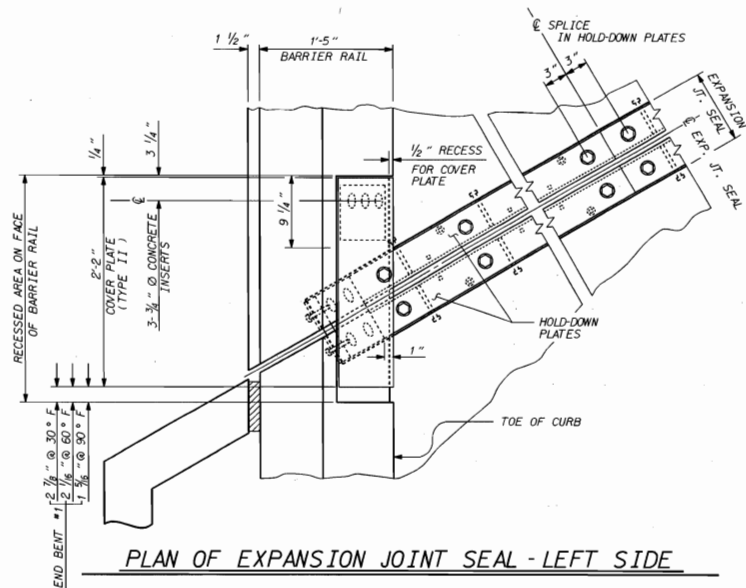


FLOW OF TRAFFIC

FLOW OF TRAFFIC

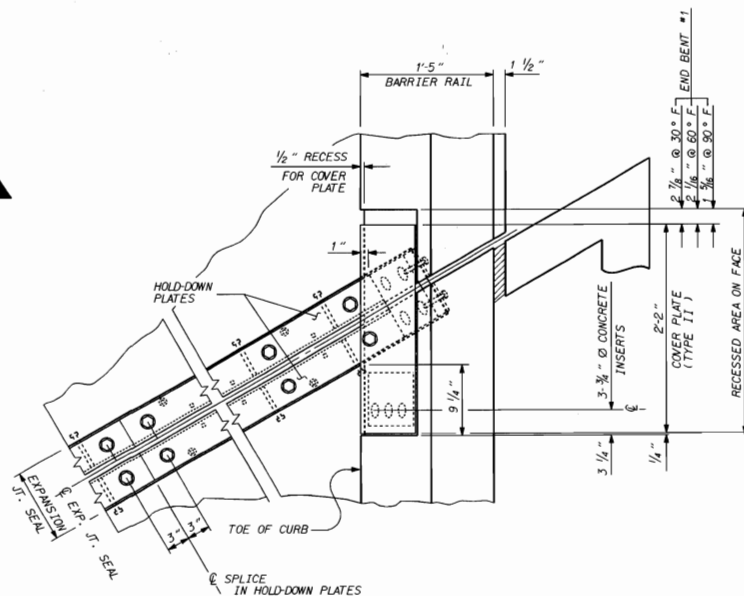


PLAN OF EXPANSION JOINT SEAL - RIGHT SIDE



FLOW OF TRAFFIC

FLOW OF TRAFFIC



PLAN OF EXPANSION JOINT SEAL - RIGHT SIDE



PROJECT NO. U-2107BA
ONSLow COUNTY
 STATION: 277+50.00 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

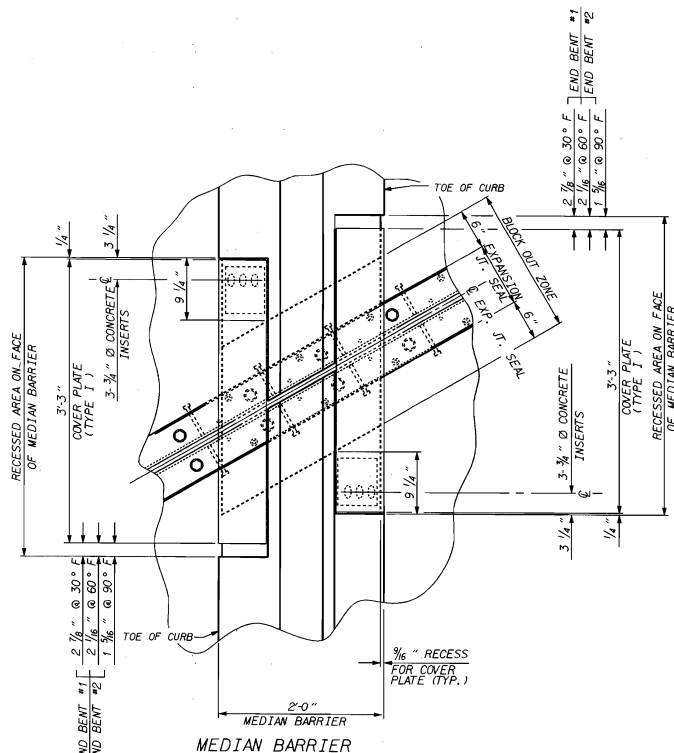
EXPANSION JOINT
 SEAL DETAILS
 @ END BENT #1 AND #2

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			5-86
2			4			TOTAL
						170

DRAWN BY: J. H. FANG DATE: 5/7/96
 CHECKED BY: J. H. FANG DATE: 12/20/96

10-APR-1997 12:02
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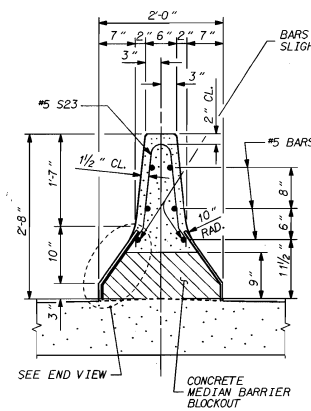
FLOW OF TRAFFIC



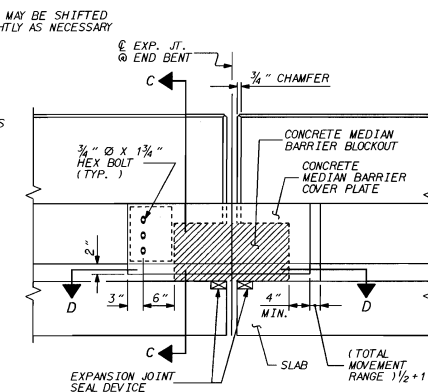
PLAN OF EXPANSION JOINT SEAL AND VIEW D-D

FOR COVER & DETAILS, SEE SHEET 2 OF 4

FLOW OF TRAFFIC



SECTION C-C



ELEVATION @ EXP. JT.

CONCRETE MEDIAN BARRIER

FOR RIGID PAVEMENT

PROJECT NO. U-2107BA

ON SLOW COUNTY

STATION: 277+50.00 -L-

SHEET 4 OF 4



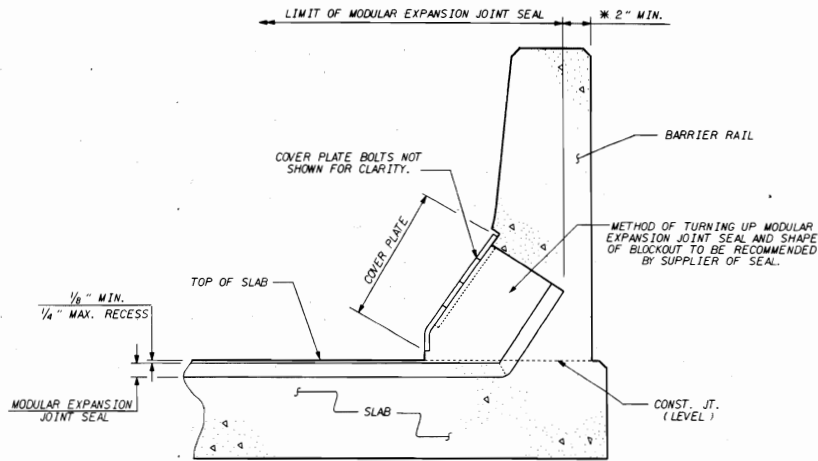
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

EXPANSION JOINT
SEAL DETAILS
FOR MEDIAN BARRIER
@ END BENT #1 AND #2

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			5-87
2			4			170

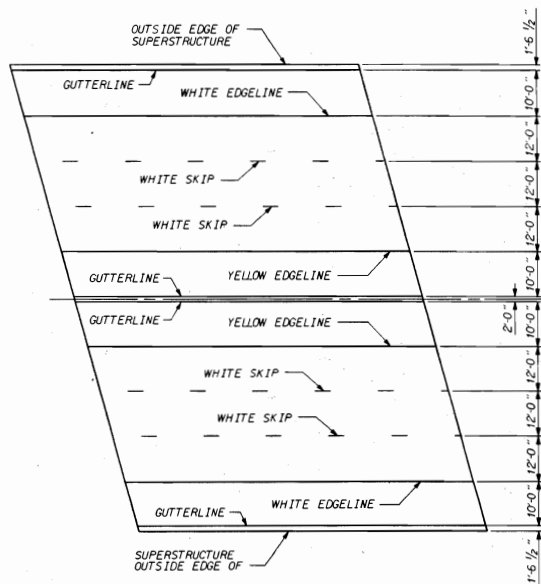
DRAWN BY: *T.H. Fang* DATE: 6/7/96
CHECKED BY: *T.H. Fang* DATE: 12/20/96

10-APR-1997 12:42
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(n)

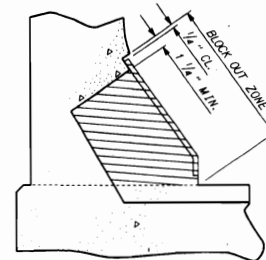


SECTION THRU RAIL NORMAL TO JOINT

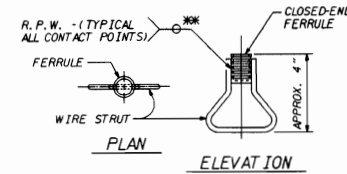
* A 2" MINIMUM CLEAR DISTANCE SHALL BE REQUIRED BETWEEN THE OUTSIDE OF BARRIER RAIL AND THE MODULAR EXPANSION JOINT SEAL AND/OR ITS ANCHORS.



PAVEMENT MARKING ALIGNMENT

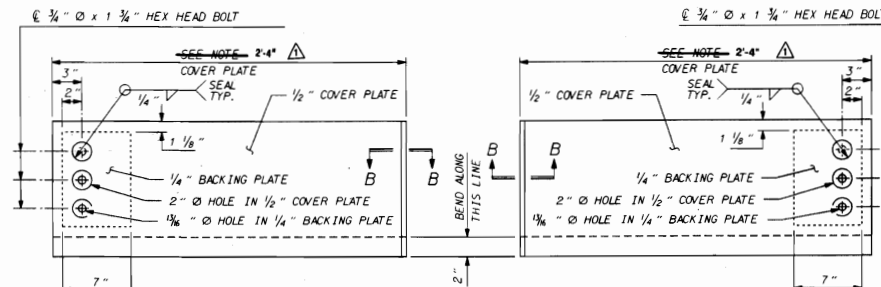


BLOCK OUT DETAIL



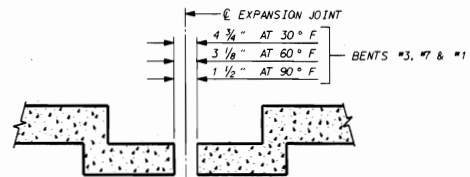
CONCRETE INSERT

** EACH WELDED ATTACHMENT OF WIRE TO FERRULE SHALL DEVELOP THE TENSILE STRENGTH OF THE WIRE.



COVER PLATE DETAILS

TABLE OF JOINT OPENINGS			
X INCHES			
BENTS	30F	60F	90F
3,7,11	7 1/8"	5 1/2"	3 7/8"



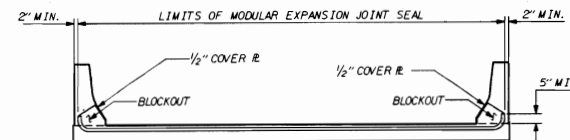
SECTION THRU SLAB
 NORMAL TO JOINT

NOTE: MODULAR EXPANSION JOINT SEAL IS REQUIRED AT THIS JOINT BUT NOT SHOWN. SEE SKETCH SHOWING LIMITS OF MODULAR EXPANSION JOINT SEAL.

SET TOP OF MODULAR EXPANSION JOINT SEAL DEVICE A MINIMUM OF 1/8" AND A MAXIMUM OF 1/4" BELOW TOP OF SLAB.

THE MODULAR EXPANSION JOINT SEAL AT BENT NO. 3, 7 & 11 SHALL BE CAPABLE OF HANDLING A TOTAL MOVEMENT, MEASURED PARALLEL TO THE CENTER LINE OF THE ROADWAY OF 3 1/4" (1 3/4" EXPANSION AND 1 3/4" CONTRACTION FROM A MIDPOINT TEMPERATURE OF 60° F.)

TYPICAL MODULAR EXPANSION JOINT
 SEAL DETAILS @ BENTS



SKETCH SHOWING LIMITS OF
 MODULAR EXPANSION JOINT SEAL

NOTES

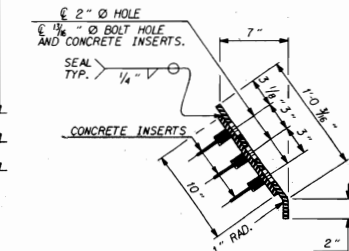
THE STEEL PLATES SHALL CONFORM TO AASHTO M270 GRADE 36 OR APPROVED EQUAL. AFTER FABRICATION, THE PLATES SHALL BE COMMERCIAL BLAST CLEANED AND COATED WITH A MINIMUM THICKNESS OF 4 DRY MILS OF ZINC-RICH PAINT IN ACCORDANCE WITH SPECIFICATIONS. AT THE CONTRACTOR'S OPTION, THESE SURFACES MAY BE METALLIZED TO A MINIMUM THICKNESS OF 4 MILS. SEE SPECIAL PROVISIONS FOR THERMAL SPRAYED COATINGS (METALLIZATION).

THE 3/4" DIAMETER HEX BOLTS SHALL CONFORM TO ASTM F593 TYPE 304 STAINLESS STEEL.

THE 3/4" CONCRETE INSERTS SHALL BE CLOSED-END FERRULES WITH LOOPED WIRE STRUTS ATTACHED TO THEM. THE INSERTS SHALL CONFORM TO ASTM A108, GRADE 12L14 AND SHALL HAVE A TENSILE WORKING LOAD CAPACITY OF 3000 LBS.

NO SEPARATE PAYMENT WILL BE MADE FOR FURNISHING AND INSTALLING THE COVER PLATES. THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR "MODULAR EXPANSION JOINT SEALS".

FOR MODULAR EXPANSION JOINT SEALS, SEE SPECIAL PROVISIONS.



END VIEW

SECTION B - B

PROJECT NO. U-2107BA
 ONSLOW COUNTY
 STATION: 277+50.00 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 Raleigh
 MODULAR EXPANSION
 JOINT SEAL DETAILS
 FOR BARRIER RAIL

REVISIONS				SHEET NO.
NO.	BY	DATE	DESCRIPTION	
1	DFP	8/8/99		5-68
2				170

DRAWN BY: Y.M.R. DATE: 6/5/96
 CHECKED BY: T.H. FANG DATE: 12/20/96



SEALED ONLY FOR THIS PROJECT
 David H. Fong
 8/19/99

ADDED COVER PLATE LENGTH & JT. OPENING TABLE

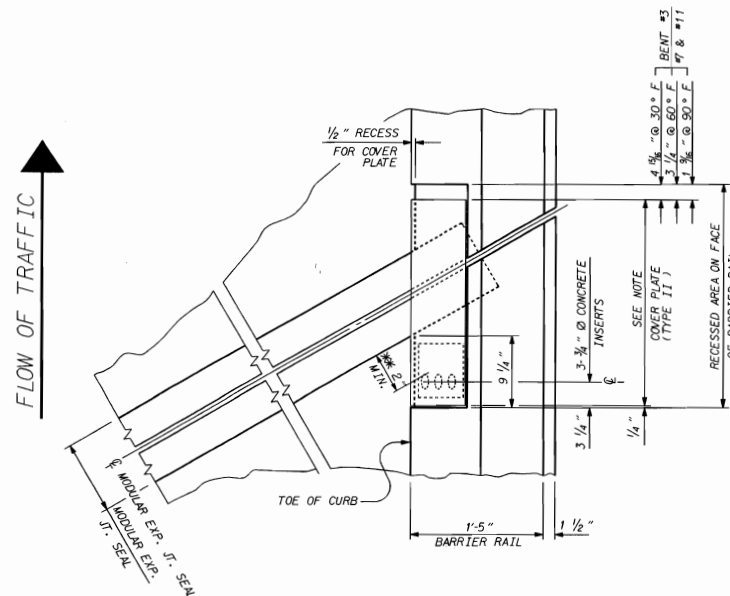
Technical drawing of a curb and gutter detail. The drawing shows a cross-section of a curb and gutter assembly. Key dimensions and components include:

- Recessed Area on Face of Barrier Rail:** Indicated by a vertical dimension line on the left.
- SEE NOTE ON RECESSED AREA (TYPE 11):** A note pointing to the recessed area.
- 3-3/4" Ø CONCRETE INSERTS:** Three circular inserts shown in a row.
- 1/2" RECESS FOR COVER PLATE:** A dimension indicating the depth of the recess for the cover plate.
- TOE OF CURB:** The outer edge of the curb.
- Barrier Rail:** The top horizontal section of the assembly.
- Modular Exp. Jt. Seal:** Two seals shown on the right side of the assembly.
- Flow of Traffic:** Indicated by a large arrow pointing downwards on the right side.

Dimensions shown include:

- 1 1/2"
- 1'-5"
- 1/4"
- 3 1/4"
- 9 1/4"
- 1 1/2"
- 1 1/2"
- 4 3/8" @ 30° F
- 3 1/4" @ 50° F
- 1 3/8" @ 90° F

*** A 2" MINIMUM CLEAR DISTANCE SHALL BE REQUIRED BETWEEN THE MODULAR EXPANSION JOINT SEAL AND THE WIRE STRUTS.



*** A 2" MINIMUM CLEAR DISTANCE SHALL BE REQUIRED BETWEEN THE MODULAR EXPANSION JOINT SEAL AND THE WIRE STRUTS.

SHEET 2 OF 3

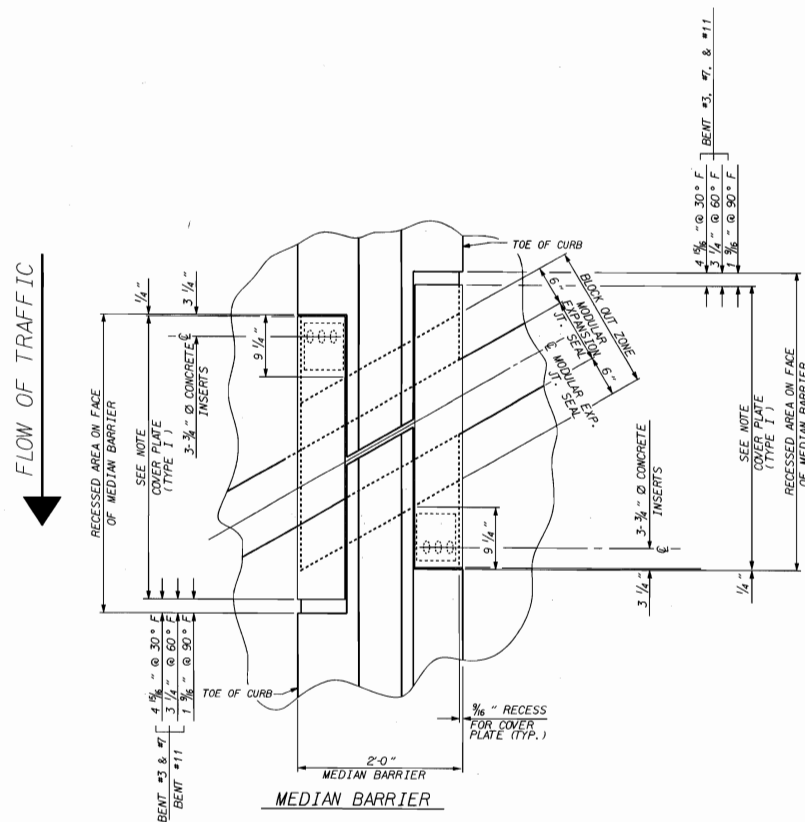
MODULAR EXPANSION
JOINT SEAL DETAILS
FOR BARRIER RAIL



DRAWN BY : N. M. Ruffin DATE : 6/5/96
CHECKED BY : T. H. FANG DATE : 12/20/96

REVISIONS						SHEET NO. 5- 89
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 170
2			4			

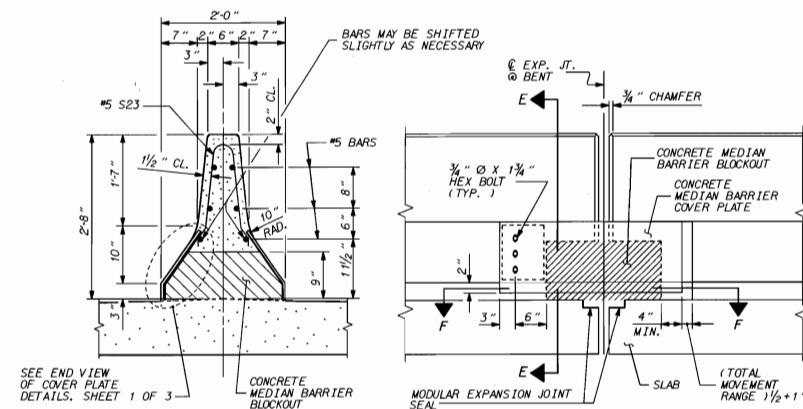
NOTE: SUPPLIER OF THE MODULAR EXPANSION JOINT SEAL IS TO DETERMINE LENGTH OF COVER PLATES REQUIRED. DETAILS OF COVER PLATES ARE SUBJECT TO CHANGE DEPENDING ON DETAILS OF MODULAR EXPANSION JOINT SEAL FURNISHED.



PLAN OF MODULAR EXPANSION JOINT SEAL AND VIEW F-F

FOR COVER PLATE DETAILS, SEE SHEET 1 OF 3

FLOW OF TRAFFIC



SECTION E-E

CONCRETE MEDIAN BARRIER

FOR RIGID PAVEMENT

ELEVATION @
EXP. JT.

PROJECT NO. U-2107BA
ONSLAW COUNTY
STATION: 277+50.00 -L-

SHEET 3 OF 3



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
MODULAR EXPANSION
JOINT SEAL DETAILS
FOR MEDIAN BARRIER
RAIL

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	5-90
1			3			10/1/95
2			4			170

DRAWN BY: T.H. Fang DATE: 6/5/96
CHECKED BY: T.H. Fang DATE: 12/20/96

10-APR-1997 02:02
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ncl

REINFORCING BAR SCHEDULE

SPAN A THRU C (LEFT SIDE OF CLOSURE POUR)

SPAN D THRU G (LEFT SIDE OF CLOSURE POUR)

SPAN H THRU K (LEFT SIDE OF CLOSURE POUR)

ALL REINFORCING STEEL SHALL BE EPOXY COATED.

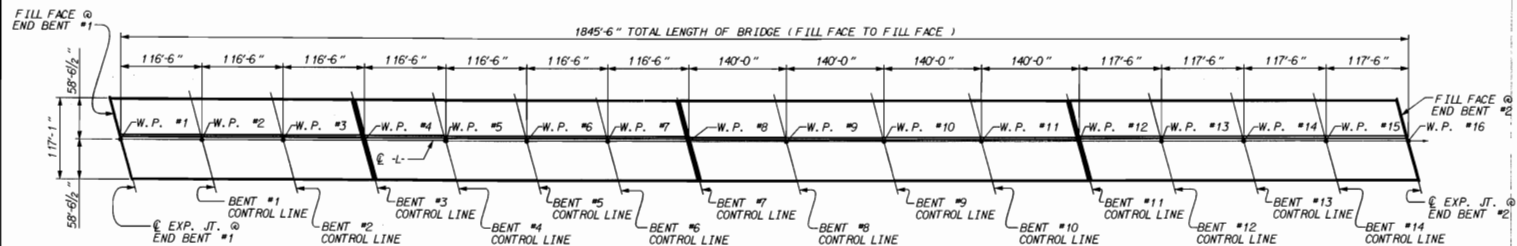
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
A1 665	#6	STR	54'-4	54270	A182 1	#6	STR	5-11	9	A185 1	#5	STR	54'-0	56	A4 1088	#5	STR	55-10	63359	A296 1	#5	STR	5'-8	6
A2 665	#5	STR	54'-4	37685	A182 2	#5	STR	54'-4	73529	A186 1	#5	STR	52'-2	52	A4 1088	#5	STR	55-10	63359	A297 1	#5	STR	55'-7	58
A101 1	#6	STR	52'-8	79	A185 1	#5	STR	52'-8	79	A187 1	#5	STR	50'-9	76	A213 1	#5	STR	54'-2	56	A298 1	#5	STR	53'-8	56
A102 1	#6	STR	50'-9	76	A187 1	#5	STR	50'-9	76	A188 1	#5	STR	48'-5	50	A213 1	#5	STR	54'-2	56	A299 1	#5	STR	51'-10	54
A103 1	#6	STR	48'-11	73	A188 1	#5	STR	48'-11	73	A189 1	#5	STR	46'-7	47	A215 1	#5	STR	50'-6	53	A300 1	#5	STR	50'-0	52
A104 1	#6	STR	47'-1	71	A189 1	#5	STR	46'-7	47	A190 1	#5	STR	44'-8	45	A216 1	#5	STR	48'-7	51	A301 1	#5	STR	48'-1	50
A105 1	#6	STR	45'-2	68	A190 1	#5	STR	44'-8	45	A191 1	#5	STR	42'-10	45	A217 1	#5	STR	46'-9	49	A302 1	#5	STR	46'-3	48
A106 1	#6	STR	43'-4	65	A191 1	#5	STR	42'-10	45	A192 1	#5	STR	41'-0	43	A218 1	#5	STR	44'-10	47	A303 1	#5	STR	44'-4	46
A107 1	#6	STR	41'-6	62	A192 1	#5	STR	41'-0	43	A193 1	#5	STR	39'-1	41	A219 1	#5	STR	43'-0	45	A304 1	#5	STR	42'-6	44
A108 1	#6	STR	39'-7	59	A193 1	#5	STR	39'-1	41	A194 1	#5	STR	37'-3	39	A220 1	#5	STR	41'-2	43	A305 1	#5	STR	40'-8	42
A109 1	#6	STR	37'-9	57	A194 1	#5	STR	37'-3	39	A195 1	#5	STR	35'-4	37	A221 1	#5	STR	39'-3	41	A306 1	#5	STR	38'-9	40
A110 1	#6	STR	35'-10	54	A195 1	#5	STR	35'-4	37	A196 1	#5	STR	33'-6	35	A222 1	#5	STR	37'-5	39	A307 1	#5	STR	36'-11	39
A111 1	#6	STR	34'-0	51	A196 1	#5	STR	33'-6	35	A197 1	#5	STR	31'-8	33	A223 1	#5	STR	35'-6	37	A308 1	#5	STR	35'-0	37
A112 1	#6	STR	32'-2	48	A197 1	#5	STR	31'-8	33	A198 1	#5	STR	30'-2	31	A224 1	#5	STR	33'-8	35	A309 1	#5	STR	33'-2	35
A113 1	#6	STR	30'-3	45	A198 1	#5	STR	30'-2	31	A199 1	#5	STR	28'-5	29	A225 1	#5	STR	31'-10	33	A310 1	#5	STR	31'-4	33
A114 1	#6	STR	28'-5	43	A199 1	#5	STR	27'-11	29	A200 1	#5	STR	26'-6	27	A226 1	#5	STR	29'-11	31	A311 1	#5	STR	29'-5	31
A115 1	#6	STR	26'-8	40	A200 1	#5	STR	26'-6	27	A201 1	#5	STR	24'-2	25	A227 1	#5	STR	28'-1	29	A312 1	#5	STR	27'-7	29
A116 1	#6	STR	24'-8	37	A201 1	#5	STR	24'-2	25	A202 1	#5	STR	22'-4	23	A228 1	#5	STR	26'-2	27	A313 1	#5	STR	25'-8	27
A117 1	#6	STR	22'-10	34	A202 1	#5	STR	22'-4	23	A203 1	#5	STR	20'-5	21	A229 1	#5	STR	24'-4	25	A314 1	#5	STR	23'-10	25
A118 1	#6	STR	20'-11	31	A203 1	#5	STR	20'-5	21	A204 1	#5	STR	18'-7	19	A230 1	#5	STR	22'-6	23	A315 1	#5	STR	22'-0	23
A119 1	#6	STR	19'-1	29	A204 1	#5	STR	18'-7	19	A205 1	#5	STR	16'-8	17	A231 1	#5	STR	20'-9	21	A316 1	#5	STR	20'-1	21
A120 1	#6	STR	17'-2	26	A205 1	#5	STR	16'-8	17	A206 1	#5	STR	15'-4	15	A232 1	#5	STR	18'-7	20	A317 1	#5	STR	18'-3	19
A121 1	#6	STR	15'-4	23	A206 1	#5	STR	15'-4	15	A207 1	#5	STR	13'-6	14	A233 1	#5	STR	16'-11	18	A318 1	#5	STR	16'-1	17
A122 1	#6	STR	13'-6	20	A207 1	#5	STR	13'-6	14	A208 1	#5	STR	11'-1	12	A234 1	#5	STR	15'-0	16	A319 1	#5	STR	14'-6	15
A123 1	#6	STR	11'-1	17	A208 1	#5	STR	11'-1	12	A209 1	#5	STR	9'-3	10	A235 1	#5	STR	13'-2	14	A320 1	#5	STR	12'-8	13
A124 1	#6	STR	9'-3	15	A209 1	#5	STR	9'-3	10	A210 1	#5	STR	7'-4	8	A236 1	#5	STR	11'-3	12	A321 1	#5	STR	10'-9	11
A125 1	#6	STR	7'-11	12	A210 1	#5	STR	7'-4	8	A211 1	#5	STR	5'-3	6	A237 1	#5	STR	9'-5	10	A322 1	#5	STR	8'-11	9
A126 1	#6	STR	6'-0	6	A211 1	#5	STR	5'-3	6	A212 1	#5	STR	4'-2	5	A238 1	#5	STR	7'-7	8	A323 1	#5	STR	7'-1	7
A127 1	#6	STR	4'-2	3	A212 1	#5	STR	4'-2	5	A213 1	#5	STR	3'-10	4	A239 1	#5	STR	6'-8	6	A240 1	#5	STR	5'-8	6
A128 1	#6	STR	2'-3	3	A213 1	#5	STR	3'-10	4	A214 1	#5	STR	2'-3	3	A241 1	#5	STR	5'-8	58	B11 288	#4	STR	26'-11	5178
A129 1	#5	STR	54'-1	56	A214 1	#5	STR	2'-3	3	A215 1	#5	STR	2'-3	3	A242 1	#5	STR	55'-8	58	B12 284	#7	STR	47'-8	27670
A130 1	#5	STR	52'-3	54	A215 1	#5	STR	2'-3	3	A216 1	#5	STR	2'-3	3	A243 1	#5	STR	55'-8	58	B13 144	#4	STR	28'-0	2693
A131 1	#5	STR	50'-5	53	A216 1	#5	STR	2'-3	3	A217 1	#5	STR	2'-3	3	A244 1	#5	STR	51'-11	54	B14 142	#7	STR	42'-8	12384
A132 1	#5	STR	48'-6	51	A217 1	#5	STR	2'-3	3	A218 1	#5	STR	2'-3	3	A245 1	#5	STR	50'-1	52	B15 560	#5	STR	58'-3	34023
A133 1	#5	STR	46'-8	49	A218 1	#5	STR	2'-3	3	A219 1	#5	STR	2'-3	3	A246 1	#5	STR	48'-2	50	B20 10	#5	STR	2'-1	22
A134 1	#5	STR	44'-9	47	A219 1	#5	STR	2'-3	3	A220 1	#5	STR	2'-3	3	A247 1	#5	STR	46'-4	48	B22 210	#7	STR	52'-0	22320
A135 1	#5	STR	42'-11	45	A220 1	#5	STR	2'-3	3	A221 1	#5	STR	2'-3	3	A248 1	#5	STR	44'-5	46	K23 4	#8	10	16'-6	176
A136 1	#5	STR	40'-11	43	A221 1	#5	STR	2'-3	3	A222 1	#5	STR	2'-3	3	A249 1	#5	STR	42'-7	44	K24 24	#8	11	22'-10	1463
A137 1	#5	STR	39'-2	41	A222 1	#5	STR	2'-3	3	A223 1	#5	STR	2'-3	3	A250 1	#5	STR	40'-9	42	K25 28	#6	STR	4'-0	168
A138 1	#5	STR	37'-4	39	A223 1	#5	STR	2'-3	3	A224 1	#5	STR	2'-3	3	A251 1	#5	STR	38'-10	41	K26 28	#6	3	6'-9	280
A139 1	#5	STR	35'-5	37	A224 1	#5	STR	2'-3	3	A225 1	#5	STR	2'-3	3	A252 1	#5	STR	37'-0	39	K27 28	#6	3	6'-9	284
A140 1	#5	STR	33'-7	35	A225 1	#5	STR	2'-3	3	A226 1	#5	STR	2'-3	3	A253 1	#5	STR	35'-1	37	K28 112	#5	3	6'-7	769
A141 1	#5	STR	31'-9	33	A226 1	#5	STR	2'-3	3	A227 1	#5	STR	2'-3	3	A254 1	#5	STR	33'-3	35	K29 448	#5	STR	7'-1	3310
A142 1	#5	STR	29'-10	31	A227 1	#5	STR	2'-3	3	A228 1	#5	STR	2'-3	3	A255 1	#5	STR	31'-5	33	K30 112	#5	6	7'-5	866
A143 1	#5	STR	27'-0	29	A228 1	#5	STR	2'-3	3	A229 1	#5	STR	2'-3	3	A256 1	#5	STR	29'-6	31	K31 36	#4	STR	4'-0	96
A144 1	#5	STR	25'-1	27	A229 1	#5	STR	2'-3	3	A230 1	#5	STR	2'-3	3	A257 1	#5	STR	27'-8	29	K32 144	#4	STR	6'-9	146
A145 1	#5	STR	23'-3	25	A230 1	#5	STR	2'-3	3	A231 1	#5	STR	2'-3	3	A258 1	#5	STR	25'-9	27	K33 36	#4	STR	4'-7	110
A146 1	#5	STR	21'-5	23	A231 1	#5	STR	2'-3	3	A232 1	#5	STR	2'-3	3	A259 1	#5	STR	23'-11	25	K34 36	#4	STR	4'-7	110
A147 1	#5	STR	19'-7	21	A232 1	#5	STR	2'-3	3	A233 1	#5	STR	2'-3	3	A260 1	#5	STR	22'-1	23	K35 126	#4	8	11'-9	989
A148 1	#5	STR	18'-8	19	A233 1	#5	STR	2'-3	3	A234 1	#5	STR	2'-3	3	A261 1	#5	STR	20'-2	21	K37 24	#4	STR	4'-4	76
A149 1	#5	STR	16'-9	17	A234 1	#5	STR	2'-3	3	A235 1	#5	STR	2'-3	3	A262 1	#5	STR	18'-4	19	K38 6	#4	STR	4'-4	76
A150 1	#5	STR	14'-11	14	A235 1	#5	STR	2'-3	3	A236 1	#5	STR	2'-3	3	A263 1	#5	STR	16'-6	17	K40 21	#4	9	7'-5	104
A151 1	#5	STR	13'-1	14	A236 1	#5	STR	2'-3	3	A237 1	#5	STR	2'-3	3	A264 1	#5	STR	14'-7	15	S3 70	#4	13	4'-1	191
A152 1	#5	STR	11'-2	12	A237 1	#5	STR	2'-3	3	A238 1	#5	STR	2'-3	3	A265 1	#5	STR	12'-9	13	S6 111	#4	15	2'-8	198
A153 1	#5	STR	9'-4	10	A238 1	#5	STR	2'-3	3	A239 1	#5	STR	2'-3	3	A266 1	#5	STR	10'-10	11	S8 864	#4	16	3'-3	1876
A154 1	#5	STR	7'-6	8	A239 1	#5	STR	2'-3	3	A240 1	#5	STR	2'-3	3	A267 1	#5	STR	9'-0	9	S9 70	#5	12	0'-8	509
A155 1	#5	STR	5'-7	6	A240 1	#5	STR	2'-3	3	A241 1	#5	STR	2'-3	3	A268 1	#5	STR	7'-2	7	S10 28	#5	12	0'-3	153
A156 1	#5	STR	3'-9	4	A241 1	#5	STR	2'-3	3	A242 1	#5	STR	2'-3	3	A269 1	#5	STR	5'-3	5	S11 280	#4	14	10'-7	1980
A157 1	#6	STR	52'-7	79	A242 1	#5	STR	2'-3	3	A243 1	#5	STR	2'-3	3	A270 1	#5	STR	3'-5	4	S12 112	#4	14	9'-9	729
A158 1	#6	STR	50'-8	76	A243 1	#5	STR	2'-3	3	A244 1	#5	STR	2'-3	3	A271 1	#5	STR	54'-1	56	U3 111	#4	17	14'-10	1100
A159 1	#6	STR	48'-10	73	A244 1	#5	STR	2'-3	3	A245 1	#5	STR	2'-3	3	A272 1	#5	STR	52'-3	54	U4 39	#4	17	11'-6	300
A160 1	#6	STR	47'-0	71	A245 1	#5	STR																	

REINFORCING BAR SCHEDULE									
SPAN L THRU 0 (LEFT SIDE OF CLOSURE POUR)					CLOSURE POUR				
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
A1 406	#5	STR	54'-4"	73937	A185 1	#5	STR	54'-0"	56
A2 406	#5	STR	54'-4"	51343	A186 1	#5	STR	52'-2"	54
A101 1	#6	STR	52'-8"	79	A187 1	#5	STR	50'-3"	52
A102 1	#6	STR	50'-9"	76	A188 1	#5	STR	48'-5"	50
A103 1	#6	STR	48'-11"	73	A189 1	#5	STR	46'-7"	49
A104 1	#6	STR	47'-1"	71	A190 1	#5	STR	44'-8"	47
A105 1	#6	STR	45'-2"	68	A191 1	#5	STR	42'-10"	45
A106 1	#6	STR	43'-4"	65	A192 1	#5	STR	41'-0"	43
A107 1	#6	STR	41'-6"	62	A193 1	#5	STR	39'-1"	41
A108 1	#6	STR	39'-7"	59	A194 1	#5	STR	37'-3"	39
A109 1	#6	STR	37'-9"	57	A195 1	#5	STR	35'-4"	37
A110 1	#6	STR	35'-10"	54	A196 1	#5	STR	33'-6"	35
A111 1	#6	STR	34'-0"	51	A197 1	#5	STR	31'-8"	33
A112 1	#6	STR	32'-2"	48	A198 1	#5	STR	29'-9"	31
A113 1	#6	STR	30'-3"	45	A199 1	#5	STR	27'-11"	29
A114 1	#6	STR	28'-5"	43	A200 1	#5	STR	26'-0"	27
A115 1	#6	STR	26'-6"	40	A201 1	#5	STR	24'-2"	25
A116 1	#6	STR	24'-8"	37	A202 1	#5	STR	22'-4"	23
A117 1	#6	STR	22'-10"	34	A203 1	#5	STR	20'-5"	21
A118 1	#6	STR	20'-11"	31	A204 1	#5	STR	18'-7"	19
A119 1	#6	STR	19'-1"	29	A205 1	#5	STR	16'-9"	17
A120 1	#6	STR	17'-2"	26	A206 1	#5	STR	14'-10"	15
A121 1	#6	STR	15'-4"	23	A207 1	#5	STR	13'-0"	14
A122 1	#6	STR	13'-6"	20	A208 1	#5	STR	11'-1"	12
A123 1	#6	STR	11'-7"	17	A209 1	#5	STR	9'-3"	10
A124 1	#6	STR	9'-9"	15	A210 1	#5	STR	7'-4"	8
A125 1	#6	STR	7'-11"	12	A211 1	#5	STR	5'-6"	6
A126 1	#6	STR	6'-0"	9	A212 1	#5	STR	3'-8"	4
A127 1	#6	STR	4'-2"	6					
A128 1	#6	STR	2'-3"	3					
A129 1	#5	STR	54'-1"	56	B5 105	#4	STR	29'-3"	2052
A130 1	#5	STR	52'-3"	54	B7 276	#7	STR	40'-8"	22942
A131 1	#5	STR	50'-5"	53	B16 105	#4	STR	29'-9"	2087
A132 1	#5	STR	48'-6"	51	B17 140	#4	STR	23'-6"	2198
A133 1	#5	STR	46'-8"	49	B18 138	#7	STR	37'-2"	10484
A134 1	#5	STR	44'-9"	47	B19 50	#5	STR	54'-3"	38193
A135 1	#5	STR	42'-11"	45	B20 5	#5	STR	2'-1"	11
A136 1	#5	STR	41'-1"	43	B21 204	#7	STR	47'-0"	19598
A137 1	#5	STR	39'-2"	41					
A138 1	#5	STR	37'-4"	39	G1 1	#5	STR	56'-1"	58
A139 1	#5	STR	35'-5"	37	J1 52	#4	STR	1'-5"	49
A140 1	#5	STR	33'-7"	35	K1 2	#8	1	17'-2"	92
A141 1	#5	STR	31'-9"	33	K2 14	#8	2	26'-0"	972
A142 1	#5	STR	29'-10"	31	K3 18	#6	STR	7'-0"	189
A143 1	#5	STR	28'-0"	29	K4 18	#6	3	9-11	268
A144 1	#5	STR	26'-1"	27	K5 2	#8	4	23'-5"	125
A145 1	#5	STR	24'-3"	25	K6 2	#6	STR	4-11	15
A146 1	#5	STR	22'-5"	23	K7 2	#6	5	6-1	18
A147 1	#5	STR	20'-6"	21	K8 80	#5	3	9-7	800
A148 1	#5	STR	18'-8"	19	K9 240	#5	STR	10'-1"	2524
A149 1	#5	STR	16'-9"	17	K10 80	#5	6	10-6	876
A150 1	#5	STR	14'-11"	16	K11 2	#8	7	18-1	97
A151 1	#5	STR	13'-1"	14	K12 24	#4	STR	7'-2"	115
A152 1	#5	STR	11'-4"	12	K13 72	#4	STR	10'-0"	481
A153 1	#5	STR	9'-10"	10	K14 24	#4	STR	9'-3"	148
A154 1	#5	STR	7'-6"	8	K15 24	#4	STR	7'-4"	118
A155 1	#5	STR	5'-7"	6	K16 72	#4	8	14-11	717
A156 1	#5	STR	3'-9"	4	K17 2	#4	STR	3'-2"	4
A157 1	#6	STR	52'-7"	79	K18 6	#4	STR	4-11	20
A158 1	#6	STR	50'-8"	76	K19 18	#4	STR	6'-5"	77
A159 1	#6	STR	48'-10"	73	K20 6	#4	STR	6'-0"	24
A160 1	#6	STR	47'-0"	71	K21 6	#4	STR	5'-1"	20
A161 1	#6	STR	45'-1"	68	K22 18	#4	9	8-11	187
A162 1	#6	STR	43'-3"	65	S1 75	#5	12	6'-9"	528
A163 1	#6	STR	41'-5"	62	S2 19	#5	12	3'-9"	74
A164 1	#6	STR	39'-6"	59	S3 75	#4	13	4'-1"	205
A165 1	#6	STR	37'-8"	57	S4 280	#4	14	9'-3"	1730
A166 1	#6	STR	35'-9"	54	S5 80	#4	14	9'-1"	485
A167 1	#6	STR	33'-11"	51	S6 210	#4	15	2'-8"	374
A168 1	#6	STR	32'-1"	48	S8 606	#4	16	3'-3"	1316
A169 1	#6	STR	30'-2"	45					
A170 1	#6	STR	28'-4"	43	U1 105	#4	17	13'-4"	935
A171 1	#6	STR	26'-5"	40	U2 27	#4	17	9'-6"	171
A172 1	#6	STR	24'-7"	37					
A173 1	#6	STR	22'-9"	34					
A174 1	#6	STR	20'-10"	31					
A175 1	#6	STR	19'-0"	29					
A176 1	#6	STR	17'-1"	26					
A177 1	#6	STR	15'-3"	23					
A178 1	#6	STR	13'-5"	20					
A179 1	#6	STR	11'-6"	17					
A180 1	#6	STR	9'-8"	15					
A181 1	#6	STR	7'-9"	12					
A182 1	#6	STR	5'-11"	9					
A183 1	#6	STR	4'-1"	6					

ALL REINFORCING STEEL SHALL BE EPOXY COATED.

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
B1 27	#4	STR	29'-5"	531
B2 16	#7	STR	40'-11"	1338
B3 6	#4	STR	16'-9"	67
B4 16	#4	STR	42'-5"	1387
B5 18	#4	STR	29'-3"	352
B6 36	#5	STR	60'-0"	2,253
B7 64	#7	STR	40'-8"	5,328
B8 12	#4	STR	23'-3"	186
B9 16	#7	STR	36'-8"	1,199
B10 54	#5	STR	53'-11"	3,037
B11 24	#4	STR	26'-11"	432
B12 32	#7	STR	47'-8"	3,118
B13 12	#4	STR	28'-0"	224
B14 16	#7	STR	42'-8"	1,395
B15 60	#5	STR	58'-3"	3,645
B16 9	#4	STR	29'-9"	179
B17 12	#4	STR	23'-6"	188
B18 16	#7	STR	37'-2"	1,215
B19 54	#5	STR	54'-3"	3,095
K36 12	#4	STR	2'-9"	22
S1 12	#5	12	6'-9"	84
S3 12	#4	13	4'-1"	33
S6 88	#4	15	2'-8"	157
S8 232	#4	16	3'-3"	504
U1 32	#4	17	13'-4"	285
U3 12	#4	17	14'-10"	119

EPOXY COATED
REINFORCING STEEL LBS. 30,325



LAYOUT FOR COMPUTING AREA
OF REINFORCED CONCRETE DECK SLAB
(SQ. FT. = 215,579)

PROJECT NO. U-2107BA

ONSLow COUNTY

STATION: 277+50.00 -L-

SHEET 2 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
STANDARD
SUPERSTRUCTURE
BILL OF MATERIAL



GROOVING BRIDGE FLOORS	
BRIDGE DECK (A, B, & C)	36,720 SQ.FT.
BRIDGE DECK (D, E, F, & G)	49,221 SQ.FT.
BRIDGE DECK (H, I, J, & K)	59,185 SQ.FT.
BRIDGE DECK (L, M, N, & O)	49,493 SQ.FT.
TOTAL	194,619 SQ.FT.

