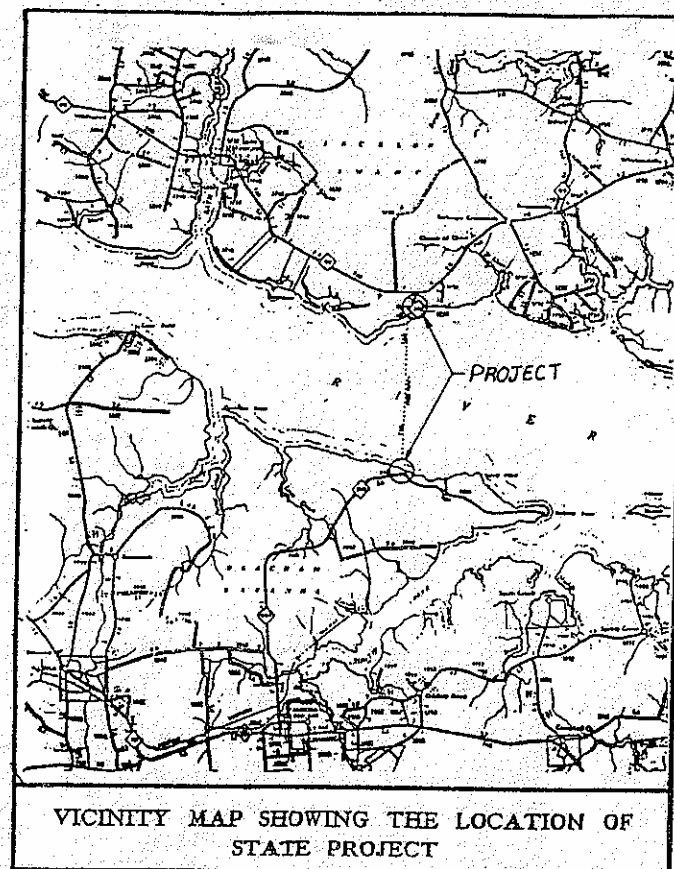


PROJECT: 8.1150701

F-2800



VICINITY MAP SHOWING THE LOCATION OF STATE PROJECT

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BEAUFORT COUNTY

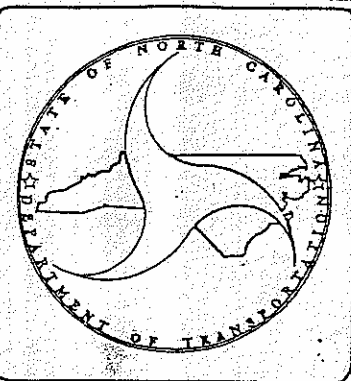
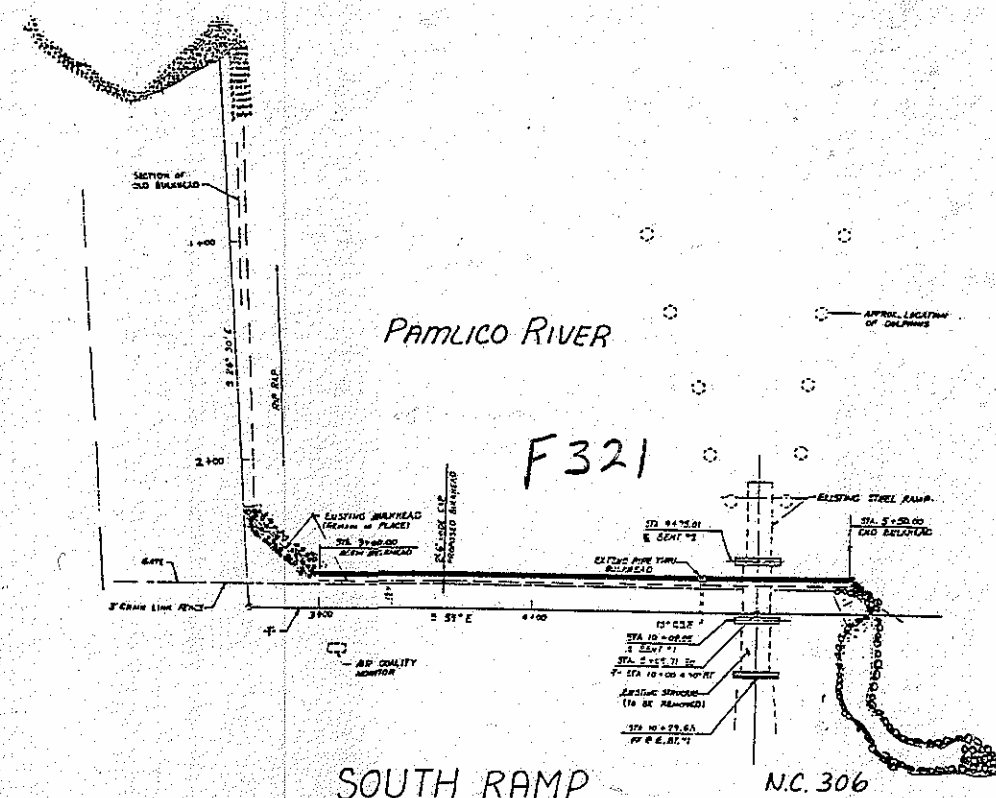
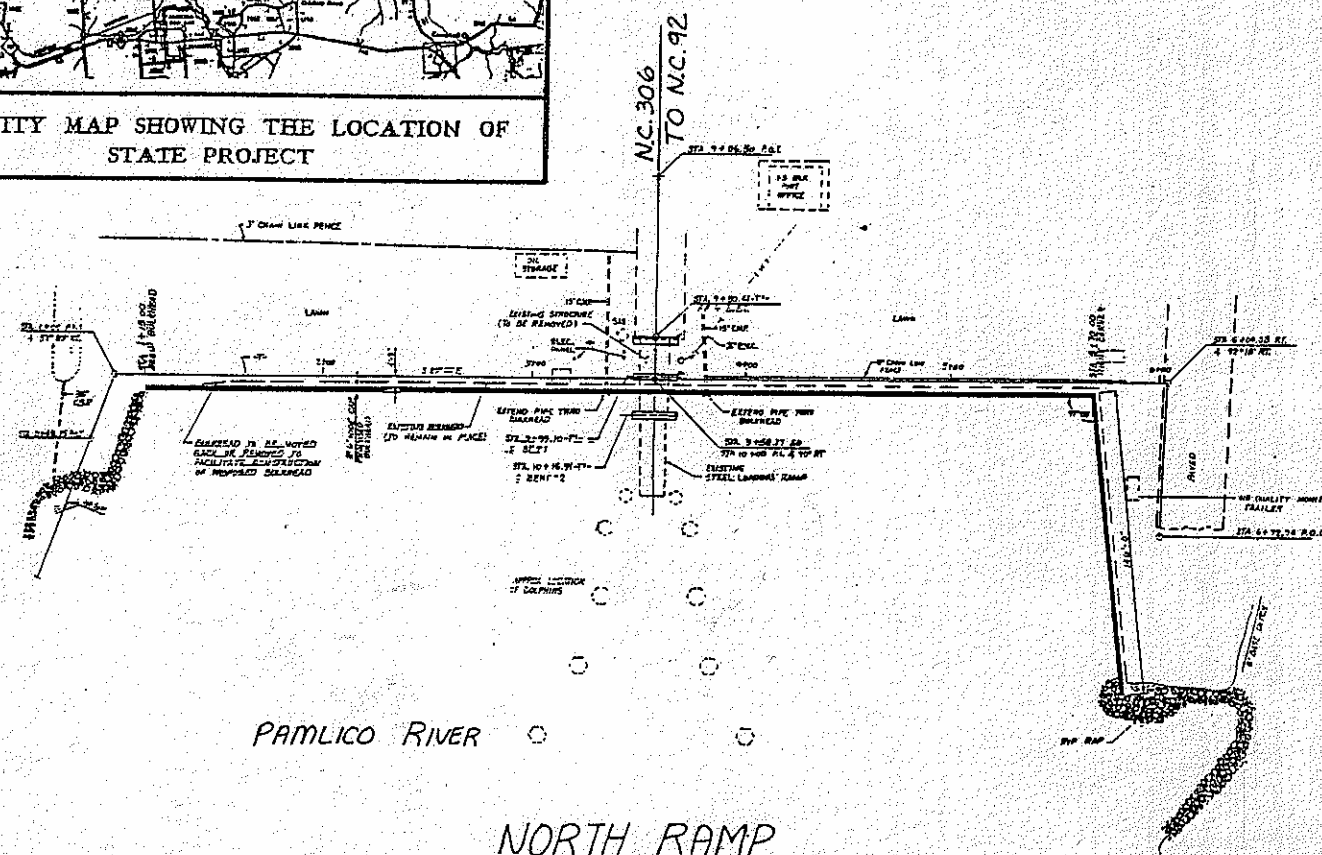
Substr. Info. for South Ramp (F321)
with North Ramp (F322)

LOCATION : N.C. 306 AT PAMLICO RIVER FERRY

TYPE OF WORK : GRADING, PAVING, BULKHEAD REPLACEMENT,
RECONSTRUCTION OF FERRY RAMPS, AND STRUCTURES

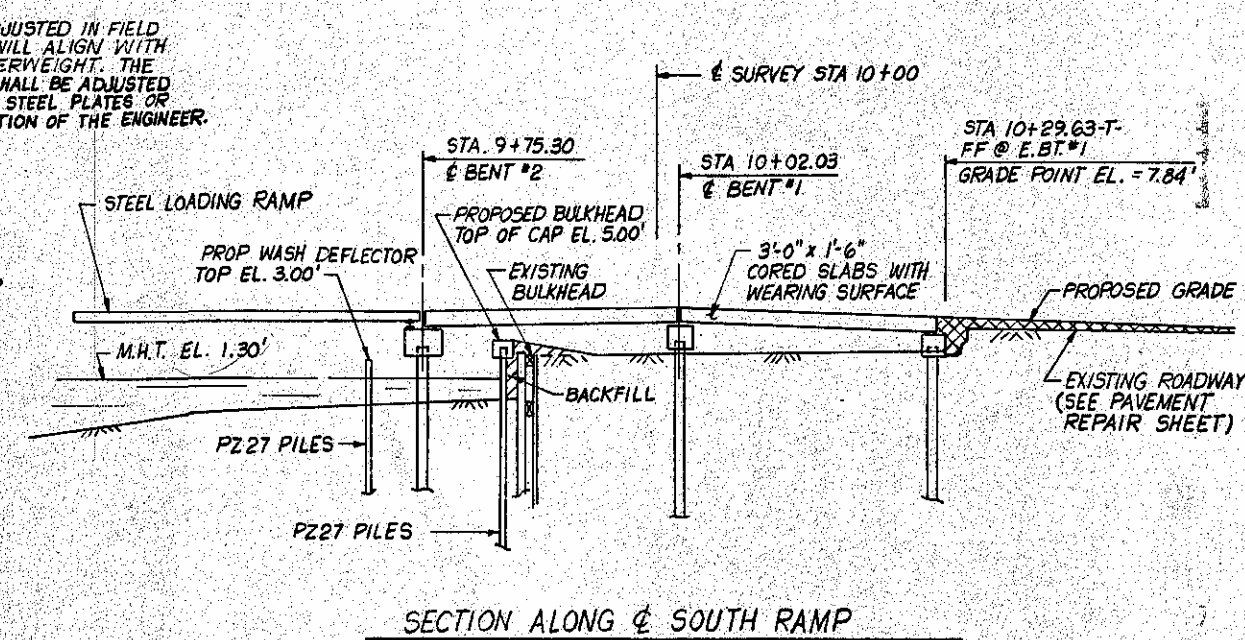
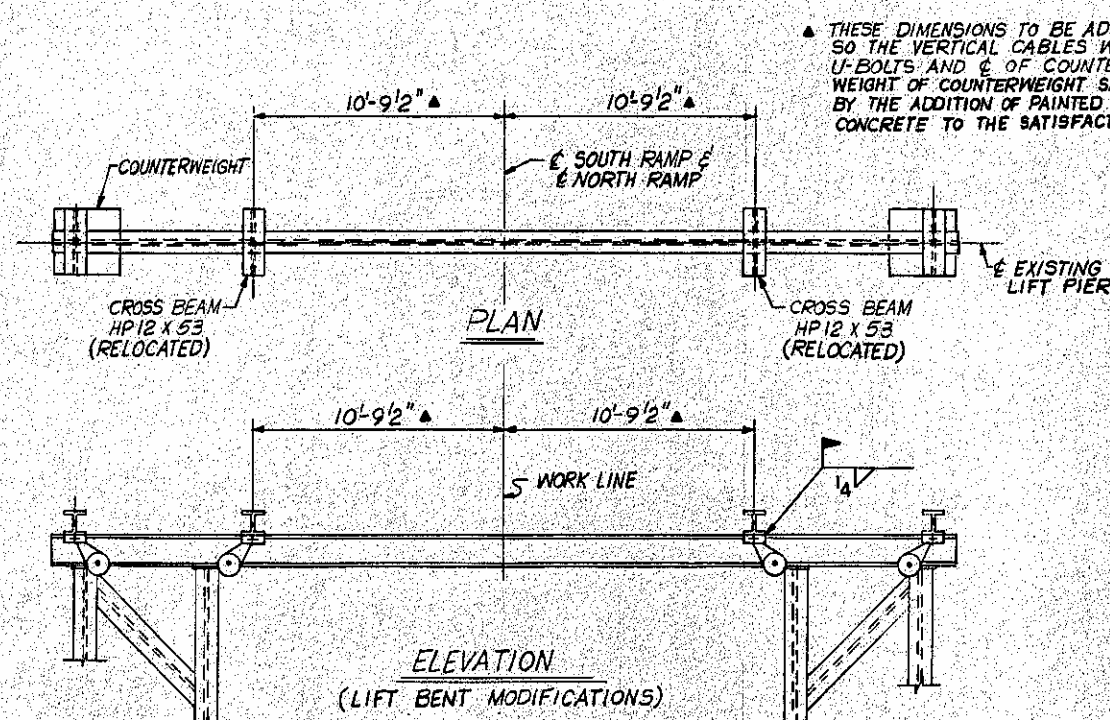
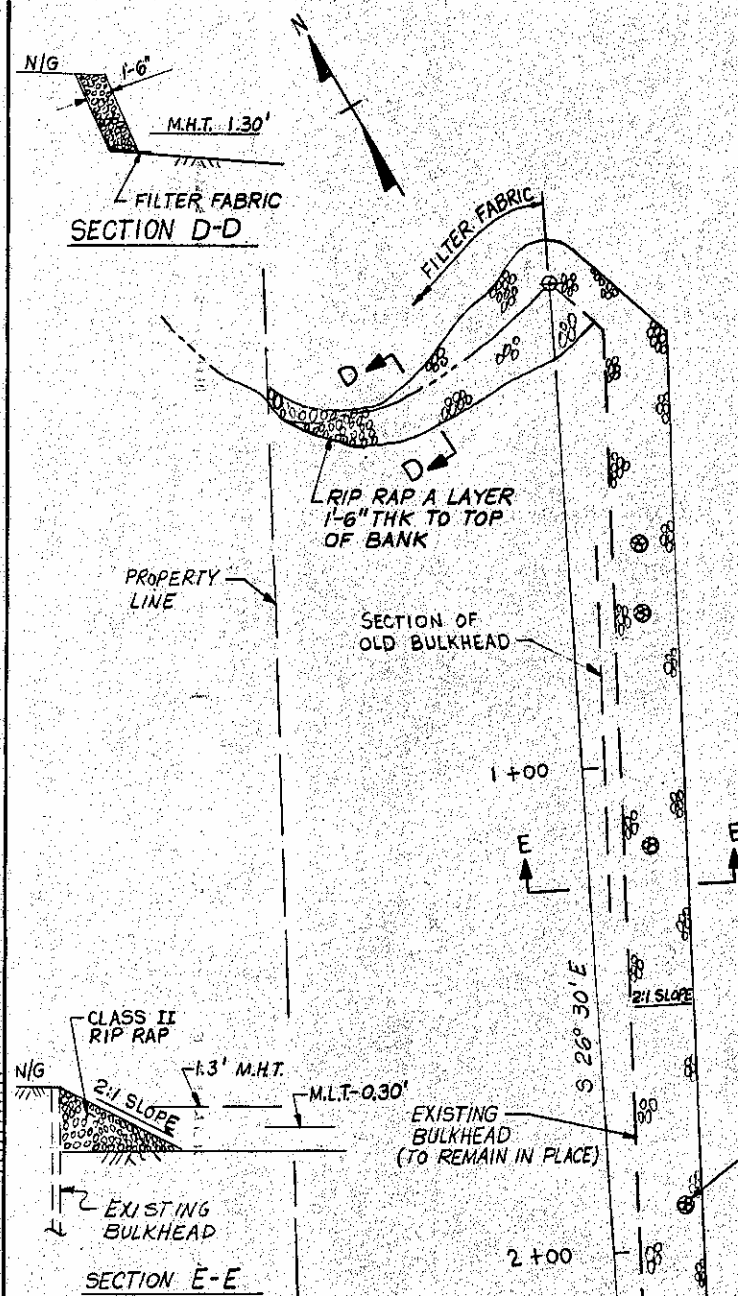
STATE	STATE PROJECT REFERENCE NO.	PROJECT NO.
N.C.	8.1150701	
STATE PROJECT NO.	F.L. PROJECT NO.	PROJECT TYPE
8.1150701	FBDNHS-306(00D)	CONST.
2.110015		P.E.

