

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.T261301

F.A. NO. : NHF-17(16)

T.I.P. NO. : U2107B

COUNTY : ONSLOW

DESCRIPTION : GRADING, DRAINAGE, -Y-LINE PAVING, THERMOPLASTIC
PAVEMENT MARKINGS, PAVEMENT MARKERS & STRUCTURES

DIVISION NO. : THREE

CONTRACTOR : BARNHILL CONT. CO. INC
PO BOX 1529
TARBORO, NC 27886

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.

J.J. Anderson Jr.
DIVISION RIGHT OF WAY AGENT

PROJECT: 8.T261301

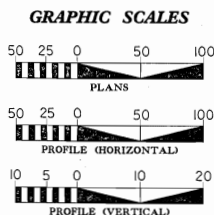
[illegible]

LOCATION: US 17 JACKSONVILLE BYPASS FROM EXISTING US 17 TO WILSON BAY
SOUTH OF JACKSONVILLE
TYPE OF WORK: GRADING, DRAINAGE, STRUCTURES, PAVING OF -Y- LINES
AND CULVERT EXTENSION

[illegible]

-L- STA 267+00.00
END STATE PROJ. 8.T261301
END F. A. PROJ. NHF-17(2)

----- CONSTRUCTION UNDER FUTURE
PAVING PROJECT



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

LENGTH ROADWAY F.A.PROJECT NHF-17(2)= 1.692 MILES
LENGTH STRUCTURE F.A.PROJECT NHF-17(2)= 0.170 MILES
TOTAL LENGTH STATE PROJECT 8.T261301= 1.862 MILES

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

Prepared In the Office of:

1995 STANDARDS SPECIFICATION

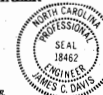
RIGHT OF WAY DATE: DEC. 30, 1994

LETTING DATE: MARCH 17, 1998

S. A. STEPNEY, P. E.
PROJECT ENGINEER

G. E. BREW, P. E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER



James C. Davis
SIGNATURE: ROADWAY DE

Grayson E. Brew 9-

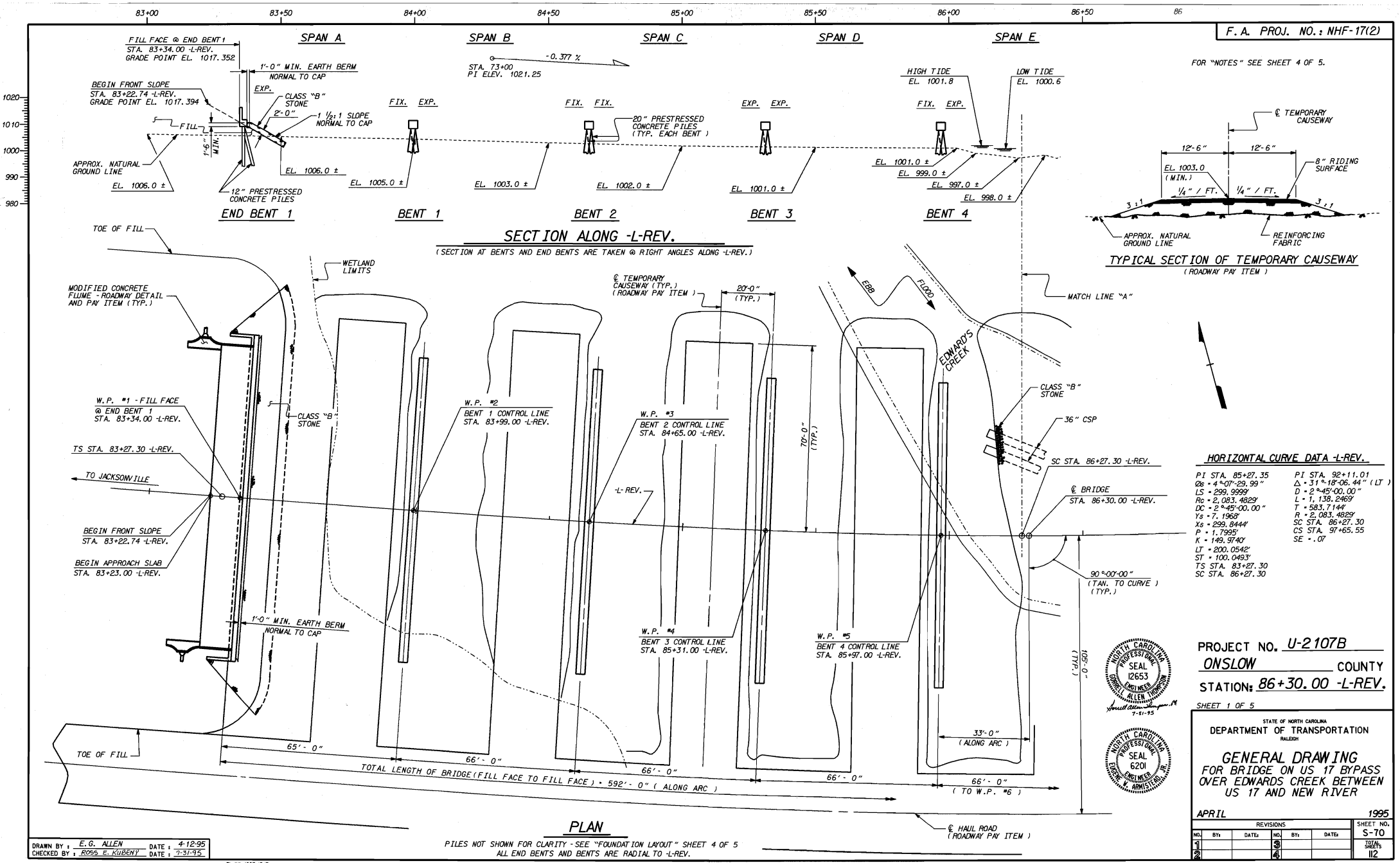
**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

STATE HIGHWAY ENGINEER - DESIGN
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED FOR 12-15-97
DIVISION ADMINISTRATOR DATE

24-SEP-1997 12:36
/usr/rdy/u2107b/u2107b.+sh
stepney3

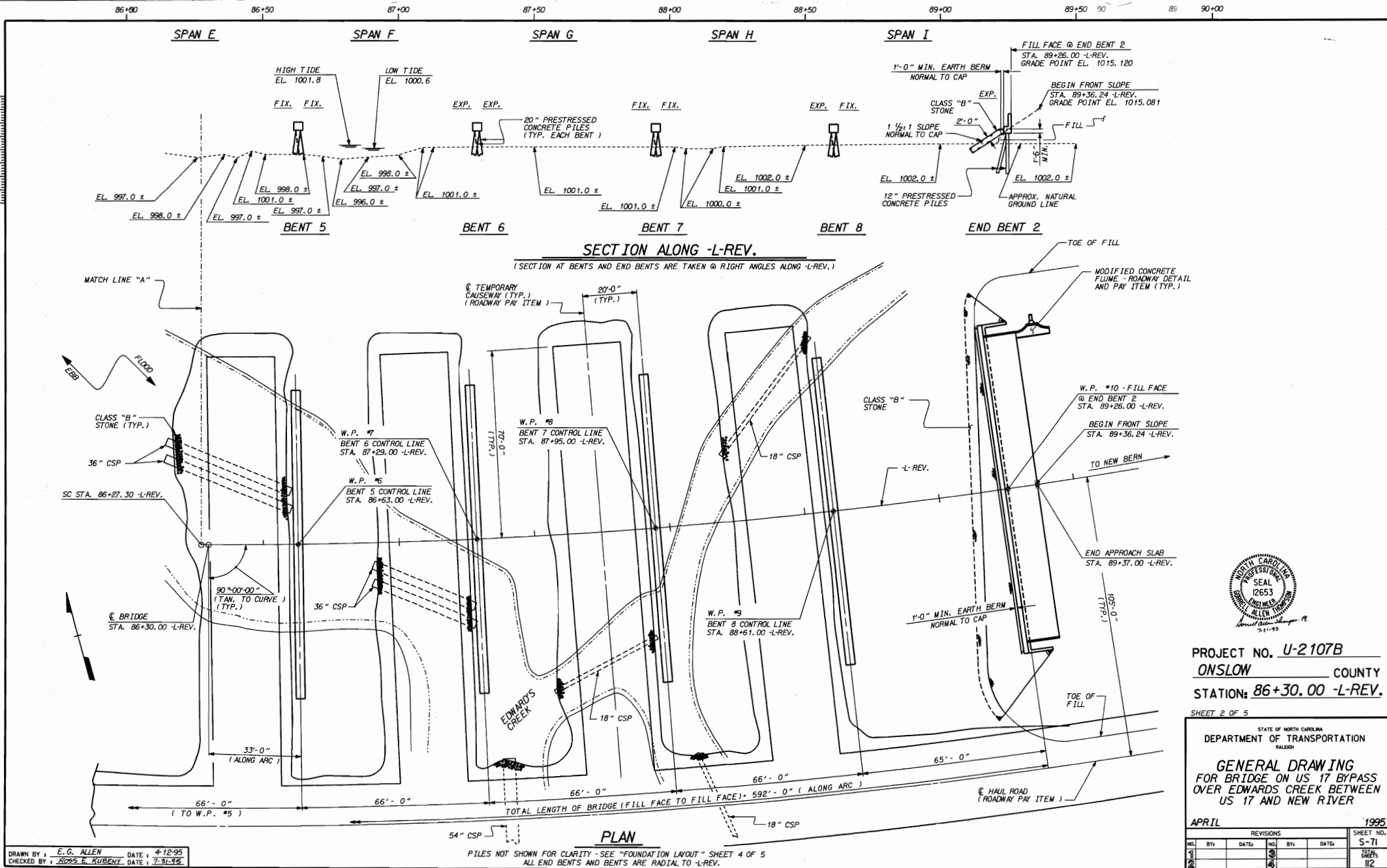
FOR "NOTES" SEE SHEET 4 OF 5.



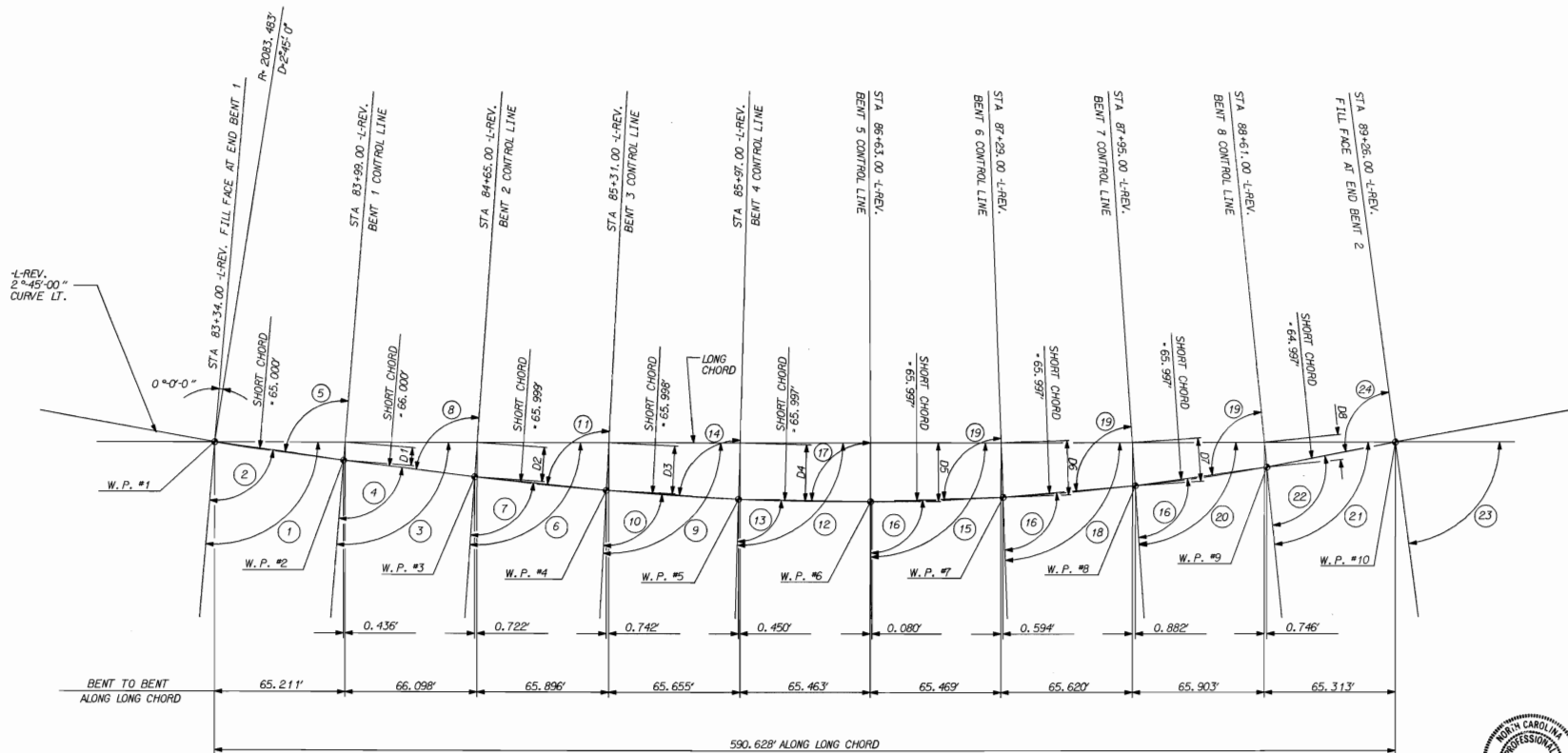
DRAWN BY: E.G. ALLEN DATE: 4-12-95
CHECKED BY: ROSS E. KUBENY DATE: 7-31-95

PILES NOT SHOWN FOR CLARITY - SEE "FOUNDATION LAYOUT" SHEET 4 OF 5
ALL END BENTS AND BENTS ARE RADIAL TO -L-REV.

31-JUL-1995 1547



	ANGLES
	deg min sec
1	94-50-50.2
2	90-05-04.2
3	94-36-49.3
4	90-17-00.4
5	89-51-03.4
6	93-58-49.0
7	90-28-59.1
8	89-39-00.0
9	92-56-51.1
10	90-40-57.9
11	89-27-01.3
12	91-30-55.8
13	90-52-18.7
14	89-15-02.5
15	89-44-33.3
16	90-54-27.0
17	89-05-56.2
18	87-55-39.3
19	89-05-33.0
20	86-06-45.3
21	84-17-51.3
22	90-53-37.5
23	82-30-36.3
24	89-06-22.5



LONG CHORD LAYOUT

OFFSET

D1	5.415'
D2	10.405'
D3	14.425'
D4	17.020'
D5	17.756'
D6	16.425'
D7	13.013'
D8	7.503'



PROJECT NO. **U-2107B**
 ONSLOW COUNTY
 STATION: **86+30.00 -L-REV.**

SHEET 3 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

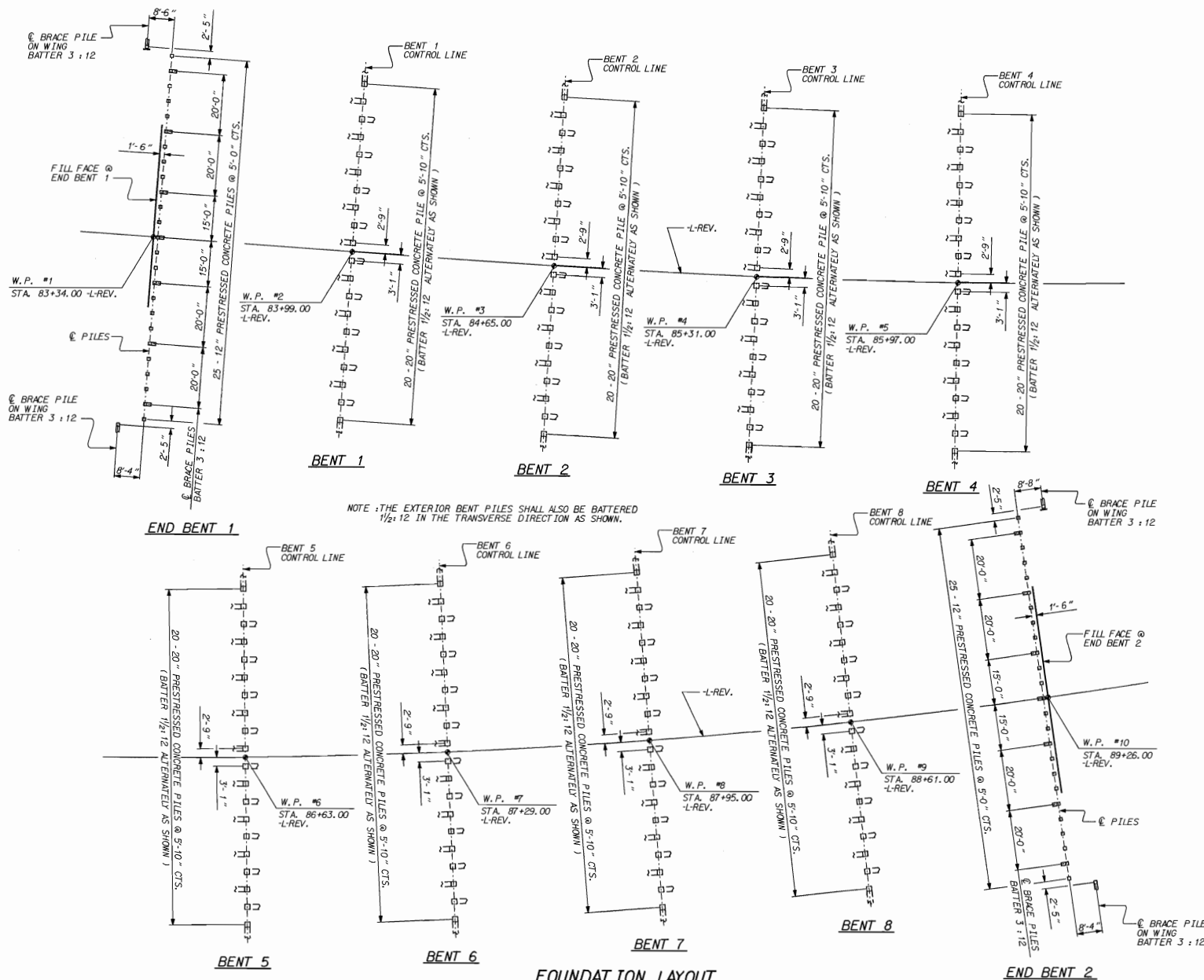
GENERAL DRAWING
 FOR BRIDGE ON US 17 BYPASS
 OVER EDWARDS CREEK BETWEEN
 US 17 AND NEW RIVER

APRIL 1995

REVISIONS				SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE
1			5		
2			6		

SHEET NO. **5-72**
 TOTAL SHEETS **112**

DRAWN BY: **F.G. ALLEN** DATE: **4-12-95**
 CHECKED BY: **R.E. KUBERT** DATE: **4-30-95**



NOTES :

ASSUMED LIVE LOAD = HS 25 OR ALTERNATE LOADING.

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

FOR REINFORCED CONCRETE DECK SLAB, SEE SPECIAL PROVISIONS.

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

FOR CURING BRIDGE DECK SLABS, SEE THE SPECIAL PROVISION "REINFORCED CONCRETE DECK SLAB."

WORK SHALL NOT BE STARTED ON END BENTS UNTIL FILL HAS BEEN PLACED.

PILES FOR END BENTS SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 50 TONS EACH.

PILES FOR ALL BENTS SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 100 TONS EACH.

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

CLASS AA CONCRETE SHALL BE USED IN ALL CAST-IN PLACE SUBSTRUCTURE UNITS.

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

ANY INCIDENTAL REINFORCING USED IN THE DECK SHALL BE EPOXY COATED.

PRESTRESSED CONCRETE GIRDERS AND PILES SHALL CONTAIN CALCIUM NITRITE CORROSION INHIBITOR, SEE SPECIAL PROVISIONS.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18, "EVALUATING SCOUR AT BRIDGES", APRIL, 1993.

THE SCOUR CRITICAL ELEVATION FOR ALL BENTS IS 990.0'. THESE ELEVATIONS ARE FOR USE BY MAINTENANCE FORCES TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

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

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.

THERE WILL BE A ONE MONTH WAITING PERIOD FOR APPROACH SLABS AFTER BACKFILLING THE END BENTS.

1000 FEET HAS BEEN ADDED TO ALL ELEVATIONS EXCEPT FOR BENCHMARK ELEVATION WHICH IS THE TRUE ELEVATION.

FOR TEMPORARY CAUSEWAY, SEE ROADWAY SPECIAL PROVISIONS.



PROJECT NO. **U-2107B**
ONSLOW COUNTY
 STATION: **86+30.00 -L-REV.**

SHEET 4 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE ON US 17 BYPASS
 OVER EDWARDS CREEK BETWEEN
 US 17 AND NEW RIVER

APRIL

1995

REVISIONS				SHEET NO.
NO.	BY	DATE	DATE	
1		3		73
2		4		112

DRAWN BY: **E.G. ALLEN** DATE: **4-12-95**
 CHECKED BY: **KOSSE KUBENY** DATE: **7-31-95**

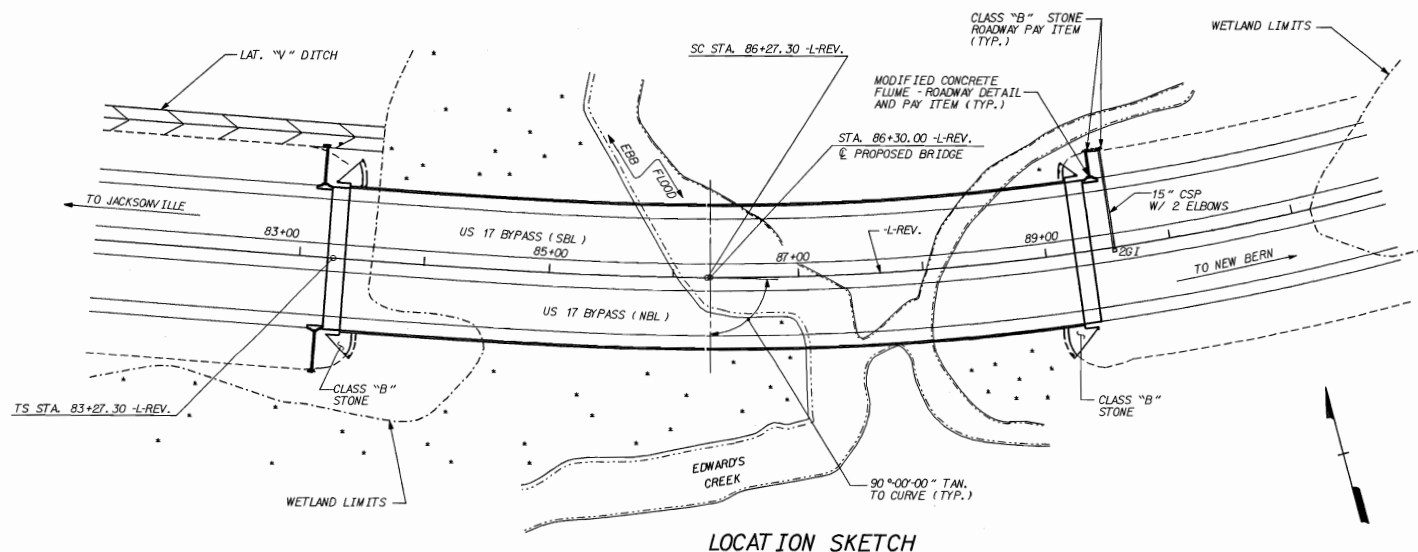
3-JUL-1995 0928

TOTAL BILL OF MATERIAL														DYNAMIC PILE LOAD TEST
	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS AA CONCRETE	BRIDGE APPROACH SLABS	EPOXY COATED REINFORCING STEEL	54" PRESTRESSED CONCRETE GIRDERS	12" PRESTRESSED CONCRETE PILES	20" PRESTRESSED CONCRETE PILES	CONCRETE BARRIER RAIL	CONCRETE MEDIAN BARRIER	STONE FOR EROSION CONTROL, CLASS B	ELASTOMERIC BEARINGS	PREFORMED COMPRESSION JOINT SEALS	
	SO. FT.	SO. FT.	CU. YDS.	LUMP SUM	LBS.	NO.	LIN. FT.	NO.	LIN. FT.	LIN. FT.	TONS	LUMP SUM	LUMP SUM	
SUPERSTRUCTURE	69,069	46,344		LUMP SUM		126	8,187.11			1179.83	614.0		LUMP SUM	LUMP SUM
END BENT 1			61.3		10,507		27	59.5			221.1			1
BENT 1			42.7		8,878			20	599.1					
BENT 2			43.5		8,878			20	599.1					
BENT 3			44.6		9,271			20	599.1					
BENT 4			45.1		9,271			20	599.1					
BENT 5			46.2		9,283			20	599.1					
BENT 6			46.2		9,283			20	599.1					
BENT 7			46.2		9,283			20	599.1					
BENT 8			46.2		9,283			20	599.1					
END BENT 2			63.1		10,599		27	59.5			221.1			1
TOTAL	69,069	46,344	485.7	LUMP SUM	94,536	126	8,187.11	54	1,048	1,179.83	614.0	484.6	LUMP SUM	LUMP SUM

B.M. = REBAR @ STA. 244+73.66 -L.P.O.T. *E.L. = 9.26 NGVD OF 1929

NOTE: FOR UTILITY INFORMATION, SEE UTILITY
CONFLICT PLANS AND PROVISIONS.