ASSEMBLED BY: J.M.R.H. DATE: 12/11/96
CHECKED BY: J.L.F.A.N.G. DATE: 1/21/97
DRAWN BY: M.BRITT DATE: 5/28/87
CHECKED BY: S.H.DAVIS DATE: 9/3/87

REV. 6/1/94 ESM -GDP
0-JUL-1997 12:00
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STANDARD SHEET NO. 5-92
TOTAL SHEETS 170

STD. NO. BOM2

REINFORCING BAR SCHEDULE

SPAN A THRU C (RIGHT SIDE OF CLOSURE POUR)

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
A5 1318	#6	STR	34-1	67473
A6 1318	#5	STR	33-10	46510
A322 2	#6	STR	33-3	100
A323 2	#6	STR	32-4	97
A324 1	#6	STR	59-8	90
A325 1	#6	STR	57-10	87
A326 1	#6	STR	55-11	84
A327 1	#6	STR	54-1	81
A328 1	#6	STR	52-3	78
A329 1	#6	STR	50-4	76
A330 1	#6	STR	48-6	73
A331 1	#6	STR	46-7	70
A332 1	#6	STR	44-9	67
A333 1	#6	STR	42-11	64
A334 1	#6	STR	41-0	62
A335 1	#6	STR	39-2	59
A336 1	#6	STR	37-4	56
A337 1	#6	STR	35-5	53
A338 1	#6	STR	33-7	50
A339 1	#6	STR	31-8	48
A340 1	#6	STR	29-10	45
A341 1	#6	STR	27-11	42
A342 1	#6	STR	25-1	39
A343 1	#6	STR	23-3	36
A344 1	#6	STR	22-4	34
A345 1	#6	STR	20-6	31
A346 1	#6	STR	18-7	28
A347 1	#6	STR	16-9	25
A348 1	#6	STR	14-11	22
A349 1	#6	STR	13-0	20
A350 1	#6	STR	11-2	17
A351 1	#6	STR	9-4	14
A352 1	#6	STR	7-5	11
A353 1	#6	STR	5-7	8
A354 1	#6	STR	3-8	6
A355 2	#5	STR	33-8	70
A356 2	#5	STR	32-9	68
A357 2	#5	STR	31-9	66
A358 1	#5	STR	59-3	62
A359 1	#5	STR	57-5	60
A360 1	#5	STR	55-6	58
A361 1	#5	STR	53-8	56
A362 1	#5	STR	51-10	54
A363 1	#5	STR	49-11	52
A364 1	#5	STR	48-1	50
A365 1	#5	STR	46-2	48
A366 1	#5	STR	44-4	46
A367 1	#5	STR	42-6	44
A368 1	#5	STR	40-7	42
A369 1	#5	STR	38-9	40
A370 1	#5	STR	36-10	38
A371 1	#5	STR	35-0	37
A372 1	#5	STR	33-2	35
A373 1	#5	STR	31-3	33
A374 1	#5	STR	29-5	31
A375 1	#5	STR	27-6	29
A376 1	#5	STR	25-8	27
A377 1	#5	STR	23-10	25
A378 1	#5	STR	21-11	23
A379 1	#5	STR	20-1	21
A380 1	#5	STR	18-2	19
A381 1	#5	STR	16-4	17
A382 1	#5	STR	14-6	15
A383 1	#5	STR	12-7	13
A384 1	#5	STR	10-9	11
A385 1	#5	STR	8-10	9
A386 1	#5	STR	7-0	7
A387 1	#5	STR	5-2	5
A388 1	#5	STR	3-3	3

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
A389 2	#6	STR	33-3	100
A390 2	#6	STR	32-3	97
A391 1	#6	STR	59-9	90
A392 1	#6	STR	57-11	87
A393 1	#6	STR	56-0	84
A394 1	#6	STR	54-2	81
A395 1	#6	STR	52-4	78
A396 1	#6	STR	50-5	76
A397 1	#6	STR	48-7	73
A398 1	#6	STR	46-8	70
A399 1	#6	STR	44-10	67
A400 1	#6	STR	43-0	65
A401 1	#6	STR	41-1	62
A402 1	#6	STR	39-3	59
A403 1	#6	STR	37-4	56
A404 1	#6	STR	35-6	53
A405 1	#6	STR	33-8	51
A406 1	#6	STR	31-9	48
A407 1	#6	STR	29-11	45
A408 1	#6	STR	28-0	42
A409 1	#6	STR	26-2	39
A410 1	#6	STR	24-4	37
A411 1	#6	STR	22-5	34
A412 1	#6	STR	20-7	31
A413 1	#6	STR	18-8	28
A414 1	#6	STR	16-10	25
A415 1	#6	STR	15-0	23
A416 1	#6	STR	13-1	20
A417 1	#6	STR	11-3	17
A418 1	#6	STR	9-5	14
A419 1	#6	STR	7-6	11
A420 1	#6	STR	5-8	8
A421 1	#6	STR	3-9	6

EPOXY COATED
REINFORCING STEEL LBS. 215566

SPAN D THRU G (RIGHT SIDE OF CLOSURE POUR)

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
A5 1790	#5	STR	34-1	91636
A6 1790	#5	STR	33-10	63166
A322 2	#6	STR	33-3	100
A323 2	#6	STR	32-4	97
A324 1	#6	STR	59-8	90
A325 1	#6	STR	57-10	87
A326 1	#6	STR	55-11	84
A327 1	#6	STR	54-1	81
A328 1	#6	STR	52-3	78
A329 1	#6	STR	50-4	76
A330 1	#6	STR	48-6	73
A331 1	#6	STR	46-7	70
A332 1	#6	STR	44-9	67
A333 1	#6	STR	42-11	64
A334 1	#6	STR	41-0	62
A335 1	#6	STR	39-2	59
A336 1	#6	STR	37-4	56
A337 1	#6	STR	35-5	53
A338 1	#6	STR	33-7	50
A339 1	#6	STR	31-8	48
A340 1	#6	STR	29-10	45
A341 1	#6	STR	27-11	42
A342 1	#6	STR	26-1	39
A343 1	#6	STR	24-3	36
A344 1	#6	STR	22-4	34
A345 1	#6	STR	20-6	31
A346 1	#6	STR	18-7	28
A347 1	#6	STR	16-9	25
A348 1	#6	STR	14-11	22
A349 1	#6	STR	13-0	20
A350 1	#6	STR	11-2	17
A351 1	#6	STR	9-4	14
A352 1	#6	STR	7-5	11
A353 1	#6	STR	5-7	8
A354 1	#6	STR	3-8	6
A355 2	#5	STR	33-8	70
A356 2	#5	STR	32-9	68
A357 2	#5	STR	31-9	66
A358 1	#5	STR	59-3	62
A359 1	#5	STR	57-5	60
A360 1	#5	STR	55-6	58
A361 1	#5	STR	53-8	56
A362 1	#5	STR	51-10	54
A363 1	#5	STR	49-11	52
A364 1	#5	STR	48-1	50
A365 1	#5	STR	46-2	48
A366 1	#5	STR	44-4	46
A367 1	#5	STR	42-6	44
A368 1	#5	STR	40-7	42
A369 1	#5	STR	38-9	40
A370 1	#5	STR	36-10	38
A371 1	#5	STR	35-0	37
A372 1	#5	STR	33-2	35
A373 1	#5	STR	31-3	33
A374 1	#5	STR	29-5	31
A375 1	#5	STR	27-6	29
A376 1	#5	STR	25-8	27
A377 1	#5	STR	23-10	25
A378 1	#5	STR	21-11	23
A379 1	#5	STR	20-1	21
A380 1	#5	STR	18-2	19
A381 1	#5	STR	16-4	17
A382 1	#5	STR	14-6	15
A383 1	#5	STR	12-7	13
A384 1	#5	STR	10-9	11
A385 1	#5	STR	8-10	9
A386 1	#5	STR	7-0	7
A387 1	#5	STR	5-2	5
A388 1	#5	STR	3-3	3

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
A389 2	#6	STR	33-3	100
A390 2	#6	STR	32-3	97
A391 1	#6	STR	59-9	90
A392 1	#6	STR	57-11	87
A393 1	#6	STR	56-0	84
A394 1	#6	STR	54-2	81
A395 1	#6	STR	52-4	78
A396 1	#6	STR	50-5	76
A397 1	#6	STR	48-7	73
A398 1	#6	STR	46-8	70
A399 1	#6	STR	44-10	67
A400 1	#6	STR	43-0	65
A401 1	#6	STR	41-1	62
A402 1	#6	STR	39-3	59
A403 1	#6	STR	37-4	56
A404 1	#6	STR	35-6	53
A405 1	#6	STR	33-8	51
A406 1	#6	STR	31-9	48
A407 1	#6	STR	29-11	45
A408 1	#6	STR	28-0	42
A409 1	#6	STR	26-2	39
A410 1	#6	STR	24-4	37
A411 1	#6	STR	22-5	34
A412 1	#6	STR	20-7	31
A413 1	#6	STR	18-8	28
A414 1	#6	STR	16-10	25
A415 1	#6	STR	15-0	23
A416 1	#6	STR	13-1	20
A417 1	#6	STR	11-3	17
A418 1	#6	STR	9-5	14
A419 1	#6	STR	7-6	11
A420 1	#6	STR	5-8	8
A421 1	#6	STR	3-9	6
A422 2	#5	STR	33-8	70
A423 2	#5	STR	32-9	68
A424 2	#5	STR	31-10	66
A425 1	#5	STR	59-4	62
A426 1	#5	STR	57-6	60
A427 1	#5	STR	55-7	58
A428 1	#5	STR	53-9	56
A429 1	#5	STR	51-11	54
A430 1	#5	STR	50-0	52
A431 1	#5	STR	48-2	50
A432 1	#5	STR	46-3	48
A433 1	#5	STR	44-5	46
A434 1	#5	STR	42-7	44
A435 1	#5	STR	40-8	42
A436 1	#5	STR	38-10	41
A437 1	#5	STR	36-11	39
A438 1	#5	STR	35-1	37
A439 1	#5	STR	33-3	35
A440 1	#5	STR	31-4	33
A441 1	#5	STR	29-6	31
A442 1	#5	STR	27-7	29
A443 1	#5	STR	25-9	27
A444 1	#5	STR	23-11	25
A445 1	#5	STR	22-0	23
A446 1	#5	STR	20-2	21
A447 1	#5	STR	18-3	19
A448 1	#5	STR	16-5	17
A449 1	#5	STR	14-7	15
A450 1	#5	STR	12-8	13
A451 1	#5	STR	10-10	11
A452 1	#5	STR	8-11	9
A453 1	#5	STR	7-1	7
A454 1	#5	STR	5-3	5
A455 1	#5	STR	3-4	3
B1 126	#4	STR	29-5	2476
B2 166	#7	STR	40-11	13883
B3 84	#4	STR	16-9	940
B4 166	#7	STR	42-5	14392
B5 126	#4	STR	29-3	2462
B6 546	#5	STR	60-0	34169
B20 5	#5	STR	2-1	11
B21 164	#7	STR	47-0	15755
G2 2	#5	STR	33-8	70
J1 63	#4	STR	1-5	60
K1 2	#8	1	17-2	92
K2 18	#8	2	26-0	1250
K3 20	#6	STR	7-0	210
K4 3	#4	STR	9-11	298
K5 2	#8	4	23-5	125
K6 2	#6	STR	4-11	15
K7 2	#6	5	6-1	18

ALL REINFORCING STEEL SHALL BE EPOXY COATED.



PROJECT NO. U-2107BA
ONSLow COUNTY
 STATION: 277+50.00 -L-

SHEET 3 OF 5

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH			
STANDARD SUPERSTRUCTURE BILL OF MATERIAL			
OCTOBER 1987			
REVISIONS		SHEET NO.	
NO.	DATE	NO.	DATE
1		3	
2		4	

STD.NO.BOM2

ASSEMBLED BY: M. M. R. R. DATE: 12/11/96
 CHECKED BY: L. H. ANG</

REINFORCING BAR SCHEDULE

SPAN H THRU K (RIGHT SIDE OF CLOSURE POUR)

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
A7 2168	#5	STR	33-1	74809
A8 2168	#5	STR	33-1	74809
A456 2	#5	STR	32-2	67
A457 1	#5	STR	68-0	63
A458 1	#5	STR	58-2	61
A459 1	#5	STR	56-3	59
A460 1	#5	STR	54-6	57
A461 1	#5	STR	52-6	55
A462 1	#5	STR	50-8	53
A463 1	#5	STR	48-10	51
A464 1	#5	STR	46-11	49
A465 1	#5	STR	45-1	47
A466 1	#5	STR	43-2	45
A467 1	#5	STR	41-4	43
A468 1	#5	STR	39-6	41
A469 1	#5	STR	37-7	39
A470 1	#5	STR	35-9	37
A471 1	#5	STR	33-10	35
A472 1	#5	STR	32-0	33
A473 1	#5	STR	30-2	31
A474 1	#5	STR	29-3	29
A475 1	#5	STR	28-5	28
A476 1	#5	STR	24-7	26
A477 1	#5	STR	22-8	24
A478 1	#5	STR	20-10	22
A479 1	#5	STR	18-11	20
A480 1	#5	STR	17-1	18
A481 1	#5	STR	15-3	16
A482 1	#5	STR	13-4	14
A483 1	#5	STR	11-6	12
A484 1	#5	STR	9-7	10
A485 1	#5	STR	7-9	8
A486 1	#5	STR	5-11	6
A487 2	#5	STR	32-11	69
A488 2	#5	STR	32-0	67
A489 1	#5	STR	59-7	62
A490 1	#5	STR	57-9	60
A491 1	#5	STR	55-10	58
A492 1	#5	STR	54-0	56
A493 1	#5	STR	52-1	54
A494 1	#5	STR	50-3	52
A495 1	#5	STR	48-5	50
A496 1	#5	STR	46-6	48
A497 1	#5	STR	44-8	47
A498 1	#5	STR	42-9	45
A499 1	#5	STR	40-11	43
A500 1	#5	STR	39-1	41
A501 1	#5	STR	37-2	39
A502 1	#5	STR	35-4	37
A503 1	#5	STR	33-5	35
A504 1	#5	STR	31-7	33
A505 1	#5	STR	29-9	31
A506 1	#5	STR	27-10	29
A507 1	#5	STR	26-0	27
A508 1	#5	STR	24-2	25
A509 1	#5	STR	22-3	23
A510 1	#5	STR	20-5	21
A511 1	#5	STR	18-6	19
A512 1	#5	STR	16-8	17
A513 1	#5	STR	14-10	15
A514 1	#5	STR	12-11	13
A515 1	#5	STR	11-1	12
A516 1	#5	STR	9-2	10
A517 1	#5	STR	7-4	8
A518 1	#5	STR	5-6	6
A519 2	#5	STR	32-3	67
A520 2	#5	STR	31-4	65
A521 1	#5	STR	58-3	61

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
A522 1	#5	STR	56-4	59
A523 1	#5	STR	54-6	57
A524 1	#5	STR	52-7	55
A525 1	#5	STR	50-9	53
A526 1	#5	STR	48-11	51
A527 1	#5	STR	47-0	49
A528 1	#5	STR	45-2	47
A529 1	#5	STR	43-3	45
A530 1	#5	STR	41-5	43
A531 1	#5	STR	39-7	41
A532 1	#5	STR	37-8	39
A533 1	#5	STR	35-10	37
A534 1	#5	STR	33-11	35
A535 1	#5	STR	32-1	33
A536 1	#5	STR	30-3	32
A537 1	#5	STR	28-4	30
A538 1	#5	STR	26-6	28
A539 1	#5	STR	24-8	26
A540 1	#5	STR	22-9	24
A541 1	#5	STR	20-11	22
A542 1	#5	STR	19-0	20
A543 1	#5	STR	17-2	18
A544 1	#5	STR	15-4	16
A545 1	#5	STR	13-5	14
A546 1	#5	STR	11-7	12
A547 1	#5	STR	9-9	10
A548 1	#5	STR	7-10	8
A549 1	#5	STR	6-0	6
A550 1	#5	STR	4-1	4
A551 1	#5	STR	2-3	2

EPOXY COATED
REINFORCING STEEL LBS. 290953

SPAN L THRU O (RIGHT SIDE OF CLOSURE POUR)

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
A5 1800	#6	STR	34-1	92148
A6 1800	#5	STR	33-10	63514
A322 2	#6	STR	33-3	100
A323 2	#6	STR	32-4	97
A324 1	#6	STR	56-8	90
A325 1	#6	STR	57-10	87
A326 1	#6	STR	55-11	84
A327 1	#6	STR	54-1	81
A328 1	#6	STR	52-3	78
A329 1	#6	STR	50-4	76
A330 1	#6	STR	48-6	73
A331 1	#6	STR	46-7	70
A332 1	#6	STR	44-9	67
A333 1	#6	STR	42-11	64
A334 1	#6	STR	41-0	62
A335 1	#6	STR	39-2	59
A336 1	#6	STR	37-3	56
A337 1	#6	STR	35-5	53
A338 1	#6	STR	33-7	50
A339 1	#6	STR	31-8	48
A340 1	#6	STR	29-10	45
A341 1	#6	STR	27-11	42
A342 1	#6	STR	26-1	39
A343 1	#6	STR	24-3	36
A344 1	#6	STR	22-4	34
A345 1	#6	STR	20-6	31
A346 1	#6	STR	18-7	28
A347 1	#6	STR	16-9	25
A348 1	#6	STR	14-11	22
A349 1	#6	STR	13-0	20
A350 1	#6	STR	11-2	17
A351 1	#6	STR	9-4	14
A352 1	#6	STR	7-5	11
A353 1	#6	STR	5-7	8
A354 1	#6	STR	3-8	6
A355 2	#5	STR	33-8	70
A356 2	#5	STR	32-9	68
A357 2	#5	STR	31-9	66
A358 1	#5	STR	59-3	62
A359 1	#5	STR	57-5	60
A360 1	#5	STR	55-6	58
A361 1	#5	STR	53-8	56
A362 1	#5	STR	51-10	54
A363 1	#5	STR	49-11	52
A364 1	#5	STR	48-1	50
A365 1	#5	STR	46-2	48
A366 1	#5	STR	44-4	46
A367 1	#5	STR	42-6	44
A368 1	#5	STR	40-7	42
A369 1	#5	STR	38-9	40
A370 1	#5	STR	36-10	38
A371 1	#5	STR	35-0	37
A372 1	#5	STR	33-2	35
A373 1	#5	STR	31-3	33
A374 1	#5	STR	29-5	31
A375 1	#5	STR	27-6	29
A376 1	#5	STR	25-8	27
A377 1	#5	STR	23-10	25
A378 1	#5	STR	21-11	23
A379 1	#5	STR	20-1	21
A380 1	#5	STR	18-2	19
A381 1	#5	STR	16-4	17
A382 1	#5	STR	14-6	15
A383 1	#5	STR	12-7	13
A384 1	#5	STR	10-9	11
A385 1	#5	STR	8-10	9
A386 1	#5	STR	7-0	7
A387 1	#5	STR	5-2	5
A388 1	#5	STR	3-3	3

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
A389 2	#6	STR	33-3	100
A390 2	#6	STR	32-4	97
A391 1	#6	STR	59-9	90
A392 1	#6	STR	57-11	87
A393 1	#6	STR	56-0	84
A394 1	#6	STR	54-2	81
A395 1	#6	STR	52-4	79
A396 1	#6	STR	50-5	76
A397 1	#6	STR	48-7	73
A398 1	#6	STR	46-8	70
A399 1	#6	STR	44-10	67
A400 1	#6	STR	43-0	65
A401 1	#6	STR	41-1	62
A402 1	#6	STR	39-3	59
A403 1	#6	STR	37-4	56
A404 1	#6	STR	35-6	53
A405 1	#6	STR	33-8	51
A406 1	#6	STR	31-9	48
A407 1	#6	STR	29-11	45
A408 1	#6	STR	28-0	42
A409 1	#6	STR	26-2	39
A410 1	#6	STR	24-4	37
A411 1	#6	STR	22-5	34
A412 1	#6	STR	20-7	31
A413 1	#6	STR	18-8	28
A414 1	#6	STR	16-10	25
A415 1	#6	STR	15-0	23
A416 1	#6	STR	13-1	20
A417 1	#6	STR	11-3	17
A418 1	#6	STR	9-5	14
A419 1	#6	STR	7-6	11
A420 1	#6	STR	5-8	9
A421 1	#6	STR	3-9	6
A422 2	#5	STR	33-9	70
A423 2	#5	STR	32-9	68
A424 2	#5	STR	31-10	66
A425 1	#5	STR	59-4	62
A426 1	#5	STR	57-6	60
A427 1	#5	STR	55-7	58
A428 1	#5	STR	53-9	56
A429 1	#5	STR	51-11	54
A430 1	#5	STR	50-0	52
A431 1	#5	STR	48-2	50
A432 1	#5	STR	46-3	48
A433 1	#5	STR	44-5	46
A434 1	#5	STR	42-7	44
A435 1	#5	STR	40-8	42
A436 1	#5	STR	38-10	40
A437 1	#5	STR	36-11	39
A438 1	#5	STR	35-1	37
A439 1	#5	STR	33-3	35
A440 1	#5	STR	31-4	33
A441 1	#5	STR	29-6	31
A442 1	#5	STR	27-7	29
A443 1	#5	STR	25-9	27
A444 1	#5	STR	23-11	25
A445 1	#5	STR	22-0	23
A446 1	#5	STR	20-2	21
A447 1	#5	STR	18-3	19
A448 1	#5	STR	16-5	17
A449 1	#5	STR	14-7	15
A450 1	#5	STR	12-8	13
A451 1	#5	STR	10-10	11
A452 1	#5	STR	8-11	9
A453 1	#5	STR	7-1	7
A454 1	#5	STR	5-3	5
A455 1	#5	STR	3-4	3
B5 4 126	#4	STR	29-3	2462
B7 332	#7	STR	40-8	27597

ALL REINFORCING STEEL SHALL BE EPOXY COATED.

EPOXY COATED
REINFORCING STEEL LBS. 294544

ASSEMBLED BY: W. M. R. M. DATE: 12/11/96
CHECKED BY: T. H. FANG DATE: 1/21/97
DRAWN BY: M. BRITT DATE: 5/28/87
CHECKED BY: S. D. DAVIS DATE: 9/3/87

REV. 6/94 EBM 40 DCP

10-JUL-1997 10:00
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PROJECT NO. U-2107BA
ONSLow COUNTY
STATION: 277+50.00 -L-

SHEET 4 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
SUPERSTRUCTURE
BILL OF MATERIAL

OCTOBER 1987					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
					SHEET NO. 5-94
					TOTAL 170

STD. NO. BOM2

	CLASS A-A CONCRETE POUR OPTION #1 (CU. YDS.)	CLASS A-A CONCRETE POUR OPTION #2 (CU. YDS.)	EPOXY COATED REINFORCING STEEL (LBS.)
SPAN 'A, B, & C'			391725
* POUR #1	261.4	361.6	
POUR #2	247.0	251.2	
POUR #3	260.9	246.9	
POUR #4	166.2	289.5	
POUR #5	204.1	246.9	
POUR #6	215.6		
SPAN 'D, E, F, & G'			532347
POUR #0	25.2	25.2	
* POUR #1	276.2	369.2	
POUR #2	247.0	237.1	
POUR #3	247.0	246.9	
POUR #4	260.9	237.1	
POUR #5	161.6	246.9	
POUR #6	204.1	287.8	
POUR #7	204.1	246.9	
POUR #8	215.6		
SPAN 'H, I, J, & K'			542046
POUR #0	27.1	27.1	
* POUR #1	341.6	256.6	
POUR #2	297.1	250.6	
POUR #3	297.1	81.1	
POUR #4	319.0	250.6	
POUR #5	217.6	248.1	
POUR #6	259.4	81.1	
POUR #7	259.4	250.6	
POUR #8	278.5	248.1	
POUR #9	—	1637	
POUR #10	—	250.6	
POUR #11	—	248.1	
SPAN 'L, M, N, & O'			535111
POUR #0	27.1	27.1	
* POUR #1	279.3	3727	
POUR #2	247.0	240.6	
POUR #3	247.0	246.9	
POUR #4	270.9	240.6	
POUR #5	164.2	246.9	
POUR #6	204.1	302.4	
POUR #7	204.1	246.9	
POUR #8	223.8		
CLOSURE POUR			30325
SPAN ABC POUR #7	40.8	—	
SPAN DEFG POUR #9	55.3	—	
SPAN HIJK POUR #9	59.6	—	
SPAN LMNO POUR #9	56.5	—	
TOTALS **	7573.3	7573.5	2051557

BAR TYPES

Technical drawings of 18 different bar types, labeled 1 through 18. Each drawing shows the bar's profile with dimensions and labels.

- Bar 1:** Dimensions: 6'-3" (top), 8'-5" (bottom), 2'-8" (right). Label: 1.
- Bar 2:** Dimensions: 4'-2" (top), 8'-5" (bottom), 2'-6" (left), 8'-5" (right). Label: 2.
- Bar 3:** Dimensions: 7'-7" (top), 7'-3" (top), 4'-4" (top), 4'-3" (top), 1'-2" (left), 3" (left), 1'-2" (right), 3" (right). Labels: K4, K8, K25, K28.
- Bar 4:** Dimensions: 4'-2" (top), 8'-5" (bottom), 2'-6" (left), 4'-11" (right), 11" (right). Label: HK.
- Bar 5:** Dimensions: 4'-11" (top), 1'-2" (left), 3" (left). Label: K7.
- Bar 6:** Dimensions: 8'-6" (top), 5'-5" (bottom), 8 1/2" (left), 8 1/2" (right), 1'-0" (left), 1'-0" (right). Label: K10, K30.
- Bar 7:** Dimensions: 4'-2" (top), 2'-1" (bottom), 8'-5" (bottom), 2'-6" (right), 11" (right). Label: K11.
- Bar 8:** Dimensions: 3'-6" (top), 7'-11" (top), 4'-9" (top), 2'-11 1/8" (left), 2'-0 9/16" (left), 3'-6" (bottom), 3'-6" (bottom). Labels: K15, K35, K15, K35.
- Bar 9:** Dimensions: 3'-6" (top), 5'-5" (top), 3'-11" (top), 1'-11 1/8" (left), 1'-8 1/2" (left), 3'-6" (bottom), 3'-6" (bottom). Labels: K22, K40, K22, K40.
- Bar 10:** Dimensions: 4'-2" (top), 2'-1" (bottom), 5'-3" (bottom), 11" (right), 3'-2" (right). Label: HK.
- Bar 11:** Dimensions: 4'-2" (top), 5'-3" (bottom), 11" (right), 5'-3" (bottom), 11" (right). Label: HK.
- Bar 12:** Dimensions: 6" (top), 8" (bottom), 2'-8" (left), 1'-0" (left), 3'-2" (left), 1'-9" (left), 5'-10" (left), 2'-8" (right), 1'-0" (right), 3'-2" (right), 1'-9" (right), 5'-10" (right). Label: HK.
- Bar 13:** Dimensions: 1'-8" (top), 9" (left). Label: S3.
- Bar 14:** Dimensions: 4 1/4" (top), 4 1/4" (left), 5" (bottom), 3'-10" (top), 3'-9" (top), 4'-6" (top), 4'-1" (top). Labels: S4, S5, S11, S12.
- Bar 15:** Dimensions: 1'-6" (top), 9 1/2" (bottom), 4 1/2" (bottom). Label: HK.
- Bar 16:** Dimensions: 4 1/2" (top), 2'-6" (top), 4 1/2" (top), 11" (bottom). Label: HK.
- Bar 17:** Dimensions: 2'-7" (top), 5'-0" (top), 3'-1" (top), 5'-9" (top), 4'-1" (top). Labels: U1, U2, U3, U4.
- Bar 18:** Dimensions: 1'-0 1/2" (top), 11" (top), 4 1/2" (top). Label: HK.

ALL BAR DIMENSIONS ARE OUT TO OUT

PROJECT NO. U-2107BA
ONSLOW COUNTY
 STATION: 277+50.00 -L-
 SHEET 5 OF 5

ALL BAR DIMENSIONS ARE OUT TO OUT

SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS

BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL		APPROACH SLABS		PARAPET AND BARRIER RAIL
	EPOXY COATED	UNCOATED	EPOXY COATED	UNCOATED	
#4	2'-0"	1'-9"	2'-0"	1'-9"	2'-9"
#5	2'-6"	2'-2"	2'-6"	2'-2"	3'-6"
#6	3'-0"	2'-7"	3'-10"	2'-7"	4'-4"
#7	5'-3"	3'-6"	5'-3"	3'-6"	5'-11"
#8	6'-10"	4'-7"	6'-10"	4'-7"	7'-9"

ASSEMBLED BY : N. L. M. K. / m DATE : 12/11/96
 CHECKED BY : T. H. FANG DATE : 1/21/97

DRAWN BY : M. BRITT DATE : 5/28/87
 CHECKED BY : S. J. DAVIS DATE : 9/3/87

REV. 6/1/94 EEM LO CRP

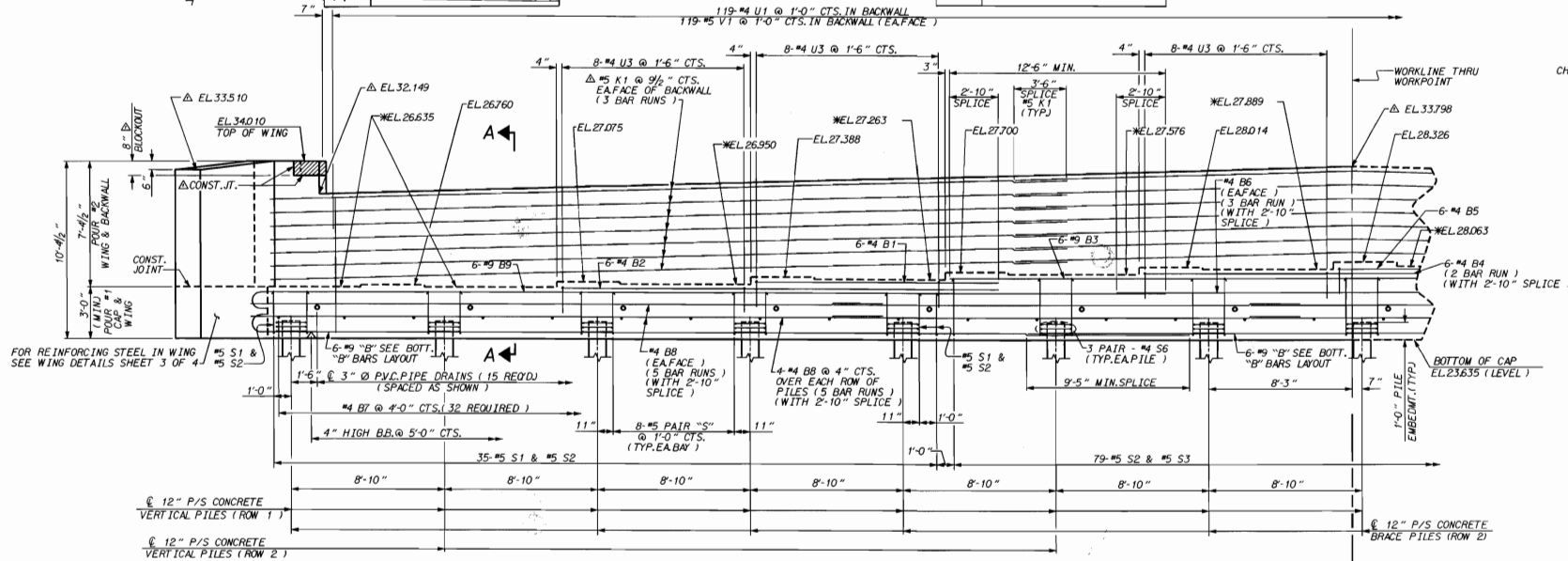
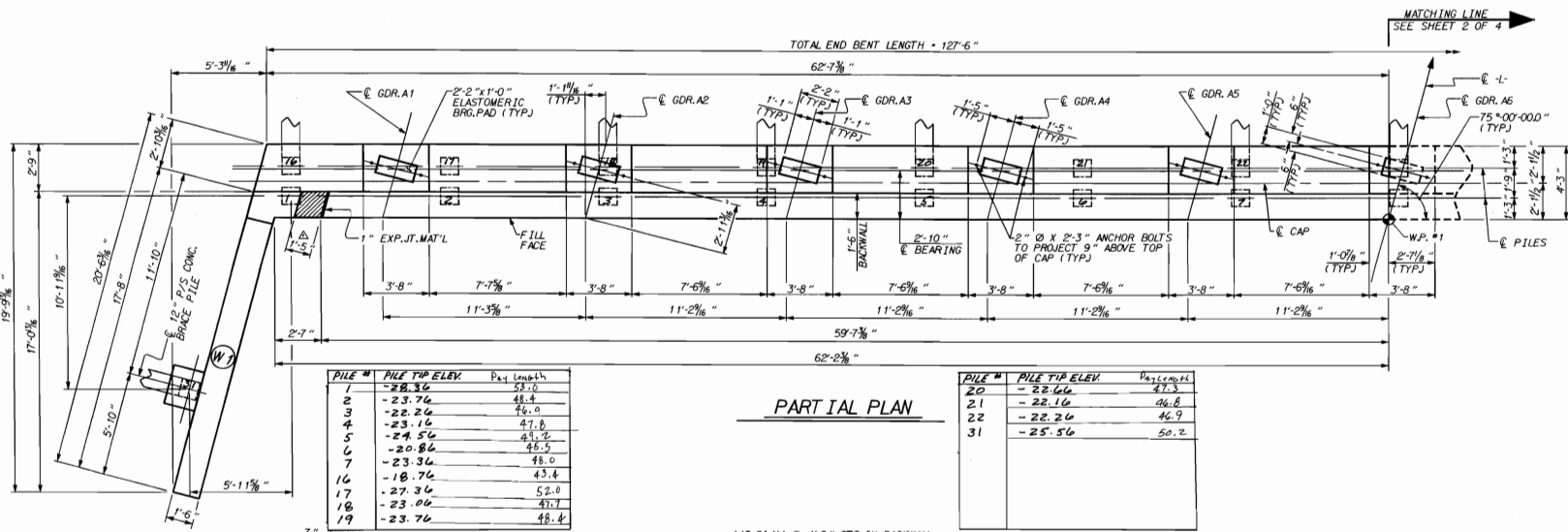
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
SUPERSTRUCTURE
BILL OF MATERIAL

OCTOBER						198
REVISIONS						SHEET NO 5-95
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 170
2			4			

STD.NO.BOM2





NOTES

- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
- FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.
- PIPE DRAINS MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR REINFORCING STEEL AND ANCHOR BOLTS.
- FOR PIPE DRAIN DETAILS, SEE SHEET 4 OF 4.
- 12" PRESTRESSED CONCRETE PILES SHALL CONTAIN CALCIUM NITRITE CORROSION INHIBITOR. PILES WHICH CONTAIN CALCIUM NITRITE CORROSION INHIBITOR SHALL BE MARKED CLEARLY. SEE SPECIAL PROVISIONS FOR "CALCIUM NITRITE CORROSION INHIBITOR."
- BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.
- THE TOP SURFACE AREAS OF THE END BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THAT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.
- THE TOP SURFACE OF THE END BENT CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE BACK FACE AT THE RATE OF 1/4" PER FOOT.
- ALL REINFORCING STEEL SHALL BE EPOXY COATED.
- THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DRAIN THROUGH THE WING WALL AS SHOWN ON THE APPROACH SLAB DETAILS SHEETS. REINFORCING STEEL IN THE WING SHALL BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.
- △ THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

△ REV. #1: REVISED THE BACKWALL ELEVATIONS, SPACING OF "K" BARS IN BACKWALL AND A WING ELEVATION SHOWN IN "PARTIAL ELEVATION", ADDED WING BLOCKOUT DETAILS TO BOTH PARTIAL PLAN AND ELEVATION, ADDED NOTE CONCERNING BLOCKOUT IN WING.

CHECKED BY: TLA DATE: 4/03/00
DATE: 4/04/00



* FOR LOCATION OF ELEVATION BETWEEN BRIDGE SEAT BUILDUPS, SEE SECTIONS SHEET 4 OF 4.

PROJECT NO. U-2107BA
ONSLAW COUNTY
STATION: 277+50.00 -L-

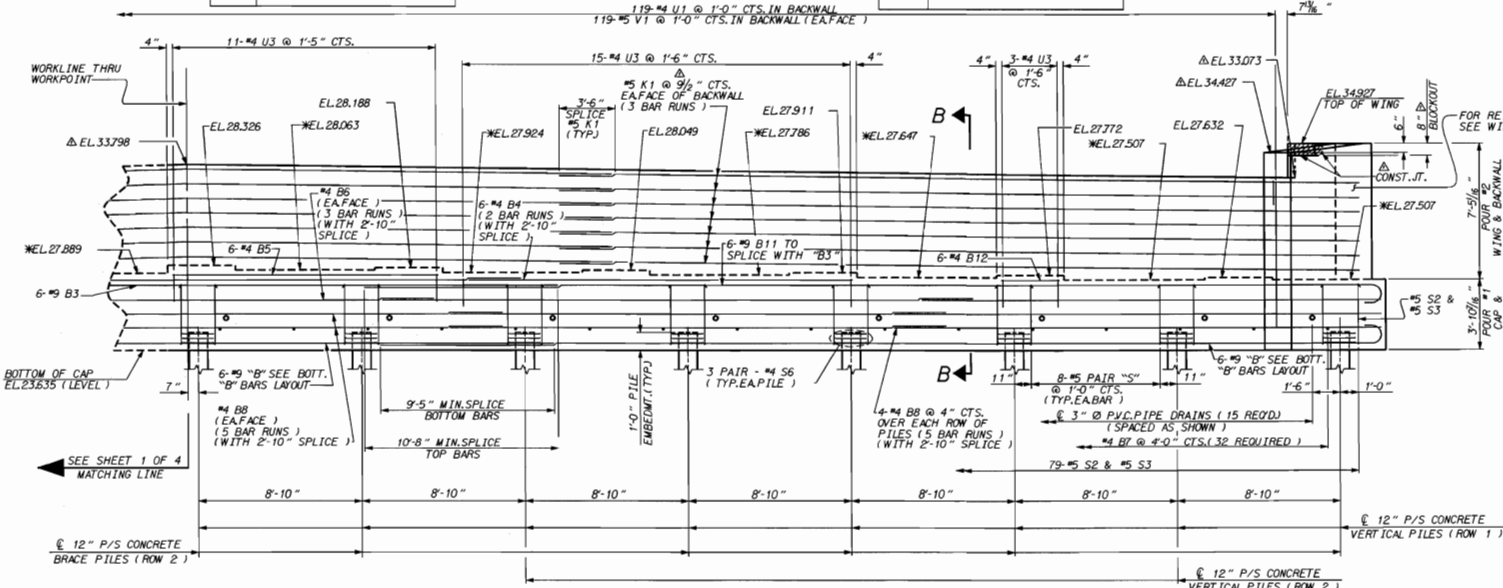
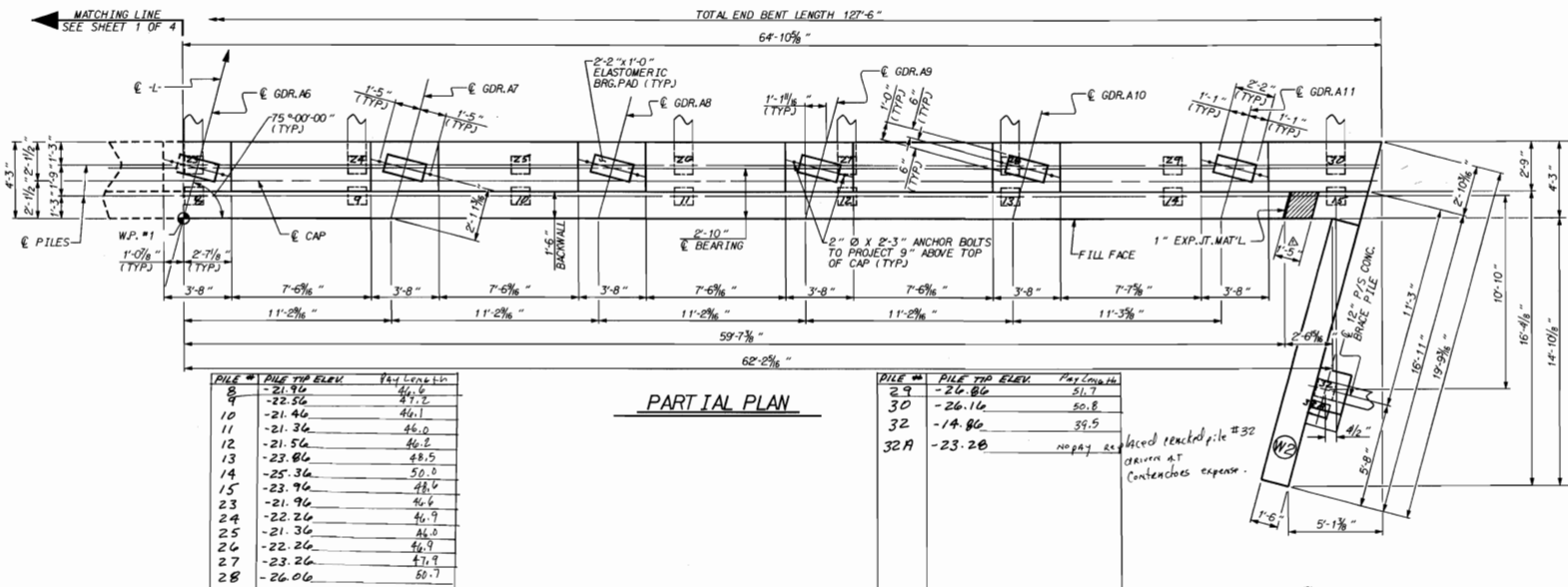
SHEET 1 OF 4

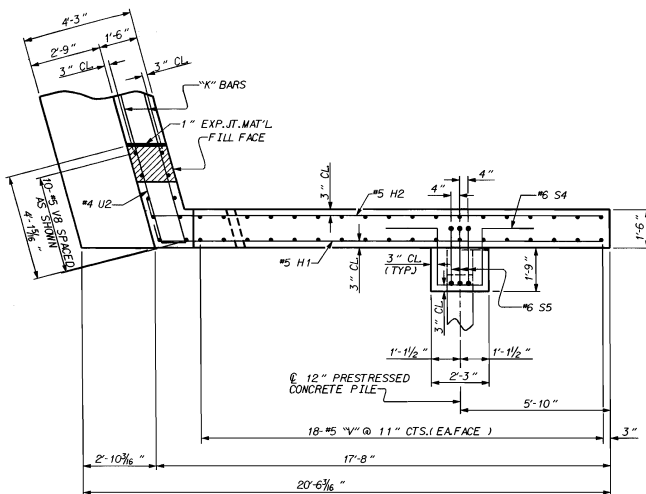
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
SUBSTRUCTURE
END BENT #1

REVISIONS				SHEET NO.	
NO.	BY	DATE	NO.	DATE	96
1			3		130/11
2			4		170

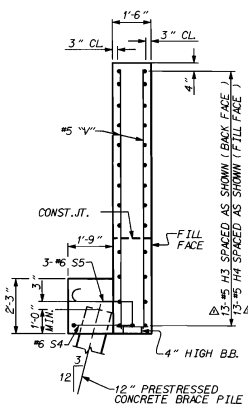
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DRAWN BY: G.D. CARROLL DATE: 7/96
CHECKED BY: T.N. CARROLL DATE: 7/96

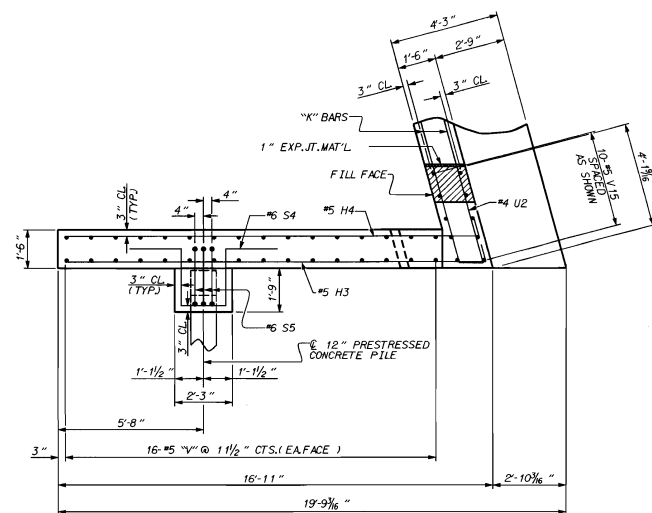




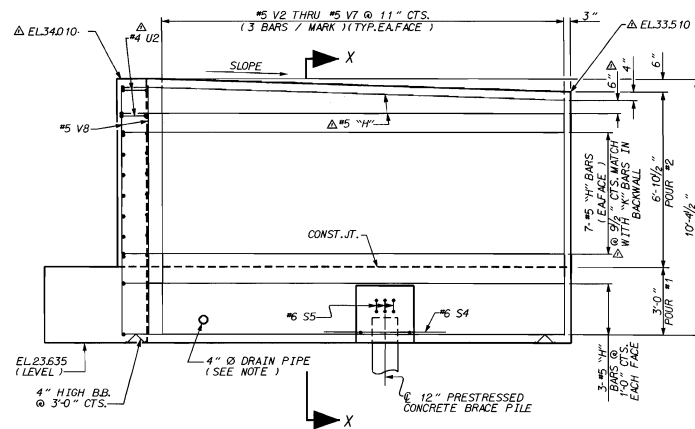
PLAN OF LEFT WING - W1



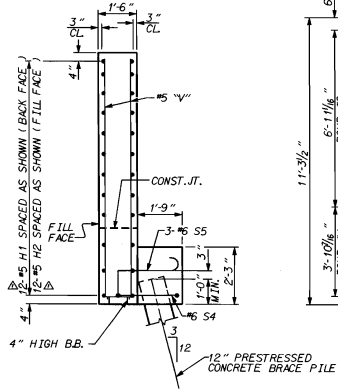
SECTION Y-Y



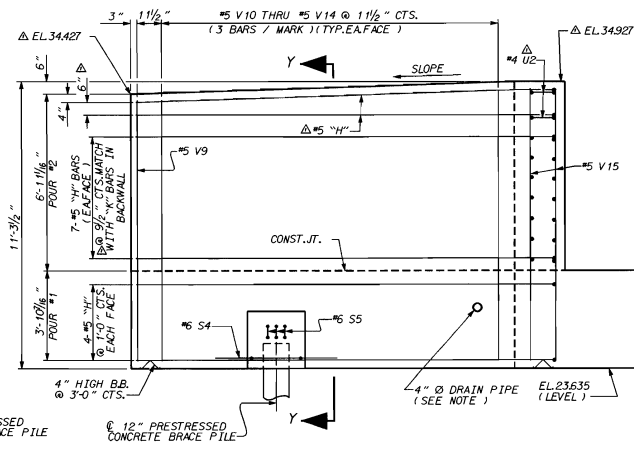
PLAN OF RIGHT WING - W2



ELEVATION OF LEFT WING - W1



SECTION X-X



ELEVATION OF RIGHT WING - W2

Δ REV. #1: REVISED WING ELEVATIONS, CHANGED SPACING & NUMBER OF "H" BARS IN ELEVATION AND SECTION VIEWS. INCREASED NUMBER OF #4 U2 BARS. ADDED BLOCKOUT DETAILS TO PLAN VIEW OF BOTH WINGS.
BY: JLA DATE: 4/03/00
CHECKED BY: CTR DATE: 4/04/00



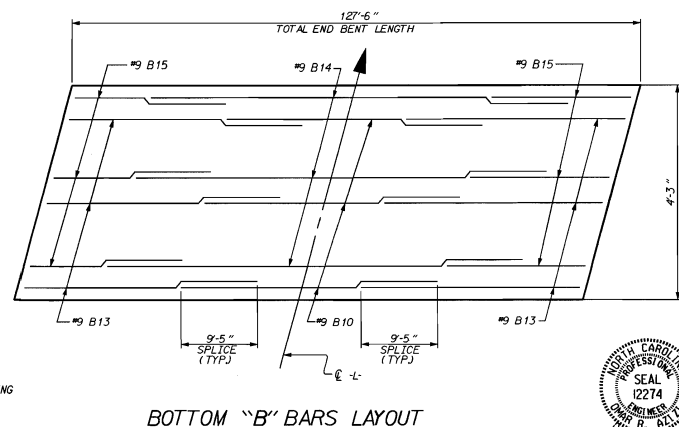
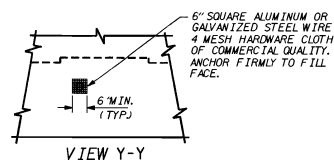
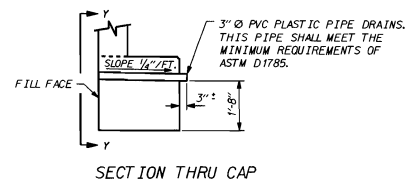
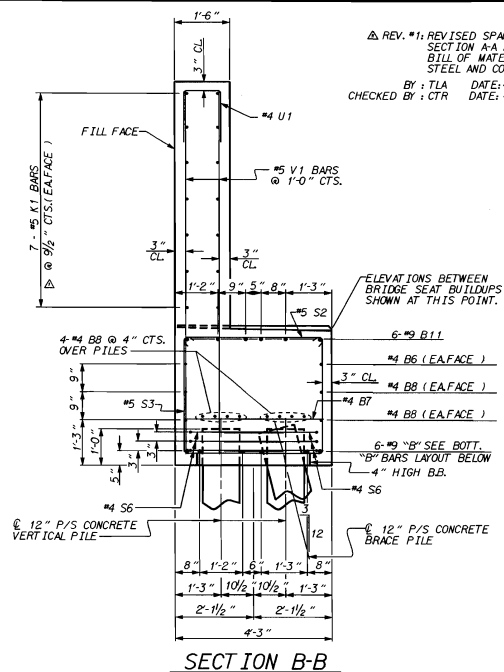
PROJECT NO. U-2107BA
ONslow COUNTY
STATION: 277+50.00 -L-

SHEET 3 OF 4

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			2			98
2			3			170

DRAWN BY: G.D. CARROLL DATE: 9/96
CHECKED BY: J.A. CARROLL DATE: 9/96

04-APR-2000 14H
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BAR TYPES

The diagram illustrates nine different types of reinforcement bars, each with specific dimensions and labels:

- Bar 1:** A straight bar with a hook (HK) at one end. Dimensions: 1'-3" (hook), 48'-8" (main length), B13.
- Bar 2:** A straight bar with a hook (HK) at one end. Dimensions: 1'-3" (hook), 52'-6" (main length), B9.
- Bar 3:** A straight bar with a hook (HK) at one end. Dimensions: 1'-3" (hook), 55'-3" (main length), B11.
- Bar 4:** A straight bar with a hook (HK) at one end. Dimensions: 1'-3" (hook), 44'-1" (main length), B15.
- Bar 5:** A straight bar with a hook (HK) at one end. Dimensions: 5/16" (hook), 3'-9" (main length), 5/16" (hook).
- Bar 6:** A straight bar with a hook (HK) at one end. Dimensions: 2'-3" (hook), 1'-9" (main length), 2" (hook).
- Bar 7:** A straight bar with a hook (HK) at one end. Dimensions: 8" (hook), 2'-6" (main length), HK.
- Bar 8:** A straight bar with a hook (HK) at one end. Dimensions: 2'-9" (hook), 2'-6" (main length), 1'-6" (hook).
- Bar 9:** A straight bar with a hook (HK) at one end. Dimensions: 2'-9" (hook), 2'-6" (main length), 1'-6" (hook).