STRUCTURE



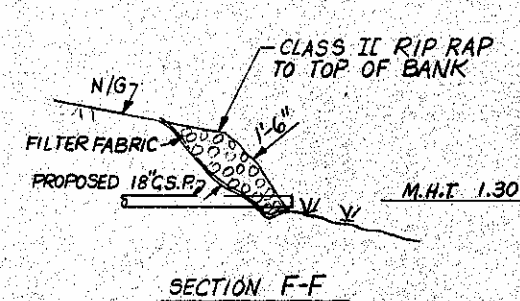
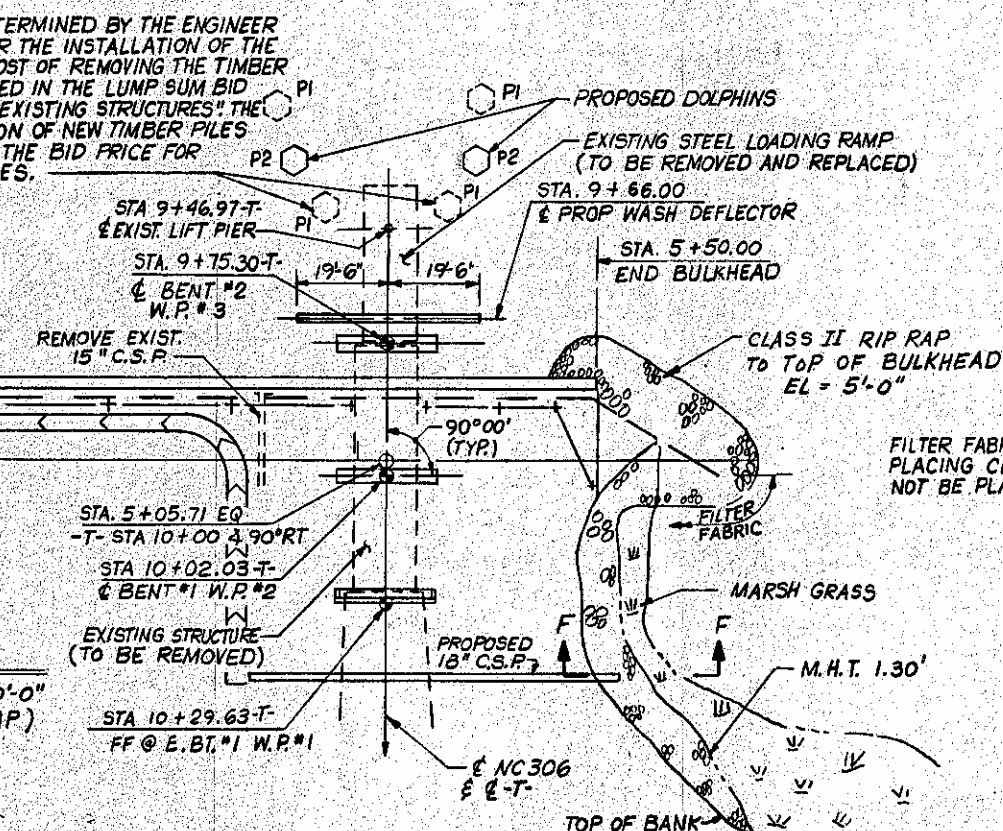
Prepared in the Office of: DIVISION OF HIGHWAYS BY STANDARD SPECIFICATIONS		STRUCTURE DESIGN UNIT G.M. WHITE, P.E. PROJECT ENGINEER N.N. BULLOCK, P.E. PROJECT DESIGN ENGINEER
LETTING DATE: APRIL 20, 1993		

STRUCTURE DESIGN UNIT	DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DR. MONTGOMERY STATE HIGHWAY ENGINEER - DESIGN DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION
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PAMLICO RIVER

A NUMBER OF PILES DETERMINED BY THE ENGINEER SHALL BE RELOCATED FOR THE INSTALLATION OF THE PROPOSED RAMP. THE COST OF REMOVING THE TIMBER PILES SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR "REMOVAL OF EXISTING STRUCTURES". THE COST OF THE INSTALLATION OF NEW TIMBER PILES SHALL BE PAID FOR AT THE BID PRICE FOR TREATED TIMBER PILES.

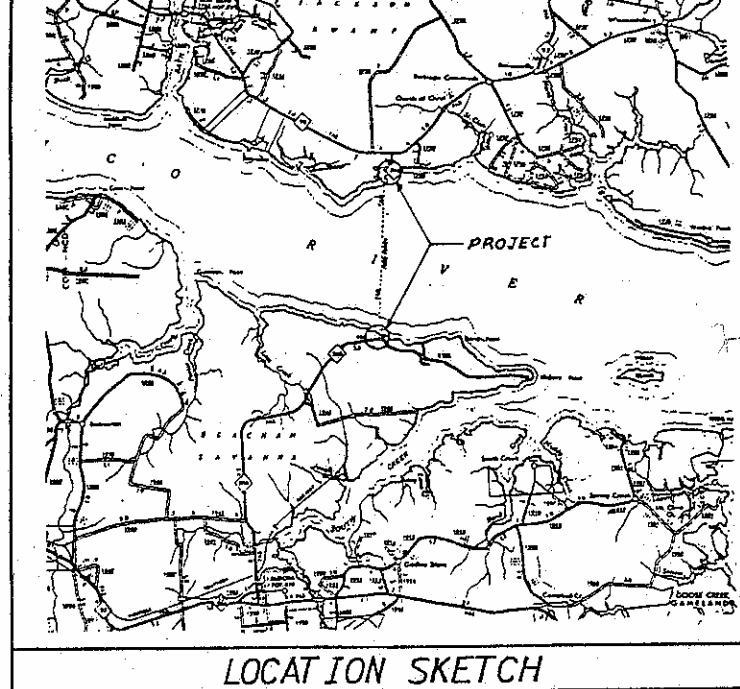


FILTER FABRIC TO BE PLACED ON BANK PRIOR TO PLACING CLASS II RIP RAP. FILTER FABRIC SHALL NOT BE PLACED ALONG THE EXISTING BULKHEAD.

PROJECT No. 8.1150701
 BEAUFORT COUNTY
 STATION: 10+00 T-S.R.

SHEET 2 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
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ASSUMED Live Load 244.10
ALL REINFORCING STEEL SHALL BE GRADE 60.
ALL STRUCTURAL STEEL SHALL BE ASTM A36.
FOR NOTIFICATION OF FERRY DIVISION. SEE SPECIAL PROVISIONS.
FOR CONCRETE COARSE AGGREGATE. SEE SPECIAL PROVISIONS.
STEEL SHEET PILING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A590.
CALCIUM NITRATE CORROSION INHIBITOR SHALL BE USED IN ALL CORED SLAB UNITS. SEE SPECIAL PROVISIONS.
FOR CORROSION PROTECTION OF 18" STEEL SHEET PILES AND HP 12 X 53 STEEL PILES. SEE SPECIAL PROVISIONS "PAINTING STEEL PILES."
THE COST FOR ALL LABOR, MATERIALS AND INCIDENTALS FOR ALTERING THE LIFT BENT AND COUNTERWEIGHT TO FIT THE PROPOSED RAMP SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR STRUCTURAL STEEL.
FOR EPOXY COATED REINFORCING STEEL. SEE SPECIAL PROVISIONS.
FOR ELASTOMERIC BEARINGS. SEE SPECIAL PROVISIONS.
THE FINAL GRADE OF BACKFILL SHALL BE GRADED TO PROVIDE ADEQUATE DRAINAGE AS DIRECTED BY THE ENGINEER.
FOR 18" STEEL SHEET PILES AND HP 12 X 53 STEEL PILES. SEE SPECIAL PROVISIONS.

THE EXISTING 15" CMP'S AT THE NORTH RAMP SHALL EXTEND THRU THE PROPOSED BULKHEAD AS DIRECTED BY THE ENGINEER. THE COST OF EXTENDING THE 15" CMP, THE LABOR, MATERIALS AND INCIDENTALS SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR 18" STEEL SHEET PILES.
THE EXISTING STRUCTURES AT THE SOUTH RAMP CONSISTING OF THE STEEL LOADING RAMP, TWO 25'-0" TIMBER SPANS, TIMBER SUBSTRUCTURE, ANY DOLPHINS OR PILES THAT INTERFERE WITH THE CONSTRUCTION OF THE PROPOSED BULKHEAD, ANY PILES TO BE REMOVED NECESSARY FOR THE INSTALLATION OF THE PROPOSED RAMP, AND WHITE OAK FENDERS INCLUDING WIRE ROPE, STAPLE AND HARDWARE ATTACHING THE FENDER TO THE DOLPHINS SHALL BE REMOVED AND SHALL BE PAID FOR AT THE LUMP SUM BID PRICE FOR REMOVAL OF EXISTING STRUCTURES AT STA. 10+00.00 - 10+00.00 SOUTH RAMP.
THE EXISTING STRUCTURES AT THE NORTH RAMP CONSISTING OF THE STEEL LOADING RAMP, TWO 17'-0" TIMBER SPANS, TIMBER SUBSTRUCTURE, 40'-0" STEEL SHEET PILE PROP DEFLECTOR, ANY DOLPHINS OR PILES THAT INTERFERE WITH THE CONSTRUCTION OF THE PROPOSED BULKHEAD, ANY PILES TO BE REMOVED NECESSARY FOR THE INSTALLATION OF THE PROPOSED RAMP, AND WHITE OAK FENDERS INCLUDING WIRE ROPE, STAPLE AND HARDWARE ATTACHING THE FENDERS TO THE DOLPHINS SHALL BE REMOVED AND SHALL BE PAID FOR AT THE LUMP SUM BID PRICE FOR REMOVAL OF EXISTING STRUCTURES AT STA. 10+00.00 - 10+00.00 NORTH RAMP.
BACKFILL BEHIND BULKHEAD SHALL BE OF SUITABLE MATERIAL AS DIRECTED BY THE ENGINEER. NO SEPARATE PAYMENT WILL BE MADE FOR THE ITEM. ALL MATERIALS, EQUIPMENT, OR LABOR FOR PLACING AND COMPACTING THIS MATERIAL SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR 18" STEEL SHEET PILES. SEE SPECIAL PROVISIONS.
THE EXISTING FENCE AS SHOWN ON THE GENERAL DRAWING SHALL BE REMOVED AND REPLACED AS DIRECTED BY THE ENGINEER. COST OF REMOVING AND REPLACING THE EXISTING FENCE SHALL BE INCLUDED IN THE SEVERAL PAY ITEMS.

TOTAL BILL OF MATERIAL FOR NORTH RAMP

TOTAL BILL OF MATERIAL FOR NORTH RAMP																						
	MOBILIZATION	REMOVAL OF EXISTING STRUCTURES @ STA. 10+00 -T- NR	CLASS "A" CONCRETE	EPOXY COATED REINFORCING STEEL	STRUCTURAL STEEL	PAINTING STRUCTURAL STEEL	UNTREATED WHITE OAK TIMBER	TREATED TIMBER PILES	HP 12X53 STEEL PILES	PAINTING STEEL PILES	18" STEEL SHEET PILES	1 1/4" Ø GALVANIZED STEEL PIPE RAIL	ELASTOMERIC BEARINGS	FILTER FABRIC FOR RIP RAP	PLAIN RIP RAP CLASS II	3'-0" X 1'-6" PRESTRESSED CONCRETE CORED SLABS	PAVEMENT REPAIR	STEEL BM GUARDRAIL	ULTRA HIGH MOLECULAR WEIGHT POLYETHELE			
	LUMP SUM	LUMP SUM	CU. YDS.	LBS.	APPROX. LBS.	LUMP SUM	MBF	NO.	LIN. FT.	NO.	LIN. FT.	LUMP SUM	SQ. FT.	LIN. FT.	LUMP SUM	SQ. YDS.	TONS	LIN. FT.	LUMP SUM	LIN. FT.	SQ. FT.	
BULKHEAD			138.1	25,651								19,585.5			45	223						
DOLPHINS							4.32	77	4235	6	390										200	
LOADING RAMP					40,600								70									
SUPERSTRUCTURE																		210		69.6		
END BENT NO. 1			5.3	947						4	164											
BENT NO. 1			6.1	989						4	164											
BENT NO. 2			6.7	1122						4	204											
PROP WASH DEFLECTOR												1287										
TOTAL	LUMP SUM	LUMP SUM	156.2	28,709	40,600	LUMP SUM	4.32	77	4235	18	922	LUMP SUM	20,872.5	70	LUMP SUM	45	223	210	LUMP SUM	69.6	200	

FOR MAINTENANCE OF TRAFFIC
SEE SPECIAL PROVISIONS

THE COST OF THE PROPOSED 18" CMP SOUTH RAMP, THE REMOVAL OF THE EXISTING 15" CMP, ALL LABOR, MATERIALS, EQUIPMENT, AND ANY INCIDENTALS NECESSARY FOR THE INSTALLATION OF THE PIPE SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR 18" STEEL SHEET PILES.

TOTAL BILL OF MATERIAL FOR SOUTH RAMP

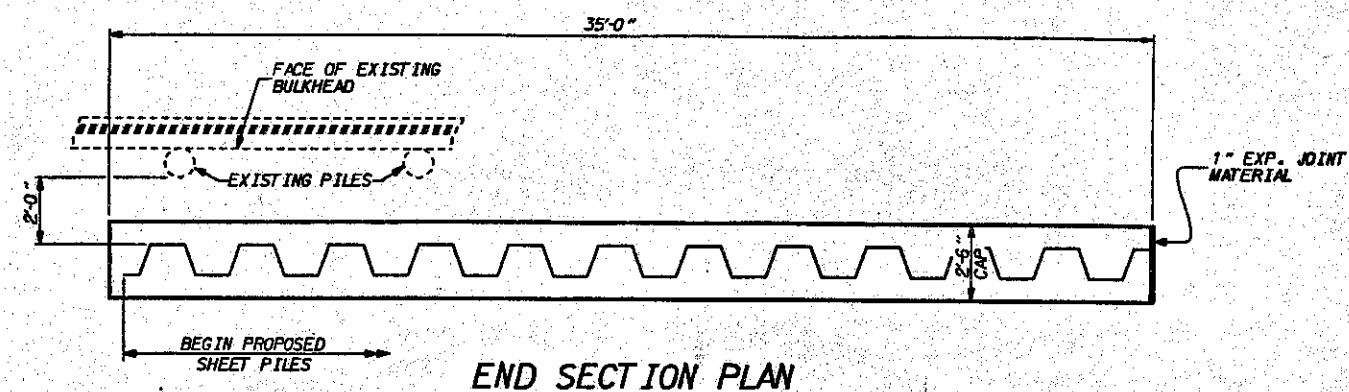
TOTAL BILL OF MATERIAL FOR SOUTH RAMP																					
	MOBILIZATION	REMOVAL OF EXISTING STRUCTURES @ STA. 10+00 -T- SR	CLASS "A" CONCRETE	EPOXY COATED REINFORCING STEEL	STRUCTURAL STEEL	PAINTING STRUCTURAL STEEL	UNTREATED WHITE OAK TIMBER	TREATED TIMBER PILES	HP 12X53 STEEL PILES		PAINTING STEEL PILES	18" STEEL SHEET PILES	1 1/4" Ø GALVANIZED STEEL PIPE RAIL	ELASTOMERIC BEARINGS	FILTER FABRIC FOR RIP RAP	PLAIN RIP RAP CLASS II	3'-0" X 1'-6" PRESTRESSED CONCRETE CORED SLABS	PAVEMENT REPAIR	STEEL BM GUARDRAIL	ULTRA HIGH MOLECULAR WEIGHT POLYETHELENE	
	LUMP SUM	LUMP SUM	CU. YDS.	LBS.	APPROX. LBS.	LUMP SUM	MBF	NO.	LIN. FT.	NO.	LIN. FT.	LUMP SUM	SQ. FT.	LIN. FT.	LUMP SUM	SQ. YDS.	TONS	LIN. FT.	LUMP SUM	LIN. FT.	SQ. FT.
BULKHEAD			57.9	10,495									8,217			45	695				
DOLPHINS							4.32	56	3080	6	390										200
LOADING RAMP					40,600									70							
SUPERSTRUCTURE																		317		94.6	
END BENT NO. 1			5.3	947						4	184										
BENT NO. 1			6.1	989						4	184										
BENT NO. 2			6.7	1122						4	208										
PROP WASH DEFLECTOR													1,287								
TOTAL	LUMP SUM	LUMP SUM	76.0	13,553	40,600	LUMP SUM	4.32	56	3080	18	966	LUMP SUM	9,504	70	LUMP SUM	45	695	317	LUMP SUM	94.6	200