* SEE "NOTES"



HYDROGRAPHIC DATA	
DESIGN DISCHARGE	• N/A
FREQUENCY OF DESIGN FLOOD	• 50 YRS.
DESIGN STILLWATER ELEVATION	• 2.7
DRAINAGE AREA	• 1.8 SQ. MI.
BASIC DISCHARGE (0.100)	• N/A
BASIC STILLWATER ELEVATION	• 3.3
OVERTOPPING FLOOD DATA	
OVERTOPPING DISCHARGE	• N/A
FREQUENCY OF OVERTOPPING FLOOD	• 500 YRS.
OVERTOPPING FLOOD ELEVATION	• 8.6



PROJECT NO. **U-2107B**
ONSLOW COUNTY
 STATION: **86+30.00 -L-REV.**
 SHEET 5 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE ON US 17 BYPASS
 OVER EDWARDS CREEK BETWEEN
 US 17 AND NEW RIVER

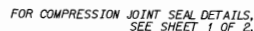
APRIL 1995				SHEET NO. S-74			
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS	
1			3			12	
2			4				

DRAWN BY: **E. G. ALLEN** DATE: **4-12-95**
 CHECKED BY: **ROSS E. KUBERT** DATE: **7-31-95**

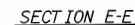
31-JUL-1995 09:28



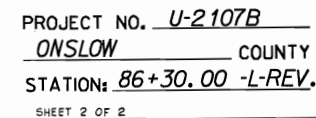
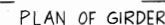
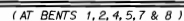
(AT END BENTS 1 & 2)



(AT BENTS 3 & 6)



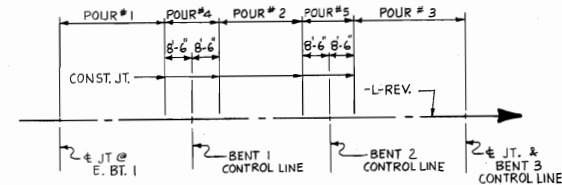
(BENT DIAPHRAGM FOR CONTINUOUS DECK SLAB



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DEC.						1994	
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	5-76	
1			3			TOTAL SHEETS	
2			4			112	

DRAWN BY : N. Q. TRAN DATE : OCT. 94
CHECKED BY : E. G. ALLEN DATE : 1-24-95



THE CONTRACTOR SHALL OBSERVE THE ABOVE
POURING SEQUECE .

FOR SECTIONS "A-A", "B-B", "C-C" & "D-D"
SEE "SUPERSTRUCTURE-TYPICAL
SECTIONS" SHEET 2 OF 2.

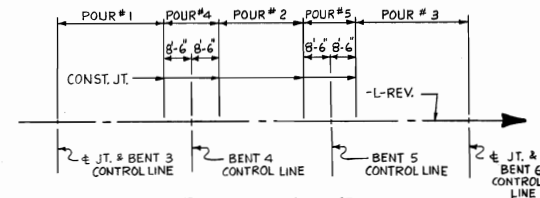


STATION: 86+30.00-L-REV.

NOV.						1994	
REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	5-77	
1			3			TOTAL SHEETS	
2			4			112	

DRAWN BY N. Q. TRAN DATE NOV. 1994
 CHECKED BY E. G. ALLEN DATE 1-24-95

"SEE 'POURING SEQUENCE' DETAIL"



POURING SEQUENCE

THE CONTRACTOR SHALL OBSERVE THE ABOVE
POURING SEQUENCE.

FOR SECTIONS "B-B", "C-C" & "D-D"
SEE "SUPERSTRUCTURE-TYPICAL
SECTIONS" SHEET 2 OF 2.

PROJECT NO. U- 2107 B

ONSLOW COUNTY

STATION: 86 + 30.00 - L - REV.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
PLAN OF SPANS D-E-F

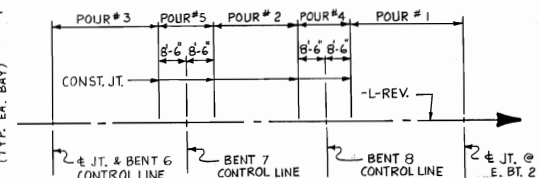
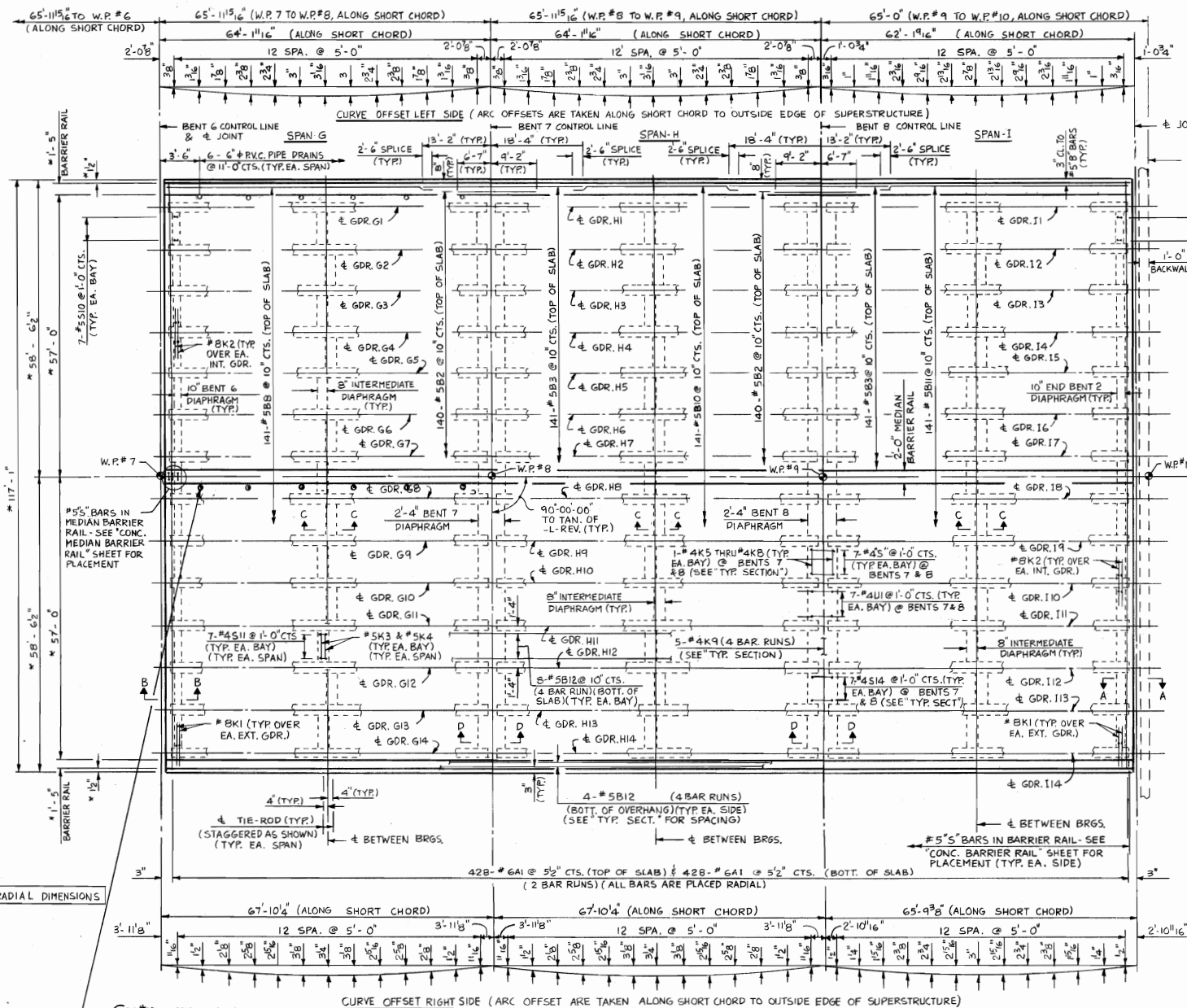
NOV.						1994	
REVISIONS						SHEET NO. 5-78	
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS 112	
1			3				
2			4				

L { SA#19 SA19 6" PVC DECK DRAINS (TYP. EA, SPAN)
SA#24 SA24 DECK PANNEL SUPPORTS (TYP. EA. SPAN)

PLAN OF SPANS D-E-F

"SEE 'POURING SEQUENCE' DETAIL"

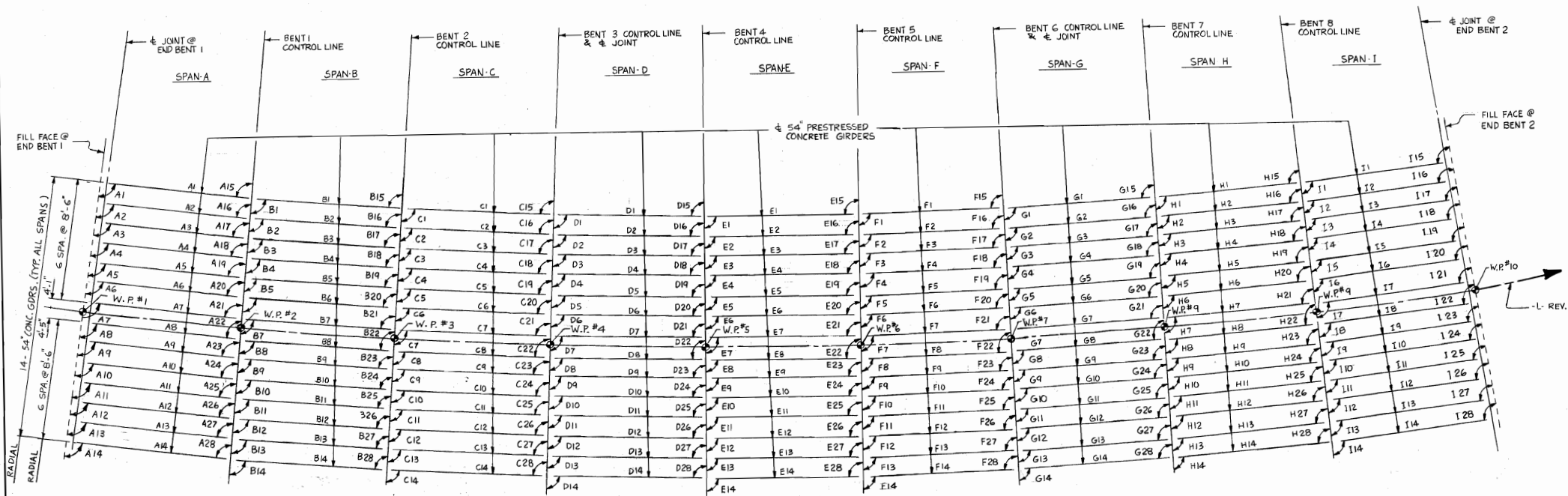
DRAWN BY N. Q. TRAN DATE NOV. 1994
 CHECKED BY E. G. ALLEN DATE 1-23-95



PROJECT NO. U- 2107 B
ON SLOW COUNTY
 STATION: 86 + 30.00 -L- REV.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
PLAN OF SPANS G-H-I

NOV.						1994													
REVISIONS												SHEET NO.							
												5-79							
NO.			BY			DATE			NO.			BY			DATE			TOTAL SHEETS	
1									3									112	
2									4										



GIRDER LAYOUT

GIRDER LAYOUT ANGLE TABLE

	GIRDER 1	GIRDER 2	GIRDER 3	GIRDER 4	GIRDER 5	GIRDER 6	GIRDER 7	GIRDER 8	GIRDER 9	GIRDER 10	GIRDER 11	GIRDER 12	GIRDER 13	GIRDER 14
SPAN A	A1 = 90°-05'-03.8"	A2 = 90°-05'-03.9"	A3 = 90°-05'-04.0"	A4 = 90°-05'-04.0"	A5 = 90°-05'-04.1"	A6 = 90°-05'-04.1"	A7 = 90°-05'-04.2"	A8 = 90°-05'-04.3"	A9 = 90°-05'-04.3"	A10 = 90°-05'-04.4"	A11 = 90°-05'-04.5"	A12 = 90°-05'-04.5"	A13 = 90°-05'-04.6"	A14 = 90°-05'-04.6"
SPAN B	B1 = 90°-16'-59.3"	B2 = 90°-16'-59.5"	B3 = 90°-16'-59.6"	B4 = 90°-16'-59.8"	B5 = 90°-17'-00.0"	B6 = 90°-17'-00.1"	B7 = 90°-17'-00.3"	B8 = 90°-17'-00.5"	B9 = 90°-17'-00.7"	B10 = 90°-17'-00.8"	B11 = 90°-17'-01.0"	B12 = 90°-17'-01.2"	B13 = 90°-17'-01.3"	B14 = 90°-17'-01.5"
SPAN C	C1 = 90°-28'-57.3"	C2 = 90°-28'-57.6"	C3 = 90°-28'-57.9"	C4 = 90°-28'-58.2"	C5 = 90°-28'-58.4"	C6 = 90°-28'-58.7"	C7 = 90°-28'-59.0"	C8 = 90°-28'-59.3"	C9 = 90°-28'-59.6"	C10 = 90°-28'-59.8"	C11 = 90°-29'-00.1"	C12 = 90°-29'-00.4"	C13 = 90°-29'-00.6"	C14 = 90°-29'-00.9"
SPAN D	D1 = 90°-40'-55.3"	D2 = 90°-40'-55.7"	D3 = 90°-40'-56.1"	D4 = 90°-40'-56.5"	D5 = 90°-40'-56.9"	D6 = 90°-40'-57.3"	D7 = 90°-40'-57.7"	D8 = 90°-40'-58.1"	D9 = 90°-40'-58.5"	D10 = 90°-40'-58.8"	D11 = 90°-40'-59.2"	D12 = 90°-40'-59.6"	D13 = 90°-40'-00.0"	D14 = 90°-40'-00.3"
SPAN E	E1 = 90°-52'-17.3"	E2 = 90°-52'-17.5"	E3 = 90°-52'-17.7"	E4 = 90°-52'-18.0"	E5 = 90°-52'-18.2"	E6 = 90°-52'-18.4"	E7 = 90°-52'-18.6"	E8 = 90°-52'-18.8"	E9 = 90°-52'-19.0"	E10 = 90°-52'-19.2"	E11 = 90°-52'-19.4"	E12 = 90°-52'-19.6"	E13 = 90°-52'-19.8"	E14 = 90°-52'-20.0"
SPAN F	F1 = 90°-54'-27.0"	F2 = 90°-54'-27.0"	F3 = 90°-54'-27.0"	F4 = 90°-54'-27.0"	F5 = 90°-54'-27.0"	F6 = 90°-54'-27.0"	F7 = 90°-54'-27.0"	F8 = 90°-54'-27.0"	F9 = 90°-54'-27.0"	F10 = 90°-54'-27.0"	F11 = 90°-54'-27.0"	F12 = 90°-54'-27.0"	F13 = 90°-54'-27.0"	F14 = 90°-54'-27.0"
SPAN G	G1 = 90°-54'-27.0"	G2 = 90°-54'-27.0"	G3 = 90°-54'-27.0"	G4 = 90°-54'-27.0"	G5 = 90°-54'-27.0"	G6 = 90°-54'-27.0"	G7 = 90°-54'-27.0"	G8 = 90°-54'-27.0"	G9 = 90°-54'-27.0"	G10 = 90°-54'-27.0"	G11 = 90°-54'-27.0"	G12 = 90°-54'-27.0"	G13 = 90°-54'-27.0"	G14 = 90°-54'-27.0"
SPAN H	H1 = 90°-54'-27.0"	H2 = 90°-54'-27.0"	H3 = 90°-54'-27.0"	H4 = 90°-54'-27.0"	H5 = 90°-54'-27.0"	H6 = 90°-54'-27.0"	H7 = 90°-54'-27.0"	H8 = 90°-54'-27.0"	H9 = 90°-54'-27.0"	H10 = 90°-54'-27.0"	H11 = 90°-54'-27.0"	H12 = 90°-54'-27.0"	H13 = 90°-54'-27.0"	H14 = 90°-54'-27.0"
SPAN I	I1 = 90°-53'-37.5"	I2 = 90°-53'-37.5"	I3 = 90°-53'-37.5"	I4 = 90°-53'-37.5"	I5 = 90°-53'-37.5"	I6 = 90°-53'-37.5"	I7 = 90°-53'-37.5"	I8 = 90°-53'-37.5"	I9 = 90°-53'-37.5"	I10 = 90°-53'-37.5"	I11 = 90°-53'-37.5"	I12 = 90°-53'-37.5"	I13 = 90°-53'-37.5"	I14 = 90°-53'-37.5"

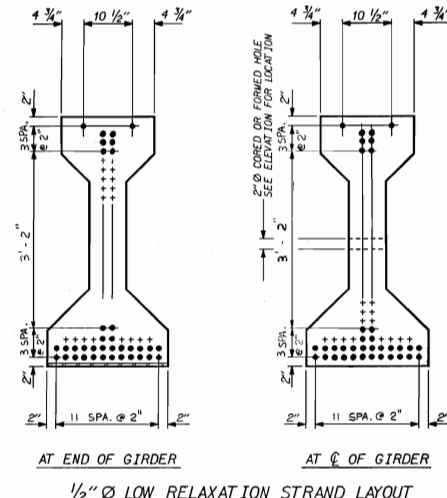
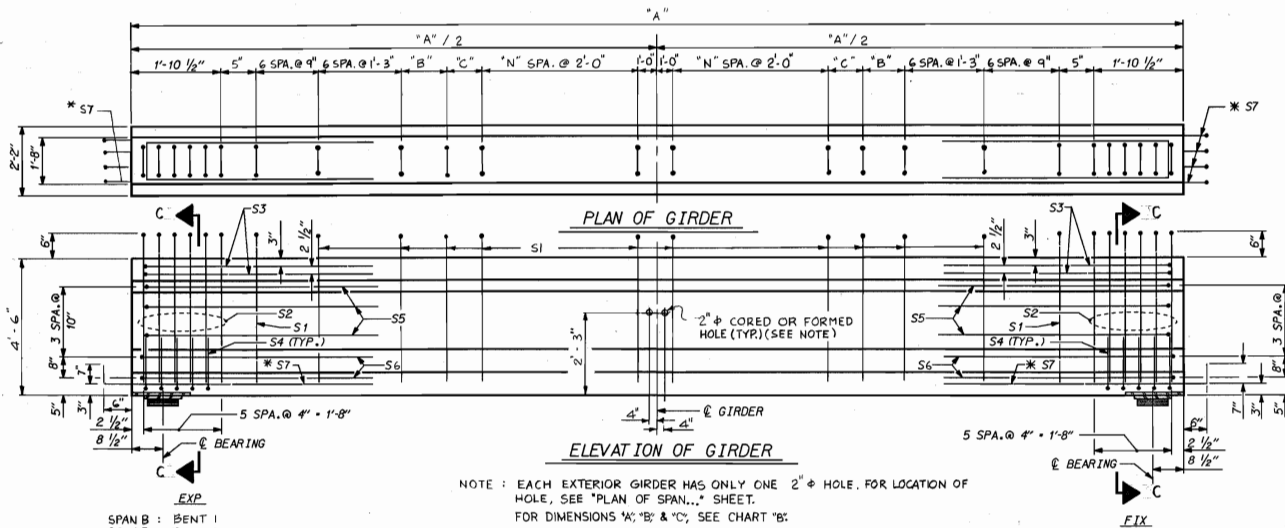


PROJECT NO. U-2107-B
 ONSLOW COUNTY
 STATION: 86+30.00-L REV.

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PRESTRESSED CONCRETE
 GIRDER LAYOUT

NO.	BY	DATE	NO.	BY	DATE	SHEET NO.
1			3			112
2			4			

DRAWN BY N. R. TRAN DATE NOV. 12, 1994
 CHECKED BY E. G. ALLEN DATE 1-24-95



GRADE 270 STRANDS

AREA	1/2" L.R.
5 SQUARE INCHES	0.153
ULTIMATE STRENGTH (LBS. PER STRAND)	41,300
APPLIED PRESTRESS (LBS. PER STRAND)	30,980

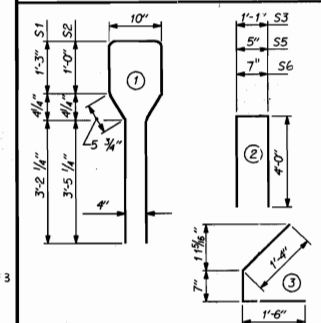
REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	1	#4	1	10'-0"	VARIES
S2	12	#6	1	10'-0"	192
S3	4	#4	2	9'-1"	24
S4	20	#4	3	3'-5"	46
S5	6	#4	2	8'-5"	34
S6	4	#4	2	8'-7"	23
* S7	8	#5	STR	5'-3"	44

REINFORCING STEEL TOTAL LBS ***
 *NOTE: S7 BARS SHALL BE BENT AFTER GIRDER FABRICATION AND BEFORE SHIPMENT.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT



QUANTITIES FOR ONE GIRDER

REINFORCING STEEL	5,000 PSI CONCRETE	1/2" L.R. STRANDS
LB.	CT.	NO.
***	***	36

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
SPAN B	14	914'-8 1/2"
SPAN E	14	914'-8 1/2"
SPAN H	14	914'-8 1/2"

PROJECT NO. U-2107B

ONSLOW COUNTY

STATION: 86 + 30.00 - L-REV.