Labels for each bar type include: HK, 1, 2, 3, 4, 5, 6, 7, 8, 9, B13, B9, B11, B15, S6, U1, U3, U5, U6, U7, U8, U9, U10, U11, U12, U13, U14, U15, U16, U17, U18, U19, U20, U21, U22, U23, U24, U25, U26, U27, U28, U29, U30, U31, U32, U33, U34, U35, U36, U37, U38, U39, U40, U41, U42, U43, U44, U45, U46, U47, U48, U49, U50, U51, U52, U53, U54, U55, U56, U57, U58, U59, U60, U61, U62, U63, U64, U65, U66, U67, U68, U69, U70, U71, U72, U73, U74, U75, U76, U77, U78, U79, U80, U81, U82, U83, U84, U85, U86, U87, U88, U89, U90, U91, U92, U93, U94, U95, U96, U97, U98, U99, U100.

BILL OF MATERIAL						
END BENT #1						
BAR	NO	SIZE	TYPE	LENGTH	WEIGHT	
B1	6	4	STR	14 - 3	57	
B2	6	4	STR	25 - 4	102	
B3	6	9	STR	44 - 0	898	
B4	12	4	STR	25 - 8	206	
B5	6	4	STR	14 - 4	5	
B6	6	4	STR	27 - 8	III	
B7	32	4	STR	3 - 0	1679	
B8	60	4	STR	27 - 8	109	
B9	6	9	STR	1 - 53 - 9	1087	
B10	6	9	STR	1 - 48 - 9	498	
B11	6	9	STR	1 - 56 - 6	1153	
B12	1	6	4	STR	3 - 0	13
B13	1	9	STR	1 - 49 - 0	138	
B14	1	9	STR	57 - 8	988	
B15	6	9	STR	1 - 45 - 4	525	
△ H1	12	5	2	18 - 3	228	
△ H2	12	5	2	18 - 7	238	
△ H3	13	5	3	17 - 3	234	
K1	42	5	STR	44 - 8	1957	
S1	35	5	5	9 - 7	350	
S2	5	14	5	4 - 8	555	
S3	79	5	4	11 - 4	934	
S4	22	6	6	10 - 5	31	
S5	6	6	7	7 - 2	38	
S6	90	4	8	7 - 2	431	
U1	9	4	8	6 - 0	477	
△ U2	4	4	9	8 - 3	22	
U3	53	4	8	6 - 9	239	
△ V1	238	5	STR	8 - 0	1986	
V2	6	5	STR	9 - 8	60	
V3	6	5	STR	9 - 6	59	
V4	6	5	STR	9 - 5	60	
V5	6	5	STR	9 - 4	58	
V6	6	5	STR	9 - 4	58	
V7	10	5	STR	9 - 9	102	
V8	10	5	STR	10 - 2	61	
V9	5	5	STR	10 - 2	64	
V10	6	5	STR	10 - 4	65	
V11	6	5	STR	10 - 5	65	
V12	6	5	STR	10 - 6	66	
V13	6	5	STR	10 - 7	66	
V14	6	5	STR	10 - 7	65	
V15	10	5	STR	10 - 8	III	
VOLD						
△ EPOXY COATED REINFORCING STEEL LBS. 16779						
CLASS AA CONCRETE BREAKDOWN						
POUR #1 (CAP & WINGS)					C.Y.	84.4
△ POUR #2 (BACKWALL & WINGS)					C.Y.	52.1
△ CLASS AA CONCRETE TOTAL					C.Y.	136.5
CLASS AA CONCRETE PILES						
NO. 32					LIN. FT.	1600

NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

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.

PROJECT NO. U-2107BA
ON SLOW COUNTY
 STATION: 277+50.00 -L-

SHEET 4 OF 4

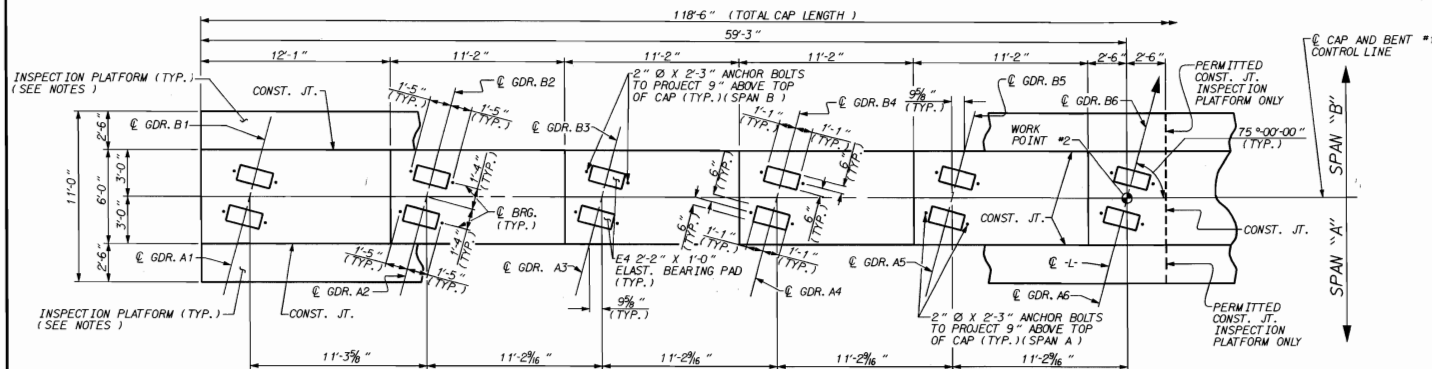
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT #1

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	99	
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2			4			170	

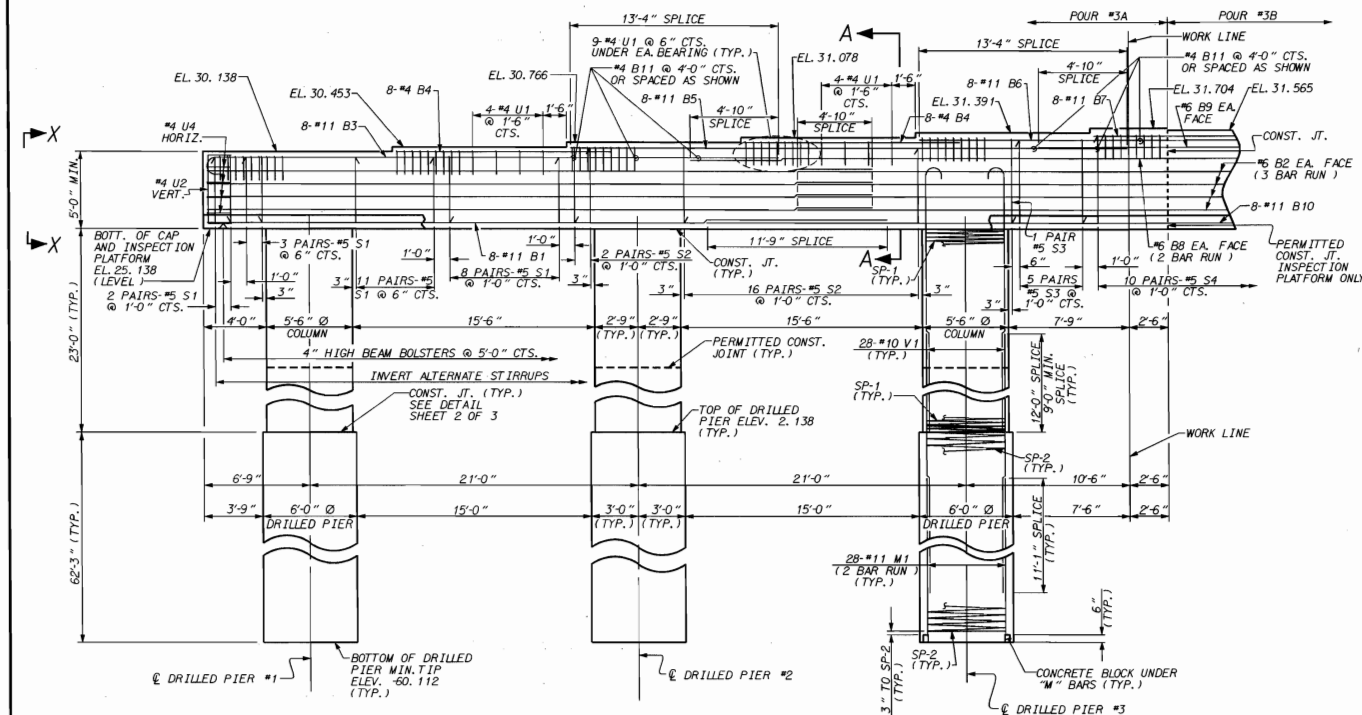
DRAWN BY : G.D.CARROLL DATE : 9/96
CHECKED BY : T.N.CARROLL DATE : 9/96

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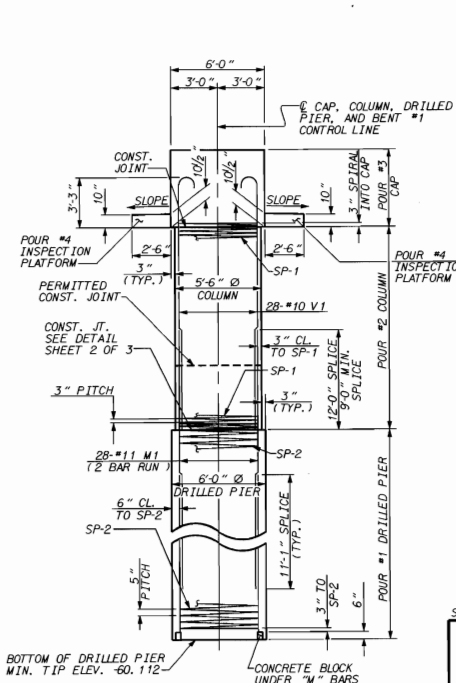
PARTIAL PLAN

(COLUMNS NOT SHOWN FOR CLARITY)



PARTIAL ELEVATION

(REINFORCING STEEL SHOWN IS TYPICAL FOR EACH COLUMN & DRILLED PIER)



LEFT END ELEVATION

NOTES

- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
- HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.
- FOR EPOXY COATED SPIRAL COLUMN REINFORCING STEEL, SEE SPECIAL PROVISIONS.
- FOR DRILLED PIERS, SEE SPECIAL PROVISIONS.
- ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR EPOXY COATED REINFORCING STEEL AND EPOXY COATED SPIRAL COLUMN REINFORCING STEEL.
- THE DRILLED PIERS SHALL BE INSTALLED TO MINIMUM TIP ELEVATION SHOWN ON PLAN.
- FOR PILE INTEGRITY TESTING, SEE SPECIAL PROVISIONS.
- ALL REINFORCING STEEL SHALL BE EPOXY COATED.
- ALL CONCRETE SHALL BE CLASS "AA" CONCRETE.
- FOR INSPECTION PLATFORM DIMENSIONS, BILL OF MATERIAL, DETAILS, AND GALVANIZED STEEL PIPE RAILING SEE BENT INSPECTION PLATFORM DETAILS SHEET.
- FOR OPTIONAL MECHANICAL BUTT SPLICING FOR REINFORCING STEEL, SEE SPECIAL PROVISIONS.



PROJECT NO. **U-2107BA**
 ONSLOW COUNTY
 STATION: **277+50.00 -L-**

SHEET 1 OF 3

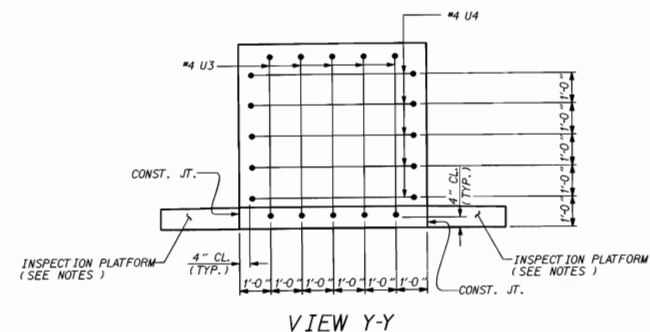
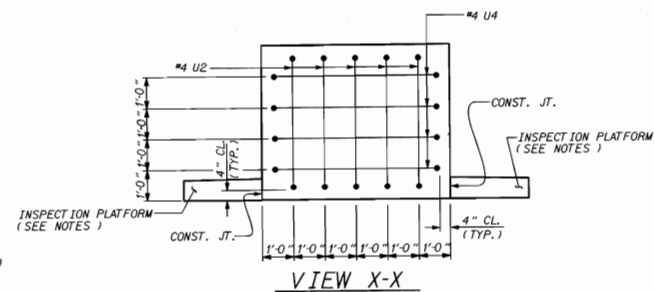
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 BENT #1**

DRAWN BY: **G.D. CARROLL/SBW** DATE: **10/31/96**
 CHECKED BY: **G.R. AZIZI** DATE: **12/13/98**

REVISIONS				SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
				TOTAL	170

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SHEET 2 OF 3

SUBSTRUCTURE
BENT #1



Amos L. AS
4/14/97

REVISIONS						SHEET NO. S-101
NO.	BY:	DATE:	NO.	BY:	DATE:	
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2			4			

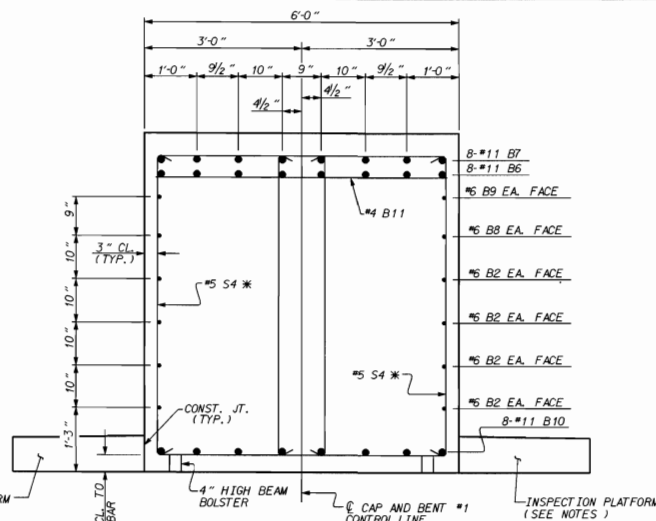
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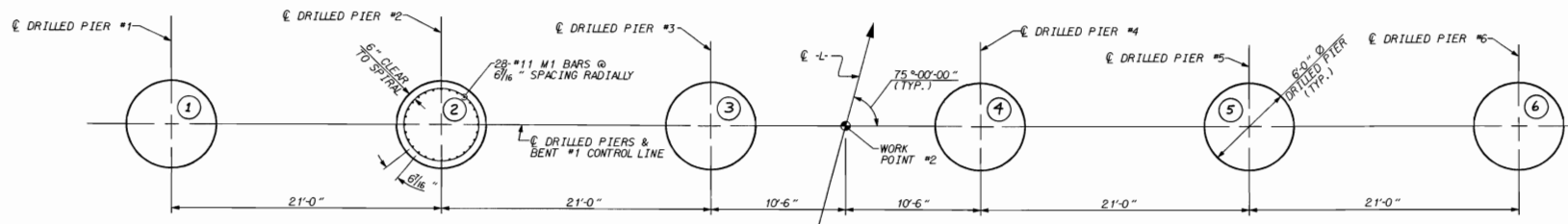
DRAWN BY : G.D. CARROLL/SEW DATE : 10/31/96
CHECKED BY : O.R. AZIZI DATE : 12/13/96

PARTIAL ELEVATION
(REINFORCING STEEL SHOWN IS TYPICAL FOR EACH COLUMN & DRILLED PIER)



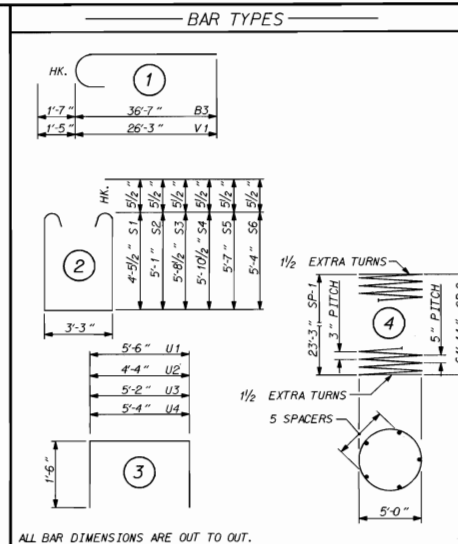
SECTION B-B

* INVERT ALTERNATE STIRRUPS



PLAN OF DRILLED PIERS

(REINFORCING STEEL SHOWN IS TYPICAL FOR EACH DRILLED PIER)



BAR	NO	SIZE	TYPE	LENGTH	WEIGHT
B1	16	11	STR	43 - 11	3735
B2	24	6	STR	42 - 7	1575
B3	16	11	STR	138 - 2	3244
B4	14	4	STR	13 - 9	147
B5	8	11	STR	35 - 8	1516
B6	8	11	STR	49 - 2	2090
B7	8	11	STR	45 - 8	666
B8	4	6	STR	45 - 8	271
B9	2	6	STR	32 - 5	5
B10	12	4	STR	54 - 0	2295
B11	12	4	STR	5 - 6	44
M1	336	11	STR	42 - 5	75721
S1	48	5	2	13 - 1	655
S2	36	5	2	14 - 4	538
S3	12	5	2	15 - 7	196
S4	24	5	2	15 - 11	365
S5	36	5	2	14 - 4	575
S6	48	5	2	14 - 10	743
U1	107	4	3	8 - 6	608
U2	5	4	3	7 - 4	24
U3	5	4	3	8 - 2	27
U4	9	4	3	8 - 4	50
V1	168	10	1	27 - 8	20000
INSPECTION PLATFORM EPOXY COATED REINFORCING STEEL LBS.					3981
EPOXY COATED REINFORCING STEEL LBS.					11924
SP-1	6		4	1495 - 7	5994
SP-2	6		4	2357 - 5	14753
EPOXY COATED SPIRAL COLUMN REINFORCING STEEL LBS.					20747
CONCRETE BREAKDOWN					
CLASS AA CONCRETE					
POUR #2 COLUMN					C. Y. 121.4
POUR #3A CAP					C. Y. 78.1
POUR #3B CAP					C. Y. 77.5
POUR #4 INSPECTION PLATFORM					C. Y. 28.1
TOTAL					C. Y. 297.1
DRILLED PIERS					
CONCRETE BREAKDOWN					
CLASS AA CONCRETE					
POUR #1 DRILLED PIERS					C. Y. 391.1
6" - 0" DIA. DRILLED PIERS					373.5 L. F.
2" 0 GALVANIIZED STEEL PIPE RAIL					255.0 L. F.
6" - 0" DIA. PERMANENT STEEL CASING					144.83 L. F.

PROJECT NO. U-2107BA
ONslow COUNTY
 STATION: 277+50.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

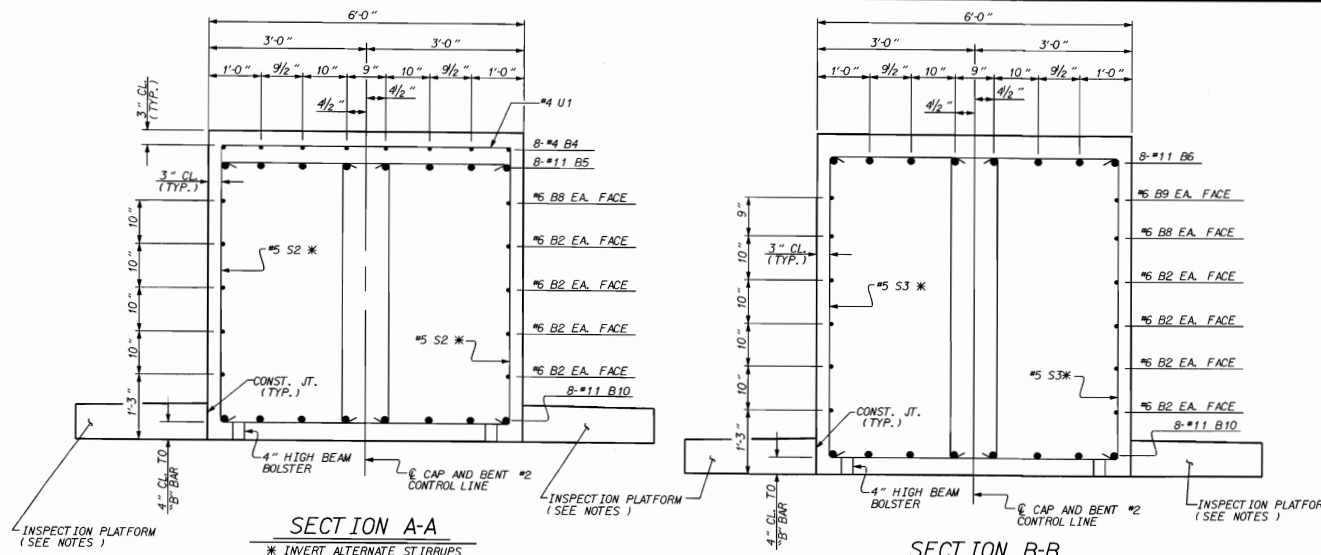
SUBSTRUCTURE
BENT #1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
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2			4			

DRAWN BY : G. D. CARROLL/SEW DATE : 10/31/96
CHECKED BY : O. R. AZIZI DATE : 12/13/96

11/13/98

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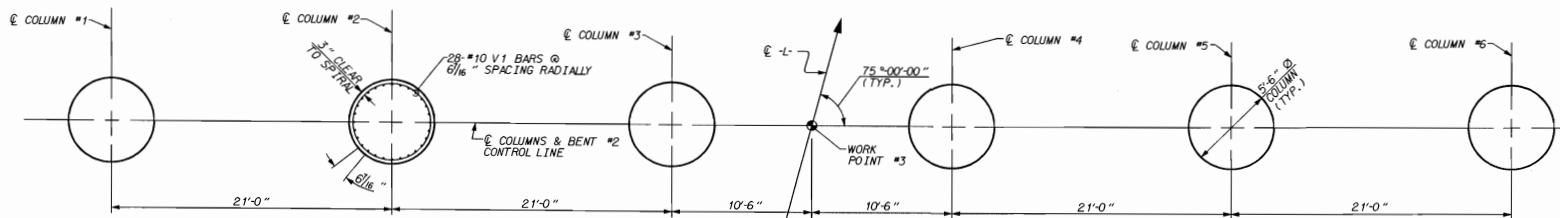



SECTION A-A

* INVERT ALTERNATE STIRRUPS

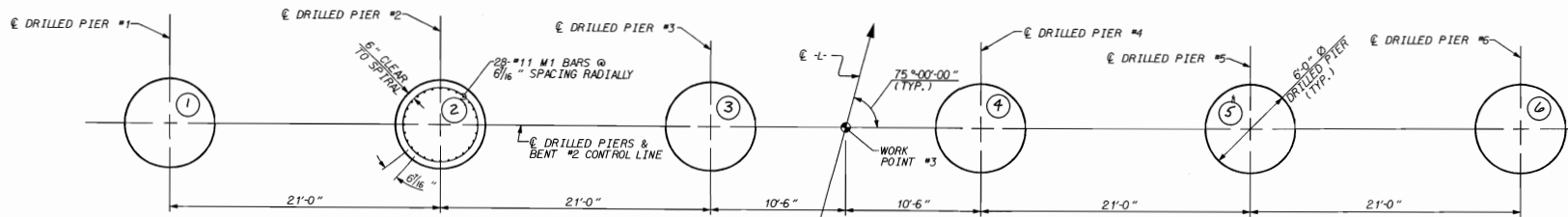
SECTION B-B

* INVERT ALTERNATE STIRRUPS



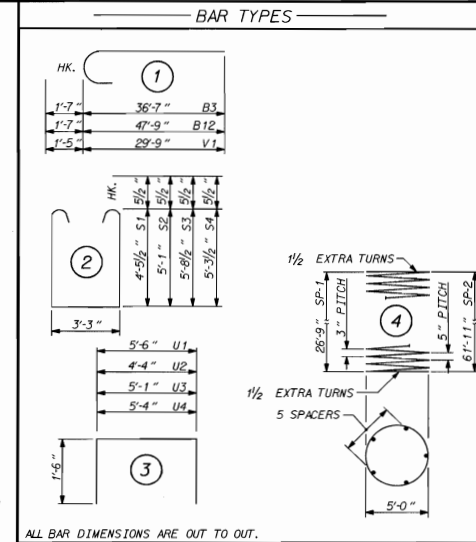
PLAN OF COLUMNS

(REINFORCING STEEL SHOWN IS TYPICAL FOR EACH COLUMN)



PLAN OF DRILLED PIERS

(REINFORCING STEEL SHOWN IS TYPICAL FOR EACH DRILLED PIER)



BILL OF MATERIAL

BENT #2

BAR	NO	SIZE	TYPE	LENGTH	WEIGHT
B1	16	II	STR	43'-11"	3733
B2	24	6	STR	42'-7"	1535
B3	8	II	STR	38'-2"	1622
B4	24	4	STR	13'-9"	250
B5	8	II	STR	35'-8"	1516
B6	8	II	STR	38'-0"	1615
B7	8	4	STR	4'-6"	24
B8	4	6	STR	45'-8"	274
B9	2	6	STR	21'-0"	63
B10	8	II	STR	54'-0"	2295
B11	10	4	STR	5'-6"	37
B12	8	II	STR	49'-4"	2097
MI	336	II	STR	42'-5"	75721
S1	48	5	STR	13'-1"	655
S2	58	5	STR	14'-4"	538
S3	58	5	STR	15'-7"	943
S4	60	5	STR	14'-9"	923
U1	III	4	STR	8'-6"	630
U2	5	4	STR	8'-4"	4
U3	5	4	STR	8'-1"	27
U4	9	4	STR	8'-4"	50
VI	168	10	I	31'-2"	22531
INSPECTION PLATFORM EPOXY COATED REINFORCING STEEL LBS.					3981
EPOXY COATED REINFORCING STEEL LBS.					121054
SP-1	6	4	STR	1713'-8"	6868
SP-2	6	4	STR	2357'-5"	14753
EPOXY COATED SPIRAL COLUMN REINFORCING STEEL LBS.					21621
CONCRETE BREAKDOWN					
CLASS AA CONCRETE					
POUR #2 COLUMN					C.Y. 139.9
POUR #3A CAP					C.Y. 78.0
POUR #3B CAP					C.Y. 77.0
POUR #4 INSPECTION PLATFORM					C.Y. 28.1
TOTAL					C.Y. 315.0
DRILLED PIERS					
CONCRETE BREAKDOWN					
CLASS AA CONCRETE					
POUR #1 DRILLED PIERS					C.Y. 391.1
6'-0" DIA. DRILLED PIERS					373.5 L.F.
2" Ø GALVANIZED STEEL PIPE RAIL					255.0 L.F.
6'-0" DIA. PERMANENT STEEL CASING					144.66 L.F.

PROJECT NO. U-2107BA

ONSLow COUNTY

STATION: 277+50.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT #2

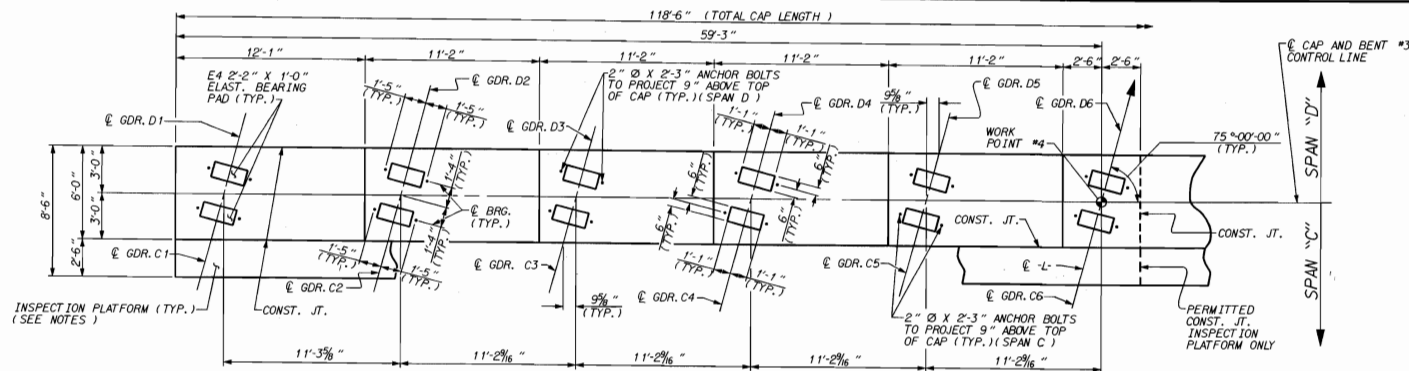


DRAWN BY: G.D. CARROLL DATE: 12/10/96
CHECKED BY: G.R. AZIZI DATE: 12/13/96

NO.	BY	DATE	NO.	BY	DATE
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2			4		

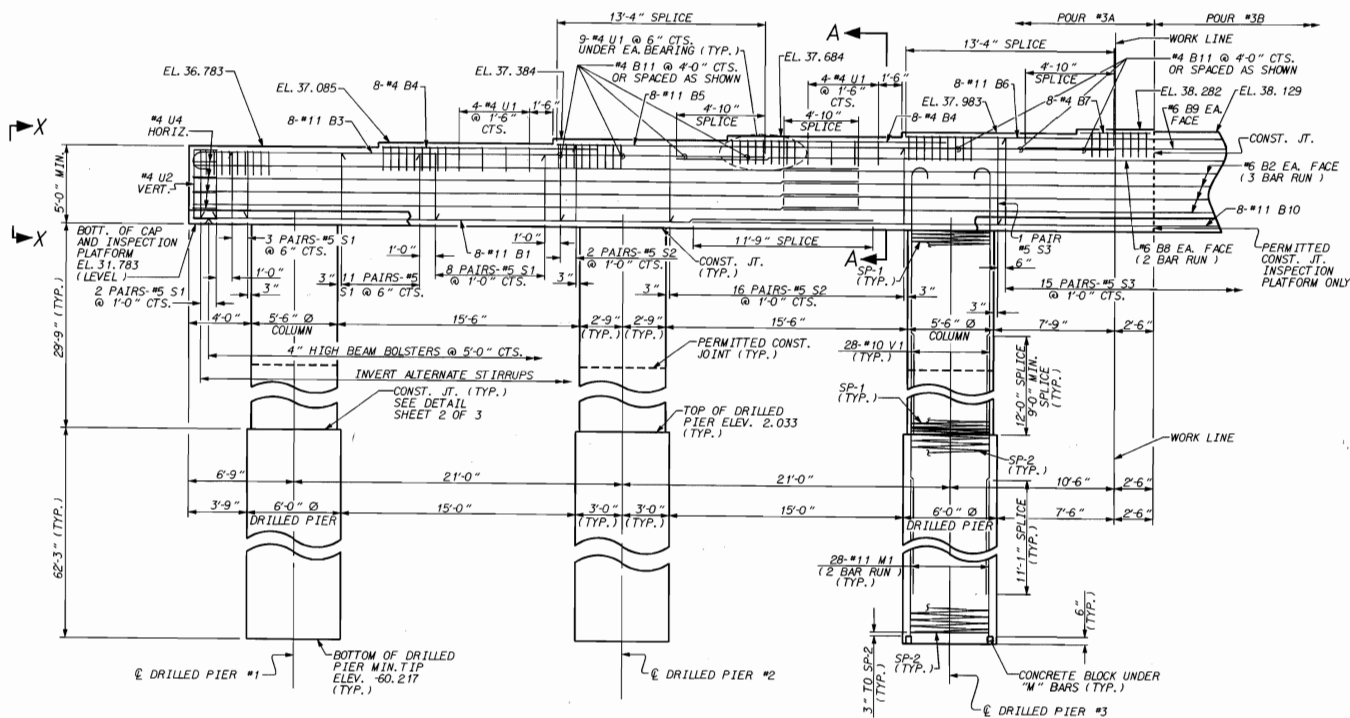
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S-105

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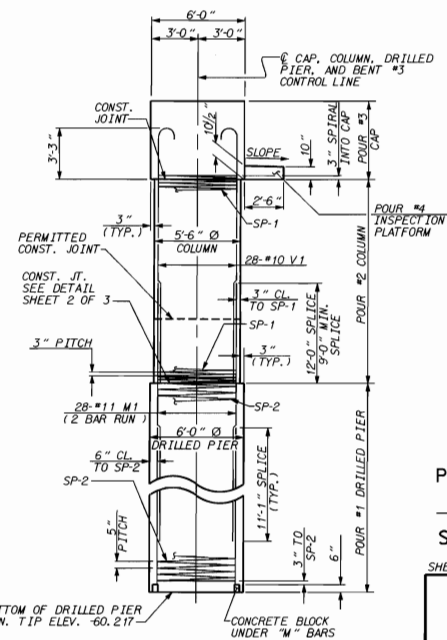
PARTIAL PLAN

(COLUMNS NOT SHOWN FOR CLARITY)



PARTIAL ELEVATION

(REINFORCING STEEL SHOWN IS TYPICAL FOR EACH COLUMN & DRILLED PIER)



LEFT END ELEVATION

NOTES

- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
- HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.
- FOR EPOXY COATED SPIRAL COLUMN REINFORCING STEEL, SEE SPECIAL PROVISIONS.
- FOR DRILLED PIERS, SEE SPECIAL PROVISIONS.
- ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR EPOXY COATED REINFORCING STEEL AND EPOXY COATED SPIRAL COLUMN REINFORCING STEEL.
- THE DRILLED PIERS SHALL BE INSTALLED TO MINIMUM TIP ELEVATION SHOWN ON PLAN.
- FOR PILE INTEGRITY TESTING, SEE SPECIAL PROVISIONS.
- ALL REINFORCING STEEL SHALL BE EPOXY COATED.
- ALL CONCRETE SHALL BE CLASS "AA" CONCRETE.
- FOR INSPECTION PLATFORM DIMENSIONS, BILL OF MATERIAL, DETAILS, AND GALVANIZED STEEL PIPE RAILING SEE BENT INSPECTION PLATFORM DETAILS SHEET.
- FOR OPTIONAL MECHANICAL BUTT SPLICING FOR REINFORCING STEEL, SEE SPECIAL PROVISIONS.
- FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.



PROJECT NO. U-2107BA
 ONSLOW COUNTY
 STATION: 277+50.00 -L-

SHEET 1 OF 3

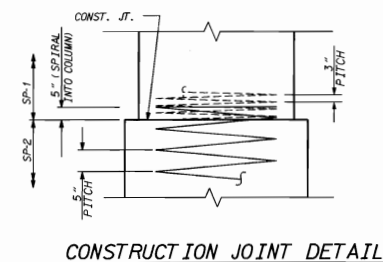
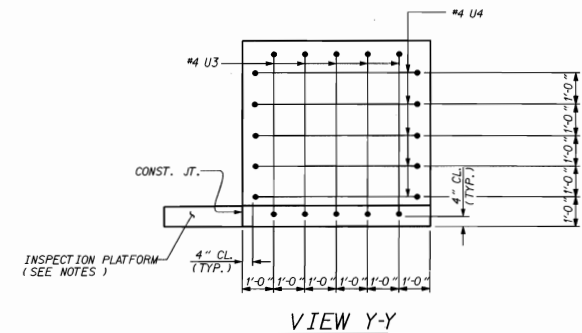
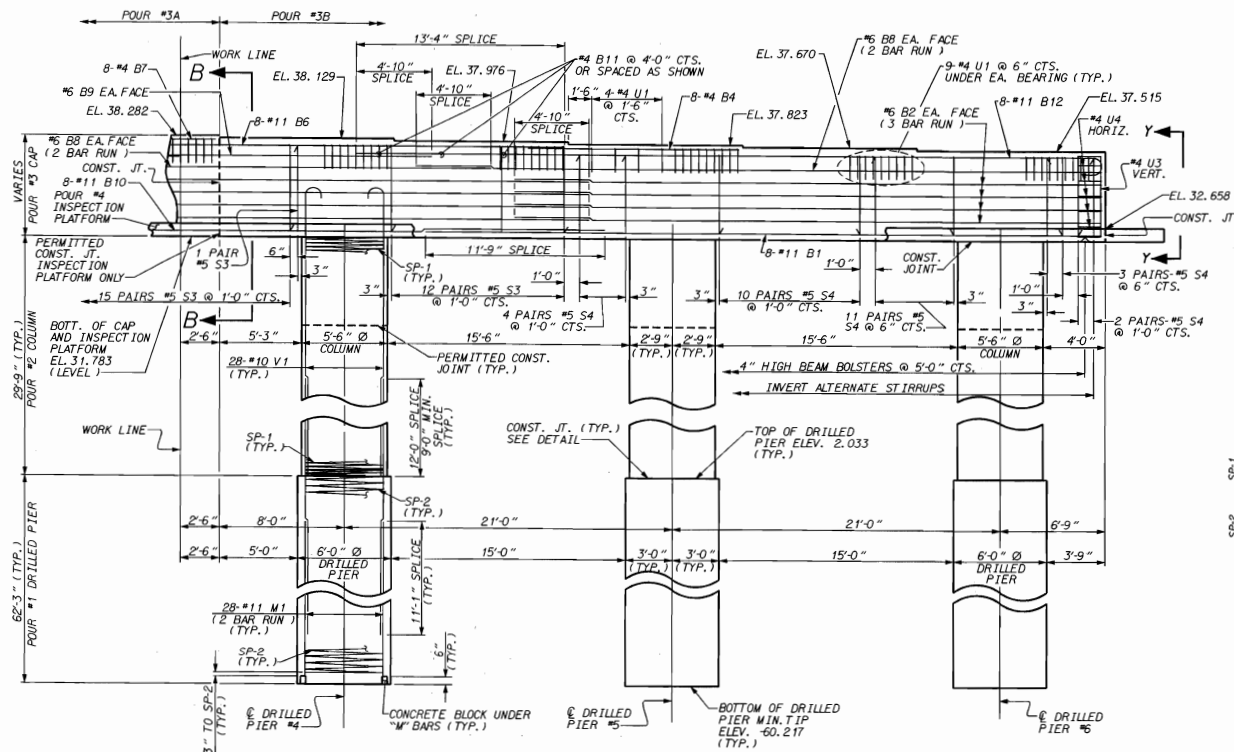
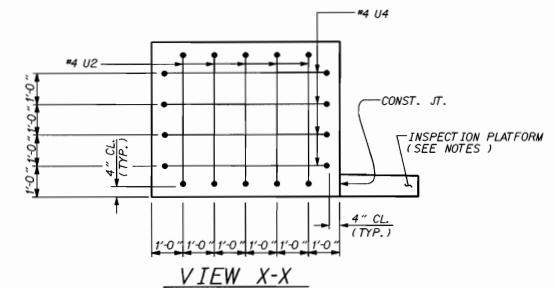
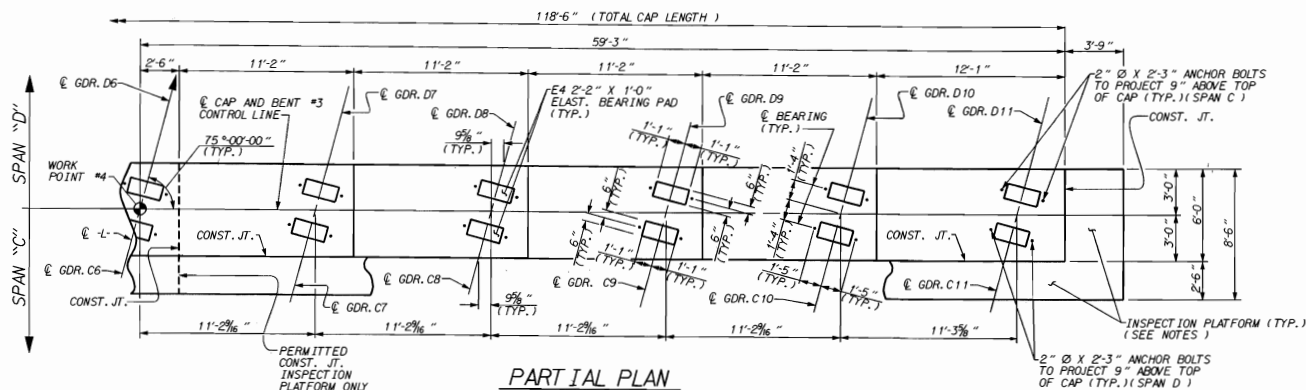
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 Raleigh

**SUBSTRUCTURE
 BENT #3**

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	5-106
1			3			170
2			4			

DRAWN BY: G.D. CARROLL DATE: 12/10/16
 CHECKED BY: O.R. AZIZI DATE: 12/13/16

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PROJECT NO. U-2107BA
ONSLow COUNTY
STATION: 277+50.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUBSTRUCTURE
BENT #3**



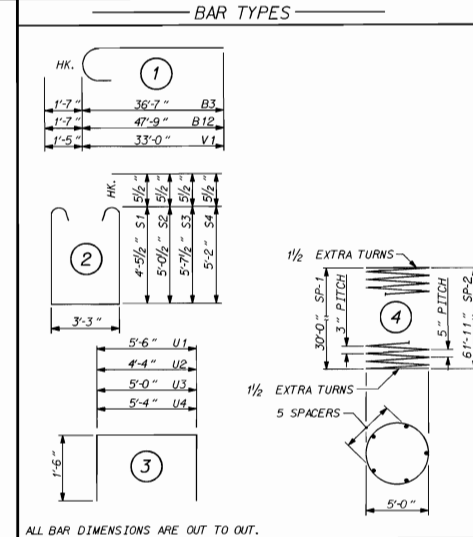
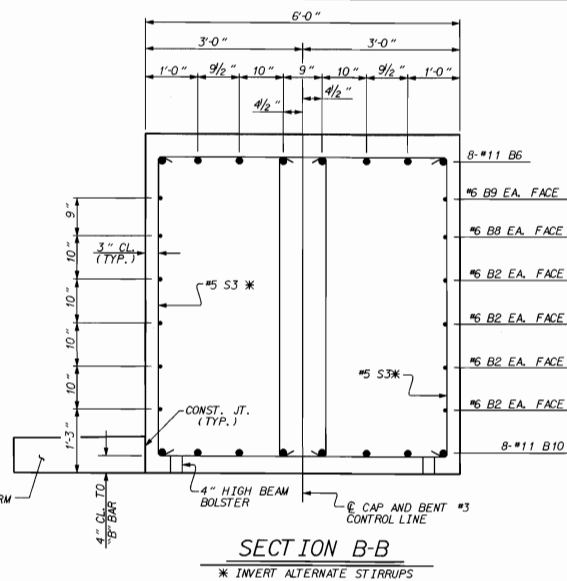
David E. Hest
11/14/17

DRAWN BY: G.D. CARROLL DATE: 12/10/96
CHECKED BY: O.R. AZIZI DATE: 12/13/96

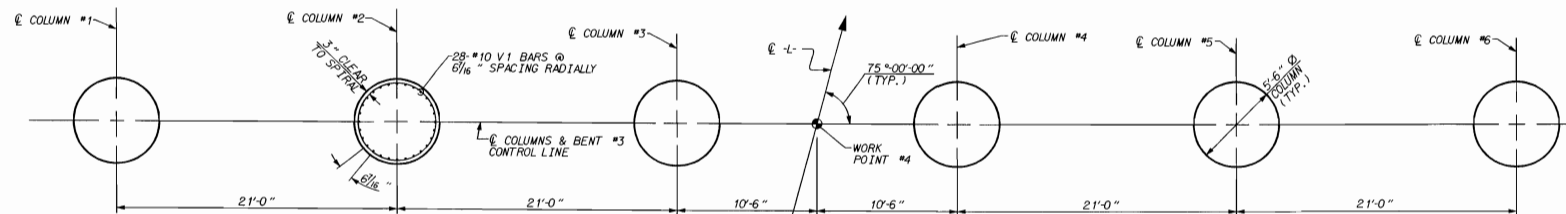
REVISIONS				SHEET NO.			
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS	
1			2			170	
2							

1-APR-1991 INCT

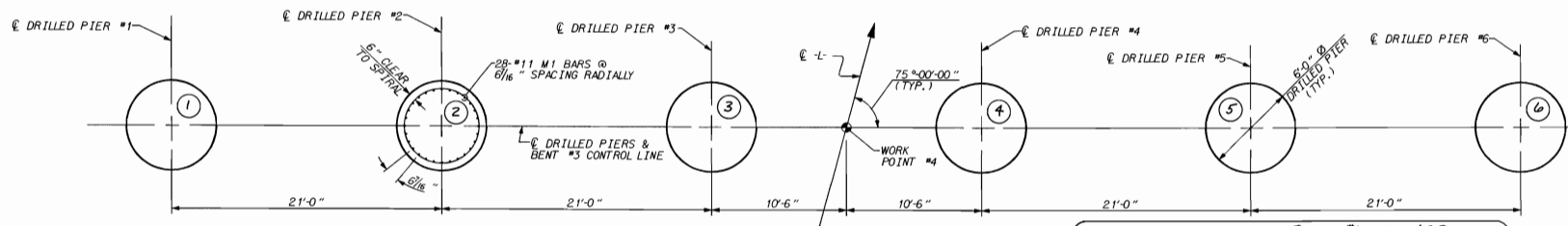
0700



BILL OF MATERIAL						
BENT #3						
BAR	NO	SIZE	TYPE	LENGTH	WEIGHT	
B1	16	11	STR	43'-11	3733	
B2	24	6	STR	42'-7	1539	
B3	11	11	I	38'-2	1629	
B4	24	4	STR	13'-9	220	
B5	8	11	STR	35'-8	1516	
B6	8	11	STR	38'-0	1615	
B7	8	4	STR	4'-6	24	
B8	4	6	STR	45'-8	274	
B9	2	6	STR	21'-0	63	
B10	8	11	STR	54'-0	2295	
B11	11	4	STR	5'-6	37	
B12	8	11	I	49'-4	2097	
M1	336	11	STR	42'-5	75721	
S1	48	5	2	13'-1	655	
S2	36	5	2	14'-2	535	
S3	3	3	2	15'-7	933	
S4	60	5	2	14'-6	907	
U1	11	4	3	8'-6	630	
U2	5	4	3	7'-4	24	
U3	5	4	3	8'-0	27	
U4	9	4	3	8'-4	50	
VI	168	10	I	34'-5	24880	
INSPECTION PLATFORM EPOXY COATED REINFORCING STEEL LBS.						2070
EPOXY COATED REINFORCING STEEL LBS.						12163
SP-1	6	6	1916'-3	3	7680	
SP-2	6	6	2357'-5	3	14753	
EPOXY COATED SPIRAL COLUMN REINFORCING STEEL LBS.						22433
CONCRETE BREAKDOWN						
CLASS AA CONCRETE						
POUR #2 COLUMN						C. Y. 157.1
POUR #3A CAP						C. Y. 77.7
POUR #3B CAP						C. Y. 76.1
POUR #4 INSPECTION PLATFORM						C. Y. 118.4
TOTAL						C. Y. 321.3
DRILLED PIERS						
CONCRETE BREAKDOWN						
CLASS AA CONCRETE						
POUR #1 DRILLED PIERS						C. Y. 391.1
6'-0" DIA. DRILLED PIERS						373.5 L.F.
2" Ø GALVANIZED STEEL PIPE RAIL						132.5 L.F.
6'-0" DIA. PERMANENT STEEL CASING						144.20 L.F.