PROJECT NO. 8.1150
BEAUFORT C
STATION: 10+00.00
10+00.00 -
SHEET 3 OF 3

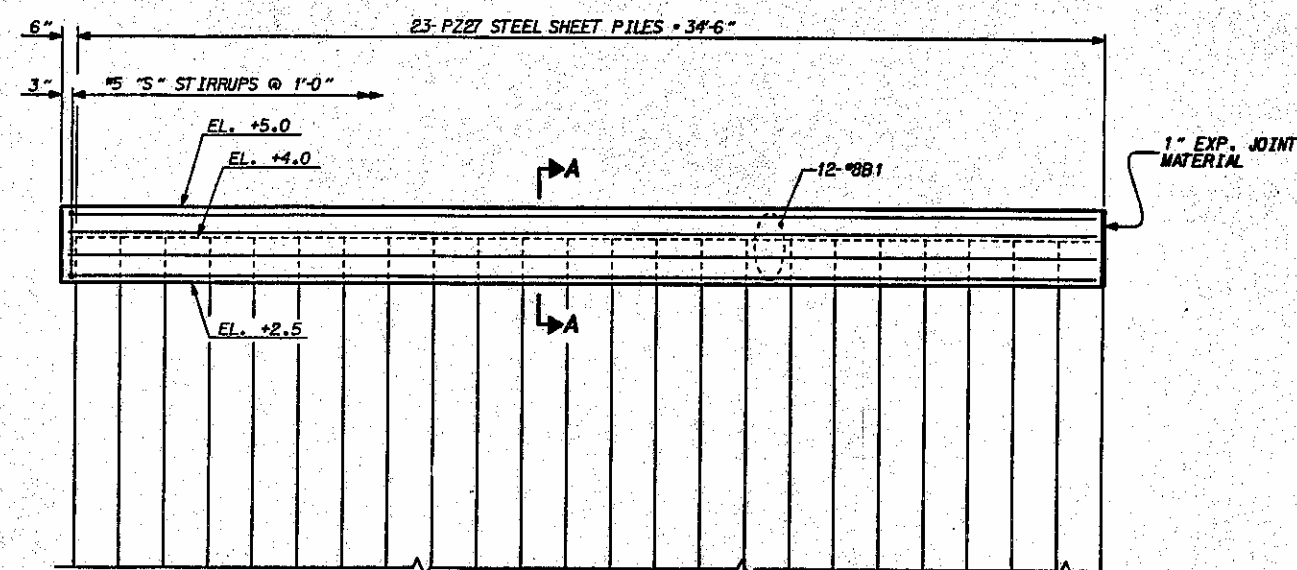
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PAMLICO RIVER FERRY
BILL OF MATERIALS

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

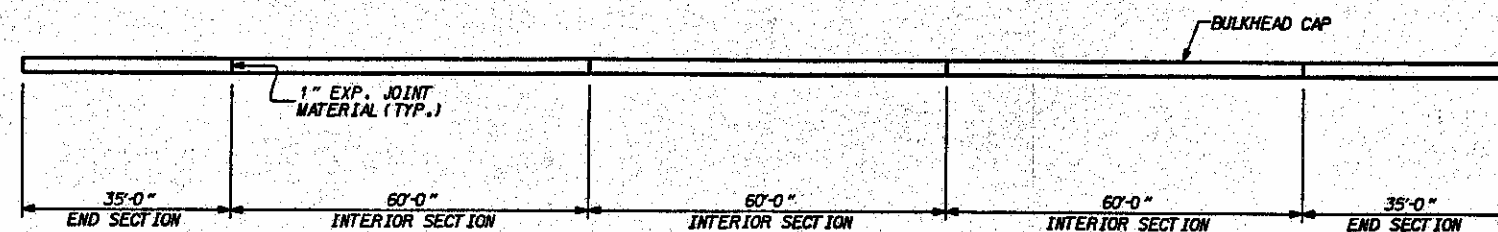
DRAWN BY: W. D. CRUTCHER DATE: 09-92
CHECKED BY: B. D. KLAPPENBACH DATE: 9-14-92
14-SEP-1992 10:52
ZHEL2050231FERRYBILL.DWG
DB015N



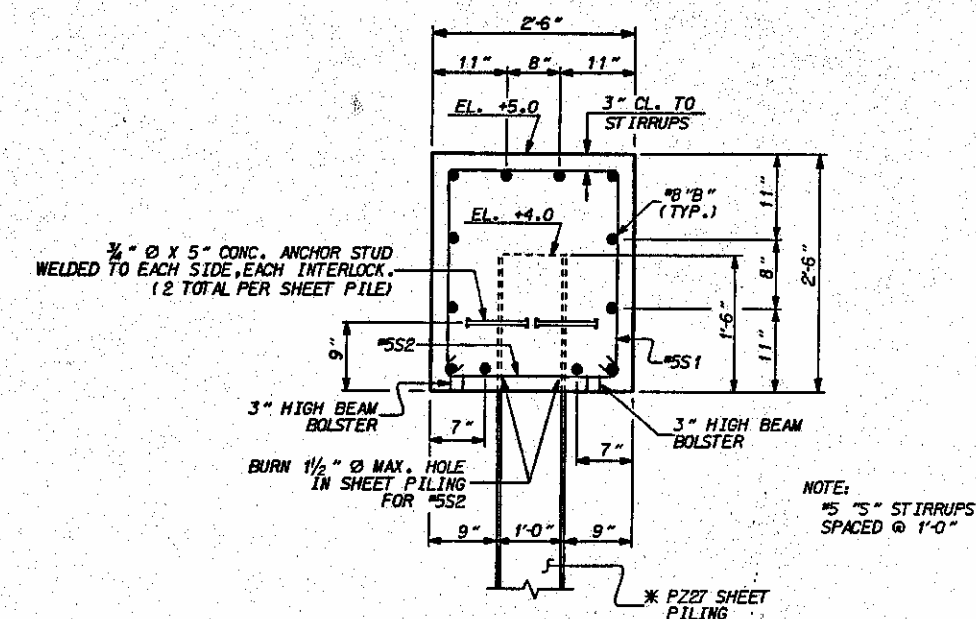
END SECTION PLAN



END SECTION ELEVATION



GENERAL BULKHEAD LAYOUT



SECTION A-A

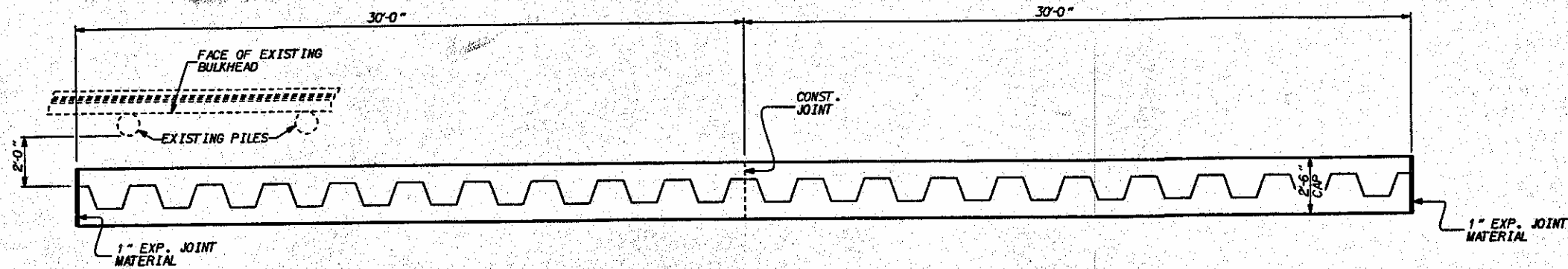
* PZ27 STEEL SHEET
PILE TIP ELEV. -29.0

PROJECT NO. 81150701
BEAUFORT COUNTY
 STATION: 10+00.00 -T-SR
 SHEET 1 OF 2

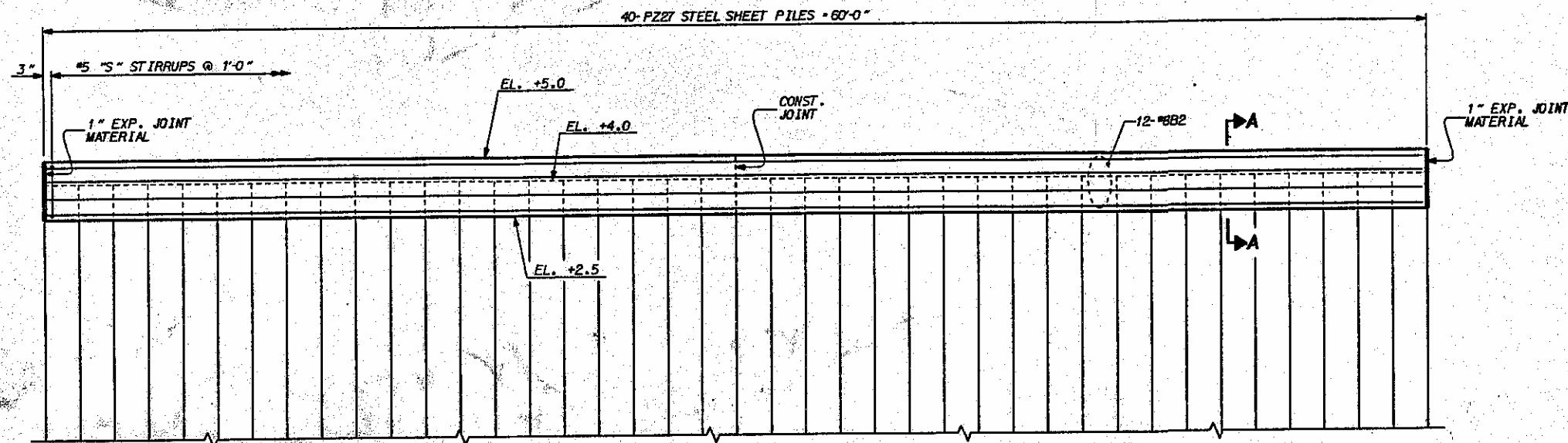
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
**PAMLICO RIVER FERRY
SOUTH RAMP
BULKHEAD END SECTION**
(2 REQUIRED)

AUGUST			1993			
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	3-7 TOTAL SHEETS 28
1			3			
2			4			

DRAWN BY : W.D. CRUTCHER DATE : 08-92
CHECKED BY : F.A. Mims DATE : 9-9-92



INTERIOR SECTION PLAN



INTERIOR SECTION ELEVATION

BAR TYPES		BILL OF MATERIAL				
Diagram 1: A U-shaped bar with a width of 2'-0" and a height of 2'-0". It is labeled with a circled 1. Diagram 2: A U-shaped bar with a width of 2'-0" and a height of 5 1/2". It is labeled with a circled 2.		BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	24	#8	STR	34-6	2211	
B2	36	#8	STR	59-6	5719	
S1	250	#5	1	6-11	1804	
S2	250	#5	2	2-11	761	

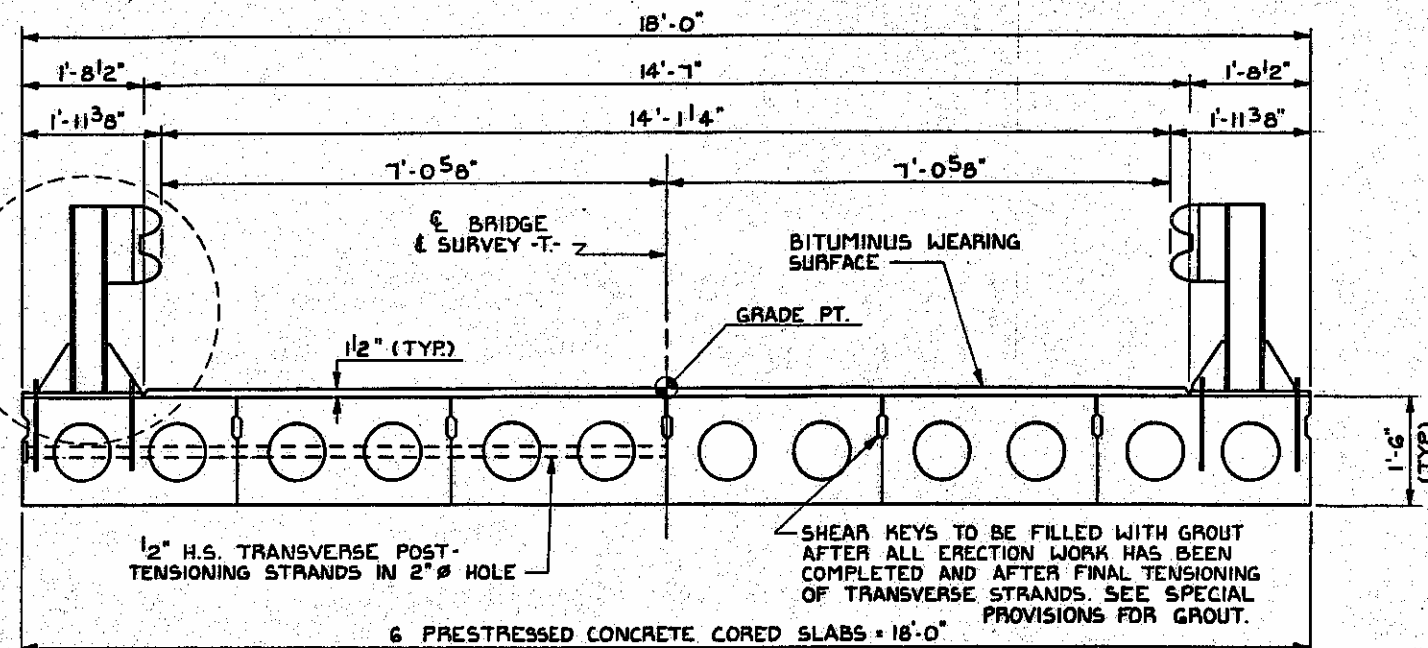
REINFORCING STEEL					10,495	LBS.
CLASS A CONCRETE					57.9	CU. YDS.
* 1'-6" STEEL SHEET PILES					8217.0	SQ. FT.
* P227 STEEL SHEET PILES						

PROJECT NO. 81150701
BEAUFORT COUNTY
 STATION: 10+00.00 - T-SR
 SHEET 2 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PAMLICO RIVER FERRY SOUTH RAMP BULKHEAD INTERIOR SECTION					
AUGUST 1992 (3 REQUIRED)					
REVISIONS			SHEET NO.		
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
			TOTAL SHEETS		
			28		

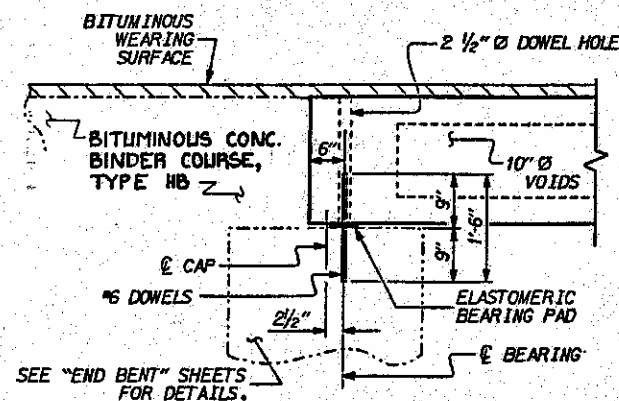
DRAWN BY: W.D. CRUTCHER DATE: 08-92
 CHECKED BY: F.A. Mimms DATE: 9-5-92