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 Raleigh

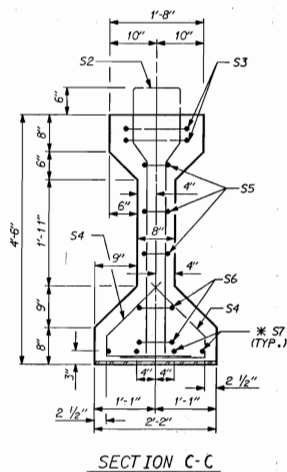
54" PRESTRESSED CONCRETE GIRDER
 CONTINUOUS FOR LIVE LOAD
 SPANS B, E & H

DEC. 1994

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

SHEET NO.
5-80
112

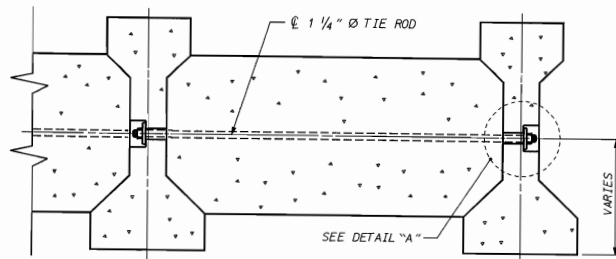
CHART "B"															
		GDR. 1	GDR. 2	GDR. 3	GDR. 4	GDR. 5	GDR. 6	GDR. 7	GDR. 8	GDR. 9	GDR. 10	GDR. 11	GDR. 12	GDR. 13	GDR. 14
SPAN-B	"A"	64'-8 3/4"	64'-9 7/8"	64'-11"	65'-0 1/8"	65'-1 1/4"	65'-2 3/8"	65'-3 1/2"	65'-4 5/8"	65'-5 3/4"	65'-6 5/8"	65'-8"	65'-9 1/8"	65'-10 1/4"	65'-11 3/8"
	"B"	1'-0 3/8"	1'-1 7/8"	1'-2"	1'-2 1/16"	1'-3 3/8"	1'-3 1/16"	1'-4 1/4"	1'-4 13/16"	1'-5 3/8"	1'-5 15/16"	1'-6 1/2"	1'-7 1/16"	1'-7 5/8"	1'-8 3/16"
	"C"	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	"N"	8	8	8	8	8	8	8	8	8	8	8	8	8	8
SPAN-E	"A"	63'-7 1/2"	63'-10 5/8"	64'-1 7/8"	64'-5"	64'-8 1/8"	64'-11 1/4"	65'-2 1/2"	65'-5 5/8"	65'-8 3/4"	65'-11 7/8"	66'-3 3/8"	66'-6 1/4"	66'-9 3/8"	67'-0 1/2"
	"B"	1'-3 1/8"	1'-3"	1'-5"	1'-5 1/2"	1'-0 9/16"	1'-2 1/8"	1'-3 3/4"	1'-5 15/16"	1'-6 5/8"	1'-8 1/16"	1'-10 1/16"	1'-11 5/8"	1'-1"	1'-1 3/8"
	"C"	1'-3 1/8"	1'-4 13/16"	1'-4 7/16"	1'-5 1/2"	—	—	—	—	—	—	—	—	1'-0 3/16"	1'-1 3/8"
	"N"	7	7	7	7	8	8	8	8	8	8	8	8	8	8
SPAN-H	"A"	63'-7"	63'-10 1/4"	64'-1 1/2"	64'-4 3/4"	64'-8"	64'-11 1/8"	65'-2 3/8"	65'-5 5/8"	65'-8 5/8"	66'-0 5/8"	66'-3 3/8"	66'-6 5/8"	66'-9 3/4"	67'-1"
	"B"	1'-3"	1'-3 13/16"	1'-4 5/8"	1'-5 1/16"	1'-6 1/4"	1'-2 1/16"	1'-3 1/16"	1'-5 5/16"	1'-6 5/16"	1'-8 9/16"	1'-10 1/16"	1'-11 3/16"	1'-10 1/16"	1'-1 1/2"
	"C"	1'-3"	1'-3 13/16"	1'-4 5/8"	1'-5 1/16"	1'-6 1/4"	—	—	—	—	—	—	—	1'-10 1/16"	1'-1 1/2"
	"N"	7	7	7	7	7	8	8	8	8	8	8	8	8	8



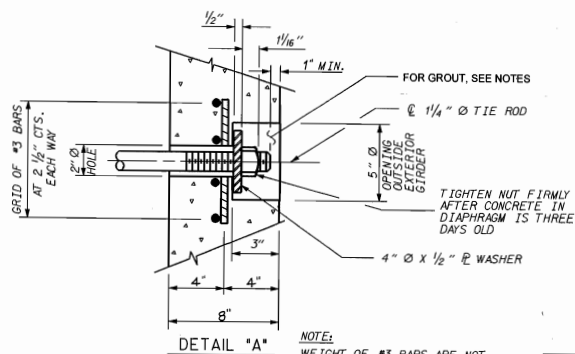
ASSEMBLED BY: N. O. TRAN DATE: DEC. 94
 CHECKED BY: E. G. ALLEN DATE: 1-24-95
 DRAWN BY: ED ROSE DATE: AUG. 1991
 CHECKED BY: GREG PERFETTI DATE: AUG. 1991

8-AUG-1993 07:06
 11/11/93 10:06

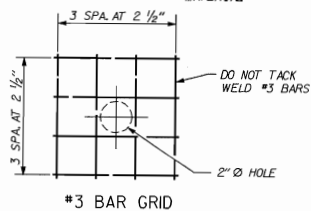
REVIEWED BY: E.L.R. CHECKED BY: G.R.P. 1-1-93
 REVISIONS BY: E.L.R. CHECKED BY: G.R.P. 1-24-92
 11/11/93 10:06



PART-SECTION AT INTERMEDIATE DIAPHRAGM

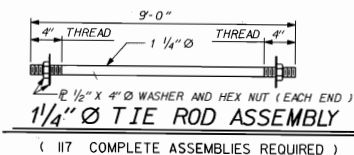


NOTE:
WEIGHT OF #3 BARS ARE NOT
INCLUDED IN THE BILL OF
MATERIAL



#3 BAR GRID

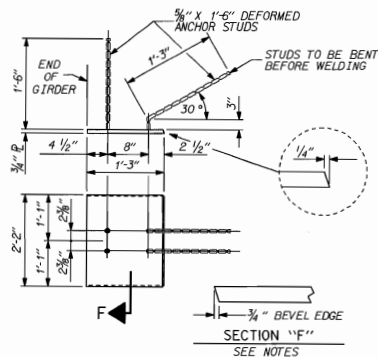
GROUTED RECESS FOR END OF TIE ROD



ASSEMBLED BY: N. Q. TRAN DATE: MAR. 1995
CHECKED BY: E. G. ALLEN DATE: 5-26-95
DRAWN BY: ED ROSE DATE: NOV. 1991
CHECKED BY: GREG PERFETTI DATE: NOV. 1991

REV. 6/1/94 EEM G. GRP

25-MAY-1992 1253



EMBEDDED PLATE "B-1" DETAILS
FOR 54" GIRDER

(2 REQ'D PER GIRDER)

DEAD LOAD DEFLECTION TABLE FOR 1/2" Ø LOW RELAXATION												
SPANS A, B, C, D, E, F, G, H & I												
GIRDER 1 THRU GIRDER 14												
TENTH POINTS	BRG.	.1	.2	.3	.4	.5	.6	.7	.8	.9	BRG.	
CAMBER (GIRDER ALONE ONLY)	0	.031	.059	.081	.095	.100	.095	.081	.059	.031	0	
DEFLECTION DUE TO SUPERIMPOSED D. L.	0	.009	.017	.023	.027	.029	.027	.023	.017	.009	0	
FINAL CAMBER	0	1/4	1/2	3/4	1	1 1/4	1 1/2	1 3/4	1 1/2	1 1/4	1	

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

CHART "C" (QUANTITIES FOR ONE GIRDER)												
TOTALS		GIRDER 1	GIRDER 2	GIRDER 3	GIRDER 4	GIRDER 5	GIRDER 6	GIRDER 7	GIRDER 8	GIRDER 9	GIRDER 10	GIRDER 11
SPAN A	SI BARS	NO. 44	44	44	44	44	44	44	44	44	44	44
	REINFORCING STEEL	LBS. 662	662	662	662	662	662	662	662	662	662	662
	5,000 P.S.I. CONCRETE	C.Y. 12.8	12.8	12.8	12.8	12.9	12.9	12.9	12.9	12.9	12.9	12.9
SPAN B	SI BARS	NO. 44	44	44	44	44	44	44	44	44	44	44
	REINFORCING STEEL	LBS. 667	667	667	667	667	667	667	667	667	667	667
	5,000 P.S.I. CONCRETE	C.Y. 13.1	13.1	13.2	13.2	13.2	13.2	13.3	13.3	13.3	13.3	13.4
SPAN C	SI BARS	NO. 44	44	44	44	44	44	44	44	44	44	44
	REINFORCING STEEL	LBS. 662	662	662	662	662	662	662	662	662	662	662
	5,000 P.S.I. CONCRETE	C.Y. 13.1	13.1	13.1	13.2	13.2	13.2	13.3	13.3	13.3	13.4	13.5
SPAN D	SI BARS	NO. 44	44	44	44	44	44	44	44	44	44	46
	REINFORCING STEEL	LBS. 662	662	662	662	662	662	662	662	662	662	676
	5,000 P.S.I. CONCRETE	C.Y. 13.0	13.1	13.1	13.1	13.2	13.2	13.3	13.3	13.4	13.4	13.5
SPAN E	SI BARS	NO. 44	44	44	44	44	44	44	44	44	44	46
	REINFORCING STEEL	LBS. 667	667	667	667	667	667	667	667	667	667	691
	5,000 P.S.I. CONCRETE	C.Y. 12.9	13.0	13.0	13.1	13.1	13.2	13.2	13.3	13.4	13.4	13.5
SPAN F OR SPAN G	SI BARS	NO. 44	44	44	44	44	44	44	44	44	44	46
	REINFORCING STEEL	LBS. 662	662	662	662	662	662	662	662	662	662	676
	5,000 P.S.I. CONCRETE	C.Y. 12.9	13.0	13.0	13.1	13.2	13.2	13.3	13.3	13.4	13.5	13.6
SPAN H	SI BARS	NO. 44	44	44	44	44	44	44	44	44	44	46
	REINFORCING STEEL	LBS. 677	677	677	677	677	677	677	677	677	677	691
	5,000 P.S.I. CONCRETE	C.Y. 12.9	13.0	13.0	13.1	13.1	13.2	13.2	13.3	13.4	13.5	13.6
SPAN I	SI BARS	NO. 42	42	42	42	44	44	44	44	44	44	44
	REINFORCING STEEL	LBS. 647	647	647	647	662	662	662	662	662	662	662
	5,000 P.S.I. CONCRETE	C.Y. 12.5	12.6	12.6	12.7	12.7	12.8	12.8	12.9	13.0	13.1	13.2

THIS STANDARD HAS BEEN EXAMINED
BY THE UNDERSIGNED AND IS SITE
ADAPTED FOR USE ON THIS PROJECT



PROJECT NO. U-2107B
ONSLAW COUNTY
STATION: 86+30.00 -L-REV.

SHEET 3 OF 3

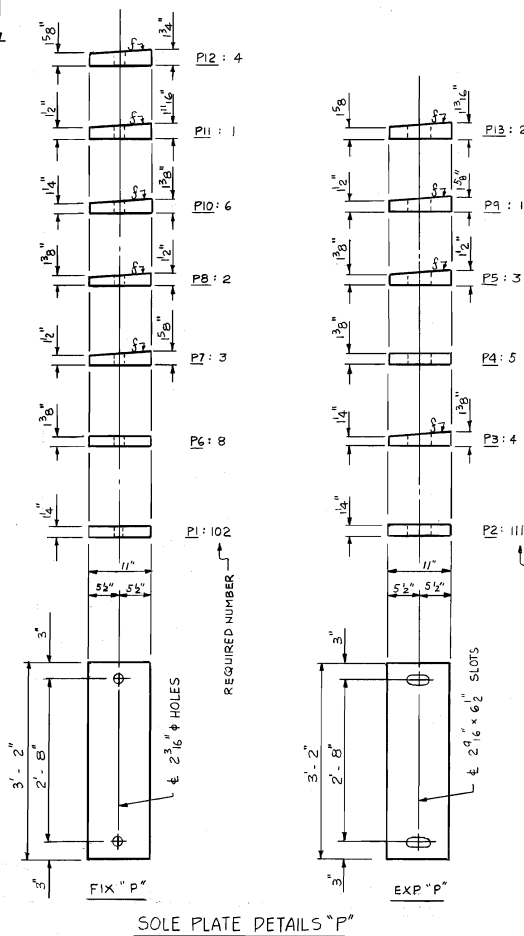
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
DETAILS

NOVEMBER 1991

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

STD. NO. PCG7



Technical drawings of a bridge deck detail. The top drawing is a cross-section showing a 1/8 inch gap, 3/8 inch and 1/4 inch dimensions, and a 3/16 inch gap. The middle drawing is a side view labeled "DETAIL 'A'" showing a 2 inch gap, 1/2 inch gap, 3/16 inch gap, and 1/2 inch gap. The bottom drawing is a top view showing a 2 inch gap, 1/2 inch gap, 3/16 inch gap, and 1/2 inch gap. The bottom drawing is labeled "TYPICAL HALF-PLAN" and "TYPICAL HALF-PLAN".

SOLE PLATE LOCATION AND ORIENTATION

KEY: ($\overrightarrow{p}$ =) , ($\overleftarrow{p}$ =) & ($\overline{p}$ =)

— LOAD RATINGS —	
	MAX. D. L. + L.
36" PCG - TYPE II	82.3 K
45" PCG - TYPE III	115.2 K
54" PCG - TYPE IV	137.4 K

PROJECT NO. U-2107B
ON SLOW COUNTY
 STATION: 86 + 30.00-L-REV.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

ELASTOMERIC BEARING DETAILS

PRESTRESSED CONCRETE GIRDER DEC. SUPERSTRUCTURE 199

REVISIONS						SHEET NO. 584
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 112
2			4			

REVISED BY E.L.R. CHECKED BY G.R.P. 3-3-93
REVISED BY E.L.R. CHECKED BY G.R.P. 8-28-92

REVISED BY W.J.H. CHECKED BY G.R.P. 10-1-90
REVISED BY W.J.H. CHECKED BY C.R.K. 3-1-90
ADDED 8/22/89

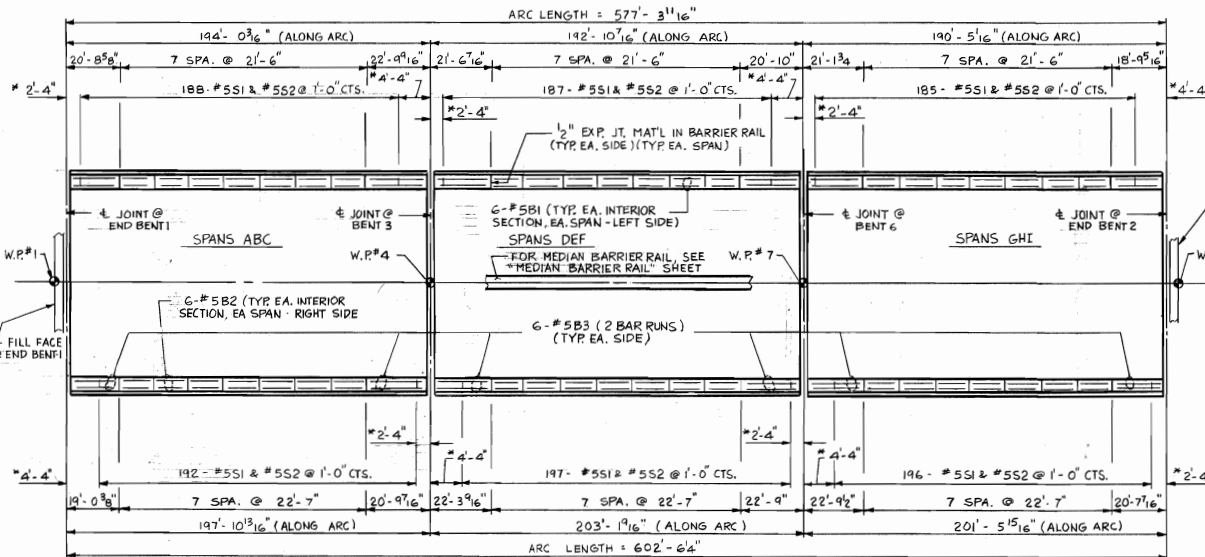
ASSEMBLED BY : N.Q. TRAN DATE : DEC. 1994
 CHECKED BY : E.G. ALLEN DATE : 1-24-95

DRAWN BY : W.J. HARRIS DATE : 8-22-89
 CHECKED BY : C.R. KING DATE : 8-22-89

REVISED BY E.L.R. CHECKED BY C.R.P. 8-29-82
 REVISED BY E.L.R. CHECKED BY C.R.P. 10-1-83
 REVISED BY W.J.H. CHECKED BY C.R.K. 8-22-89
 REVISED BY W.J.H. CHECKED BY C.R.K. 5-1-89
 REDRAWN 10-2-87

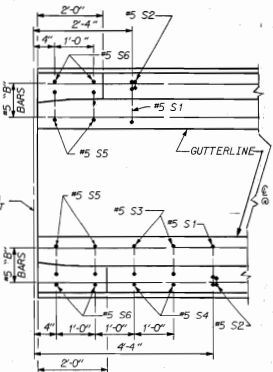
ASSEMBLED BY N.D. TANJAN DATE: 2/2-1994
 CHECKED BY E.G. ALLEN DATE: 1-24-95
 DRAWN BY R. BISSETTE DATE: 5/28/87
 CHECKED BY S.J. DAVIS DATE: 9/3/87

14-DEC-1992 06:08
 Z0K203000CBRLST02
 RBISSETTE

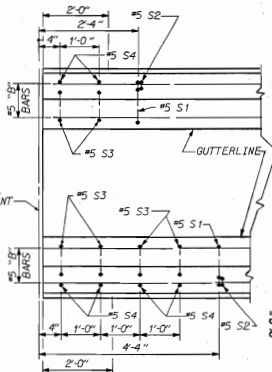


PLAN

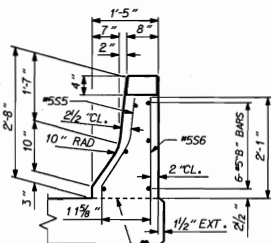
* SEE PLAN VIEW @ BENTS & END BENTS



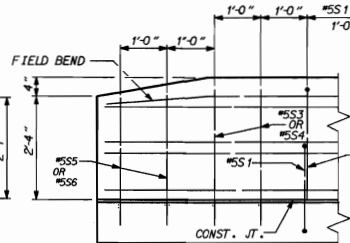
PLAN @ END BENTS



PLAN @ BENTS 3 & 6

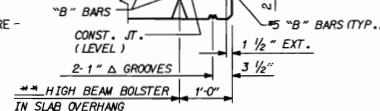


END VIEW



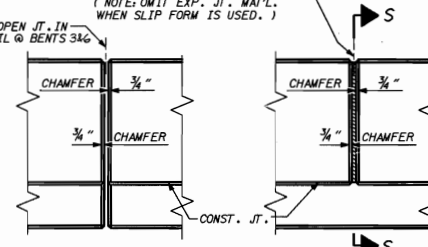
SIDE VIEW

BARRIER RAIL-END OF RAIL DETAILS



SECTION THRU RAIL

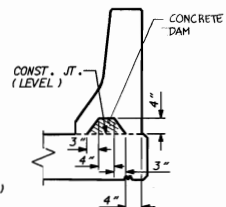
@ 1/2" EXP. JT. MAT'L HELD IN PLACE WITH GALVANIZED NAILS. (NOTE: OMIT EXP. JT. MAT'L WHEN SLIP FORM IS USED.)



ELEVATION AT EXPANSION JOINTS

BARRIER RAIL DETAILS

NOTES
 THE BARRIER RAIL IN CONTINUOUS UNIT SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THE UNIT HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.
 WHEN COMPRESSION JOINT SEAL OR EVAZOTE JOINT SEAL IS REQUIRED, THE JOINT IN THE DECK SHALL BE SAWED PRIOR TO THE CASTING OF BARRIER RAIL.
 ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.
 THE #5S3 THRU #5S6 BARS SHALL BE INSTALLED, USING AN ADHESIVE ANCHORING SYSTEM, AFTER SAWING THE JOINT. FOR ADHESIVELY ANCHORED BOLTS OR DOWELS, SEE SPECIAL PROVISIONS. TESTING FOR THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.
 THE #5S1 & #5S2 BARS AT THE 1/2" EXP. JOINTS IN BARRIER RAIL SHALL BE SHIFTED TO CLEAR THOSE JOINTS BY THREE (3) INCHES.

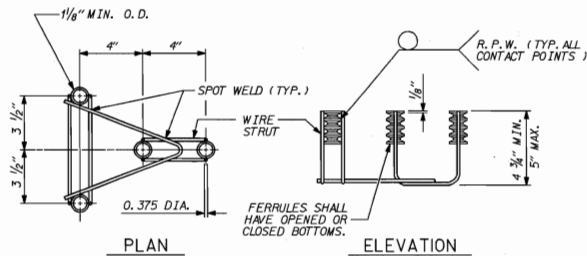


SECTION S-S
 AT DAM IN OPEN JOINT
 (THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)

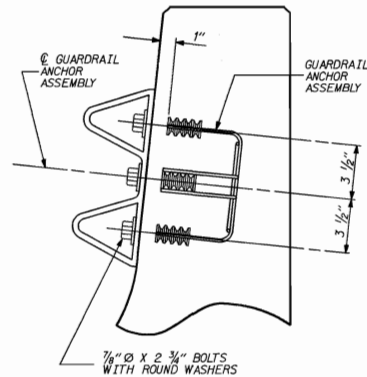
BAR TYPES					
1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36
37	38	39	40	41	42
43	44	45	46	47	48
49	50	51	52	53	54
55	56	57	58	59	60
61	62	63	64	65	66
67	68	69	70	71	72
73	74	75	76	77	78
79	80	81	82	83	84
85	86	87	88	89	90
91	92	93	94	95	96
97	98	99	100	101	102
103	104	105	106	107	108
109	110	111	112	113	114
115	116	117	118	119	120
121	122	123	124	125	126
127	128	129	130	131	132
133	134	135	136	137	138
139	140	141	142	143	144
145	146	147	148	149	150
151	152	153	154	155	156
157	158	159	160	161	162
163	164	165	166	167	168
169	170	171	172	173	174
175	176	177	178	179	180
181	182	183	184	185	186
187	188	189	190	191	192
193	194	195	196	197	198
199	200	201	202	203	204
205	206	207	208	209	210
211	212	213	214	215	216
217	218	219	220	221	222
223	224	225	226	227	228
229	230	231	232	233	234
235	236	237	238	239	240
241	242	243	244	245	246
247	248	249	250	251	252
253	254	255	256	257	258
259	260	261	262	263	264
265	266	267	268	269	270
271	272	273	274	275	276
277	278	279	280	281	282
283	284	285	286	287	288
289	290	291	292	293	294
295	296	297	298	299	300

PROJECT NO. U-2107 B
 ONSLOW COUNTY
 STATION: 86+30.00-L-REV.
 SHEET 1 OF 2

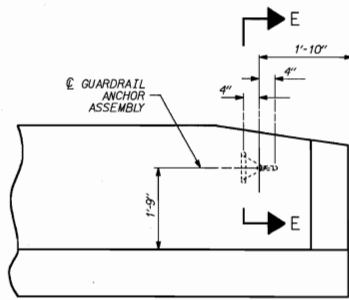
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
CONCRETE BARRIER RAIL					
DEC.	1994				
NO.	REV.	DATE	NO.	REV.	DATE
1	1	5-25	2	1	11-2



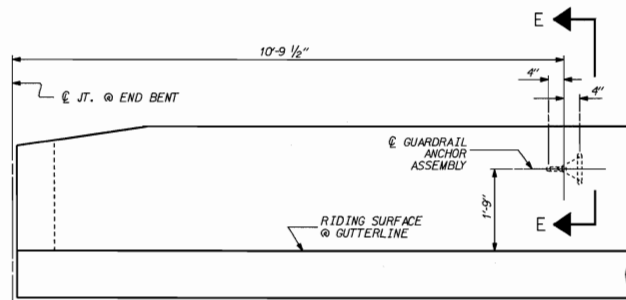
GUARDRAIL ANCHOR ASSEMBLY



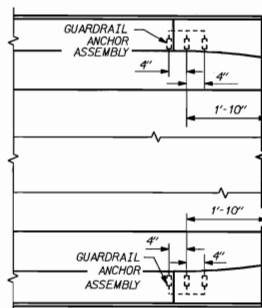
SECTION E-E



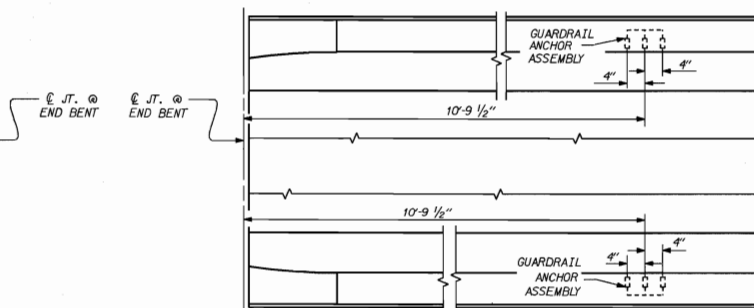
**ELEVATION
(TYPE II)**



**ELEVATION
(TYPE I)**



**PLAN
(TYPE II)**



**PLAN
(TYPE I)**

LOCATION OF ANCHORS FOR GUARDRAIL

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS:

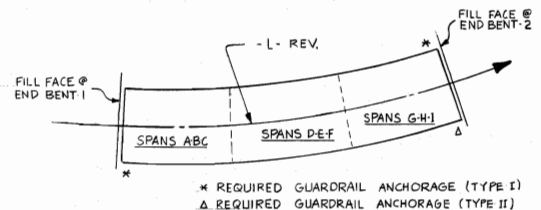
- FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF ASTM A108, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 1 1/2".
- 4 - 7/8" Ø X 2 3/4" BOLTS WITH WASHERS FOR GUARDRAIL ANCHOR ASSEMBLY SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. (AT 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.