PLAN OF COLUMNS
(REINFORCING STEEL SHOWN IS TYPICAL FOR EACH COLUMN)



PLAN OF DRILLED PIERS
(REINFORCING STEEL SHOWN IS TYPICAL FOR EACH DRILLED PIER)

(TIP ELEV. FOR DRILLED PIERS #1 THRU #6 IS -60.3



PROJECT NO. U-2107BA
ON SLOW COUNTY
 STATION: 277+50.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT #3

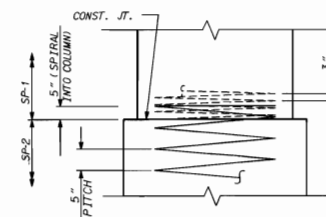
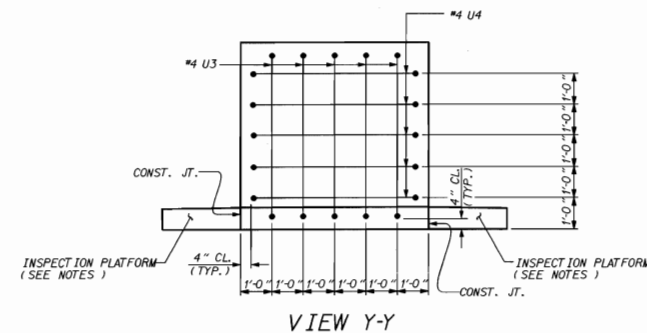
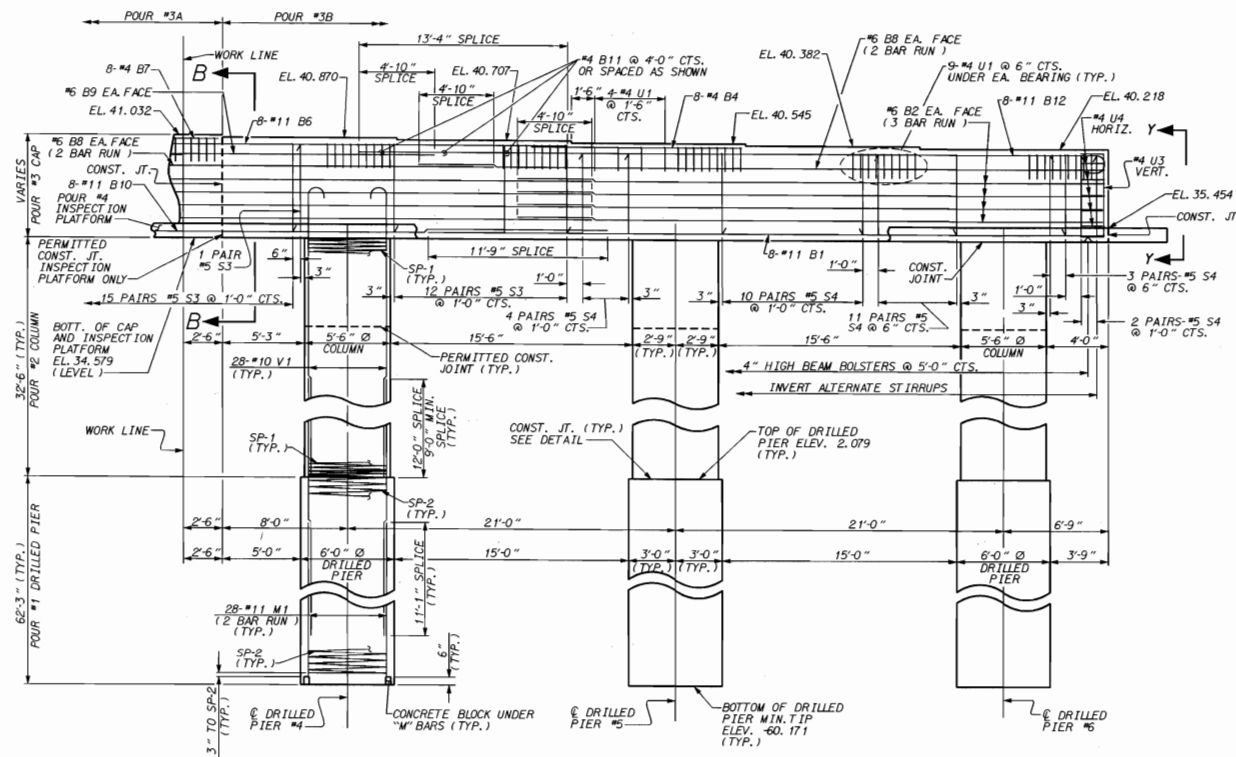
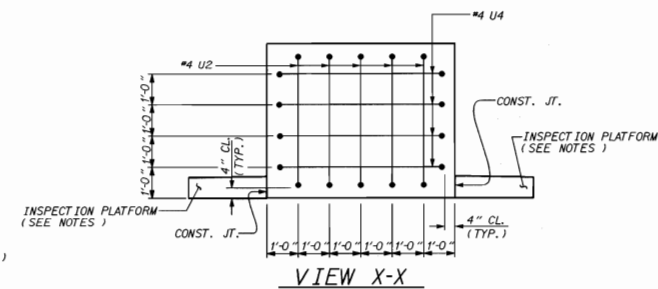
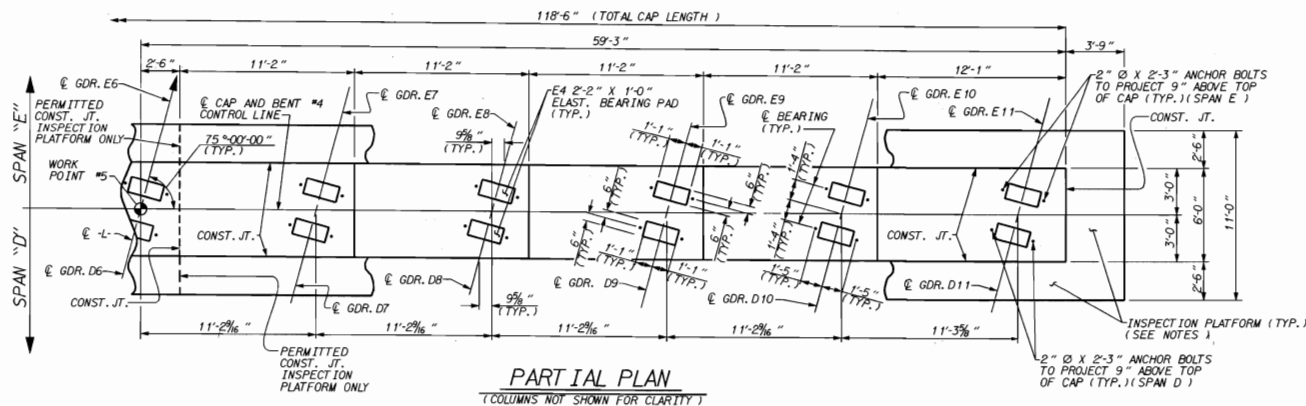
REVISIONS						SHEET NO. 5-108
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 170
2			4			

DRAWN BY : G.D. CARROLL DATE : 12/10/96
CHECKED BY : O.R. AZIZI DATE : 12/13/96

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12-JAN-1998 14:32
#####DGN#####
nelli

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PROJECT NO. U-2107BA
ONSLow COUNTY
STATION: 277+50.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALPH

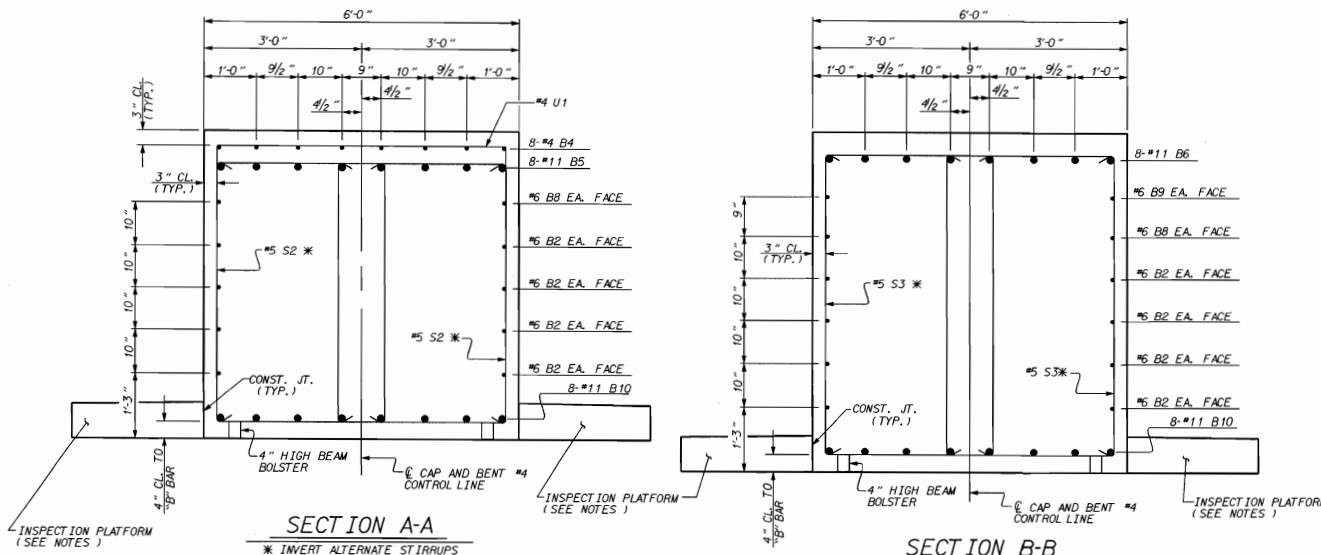
**SUBSTRUCTURE
BENT #4**

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

170
170
170

DRAWN BY: G.D. CARROLL DATE: 12/10/96
CHECKED BY: O.R. AZIZI DATE: 12/13/96



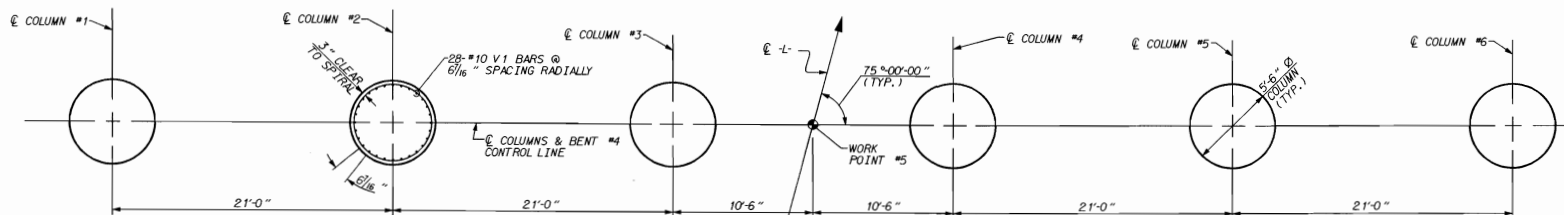


SECTION A-A

* INVERT ALTERNATE STIRRUPS

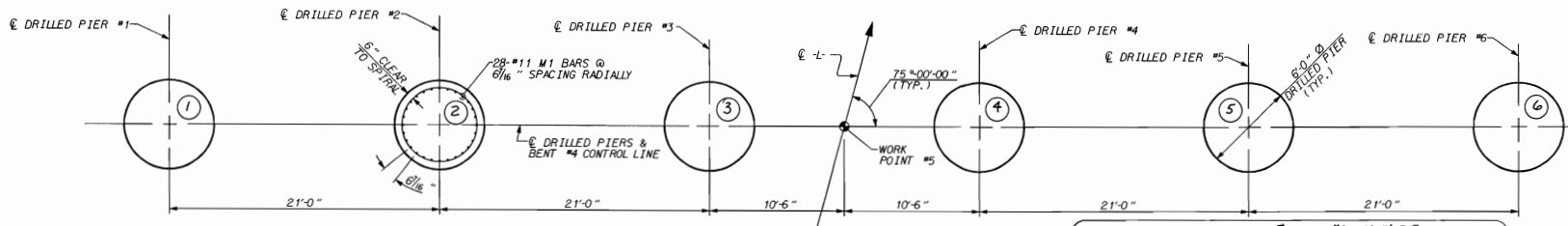
SECTION B-B

* INVERT ALTERNATE STIRRUPS



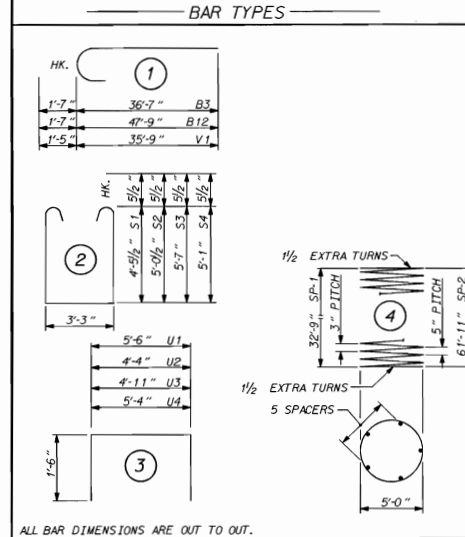
PLAN OF COLUMNS

(REINFORCING STEEL SHOWN IS TYPICAL FOR EACH COLUMN)



PLAN OF DRILLED PIERS

(REINFORCING STEEL SHOWN IS TYPICAL FOR EACH DRILLED PIER)



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT #4

BAR	NO	SIZE	TYPE	LENGTH	WEIGHT
B1	16	II	STR	43'-8"	3738
B2	24	6	STR	42'-7"	1535
B3	8	II	I	38'-2"	1522
B4	24	4	STR	13'-9"	220
B5	8	II	STR	35'-8"	1516
B6	8	II	STR	38'-0"	1615
B7	8	4	STR	4'-6"	24
B8	4	6	STR	45'-8"	274
B9	2	6	STR	21'-0"	63
B10	8	II	STR	54'-0"	2295
B11	10	4	STR	5'-6"	37
B12	8	II	I	49'-4"	2097

MI	336	II	STR	42'-5"	75721
SI	48	5	2	13'-1"	655
SI	36	5	2	14'-3"	535
S4	60	5	2	14'-4"	897
U1	11	4	3	8'-6"	630
U2	5	4	3	7'-4"	24
U3	5	4	3	7'-11"	26
U4	9	4	3	8'-4"	50

VI 168 10 I 37'-2 26868

INSPECTION PLATFORM EPOXY COATED REINFORCING STEEL LBS. 3981

EPOXY COATED REINFORCING STEEL LBS. 125346

SP-1 6 4 2087'-7 8367

SP-2 6 4 2357'-5 14753

EPOXY COATED SPIRAL COLUMN REINFORCING STEEL LBS. 23120

CONCRETE BREAKDOWN

CLASS AA CONCRETE

POUR #2 COLUMN C.Y. 171.6

POUR #3A CAP C.Y. 77.5

POUR #3B CAP C.Y. 75.2

POUR #4 INSPECTION PLATFORM C.Y. 20.1

TOTAL C.Y. 344.4

DRILLED PIERS

CONCRETE BREAKDOWN

CLASS AA CONCRETE

POUR #1 DRILLED PIERS C.Y. 391.1

6'-0" DIA. DRILLED PIERS 373.5 L.F.

2" GALVANIZED STEEL PIPE RAIL 255.0 L.F.

6'-0" DIA. PERMANENT STEEL CASING 144.47 L.F.

PROJECT NO. U-2107BA

ONSLow COUNTY

STATION: 277+50.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

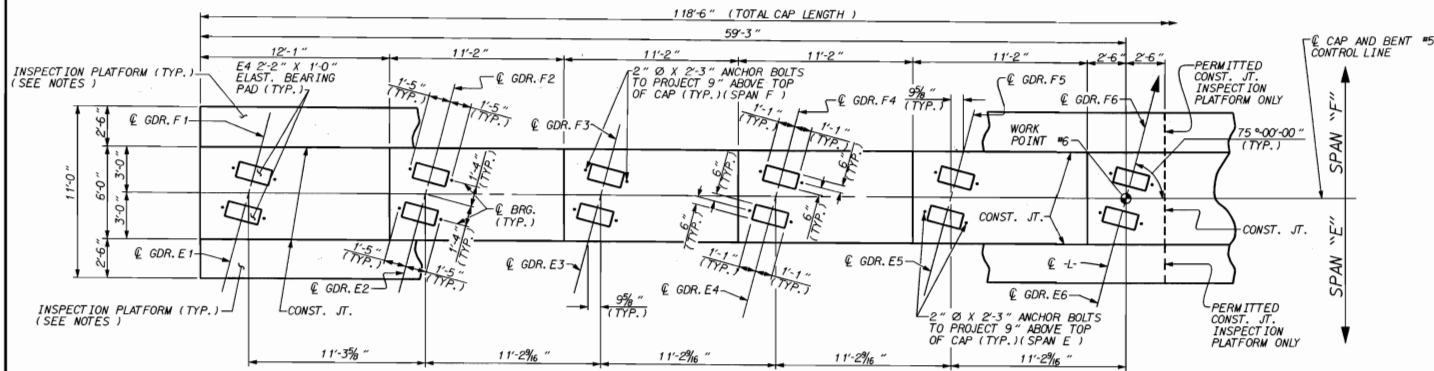
SUBSTRUCTURE
BENT #4

REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	5-111	
1			2			TOTAL SHEETS 170	

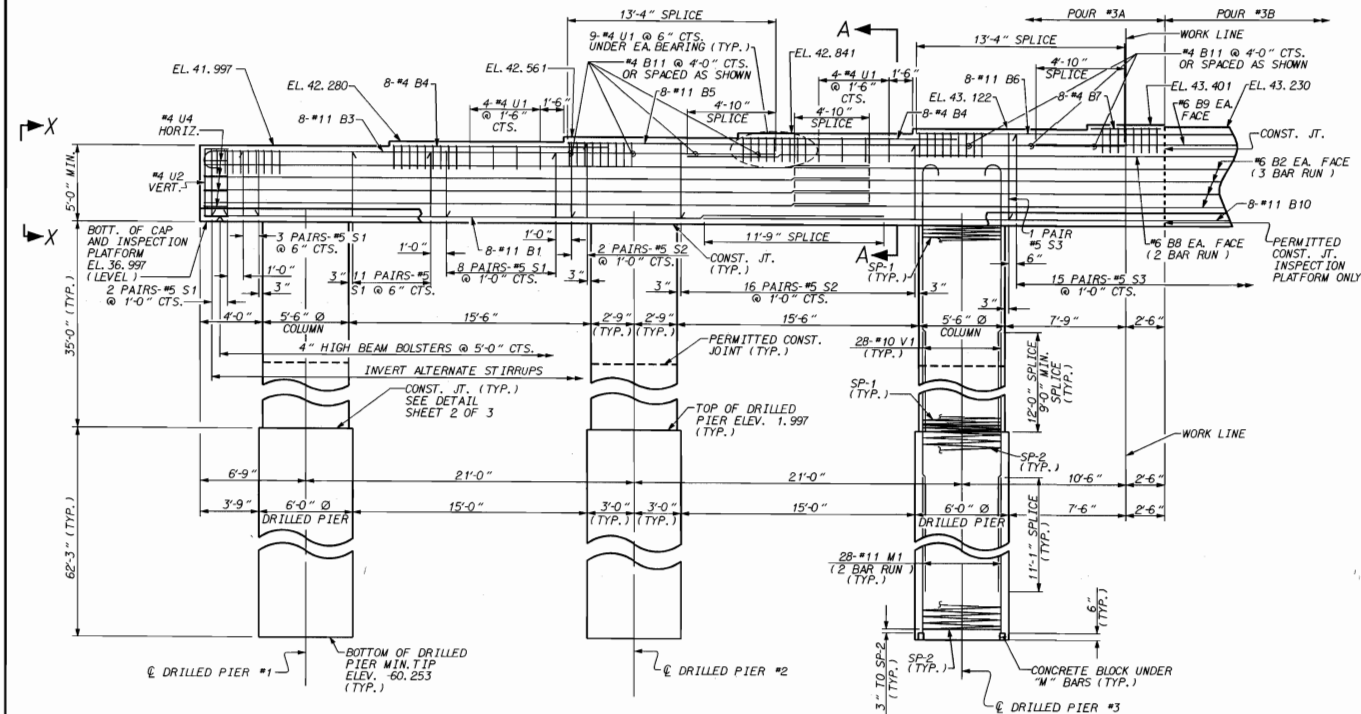


DRAWN BY: G.D. CARROLL DATE: 12/10/96
CHECKED BY: G.R. AZIZI DATE: 12/13/96

12-JAN-2008 14:32
*****KODON*****
PWS

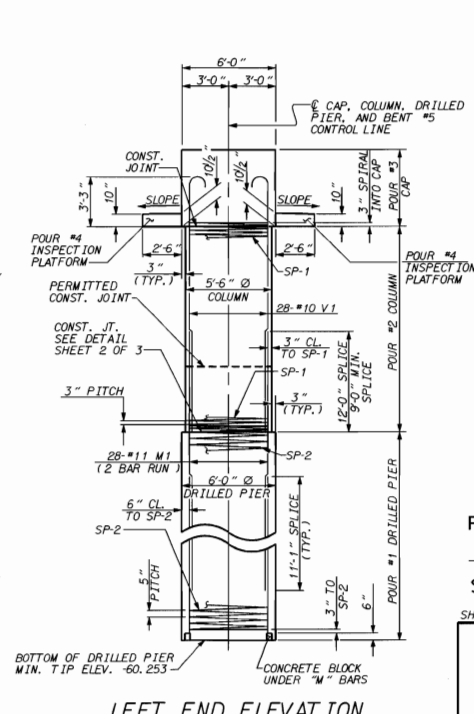


PARTIAL PLAN
(COLUMNS NOT SHOWN FOR CLARITY)



PARTIAL ELEVATION

(REINFORCING STEEL SHOWN IS TYPICAL FOR EACH COLUMN & DRILLED PIER)



LEFT END ELEVATION

NOTES

- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
- HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.
- FOR EPOXY COATED SPIRAL COLUMN REINFORCING STEEL, SEE SPECIAL PROVISIONS.
- FOR DRILLED PIERS, SEE SPECIAL PROVISIONS.
- ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR EPOXY COATED REINFORCING STEEL AND EPOXY COATED SPIRAL COLUMN REINFORCING STEEL.
- THE DRILLED PIERS SHALL BE INSTALLED TO MINIMUM TIP ELEVATION SHOWN ON PLAN.
- FOR PILE INTEGRITY TESTING, SEE SPECIAL PROVISIONS.
- ALL REINFORCING STEEL SHALL BE EPOXY COATED.
- ALL CONCRETE SHALL BE CLASS "AA" CONCRETE.
- FOR INSPECTION PLATFORM DIMENSIONS, BILL OF MATERIAL, DETAILS, AND GALVANIZED STEEL PIPE RAILING SEE BENT INSPECTION PLATFORM DETAILS SHEET.
- FOR OPTIONAL MECHANICAL BUTT SPLICING FOR REINFORCING STEEL, SEE SPECIAL PROVISIONS.

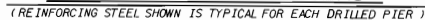
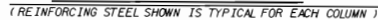


PROJECT NO. **U-2107BA**
ONSLow COUNTY
STATION: **277+50.00 -L-**

SHEET 1 OF 3

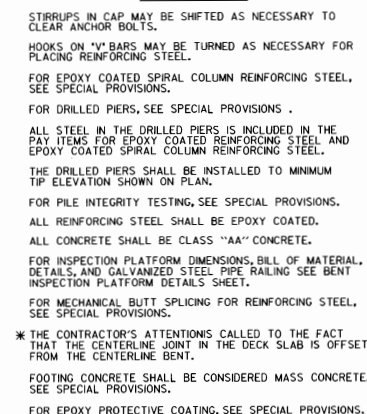
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			5-112
2			4			170

DRAWN BY: **G.D. CARROLL** DATE: **12/10/96**
CHECKED BY: **O.B. AZIZI** DATE: **12/20/96**

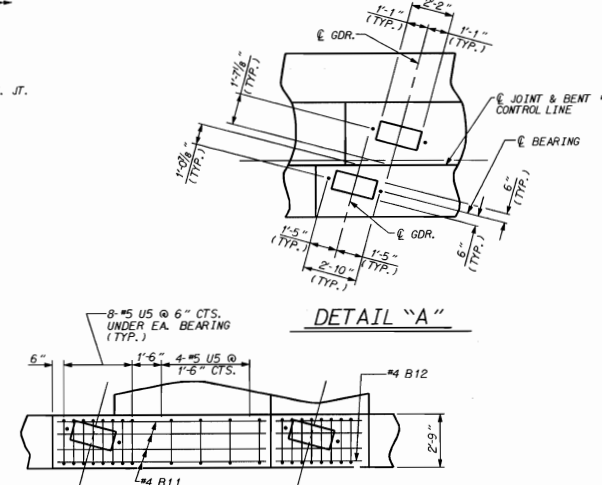


DRAWN BY : G.D. CARROLL DATE : 12/10/96
CHECKED BY : O.R. AZIZI DATE : 12/13/96





NOTE, COLUMNS NOT SHOWN FOR CLARITY



PROJECT NO. U-2107BA
ONSLOW COUNTY
 STATION: 277+50.00 -L-

SHEET 1 OF 5

STATE OF NORTH CAROLINA

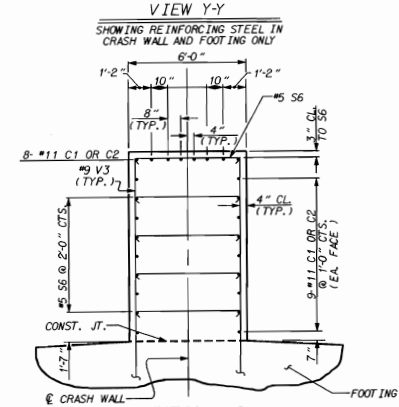
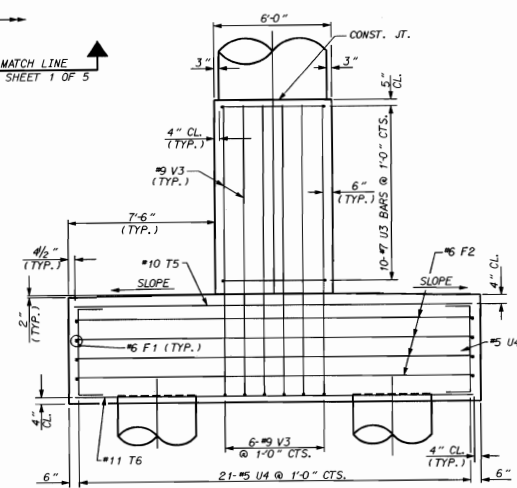
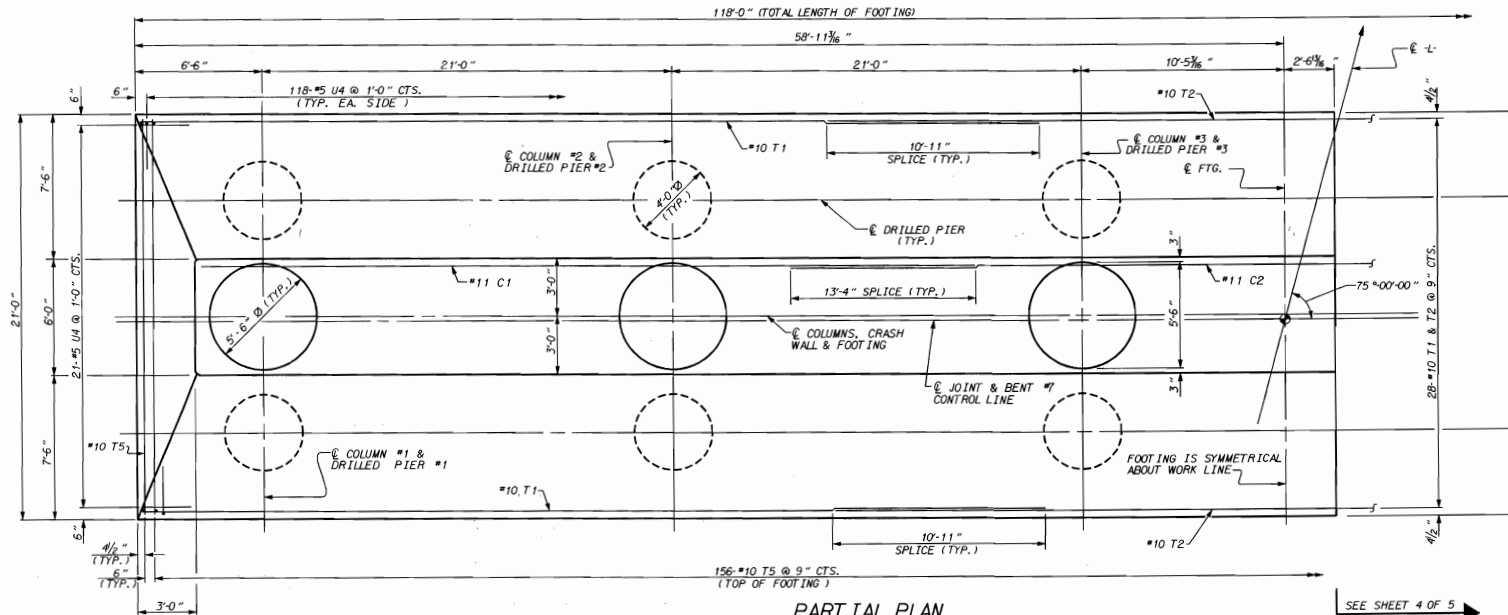
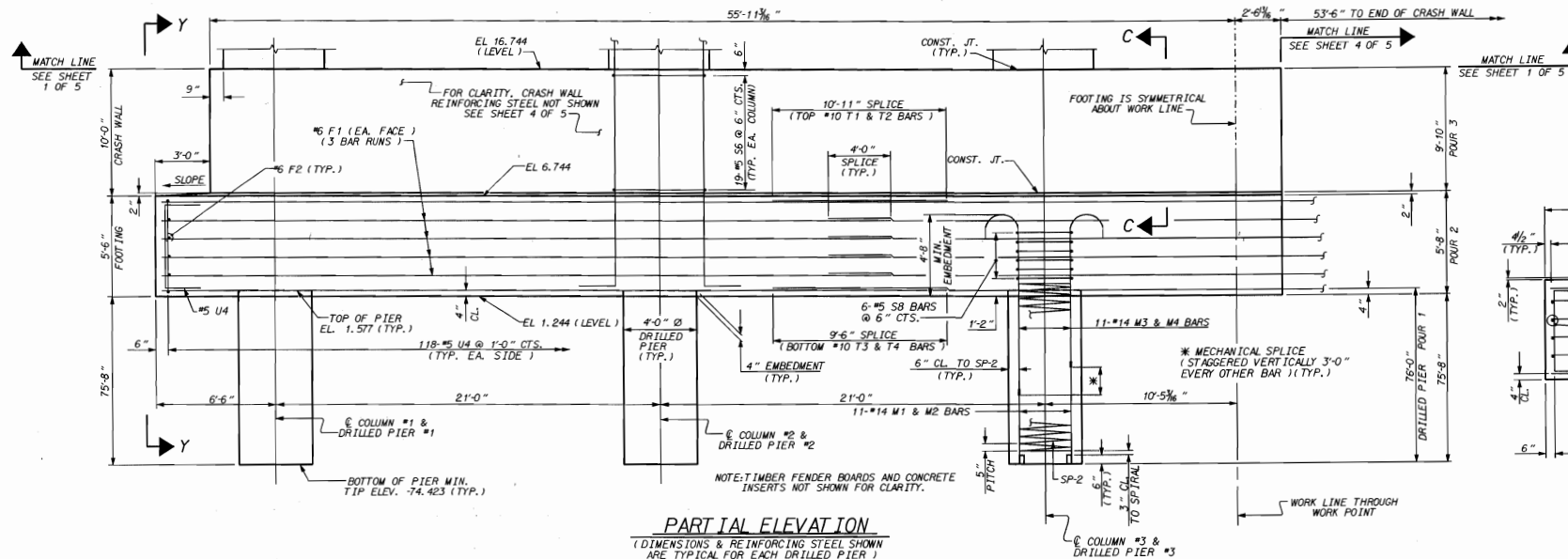
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT #7

REVISIONS						SHEET 5-118
•	BY:	DATE:	•	BY:	DATE:	
1			3			TOTAL SHEETS 170
2			4			

DRAWN BY : S. B. WILLIAMS/GDC DATE : 7-96
CHECKED BY : N. M. RUFFIN DATE : 3/97

PARTIAL ELEVATION
(DATA SHOWN IS TYPICAL FOR EACH COLUMN)
(REINFORCING STEEL IN STEP UP NOT SHOWN FOR CLARITY)



PROJECT NO. **U-2107BA**
ONSLow COUNTY
STATION: **277+50.00 -L-**

SHEET 3 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUBSTRUCTURE
BENT #7**



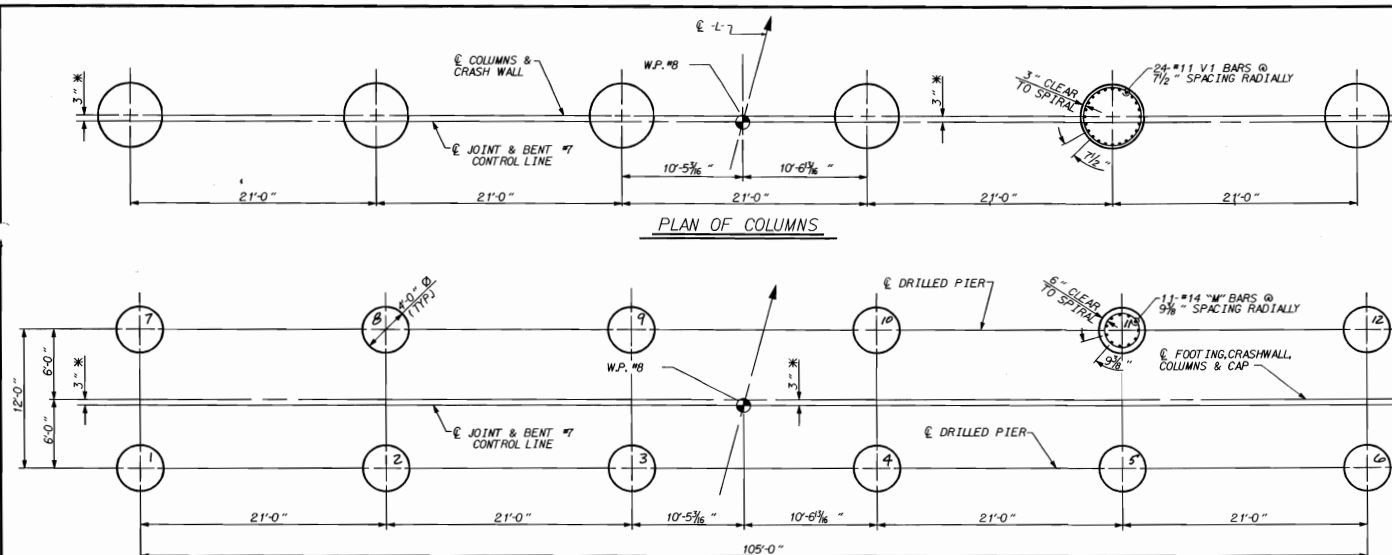
Omar R. 118
1/25/97

DRAWN BY: **S.B. WILLIAMS/GDC** DATE: **9-96**
CHECKED BY: **N.W. RUFFIN** DATE: **3-97**

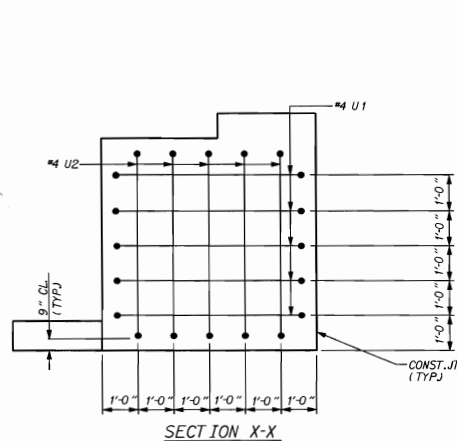
SEE SHEET 4 OF 5
MATCH LINE

REVISIONS				SHEET #	
BY	DATE	BY	DATE	5-120	
1		3		TOTAL	170
2		4			

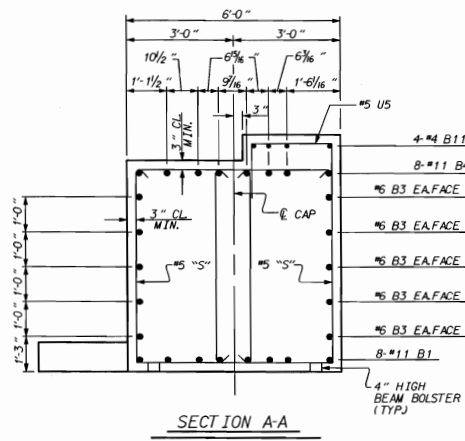
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2			4			



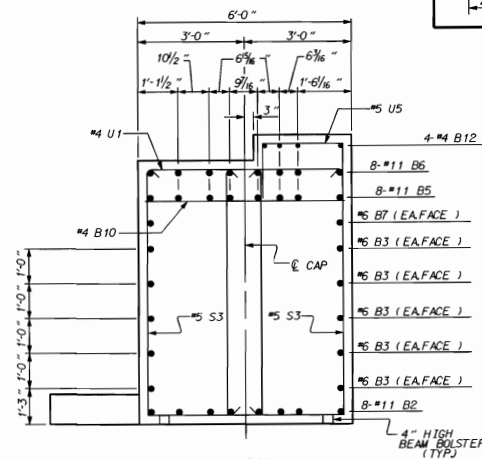
PLAN OF DRILLED PIERS
FOR REINFORCING STEEL IN DRILLED PIERS, SEE SHEET 3 OF 5
TYP. ELEV. FOR DRILLED PIERS #1 THRU #12 15 -74.5'



SECTION X-X

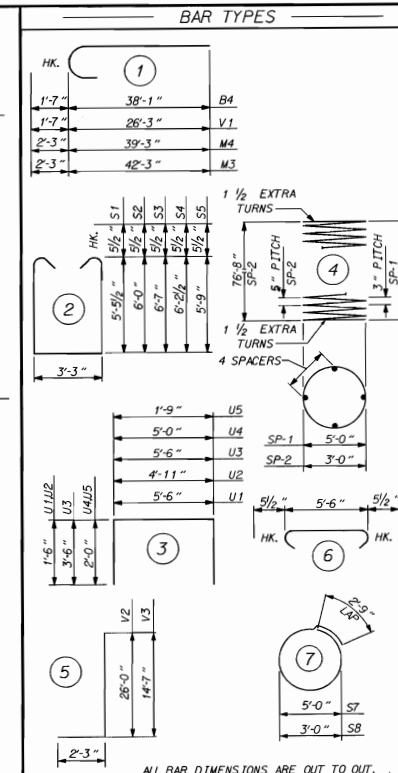


SECTION A-A



SECTION B-B

△ REV. #1: REVISED THE CONCRETE QUANTITY FOR THE BENT CAP.
BY: NMR DATE: 10/5/98
CHECKED BY: SDC DATE: 10-14-98



ALL BAR DIMENSIONS ARE OUT TO OUT.

CONCRETE BREAKDOWN	C. Y.
CLASS AA CONCRETE	512.4
POUR #2 FOOTING	244.8
POUR #3 CRASHWALL	117.5
POUR #4 COLUMNS	95.1
POUR #5A CAP	89.2
POUR #6 INSPECTION PLATFORM	10.4
TOTAL	1069.4

DRILLED PIERS	C. Y.
CONCRETE BREAKDOWN	424.5
CLASS AA CONCRETE	424.5
POUR #1 DRILLED PIERS	424.5
4'-0" DIA. DRILLED PIERS	92.0
2" GALVANIZED STEEL PIPE RAIL	132.5
4'-0" DIA. PERMANENT STEEL CASING	306.93



BILL OF MATERIAL					
BENT #7					
BAR	NO	SIZE	TYPE	LENGTH	WEIGHT
B1	16	II	STR	43'-11"	3732
B2	8	II	STR	53'-9"	2295
B3	30	6	STR	42'-0"	1893
B4	16	II	STR	39'-8"	3372
B5	16	II	STR	37'-4"	3174
B6	8	II	STR	20'-6"	871
B7	4	6	STR	26'-8"	162
B8	32	4	STR	15'-9"	337
B9	8	4	STR	4'-6"	24
B10	14	4	STR	5'-6"	51
B11	40	4	STR	11'-10"	316
B12	8	4	STR	4'-6"	24
C1	52	II	STR	41'-0"	11442
C2	28	II	STR	54'-0"	7575
F1	24	6	STR	41'-10"	1508
F2	8	6	STR	20'-6"	246
M1	66	14	STR	37'-7"	18976
M2	66	14	STR	40'-7"	20491
M3	66	14	STR	44'-6"	22468
M4	66	14	STR	41'-6"	20953
S1	48	5	STR	15'-1"	755
S2	40	5	STR	16'-2"	674
S3	34	5	STR	17'-4"	615
S4	34	5	STR	16'-7"	588
S5	34	5	STR	15'-8"	582
S6	150	5	STR	6'-5"	1004
S7	114	5	STR	18'-6"	2200
S8	72	5	STR	12'-3"	920
T1	56	10	STR	42'-3"	10422
T2	28	10	STR	52'-11"	6376
T3	54	10	STR	42'-6"	9875
T4	27	10	STR	51'-6"	5983
T5	156	10	STR	20'-6"	13761
T6	115	10	STR	20'-6"	12525
U1	144	4	STR	8'-6"	818
U2	10	4	STR	7'-11"	51
U3	29	7	STR	12'-6"	51
U4	218	5	STR	9'-0"	2610
U5	129	5	STR	5'-9"	774
V1	14	II	STR	27'-10"	21295
V2	14	II	STR	28'-3"	21613
V3	12	9	STR	16'-10"	9844
INSPECTION PLATFORM EPOXY COATED REINFORCING STEEL LBS.					2070
EPOXY COATED REINFORCING STEEL LBS.					246069
SP-1	6	4	1495	8	5995
SP-2	12	4	1733	8	21699
EPOXY COATED SPIRAL COLUMN REINFORCING STEEL LBS.					27694

PROJECT NO. U-2107BA
ON SLOW COUNTY
STATION: 277+50.00 -L-

SHEET 5 OF 5

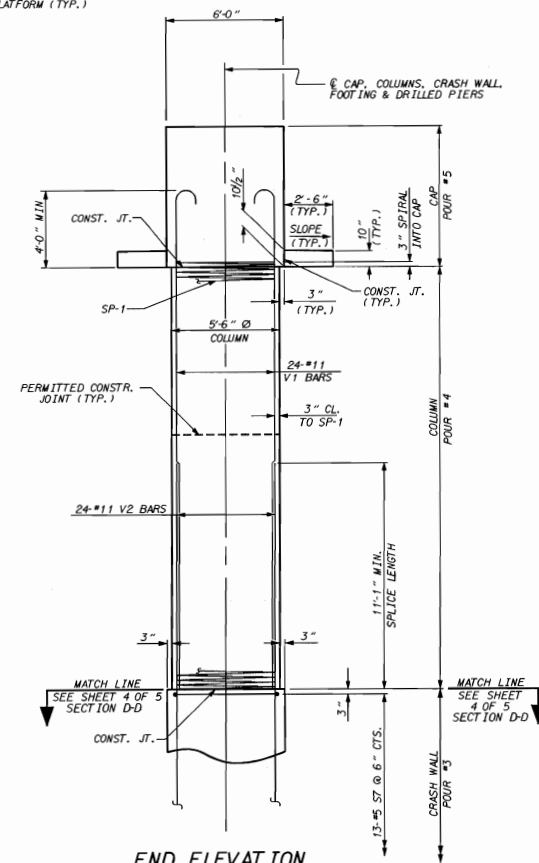
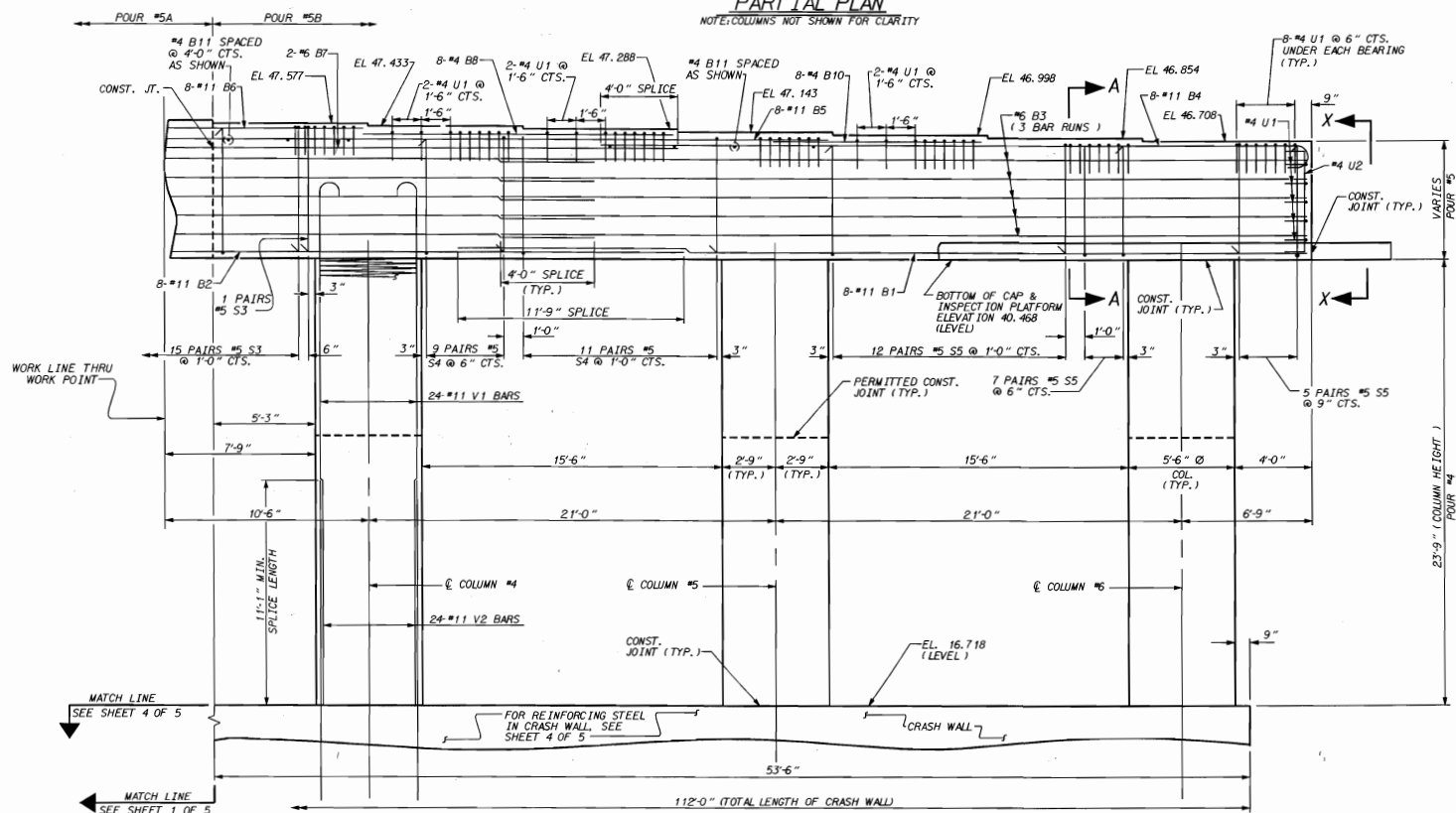
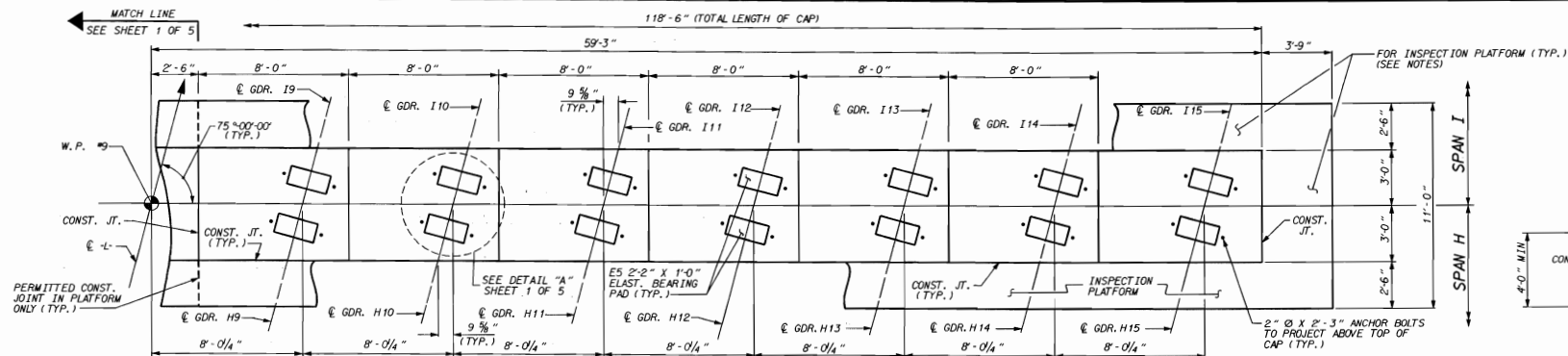
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RAILROAD