FOR DETAILS, SEE
GUARDRAIL SHEET



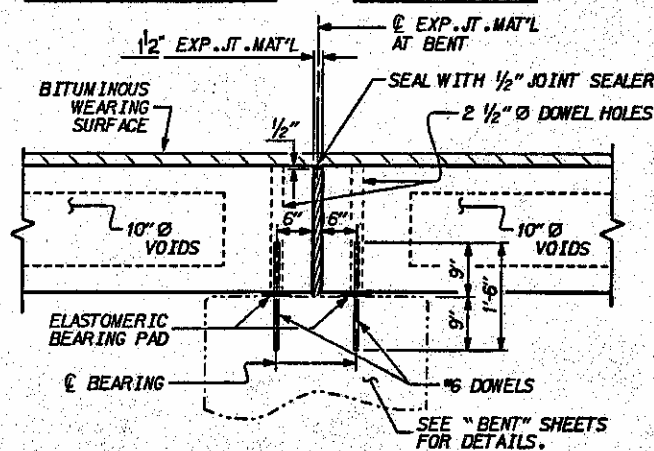
TYPICAL SECTION

FIXED END



SECTION AT END BENT

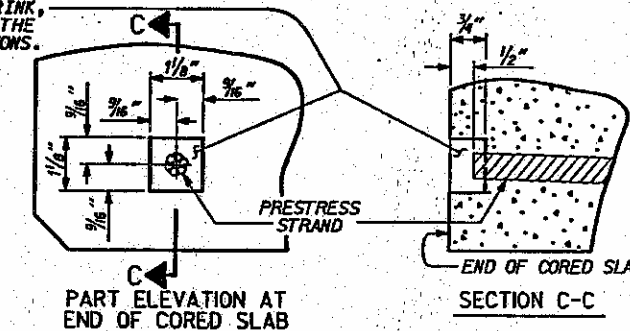
EXPANSION END



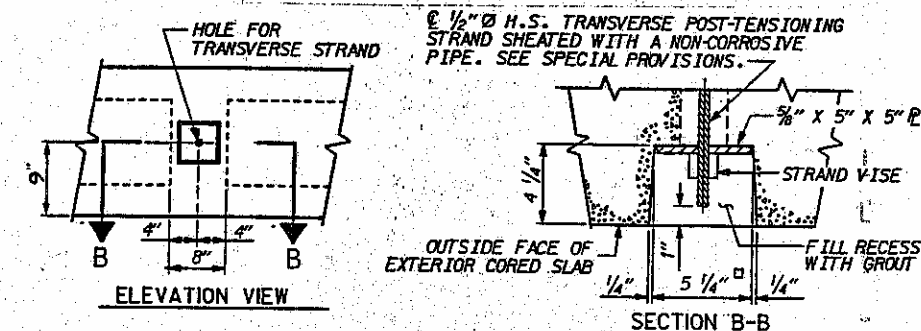
SECTION AT BENT

□ BOND SHALL BE BROKEN AT THESE STRANDS FOR A DISTANCE OF 4'-0" FROM END OF CORED SLAB UNIT.

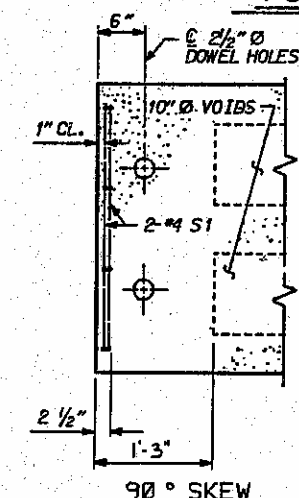
FILL THE RECESS WITH A NON-SHRINK, NON-METALLIC GROUT APPROVED BY THE ENGINEER. SEE SPECIAL PROVISIONS.



GRADED RECESS AT END OF PRETENSIONED STRAND-CORED SLABS

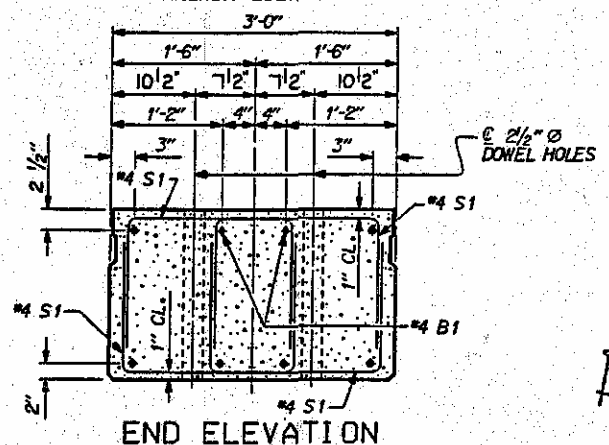


GRADED RECESS AT END OF POST-TENSIONED STRAND-CORED SLABS



PART PLAN-EXTERIOR SECTION

NOTE: EXTERIOR SECTION SHOWN-INTERIOR SECTION SIMILAR EXCEPT OMIT 3/4" ANCHOR BOLTS.



END ELEVATION

SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN.) INTERIOR SLAB SECTION SHOWN-EXTERIOR SLAB SECTION SIMILAR EXCEPT SHEAR KEY LOCATION.

SHEAR KEY DETAIL
NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.

PROJECT NO. 81150701
BEAUFORT COUNTY
STATION: 10+00.00 - T-SK
SHEET 10F 3

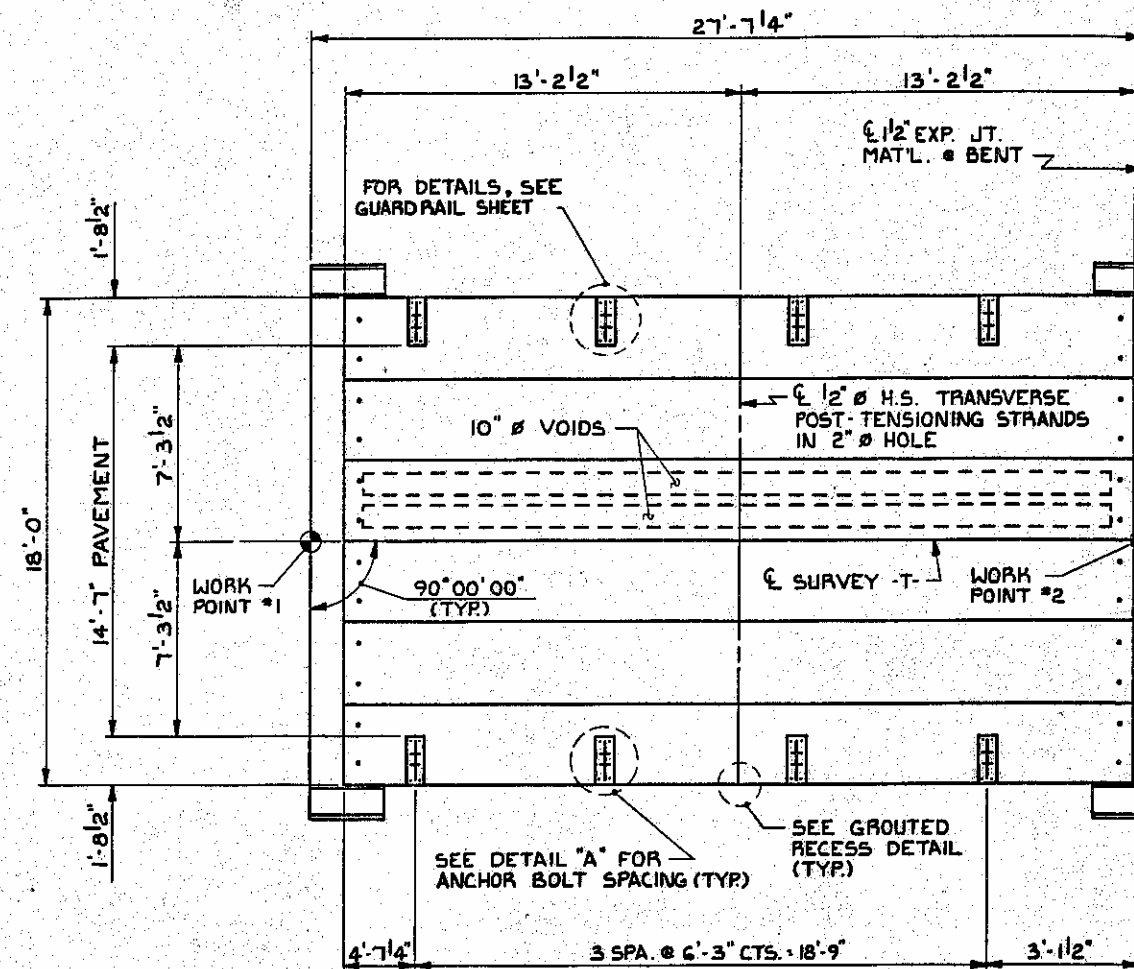
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
3'-0" X 1'-6"
PRESTRESSED CONCRETE
CORED SLAB UNIT
SOUTH RAMP

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

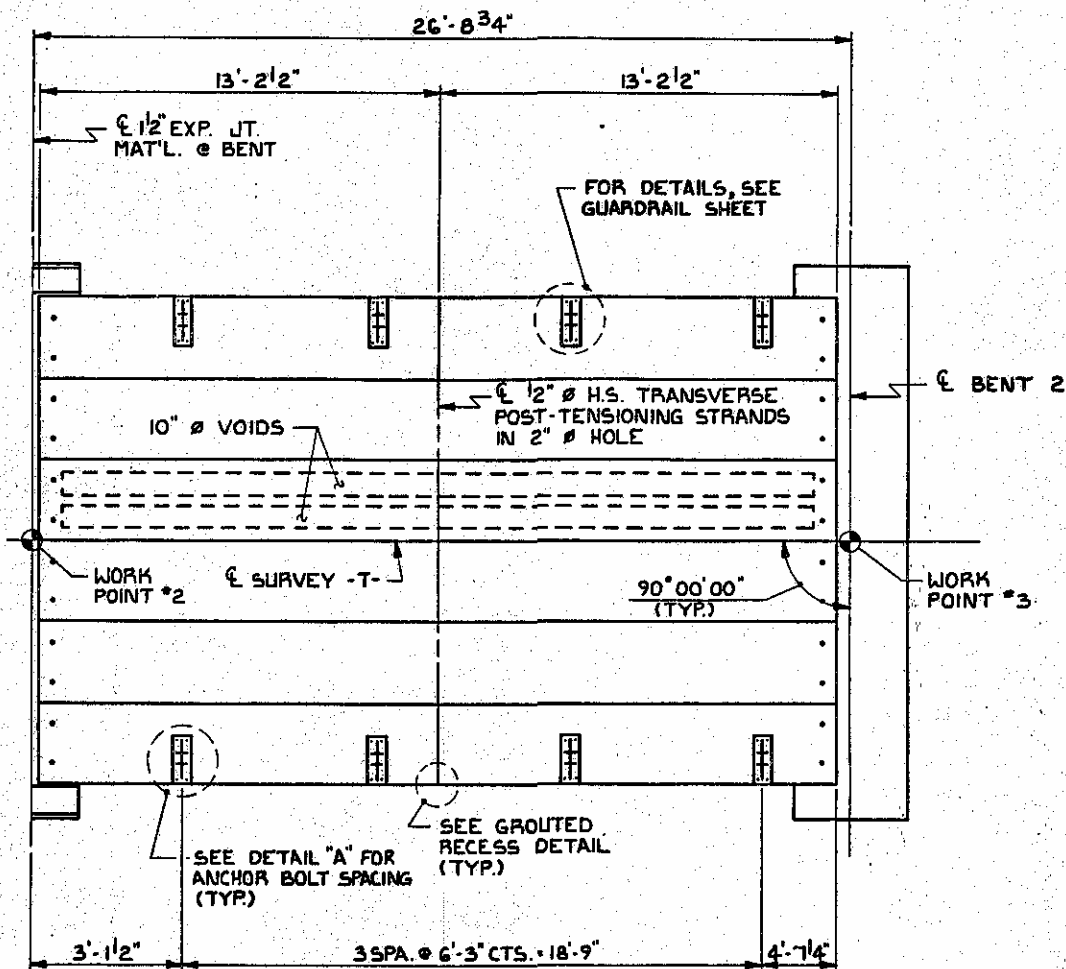
SHEET NO.
S-12
TOTAL
28

REVISED BY W.J.H. CHECKED BY C.R.K. 3-1-90
REVISED BY W.J.H. CHECKED BY F.C.J. 6-22-89
REWORK 6-22-89

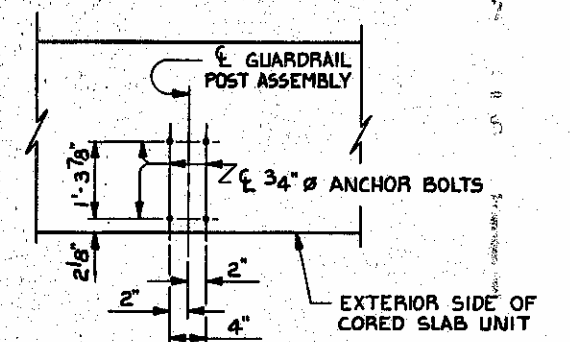
ASSEMBLED BY: L.A. HALL DATE: 2-3-92
CHECKED BY: F.C. JONES DATE: 3-11-92
DRAWN BY: W.J. HARRIS DATE: 4-31-89
CHECKED BY: F.C. JONES DATE: 5-16-89
SPECIAL
STANDARD



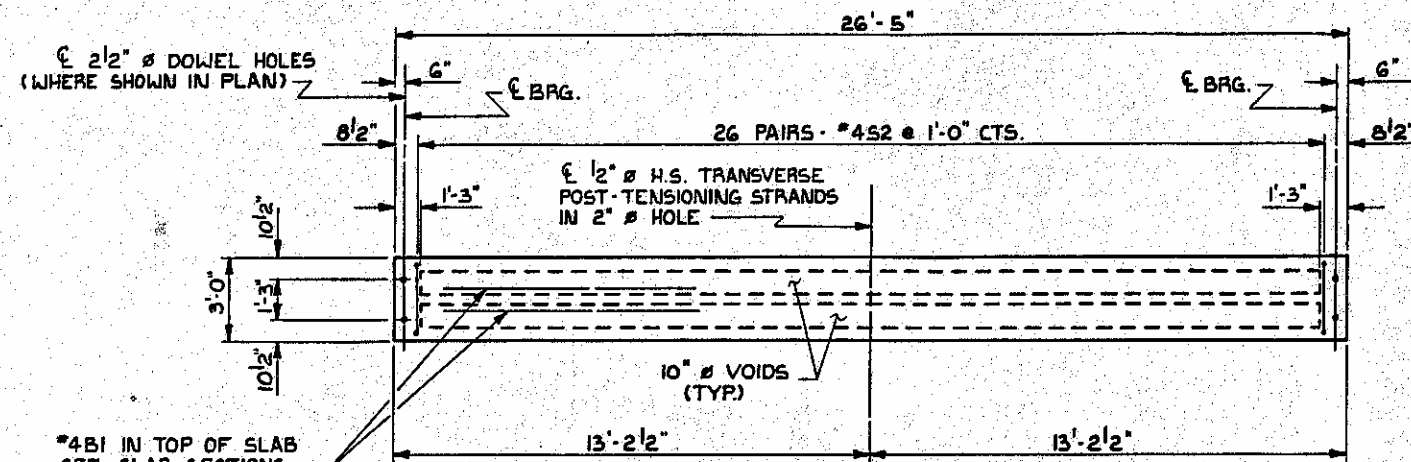
PLAN OF SPAN "A"



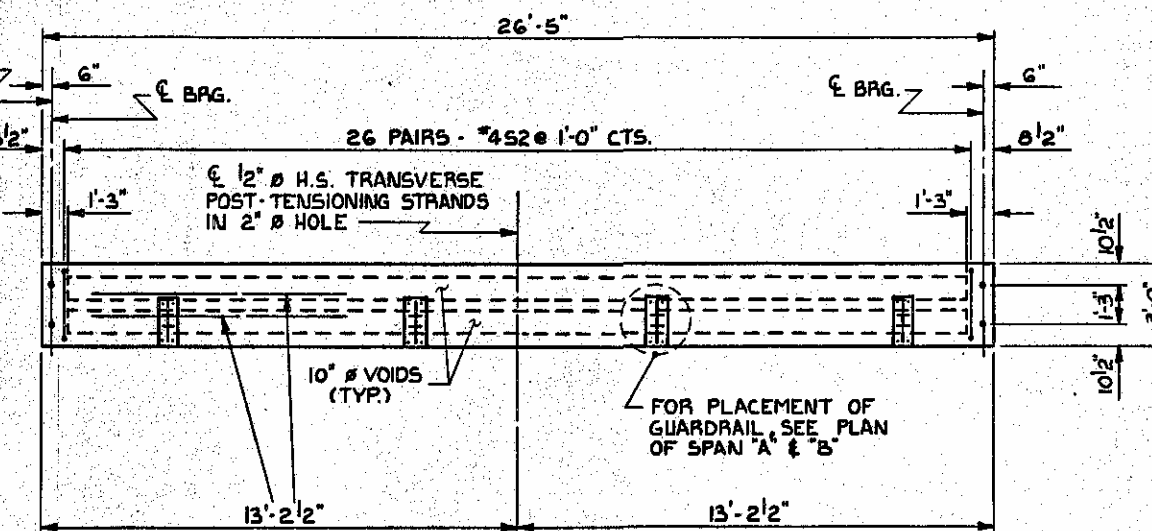
PLAN OF SPAN "B"