SKETCH SHOWING POINTS OF ATTACHMENTS

PROJECT NO. **U-2107B**

CONSON COUNTY

STATION: **86+30.00-L-REV.**

SHEET 2 OF 2

THIS STANDARD HAS BEEN EXAMINED BY THE UNDERSIGNED AND IS SITE ADAPTED FOR USE ON THIS PROJECT



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

DEC. 1994

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	5-86
1			3			3/2/94
2			4			11/2

STD. No. GRA1

ASSEMBLED BY: **N. Q. TRAN** DATE: **DEC. 1994**
CHECKED BY: **E. G. ALLEN** DATE: **1-24-95**
DRAWN BY: **MIKE BRITT** DATE: **DEC. 1997**
CHECKED BY: **RANDY BISSETTE** DATE: **DEC. 1997**

**SPECIAL
STANDARD**

REV. 6/1/94 EEM 64 GRP

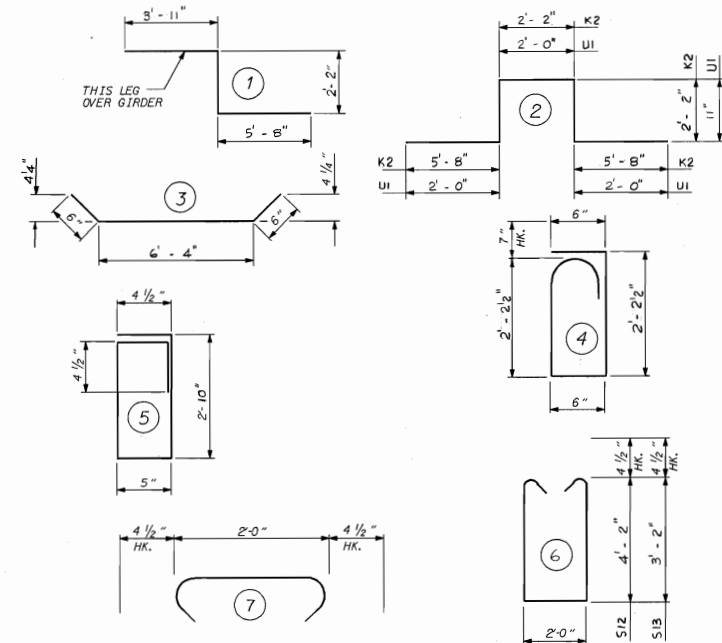
04-JAN-1995 14531

DRAWN BY R.E. KUBENY DATE 1-27-95
CHECKED BY E.G. ALLEN DATE 1-30-95

REINFORCING BAR SCHEDULE

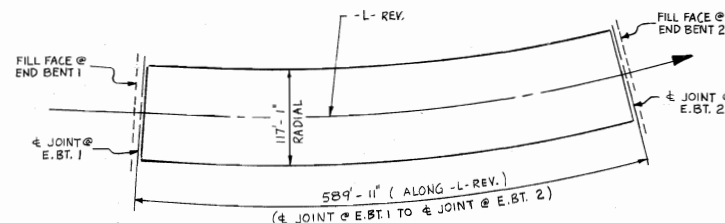
SPANS ABC						SPANS D-E-F						SPANS G-H-I					
BAR	NO.	SIZE	TYP	LENGTH	WEIGHT	BAR	NO.	SIZE	TYP	LENGTH	WEIGHT	BAR	NO.	SIZE	TYP	LENGTH	WEIGHT
A1	171.2	6	STR	59'-11	154,071	A1	172.8	6	STR	59'-11	155,511	A1	171.2	6	STR	59'-11	154,071
B1	141	5	STR	53'- 4	7,843	B2	280	5	STR	15'- 9	4,600	B2	280	5	STR	15'- 9	4,600
B2	280	5	STR	15'- 9	4,600	B3	282	5	STR	31'- 6	9,265	B3	282	5	STR	31'- 6	9,265
B3	282	5	STR	31'- 6	9,265	B5	141	5	STR	56'- 7	8,321	B8	141	5	STR	56'-11	8,370
B4	141	5	STR	35'- 0	5,147	B7	141	5	STR	36'- 2	5,319	B10	141	5	STR	36'- 3	5,331
B5	141	5	STR	56'- 7	8,321	B8	141	5	STR	56'-11	8,370	B11	141	5	STR	54'-11	8,076
B6	448	5	STR	51'- 3	23,947	B9	448	5	STR	52'- 7	24,570	B12	448	5	STR	52'- 2	24,376
K1	8	8	1	11'- 9	251	K1	8	8	1	11'- 9	251	K1	8	8	1	11'- 9	251
K2	48	8	2	17'-10	2,286	K2	48	8	2	17'-10	2,286	K2	48	8	2	17'-10	2,286
K3	78	5	STR	6'- 8	542	K3	78	5	STR	6'- 8	542	K3	78	5	STR	6'- 8	542
K4	78	5	STR	7'- 4	597	K4	78	5	STR	7'- 4	597	K4	78	5	STR	7'- 4	597
K5	52	4	STR	6'- 6	226	K5	52	4	STR	6'- 6	226	K5	52	4	STR	6'- 6	226
K6	184	4	STR	7'- 6	521	K6	184	4	STR	7'- 6	521	K6	184	4	STR	7'- 6	521
K7	52	4	STR	6'-10	237	K7	52	4	STR	6'-10	237	K7	52	4	STR	6'-10	237
K8	52	4	STR	6'- 0	208	K8	52	4	STR	6'- 0	208	K8	52	4	STR	6'- 0	208
K9	40	4	STR	29'- 8	793	K9	40	4	STR	29'- 8	793	K9	40	4	STR	29'- 8	793
S10	182	5	4	6'- 0	1,139	S10	182	5	4	6'- 0	1,139	S10	182	5	4	6'- 0	1,139
S11	273	4	5	7'- 3	1,322	S11	273	4	5	7'- 3	1,322	S11	273	4	5	7'- 3	1,322
S12	130	4	6	11'- 1	962	S12	130	4	6	11'- 1	962	S12	130	4	6	11'- 1	962
S13	52	4	6	9'- 1	316	S13	52	4	6	9'- 1	316	S13	52	4	6	9'- 1	316
S14	546	4	7	2'- 9	1,003	S14	546	4	7	2'- 9	1,003	S14	546	4	7	2'- 9	1,003
U1	182	4	2	7'-10	952	U1	182	4	2	7'-10	952	U1	182	4	2	7'-10	952
EPOXY COATED REINFORCING STEEL LBS. 224,549						EPOXY COATED REINFORCING STEEL LBS. 227,311						EPOXY COATED REINFORCING STEEL LBS. 225,444					

BAR TYPES



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'-5"
#6	3'-0"	2'-7"	3'-10"	2'-7"	4'-4"
#8	6'-0"	4'-0"	6'-0"	4'-0"	6'-10"

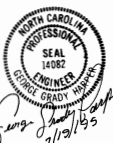


LAYOUT FOR COMPUTING AREA OF REINFORCED CONCRETE DECK SLAB
(SQ. FT. = 69,064)

SUPERSTRUCTURE BILL OF MATERIAL		
	CLASS A-A CONCRETE (CU. YDS.)	EPOXY COATED REINFORCING STEEL (LBS.)
SPAN ABC	819.9	224,549
SPAN DEF	827.4	227,311
SPAN GHI	820.1	225,444
TOTAL	2467.4	677,304

CONCRETE BREAKDOWN (CU. YDS.)			
SPAN	A, B, & C	D, E, & F	G, H, & I
POUR 1	213.3	220.8	213.5
POUR 2	184.4	184.4	184.4
POUR 3	220.8	220.8	220.8
POUR 4	100.7	100.7	100.7
POUR 5	100.7	100.7	100.7
TOTAL	819.9	827.4	820.1

GROOVING BRIDGE FLOORS	
APPROACH SLABS	0 SQ. FT.
BRIDGE DECK	61,412 SQ. FT.
TOTAL	61,412 SQ. FT.

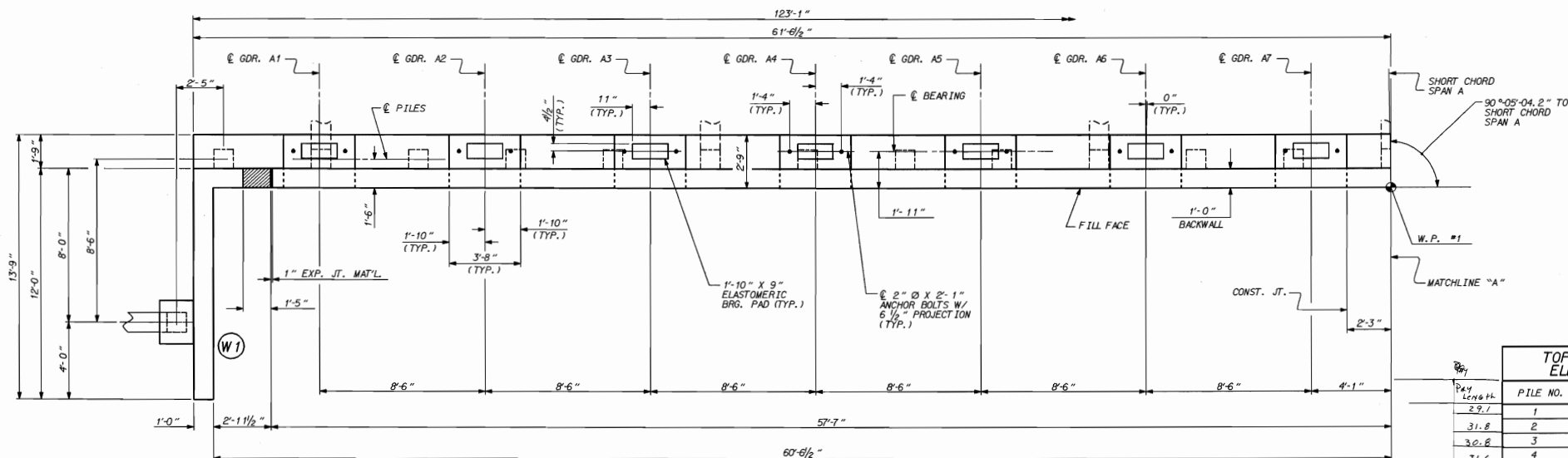


PROJECT NO. U-2107B
ONSLow COUNTY
STATION: 86 + 30.00-L-REV.

STATE OF NORTH CAROLINA					
DEPARTMENT OF TRANSPORTATION					
RAILROAD					
SUPERSTRUCTURE					
BILL OF MATERIAL					
DEC.					
1994					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			2		
				SHEET NO. 5-98	
				TOTAL SHEETS	

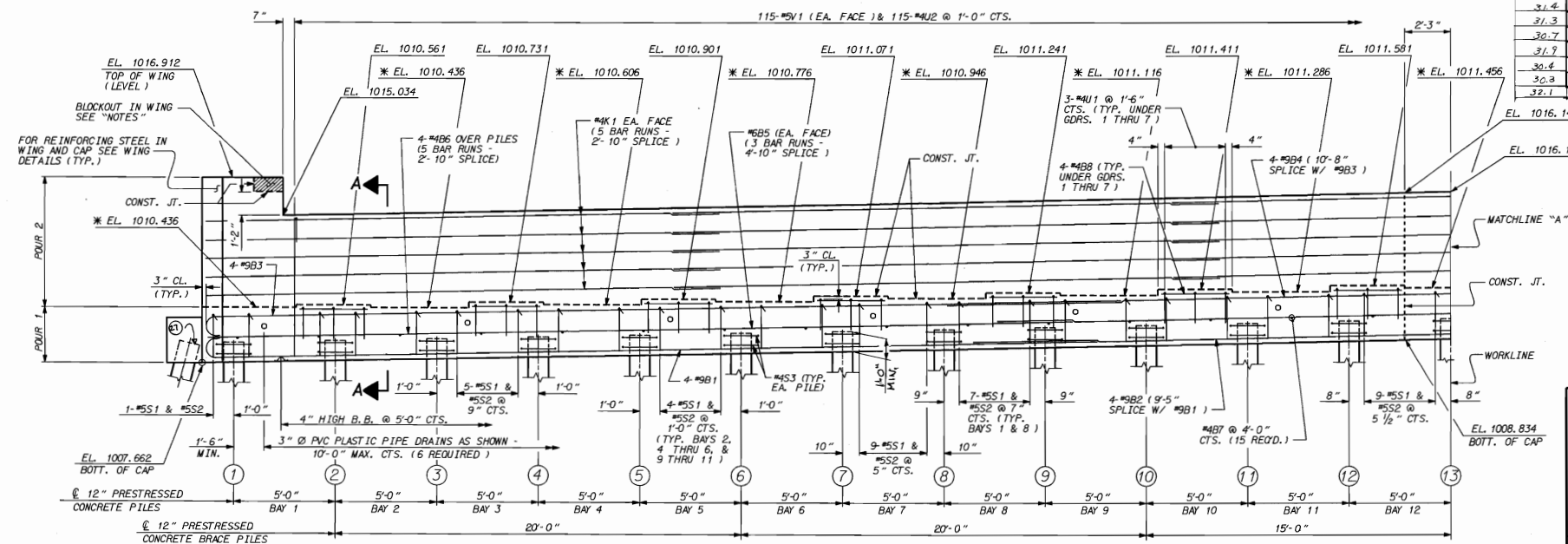
DRAWN BY: N. Q. TRAN DATE: DEC. 1994
CHECKED BY: E. G. ALLEN DATE: 1-24-95

14-DEC-1994 1650



PART PLAN

TOP OF PILE ELEVATIONS			
PILE NO.	ELEVATION	PILE TOP ELEV.	
1	1008.703	- 23.40	
2	1008.804	- 23.00	
3	1008.904	- 22.9	
4	1009.005	- 22.59	
5	1009.105	- 21.59	
6	1009.206	- 21.59	
7	1009.306	- 22.59	
8	1009.407	- 21.99	
9	1009.507	- 21.79	
10	1009.608	- 21.09	
11	1009.708	- 22.19	
12	1009.809	- 20.99	
13	1009.909	- 20.89	
32.1 x 2.7	1008.703	- 23.40	



PART ELEVATION

* FOR LOCATION OF ELEVATIONS BETWEEN BRIDGE SEAT BUILDUPS, SEE "SECTION A-A".



PROJECT NO. **U-2107B**
ONslow COUNTY
 STATION: **86+30.00 -L-REV.**

SHEET 1 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 Raleigh

**SUBSTRUCTURE
 END BENT 1**

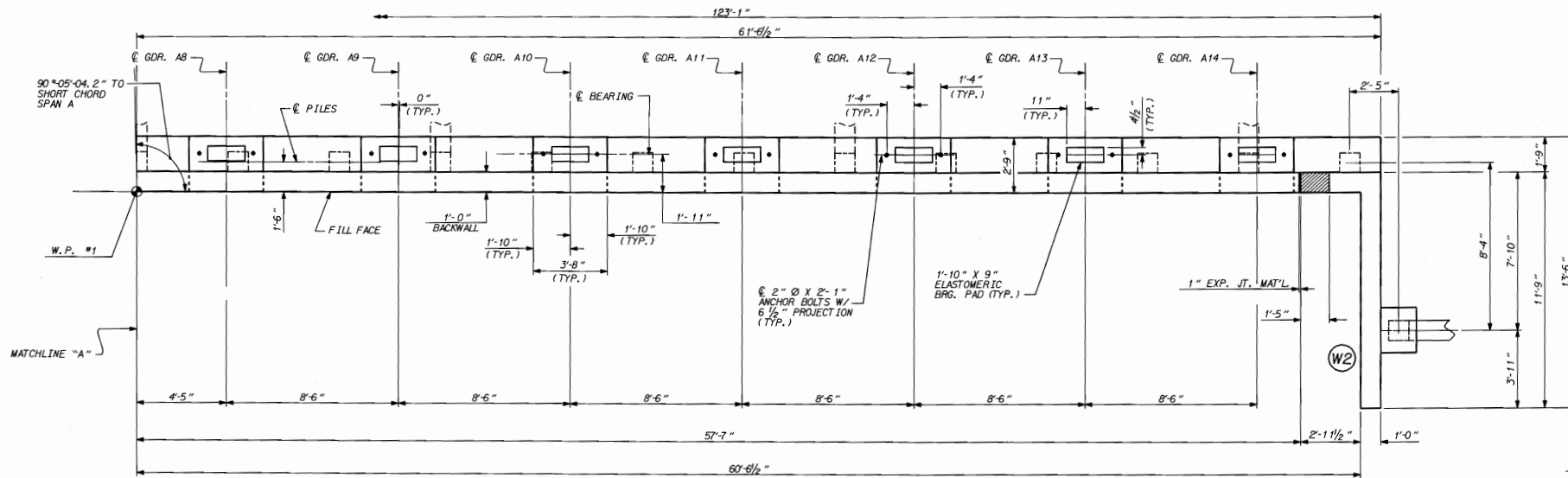
MARCH

1995

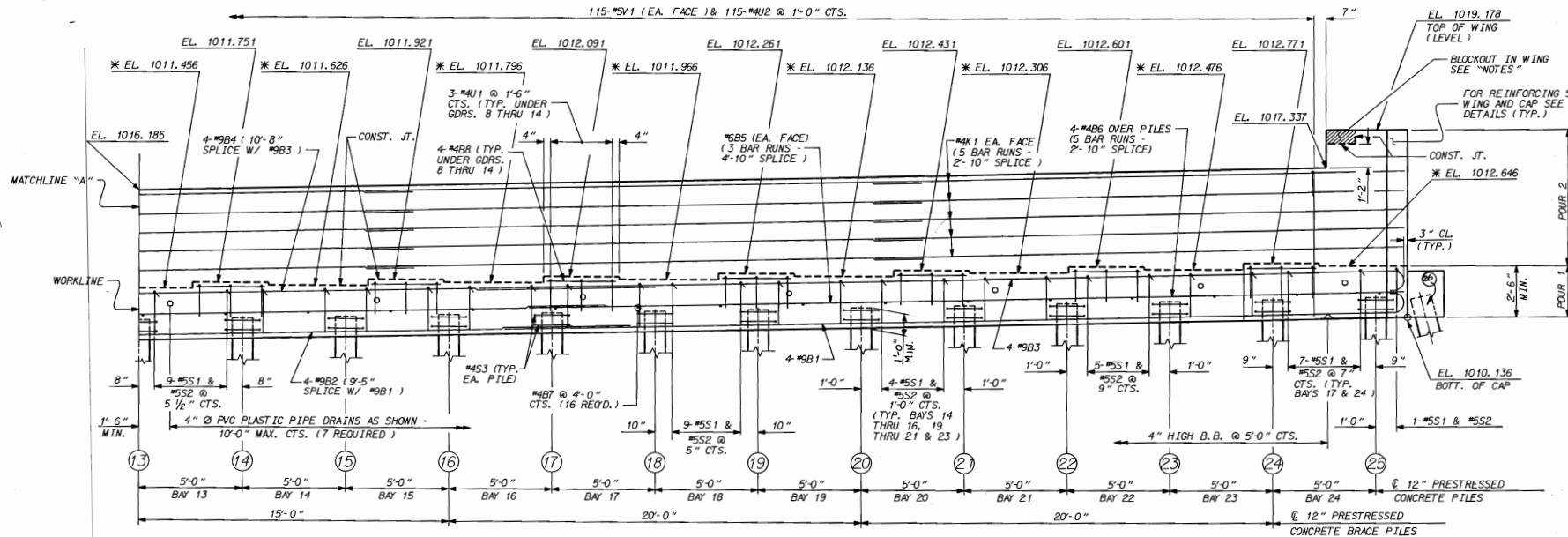
REVISIONS				SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

DRAWN BY: **E.G. ALLEN** DATE: **3-24-95**
 CHECKED BY: **K.E. KUBERNY** DATE: **3-28-95**

18-JUL-1995 14044



PART PLAN



PART ELEVATION

Pay Length

TOP OF PILE ELEVATIONS		
True Top Elev.	PILE NO.	ELEVATION
-20.39	13	1009.909
-19.79	14	1010.010
-20.09	15	1010.110
-20.39	16	1010.211
-19.39	17	1010.311
-19.59	18	1010.412
-19.59	19	1010.512
-17.99	20	1010.613
-18.69	21	1010.713
-17.69	22	1010.814
-17.69	23	1010.914
-17.28	24	1011.015
-17.15	25	1011.115
-17.99	26	1011.115



PROJECT NO. **U-2107B**
ONSLow COUNTY
 STATION: **86+30.00 -L-REV.**

SHEET 2 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION

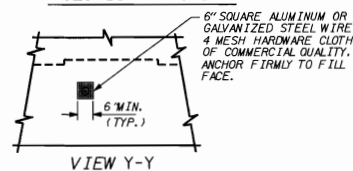
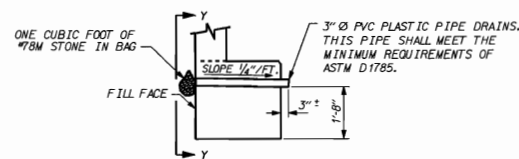
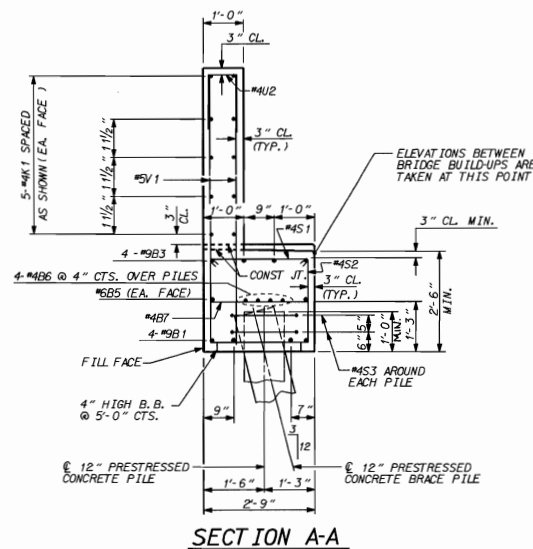
**SUBSTRUCTURE
 END BENT 1**

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

MARCH 1995
 S-90
 TOTAL SHEETS 112

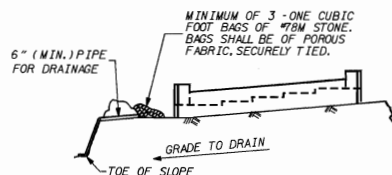
DRAWN BY: **E. G. ALLEN** DATE: 3-24-95
 CHECKED BY: **R. E. KUBENY** DATE: 7-18-95

* FOR LOCATION OF ELEVATIONS BETWEEN BRIDGE SEAT BUILDUPS, SEE "SECTION A-A".



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



BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

TEMPORARY DRAINAGE AT END BENT

-----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.

BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

THE TOP SURFACE AREAS OF THE END BENT CAPS 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.

THE CONCRETE IN THE SHADED AREA OF THE WINGS SHALL BE POURED AFTER THE JOINT IN THE DECK AND THE APPROACH SLAB HAS BEEN SAWS AND, IF SLIP FORMING IS USED, AFTER THE CASTING OF THE BARRIER RAIL.

ONE THOUSAND (1000) FEET HAS BEEN ADDED TO ALL ELEVATIONS.

THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" Ø DRAIN PIPE THROUGH THE WING WALL AS SHOWN IN THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL SHALL BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.



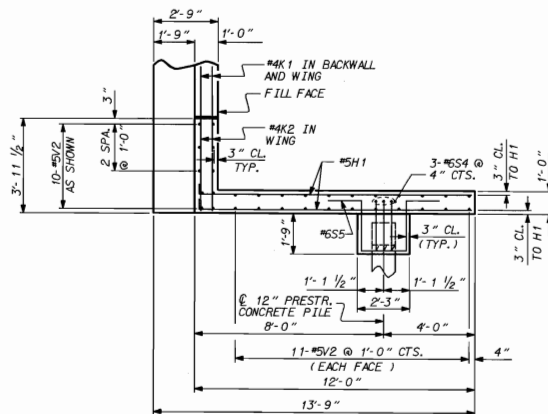
PROJECT NO. U-2107B
ONSLOW COUNTY
 STATION: 86+30.00 -L-REV.
 SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

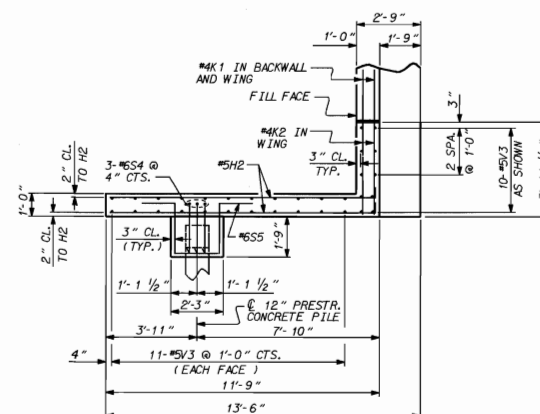
SUBSTRUCTURE END BENT 1

REVISIONS				1995	
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

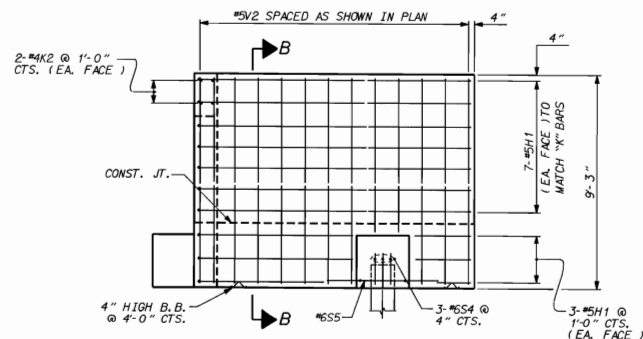
DRAWN BY: E.G. ALLEN DATE: 3-24-95
 CHECKED BY: B.E. KUBENY DATE: 7-18-95



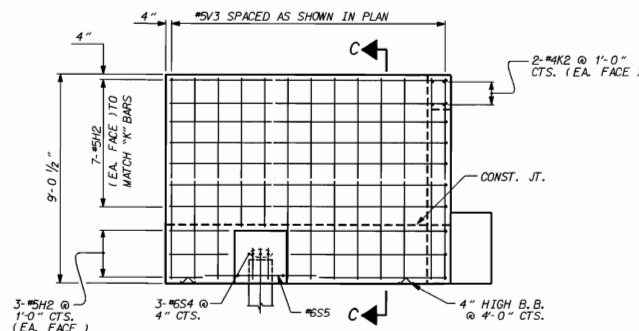
PLAN OF LEFT WING - W1



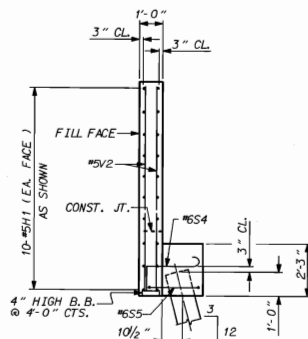
PLAN OF RIGHT WING - W2



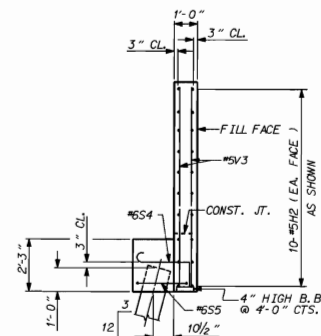
ELEVATION OF LEFT WING - W1



ELEVATION OF RIGHT WING - W2



SECTION B-B



SECTION C-C

BAR TYPES

BILL OF MATERIAL

END BENT 1

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	9	48'-5	1317
B2	4	9	47'-2	641
B3	8	3	49'-3	1340
B4	4	9	48'-0	553
B5	6	9	44'-1	397
B6	20	4	26'-10	358
B7	31	4	26'-3	47
B8	36	4	3'-2	118
H1	20	5	4	257
H2	20	5	4	252
K1	50	8	4	26
K2	50	8	4	18
S1	132	5	2	436
S2	132	5	9	952
S3	50	4	10	234
S4	6	6	6	35
S5	2	6	8	26
U1	42	4	6	143
U2	115	4	6	192
V1	230	5	STR	1619
V2	32	5	STR	292
V3	32	5	STR	284

EPOXY COATED REINFORCING STEEL LBS. 10,507

CLASS AA CONCRETE BREAKDOWN:

POUR #1 (COP & WING) 34.5 CY.