SUBSTRUCTURE
BENT #7

REVISIONS				SHEET #	
BY	DATE	BY	DATE	S-122	
1	NMR	10/5/98	3		
2			4		
				TOTAL SHEETS	170

DRAWN BY: S.B. WILLIAMS/GDC DATE: 8-96
CHECKED BY: N.M. RUFFIN DATE: 3-97

REVISIONS						SHEET NO. 5-123
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 170
2			4			

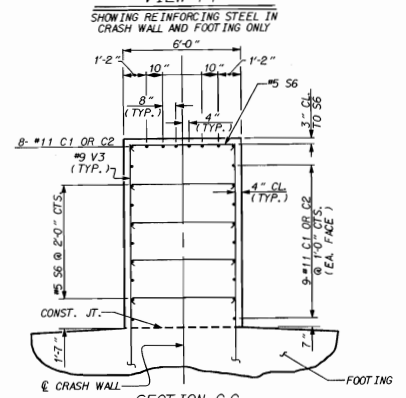
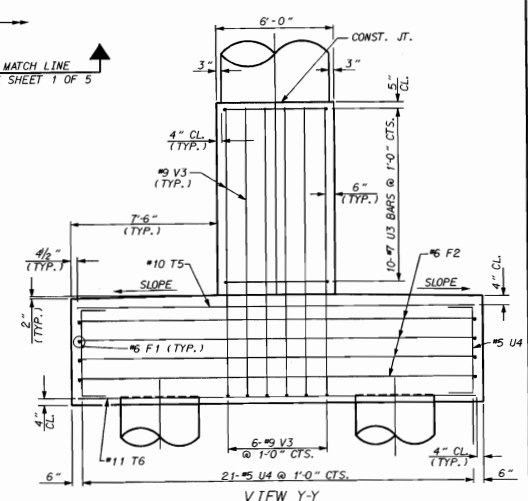
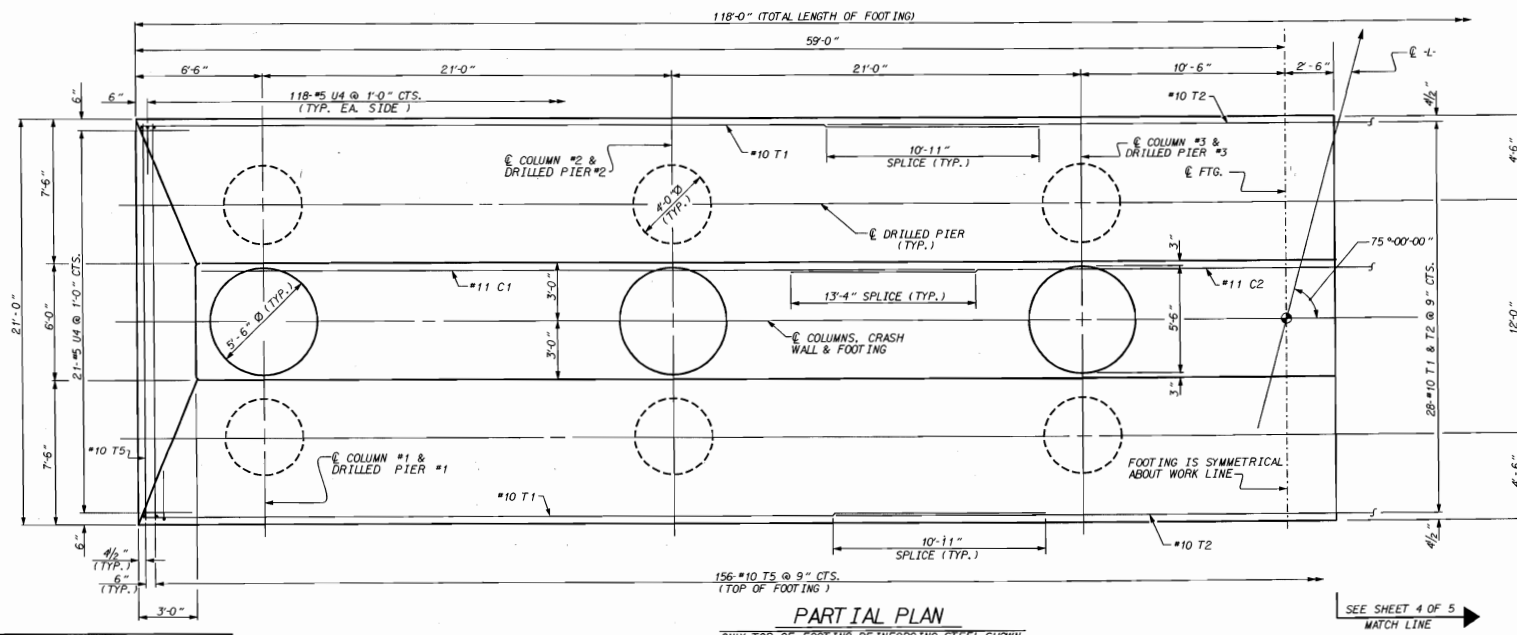
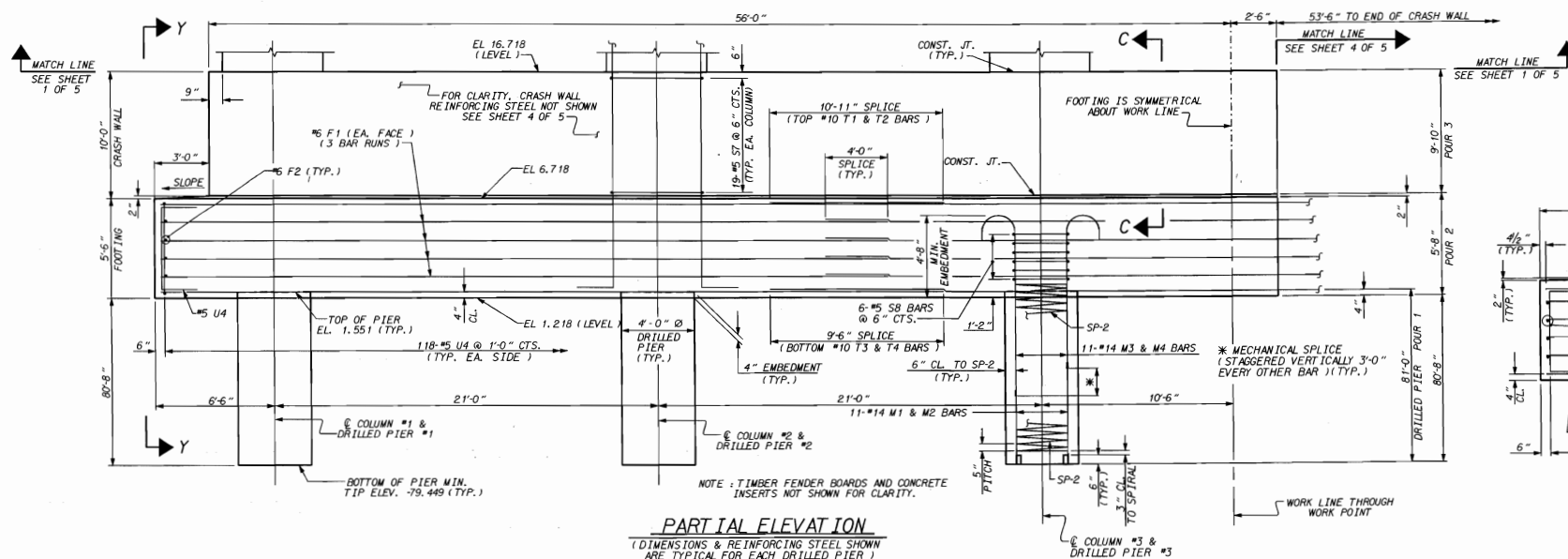


PROJECT NO. U-2107BA
ONslow COUNTY
 STATION: 277+50.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

*SUBSTRUCTURE
BENT #8*

REVISIONS						SHEET NO. S-124
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 170
2			4			



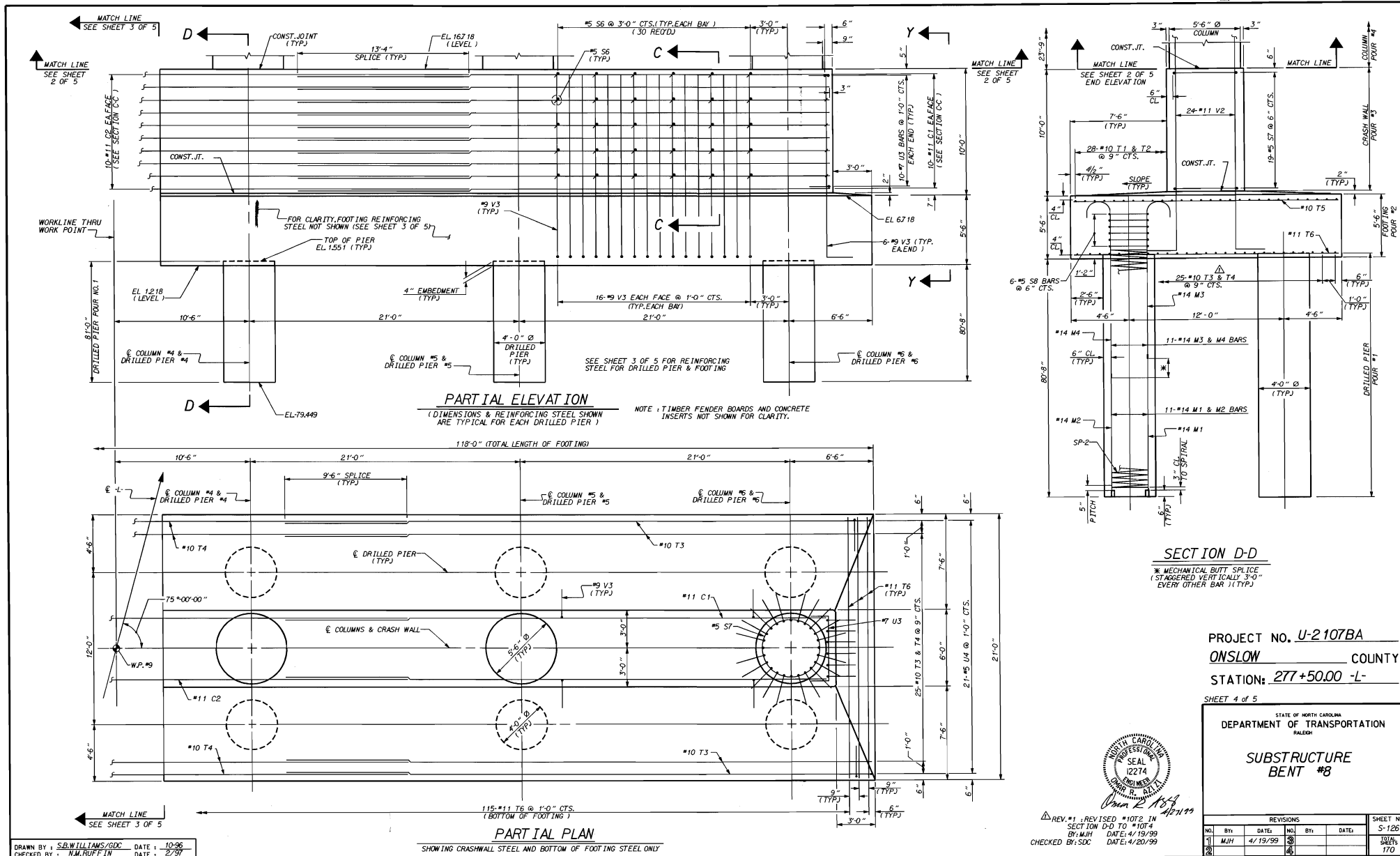
PROJECT NO. **U-2107BA**
ONSLow COUNTY
 STATION: **277+50.00 -L-**

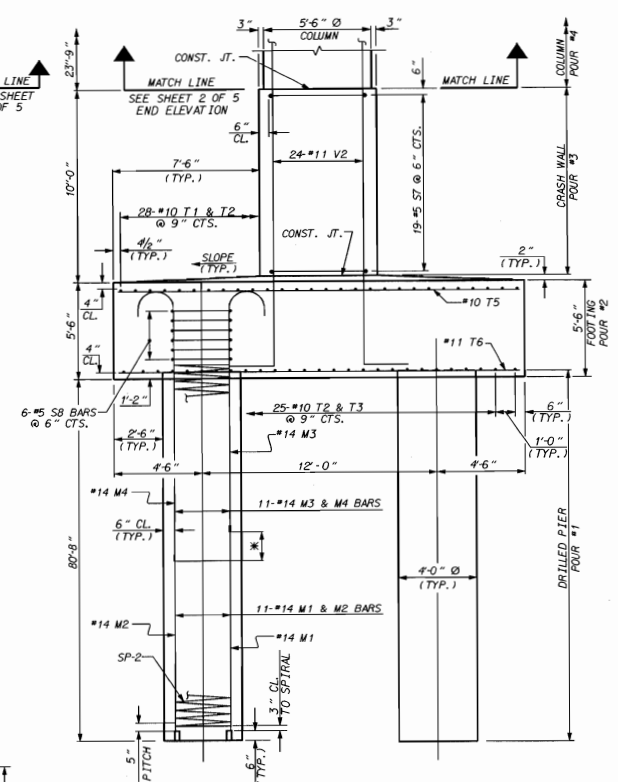
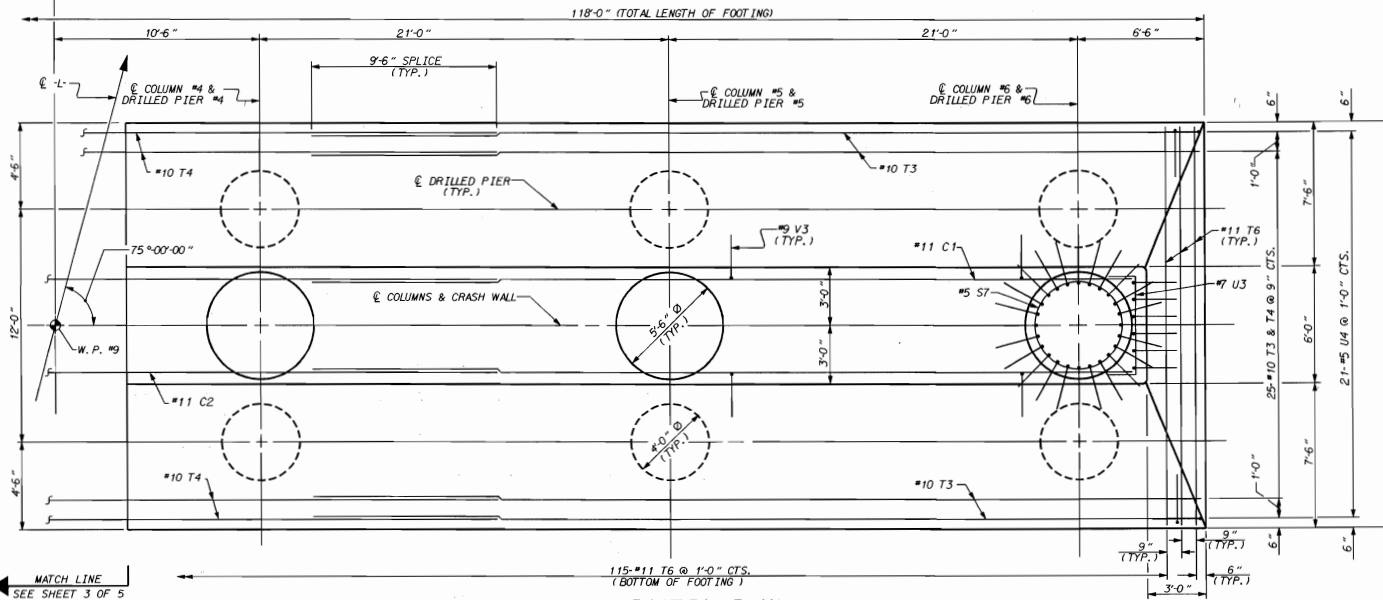
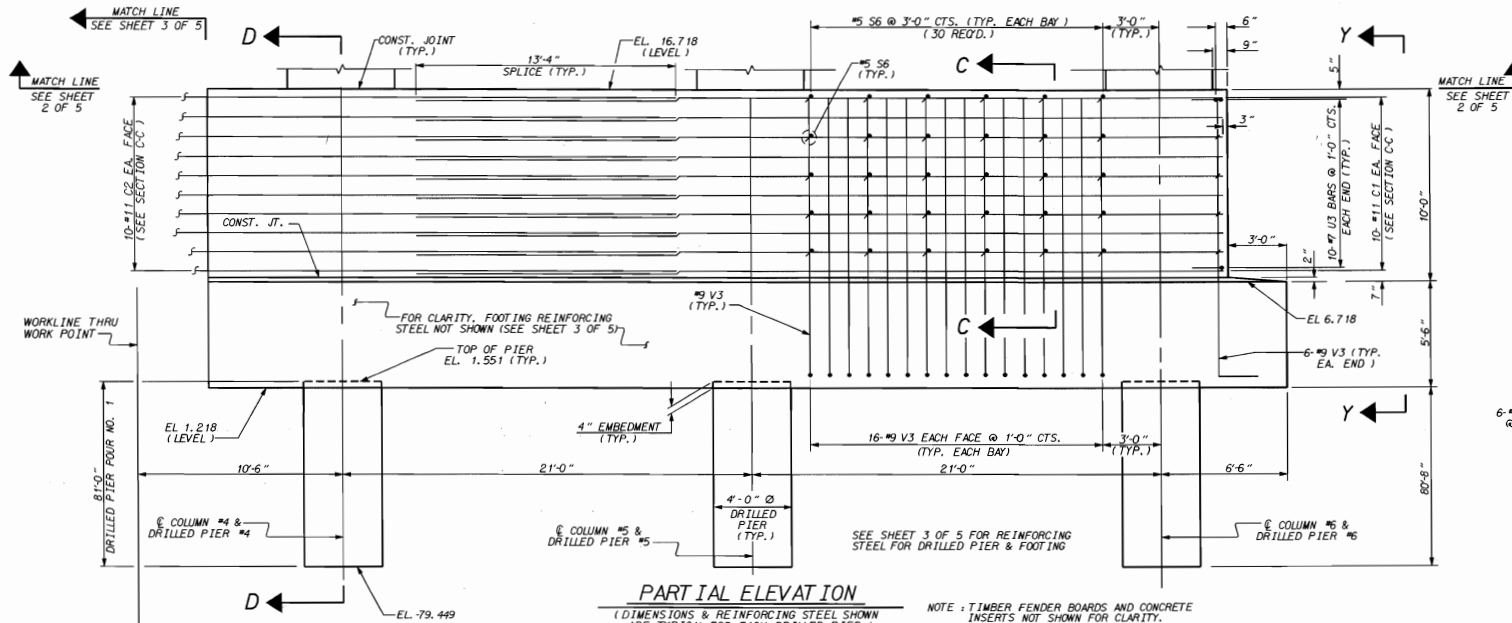
SHEET 3 OF 5



REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	S-125	
1			3			TOTAL SHEETS 170	
2			4				

DRAWN BY: **S.B. WILLIAMS/GDC** DATE: **9-96**
 CHECKED BY: **N.M. RUFFIN** DATE: **2/97**





PROJECT NO. U-2107BA
ONSLow COUNTY
STATION: 277+50.00 -L-

SHEET 4 of 5

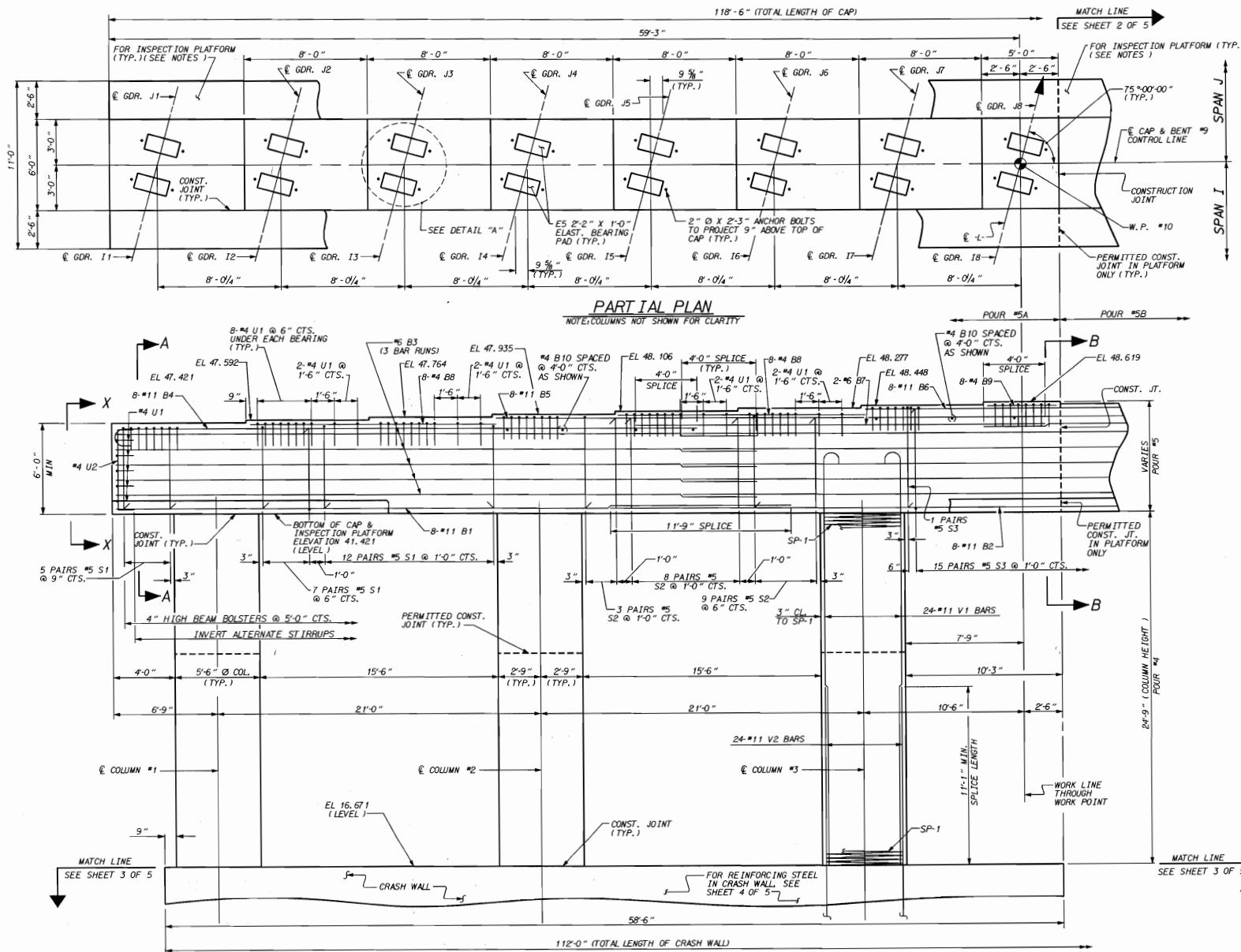
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUBSTRUCTURE
BENT #8**

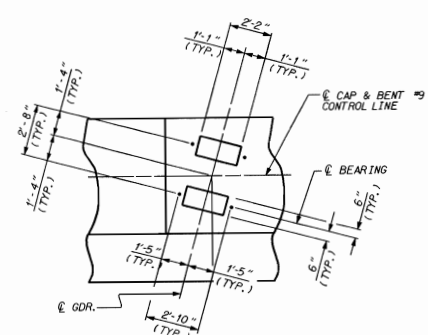


DRAWN BY: S.B. WILLIAMS/GDC DATE: 10-96
CHECKED BY: N.W. RUFFIN DATE: 2/97

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			10/96
2			4			170



- NOTES**
- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
 - HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.
 - FOR EPOXY COATED SPIRAL COLUMN REINFORCING STEEL, SEE SPECIAL PROVISIONS.
 - FOR DRILLED PIERS, SEE SPECIAL PROVISIONS.
 - ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR EPOXY COATED REINFORCING STEEL AND EPOXY COATED SPIRAL COLUMN REINFORCING STEEL.
 - THE DRILLED PIERS SHALL BE INSTALLED TO MINIMUM TIP ELEVATION SHOWN ON PLAN.
 - FOR PILE INTEGRITY TESTING, SEE SPECIAL PROVISIONS.
 - ALL REINFORCING STEEL SHALL BE EPOXY COATED.
 - ALL CONCRETE SHALL BE CLASS "AA" CONCRETE.
 - FOR INSPECTION PLATFORM DIMENSIONS, BILL OF MATERIAL, DETAILS, AND GALVANIZED STEEL PIPE RAILING SEE BENT INSPECTION PLATFORM DETAILS SHEET.
 - FOR MECHANICAL BUTT SPlicing FOR REINFORCING STEEL, SEE SPECIAL PROVISIONS.
 - FOR TIMBER FENDER BOARDS AND CONCRETE INSERTS SEE "TIMBER FENDER BOARDS" BENT #8 & #9 SHEET.
 - FOOTING CONCRETE SHALL BE CONSIDERED MASS CONCRETE. SEE SPECIAL PROVISIONS.



PROJECT NO. **U-2107BA**
ONSLow COUNTY
 STATION: **277+50.00 -L-**

SHEET 1 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

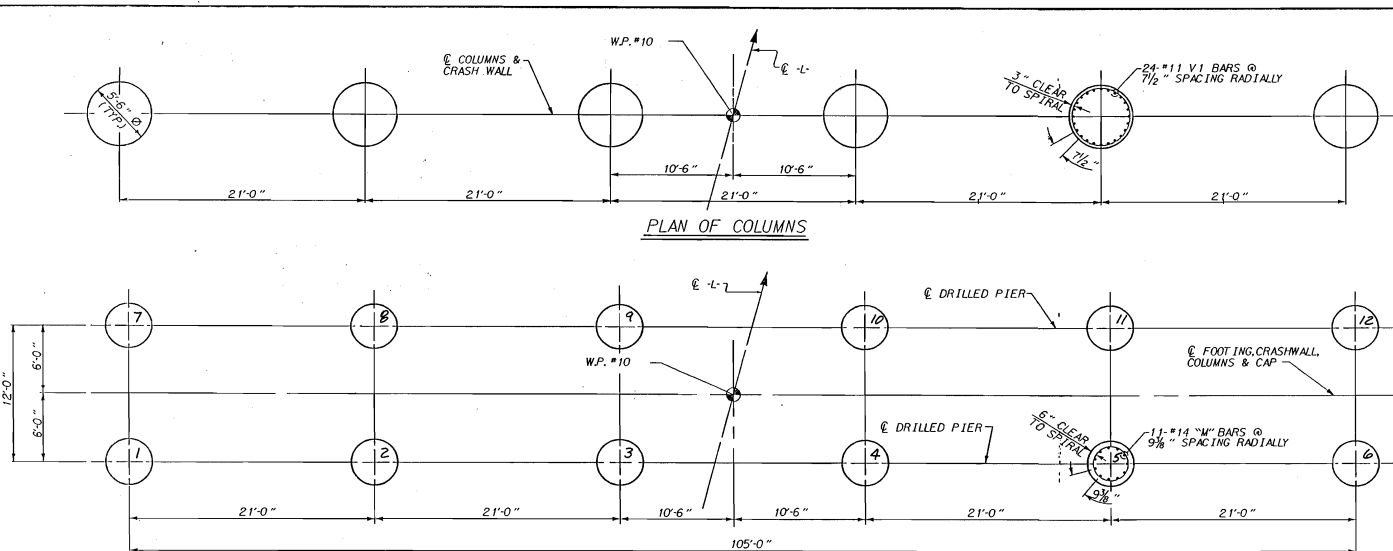
**SUBSTRUCTURE
 BENT #9**

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	5-128
1			3			TOTAL
2			4			170



DRAWN BY: **S.B. WILLIAMS/GDC** DATE: **7-96**
 CHECKED BY: **N.W. BUFFIN** DATE: **8-97**



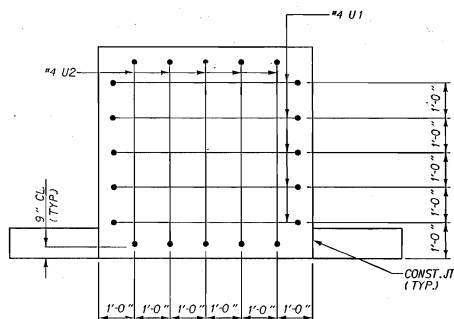


PLAN OF COLUMNS

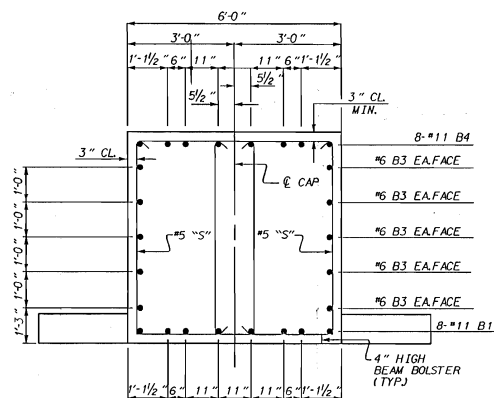
PLAN OF DRILLED PIERS

FOR REINFORCING STEEL IN DRILLED PIERS, SEE SHEET 3 OF 5

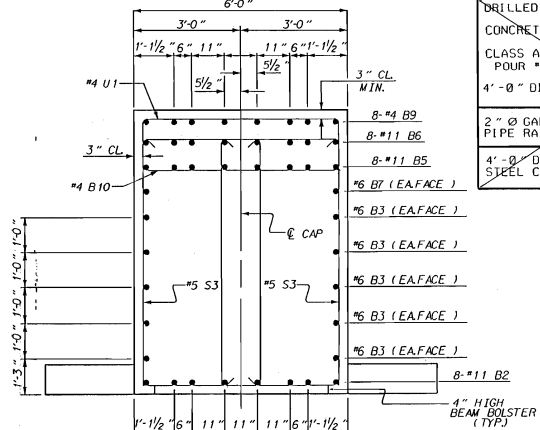
T.P. ELEV. FOR DRILLED PIERS #1 THRU #12 IS -74.5



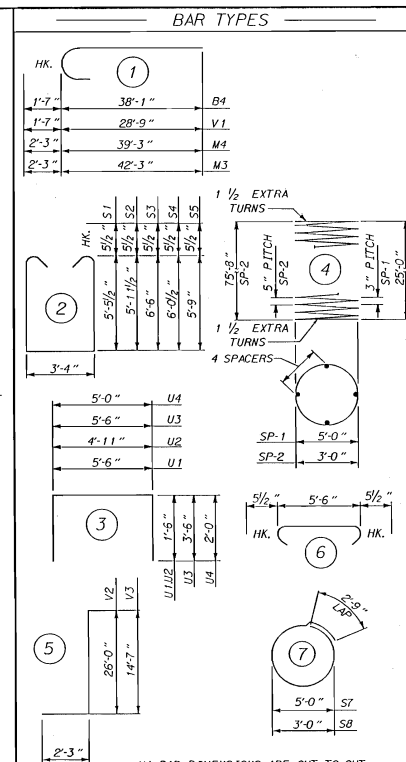
SECTION X-X



SECTION A-A



SECTION B-B



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL					
BENT NO.9					
BAR	NO	SIZE	TYPE	LENGTH	WEIGHT
B1	16	II	STR	43'-8"	3733
B2	8	II	STR	53'-9"	2287
B3	30	6	STR	42'-0"	1895
B4	16	II	STR	39'-8"	3372
B5	16	II	STR	37'-4"	3174
B6	8	II	STR	20'-6"	871
B7	4	6	STR	26'-8"	162
B8	32	4	STR	15'-9"	537
B9	8	4	STR	4'-6"	24
B10	14	4	STR	5'-6"	51
C1	52	II	STR	41'-5"	4442
C2	26	II	STR	54'-10"	7575
F1	24	6	STR	41'-10"	1508
F2	24	6	STR	20'-6"	246
M1	66	14	STR	37'-7"	18976
M2	66	14	STR	40'-7"	20491
M3	66	14	STR	44'-6"	22468
M4	66	14	STR	41'-6"	20953
S1	48	II	STR	15'-2"	759
S2	40	II	STR	16'-2"	674
S3	34	II	STR	17'-3"	642
S4	40	II	STR	16'-4"	681
S5	48	II	STR	15'-9"	789
S6	150	II	STR	6'-5"	1004
S7	14	II	STR	7'-8"	2200
S8	72	II	STR	12'-3"	920
T1	56	10	STR	43'-3"	10422
T2	28	10	STR	52'-11"	6376
T3	54	10	STR	42'-6"	9875
T4	27	10	STR	51'-6"	5983
T5	156	10	STR	20'-6"	13761
T6	15	II	STR	20'-6"	12525
U1	144	4	STR	8'-6"	818
U2	10	4	STR	7'-8"	53
U3	20	7	STR	12'-6"	511
U4	278	5	STR	9'-0"	2610
V1	144	II	STR	30'-4"	23207
V2	144	II	STR	28'-3"	21613
V3	172	9	STR	16'-10"	9844
INSPECTION PLATFORM EPOXY COATED REINFORCING STEEL LBS.					
3981					
EPOXY COATED REINFORCING STEEL LBS.					
248779					
SP-1 4 1604-8 6432					
SP-2 12 4 1711-5 21420					
EPOXY COATED SPIRAL COLUMN REINFORCING STEEL LBS.					
27852					
CONCRETE BREAKDOWN					
CLASS AA CONCRETE					
POUR #2 FOOTING C.Y. 512.4					
POUR #3 CRASHWALL C.Y. 244.7					
POUR #4 COLUMNS C.Y. 130.7					
POUR #5A CAP C.Y. 10.1					
POUR #5B CAP C.Y. 83.0					
POUR #6 INSPECTION PLATFORM C.Y. 20.1					
TOTAL C.Y. 1081.0					

PROJECT NO. U-2107BA
ONSLow COUNTY
STATION: 277+50.00 -L-

SHEET 5 OF 5

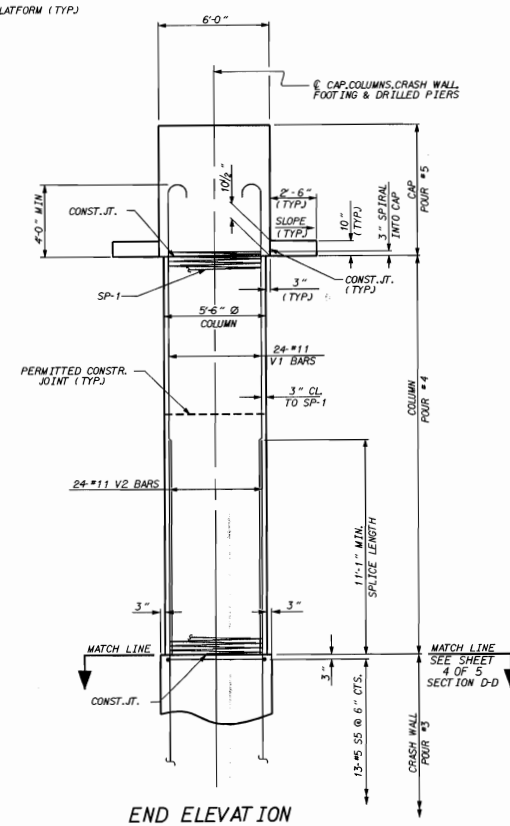
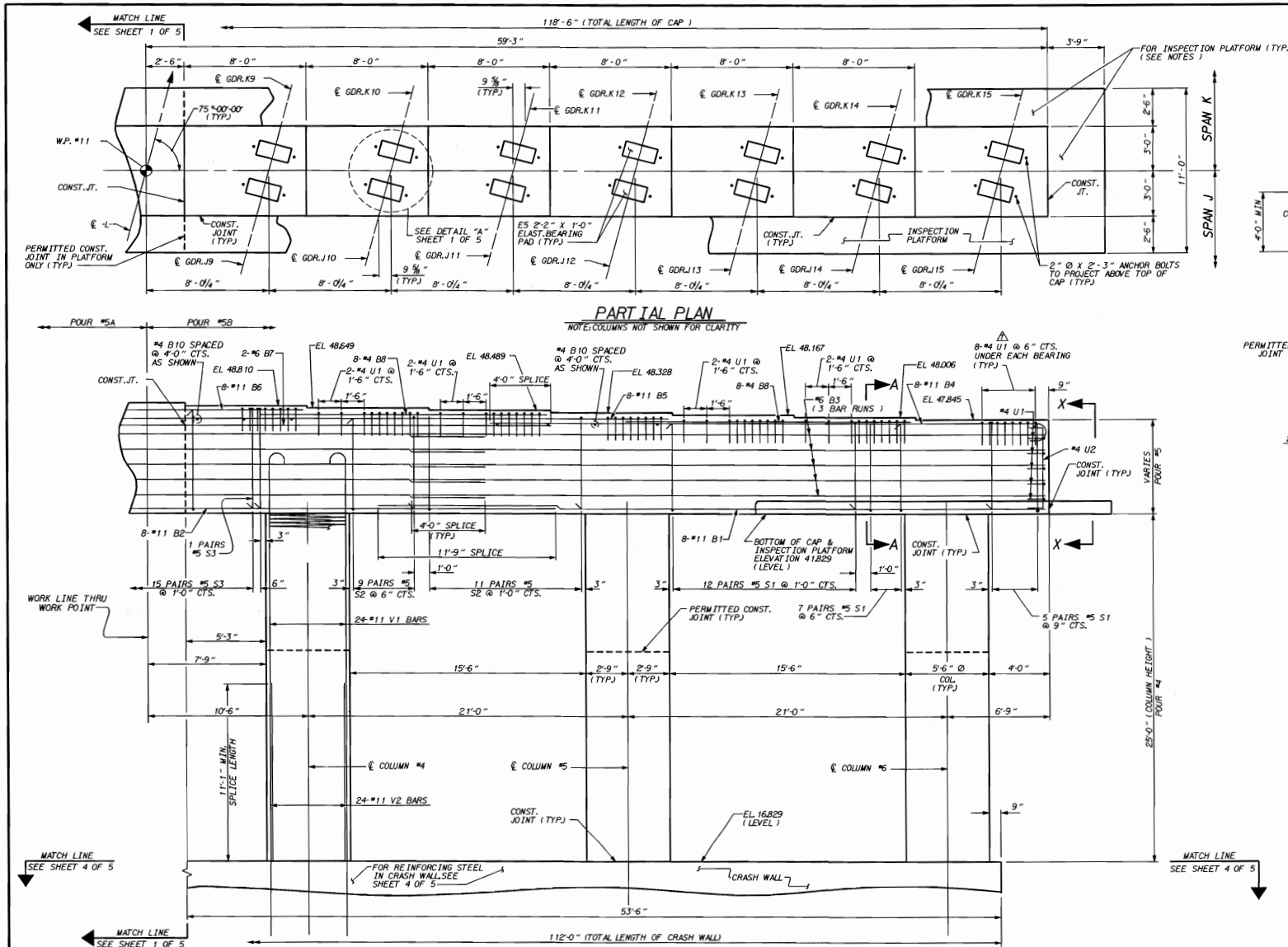
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RAILROAD

SUBSTRUCTURE
BENT #9



DRAWN BY: S.B.WILLIAMS/GDC DATE: 8-96
CHECKED BY: N.M. RUFFIN DATE: 2-97

REVISIONS						SHEET NO. 5-133
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 170
2			4			



PROJECT NO. U-2107BA
ONSLOW COUNTY
 STATION: 277+50.00 -L-

SHEET 2 OF 5

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

SUBSTRUCTURE BENT #10

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1	M/JH	4/19/99	3			TOTAL SHEETS 170
2			4			

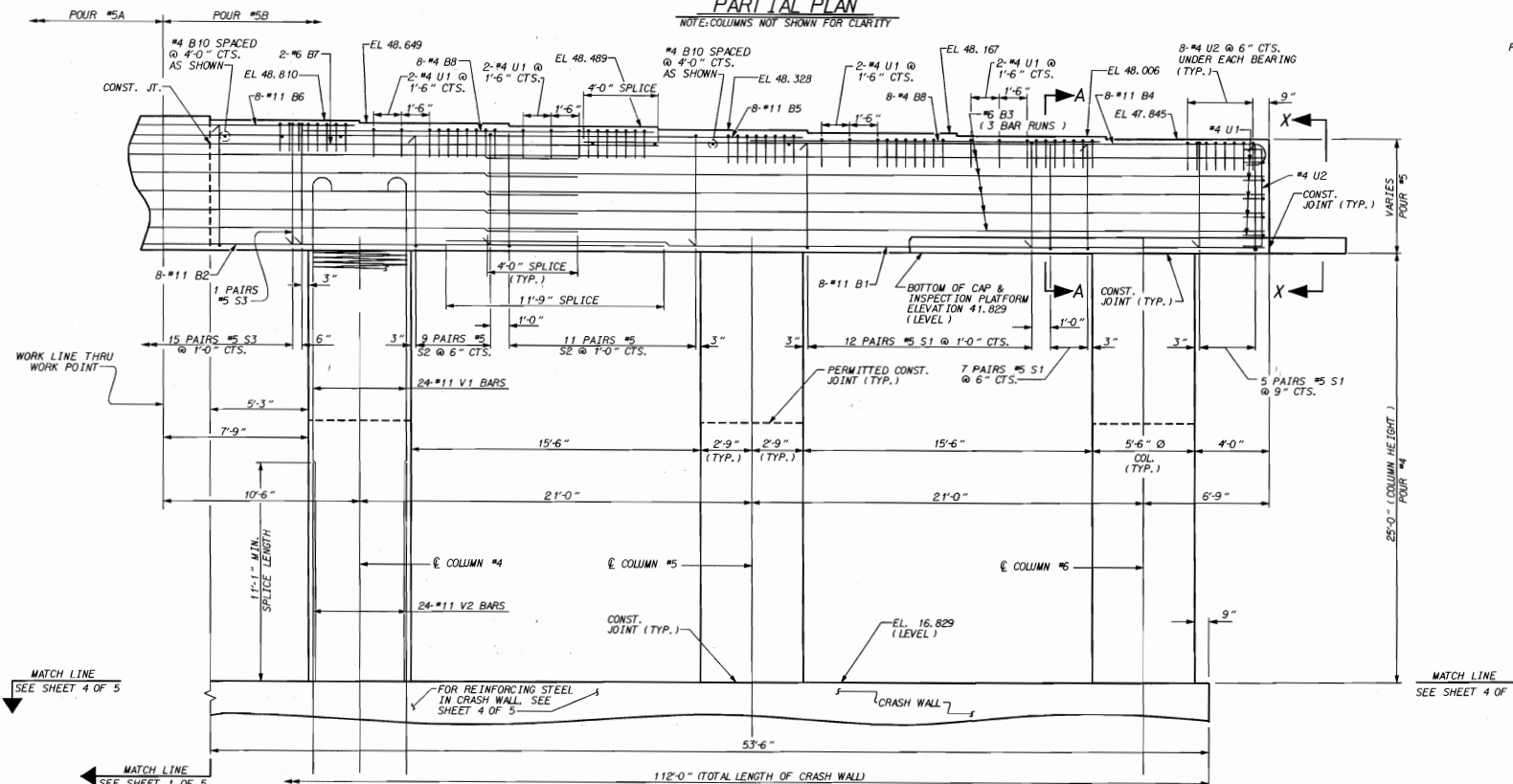


REV. #1: REVISED #402 IN ELEVATION
 VIEW TO #401
 CHECKED BY: SDG DATE: 4/20/99

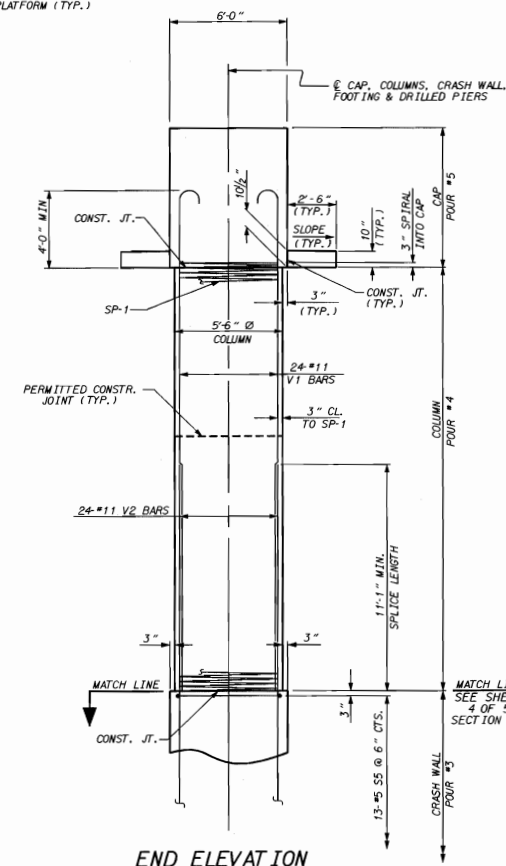
DRAWN BY: S.WILLIAMS/GDC DATE: 7-96
 CHECKED BY: N.M. RUFFIN DATE: 8-97

NOTE: COLUMNS NOT SHOWN FOR CLARITY

NOTE: COLUMNS NOT SHOWN FOR CLARITY



(DATA SHOWN IS TYPICAL FOR EACH COLUMN)