DETAIL "A"



PLAN OF INTERIOR CORED SLAB UNIT
FOR LOCATION OF ADDITIONAL REINFORCING STEEL
AT ENDS OF SLAB, SEE "PART PLAN - EXTERIOR SECTION"



PLAN OF EXTERIOR CORED SLAB UNIT
FOR LOCATION OF ADDITIONAL REINFORCING STEEL
AT ENDS OF SLAB, SEE "PART PLAN - EXTERIOR SECTION"

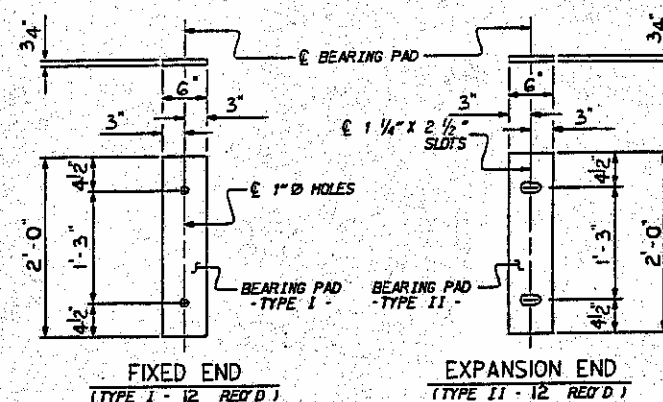
PROJECT No. 8.1150.701
BEAUFORT COUNTY
STATION: 10+00.00 - T-SR
SHEET 2 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PLAN OF SPANS CORED SLAB DETAILS SOUTH RAMP					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
					SHEET NO. 5-13 TOTAL SHEETS 28

DRAWN BY L. A. HALL DATE 9-8-92
CHECKED BY E. A. Mims DATE 9-11-92

REVISED BY E.L.R. CHECKED BY G.R.P. 11-13-91 R
REVISED BY E.L.R. CHECKED BY G.R.P. 5-17-91
REVISED BY W.J.H. CHECKED BY G.R.P. 10-1-90
REVISED BY W.J.H. CHECKED BY F.C.J. 3-1-90
REDRAWN 8-22-89

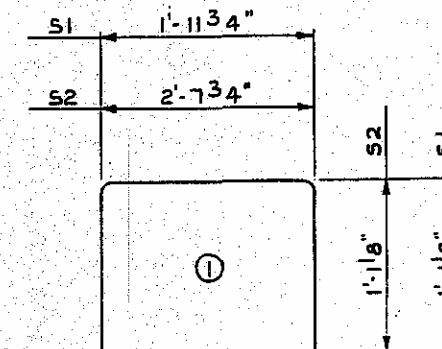
ASSEMBLED BY : L.A. HALL	DATE : 9-9-92	SPECIAL
CHECKED BY : F.B. MUMMS	DATE : 9-11-92	
DRAWN BY : W.J. HARRIS	DATE : 4-31-89	STANDARD
CHECKED BY : F.C. JONES	DATE : 5-16-89	



ELASTOMERIC BEARING DETAILS

GRADE 270 STRANDS		
	1/2" Ø S.R.	1/2" Ø L.R.
AREA (SQUARE INCHES)	0.153	0.153
ULTIMATE STRENGTH (LBS. PER STRAND)	41,300	41,300
APPLIED PRESTRESS (LBS. PER STRAND)	28,900	30,880

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR ONE CORED SLAB SECTION

BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT		INTERIOR UNIT	
				LENGTH	WEIGHT	LENGTH	WEIGHT
B1	2	#4	STR	26'-0"	35	26'-0"	35
S1	8	#4	I	4'-2"	22	4'-2"	22
S2	52	#4	I	4'-10"	168	4'-10"	168
REINFORCING STEEL				LBS.	225	LBS.	225
1/2" Ø S.R. STRANDS				No.	12	No.	12
1/2" Ø L.R. STRANDS				No.	12	No.	12

DEAD LOAD DEFLECTION AND CAMBER

	3'-0" x 1'-6"		3'-0" x 1'-9"	
	1/2" Ø S.R. STRAND	1/2" Ø L.R. STRAND	1/2" Ø S.R. STRAND	1/2" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1/16" ↑	1/2" ↑	1/16" ↑	1/2" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD **	0" ↓	0" ↓	0" ↓	0" ↓
FINAL CAMBER	1/16" ↑	1/2" ↑	1/16" ↑	1/2" ↑

** INCLUDES FUTURE WEARING SURFACE

NOTES

THE CONTRACTOR MAY USE EITHER 1/2" DIA. STRESS RELIEVED OR 1/2" DIA. LOW RELAXATION STRANDS ACCORDING TO LAYOUTS SHOWN ON THIS SHEET.

THE SAME TYPE AND SAME SIZE STRANDS SHALL BE USED FOR ALL CORED SLAB UNITS IN THE STRUCTURE.

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE STRESS RELIEVED OR 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.

ALL REINFORCING STEEL CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.

THE 2 1/2" DIA. DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH GROUT. THE 2 1/2" DIA. DOWEL HOLES AT EXPANSION ENDS OF SLAB SECTIONS SHALL BE FILLED WITH HOT POURED RUBBER ASPHALT MATERIAL TO 1 1/2" ABOVE TOP OF DOWELS AND THEN FILLED WITH GROUT. FOR GROUT FOR PRESTRESSED CORED SLABS, SEE SPECIAL PROVISIONS.

THE HOT POURED RUBBER ASPHALT MATERIAL SHALL CONFORM TO THE REQUIREMENTS FOR JOINT SEALER, SEE STANDARD SPECIFICATIONS.

FOR PRESTRESSED CORED SLABS, SEE SPECIAL PROVISIONS.

FOR GROUT FOR ENDS OF PRESTRESSED CORED SLABS, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC BEARINGS, SEE SPECIAL PROVISIONS.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE 1/2" THICK EXPANSION JOINT MATERIAL IN THE JOINTS BETWEEN THE ENDS OF THE CORED SLAB

NOMINAL AND CAN BE EXPECTED TO VARY. THE CONTRACTOR MAY USE MORE THAN ONE LAYER OF EXPANSION JOINT MATERIAL WITH A MINIMUM LAYER THICKNESS OF 3/8" TO PROVIDE THE THICKNESS REQUIRED.

WHEN CORED SLABS ARE CAST, A POSITIVE HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDWAYS. THIS SYSTEM SHALL BE DESIGNED TO BE LEFT IN PLACE UNTIL THE CONCRETE HAS REACHED RELEASE STRENGTH. AT LEAST THREE WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM, IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 4000 PSI.

FOR EPOXY COATED REINFORCING STEEL, SEE SPECIAL PROVISIONS.

CALCIUM NITRATE CORROSION INHIBITOR SHALL BE USED IN ALL PRESTRESSED CONCRETE CORED SLAB UNITS. SEE SPECIAL PROVISIONS.

THE COST OF THE 3/4" Ø ANCHOR BOLTS SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR 3'-0" x 1'-6" PRESTRESSED CONCRETE CORED SLABS.

CORED SLABS REQUIRED

	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	4	26'-5"	105'-8"
INTERIOR C.S.	8	26'-5"	211'-4"
TOTAL	12		317'-0"

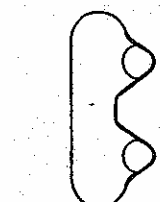
PROJECT NO. 81150701

BEAUFORT COUNTY

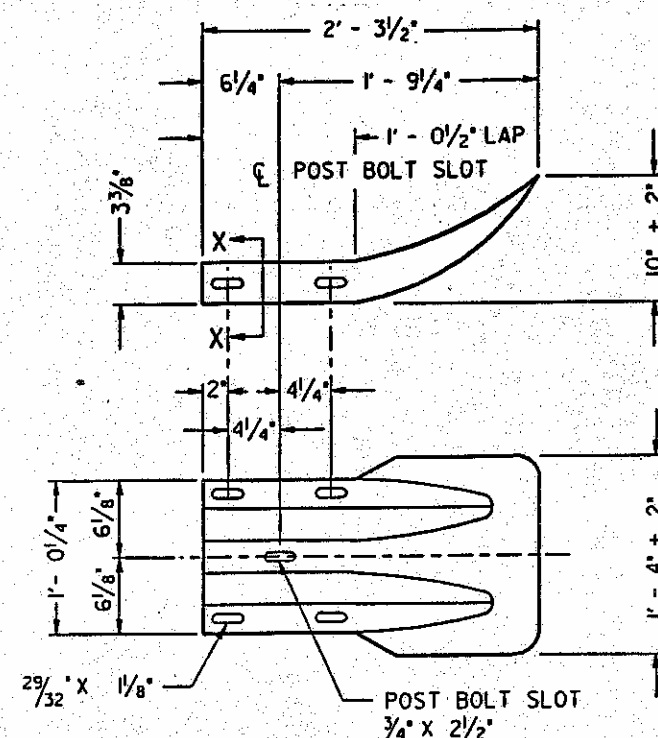
STATION: 10+00.00 - T - S.R.

SHEET 3 OF 3

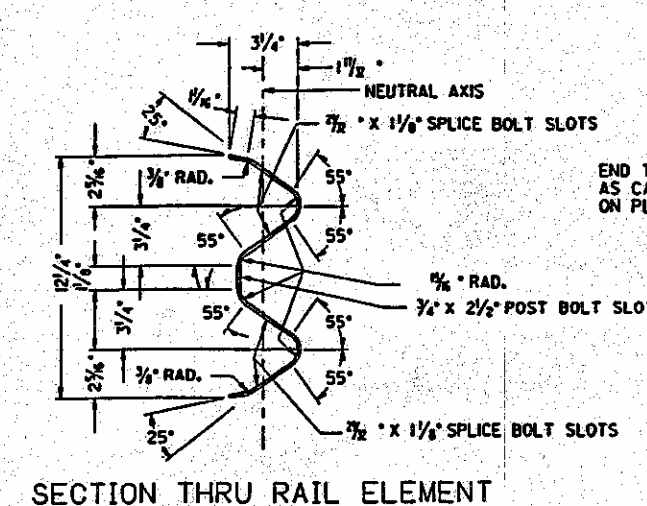
STATE OF NORTH CAROLINA			
DEPARTMENT OF TRANSPORTATION			
RALEIGH			
STANDARD			
3'-0" X 1'-6"			
PRESTRESSED			
CONCRETE CORED			
SLAB UNIT			
SOUTH RAMP			
REVISIONS			
NO.	BY:	DATE:	NO.
1			3
2			4
SHEET NO.			S-14
TOTAL			28



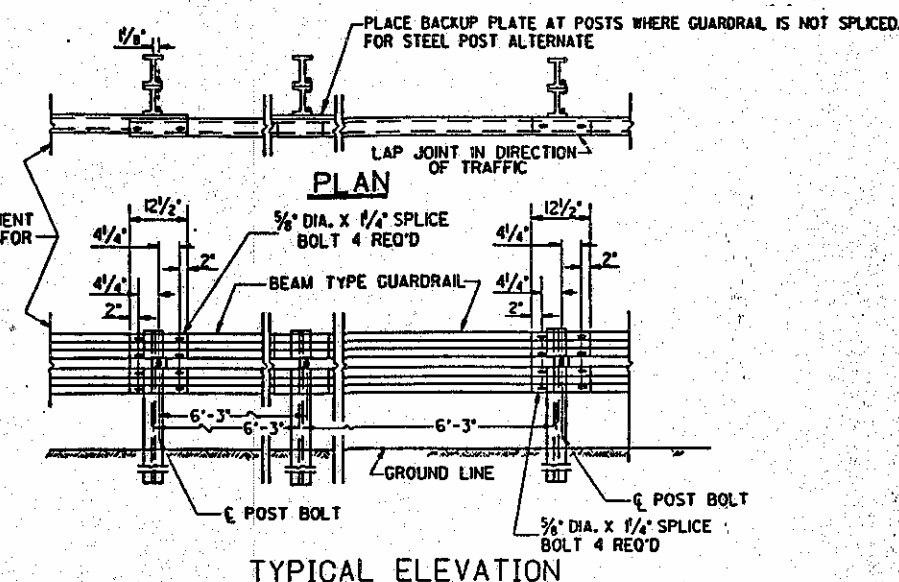
SECTION X-X



TERMINAL END SECTION



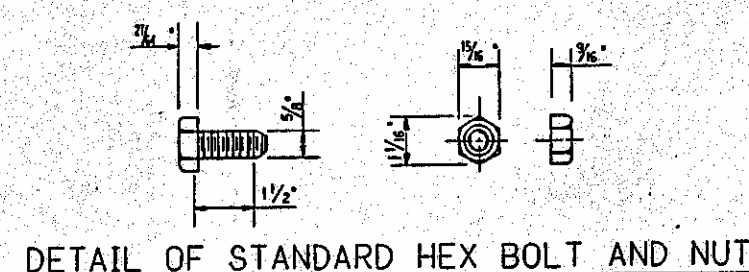
SECTION THRU RAIL ELEMENT



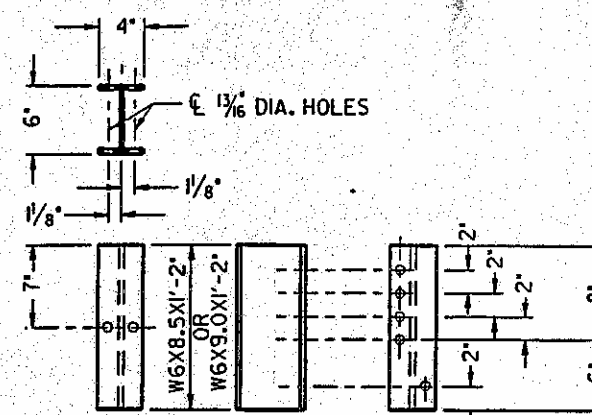
NOTES FOR GUARDRAIL POST ANCHORED TO STRUCTURE:
POST AND POST BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF A.S.T.M. A-36 AND SHALL BE GALVANIZED AFTER FABRICATION TO CONFORM TO THE REQUIREMENTS OF A.S.T.M. A-123.

FOR NEW STRUCTURES: THE POST SHALL BE ATTACHED TO ANCHOR BOLTS THAT ARE CAST IN THE CORED SLAB AT THE TIME THE CORED SLAB IS POURED.

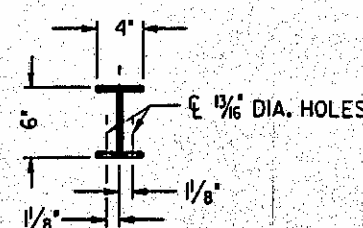
ANCHORS SHALL BE GALVANIZED TO CONFORM TO THE REQUIREMENTS OF ASTM A-153.



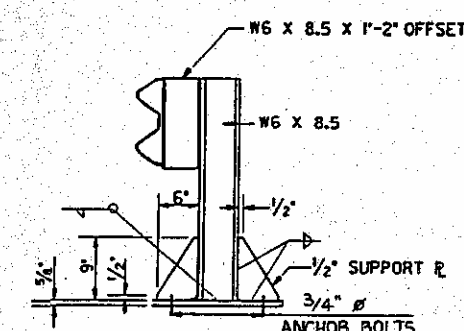
DETAIL OF STANDARD HEX BOLT AND NUT



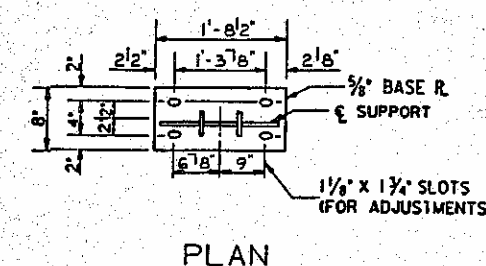
FRONT - SIDE - BACK
DETAIL OF "W" STEEL
OFFSET BLOCK



FRONT - SIDE - BACK
DETAIL OF "W" STEEL POST



ELEVATION



PLAN

ANCHORAGE FOR GUARDRAIL POST

NOTE: THE CONTRACTOR'S ATTENTION IS DRAWN TO THE FACT THAT THE BOLT SPACING IN THE BASE PLATE IS UNSYMMETRICAL.