POUR #2 (BACKWALL & WING) 26.8 CY.

CLASS AA CONCRETE TOTAL = 61.3 CY.

12" SQ. PRESTRESSED CONCRETE PILES

NO. = 27 LIN. FT. = 800

NOTE : CONCRETE DISPLACED BY THE 12" PRESTRESSED CONCRETE PILES HAS BEEN DEDUCTED.

ALL BAR DIMENSIONS ARE OUT TO OUT.



PROJECT NO. U-2107B
ONslow COUNTY
 STATION: 86+30.00 -L-REV.

SHEET 4 OF 4

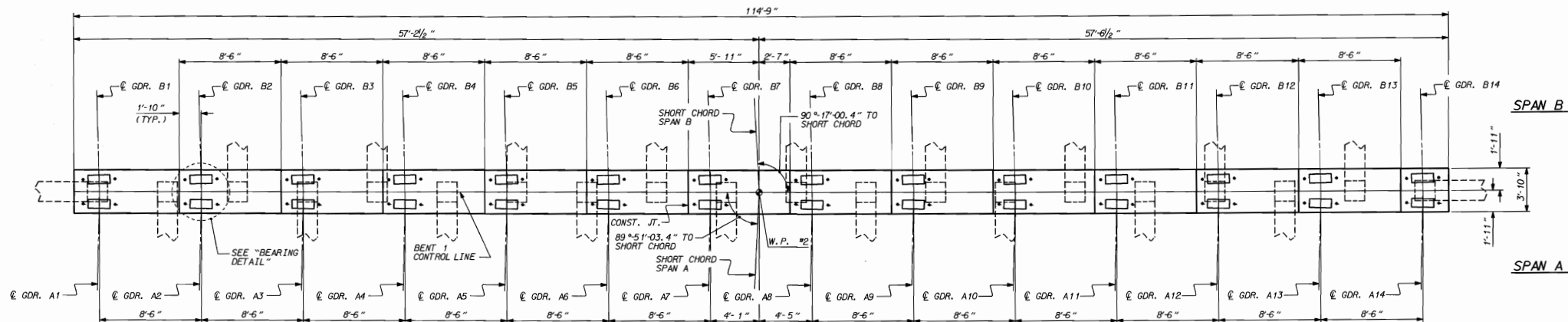
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 Raleigh

SUBSTRUCTURE
END BENT 1

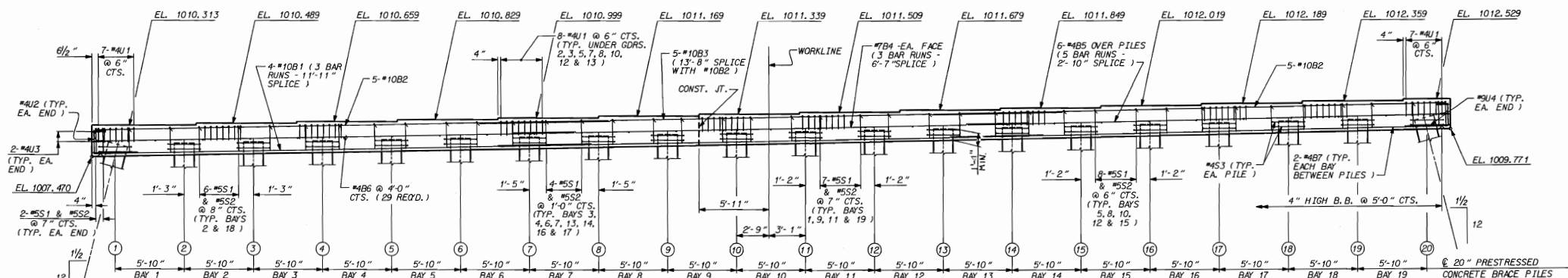
MARCH		1995	
NO.	BY	DATE	REVISIONS
1			
2			

DRAWN BY: E.G. ALLEN DATE: 3-24-95
 CHECKED BY: R.E. KUBENY DATE: 7-18-95

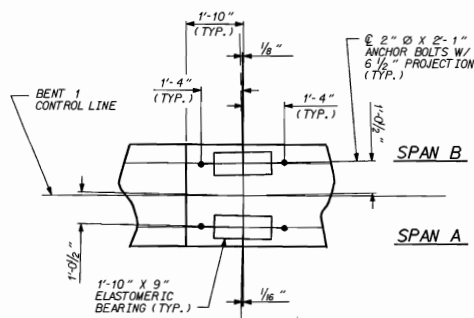
18-JUL-1995 1445



PLAN - BENT 1

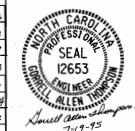


ELEVATION - BENT 1



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

TOP OF PILE ELEVATIONS - BENT 1		
PILE NO.	TOP OF PILE ELEVATION	PILE TYP.
1	1008.609	-19.99 28.6
2	1008.726	-21.07 28.6
3	1008.843	-20.86 28.7
4	1008.960	-20.84 28.8
5	1009.077	-20.62 28.7
6	1009.194	-20.21 28.9
7	1009.311	-19.99 28.2
8	1009.428	-19.97 28.6
9	1009.545	-19.85 28.6
10	1009.662	-19.44 28.1
11	1009.779	-19.52 28.2
12	1009.896	-21.50 31.6
13	1010.013	-21.09 31.1
14	1010.130	-20.67 30.8
15	1010.247	-21.65 31.3
16	1010.364	-20.18 31.5
17	1010.481	-20.12 31.6
18	1010.598	-19.10 28.7
19	1010.715	-19.98 31.7
20	1010.832	-18.77 28.6



PROJECT NO. U-2107B
ONslow COUNTY
 STATION: 86+30.00 -L-REV.

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION

SUBSTRUCTURE
 BENTS 1 & 2

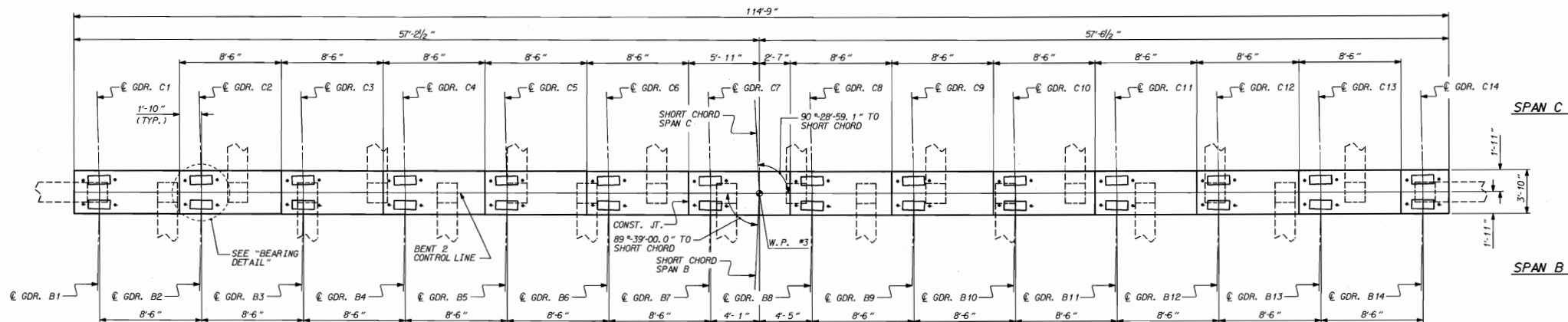
APRIL

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

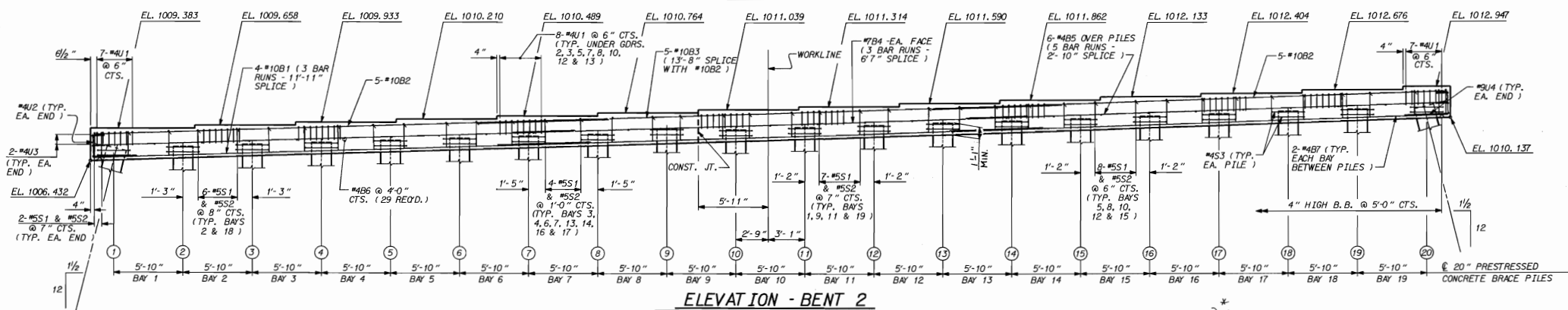
DRAWN BY: E.G. ALLEN DATE: 4-7-95
 CHECKED BY: J.L. BELDEN DATE: 7-18-95

BEARING DETAIL

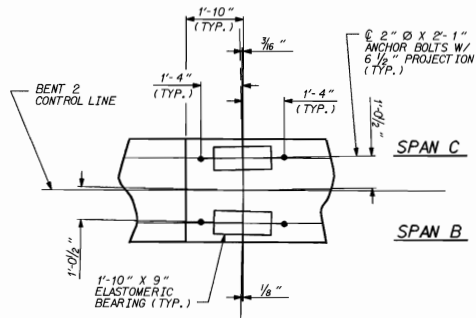
18-JUL-1995 14:46



PLAN - BENT 2



ELEVATION - BENT 2



BEARING DETAIL

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

TOP OF PILE ELEVATIONS - BENT 2		
PILE NO.	TOP OF PILE ELEVATION	PILE TIP * ELEV.
1	1007.605	-20.99 ±0.5
2	1007.794	-22.01 ±0.7
3	1007.982	-21.72 ±0.6
4	1008.171	-21.60 ±0.1
5	1008.359	-21.34 ±0.1
6	1008.547	-20.05 ±0.2
7	1008.735	-20.40 ±0.7
8	1008.924	-20.48 ±0.1
9	1009.112	-20.29 ±0.0
10	1009.301	-19.80 ±0.3
11	1009.489	-19.01 ±0.2
12	1009.677	-21.71 ±0.0
13	1009.866	-21.23 ±0.1
14	1010.054	-20.75 ±0.7
15	1010.242	-21.00 ±0.7
16	1010.431	-20.07 ±0.7
17	1010.619	-19.90 ±0.1
18	1010.807	-18.09 ±0.0
19	1010.996	-19.70 ±0.1
20	1011.184	-18.41 ±0.5



PROJECT NO. U-2107B
ONSLow COUNTY
 STATION: 86+30.00 -L-REV.

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 Raleigh

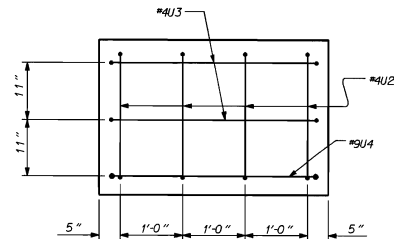
**SUBSTRUCTURE
 BENTS 1 & 2**

APRIL 1995

REVISIONS				SHEET NO. S-94
NO.	BY	DATE	DESCRIPTION	
1				TOTAL SHEETS 112
2				

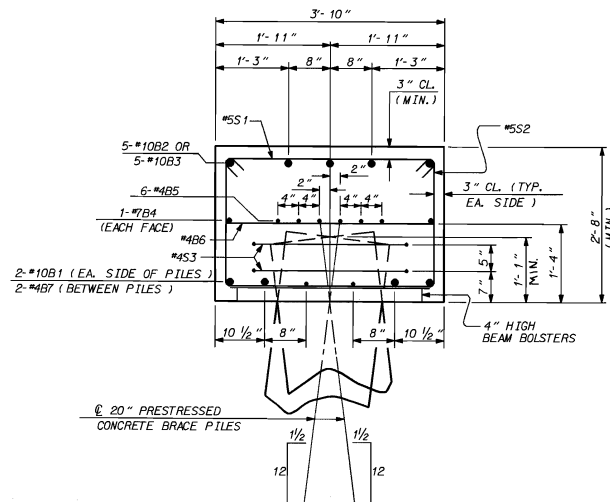
DRAWN BY: E. G. ALLEN DATE: 4-7-95
 CHECKED BY: J. L. BOLDEN DATE: 7-18-95

18-JUL-1995 14:46



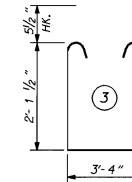
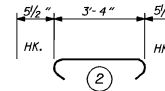
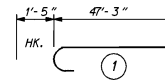
END VIEW

(BOTH ENDS TYPICAL)

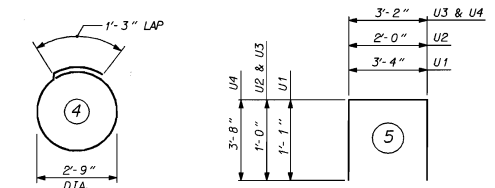


SECTION THRU CAP

BAR TYPES



BILL OF MATERIAL BENT 1						BILL OF MATERIAL BENT 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	12	10	STR	45'-1"	2380	B1	12	10	STR	45'-1"	2380
B2	18	10	STR	48'-8"	2094	B2	18	10	STR	48'-8"	2094
B3	5	10	STR	47'-3"	1017	B3	5	10	STR	47'-3"	1017
B4	6	7	STR	42'-6"	521	B4	6	7	STR	42'-6"	521
B5	30	4	STR	25'-2"	584	B5	30	4	STR	25'-2"	584
B6	29	4	STR	2'-4"	65	B6	29	4	STR	2'-4"	65
B7	38	4	STR	3'-10"	97	B7	38	4	STR	3'-10"	97
S1	116	5	2	4'-3"	514	S1	116	5	2	4'-3"	514
S2	116	5	3	8'-6"	1028	S2	116	5	3	8'-6"	1028
S3	40	4	1	9'-11"	265	S3	40	4	1	9'-11"	265
U1	78	4	5	5'-6"	287	U1	78	4	5	5'-6"	287
U2	8	4	4	4'-0"	21	U2	8	4	4	4'-0"	21
U3	4	4	4	5'-2"	14	U3	4	4	4	5'-2"	14
U4	2	9	5	10'-6"	71	U4	2	9	5	10'-6"	71
EPOXY COATED REINFORCING STEEL LBS. 8,878						EPOXY COATED REINFORCING STEEL LBS. 8,878					
CLASS AA CONCRETE TOTAL = 42.7 CY.						CLASS AA CONCRETE TOTAL = 43.5 CY.					
20" PRESTRESSED CONCRETE PILES NO. = 20 LIN. FT. = 700						20" PRESTRESSED CONCRETE PILES NO. = 20 LIN. FT. = 700					



ALL BAR DIMENSIONS ARE OUT TO OUT



PROJECT NO. U-2107B
ONSLow COUNTY
 STATION: 86+30.00 -L-REV.

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 BENTS 1 & 2**

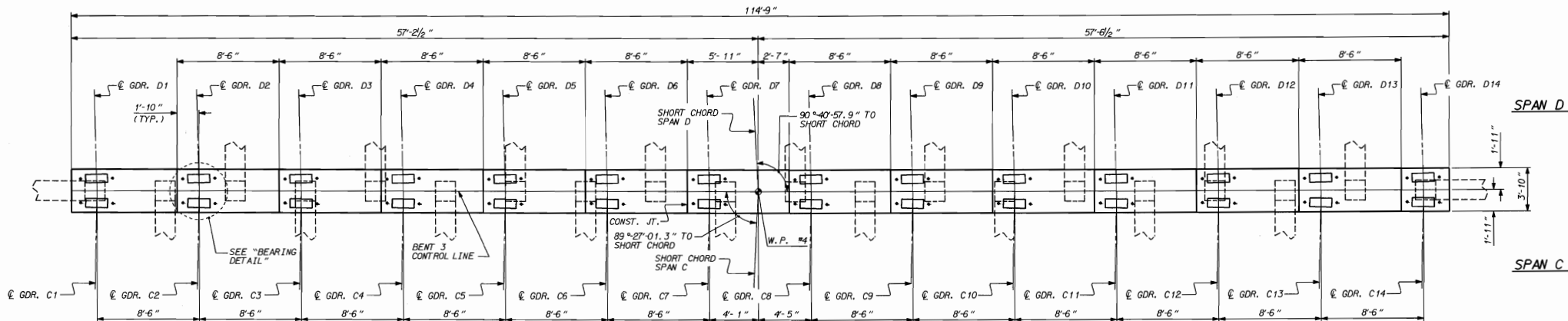
APRIL 1995

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

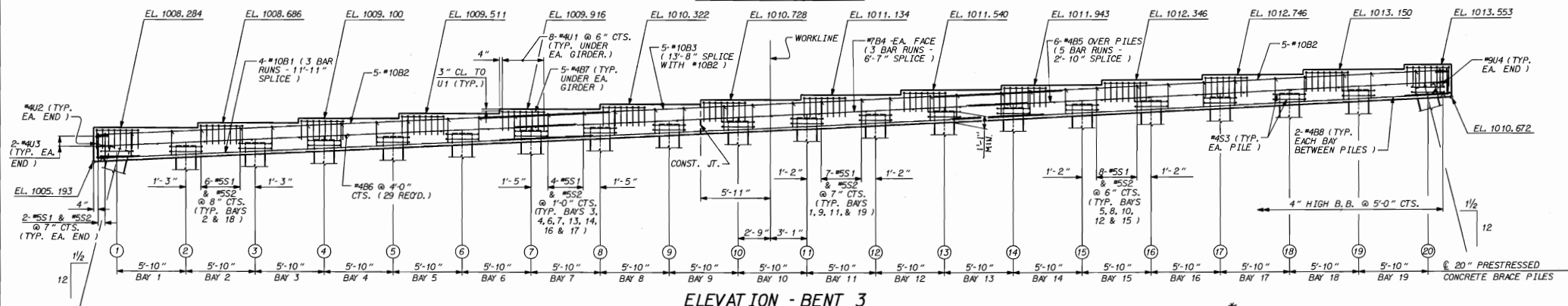
S-95
 112

DRAWN BY: E. G. ALLEN DATE: 4-7-95
 CHECKED BY: J. L. BOLDEN DATE: 7-18-95

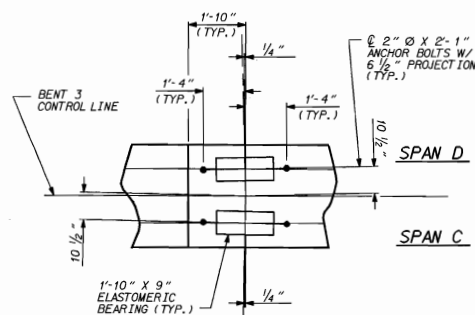
18-JUL-1995 14:47



PLAN - BENT 3



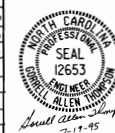
ELEVATION - BENT 3



BEARING DETAIL

-----NOTES-----
 STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
 FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.
 THE TOP SURFACE AREAS OF THE BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THAT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

TOP OF PILE ELEVATIONS - BENT 3		
PILE NO.	TOP OF PILE ELEVATION	PILE TIP ELEV.
1	1006.410	-28.59 35.0
2	1006.688	-28.31 35.0
3	1006.967	-28.28 36.0
4	1007.245	-27.72 36.0
5	1007.524	-26.06 36.0
6	1007.802	-27.00 35.0
7	1008.081	-27.42 36.5
8	1008.359	-26.04 36.4
9	1008.638	-27.00 36.5
10	1008.916	-25.38 36.3
11	1009.195	-27.30 36.5
12	1009.473	-26.33 36.8
13	1009.752	-18.75 37.0
14	1010.030	-18.71 37.0
15	1010.309	-18.09 38.4
16	1010.587	-19.41 36.0
17	1010.866	-19.33 36.2
18	1011.145	-20.15 36.3
19	1011.423	-21.38 32.8
20	1011.702	-21.40 33.3



PROJECT NO. **U-2107B**
ONSLow COUNTY
 STATION: **86+30.00 -L-REV.**

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 Raleigh

**SUBSTRUCTURE
 BENTS 3 & 4**

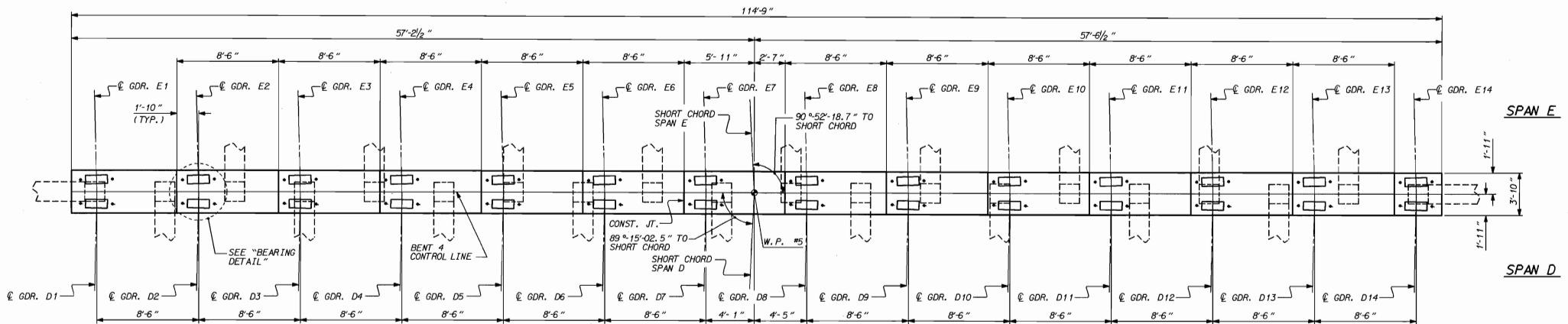
APRIL

1995

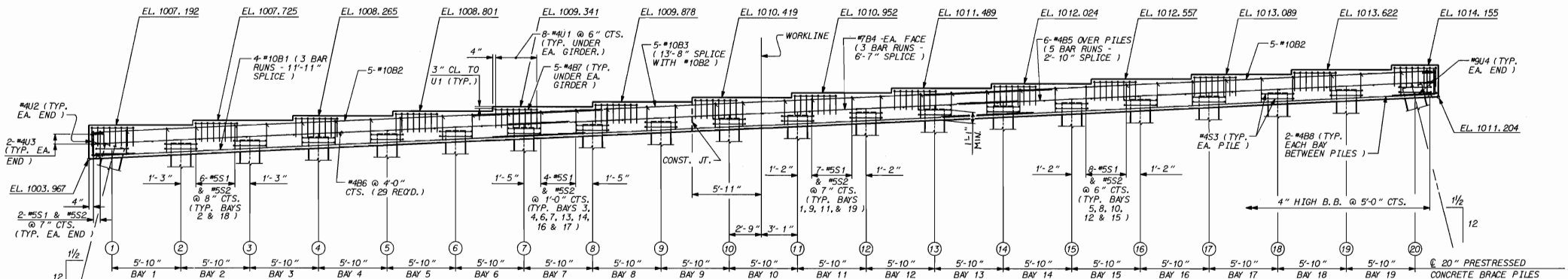
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			S-96
2			4			112

DRAWN BY: **E.G. ALLEN** DATE: **4-7-95**
 CHECKED BY: **J.L. BOLLEN** DATE: **7-19-95**

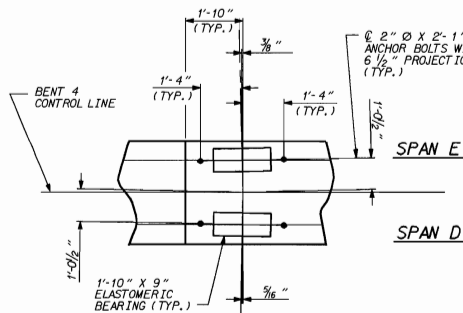
18-JUL-1995 14:40



PLAN - BENT 4



ELEVATION - BENT 4



BEARING DETAIL

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

TOP OF PILE ELEVATIONS - BENT 4		
PILE NO.	TOP OF PILE ELEVATION	PILE TIP ELEV.
1	1005.226	-21.31 26.6
2	1005.594	-21.41 33.0
3	1005.962	-20.34 26.3
4	1006.330	-22.07 28.4
5	1006.698	-21.40 34.1
6	1007.066	-21.53 28.6
7	1007.434	-20.27 22.8
8	1007.802	-21.60 29.4
9	1008.170	-21.88 30.0
10	1008.537	-21.86 36.4
11	1008.905	-25.89 34.6
12	1009.273	-22.83 29.6
13	1009.641	-21.36 31.0
14	1010.009	-20.89 30.4
15	1010.377	-22.22 32.6
16	1010.745	-21.05 31.8
17	1011.113	-21.19 32.9
18	1011.481	-23.52 35.0
19	1011.848	-23.05 35.7
20	1012.216	-20.28 32.5