END ELEVATION

PROJECT NO. U-2107BA
ON SLOW COUNTY
 STATION: 277+50.00 -L-

SHEET 2 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

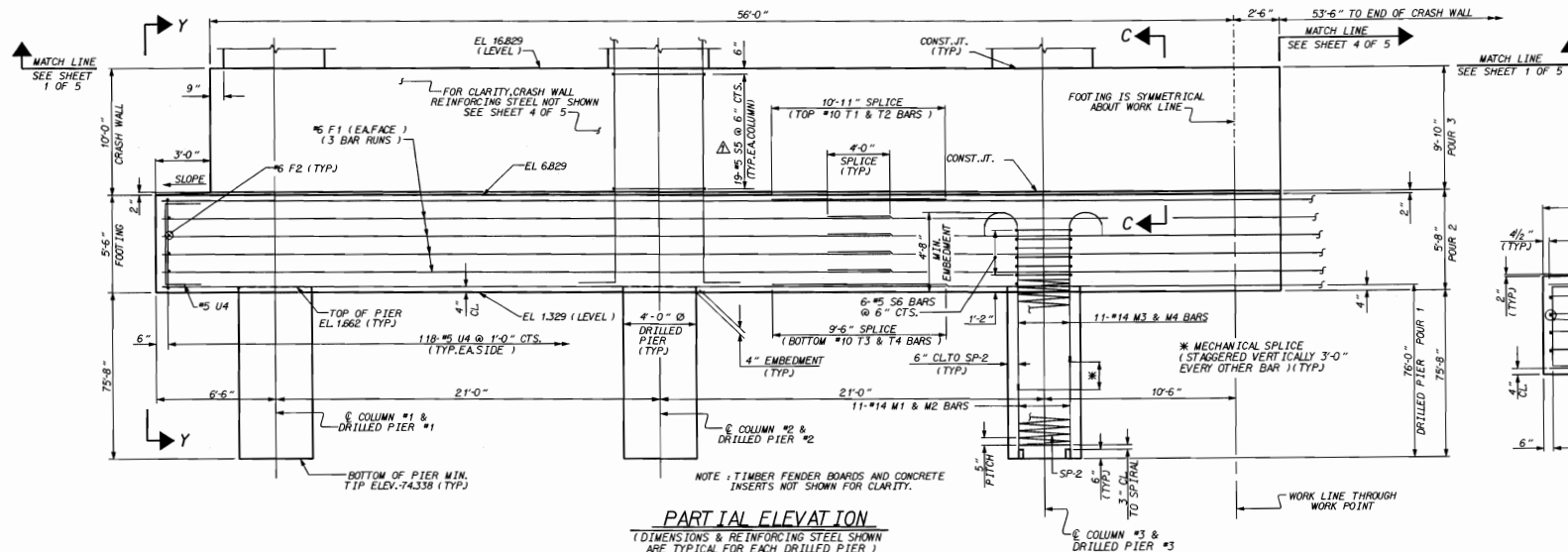
SUBSTRUCTURE
BENT #10

REVISIONS						SHEET NO. 5-13
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 170
2			4			

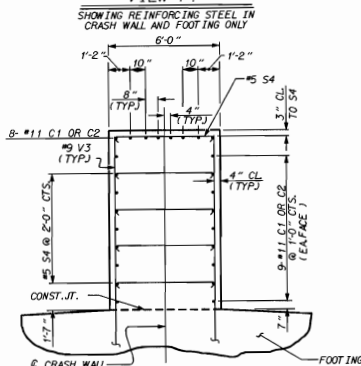
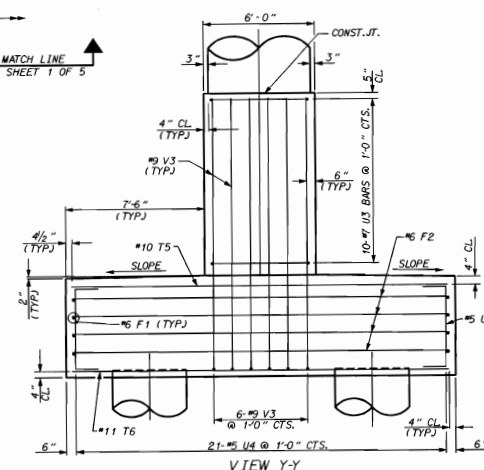
DRAWN BY : S.B. WILLIAMS/GDC DATE : 7-96
CHECKED BY : N.M. RUFFIN DATE : 2/97



4/25/97



PARTIAL ELEVATION
(DIMENSIONS & REINFORCING STEEL SHOWN ARE TYPICAL FOR EACH DRILLED PIER)



PROJECT NO. **U-2107BA**
ONSLow COUNTY
STATION: **277+50.00 -L-**

SHEET 3 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE BENT #10



REV. #1: REVISED 5/5/99 IN ELEVATION
VIEW TO 5/5/99
BY: M/JH DATE: 4/19/99
CHECKED BY: SDC DATE: 4/20/99

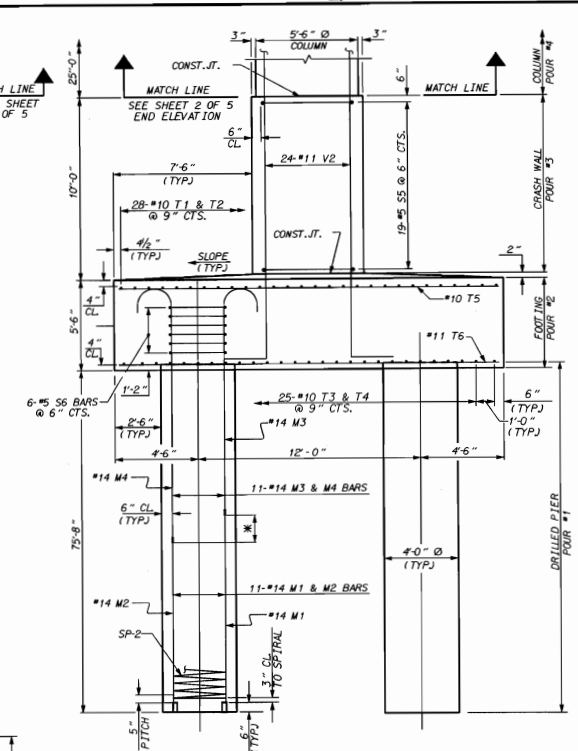
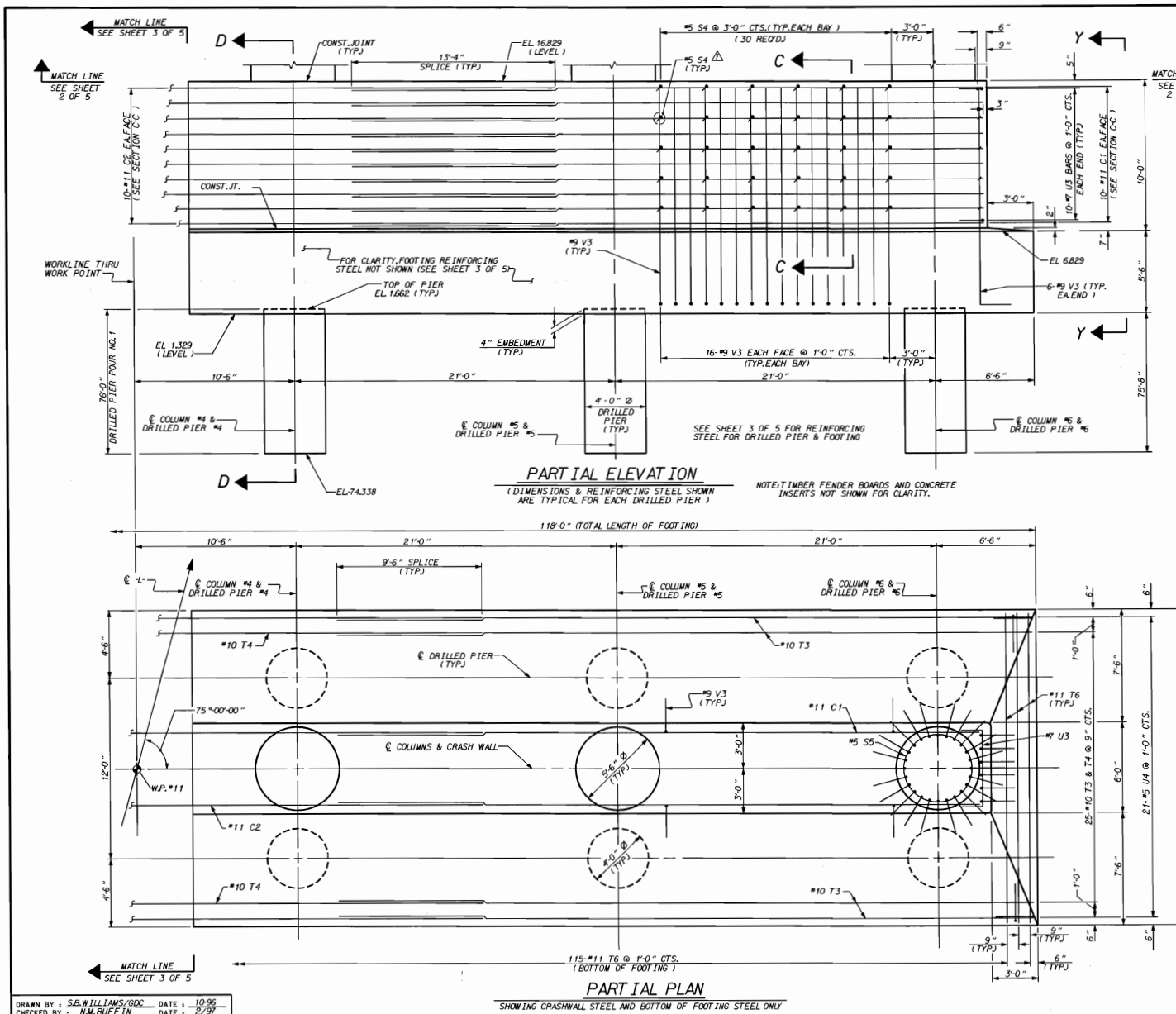
REVISIONS			SHEET NO.		
NO.	BY	DATE	NO.	BY	DATE
1	M/JH	4/19/99	3		
2			4		

DRAWN BY: **S.W. WILLIAMS/SDC** DATE: **2-96**
CHECKED BY: **N.M. RUFFIN** DATE: **2/97**

PARTIAL PLAN
ONLY TOP OF FOOTING REINFORCING STEEL SHOWN

SEE SHEET 4 OF 5
MATCH LINE

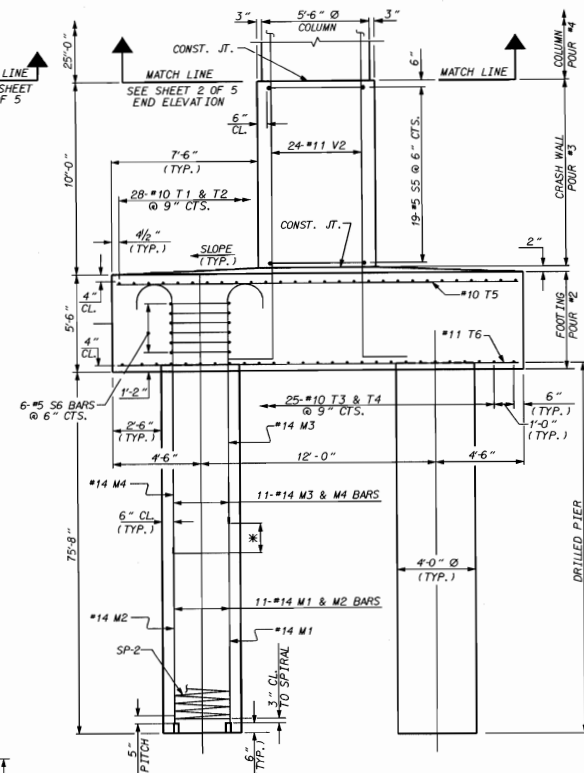
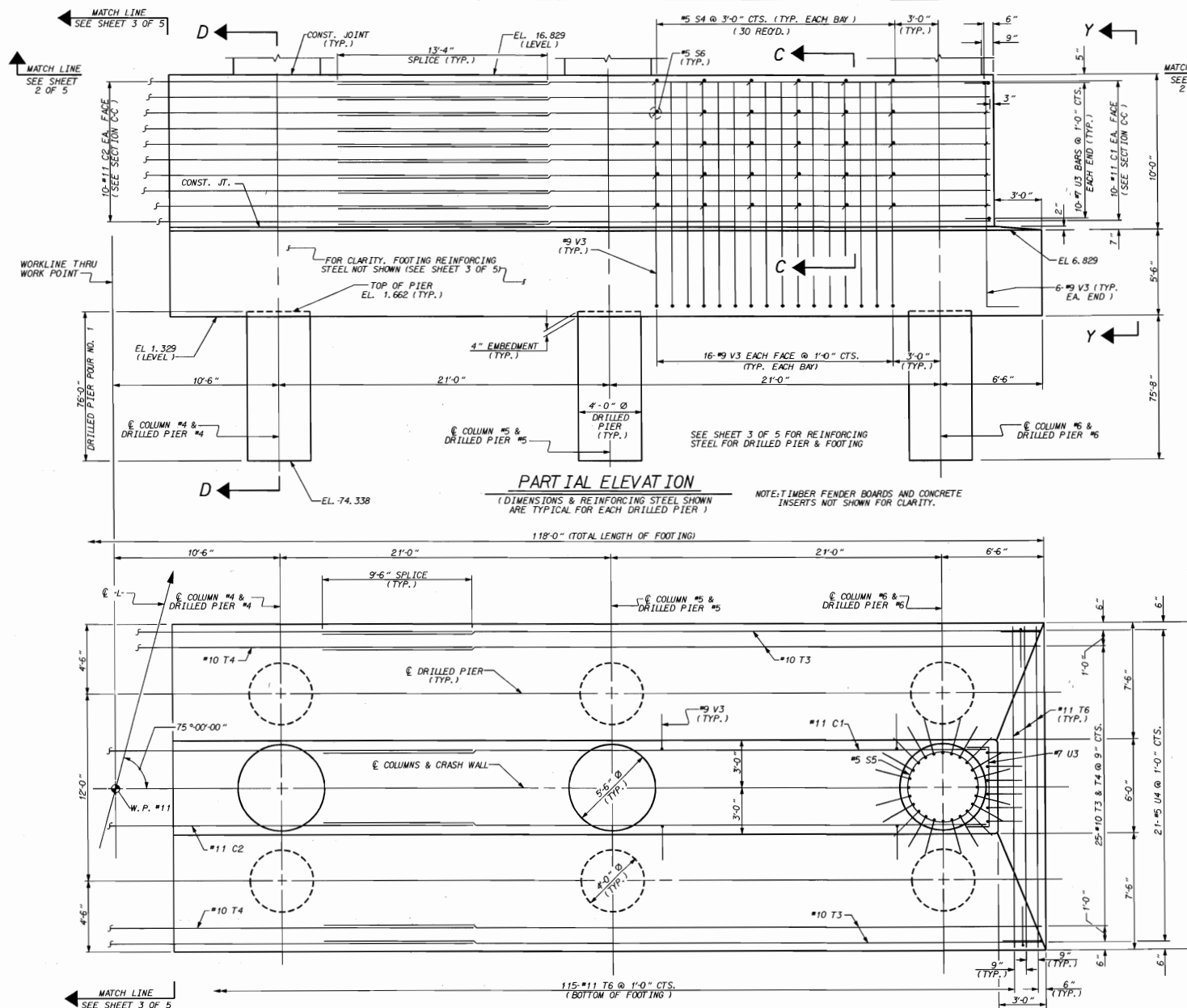
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT #10					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-135 TOTAL SHEETS 170					



PROJECT NO. U-2107BA
ONSLOW COUNTY
 STATION: 277+50.00 -L-

SHEET 4 of 5

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT #10					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1	MJH	4/19/99	2		
REV. #1: REVISED #56 IN ELEVATION VIEW TO #54 BY: MJH DATE: 4/19/99 CHECKED BY: SDC DATE: 4/20/99					
SHEET NO. S-136					170



PROJECT NO. **U-2107BA**
ON **NSLOW** COUNTY
STATION: **277+50.00 -L-**

SHEET 4 of 5

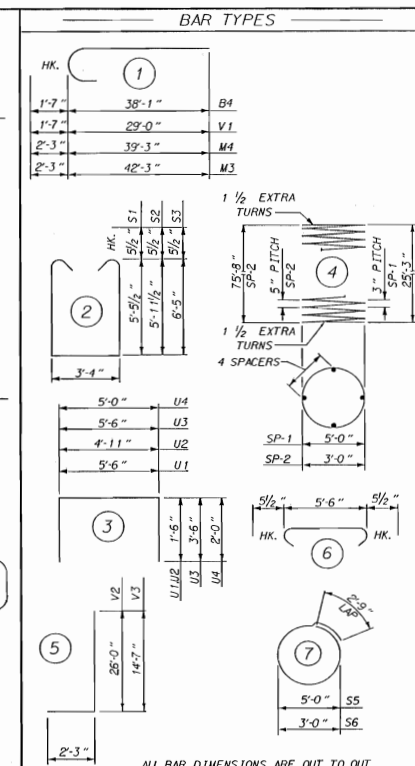
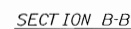
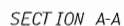
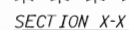
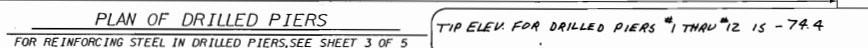
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUBSTRUCTURE
BENT #10**



David R. Kiser
1/15/17

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



BILL OF MATERIAL					
BENT NO.10					
BAR	NO	SIZE	TYPE	LENGTH	WEIGHT
B1	16	II	STR	43'-0"	3733
B2	3	II	STR	53'-0"	2289
B3	8	II	STR	42'-0"	1893
B4	10	II	STR	39'-0"	3372
B5	16	II	STR	37'-4"	3174
B6	8	II	STR	20'-6"	871
B7	6	II	STR	26'-11"	1624
B8	32	4	STR	15'-9"	337
B9	8	4	STR	4'-6"	24
B10	4	4	STR	5'-6"	51
C1	52	II	STR	41'-5"	14442
C2	26	II	STR	54'-10"	7575
F1	24	6	STR	41'-10"	1508
F2	6	6	STR	20'-6"	246
M1	66	14	STR	37'-7"	18976
M2	66	14	STR	40'-7"	20491
M3	66	14	I	44'-6"	22468
M4	66	14	I	41'-6"	20953
S1	96	5	2	15'-2"	1519
S2	80	5	2	16'-2"	1349
S3	34	5	2	16'-2"	9875
S4	150	5	6	5'-10"	1004
S5	114	5	7	18'-6"	2200
S6	72	5	7	12'-3"	920
T1	56	10	STR	43'-3"	10422
T2	28	10	STR	52'-11"	6376
T3	28	10	STR	42'-6"	5985
T4	27	10	STR	51'-6"	5983
T5	156	10	STR	20'-6"	13761
T6	115	11	STR	20'-6"	12525
U1	144	4	3	8'-6"	818
U2	10	4	3	7'-11"	53
U3	10	4	3	12'-6"	53
U4	278	5	3	9'-0"	2610
V1	144	II	1	30'-7"	23398
V2	144	II	5	20'-3"	2613
V3	172	9	5	16'-10"	9844
INSPECTION PLATFORM EPOXY COATED REINFORCING STEEL LBS.					3981
EPOXY COATED REINFORCING STEEL LBS.					248929
SP-1	6	4	170	3	6494
SP-2	12	4	168	5	2420
EPOXY COATED SPIRAL COLUMN REINFORCING STEEL LBS.					27914
CONCRETE BREAKDOWN					
CLASS	AS CONCRETE				
POUR #1	2' FOOTING				C. Y. 51.2
POUR #2	3' CRASHWALL				C. Y. 244.
POUR #3	4' COLUMNS				C. Y. 182.
POUR #4	5' CAP				C. Y. 89.
POUR #5	5' CAP				C. Y. 01.
POUR #6	INSPECTION PLATFORM				C. Y. 28.
TOTAL					C. Y. 1088.

PROJECT NO. U-2107BA
ON SLOW COUNTY
 STATION: 277+50.00 -L-

SHEET 5 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT #10



Chris L. Asay
7/9/78

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-137 TOTAL SHEETS 170
2			4			

DRAWN BY : S.B.WILLIAMS/GDC DATE : 8-96
CHECKED BY : N.M.RUFFIN DATE : 2/97

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO
CLEAR ANCHOR BOLTS.

HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR
HOOKING ON REINFORCING STEEL.

FOR EPOXY COATED SPIRAL COLUMN REINFORCING STEEL,
SEE SPECIAL PROVISIONS.

FOR DRILLED PIERS, SEE SPECIAL PROVISIONS .

ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE
PAY ITEMS FOR EPOXY COATED REINFORCING STEEL AND
EPOXY COATED SPIRAL COLUMN REINFORCING STEEL.

THE DRILLED PIERS SHALL BE INSTALLED TO MINIMUM
TIP ELEVATION SHOWN ON PLAN.

FOR PILE INTEGRITY TESTING, SEE SPECIAL PROVISIONS.

ALL REINFORCING STEEL SHALL BE EPOXY COATED.

ALL CONCRETE SHALL BE CLASS "AA" CONCRETE.

FOR INSPECTION PLATFORM DIMENSIONS, BILL OF MATERIAL,
DETAILS, AND GALVANIZED STEEL PIPE RAILING SEE BENT
INSPECTION PLATFORM DETAILS SHEET.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT
THAT THE CENTERLINE JOINT IN THE DECK SLAB IS OFFSET
FROM THE CENTERLINE BENT.

FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.



PROJECT NO. U-2107BA
ON SLOW COUNTY
 STATION: 277+50.00 -L-

SHEET 1 OF 3

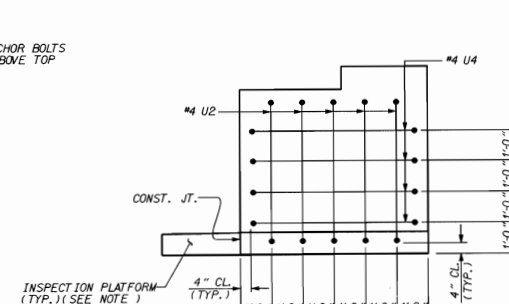
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT #11

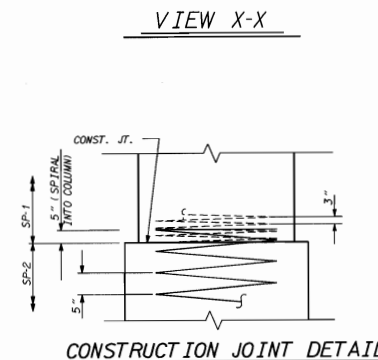
REVISIONS						SHEET NO. 138
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 170
2			4			

15-APR-1997 19:20
#####DCN#####

DRAWN BY : S.B. WILLIAMS/GDC DATE : 12-6-96
CHECKED BY : N.M. RUFFIN DATE : 2/21/97



NOTE : COLUMNS & DRILLED PIERS NOT SHOWN FOR CLARITY



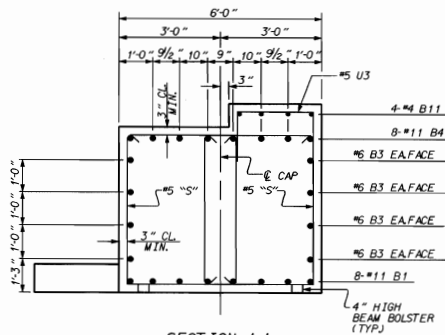
(REINFORCING STEEL SHOWN IS TYPICAL FOR EACH COLUMN & DRILLED PIER)

SHEET 2 OF 3

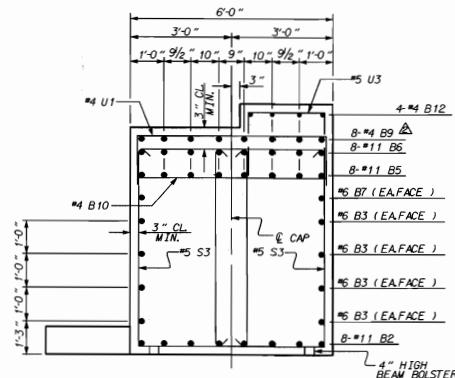
REVISIONS						SHEET NO. 139
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 170
2			4			

14-APR-1997 08:58
#####DGN#####
or'ed

DRAWN BY : S. B. WILLIAMS/GDC DATE : 12-6-96
CHECKED BY : N. M. RUFFIN DATE : 2/21/97

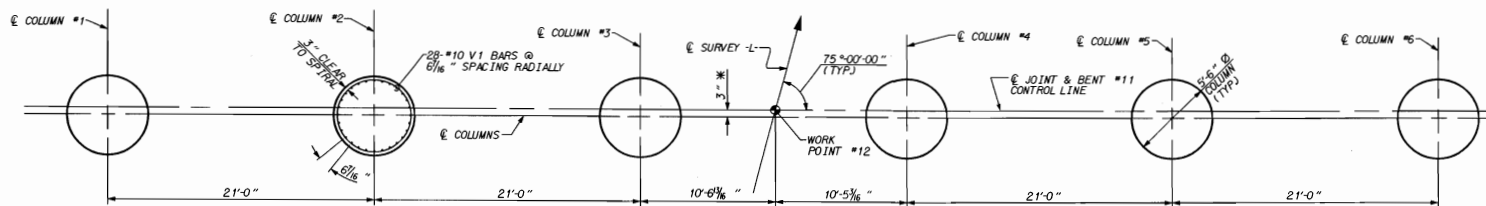


SECTION A-A



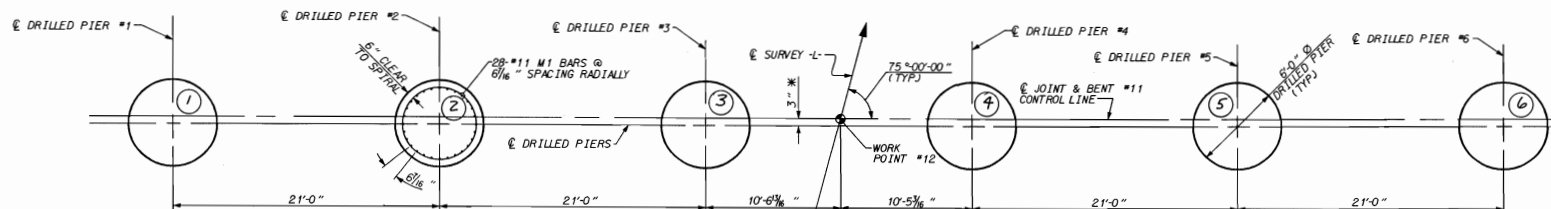
SECTION B-B

BAR TYPES		BILL OF MATERIAL			
		BENT #11			
BAR	NO	SIZE	TYPE	LENGTH	WEIGHT
B1	16	II	STR	43'-11"	3733
B2	53	9	STR	53'-9"	2285
B3	2	6	STR	42'-0"	1703
B4	16	II	STR	39'-8"	3372
B5	16	II	STR	37'-4"	3174
B6	8	II	STR	20'-6"	871
B7	4	6	STR	26'-11"	162
B8	32	4	STR	15'-9"	337
B9	8	4	STR	4'-6"	24
B10	14	4	STR	5'-6"	51
B11	40	4	STR	11'-10"	316
B12	8	4	STR	4'-6"	24
MI	336	II	STR	44'-11"	80184
SI	48	5	2	13'-3"	663
S2	40	5	2	12'-2"	508
S3	34	5	2	15'-2"	538
S4	34	5	2	13'-1"	511
S5	54	5	2	13'-1"	737
U1	130	4	3	8'-6"	738
U2	10	4	3	7'-4"	49
U3	128	4	3	8'-2"	768
U4	8	4	3	8'-2"	45
VI	168	10	1	45'-2"	32651
INSPECTION PLATFORM EPOXY COATED REINFORCING STEEL LBS.					2070
EPOXY COATED REINFORCING STEEL LBS.					13554
SP-1	6	4	2586-2	10365	
SP-2	6	4	2544-0	15920	
EPOXY COATED SPIRAL COLUMN REINFORCING STEEL LBS.					26285
CONCRETE BREAKDOWN					
CLASS AA CONCRETE					
POUR #2 COLUMN				C.Y.	213.8
POUR #3A CAP				C.Y.	81.3
POUR #3B CAP				C.Y.	73.4
POUR #4 INSPECTION PLATFORM				C.Y.	10.4
TOTAL				C.Y.	378.9
DRILLED PIERS					
CONCRETE BREAKDOWN					
CLASS AA CONCRETE					
POUR #1 DRILLED PIERS				C.Y.	422.5
6'-0" DIA. DRILLED PIERS					403.5 L.F.
2" GALVANIZED STEEL PIPE RAIL					132.5 L.F.
6'-0" DIA. PERMANENT STEEL CASING					138.56 L.F.



PLAN OF COLUMNS

(REINFORCING STEEL SHOWN IS TYPICAL FOR EACH COLUMN)



PLAN OF DRILLED PIERS

(REINFORCING STEEL SHOWN IS TYPICAL FOR EACH DRILLED PIER)

DRAWN BY: S.W. WILLIAMS DATE: 12-9-96
CHECKED BY: N.M. HUFFIN DATE: 2-21-97

REV. #2: SHOW #489 BARS IN SECTION B-B
BY: M.J.H. DATE: 4/19/99
CHECKED BY: S.D.C. DATE: 4/20/99
REV. #1: REVISED CONCRETE QUANTITY FOR BENT CAP
BY: M.J.H. DATE: 10/5/98
CHECKED BY: S.D.C. DATE: 10/6/98



PROJECT NO. U-2107BA
ON SLOW COUNTY
STATION: 277+50.00 -L-

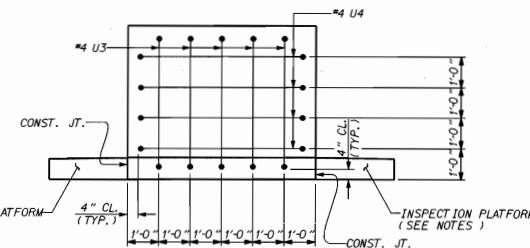
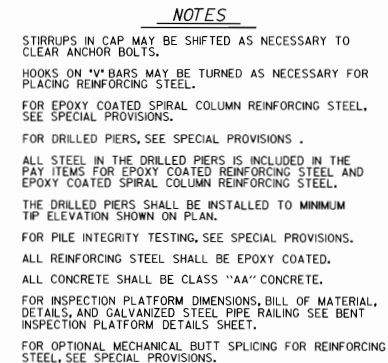
SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

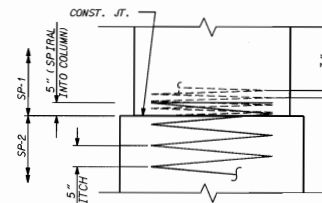
SUBSTRUCTURE
BENT #11

REVISIONS		SHEET NO.	
NO.	BY	DATE	NO.
1	NMR	10/5/98	140
2	MJH	4/19/99	170

26-APR-1999 10:48
SHEET 3 OF 3
MIO



CONSTRUCTION JOINT DETAIL



CONSTRUCTION JOINT DETAIL

PROJECT NO. U-2107BA
ON SLOW COUNTY
 STATION: 277+50.00 -L-
 SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

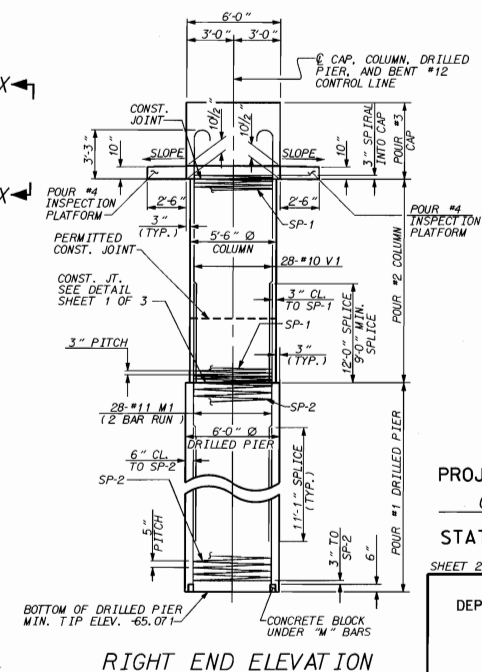
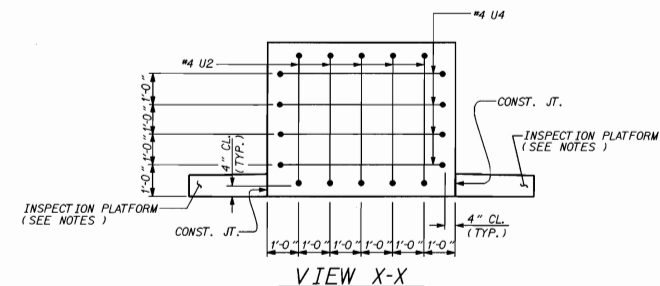
SUBSTRUCTURE
BENT #12

REVISIONS						SHEET NO. 5-14
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 170
2			4			

II-APR-1997 14:27
 *****DCN*****
 0500

DRAWN BY : G.D. CARROLL DATE : 12/18/96
CHECKED BY : O.R. AZIZI DATE : 12/20/96





PROJECT NO. U-2107BA
ON SLOW COUNTY
 STATION: 277+50.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT #12

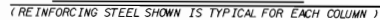
REVISIONS						SHEET NO. 5-142
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 170
2			4			

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DRAWN BY : G. D. CARROLL DATE : 12/18/96
CHECKED BY : O. R. AZIZI DATE : 12/20/96



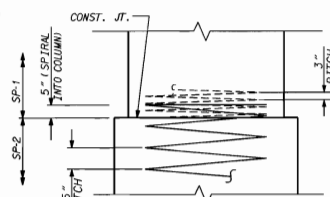
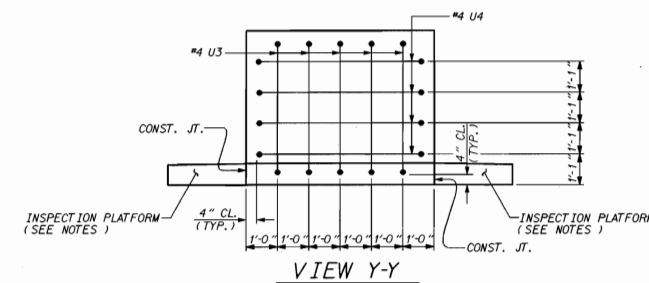
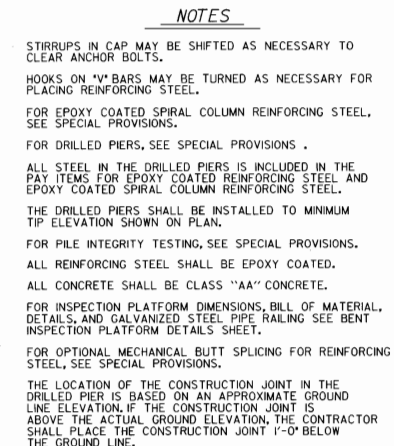
12-JAN-1998 14:32
 *****DCN*****
 call



(REINFORCING STEEL SHOWN IS TYPICAL FOR EACH DRILLED PIER)

DRAWN BY : G.D. CARROLL DATE : 12/18/96
CHECKED BY : O.R. AZIZI DATE : 12/20/96





PROJECT NO. U-2107BA
ONslow COUNTY
 STATION: 277+50.00 -L-

SHEET 1 OF 3

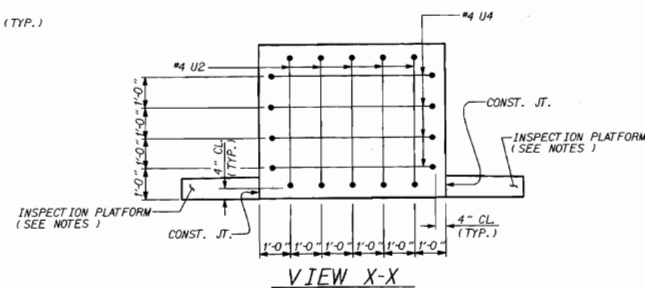
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RAILROAD

SUBSTRUCTURE
BENT #14

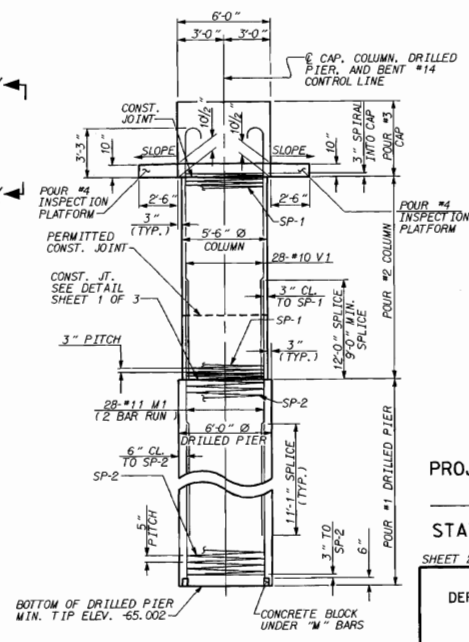
REVISIONS						SHEET 1 S-14
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 170
2			4			

I-APR-1997 14:27
 *****DCN*****

DRAWN BY : G.D. CARROLL DATE : 12/18/96
CHECKED BY : O.R. AZIZI DATE : 1/7/97



(COLUMNS NOT SHOWN FOR CLARITY)



RIGHT END ELEVATION

(REINFORCING STEEL SHOWN IS TYPICAL FOR EACH COLUMN & DRILLED PIER)

Amos L. Agee
4/14/97

PROJECT NO. U-2107BA
ONslow COUNTY
 STATION: 277+50.00 -L-

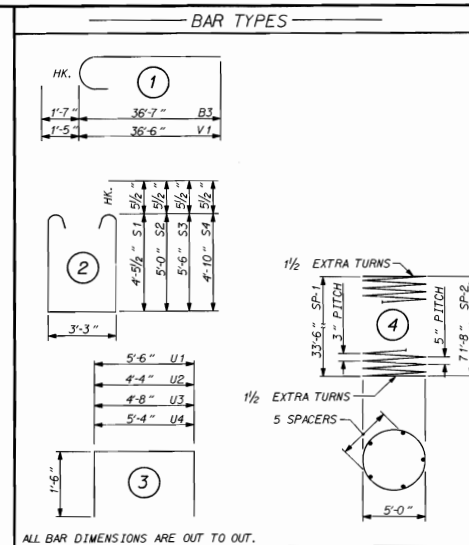
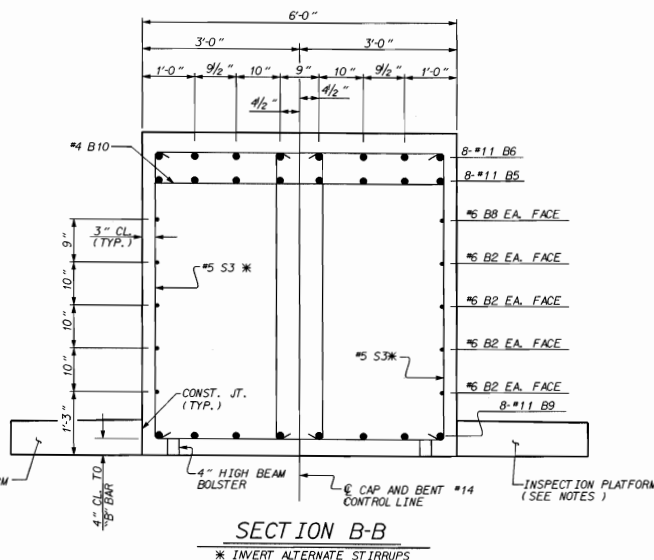
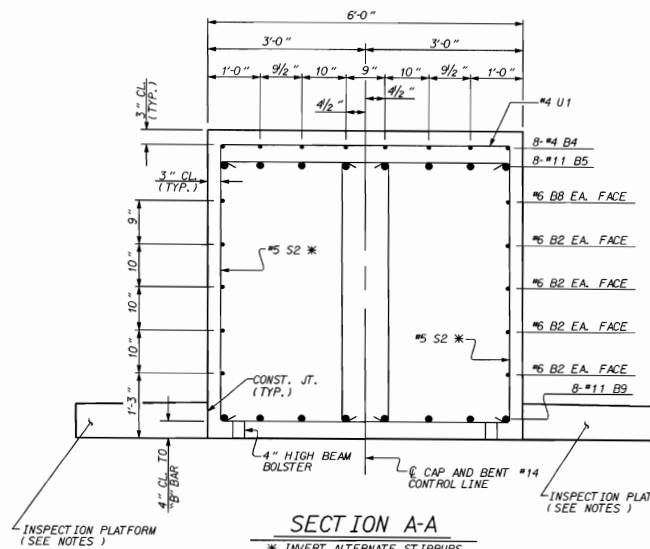
SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

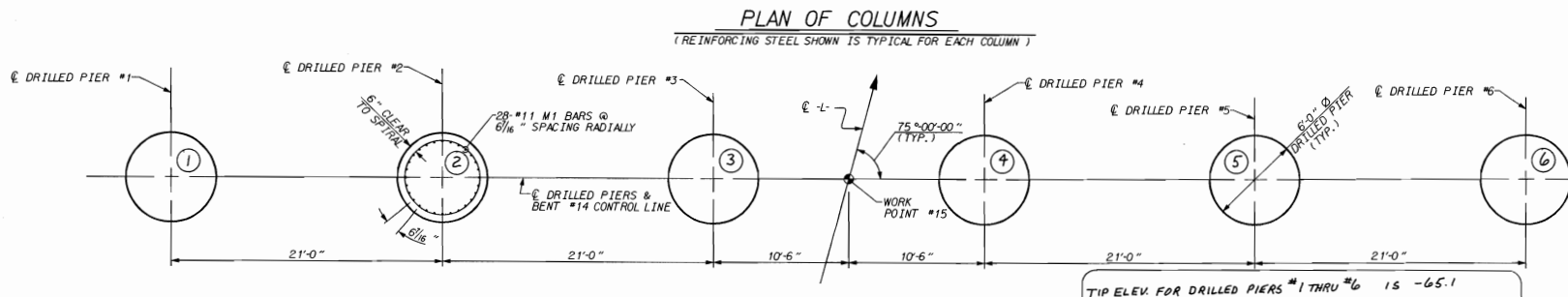
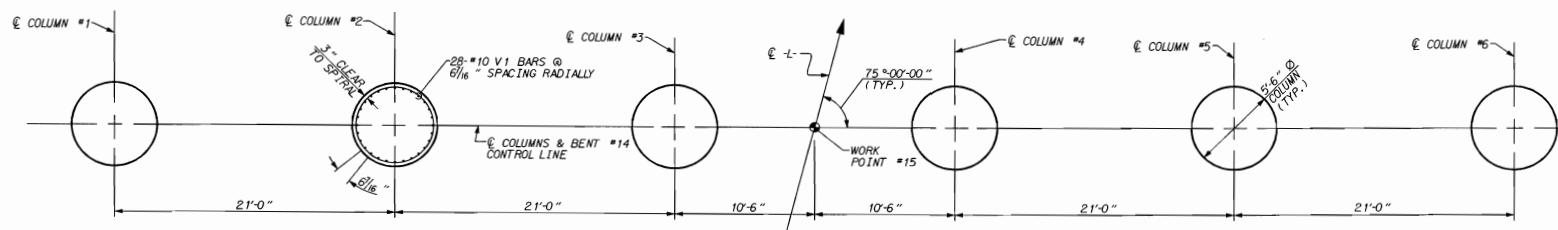
SUBSTRUCTURE
BENT #14

REVISIONS						SHEET NO. 5-148
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 170
2			4			

#-APR-1997 14:27
#####DCN#####
ORCA



BILL OF MATERIAL					
BENT #14					
BAR	NO	SIZE	TYPE	LENGTH	WEIGHT
B1	16	II	STR	43'-11"	3733
B2	24	6	STR	42'-7"	1536
B3	16	II	I	38'-2"	3244
B4	32	4	STR	13'-9"	284
B5	16	II	STR	42'-5"	3906
B6	8	4	STR	26'-10"	141
B7	8	4	STR	4'-5"	24
B8	4	6	STR	45'-5"	273
B9	8	II	STR	54'-0"	2295
B10	14	4	STR	5'-6"	51
MI	336	II	STR	47'-4"	84498
SI	48	5	2	13'-1"	655
S2	72	5	14	14'-2"	1064
S3	34	5	15	15'-2"	538
S4	48	5	13	13'-0"	693
UI	119	4	3	8'-6"	676
U2	15	4	7	7'-4"	24
U3	15	4	7	7'-4"	26
U4	8	4	3	8'-4"	45
VI	168	10	I	37'-11"	27410
INSPECTION PLATFORM EPOXY COATED REINFORCING STEEL LBS.					
EPOXY COATED REINFORCING STEEL LBS.					
SP-1	6			2134'-4"	8554
SP-2	6			2721'-3"	17030
EPOXY COATED SPIRAL COLUMN REINFORCING STEEL LBS.					
CONCRETE BREAKDOWN					
CLASS AA CONCRETE					
POUR #2 COLUMN					
POUR #3A CAP					
POUR #3B CAP					
POUR #4 INSPECTION PLATFORM					
TOTAL					
C. Y. 175.5					
C. Y. 79.6					
C. Y. 69.7					
C. Y. 20.1					
C. Y. 344.9					
DRILLED PIERS					
CONCRETE BREAKDOWN					
CLASS AA CONCRETE					
POUR #1 DRILLED PIERS					
6'-0" DIA. DRILLED PIERS					
NOT IN ROCK					
432.0 L.F.					
2" DIA GALVANIZED STEEL PIPE RAIL					
255.0 L.F.					
6'-0" DIA. PERMANENT STEEL CASING					
167.99 L.F.					



TIP ELEV. FOR DRILLED PIERS #1 THRU #6 IS -65.1



PROJECT NO. U-2107BA
ONSLow COUNTY
STATION: 277+50.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT #14

REVISIONS				SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
				TOTAL	170

DRAWN BY: G.D. CARROLL DATE: 12/18/96
CHECKED BY: O.R. AZIZI DATE: 1/7/97

12-JAN-98 1432

NOTES

FOR GALVANIZED STEEL PIPE RAIL, SEE STANDARD SPECIFICATIONS.

THE BASE PLATE AND STEEL PIPE RAIL SHALL BE WELDED
PRIOR TO GALVANIZATION.

FOR PERMITTED FIELD SPLICE OF THE PIPE RAIL. SEE
SHEET 2 OF 2.

FOR ADHESIVE ANCHOR SYSTEM, SEE SPECIAL PROVISION
FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS.

TESTING FOR ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

REINFORCING STEEL, CLASS AA CONCRETE AND 2" Ø GALVANIZED STEEL PIPE RAIL QUANTITIES FOR THE INSPECTION PLATFORM ARE TO BE INCLUDED IN THE BILL OF MATERIAL FOR EACH INDIVIDUAL BENT.

ALL RAIL POSTS SHALL BE PLUMB.

REINFORCING BARS R1 & R2 SHALL BE CAST WITH THE BENT CAP
AND MAY BE SHIFTED AS NECESSARY TO CLEAR CAP REINFORCING
STEEL.

ALL REINFORCING STEEL IN THE INSPECTION PLATFORM SHALL BE EPOXY COATED.

EPOXY PROTECTIVE COATING SHALL BE APPLIED TO THE TOP SURFACE OF THE INSPECTION PLATFORM AT BENTS #3, #7, & #11. FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 36.

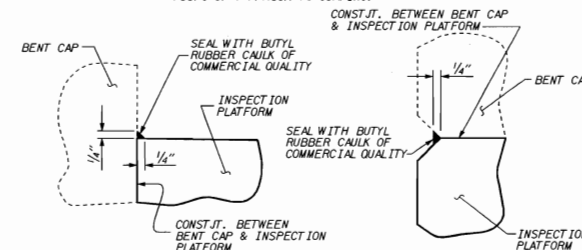
ALL STRUCTURAL STEEL SHALL BE GALVANIZED, SEE STANDARD SPECIFICATIONS.

ALL STRUCTURAL STEEL, ADHESIVE ANCHORS, PREFORMED BEARING PAD, NUTS, WASHERS, AND FIELD SPLICE SHALL BE INCLUDED IN THE LINEAR FOOT PRICE OF 2" Ø GALVANIZED STEEL PIPE RAIL.

ADHESIVE ANCHORS SHALL BE ASTM F593 TYPE 305 STAINLESS STEEL. HEX NUTS SHALL BE STAINLESS STEEL AND MEET THE REQUIREMENTS OF ASTM F594. WASHERS SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.

ALL GALVANIZED STRUCTURAL STEEL AND GALVANIZED PIPE RAIL SHALL BE PAINTED WITH A GRAY TOP COAT OF ACRYLIC PAINT 2 - 4 MILS (DFT) AS PER STANDARD SPECIFICATIONS 1080 - 13.

THE GALVANIZED SURFACE SHALL BE CLEANED TO (SSPC SP-1) PRIOR TO COATING.