GUARDRAIL QUANTITIES	
	LIN. FT.
NORTH RAMP	69'-7"
SOUTH RAMP	94'-7"

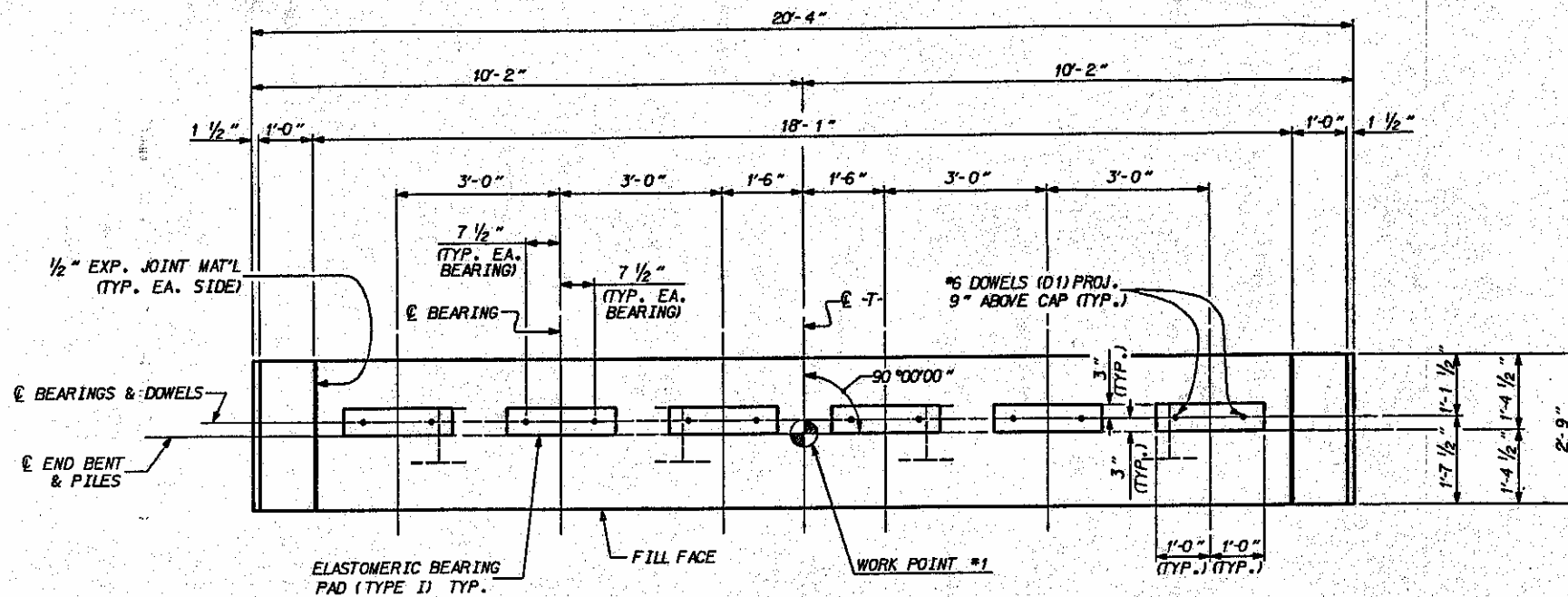
PROJECT No. 8.1150701

BEAUFORT COUNTY

STATION: 10+00.00-T-NR
10+00.00-T-SR

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
GUARDRAIL DETAILS NORTH RAMP & SOUTH RAMP					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
SHEET NO. S-15					TOTAL SHEETS 28

DRAWN BY L. A. HALL DATE 9-10-92
CHECKED BY P. E. KELLY DATE 9-11-92



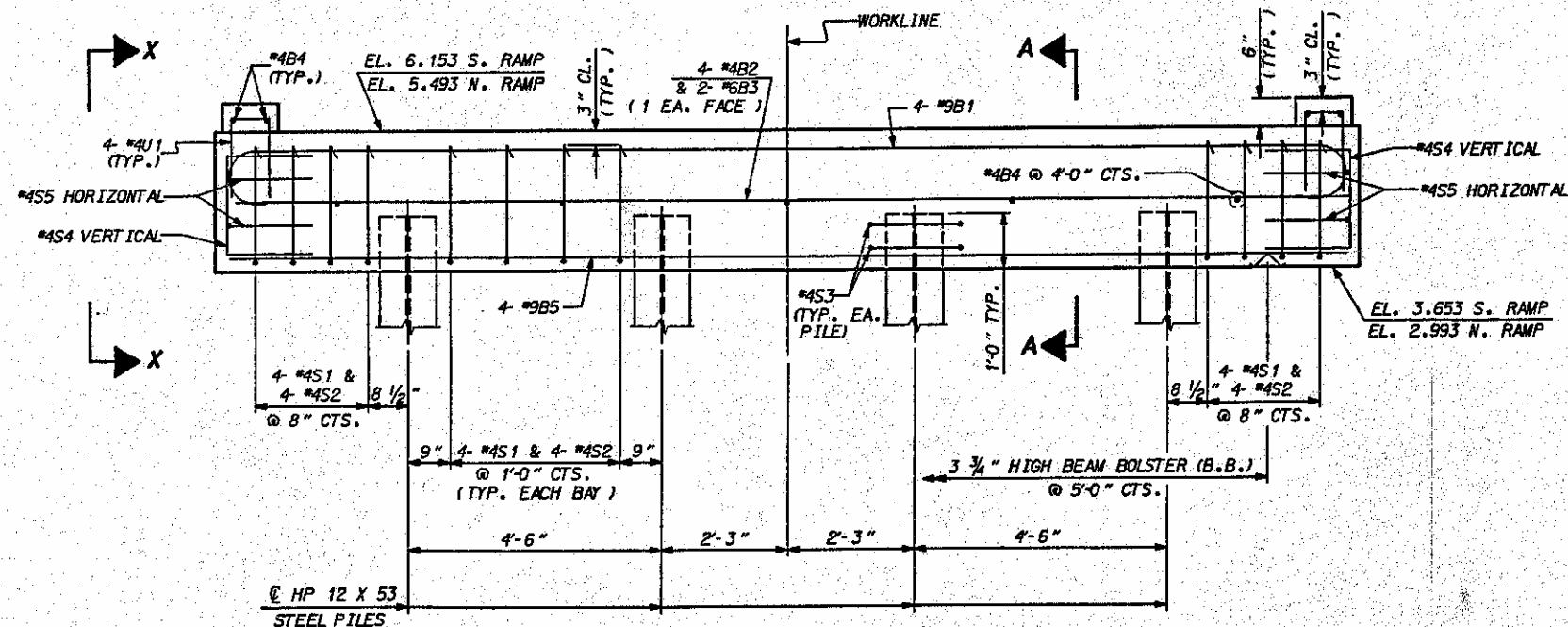
PLAN

NOTES

ALL REINFORCING STEEL SHALL BE GRADE 60.

HP 12 X 53 STEEL PILES SHALL BE
INSTALLED TO HAVE A MINIMUM BEARING
CAPACITY OF 10 TONS PER PILE.

ALL REINFORCING STEEL SHALL BE EPOXY COATED.



ELEVATION

BAR TYPES

BILL OF MATERIAL

END BENT #1

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	9	1	22'-4" 304
B2	4	4	STR	19'-10" 53
B3	2	6	STR	19'-10" 60
B4	9	4	STR	2'-3" 14
B5	4	9	STR	19'-10" 270

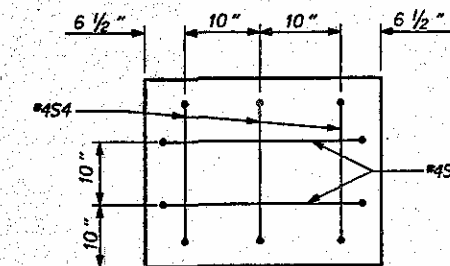
D1	12	6	STR	1'-6" 27
S1	20	4	2	3'-0" 40
S2	20	4	3	6'-11" 92
S3	8	4	4	6'-6" 35
S4	6	4	5	4'-10" 19
S5	4	4	5	5'-2" 14

U1	8	4	5	3'-6" 19
EPOXY COATED				
REINFORCING STEEL				LBS. 947

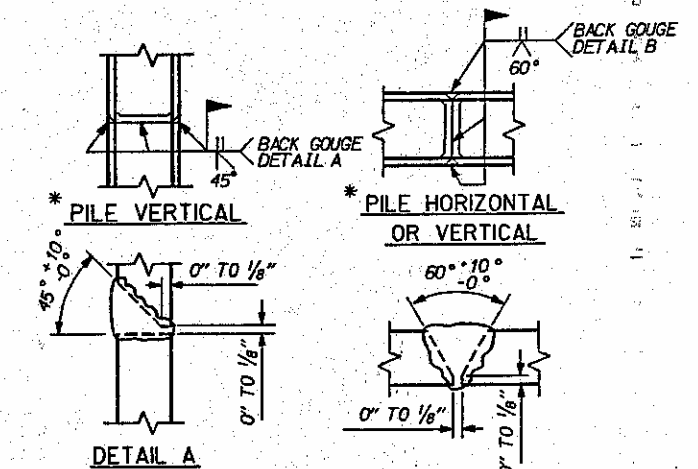
CLASS "A" CONCRETE				
POUR #1		CAP	C.Y.	5.3
ABOVE QUANTITIES ARE FOR 1 BENT				

HP 12 X 53 STEEL PILES				
SOUTH RAMP	NO. 4	LIN. FEET	184	
NORTH RAMP	NO. 4	LIN. FEET	164	

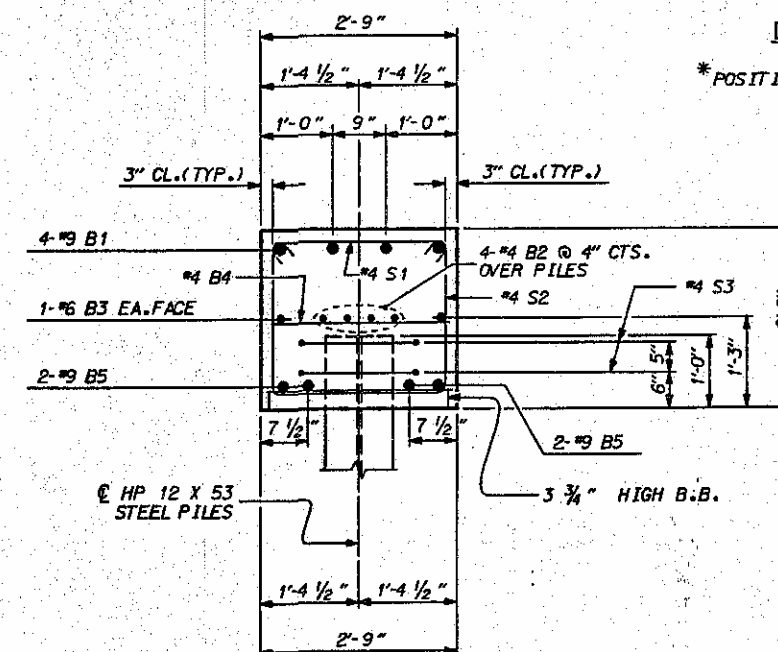
ALL BAR DIMENSIONS ARE OUT TO OUT.



VIEW X-X
(TYP. EACH END)



PILE SPLICE DETAILS

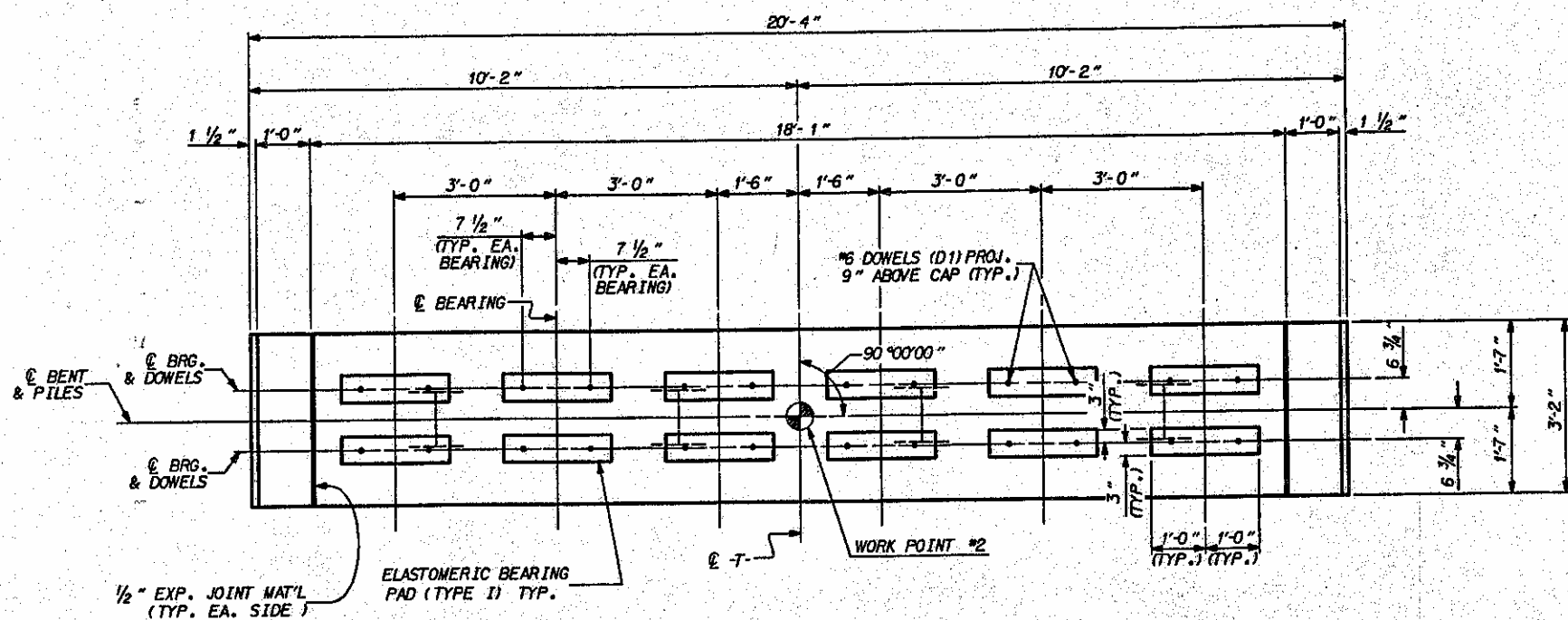


SECTION A-A

PROJECT NO. 8.1150701
BEAUFORT COUNTY
 STATION: 10+00.00 -T-NR
10+00.00 -T-SR

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PAMLICO RIVER FERRY
SOUTH RAMP AND
NORTH RAMP
END BENT #1

SEPTEMBER						1992	
REVISONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16	
1			3			TOTAL SHEETS	
2			4			28	