PROJECT NO. **U-2107B**
ONSLow COUNTY
 STATION: **86+30.00 -L-REV.**

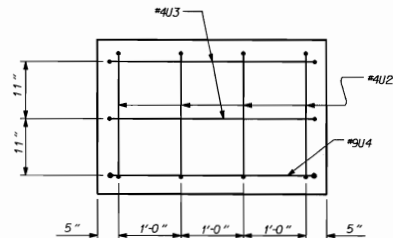
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			2		
3			4		

APRIL 1995

SHEET NO. **S-97**

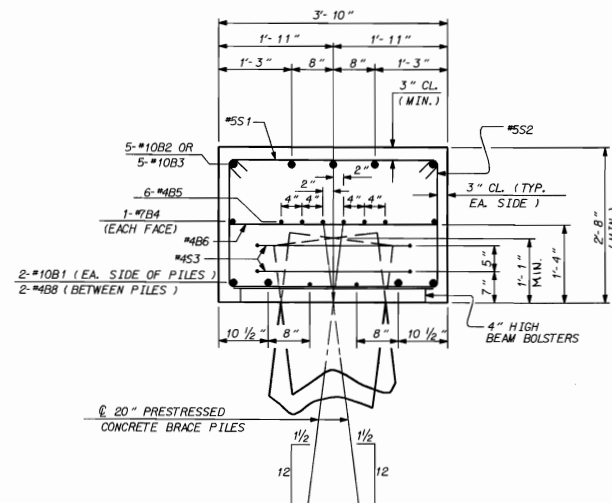
TOTAL SHEETS **112**

DRAWN BY: **E.G. ALLEN** DATE: **4-7-95**
 CHECKED BY: **J.L. GOLDEN** DATE: **7-18-95**



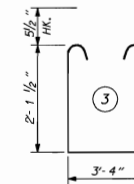
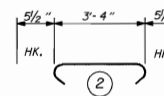
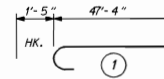
END VIEW

(BOTH ENDS TYPICAL)

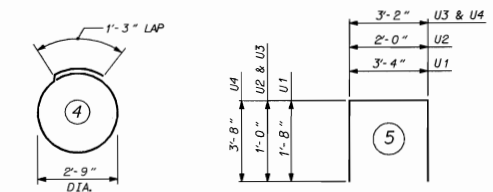


SECTION THRU CAP

BAR TYPES



BILL OF MATERIAL BENT 3						BILL OF MATERIAL BENT 4					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	12	10	STR	46'-2"	2384	B1	12	10	STR	46'-2"	2384
B2	10	10	1	48'-9"	2098	B2	10	10	1	48'-9"	2098
B3	5	10	STR	47'-4"	1018	B3	5	10	STR	47'-4"	1018
B4	6	7	STR	42'-7"	522	B4	6	7	STR	42'-7"	522
B5	30	4	STR	25'-2"	504	B5	30	4	STR	25'-2"	504
B6	29	4	STR	3'-4"	65	B6	29	4	STR	3'-4"	65
B7	70	4	STR	3'-8"	171	B7	70	4	STR	3'-8"	171
B8	38	4	STR	3'-10"	97	B8	38	4	STR	3'-10"	97
S1	116	5	2	4'-3"	514	S1	116	5	2	4'-3"	514
S2	116	5	2	8'-6"	1028	S2	116	5	2	8'-6"	1028
S3	40	4	4	9'-11"	265	S3	40	4	4	9'-11"	265
U1	112	4	8	6'-8"	499	U1	112	4	8	6'-8"	499
U2	8	4	4	4'-0"	21	U2	8	4	4	4'-0"	21
U3	4	4	5	5'-2"	14	U3	4	4	5	5'-2"	14
U4	2	4	5	10'-6"	71	U4	2	4	5	10'-6"	71
EPOXY COATED REINFORCING STEEL LBS. 9,271						EPOXY COATED REINFORCING STEEL LBS. 9,271					
CLASS AA CONCRETE TOTAL = 44.6 CY.						CLASS AA CONCRETE TOTAL = 46.7 CY.					
20" PRESTRESSED CONCRETE PILES NO. = 20 LIN. FT. = 600						20" PRESTRESSED CONCRETE PILES NO. = 20 LIN. FT. = 600					



ALL BAR DIMENSIONS ARE OUT TO OUT

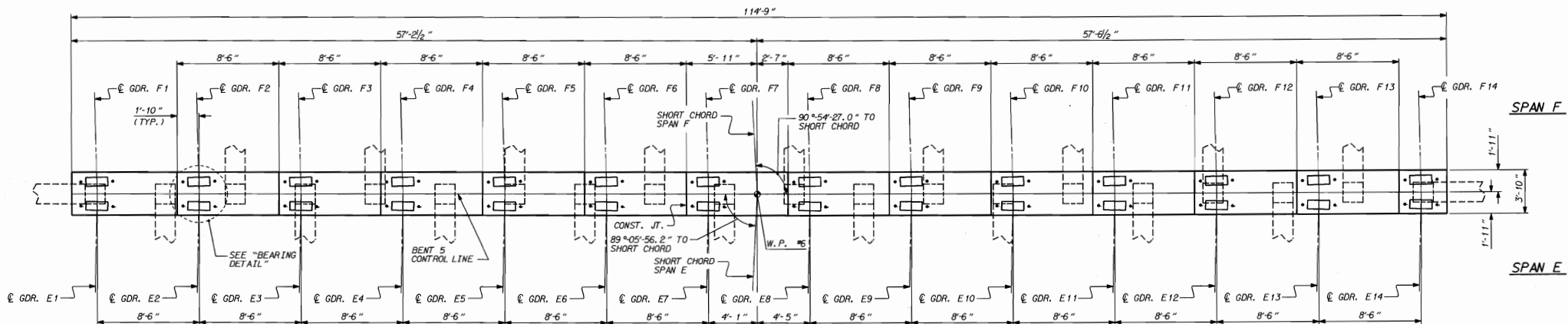


PROJECT NO. U-2107B
ONSLow COUNTY
 STATION: 86+30.00 -L-REV.
 SHEET 3 OF 3

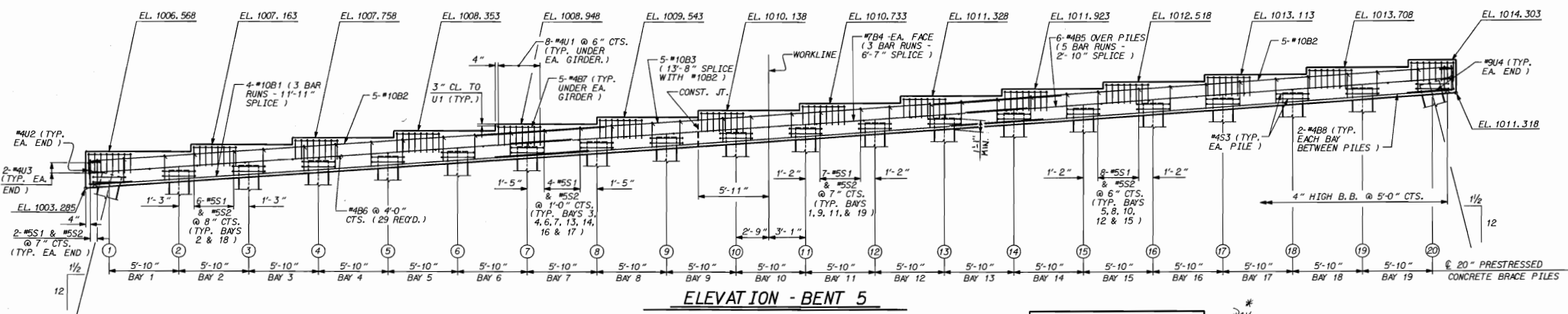
STATE OF NORTH CAROLINA				DEPARTMENT OF TRANSPORTATION			
RALEIGH				SUBSTRUCTURE			
BENTS 3 & 4				APRIL 1995			
NO.	BY	DATE	NO.	BY	DATE	SHEET NO.	NO.
1			3			10/11	112
2			4				

DRAWN BY: E. G. ALLEN DATE: 4-7-95
 CHECKED BY: J. L. GOLDEN DATE: 7-18-95

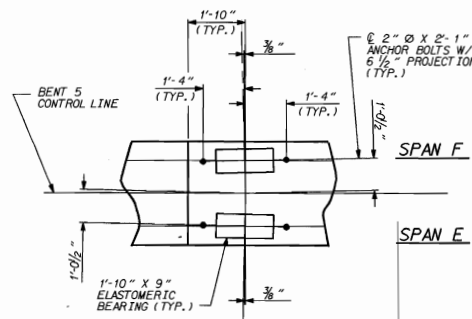
18-AU-095 1449



PLAN - BENT 5



ELEVATION - BENT 5



BEARING DETAIL

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

TOP OF PILE ELEVATIONS - BENT 5		
PILE NO.	TOP OF PILE ELEVATION	PILE TIP ELEV.
1	1004.564	-22.74 27.1
2	1004.972	-22.59 28.3
3	1005.380	-22.44 29.5
4	1005.789	-22.29 30.7
5	1006.197	-22.14 31.9
6	1006.606	-21.99 33.1
7	1007.014	-21.84 34.3
8	1007.422	-21.69 35.5
9	1007.831	-21.54 36.7
10	1008.239	-21.39 37.9
11	1008.647	-21.24 39.1
12	1009.056	-21.09 40.3
13	1009.464	-20.94 41.5
14	1009.872	-20.79 42.7
15	1010.281	-20.64 43.9
16	1010.689	-20.49 45.1
17	1011.097	-20.34 46.3
18	1011.506	-20.19 47.5
19	1011.914	-20.04 48.7
20	1012.322	-19.89 49.9



PROJECT NO. **U-2107B**
ONSLOW COUNTY
 STATION: **86+30.00 -L-REV.**

SHEET 1 OF 5

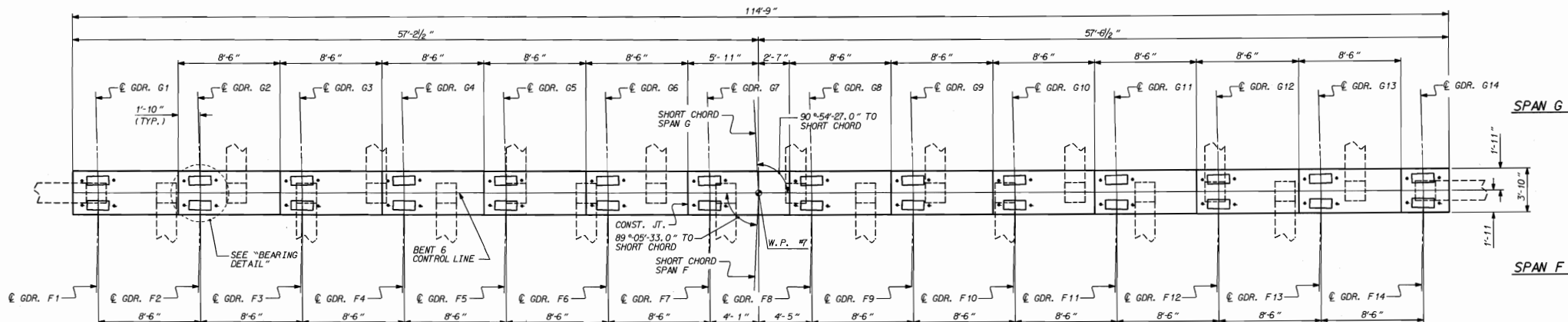
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
BENTS 5 THRU 8

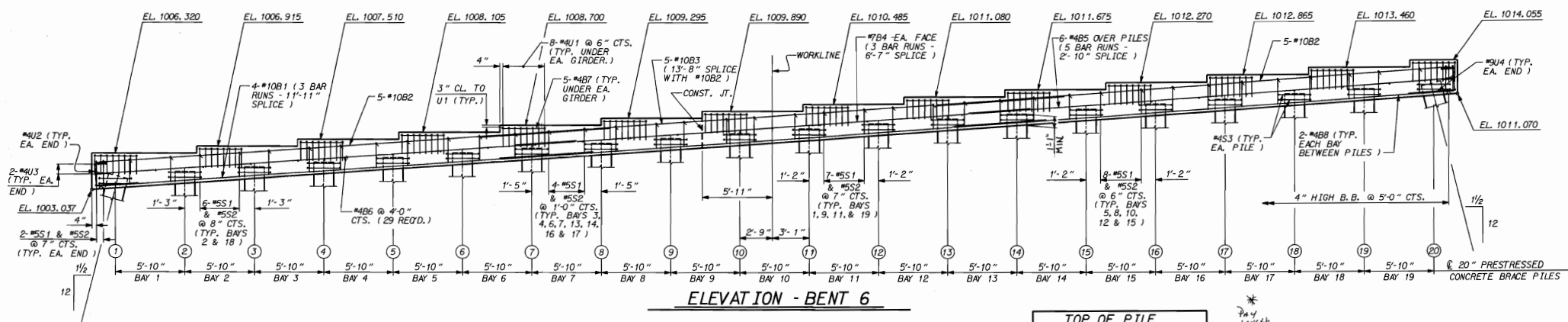
REVISIONS				SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

DRAWN BY: **E. G. ALLEN** DATE: **4-7-95**
 CHECKED BY: **J. L. BOLDEN** DATE: **7-18-95**

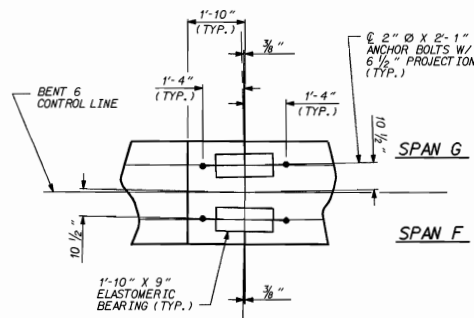
18-JUL-1995 1460



PLAN - BENT 6



ELEVATION - BENT 6



BEARING DETAIL

---NOTES---
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.
THE TOP SURFACE AREAS OF THE BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THAT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

TOP OF PILE ELEVATIONS - BENT 6		
PILE NO.	TOP OF PILE ELEVATION	PILE TIP ELEVATION
1	1004.316	-2378.28.3
2	1004.724	-2358.28.3
3	1005.132	-2347.34.6
4	1005.541	-2346.34.0
5	1005.949	-2345.34.4
6	1006.358	-2344.34.3
7	1006.766	-2343.34.3
8	1007.174	-2342.32.7
9	1007.583	-2341.32.2
10	1007.991	-2340.32.4
11	1008.399	-2339.31.0
12	1008.808	-2338.32.6
13	1009.216	-2337.31.7
14	1009.624	-2336.31.3
15	1010.033	-2335.31.7
16	1010.441	-2334.31.0
17	1010.849	-2333.31.2
18	1011.258	-2332.31.2
19	1011.666	-2331.31.2
20	1012.074	-2330.31.0



PROJECT NO. **U-2107B**
ONSLow COUNTY
STATION: **86+30.00 -L-REV.**

SHEET 2 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUBSTRUCTURE
BENTS 5 THRU 8**

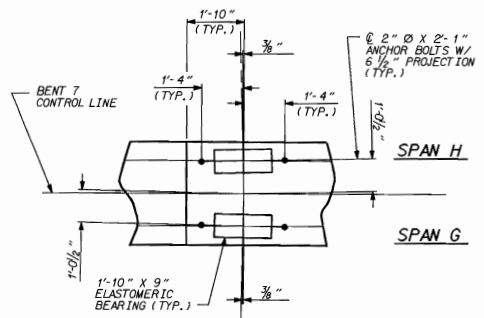
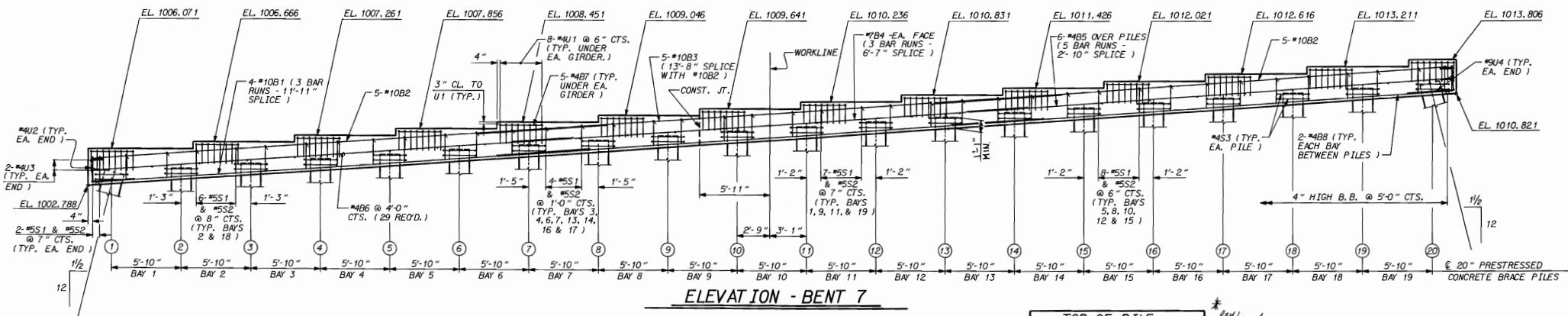
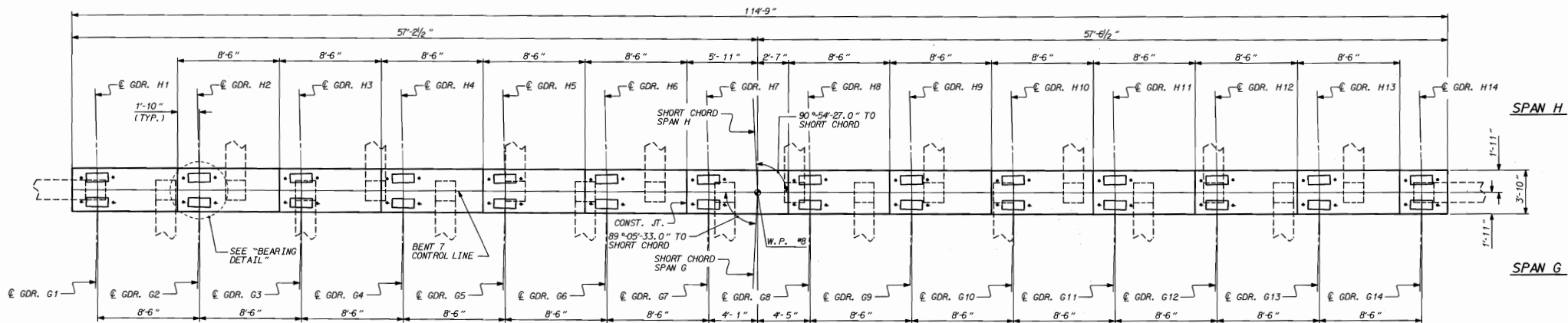
APRIL

1995

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

DRAWN BY: **E. G. ALLEN** DATE: **4-7-95**
CHECKED BY: **J. L. BOLDEN** DATE: **3-18-95**

18-JUL-1995 1400
18-JUL-1995 1400



---NOTES---

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

TOP OF PILE ELEVATIONS - BENT 7		
PILE NO.	TOP OF PILE ELEVATION	PILE TIP ELEV.
1	1004.067	-24.98
2	1004.475	-29.92
3	1004.883	-24.92
4	1005.292	-25.01
5	1005.700	-29.90
6	1006.109	-24.09
7	1006.517	-24.48
8	1006.925	-25.17
9	1007.334	-23.67
10	1007.742	-24.66
11	1008.150	-22.45
12	1008.559	-23.34
13	1008.967	-19.03
14	1009.375	-24.02
15	1009.784	-14.02
16	1010.192	-17.11
17	1010.601	-18.00
18	1011.009	-17.19
19	1011.417	-20.58
20	1011.826	-15.27



PROJECT NO. U-2107B
ONSLow COUNTY
 STATION: 86+30.00 -L-REV.

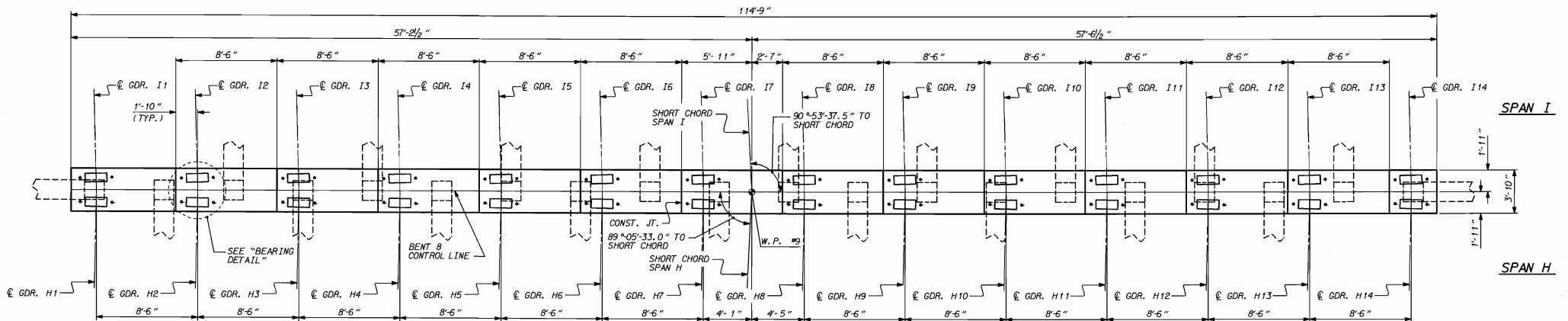
SHEET 3 OF 5
 DEPARTMENT OF TRANSPORTATION
 Raleigh
SUBSTRUCTURE
BENTS 5 THRU 8

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

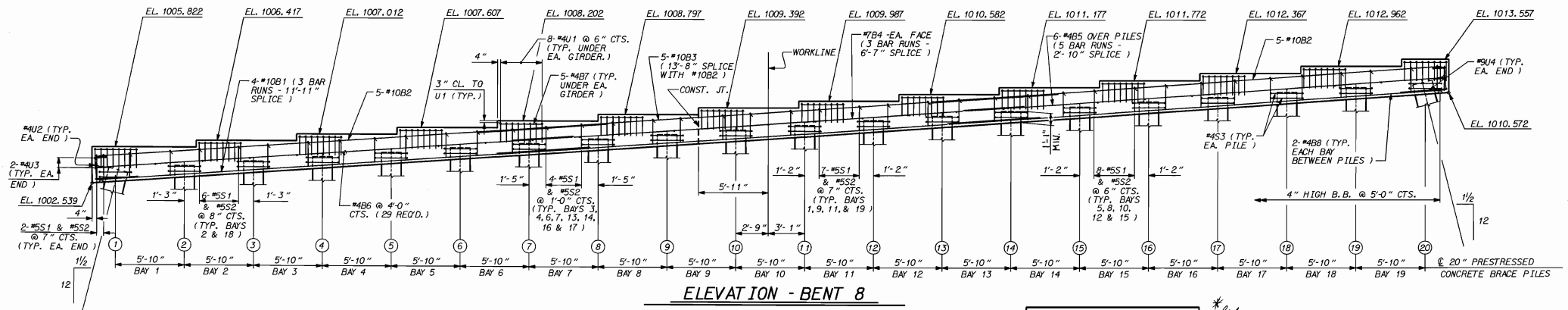
APRIL 1995

DRAWN BY: E. G. ALLEN
 CHECKED BY: J. L. BOLDEN
 DATE: 4-7-95
 DATE: 7-18-95

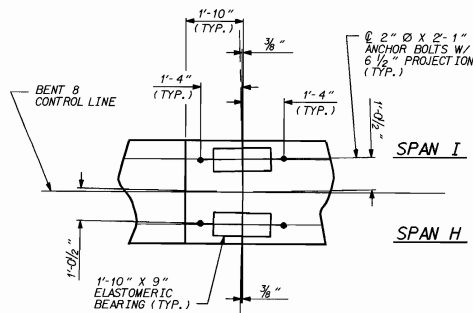
18-JUL-1995 1401



PLAN - BENT 8



ELEVATION - BENT 8



BEARING DETAIL

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

TOP OF PILE ELEVATIONS - BENT 8		
PILE NO.	TOP OF PILE ELEVATION	PILE TOP ELEV.
1	1003.818	-21.29 31.1
2	1004.226	-23.07 27.3
3	1004.634	-26.17 31.4
4	1005.043	-22.16 27.2
5	1005.451	-20.25 25.7
6	1005.860	-21.44 27.3
7	1006.268	-18.23 24.5
8	1006.676	-17.62 26.3
9	1007.085	-19.01 26.1
10	1007.493	-21.11 29.2
11	1007.901	-18.70 26.4
12	1008.310	-22.39 26.6
13	1008.718	-21.58 30.3
14	1009.126	-21.07 30.2
15	1009.535	-21.17 17.0
16	1009.943	-19.76 27.7
17	1010.352	-19.45 27.8
18	1010.760	-18.54 27.3
19	1011.168	-18.43 27.6
20	1011.577	-18.62 30.1