SECTION C-C

DETAIL "A"

PROJECT NO. U-2107BA
ON SLOW COUNTY
 STATION: 277+50.00 -L-
 SHEET 1 OF 2

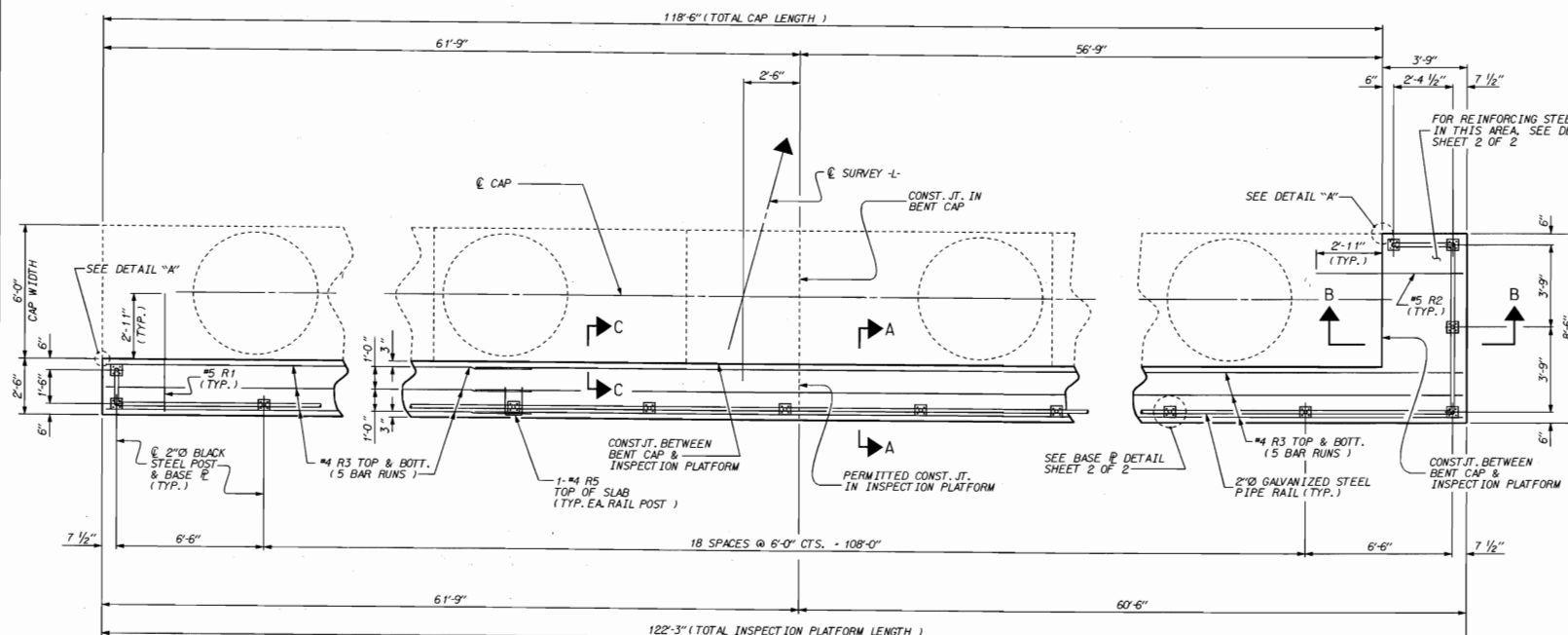
SHEET 1 OF 2

STATE OF NORTH CAROLINA

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

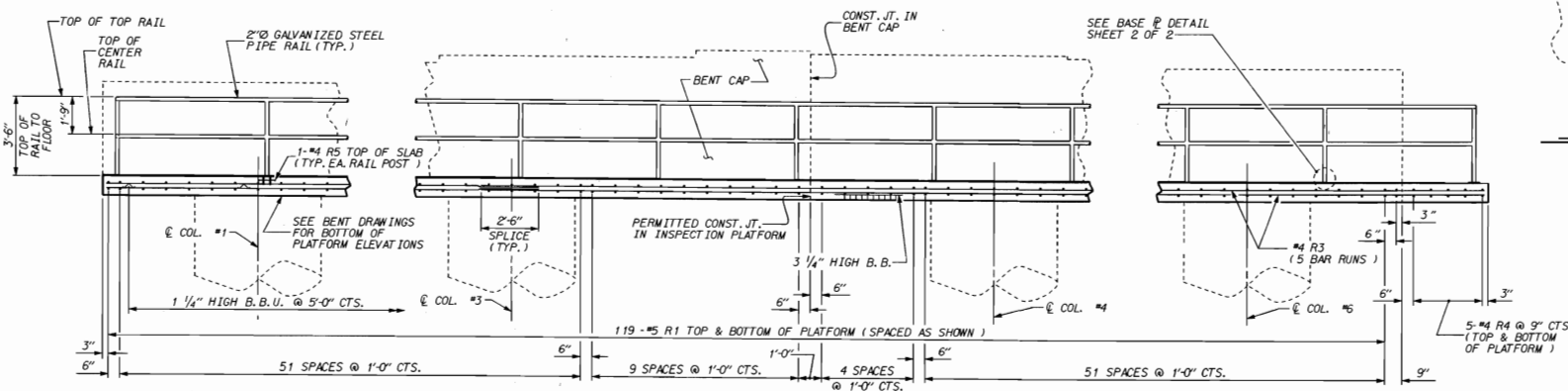
BENT
INSPECTION PLATFORM
DETAILS
BENTS #3, #7, AND #11

REVISIONS						SHEET NO. S-150
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 170
2			4			



PLAN OF INSPECTION PLATFORM

(FOR SECTIONS A-A & B-B, SEE SHEET 2 OF 2)



ELEVATION

DRAWN BY : M. R. / N. M. R. DATE : 11-27-96
CHECKED BY : T. H. FANG DATE : 12/16/96

BILL OF MATERIAL FOR ONE INSPECTION PLATFORM

QUANTITIES ARE INCLUDED IN
 BENT BILL OF MATERIALS

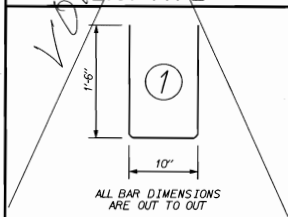
BAR	No.	SIZE	TYPE	LENGTH	WEIGHT
R1	240	#5	STR.	5'-3"	1,314
R2	16	#5	STR.	6'-6"	108
R3	30	#4	STR.	26'-5"	529
R4	10	#4	STR.	8'-2"	55
R5	25	#4	1	3'-10"	64

EPoxy COATED
 REINFORCING STEEL 2,070 LBS.

CLASS AA CONCRETE 10.4 C.Y.

2" Ø GALVANIZED STEEL PIPE RAIL 132.5 L.F.

BAR TYPE



PROJECT NO. U-2107BA

ON SLOW COUNTY

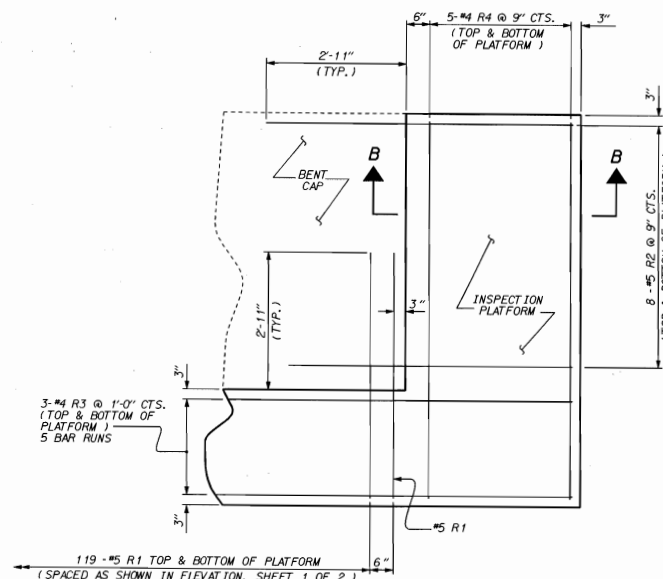
STATION: 277+50.00 -L-

SHEET 2 OF 2

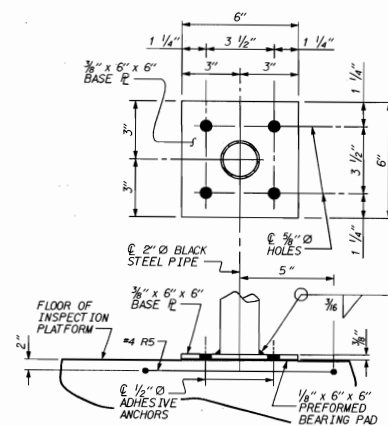
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALPH

BENT
 INSPECTION PLATFORM
 DETAILS
 BENTS #3, #7, AND #11

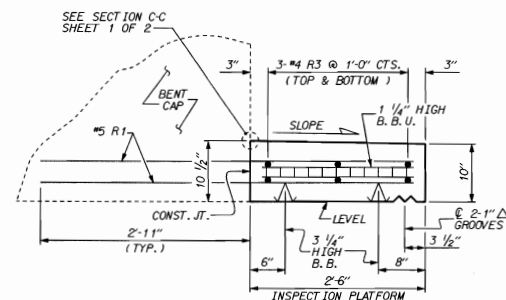
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			170
2			4			170



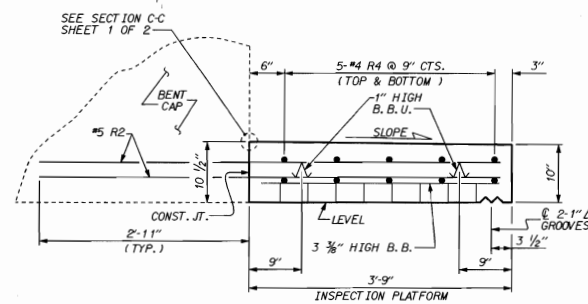
DETAIL "B"



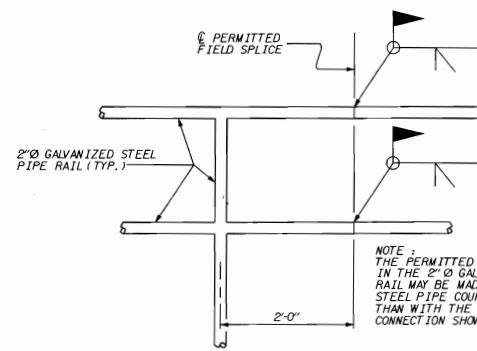
BASE PLATE DETAILS



SECTION A-A

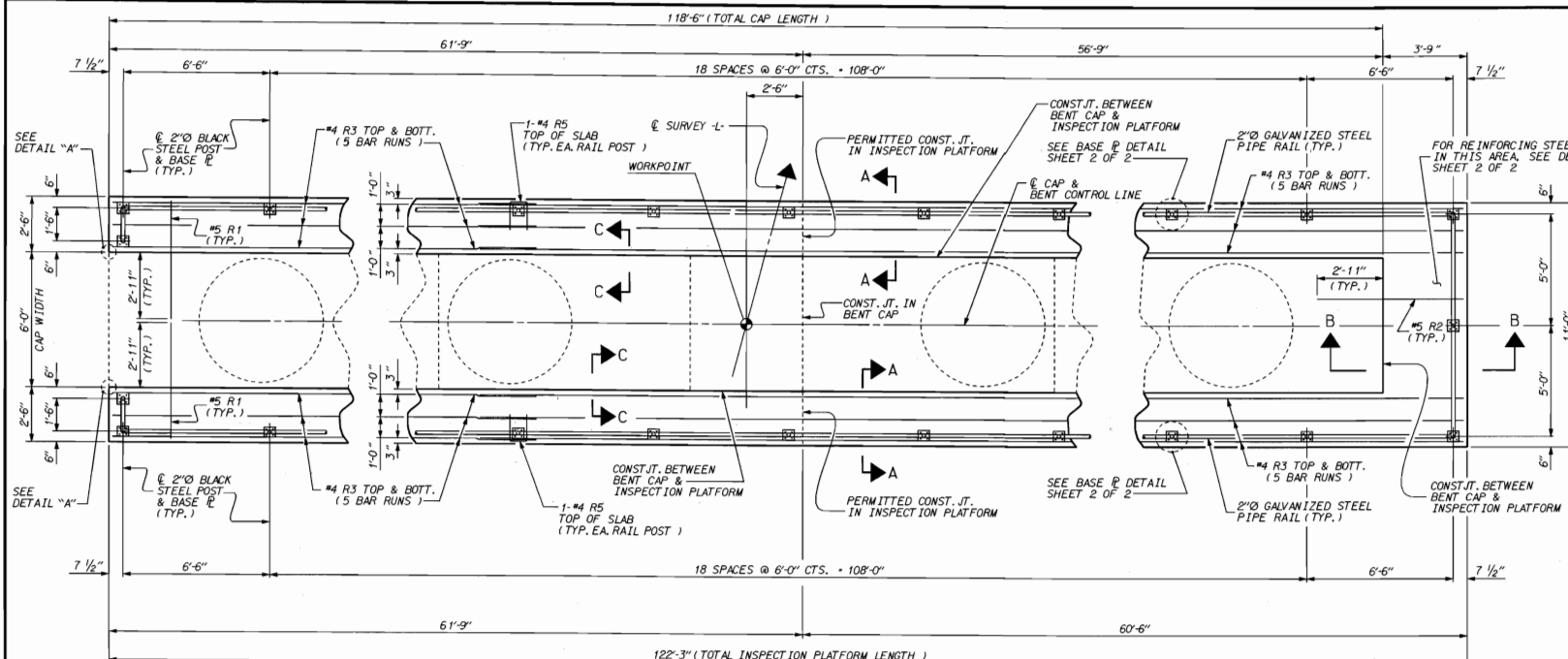


SECTION B-B



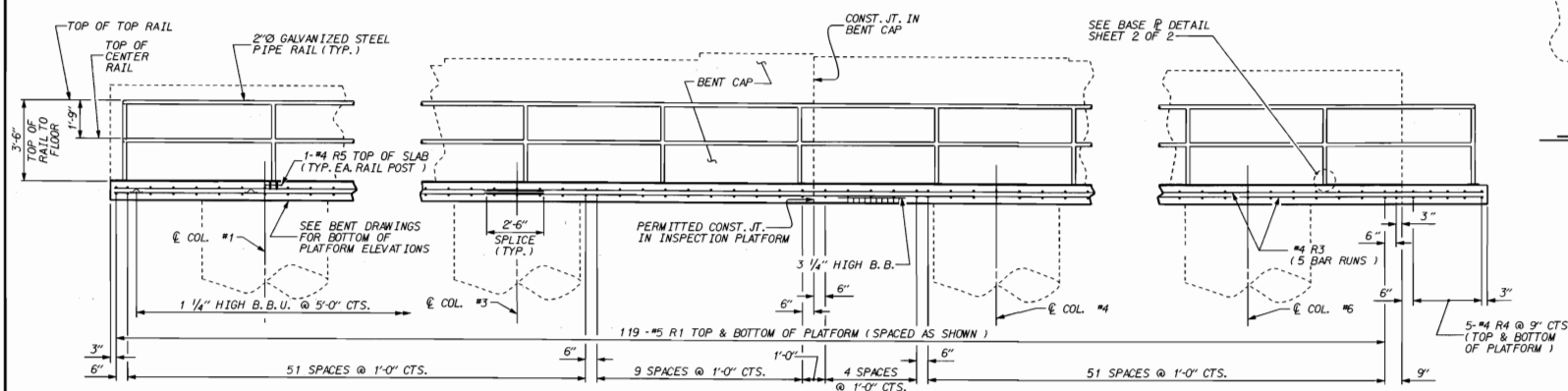
PERMITTED FIELD SPLICE DETAIL

NOTE:
 THE PERMITTED FIELD SPLICE
 IN THE 2" Ø GALVANIZED STEEL PIPE
 RAIL MAY BE MADE WITH A GALVANIZED
 STEEL PIPE COUPLING RATHER
 THAN WITH THE FIELD WELDED
 CONNECTION SHOWN.



PLAN OF INSPECTION PLATFORM

(FOR SECTIONS A-A & B-B, SEE SHEET 2 OF 2)



ELEVATION

ONE SIDE SHOWN, OTHER SIDE SIMILAR

NOTES

FOR GALVANIZED STEEL PIPE RAIL, SEE STANDARD SPECIFICATIONS.

THE BASE PLATE AND STEEL PIPE RAIL SHALL BE WELDED
PRIOR TO GALVANIZATION.

FOR PERMITTED FIELD SPLICE OF THE PIPE RAIL, SEE
SHEET 2 OF 2.

FOR ADHESIVE ANCHOR SYSTEM, SEE SPECIAL PROVISION
FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS.

TESTING FOR ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

REINFORCING STEEL, CLASS AA CONCRETE AND 2" Ø GALVANIZED STEEL PIPE RAIL QUANTITIES FOR THE INSPECTION PLATFORM ARE TO BE INCLUDED IN THE BILL OF MATERIAL FOR EACH INDIVIDUAL BENT.

ALL RAIL POSTS SHALL BE PLUMB.

REINFORCING BARS R1 & R2 SHALL BE CAST WITH THE BENT CAP AND MAY BE SHIFTED AS NECESSARY TO CLEAR CAP REINFORCING STEEL.

ALL REINFORCING STEEL IN THE INSPECTION PLATFORM SHALL BE EPOXY COATED.

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 36.

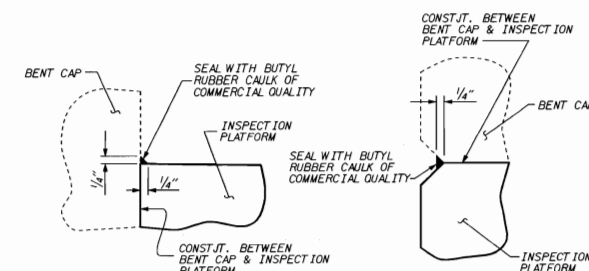
ALL STRUCTURAL STEEL SHALL BE GALVANIZED. SEE STANDARD SPECIFICATIONS.

ALL STRUCTURAL STEEL, ADHESIVE ANCHORS, PREFORMED BEARING PAD, NUTS, WASHERS, AND FIELD SPLICE SHALL BE INCLUDED IN THE LINEAR FOOT PRICE OF 2" Ø GALVANIZED STEEL PIPE RAIL.

ADHESIVE ANCHORS SHALL BE ASTM F593 TYPE 305 STAINLESS STEEL. HEX NUTS SHALL BE STAINLESS STEEL AND MEET THE REQUIREMENTS OF ASTM F594. WASHERS SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.

ALL GALVANIZED STRUCTURAL STEEL AND GALVANIZED PIPE RAIL
SHALL BE PAINTED WITH A GRAY TOP COAT OF ACRYLIC PAINT
2 - 4 MILS (DFT) AS PER STANDARD SPECIFICATIONS 1080 - 13.

THE GALVANIZED SURFACE SHALL BE CLEANED TO (SSPC SP-1) PRIOR TO COATING.



SECTION C-C

DETAIL "A"

PROJECT NO. U-2107BA
ONslow COUNTY
 STATION: 277+50.00 -L-

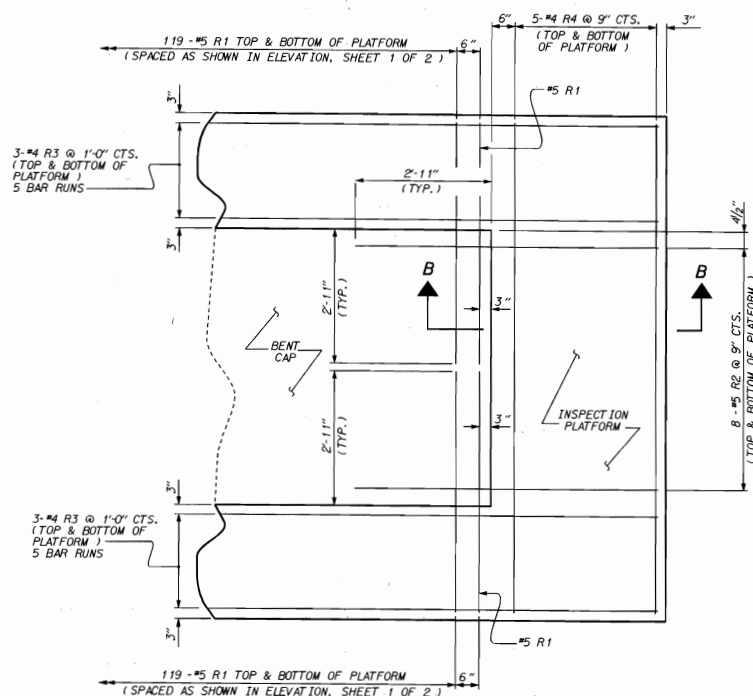
SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

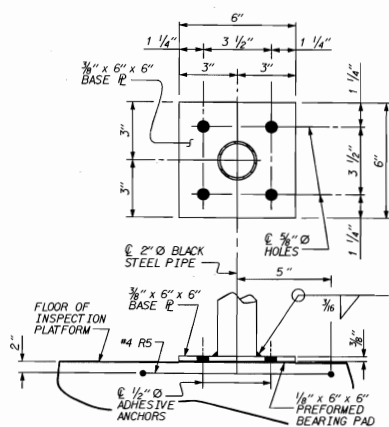
BENT INSPECTION PLATFORM DETAILS

BENTS #1, #2, #4, #5, #6, #8,
#9, #10, #12, #13, AND #14

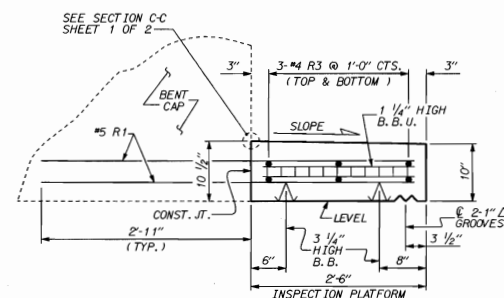
REVISIONS						SHEET NO. S-152
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 170
2			4			



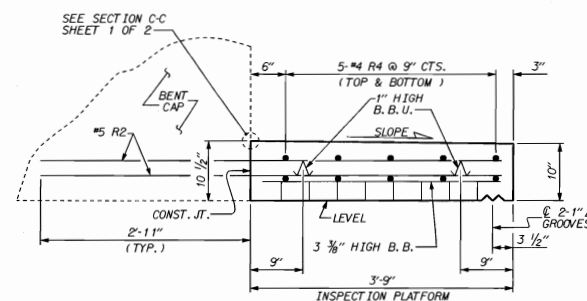
DETAIL "B"



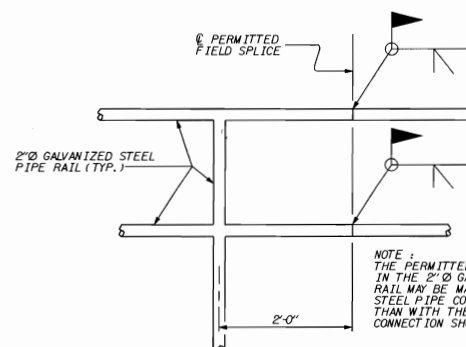
BASE PLATE DETAILS



SECTION A-A



SECTION B-B



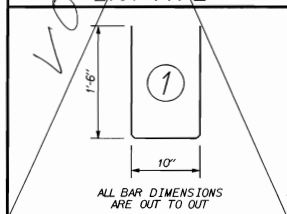
PERMITTED FIELD SPICE DETAIL

BILL OF MATERIAL FOR ONE INSPECTION PLATFORM

QUANTITIES ARE INCLUDED IN BENT BILL OF MATERIALS					
BAR	No.	SIZE	TYPE	LENGTH	WEIGHT
R1	480	#5	STR.	5'-3"	2,628
R2	16	#5	STR.	6'-6"	108
R3	60	#4	STR.	26'-5"	1,059
R4	10	#4	STR.	10'-8"	71
R5	45	#4	1	3'-10"	115

EPOXY COATED
REINFORCING STEEL 3,981 LBS.
CLASS AA CONCRETE 20.1 C.Y.
2" Ø GALVANIZED STEEL PIPE RAIL 255.0 L.F.

BAR TYPE



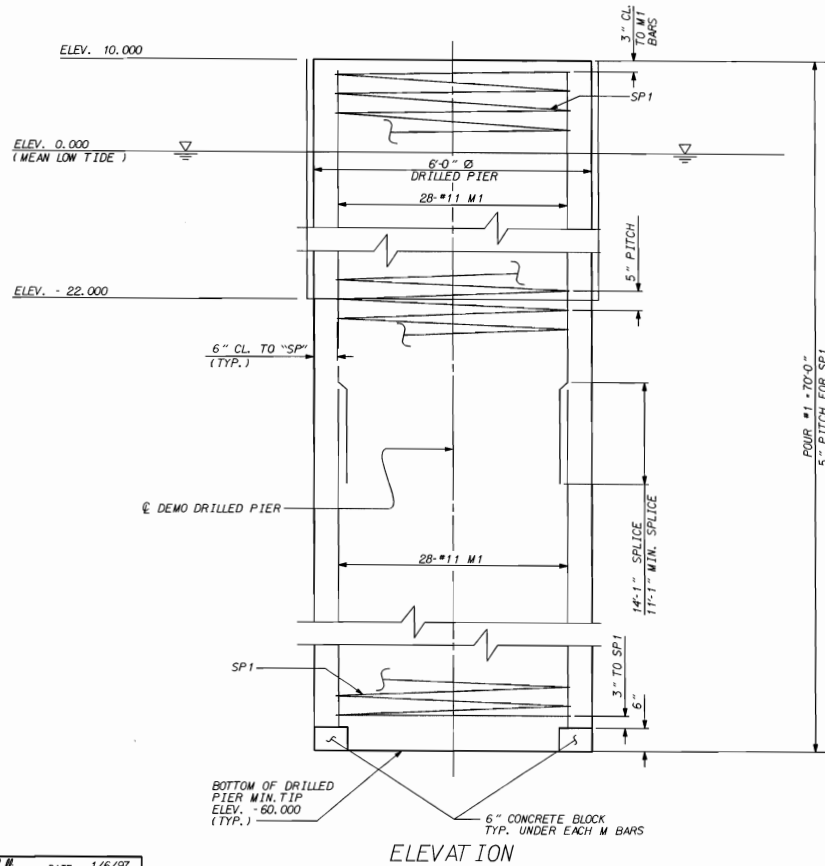
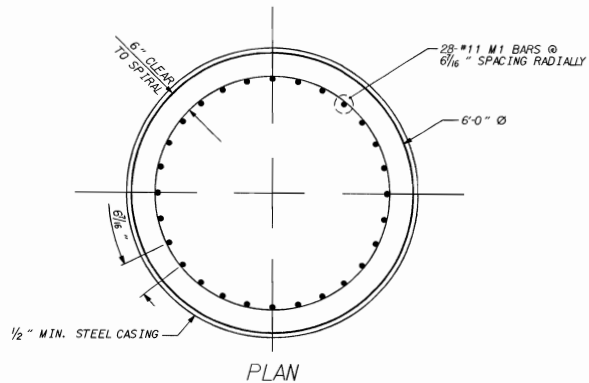
PROJECT NO. U-2107BA
ONSLow COUNTY
STATION: 277+50.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
BENT
INSPECTION PLATFORM
DETAILS

BENTS #1, #2, #4, #5, #6, #8,
#9, #10, #12, #13, AND #14

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



NOTES

ALL REINFORCING STEEL SHALL BE EPOXY COATED.

ALL CONCRETE SHALL BE CLASS "AA" CONCRETE.

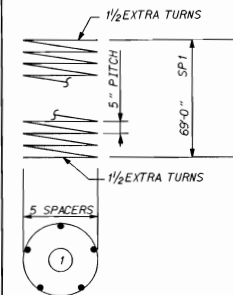
FOR AXIAL COMPRESSIVE LOAD TEST OF DRILLED
PIER, SEE SPECIAL PROVISIONS.

FOR OPTIONAL MECHANICAL BUTT SPLICE. SEE SPECIAL PROVISION
FOR "MECHANICAL BUTT SPLICING FOR REINFORCING STEEL."

FOR DEMONSTRATION DRILLED PIER, SEE SPECIAL PROVISIONS FOR "DRILLED PIERS".

BAR TYPES

ALL BARS ARE OUT TO OUT.



BILL OF MATERIAL

~~DEMO DRILLED PIER~~

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
M1	56	#11	STR.	41'-8"	12,397

EPOXY REINFORCING STEEL	/LBS.	12,397
-------------------------	-------	--------

SP 1	1		/	1	2621'-9"	2734
------	---	--	---	---	----------	------

~~DRI LLED PIERS~~

CONCRETE BREAKDOWN

CLASS AA CONCRETE
POUR #1 DRILLED PIERS C.Y. 73.3

6' - 0" DIA. DRILLED PIERS \ 70 L.F.

6' - 0" DIA. PERMANENT STEEL CASING	32.00 L.F.
--	------------

PROJECT NO. U-2107BA

ON SLOW COUNTY

STATION: 277+50.00 -L-

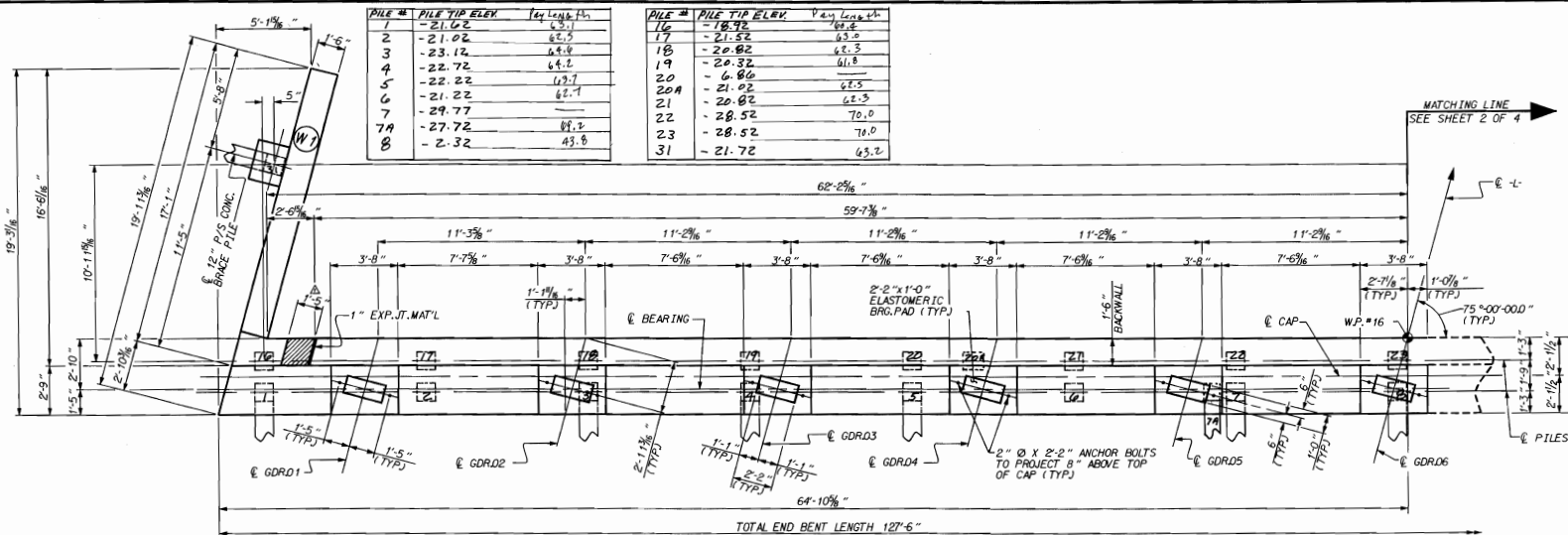
11/13/98

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

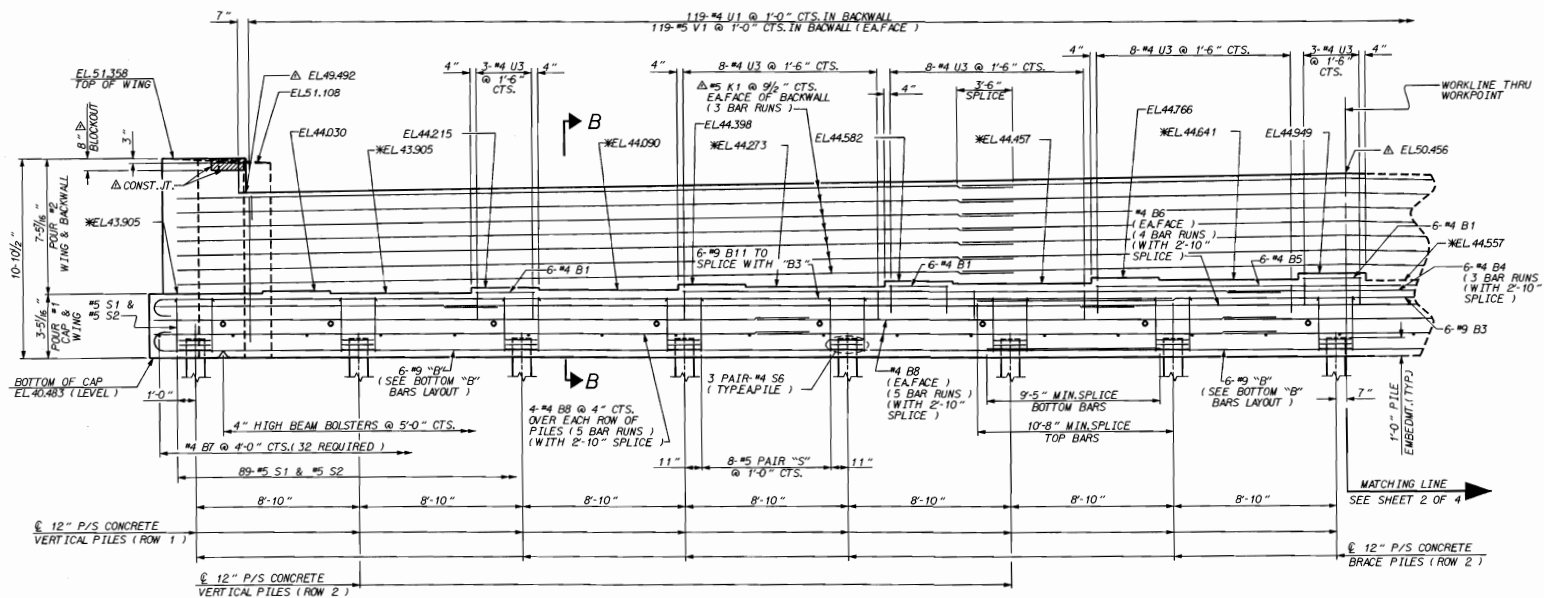
DEMONSTRATION
DRILLED PIER

REVISIONS						SHEET NO. S-154
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 170
2			4			

DRAWN BY : N. M. Ruffa DATE : 1/6/97
CHECKED BY : O. R. AZIZI, PE DATE : 1/7/97



PARTIAL PLAN



PARTIAL ELEVATION

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.

PIPE DRAINS MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR REINFORCING STEEL AND ANCHOR BOLTS.

FOR PIPE DRAIN DETAILS, SEE SHEET 4 OF 4.

12\"/>

BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

THE TOP SURFACE AREAS OF THE END BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THAT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

THE TOP SURFACE OF THE END BENT CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE BACK FACE AT THE RATE OF 1/4\"/>

THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4\"/>

ALL REINFORCING STEEL SHALL BE EPOXY COATED.

Δ THE CONCRETE IN THE SHADED AREA OF THE WING WALL BE POURED AFTER THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

Δ REV. #1: REVISED THE BACKWALL ELEVATIONS, AND THE SPACING OF \"X\" BARS IN BACKWALL SHOWN IN \"PARTIAL ELEVATION\". ADDED WING BLOCKOUT DETAILS TO BOTH PARTIAL PLAN AND ELEVATION. ADDED NOTE CONCERNING BLOCKOUT IN WING.

BY: TLA DATE: 4/03/00
CHECKED BY: CTR DATE: 4/04/00



* FOR LOCATION OF ELEVATION BETWEEN BRIDGE SEAT BUILDUPS, SEE SECTIONS SHEET 4 OF 4.

PROJECT NO. U-2107BA

ONSLOW COUNTY

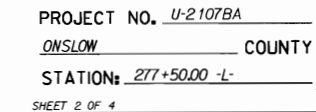
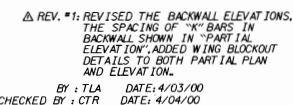
STATION: 277+50.00 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT #2					
REVISIONS					SHEET NO. 155
NO.	BY	DATE	NO.	BY	
1			3		TOTAL SHEETS 170

DRAWN BY: G.D. CARROLL DATE: 9/96
CHECKED BY: J.W. CARROLL DATE: 9/96

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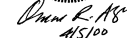
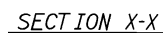
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
 HAULING

***SUBSTRUCTURE
 END BENT #2***

REVISONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	156
1			3			TOTAL SHEETS 170
2			4			

DRAWN BY : G.D. CARROLL DATE : 7/96
CHECKED BY : T.N. CARROLL DATE : 7/96

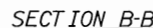
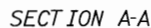
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SHEET 3 OF 4

SUBSTRUCTURE
END BENT #2

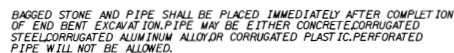
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CHECKED BY : CTR DATE: 4/04/00



CONCRETE DISPLACED BY 12" P/S CONCRETE
PILES HAS BEEN DEDUCTED.



BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.



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



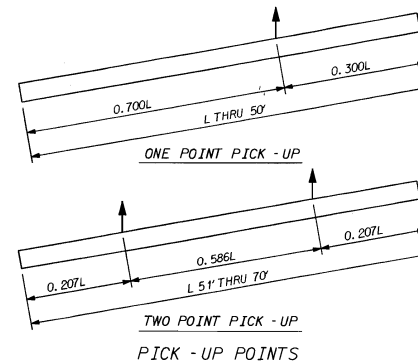
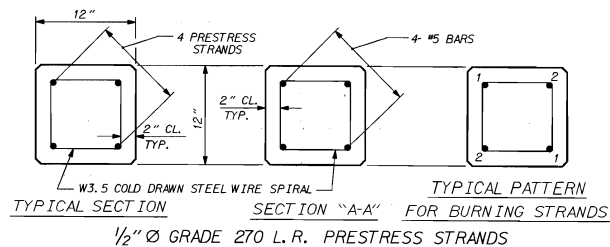
Donna R. Ayers
4/5/00

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT #2

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QUANTITIES FOR ONE 12" PRESTRESSED PILE						
LENGTH	CONCRETE CU. YDS.	PILE WT. TONS	ONE PICK-UP POINT		TWO PICK-UP POINT	
			0.300L	0.700L	0.207L	0.596L
25'-0"	0.91	1.85	7'-6"	17'-6"		
30'-0"	1.10	2.22	9'-0"	21'-0"		
35'-0"	1.28	2.59	10'-6"	24'-6"		
40'-0"	1.46	2.96	12'-0"	28'-0"		
45'-0"	1.64	3.33	13'-6"	31'-6"		
50'-0"	1.83	3.70	15'-0"	35'-0"		
55'-0"	2.01	4.07			11' - 4 1/2"	32' - 3"
60'-0"	2.19	4.44			12' - 5"	35' - 2"
65'-0"	2.37	4.81			13' - 5 1/2"	38' - 1"
70'-0"	2.56	5.18			14' - 6"	41' - 0"

STEEL PILE TIP DETAILS

NOTES

WHEN NOTED ON GENERAL DRAWING, THE CONTRACTOR, AT HIS OPTION, MAY SUBSTITUTE 12" PRESTRESSED CONCRETE PILES WITH STEEL PILE TIPS, AS SHOWN IN THE DETAILS, IN LIEU OF HP 12 X 53 STEEL PILES.

~~THE STEEL PILE TIP SHALL NOT BE INCLUDED IN DETERMINING THE LENGTH OF THE PILE FOR PAYMENT.
THE COST OF THE STEEL PILE TIP UNIT SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR LINEAR
FEET OF PILES.~~

~~PLATE AND SWEDGE BOLTS SHALL MEET THE REQUIREMENTS OF AASHTO M270 GRADE 36.~~

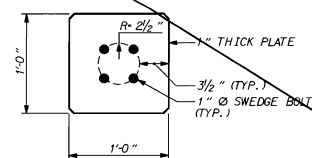
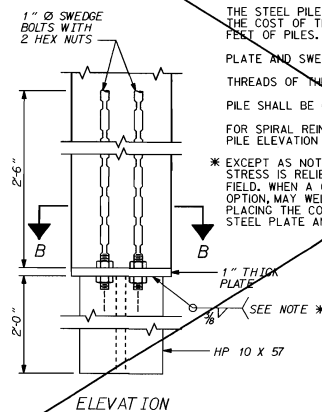
THREADS OF THE SWEDGE BOLTS SHALL BE BURRED AT THE FACE OF THE NUT.

PILE SHALL BE CAST WITH SWEDGE BOLTS AND PLATE IN PLACE.

FOR SPIRAL REINFORCING AND PRESTRESSING STRAND DETAILS. S

PILE ELEVATION AND TYPICAL SECTION.

~~EXCEPT AS NOTED BELOW THE HP 10 X 57 SECTION SHALL BE WELDED TO THE STEEL PLATE AFTER STRAND STRESS IS RELIEVED. THE HP 10 X 57 SECTION MAY BE WELDED IN THE PRESTRESSER'S YARD OR IN THE FIELD. WHEN A CIRCULAR STRAND PATTERN AS SHOWN ON THE PLAN IS USED, THE CONTRACTOR, AT HIS OPTION, MAY WELD THE HP 10 X 57 SECTION TO THE STEEL PLATE AT THE FABRICATION PLANT PRIOR TO PLACING THE CONCRETE. THE FLANGES OF THE HP SECTION SHALL BE PARALLEL TO THE EDGES OF THE STEEL PLATE AND CONCRETE PILE.~~



SECTION B-B

(HOLES FOR STRANDS NOT SHOWN)

NOTES

CONCRETE DESIGN DATA : $f'_c = 5.000$ PSI ; $f_c = 2.000$ PSI

IMPACT IN HANDLING = 50%.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE PILE SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 3,500 PSI.

IN DRIVING PILES, A METHOD APPROVED BY THE ENGINEER SHALL BE USED, WHEREBY THE HEAD OF THE PILE IS NOT DAMAGED.

PROPOSED DEVICES FOR LIFTING PILES, RECESS DETAILS, AND PATCHING MATERIAL SHALL BE DETAILED IN SHOP DRAWINGS. AFTER ATTACHMENTS HAVE BEEN REMOVED, OPENINGS SHALL BE REPAIRED SUCH THAT THE APPEARANCE OF THE PILE IS UNIFORM.

WHERE CAST - IN - PLACE LIFTING DEVICES ARE NOT USED, PICK-UP POINTS TO BE INDICATED WITH A BLACK MARK 2" WIDE.

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW-RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO ASTM A-416 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS.

THE CONTRACTOR SHALL USE THE FOLLOWING STRAND TYPE:

SIZE	GRADE	NUMBER OF STRANDS	AREA	ULTIMATE STRENGTH	APPLIED PRESTRESS FORCE
1/2"	270 L. R.	4	0.153	41,300* PER STRAND	30,980* PER STRAND

THE SLIP-FORM METHOD OF CASTING PILES WILL NOT BE PERMITTED.

IF STRAND STRESS IS RELIEVED BY BURNING, THE STRANDS SHALL BE BURNED IN PAIRS, EXCEPT WHERE 5 STRANDS ARE USED THE LAST STRAND MAY BE BURNED SINGLY, ACCORDING TO BURNING PATTERNS SHOWN. NOT MORE THAN 4 STRANDS MAY BE BURNED AT ANY ONE SECTION BEFORE THE SAME STRANDS ARE BURNED AT BOTH ENDS OF THE BED AND BETWEEN EACH PAIR OF PILES IN THE BED.

BUILD-UPS SHALL BE 'CLASS A' CONCRETE WITH 20% ADDITIONAL CEMENT. NO DRIVING OF THE BUILT-UP PILE WILL BE PERMITTED UNTIL THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF 3,000 PSI AND UNTIL A PERIOD OF SEVEN DAYS HAS ELAPSED SINCE CASTING OF THE BUILD-UP.

ALL CORNERS TO BE CHAMFERED 3/4 " .

THE WATER/CEMENT RATIO FOR PRESTRESSED CONCRETE PILES SHALL NOT EXCEED 0.40".



PROJECT NO. U-2107BA

ON SLOW COUNTY

STATION: 277+50.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RAI FIGH

STANDARD
12" PRESTRESSED
CONCRETE PILE

OCT

REVISION:

1977

SHEET NO.
S-159

5	100
	TOTAL SHEETS

STD, NO, PCP1

ASSEMBLED BY : <u>G. D. CARROLL</u>	DATE : <u>12/96</u>	SPECIAL
CHECKED BY : <u>T. N. CARROLL</u>	DATE : <u>12/96</u>	
DRAWN BY : <u>F. C. JONES</u>	DATE : <u>7/12/88</u>	STANDARD
CHECKED BY : <u>C. R. KING</u>	DATE : <u>3/1/89</u>	

REV. 6/1/94 EEM (A) GRP
REV. 6-16-95 EEM (A) RCW

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greg

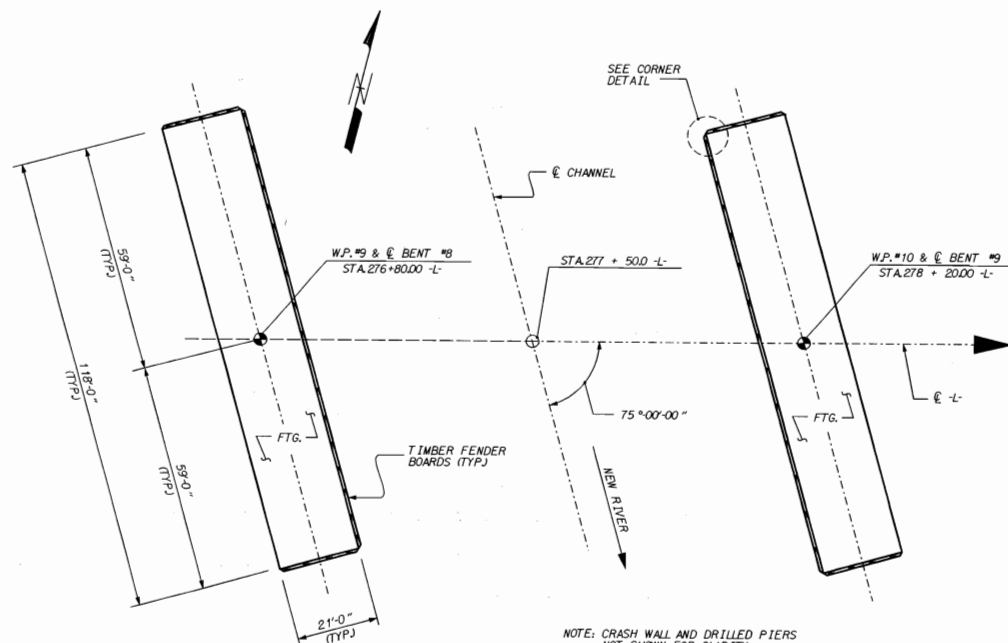
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NOTES :

EACH TREATED TIMBER BOARD MAY NOT EXCEED 16'-0" IN LENGTH, AND SHALL CONTAIN AT LEAST THREE SETS OF FASTENERS SPACED AT A MAXIMUM OF 6'-6".

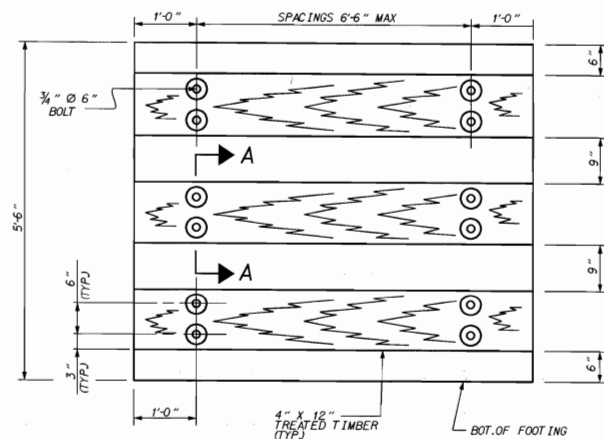
THE 3/4" Ø CONCRETE INSERTS SHALL BE CLOSED-END FERRULES WITH LOOPED WIRE STRUTS ATTACHED TO THEM THE INSERTS SHALL CONFORM TO ASTM A108, GRADE 12L14 AND SHALL HAVE A TENSILE WORKING LOAD CAPACITY OF 3 KIPS

FOR TIMBER FENDER BOARDS AT CHANNEL BENTS, SEE SPECIAL PROVISIONS.