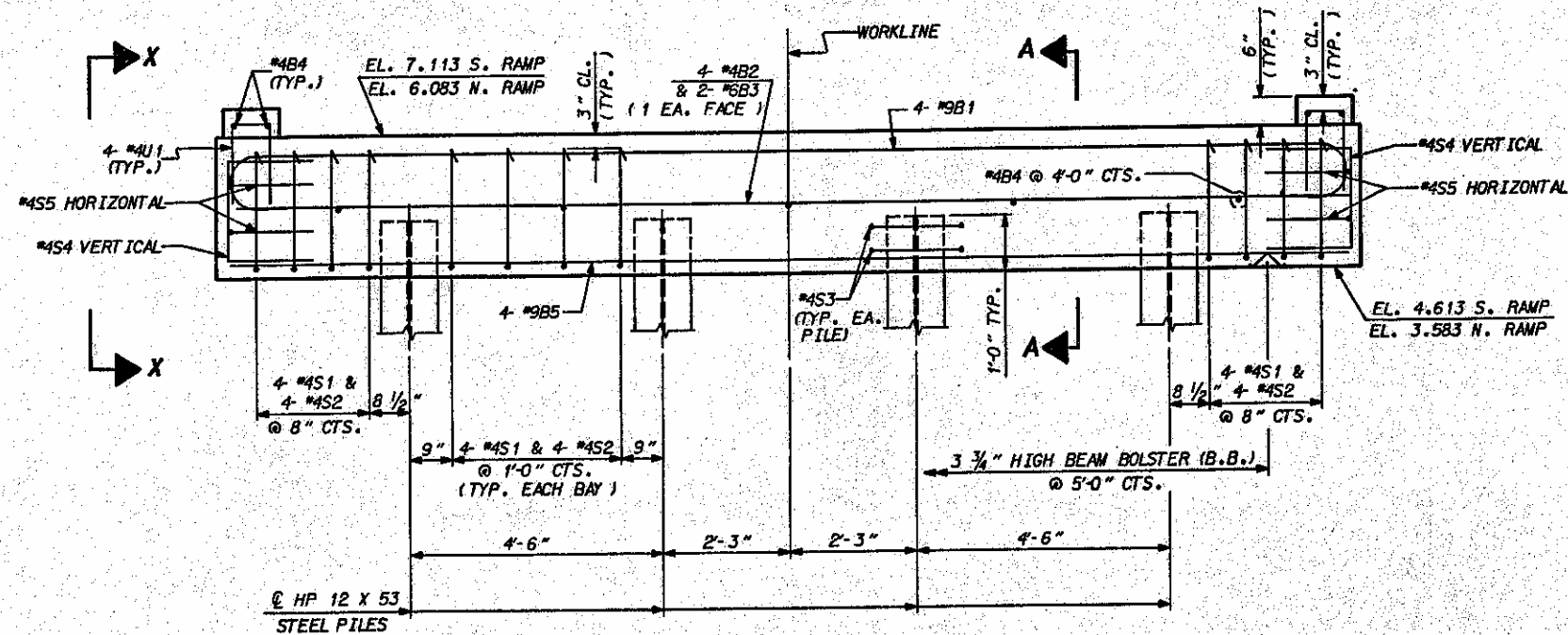
PLAN

NOTES

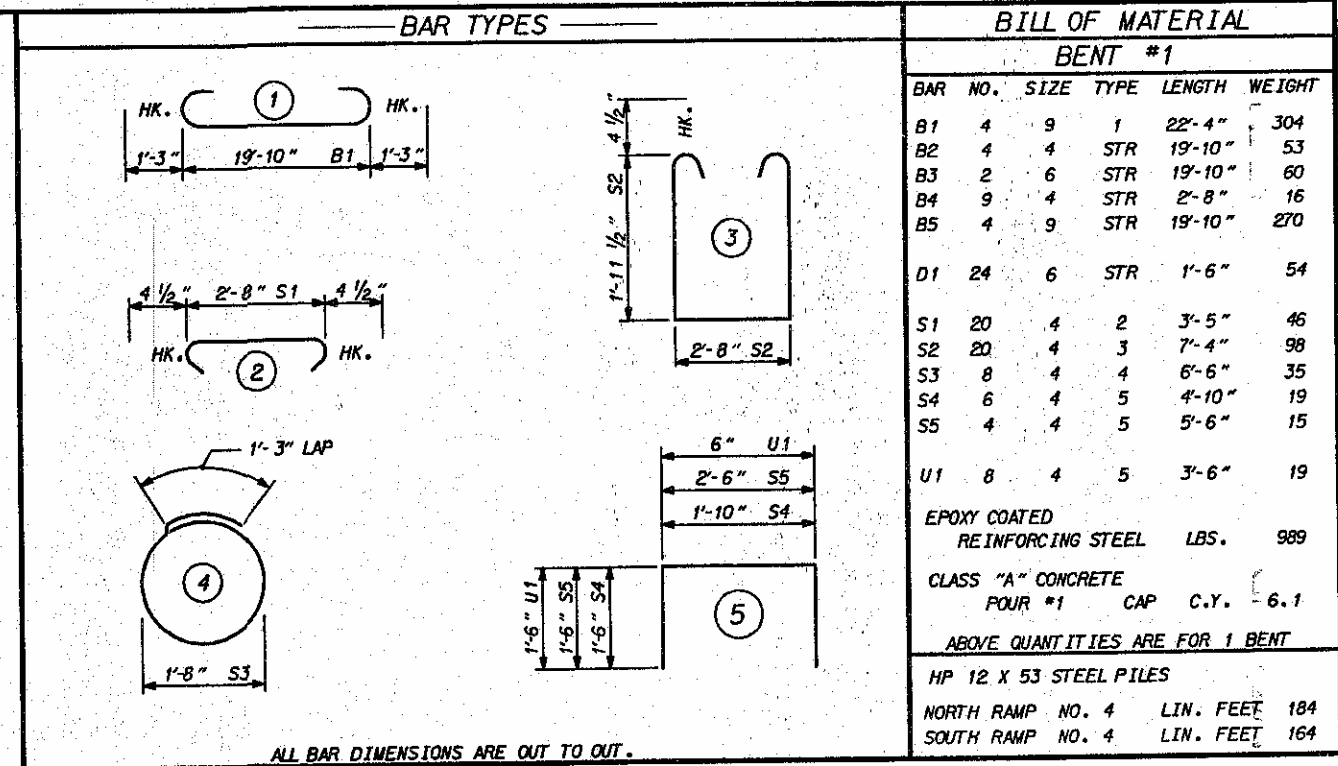
ALL REINFORCING STEEL SHALL BE GRADE 60.

HP 12 X 53 STEEL PILES SHALL BE
INSTALLED TO HAVE A MINIMUM BEARING
CAPACITY OF 25 TONS PER PILE.

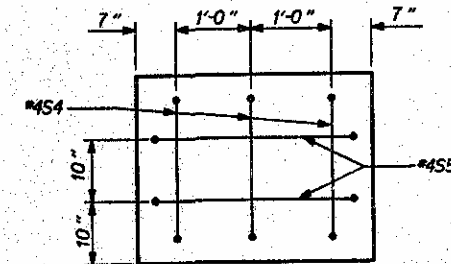
ALL REINFORCING STEEL SHALL BE EPOXY COATED.



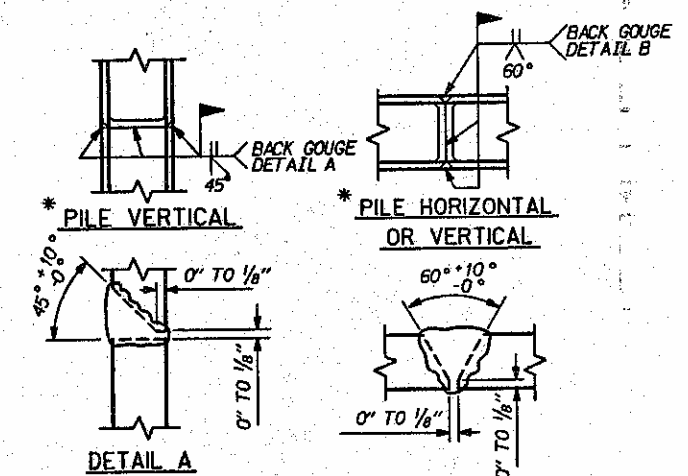
ELEVATION



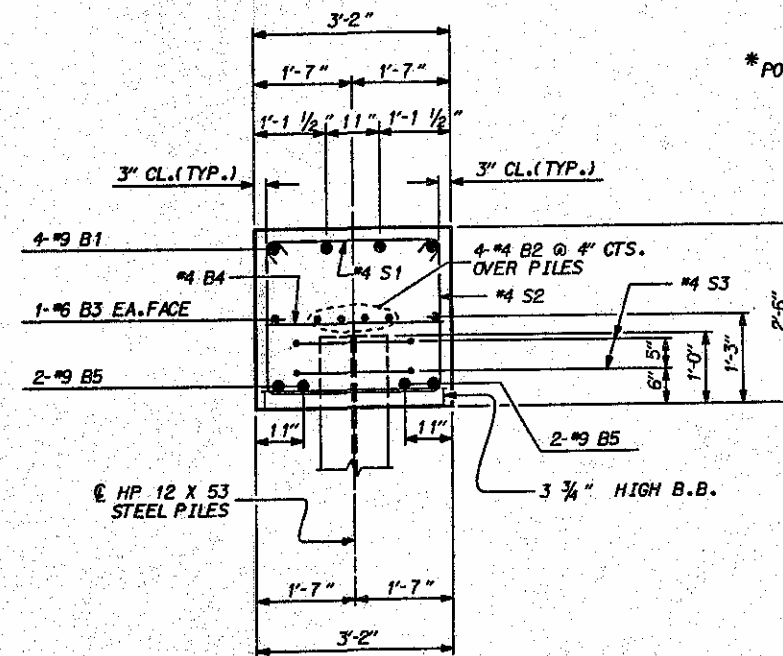
ALL BAR DIMENSIONS ARE OUT TO OUT.



VIEW X-X
(TYP. EACH END)



PILE SPLICE DETAILS

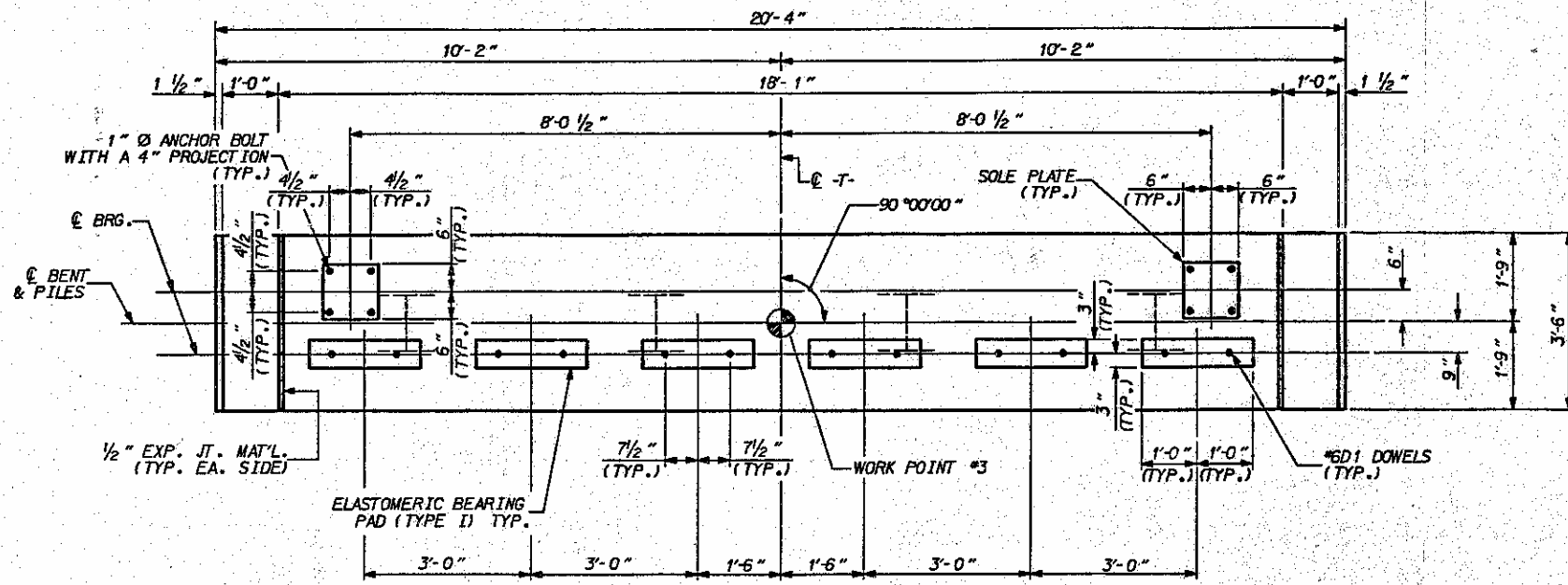


SECTION A-A

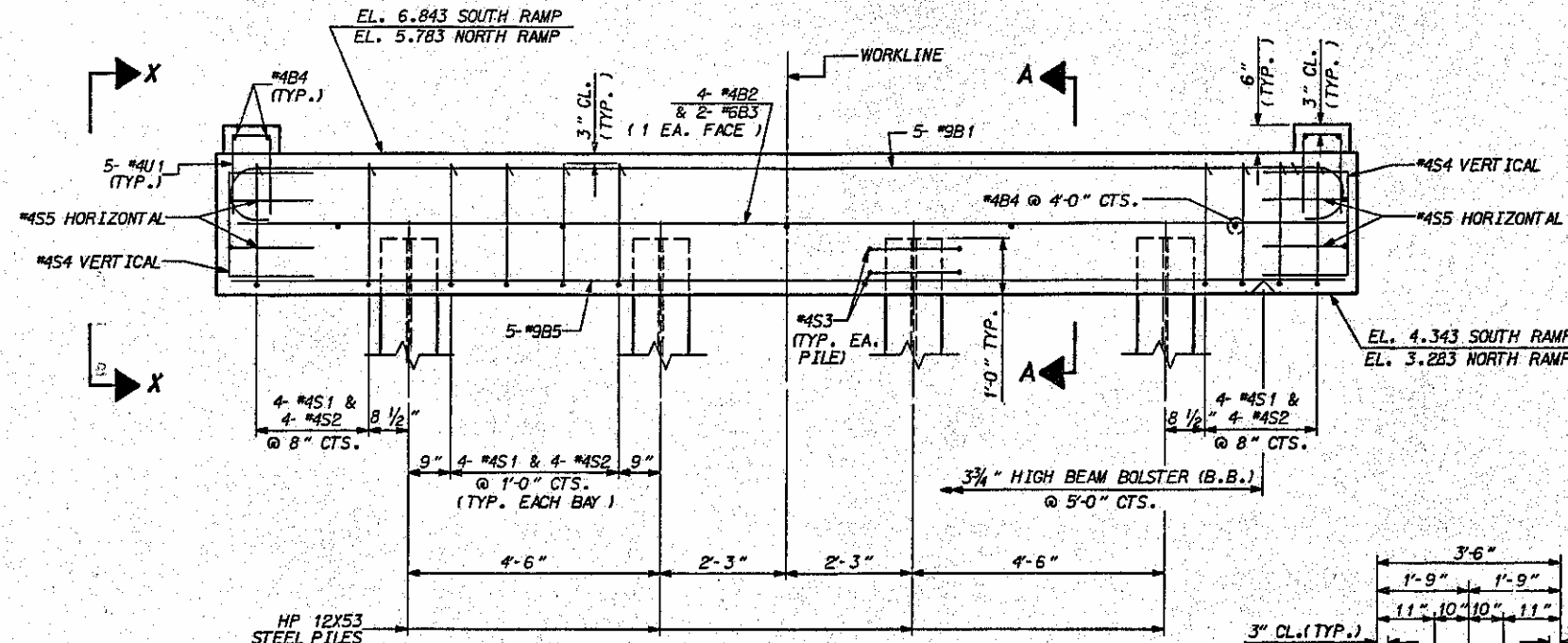
PROJECT NO. 8.1150701
BEAUFORT COUNTY
 STATION: 10+00.00 -T-NR
10+00.00-T-SR

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PAMLICO RIVER FERRY
SOUTH RAMP AND
NORTH RAMP
BENT #1

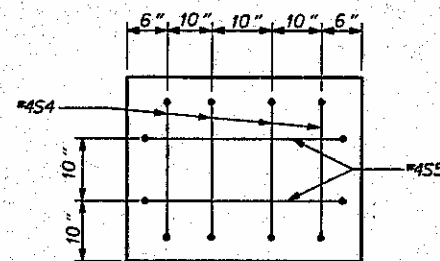
SEPTEMBER						1992
REVISIONS						SHEET NO. 5-17
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 28
2			4			