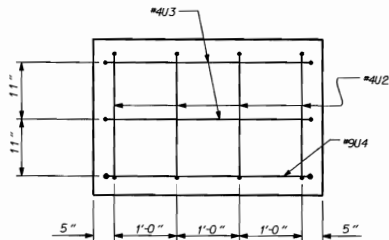
PROJECT NO. **U-2107B**
ONSLow COUNTY
 STATION: **86+30.00 -L-REV.**

SHEET 4 OF 5

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH			
SUBSTRUCTURE BENTS 5 THRU 8			
APRIL		1995	
REVISIONS		SHEET NO.	
NO.	BY	DATE	NO.
1			3
2			4
TOTAL SHEETS		112	

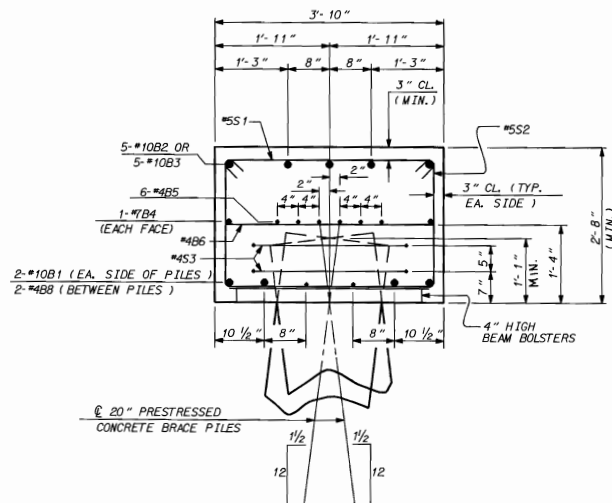
DRAWN BY: **E.G. ALLEN** DATE: **4-7-95**
 CHECKED BY: **J.L. BELDEN** DATE: **7-18-95**

18-JUL-1995 1451



END VIEW

(BOTH ENDS TYPICAL)



SECTION THRU CAP

**BILL OF MATERIAL
BENT 5**

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	12	10	STR	46-2
B2	10	10	1	2098
B3	5	10	STR	47-4
B4	6	7	STR	42-7
B5	30	4	STR	25-2
B6	29	4	STR	3-4
B7	70	4	STR	3-8
B8	38	4	STR	3-10
S1	116	5	2	4-3
S2	116	5	8-6	1028
S3	40	4	9-11	265
U1	112	4	5	6-10
U2	8	4	4-0	21
U3	4	4	5-2	14
U4	2	9	5	10-6

EPOXY COATED
REINFORCING STEEL LBS. 9,283
CLASS AA CONCRETE TOTAL = 46.2 CY.
20" PRESTRESSED CONCRETE PILES
NO. = 20 LIN. FT. = 700

**BILL OF MATERIAL
BENT 6**

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	12	10	STR	46-2
B2	10	10	1	2098
B3	5	10	STR	47-4
B4	6	7	STR	42-7
B5	30	4	STR	25-2
B6	29	4	STR	3-4
B7	70	4	STR	3-8
B8	38	4	STR	3-10
S1	116	5	2	4-3
S2	116	5	8-6	1028
S3	40	4	9-11	265
U1	112	4	5	6-10
U2	8	4	4-0	21
U3	4	4	5-2	14
U4	2	9	5	10-6

EPOXY COATED
REINFORCING STEEL LBS. 9,283
CLASS AA CONCRETE TOTAL = 46.2 CY.
20" PRESTRESSED CONCRETE PILES
NO. = 20 LIN. FT. = 700

**BILL OF MATERIAL
BENT 7**

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	12	10	STR	46-2
B2	10	10	1	2098
B3	5	10	STR	47-4
B4	6	7	STR	42-7
B5	30	4	STR	25-2
B6	29	4	STR	3-4
B7	70	4	STR	3-8
B8	38	4	STR	3-10
S1	116	5	2	4-3
S2	116	5	8-6	1028
S3	40	4	9-11	265
U1	112	4	5	6-10
U2	8	4	4-0	21
U3	4	4	5-2	14
U4	2	9	5	10-6

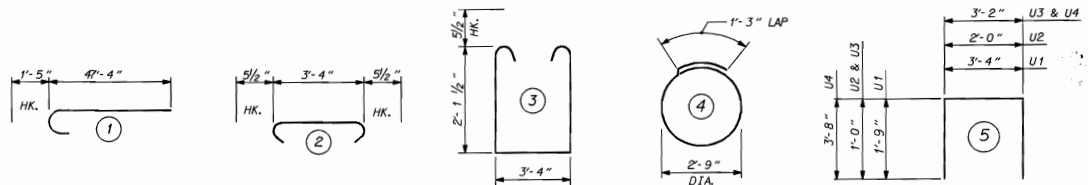
EPOXY COATED
REINFORCING STEEL LBS. 9,283
CLASS AA CONCRETE TOTAL = 46.2 CY.
20" PRESTRESSED CONCRETE PILES
NO. = 20 LIN. FT. = 600

**BILL OF MATERIAL
BENT 8**

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	12	10	STR	46-2
B2	10	10	1	2098
B3	5	10	STR	47-4
B4	6	7	STR	42-7
B5	30	4	STR	25-2
B6	29	4	STR	3-4
B7	70	4	STR	3-8
B8	38	4	STR	3-10
S1	116	5	2	4-3
S2	116	5	8-6	1028
S3	40	4	9-11	265
U1	112	4	5	6-10
U2	8	4	4-0	21
U3	4	4	5-2	14
U4	2	9	5	10-6

EPOXY COATED
REINFORCING STEEL LBS. 9,283
CLASS AA CONCRETE TOTAL = 46.2 CY.
20" PRESTRESSED CONCRETE PILES
NO. = 20 LIN. FT. = 600

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT



PROJECT NO. U-2107B
ONSLow COUNTY
STATION: 86+30.00 -L-REV.

SHEET 5 OF 5

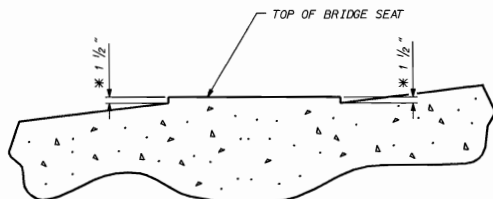
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUBSTRUCTURE
BENT 5 THRU 8**

APRIL 1995			
NO.	BY	DATE	REVISIONS
1			
2			

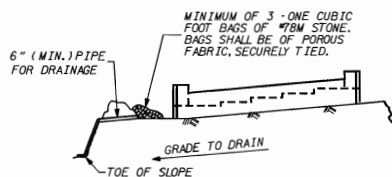
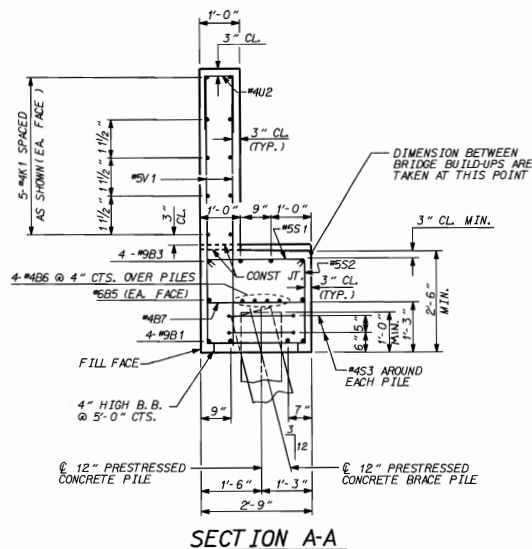
DRAWN BY: E. G. ALLEN DATE: 4-7-95
CHECKED BY: J. L. BOLLEN DATE: 7-18-95

10-AL-1095 H482



* FOR LOCATION OF DIMENSION BETWEEN BRIDGE SEAT BUILDUPS, SEE "SECTION A-A"

DETAIL A
(TYPICAL EACH BRIDGE SEAT)

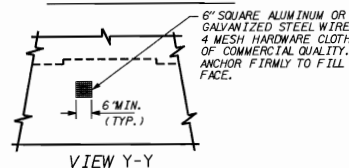
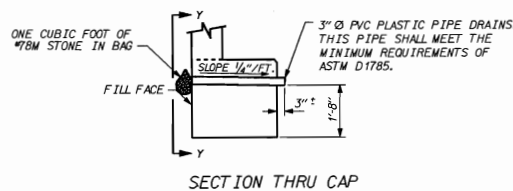


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

TEMPORARY DRAINAGE AT END BENT



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

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.

BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

THE TOP SURFACE AREAS OF THE END BENT CAPS 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 CONCRETE IN THE SHADED AREA OF THE WINGS SHALL BE POURED AFTER THE JOINT IN THE DECK AND THE APPROACH SLAB HAS BEEN SAWS AND, IF SLIP FORMING IS USED, AFTER THE CASTING OF THE BARRIER RAIL.

ONE THOUSAND (1000) FEET HAS BEEN ADDED TO ALL ELEVATIONS.

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



PROJECT NO. **U-2107B**
ON SLOW COUNTY
STATION: **86+30.00 -L-REV.**

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE END BENT 2

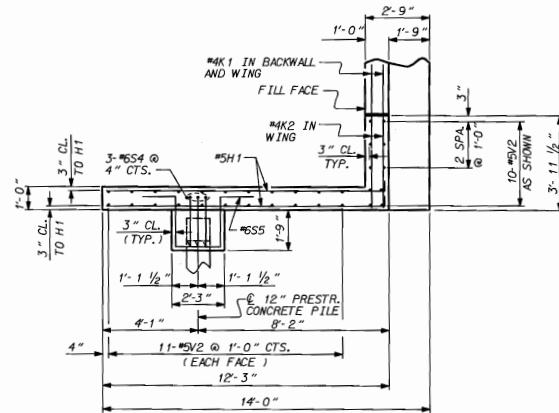
MARCH

1995

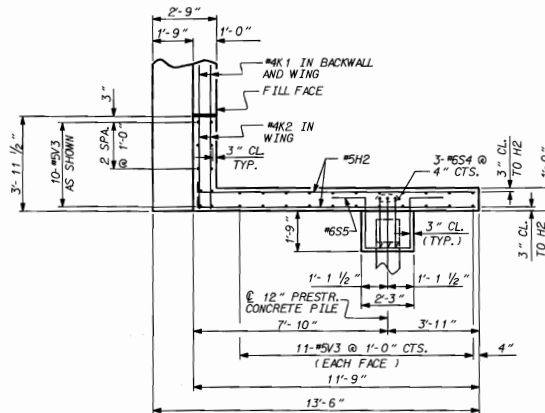
DRAWN BY: **E.G. ALLEN** DATE: **3-14-95**
CHECKED BY: **R.E. KUBENY** DATE: **7-18-95**

18-JUL-1995 15:33
ALL RIGHTS RESERVED BY THE STATE OF NORTH CAROLINA

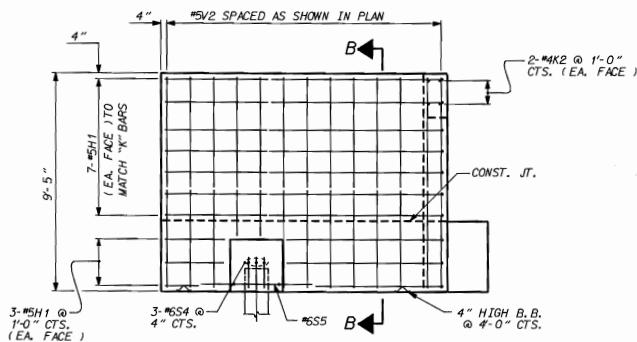
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	5-106
1			3			TOTALS
2			4			112



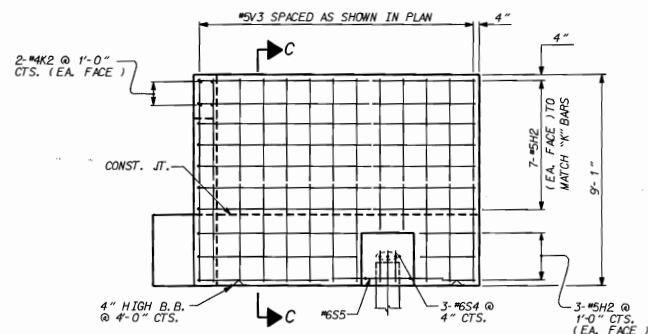
PLAN OF LEFT WING - W1



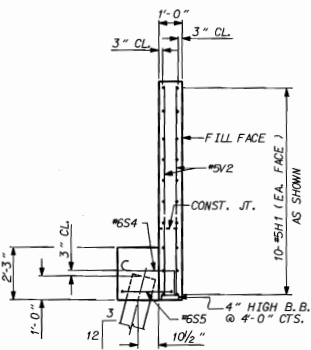
PLAN OF RIGHT WING - W2



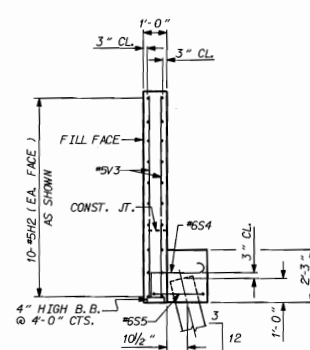
ELEVATION OF LEFT WING - W1



ELEVATION OF RIGHT WING - W2



SECTION B-B



SECTION C-C

BAR TYPES

BILL OF MATERIAL

END BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	9	1	48'-7	1321
B2	4	9	STR	47'-4	644
B3	8	9	1	49'-5	1344
B4	4	9	STR	48'-2	655
B5	6	6	STR	44'-3	399
B6	20	4	STR	26'-11	368
B7	3	4	STR	2'-3	47
B8	52	4	STR	3'-2	110
B9	4	4	STR	6'-4	17
H1	20	5	4	12'-7	262
H2	20	5	4	12'-1	252
K1	50	4	STR	26'-11	899
K2	8	4	STR	3'-5	18
S1	130	5	2	3'-2	429
S2	130	5	3	7'-1	960
S3	50	4	5	7'-0	234
S4	6	6	7	3'-10	35
S5	2	6	8	8'-9	26
U1	44	4	5	5'-5	159
U2	115	4	6	2'-8	285
V1	230	5	STR	6'-10	1639
V2	32	5	STR	8'-11	298
V3	12	5	STR	8'-7	286

EPOXY COATED REINFORCING STEEL LBS. 10,599

CLASS AA CONCRETE BREAKDOWN:

POUR #1 (CAP & WING) 35.8 CY.

POUR #2 (BACKWALL & WING) 27.3 CY.

CLASS AA CONCRETE TOTAL = 63.1 CY.

12" PRESTRESSED CONCRETE PILES

NO. = 27 LIN. FT. = 675

NOTE: CONCRETE DISPLACED BY THE 12" PRESTRESSED CONCRETE PILES HAS BEEN DEDUCTED.

ALL BAR DIMENSIONS ARE OUT TO OUT.

ALL BAR DIMENSIONS ARE OUT TO OUT.



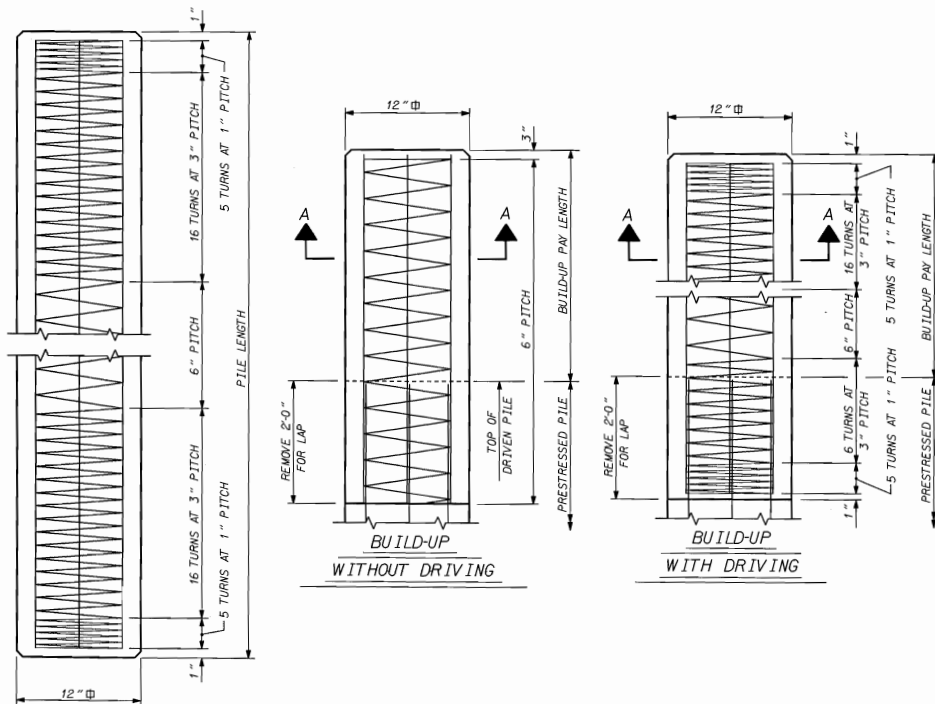
PROJECT NO. U-2107B
ONSLow COUNTY
 STATION: 86+30.00 -L-REV.
 SHEET 4 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE
END BENT 2

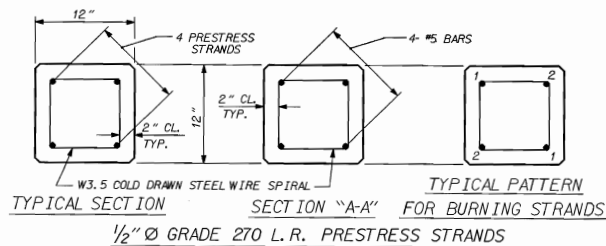
MARCH		1995	
NO.	BY	DATE	REVISIONS
1			
2			

DRAWN BY: E.G. ALLEN DATE: 3-14-95
 CHECKED BY: R.E. KUBENY DATE: 7-18-95

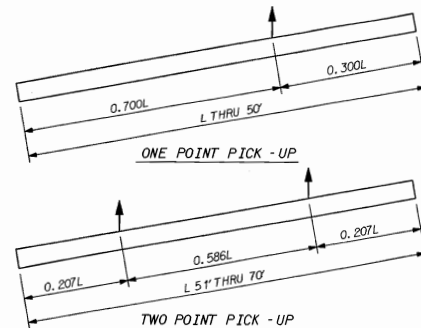
18-JUL-1995 14:54



ELEVATION



TYPICAL SECTION SECTION "A-A" FOR BURNING STRANDS
1/2" Ø GRADE 270 L.R. PRESTRESS STRANDS



PICK-UP POINTS

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	0.586L
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 IN 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.

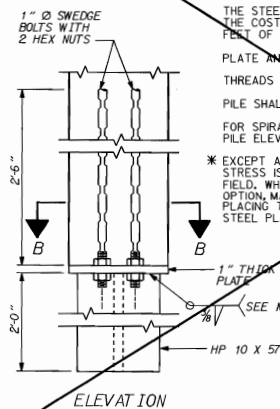
PLATE AND SWEDGE BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A-36.

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

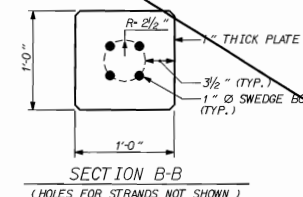
PILE SHALL BE CAST WITH SWEDGE BOLTS AND PLATE IN PLACE.

FOR SPIRAL REINFORCING AND PRESTRESSING STRAND DETAILS, SEE STANDARD 12" PRESTRESSED CONCRETE 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.



ELEVATION



SECTION B-B
(HOLES FOR STRANDS NOT SHOWN)

NOTES

CONCRETE DESIGN DATA : $f'c = 5,000$ PSI ; $f_s = 2,000$ 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.

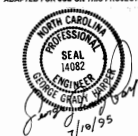
BUILD-UPS SHALL BE 'CLASS A' CONCRETE WITH 20% ADDITIONAL CEMENT. NO DRIVING OF THE BUILT-UP PILE WILL BE PERMITTED UNTIL THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF 3,000 PSI AND UNTIL A PERIOD OF SEVEN DAYS HAS ELAPSED SINCE CASTING OF THE BUILD-UP.

ALL CORNERS TO BE CHAMFERED 3/4".

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

PRESTRESSED CONCRETE PILES SHALL CONTAIN CALCIUM NITRIDE CORROSION INHIBITOR. PILES WHICH CONTAIN CALCIUM NITRIDE INHIBITOR SHALL BE MARKED CLEARLY. SEE SPECIAL PROVISIONS FOR "CALCIUM NITRIDE CORROSION INHIBITOR".

THIS STANDARD HAS BEEN EXAMINED BY THE UNDERSIGNED AND IS ADAPTED FOR USE ON THIS PROJECT.



PROJECT NO. U-2107B
ONSLOW COUNTY
STATION: 86+30.00 -L-REV.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
12" PRESTRESSED
CONCRETE PILE

OCT.				1977			
REVISIONS				SHEET NO.			
NO.	BY	DATE	NO.	BY	DATE	NO.	DATE
1			3			5	10/8
2			4			6	11/2

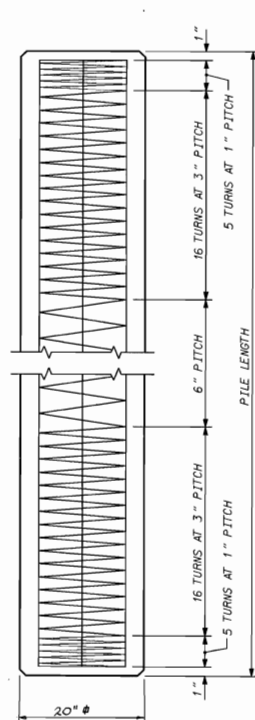
STD. NO. PCP1

ASSEMBLED BY : E.G. ALLEN DATE : 5-24-95
CHECKED BY : E.E. KUBENY DATE : 5-24-95
DRAWN BY : F.C. JONES DATE : 7/12/88
CHECKED BY : C.R. KING DATE : 3/1/89

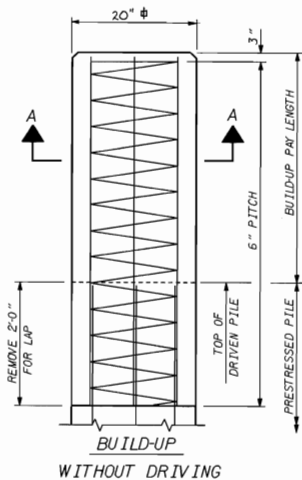
SPECIAL
STANDARD

REV. 6/1/94 EEM LG GRP

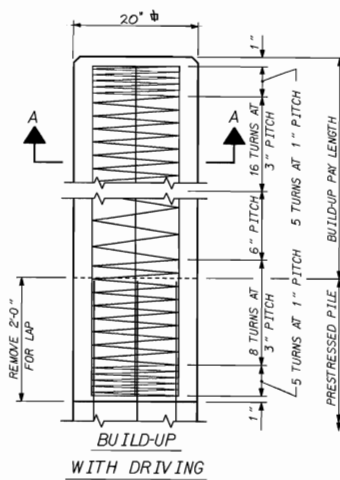
24 MAY 1995 09:50
ALL RIGHTS RESERVED



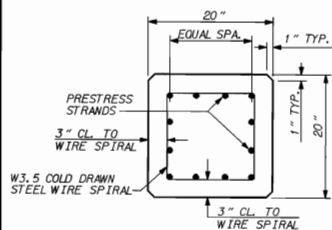
ELEVATION



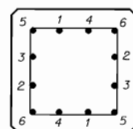
BUILD-UP
WITHOUT DRIVING



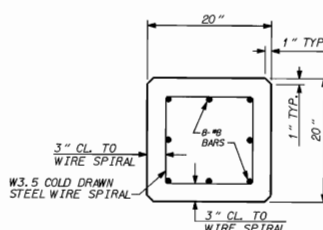
BUILD-UP
WITH DRIVING



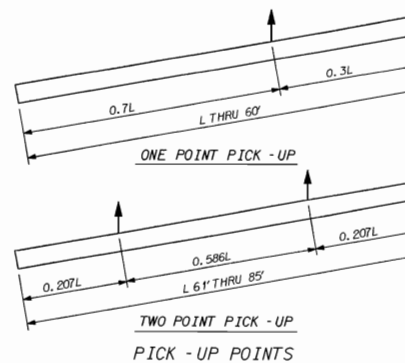
TYPICAL SECTION



TYPICAL PATTERN
FOR
BURNING STRANDS



SECTION A-A



PICK - UP POINTS

NOTES

CONCRETE DESIGN DATA : $f'c = 5,000$ PSI ; $fc = 2,000$ PSI
IMPACT IN HANDLING = 50%

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

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

THE CONTRACTOR SHALL USE THE FOLLOWING STRAND TYPE:

SIZE	GRADE	NUMBER OF STRANDS	AREA	ULTIMATE STRENGTH	APPLIED PRESTRESS FORCE
1/2"	270 L.R.	12	0.153	41,300* PER STRAND	30,980* PER STRAND

STRANDS SHALL BE EQUALLY SPACED AS SHOWN IN THE "TYPICAL SECTION". A CIRCULAR STRAND PATTERN SHALL NOT BE PERMITTED.