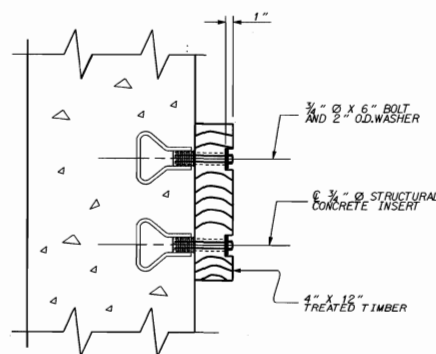


NOTE: CRASH WALL AND DRILLED PIERS NOT SHOWN FOR CLARITY.

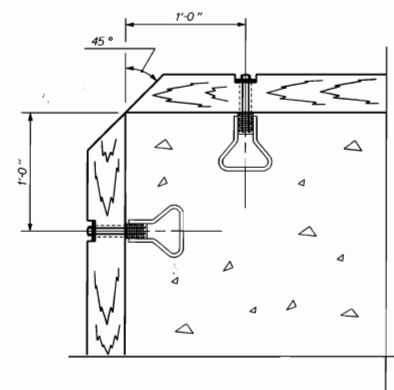
CHANNEL BENT FOOTING LAYOUT



ELEVATION

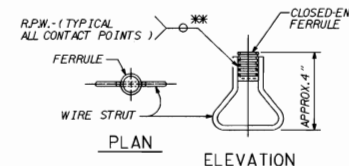


SECTION A-A



CORNER DETAIL

(TYP. EACH CORNER)



CONCRETE INSERT

** EACH WELDED ATTACHMENT OF WIRE TO FERRULE SHALL DEVELOP THE TENSILE STRENGTH OF THE WIRE.

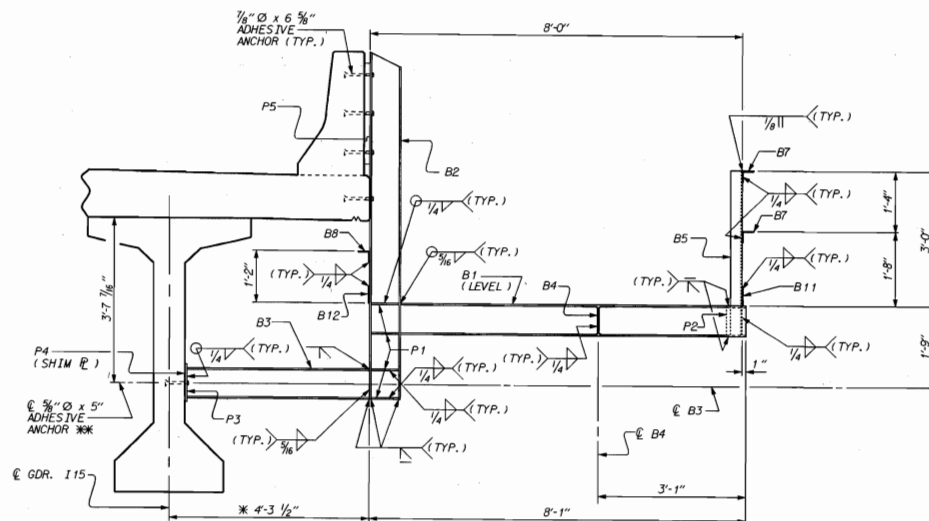


PROJECT NO. U-2107BA
ONSLow COUNTY
STATION: 277+50.00 -L-

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			5-160
2			4			170

DRAWN BY: DCHAPMAN DATE: 11/96
CHECKED BY: T. YANG DATE: 11/96

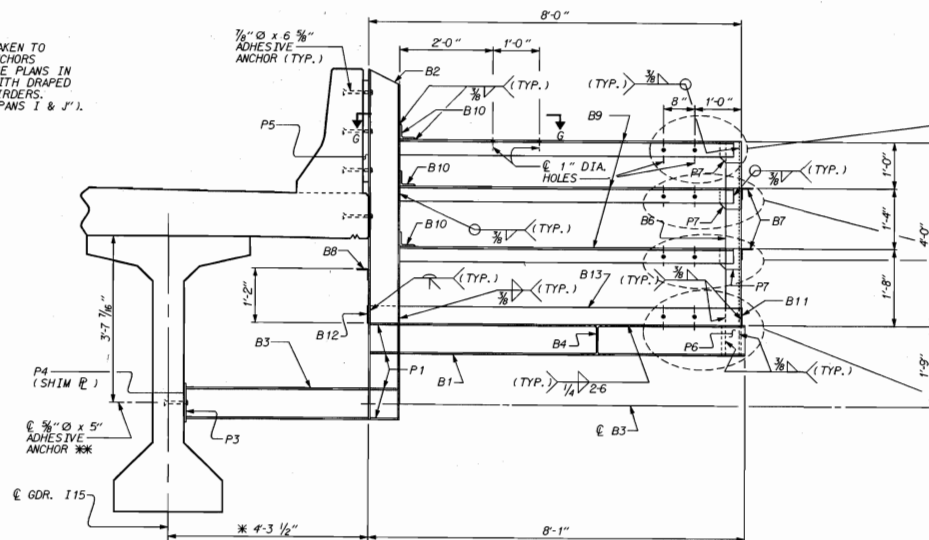
TIMBER FENDER BOARDS
@ BENTS #8 & #9



SECTION C-C

* NOTE :
 THIS DIMENSION TO BE CHECKED IN
 THE FIELD BEFORE FABRICATION.
 P4 SHIM P's MAY BE USED AS REQUIRED.
 MAXIMUM THICKNESS OF SHIM P's SHALL
 BE 3/8" TOTAL.

** NOTE :
 EXTREME CARE SHOULD BE TAKEN TO
 ACCURATELY LOCATE THESE ANCHORS
 TO DIMENSIONS SHOWN ON THE PLANS IN
 ORDER TO AVOID CONFLICT WITH DRAPED
 STRANDS IN PRESTRESSED GIRDERS.
 (SEE GIRDER SHEET FOR "SPANS 1 & 1'").



SECTION E-E

NOTES :

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 36.

ALL STRUCTURAL MEMBERS, INCLUDING OPEN GRID FLOOR, SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION PER STANDARD SPECIFICATIONS, AND SHALL BE PAINTED WITH A TOP COAT OF ACRYLIC PAINT 2-4 MILS (DFT) AS PER STANDARD SPECIFICATION 1080-13.

THE GALVANIZED SURFACE SHALL BE CLEANED TO (SSPC SP-1) PRIOR TO COATING.

ALL FABRICATION SHALL CONFORM TO THE APPLICABLE SECTION OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.

OPEN GRID FLOOR SHALL BE WELDED SECURELY TO EACH HORIZONTAL FLOOR MEMBER (B1).

FOR SOLAR ARRAY SUPPORT PLATFORM, SEE SPECIAL PROVISIONS FOR "SOLAR ARRAY SUPPORT PLATFORM/CHAIN LINK FENCE".

FOR ADHESIVE ANCHOR SYSTEM, SEE SPECIAL PROVISION FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS.

ADHESIVE ANCHOR SYSTEM SHALL HAVE A MINIMUM PULLOUT STRENGTH OF 7.5 KIPS. A MINIMUM OF EIGHT (8) ANCHORS SHALL BE TESTED. IF ANY ANCHOR FAILS THE CONTRACTOR SHALL, AT HIS EXPENSE, TEST ALL ANCHORS UNLESS DIRECTED OTHERWISE BY THE ENGINEER.

THE ENTIRE COST FOR THE LABOR AND MATERIALS NECESSARY TO FABRICATE AND INSTALL SOLAR ARRAY SUPPORT PLATFORM SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR THE "SOLAR ARRAY SUPPORT PLATFORM/CHAIN LINK FENCE".

ADHESIVE ANCHORS SHALL BE ASTM F593 TYPE 305 STAINLESS STEEL HEX NUTS SHALL BE STAINLESS STEEL AND MEET THE REQUIREMENTS OF ASTM F594. WASHERS SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.

IN LIEU OF GALVANIZING AND PAINTING WITH A TOP COAT, THE CONTRACTOR MAY AT HIS OPTION UPON COMPLETION OF SHOP FABRICATION BLAST CLEAN AND METALLIZE THE STRUCTURAL STEEL (EXCLUDING STAINLESS STEEL NUTS, BOLTS, AND WASHERS TO A MINIMUM THICKNESS OF 8 MILS. SEE SPECIAL PROVISION FOR THERMAL SPRAYED COATINGS (METALLIZATION)).

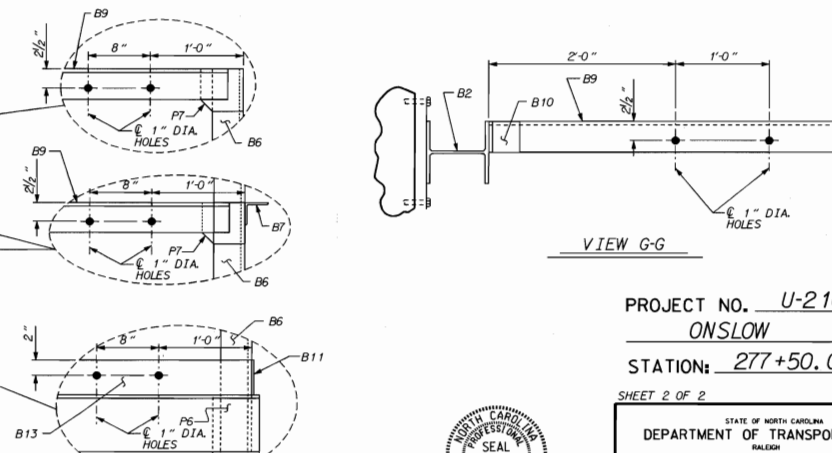
ALL METALLIZED SURFACES SHALL RECEIVE A SEAL COATING AS SPECIFIED IN THE SPECIAL PROVISION, THERMAL SPRAYED COATINGS (METALLIZATION).

BILL OF MATERIAL

ITEM	NUMBER	DESCRIPTION	LENGTH ***
B1	7	W8 x 31	7'-5"
B2	7	W8 x 31	7'-7"
B3	7	W8 x 31	3'-11"
B4	6	W8 x 31	2'-5 3/4"
B5	5	L 3 x 3 x 1/4	3'-8"
B6	2	L 4 x 4 x 1/2	4'-8"
B7	2	L 3 x 3 x 1/4	16'-4"
B8	1	L 3 x 3 x 1/4	15'-8"
B9	6	L 4 x 4 x 1/2	7'-2"
B10	6	L 4 x 4 x 1/2	0'-4"
B11	1	P 1/4 x 4 1/2	16'-4"
B12	1	P 1/4 x 4 1/2	16'-0"
B13	2	P 1/2 x 4 1/2	8'-0"
B14	5	3/4" DIA RUNG	2'-4"
P1	56	P 1/6 x 3 3/4 x 7	---
P2	5	P 1/4 x 5 x 8	---
P3	7	P 1/2 x 9 x 10	---
P4	AS REQ'D	P 1/4 x 9 x 10	---
P5	7	P 1 1/2 x 17 x 26	---
P6	2	P 1/2 x 6 x 8	---
P7	6	P 1/2 x 5 1/2 x 5 1/2	---

1" x 4" OPEN GRID FLOOR W/ 3/4" x 3/8" BEARING BARS
 1/8" x 6 3/8" ADHESIVE ANCHOR (56 REQUIRED)
 3/8" x 5" ADHESIVE ANCHOR (7 REQUIRED)

*** LENGTHS OF MEMBERS MAY BE ADJUSTED
 IF REQUIRED BY FABRICATOR.



VIEW G-G

PROJECT NO. U-2107BA

ONSLow COUNTY

STATION: 277+50.00 -L-

SHEET 2 OF 2



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SOLAR ARRAY
 SUPPORT PLATFORM
 DETAILS

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			5-162
2			4			170

NOTES :

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 36.

CHAIN LINK FENCE FABRIC, FENCE POSTS, HARDWARE AND ACCESSORIES SHALL BE GALVANIZED STEEL. SEE STANDARD SPECIFICATIONS.

GATE, HINGES, AND LATCH SHALL BE DESIGNED TO PERMIT THE GATE OUTWARD (AWAY FROM TRAFFIC) ONLY. HINGES AND LATCH SHALL BE REASONABLY TAMPER RESISTANT. MAKE PROVISIONS FOR LATCH TO BE SECURED BY PADLOCK.

ADHESIVE ANCHOR SYSTEM SHALL HAVE A MINIMUM PULLOUT STRENGTH OF 7.5 KIPS. A MINIMUM OF FOUR (4) ANCHORS SHALL BE TESTED. IF ANY ANCHOR FAILS, THE CONTRACTOR SHALL, AT HIS EXPENSE, TEST ALL ANCHORS UNLESS DIRECTED OTHERWISE BY THE ENGINEER.

FOR ADHESIVE ANCHOR SYSTEM, SEE SPECIAL PROVISION FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS.

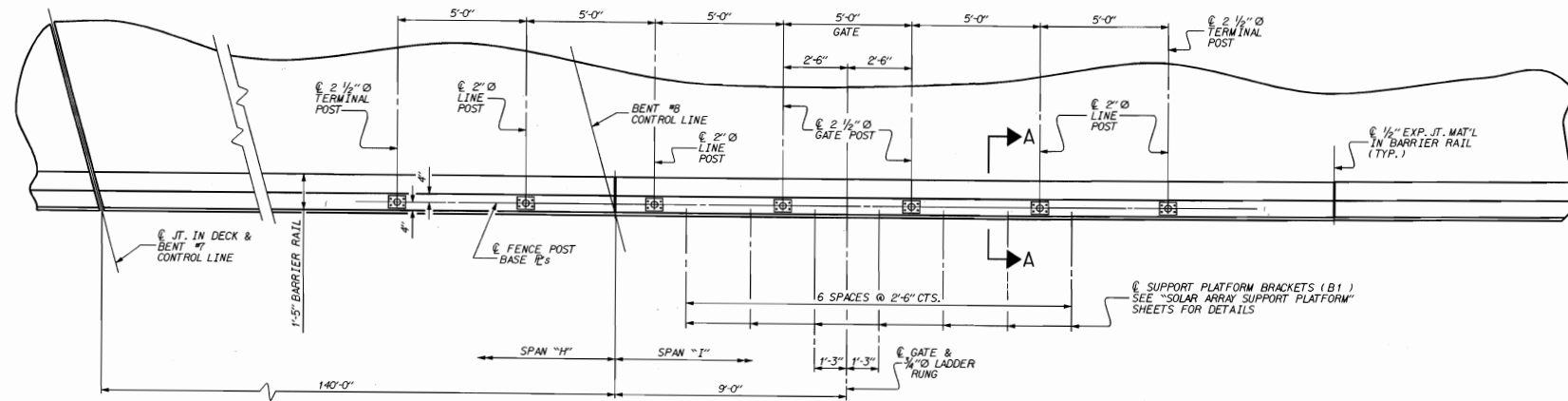
THE ENTIRE COST FOR THE LABOR AND MATERIALS NECESSARY TO INSTALL CHAIN LINK FENCE SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR THE "SOLAR ARRAY SUPPORT PLATFORM/CHAIN LINK FENCE".

LINEAR FEET OF CHAIN LINK FENCE - 30 FEET.

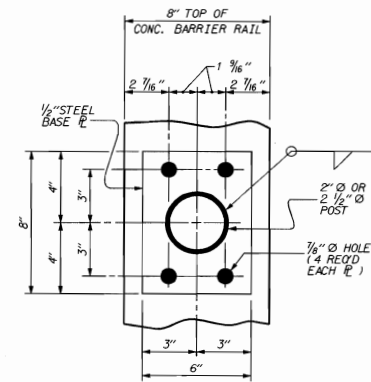
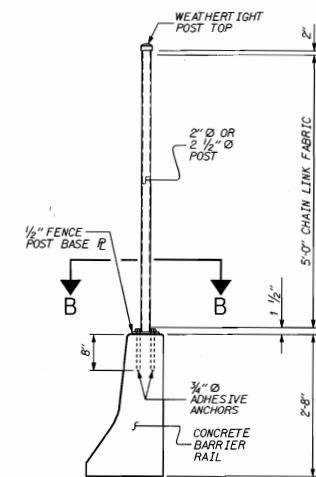
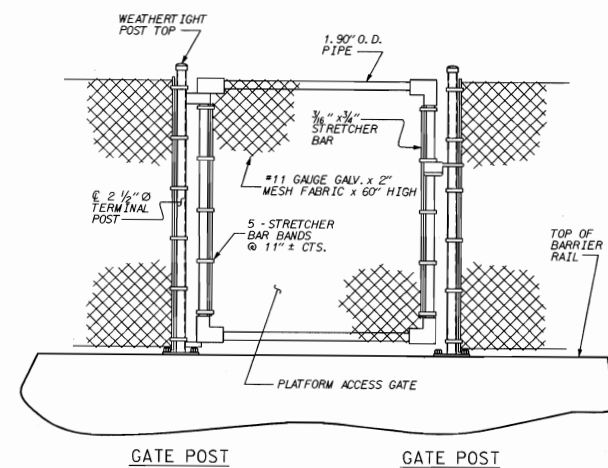
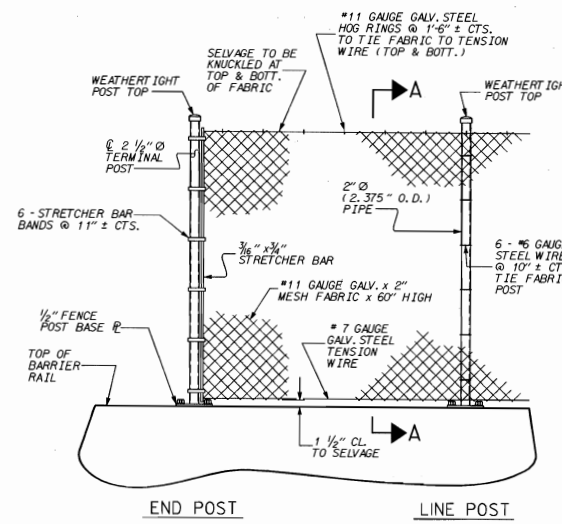
ALL STRUCTURAL STEEL SHALL BE GALVANIZED AFTER FABRICATION PER STANDARD SPECIFICATION.

ADHESIVE ANCHORS SHALL BE ASTM F593 TYPE 305 STAINLESS STEEL. HEX NUTS SHALL BE STAINLESS STEEL AND MEET THE REQUIREMENTS OF ASTM F594. WASHERS SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.

THE BASE PLATE AND FENCE POST SHALL BE WELDED PRIOR TO GALVANIZATION.



PLAN OF FENCE POST SPACING



SECTION B-B

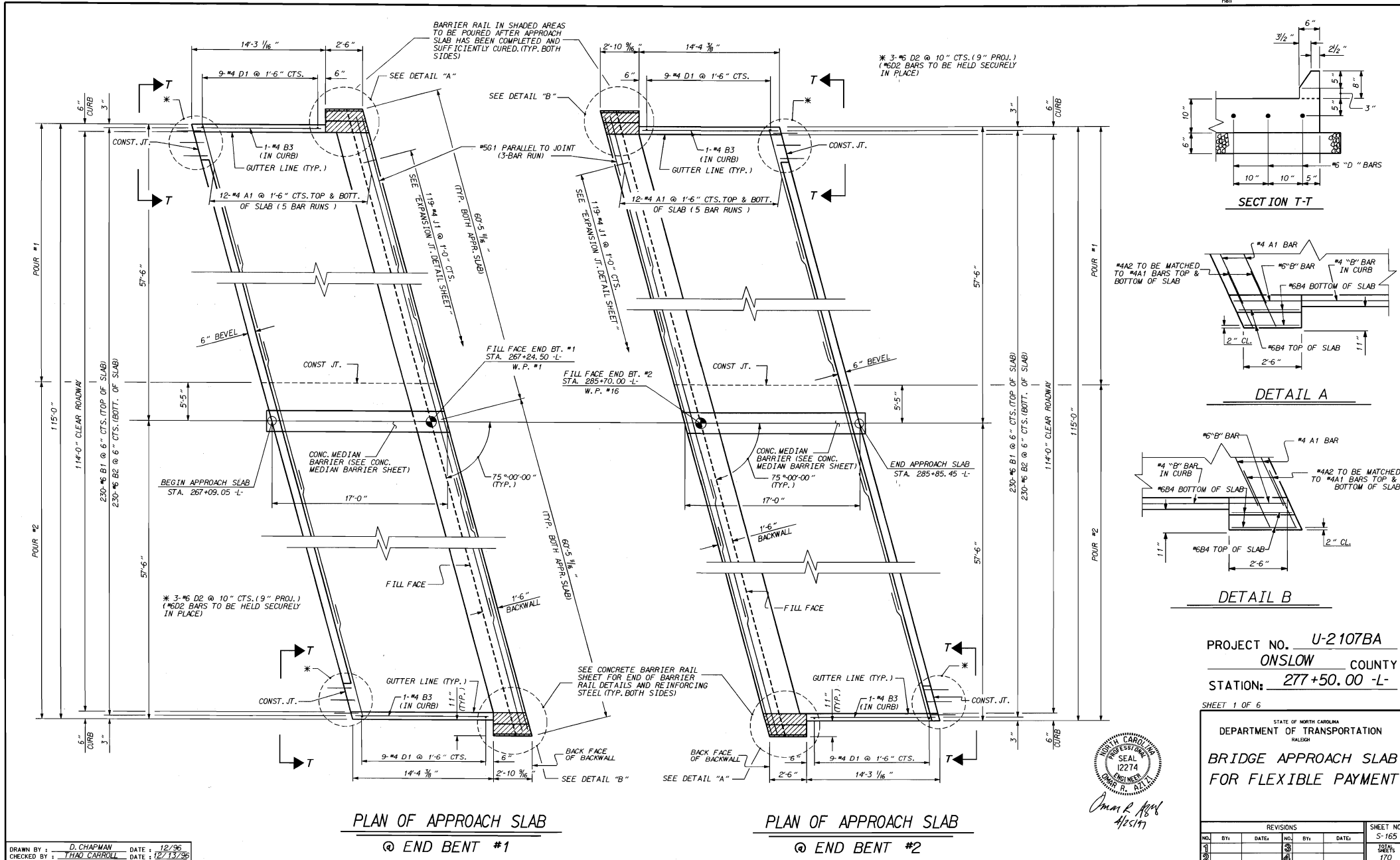
BASE PLATE DETAIL
 PROJECT NO. U-2107BA
 ONSLOW COUNTY
 STATION: 277+50.00 -L-

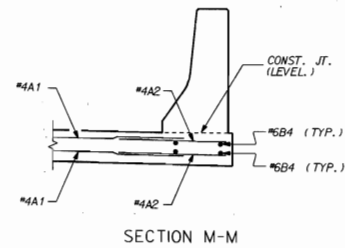
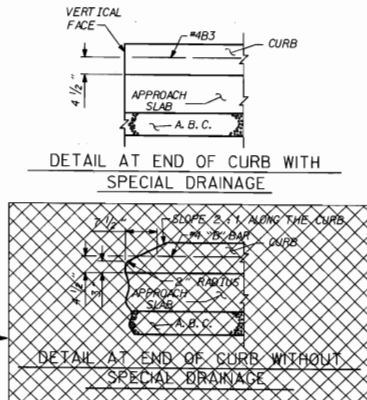
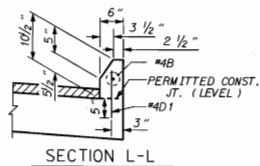
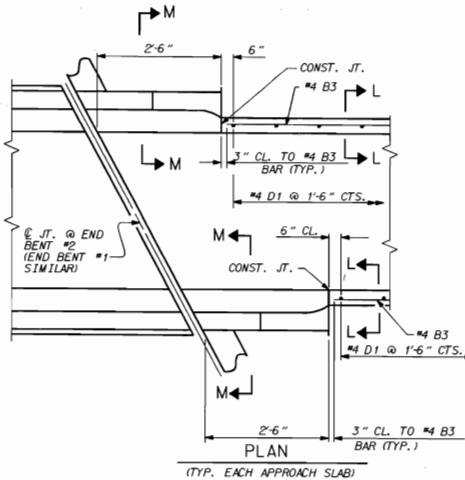


SECTION A-A

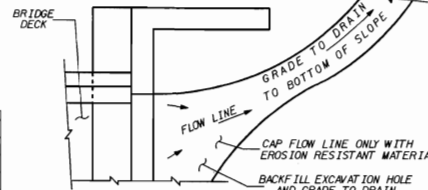
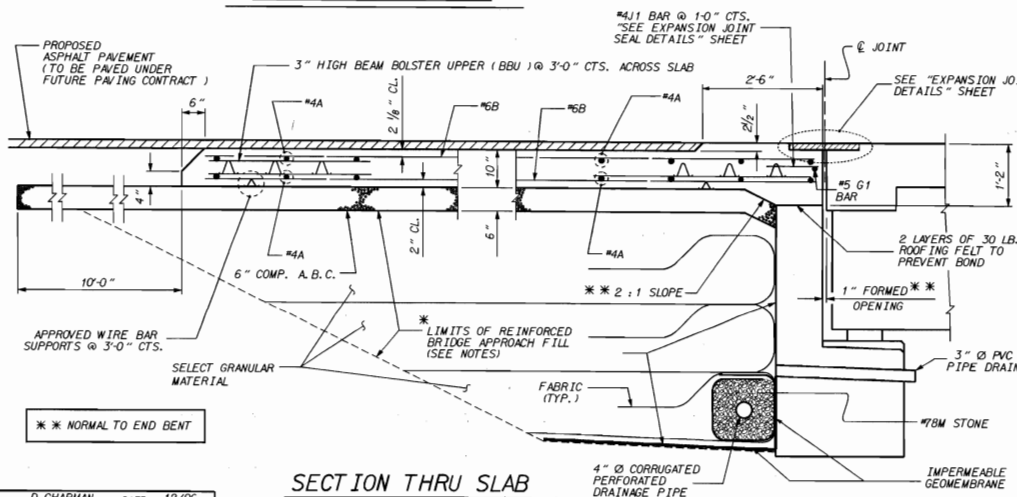
FENCE DETAILS ON BARRIER RAIL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			5-163
2			4			
TOTAL SHEETS						170



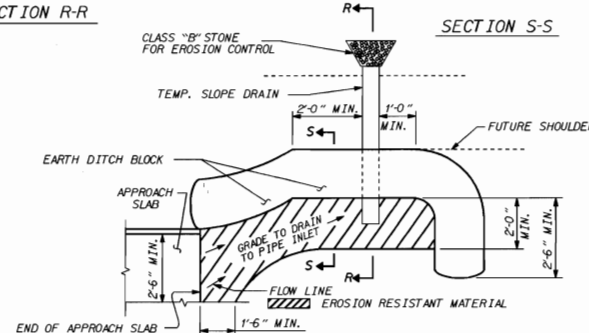
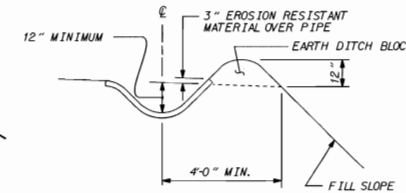
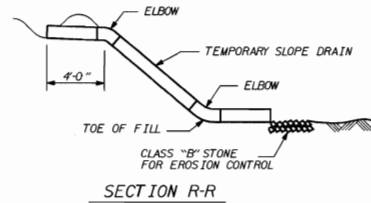


CURB DETAILS



NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT TO THE STRUCTURE. THE CONTRACTOR WILL BE REQUIRED TO REMOVE THESE MATERIALS PRIOR TO CONSTRUCTION OF THE APPROACH SLAB.

TEMPORARY DRAINAGE DETAIL



NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 2" DEPTH, 2) EROSION CONTROL MAT, OR 3) CONCRETE, AS DIRECTED BY THE ENGINEER. THE SLOPE DRAIN SHALL CONSIST OF A NON-PERFORATED TEMPORARY DRAINAGE PIPE, 12 INCHES IN DIAMETER.

TEMPORARY BERM AND SLOPE DRAIN DETAILS

NOTES

* FOR REINFORCED BRIDGE APPROACH FILL INCLUDING FABRIC, IMPERMEABLE GEOMEMBRANE, 4" Ø DRAINAGE PIPE, 750M STONE, AND SELECT GRANULAR FILL, SEE SHEET 3 OF 6.

TEMPORARY DRAINAGE AND TEMPORARY BERM AND SLOPE DRAINS WILL BE PAID FOR UNDER THE LUMP SUM PRICE FOR BRIDGE APPROACH SLAB.

AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE.

THE 6" COMP. A.B.C. IS TO EXTEND 10'-0" BEYOND THE SLAB AS SHOWN AND 1'-0" OUTSIDE OF EACH EDGE OF SLAB.

THE CONTRACTOR MAY, AT HIS OPTION, USE EITHER 4" TYPE HB ASPHALT CONCRETE BASE COURSE OR 5" CLASS "A" CONCRETE IN LIEU OF 6" A.B.C. IF 5" CLASS "A" CONCRETE IS USED, THE CONCRETE SHALL BE FINISHED TO A SMOOTH SURFACE AND A LAYER OF 30 LB. ROOFING FELT SHALL BE PLACED BETWEEN THE CONCRETE BASE AND THE APPROACH SLAB TO PREVENT BOND. THE WIDTH OF THE CONCRETE BASE SHALL BE THE SAME WIDTH AS THE APPROACH SLAB. THE APPROACH SLABS SHALL NOT BE CAST UNTIL THE CONCRETE HAS REACHED AN AGE OF THREE CURING DAYS.

DOWELS MAY BE PUSHED INTO GREEN CONCRETE AFTER THE SLAB HAS BEEN SCREENED AND FLOAT FINISHED EXCEPT AS NOTED ON THE PLANS.

PAYMENT FOR BARRIER RAIL EXTENSIONS SHALL BE PAID FOR UNDER CONCRETE BARRIER RAIL.

FOR DETAILS OF THE BARRIER RAIL EXTENSION, SEE "STANDARD CONCRETE BARRIER RAIL EXTENSION."

FOR DETAILS OF MEDIAN BARRIER, SEE "CONCRETE MEDIAN BARRIER" SHEET.

ALL REINFORCING STEEL SHALL BE EPOXY COATED.

APPROACH GROOVING IS NOT REQUIRED.

BILL OF MATERIAL

END BENT #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	120	4	STR.	25'-4"	2031
A2	8	4	STR.	2'-9"	15
B1	230	6	STR.	16'-1"	5556
B2	230	6	STR.	16'-7"	5729
B3	2	4	STR.	13'-10"	18
B4	8	6	STR.	2'-3"	27
D1	18	4	STR.	0'-10"	10
D2	6	6	STR.	1'-6"	14
G1	3	5	STR.	42'-3"	132
J1	119	4	1	1'-5"	113

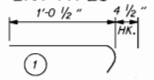
EPOXY COATED	13,645 LBS.
REINFORCING STEEL TOTAL	
CLASS AA CONC.	
POUR #1	29.4 C.Y.
POUR #2	35.5 C.Y.
TOTAL	64.9 C.Y.

END BENT #2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	120	4	STR.	25'-4"	2031
A2	8	4	STR.	2'-9"	15
B1	230	6	STR.	16'-1"	5556
B2	230	6	STR.	16'-7"	5729
B3	2	4	STR.	13'-10"	18
B4	8	6	STR.	2'-3"	27
D1	18	4	STR.	0'-10"	10
D2	6	6	STR.	1'-6"	14
G1	3	5	STR.	42'-3"	132
J1	119	4	1	1'-5"	113

EPOXY COATED	13,645 LBS.
REINFORCING STEEL TOTAL	
CLASS AA CONC.	
POUR #1	29.4 C.Y.
POUR #2	35.5 C.Y.
TOTAL	64.9 C.Y.

BAR TYPES



PROJECT NO. U-2107BA

ONSLOW COUNTY

STATION: 277+50.00 -L-

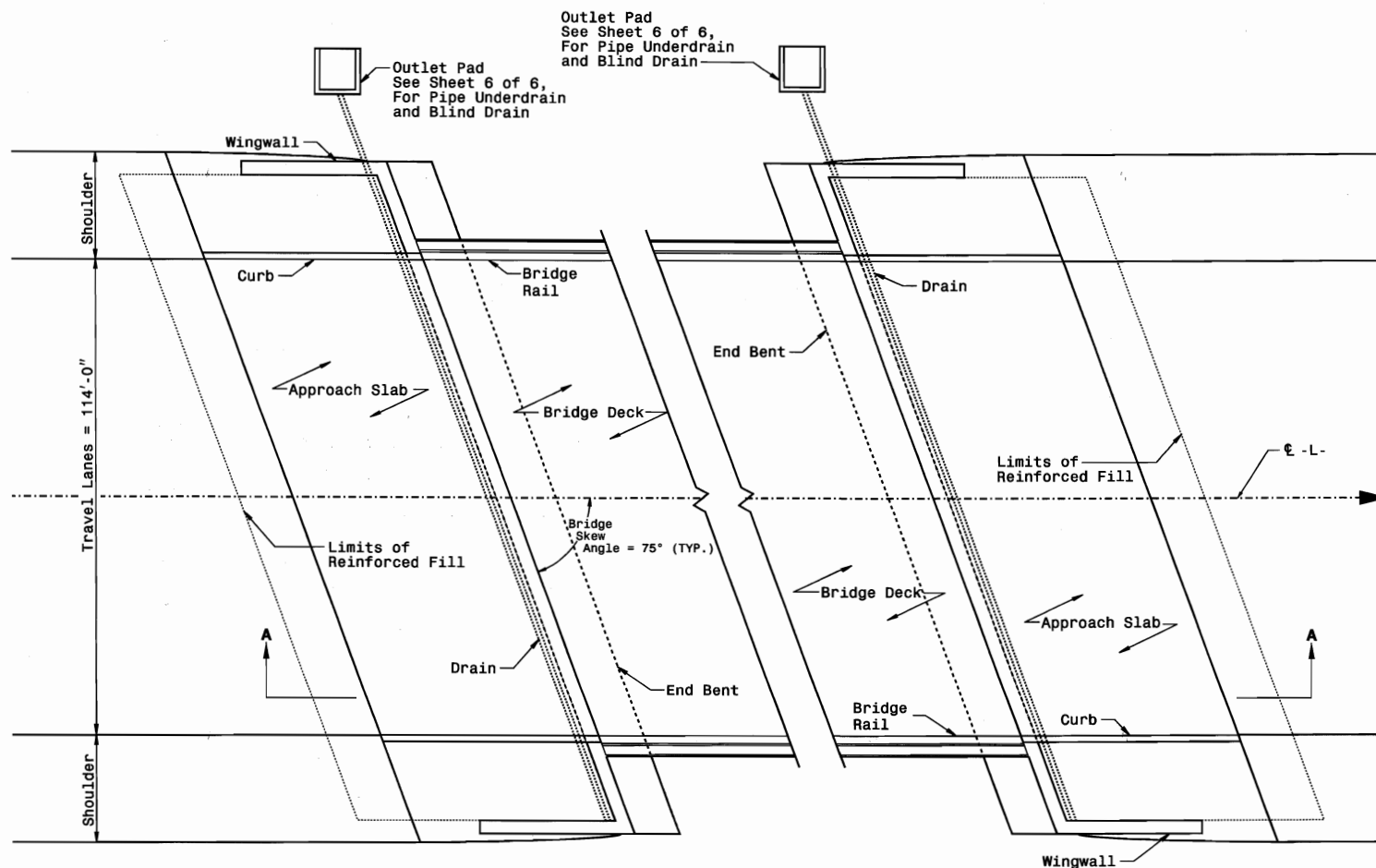
SHEET 2 OF 6

DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB
FOR FLEXIBLE PAVEMENT
WITH REINFORCED BRIDGE
APPROACH FILL

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

SHEET NO.
S-166
170



Plan View

REINFORCED BRIDGE APPROACH FILLS

PROJECT NO. U-2107BA

ONslow COUNTY

STATION: 277+50.00 -L-

SHEET 3 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

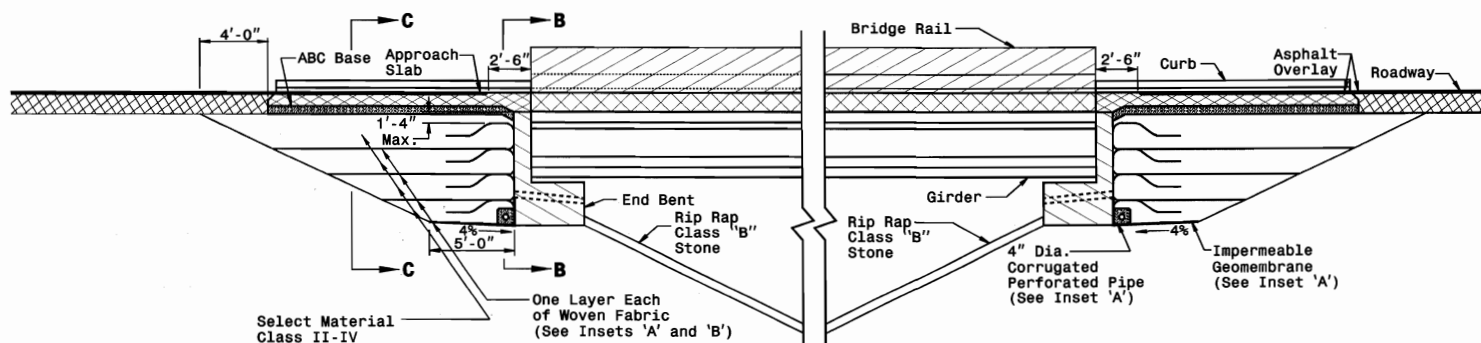
BRIDGE APPROACH SLAB
FOR FLEXIBLE PAVEMENT
WITH REINFORCED BRIDGE
APPROACH FILL

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			5-167
2			4			TOTAL SHEETS 170

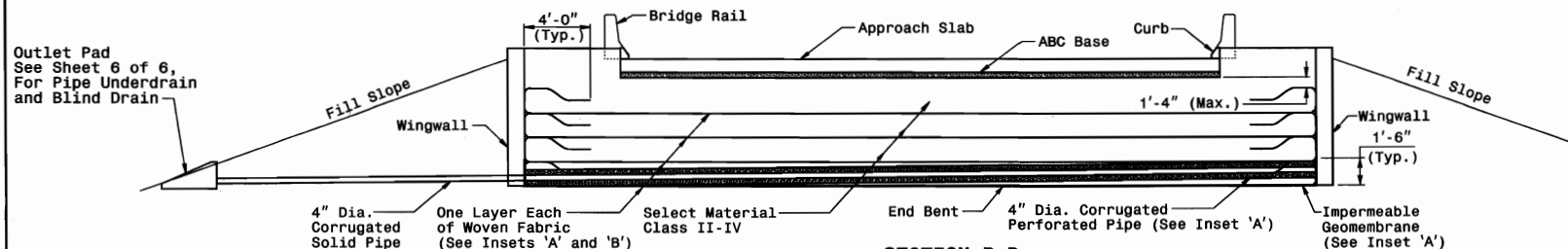
DRAWN BY: N. M. R. B. DATE: 1/28/97
CHECKED BY: O. R. AZIZI DATE: 3/20/97

NOTE

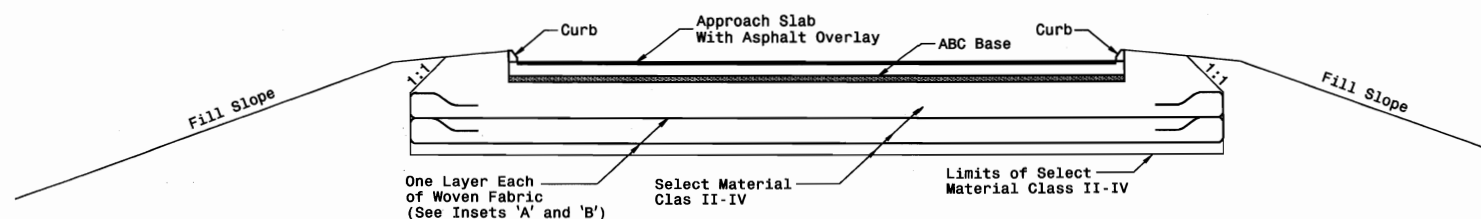
FOR INSETS 'A' AND 'B', SEE SHEET 5 OF 6.



SECTION A-A



SECTION B-B



SECTION C-C

REINFORCED BRIDGE APPROACH FILLS **PRESTRESSED GIRDER BRIDGE**

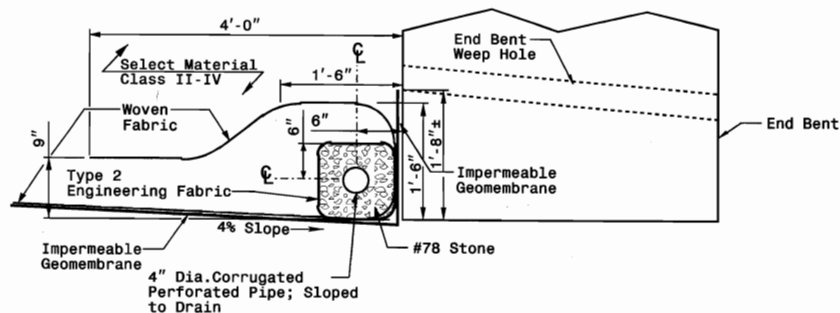
PROJECT NO. U-2107BA
ON ONSLOW COUNTY
STATION: 277+50.00 -L-

SHEET 4 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
BRIDGE APPROACH SLAB
FOR FLEXIBLE PAVEMENT
WITH REINFORCED BRIDGE
APPROACH FILL

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
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2			4			
TOTAL SHEETS						170

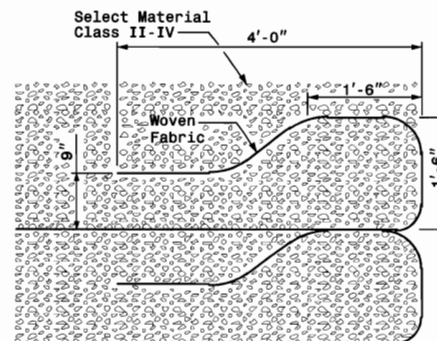
DRAWN BY: W.M.R.H. DATE: 1/28/97
CHECKED BY: G.B. A2121 DATE: 3/20/97



Girder Bridge
 Showing First Lift and Drains

Inset 'A'

Length of Bridge End Bent Inside Wingwalls		
If Bridge Skew is Less Than or Equal to 90°:		
$\frac{(\text{Roadway Width} + 7'-0")}{\sin (\text{Bridge Skew Angle})}$		= Dis. Between Wingwalls
If Bridge Skew is Greater Than 90°:		
$\frac{(\text{Roadway Width} + 7'-0")}{\cos (\text{Bridge Skew Angle} - 90^\circ)}$		= Dis. Between Wingwalls



Typical Fabric Lift and Wrap
 Showing Second and Above Lifts

Inset 'B'

Height of Backwall	Number of Fabric Layers
4'-6" - 5'-9"	3
5'-10" - 7'-2"	4
7'-3" - 8'-8"	5
8'-9" - 10'-1"	6
10'-2" - 11'-8"	7

Note: Cored Slab Structures
 Require 2 Fabric Layers.

REINFORCED BRIDGE APPROACH FILLS
 INSETS AND CHARTS

PROJECT NO. U-2107BA
ONslow COUNTY
 STATION: 277+50.00 -L-

SHEET 5 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 BALEIGH
 BRIDGE APPROACH SLAB
 FOR FLEXIBLE PAVEMENT
 WITH REINFORCED BRIDGE
 APPROACH FILL

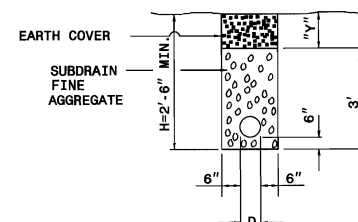
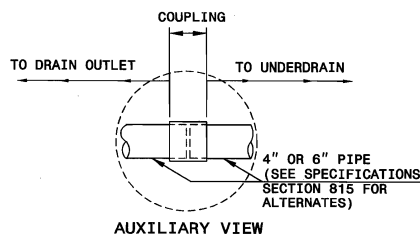
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			5-169
2			4			170

GENERAL NOTES:

WHEN PROOF ROLLING IS REQUIRED, THE
 PIPE UNDERDRAINS SHALL BE A MINIMUM OF 6' DEEP.

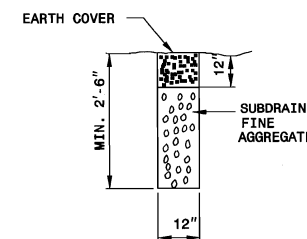
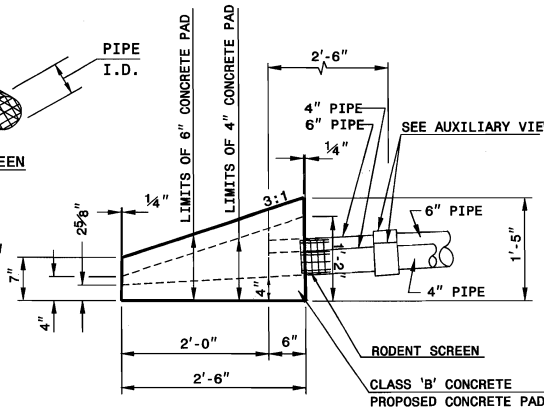
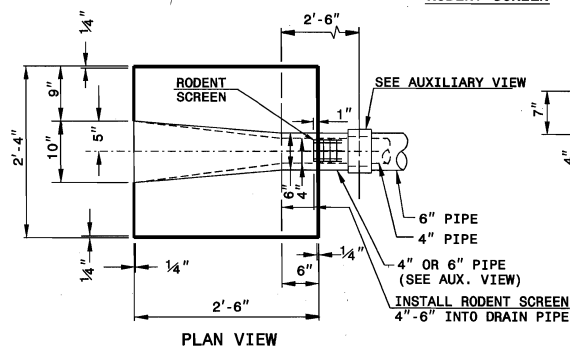
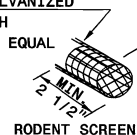
CONCRETE PAD NOTE:

PIPE OUTLET SHALL BE CONNECTED INTO DRAINAGE
 STRUCTURE WHEREVER POSSIBLE. IF NOT CON-
 NECTED TO DRAINAGE STRUCTURE, END OF PIPE
 SHALL BE PROTECTED BY CONCRETE PAD FOR
 OUTLET END OF UNDERDRAIN. PADS ARE NEEDED
 AT LOCATIONS WHERE PIPE IS NOT PLACED
 IN DRAINAGE STRUCTURE TO FACILITATE MAIN-
 TENANCE AND AID IN IDENTIFICATION.



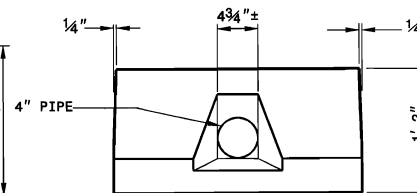
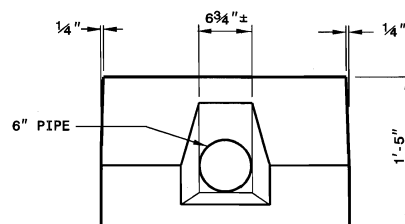
PIPE UNDERDRAIN
 Y = 12" WHEN "H" IS 4'-0" OR LESS
 Y = VARIABLE WHEN "H" IS OVER 4'-0"

2x2 TO 4x4 GALVANIZED
 HARDWARE CLOTH
 0.063 WIRE OR EQUAL



SUBDRAIN QUANTITIES	
TYPE	EXCAV. OR FINE AGGR. CU. YDS. PER FT. DEPTH/LIN. FT.
UNDER DRAIN	0.056
BLIND DRAIN	0.037

THE CONCRETE PAD CONSISTS OF 4" DRAIN 0.137 CUBIC YARDS,
 6" DRAIN 0.177 CUBIC YARDS CLASS "B" CONCRETE.



PIPE UNDERDRAIN AND BLIND DRAIN

PROJECT NO. U-2107BA
ONSLow COUNTY
 STATION: 277+50.00 -L-

SHEET 6 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BRIDGE APPROACH SLAB
 FOR FLEXIBLE PAVEMENT
 WITH REINFORCED BRIDGE
 APPROACH FILL

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	5-170
1			3			TOTAL
2			4			SHEETS
						170

DRAWN BY: M. M. R. R. DATE: 1/28/97
 CHECKED BY: O. R. AZIZI DATE: 3/20/97