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

IF STRAND STRESS IS RELIEVED BY BURNING, THE STRANDS SHALL BE BURNED IN OPPOSITE PAIRS AS INDICATED IN THE TYPICAL PATTERN SHOWN. FOR ANY NUMBER OF STRANDS BURN IN OPPOSITE PAIRS AND SYMMETRICAL ABOUT BOTH VERTICAL AND HORIZONTAL AXES. STRANDS 1-1 SHALL BE BURNED BEFORE 2-2, ETC. NOT MORE THAN 4 STRANDS, SAY 5-5 AND 6-6, MAY BE BURNED AT ANY ONE SECTION BEFORE THESE SAME PAIRS OF STRANDS ARE BURNED AT BOTH ENDS OF THE BED AND BETWEEN EACH PAIR OF PILES IN THE BED.

BUILD-UPS SHALL BE OF '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 P.S.I. AND UNTIL A PERIOD OF SEVEN DAYS HAS ELAPSED SINCE CASTING OF THE BUILD-UP.

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 TRANSFER OF LOAD FROM THE ANCHORAGES TO THE PILE SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 3500 PSI.

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

PRESTRESSED CONCRETE PILES SHALL CONTAIN CALCIUM NITRITE CORROSION INHIBITOR. PILES WHICH CONTAIN CALCIUM NITRITE INHIBITOR SHALL BE MARKED CLEARLY. SEE SPECIAL PROVISIONS FOR "CALCIUM NITRITE CORROSION INHIBITOR".

THIS STANDARD HAS BEEN EXAMINED BY THE UNDERSIGNED AND IS SITE ADAPTED FOR USE ON THIS PROJECT.



QUANTITIES FOR ONE 20" SQUARE PILE					
LENGTH	CONCRETE CU. YDS.	PILE WT. TONS	ONE PICK-UP POINTS		TWO PICK-UP POINTS
			0.3L	0.7L	0.207L 0.586L
25'-0"	2.56	5.18	7'-6"	17'-6"	
30'-0"	3.07	6.22	9'-0"	21'-0"	
35'-0"	3.58	7.26	10'-6"	24'-6"	
40'-0"	4.09	8.29	12'-0"	28'-0"	
45'-0"	4.61	9.33	13'-6"	31'-6"	
50'-0"	5.12	10.36	15'-0"	35'-0"	
55'-0"	5.63	11.40	16'-6"	38'-6"	
60'-0"	6.14	12.44	18'-0"	42'-0"	
65'-0"	6.65	13.47		13'-5 1/2"	38'-1"
70'-0"	7.17	14.51		14'-6"	41'-0"
75'-0"	7.68	15.55		15'-6 1/2"	43'-11"
80'-0"	8.19	16.58		16'-6 1/2"	46'-11"
85'-0"	8.70	17.62		17'-7"	49'-10"

PROJECT NO. U-2107B
ONSLow COUNTY
STATION: 86+30.00 -L-REV.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION
STANDARD
20" SQUARE PRESTRESSED
CONCRETE PILE

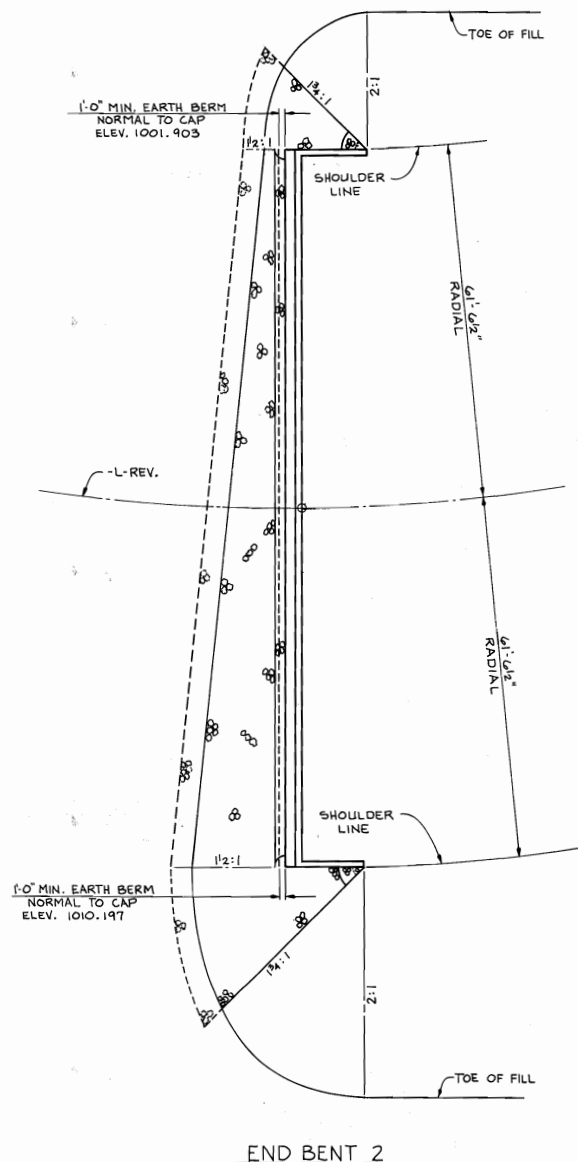
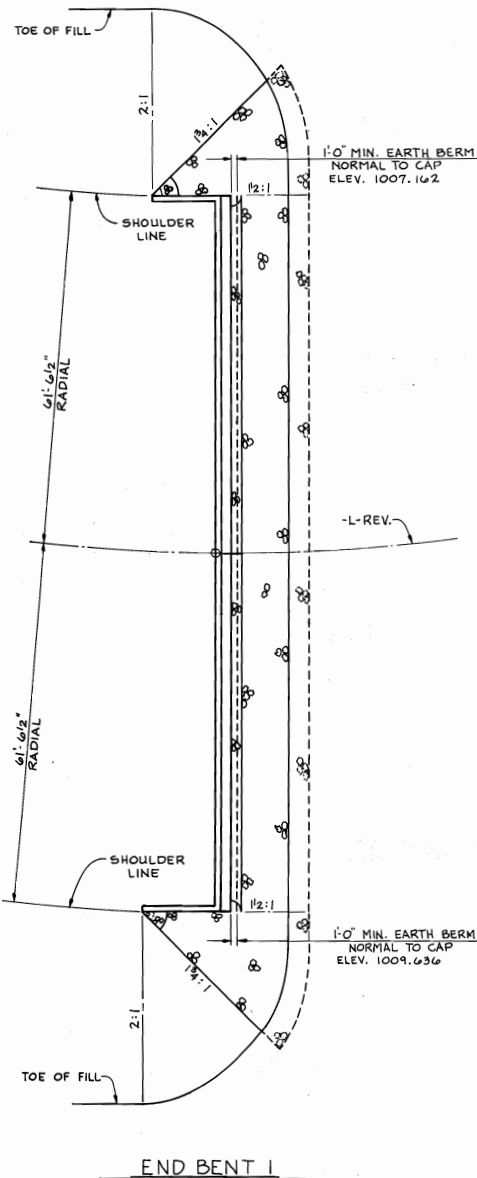
APRIL				1985			
REVISIONS				SHEET NO.			
NO.	BY	DATE		NO.	BY	DATE	
1				3			
2				4			

ASSEMBLED BY : E.G. ALLEN	DATE : 5-24-95	SPECIAL
CHECKED BY : R.E. KUBENY	DATE : 5-26-95	
DRAWN BY : W.J. HARRIS	DATE : 1/5/89	STANDARD
CHECKED BY : C.R. KING	DATE : 3/1/89	

REV. 6/1/94 EEM GA GRP

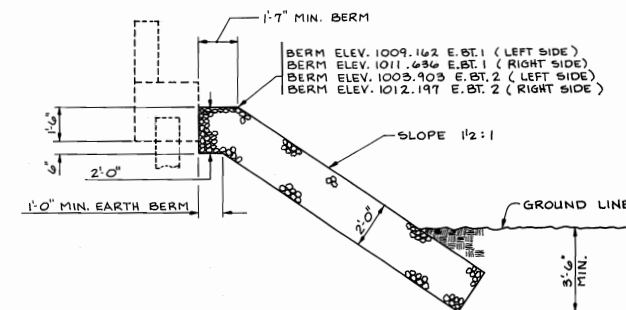
26-MAY-1995 0952

STD. NO. PCP2

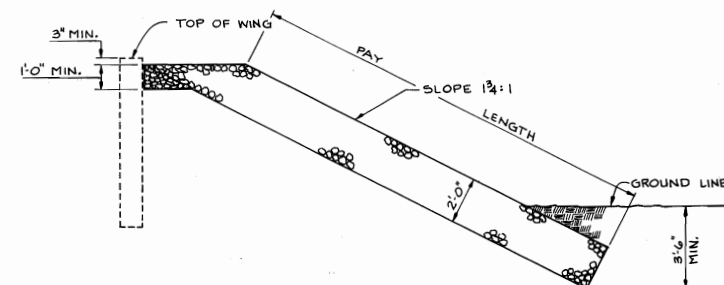


NOTES

RIP RAP - CLASS 'B' STONE - SHALL BE PLACED UNDER BOTH ENDS OF THE BRIDGE. LIMITS OF THE RIP RAP SHALL BE AS SHOWN IN THE DETAILS. METHOD OF MEASUREMENT AND BASIS OF PAYMENT SHALL BE AS PRESCRIBED IN THE SPECIAL PROVISION ENTITLED "RIP RAP - CLASS 'B' STONE".



SECTION AT E. BT. 1 & 2
NORMAL TO CAP



SECTION AT E. BT. WINGS
SECTION TAKEN AT END OF SLOPE PROTECTION.

ESTIMATED QUANTITIES

	CLASS 'B' STONE (TONS)
END BENT 1	221.1
END BENT 2	263.5
TOTAL - TONS	484.6



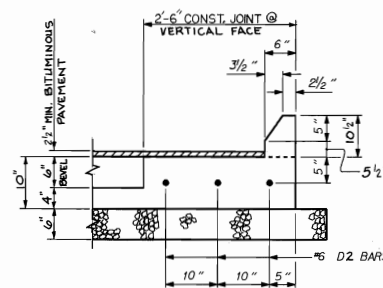
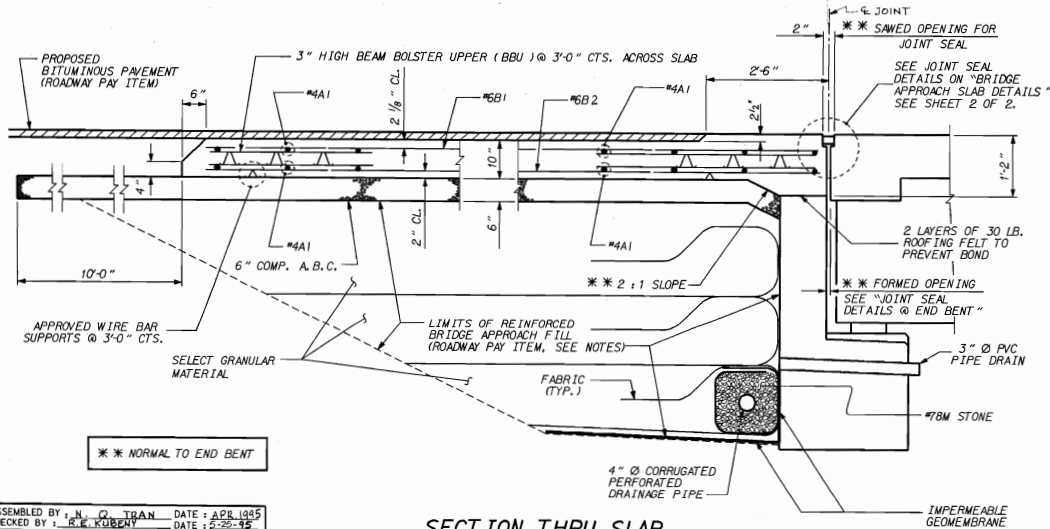
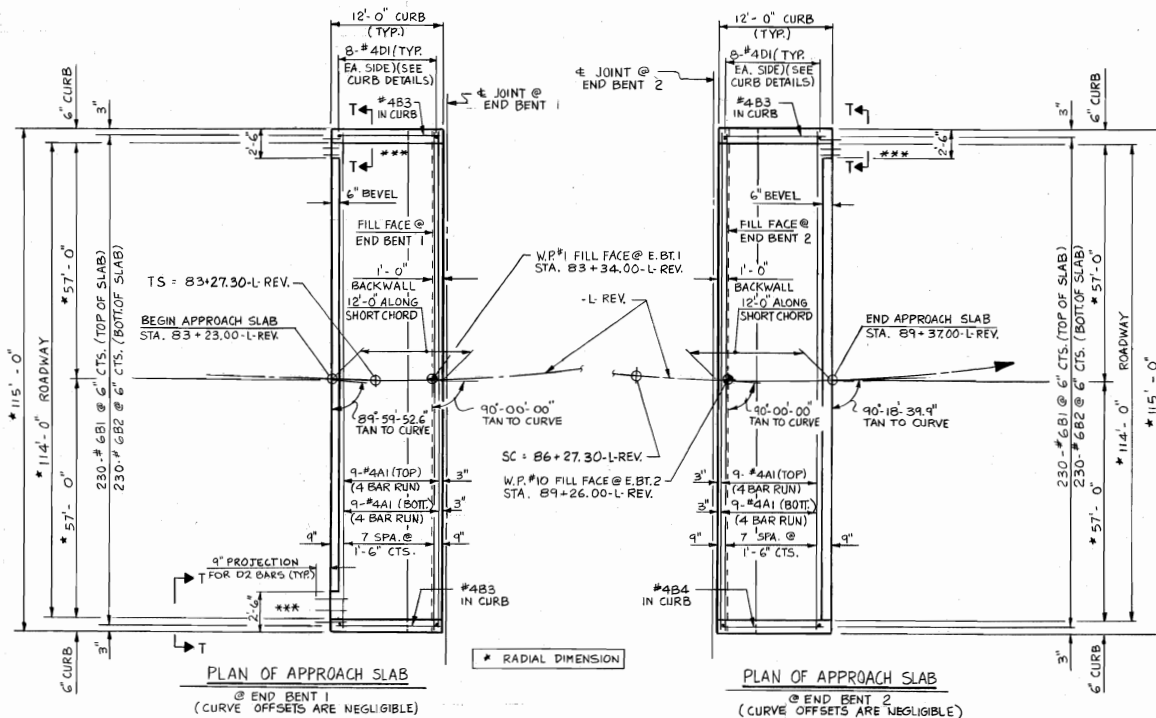
PROJECT No. U-2107B
ONSLow COUNTY
STATION: 86+30.00-L-REV.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
RIP RAP DETAILS
CLASS 'B' STONE

NOV.						1994							
REVISIONS												SHEET NO.	
NO.		BY		DATE		NO.		BY		DATE		5-11	
1						3						TOTAL SHEET	
2						4						112	

SHEET NO.
5-110
TOTAL SHEETS
112

DRAWN BY: BOSS E. KUBENY DATE: 11-17-94
CHECKED BY: G. ALLEN DATE: 5-16-95



NOTES

THE JOINT SHALL BE SAWED PRIOR TO THE CASTING OF THE CONCRETE CURB TO THE CONSTRUCTION JOINT AND THE BARRIER RAIL. FOR LOCATION OF CONSTRUCTION JOINT SEE CURB DETAILS.

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 BITUMINOUS 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 SCREEDED AND FLOAT FINISHED EXCEPT AS NOTED ON THE PLANS.

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.

APPROACH SLAB GROOVING IS NOT REQUIRED.

THE MEMBRANE CURING COMPOUND SHALL NOT BE USED ON AREAS THAT ARE TO RECEIVE A BITUMINOUS WEARING SURFACE.

FOR REINFORCED BRIDGE APPROACH FILL INCLUDING FABRIC, IMPERMEABLE GEOMEMBRANE, 4" Ø DRAINAGE PIPE, #7M STONE, AND SELECT GRANULAR FILL. SEE ROADWAY PLANS.

THE AREAS BETWEEN THE WINGWALLS AND THE APPROACH SLAB SHALL BE PAVED. SEE ROADWAY PLANS.

FOR SPICE LENGTH, SEE CHART ON SUPERSTRUCTURE "BILL OF MATERIAL" SHEET.

WITH COMPRESSION JOINT SEAL

FOR PREFORMED COMPRESSION JOINT SEAL. SEE SPECIAL PROVISIONS.

PAYMENT FOR COMPRESSION JOINT SEAL SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR "COMPRESSION JOINT SEAL".

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE COMPRESSION JOINT SEAL SHALL BE 3".

BILL OF MATERIAL

APPROACH SLAB @ END BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	72	4	STR	24'-9"	1431
B1	230	6	STR	11'-1"	3829
B2	230	6	STR	11'-7"	4002
B3	1	4	STR	11'-7"	15
D1	16	4	STR	1'-0"	11
D2	6	6	STR	1'-6"	14

EPOXY COATED REINFORCING STEEL LBS. 9,302

CLASS "AA" CONCRETE C.Y. 44.2

APPROACH SLAB @ END BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	72	4	STR	24'-9"	1431
B1	230	6	STR	11'-1"	3829
B2	230	6	STR	11'-7"	4002
B3	1	4	STR	11'-7"	15
B4	1	4	STR	11'-2"	7
D1	16	4	STR	1'-0"	11
D2	6	6	STR	1'-6"	14

EPOXY COATED REINFORCING STEEL LBS. 9,295

CLASS "AA" CONCRETE C.Y. 44.2

THIS STANDARD HAS BEEN EXAMINED BY THE UNDERSIGNED AND IS SITE ADAPTED FOR USE ON THIS PROJECT.



PROJECT NO. **U-2107B**
ONSLOW COUNTY
 STATION: **86+30.00 -L-REV.**

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 STANDARD
**BRIDGE APPROACH SLAB
 FOR FLEXIBLE PAVEMENT
 WITH REINFORCED BRIDGE
 APPROACH FILL**

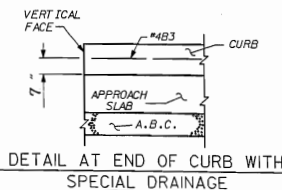
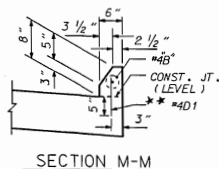
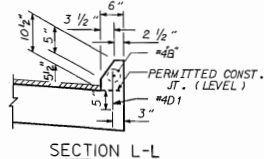
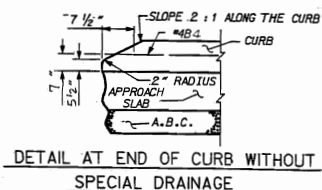
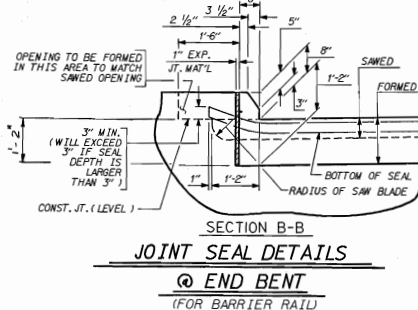
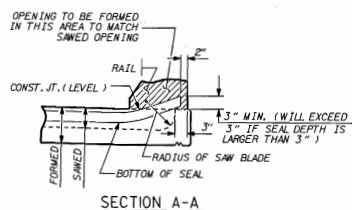
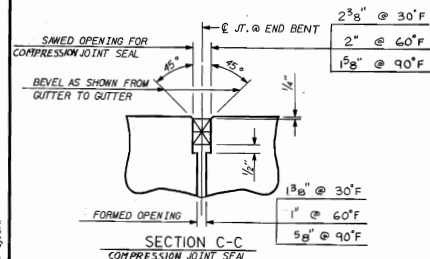
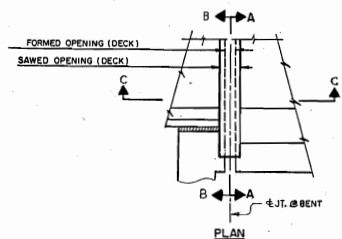
REVISIONS				SHEET NO.
NO.	BY	DATE	NO.	DATE
1			3	
2			4	

STD NO RAS5

ASSEMBLED BY: **N. O. TRAN** DATE: **APR 1995**
 CHECKED BY: **E. E. KUBEN** DATE: **5-3-95**
 STD. DRAWN BY: **E. E. MURRAY** DATE: **3/16/95**
 STD. CHECKED BY: **V. A. PADEL** DATE: **3/21/95**
 ADDED 3/21/95

12-APR-1995 RUP

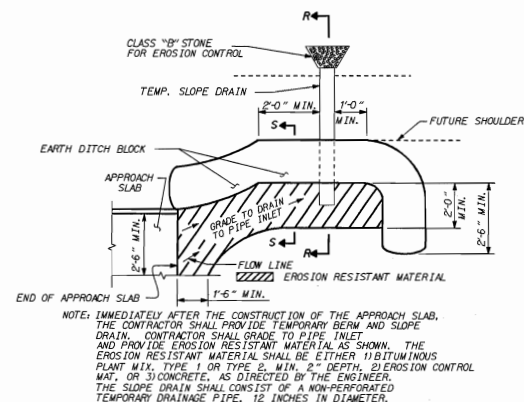
REVISED 8/29/88 BY ELR / N.G.P.
 REVISED 3/15/91 BY ELR / N.G.P.
 REVISED 3/1/90 BY N.H. / N.G.P.
 REVISED 8/29/88 BY N.H. / N.G.P.
 REVISED 3/15/91 BY N.H. / N.G.P.
 REDRAWN 12/1/88 BY N.H. / N.G.P.



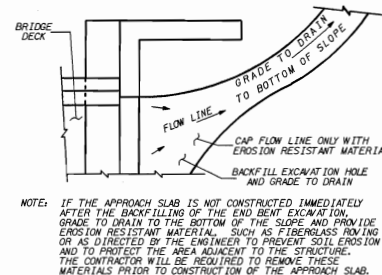
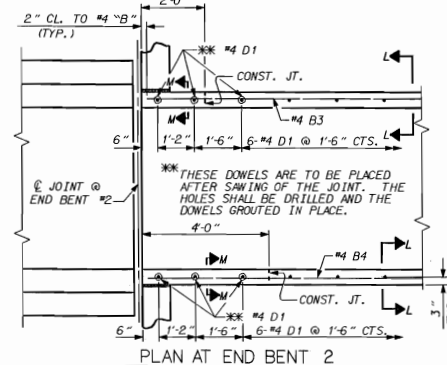
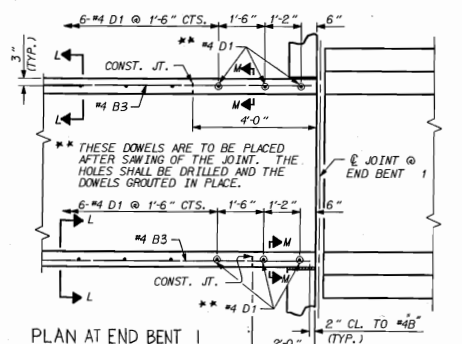
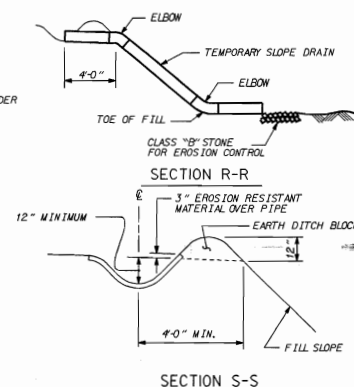
ASSEMBLED BY: NIP & TRAN.	DATE: OCT 1989	SPECIAL
CHECKED BY: R.E. KUBENY	DATE: 5-25-16	
DRAWN BY: E.C. JONES	DATE: 1/28/88	STANDARD
CHECKED BY: A.R. BISSETTE	DATE: 11/28/88	

04-MAY-1994 1443
 1443-1443-1443-1443

CURB DETAILS



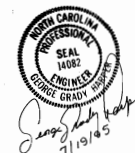
PLAN VIEW
 TEMPORARY BERM AND SLOPE DRAIN DETAILS



TEMPORARY DRAINAGE DETAIL

PROJECT NO. U-2107B
 ONSLOW COUNTY
 STATION: 86 + 30.00 - L-REV.
 SHEET 2 OF 2

THIS STANDARD HAS BEEN EXAMINED
 BY THE UNDERGROUND AND IS SITE
 ADAPTED FOR USE ON THIS PROJECT



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RAILROAD			
STANDARD BRIDGE APPROACH SLAB DETAILS			
OCT. 1994			
REVISIONS			
NO.	BY	DATE	NO.
1	BY	DATE	1
2	BY	DATE	2

STD. NO. BAS3