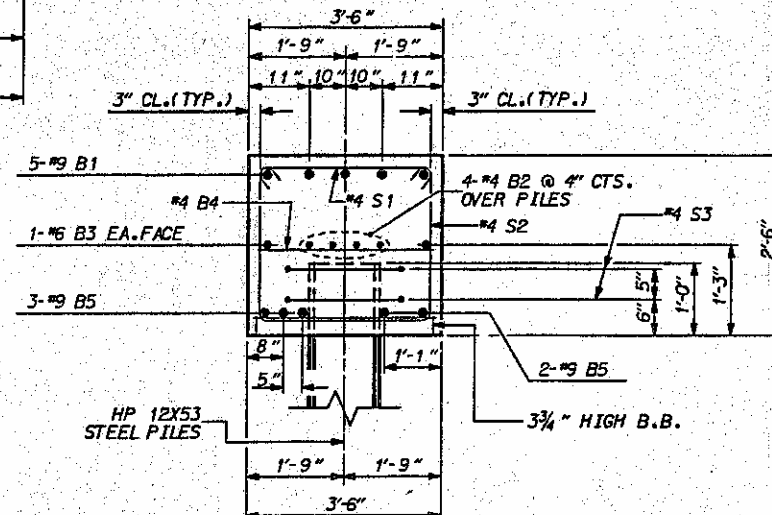
PLAN



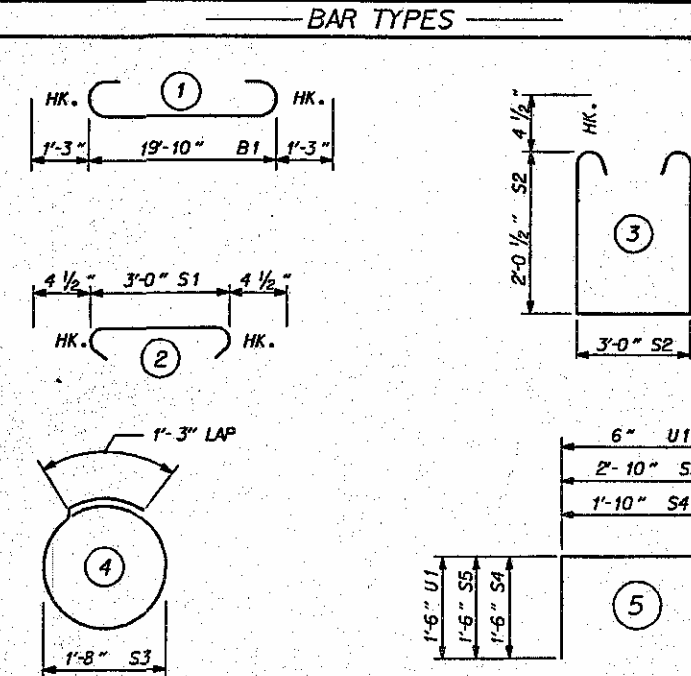
ELEVATION



VIEW X-X
(TYP. EACH END)



SECTION A-A



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT #2

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	5	9	1	22'-4"
B2	4	4	STR	19'-10"
B3	2	6	STR	19'-10"
B4	9	4	STR	3'-0"
B5	5	9	STR	19'-10"
D1	12	6	STR	1'-6"
S1	20	4	2	3'-9"
S2	20	4	3	7'-10"
S3	8	4	4	6'-6"
S4	8	4	5	4'-10"
S5	4	4	5	5'-10"
U1	10	4	5	3'-6"

EPOXY COATED
REINFORCING STEEL LBS. 1122

CLASS "A" CONCRETE
POUR #1 CAP C.Y. 6.7

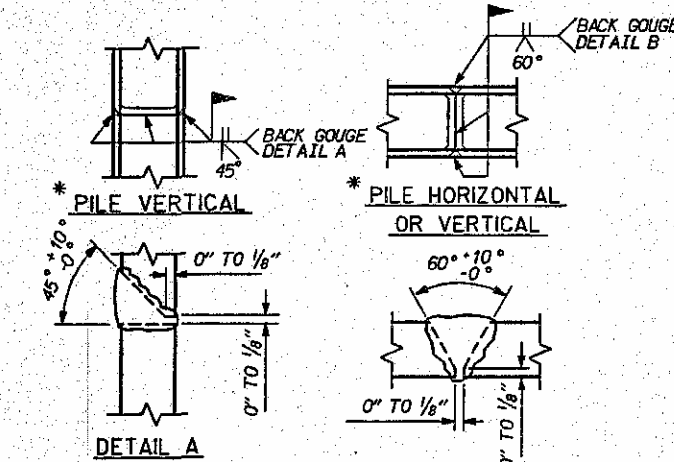
ABOVE QUANTITIES ARE FOR 1 BENT

HP 12X53 STEEL PILES

SOUTH RAMP: NO. 4 LIN. FEET 208
NORTH RAMP: NO. 4 LIN. FEET 204

NOTES

ALL REINFORCING STEEL SHALL BE GRADE 60.
HP 12X53 STEEL PILES SHALL BE
INSTALLED TO HAVE A MINIMUM BEARING
CAPACITY OF 25 TONS PER PILE.
ALL REINFORCING STEEL SHALL BE
EPOXY COATED.



PILE SPLICE DETAILS

PROJECT NO. 8.1150701

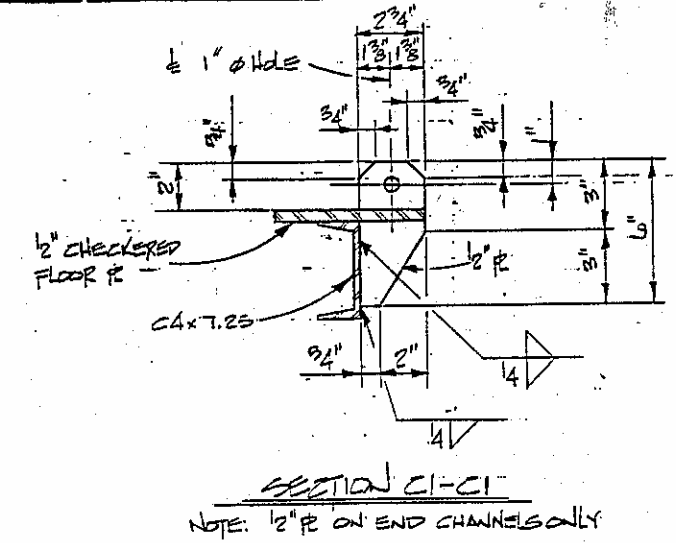
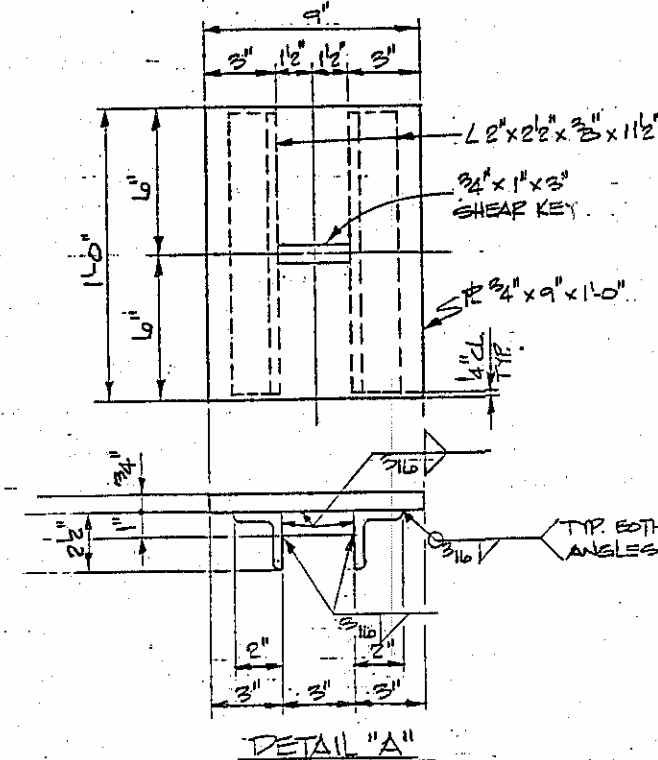
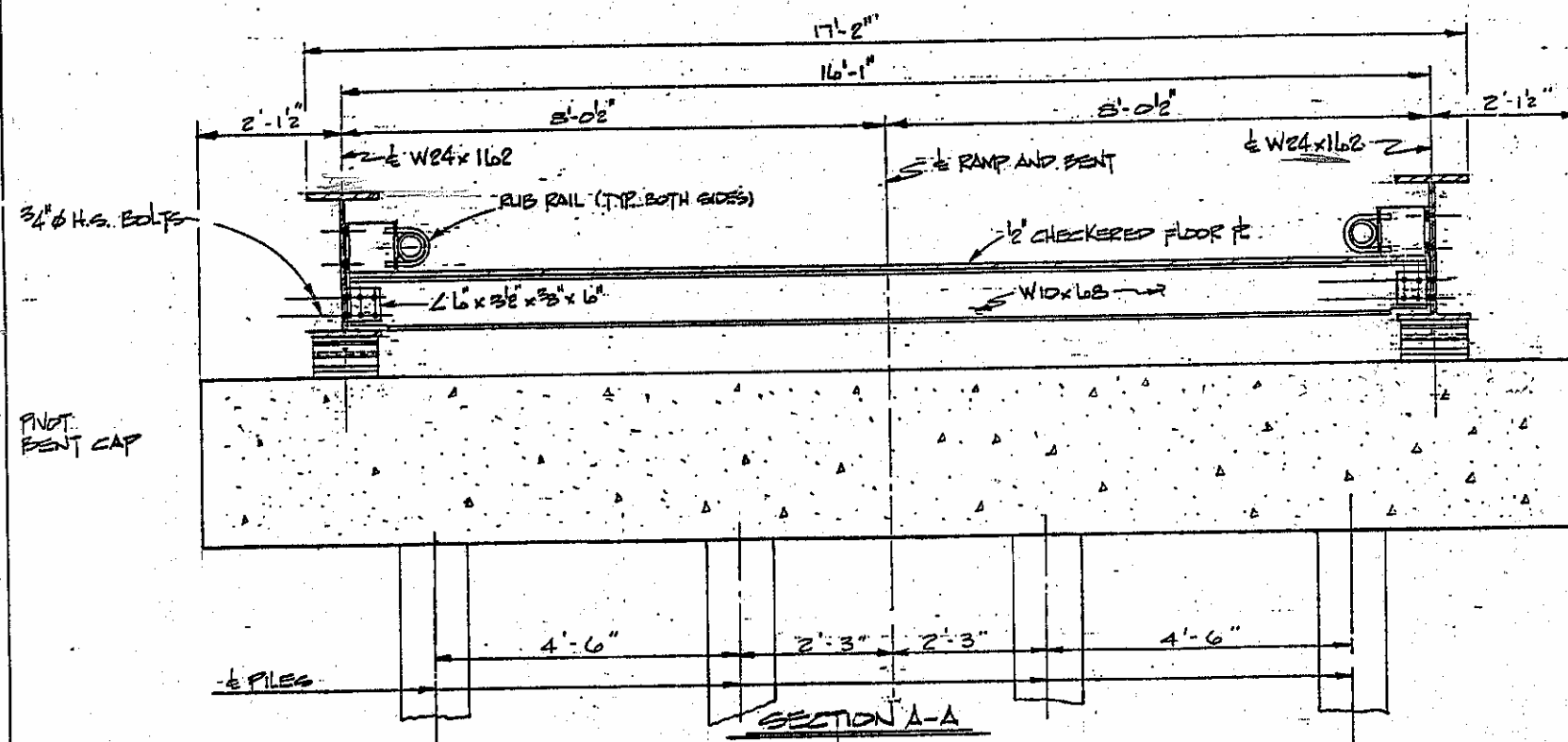
BEAUFORT COUNTY

STATION: 10+00.00 -T-NR
10+00.00 -T-SR

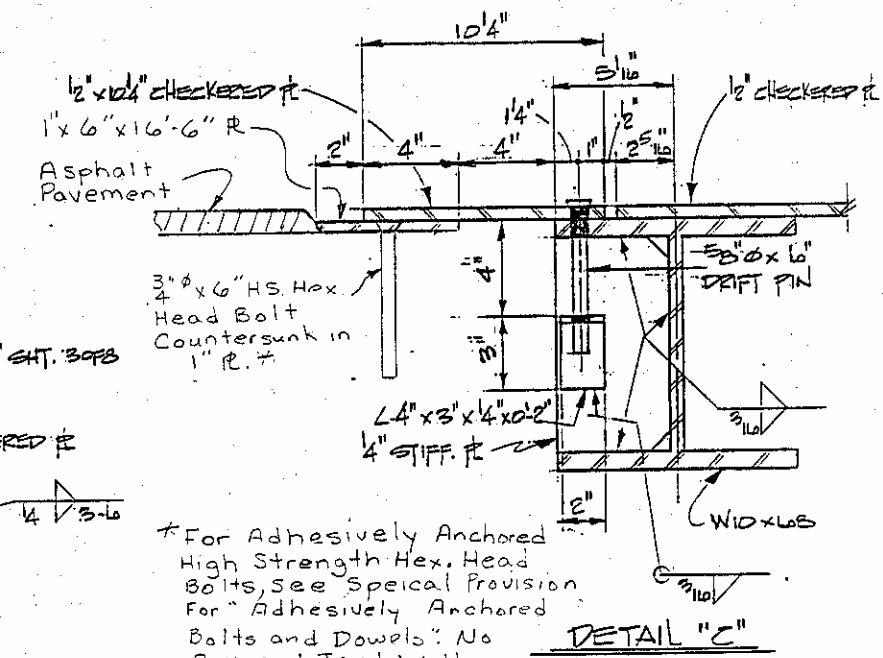
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PAMLICO RIVER FERRY
NORTH AND SOUTH RAMP
BENT #2

NO.	BY	DATE	NO.	BY	DATE	SHEET NO.
1			3			5-18
2			4			28

DRAWN BY: W.D. CRUTCHER DATE: 9/4/92
CHECKED BY: P.E. KELLY DATE: 9/1/92



SECTION C-C
NOTE: 1/2" R ON END CHANNELS ONLY



*For Adhesively Anchored High Strength Hex. Head Bolts, see Special Provision For "Adhesively Anchored Bolts and Dowels". No Pull Out Test Will Be Required.

PROJECT NO. 8-1150701
BEAUFORT COUNTY
STATION: 10+00.0 T-SR
10+00.0 T-NR

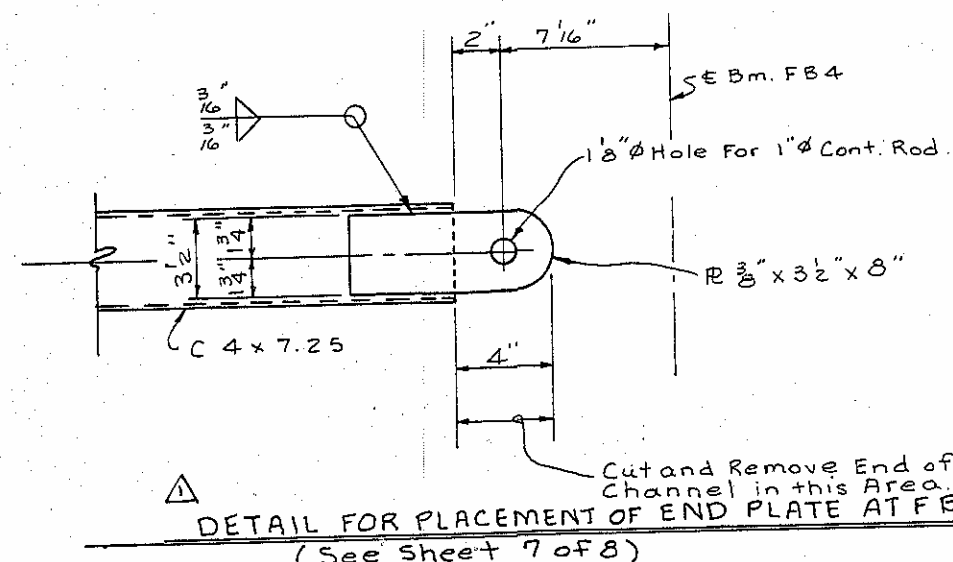
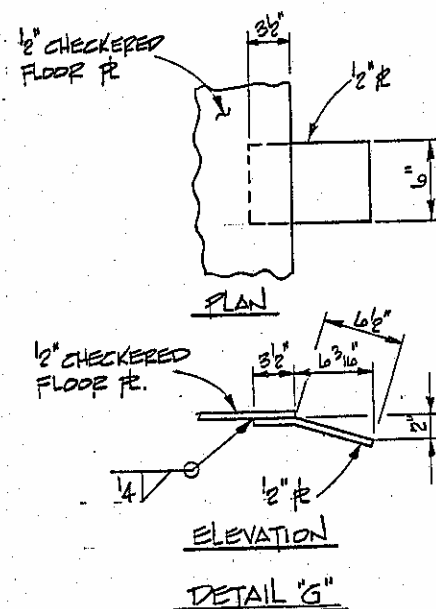
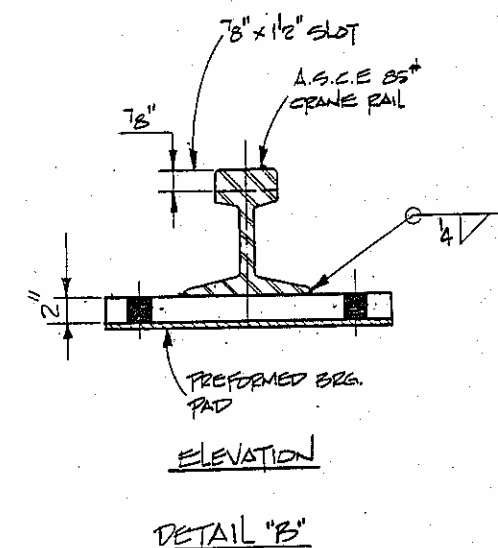
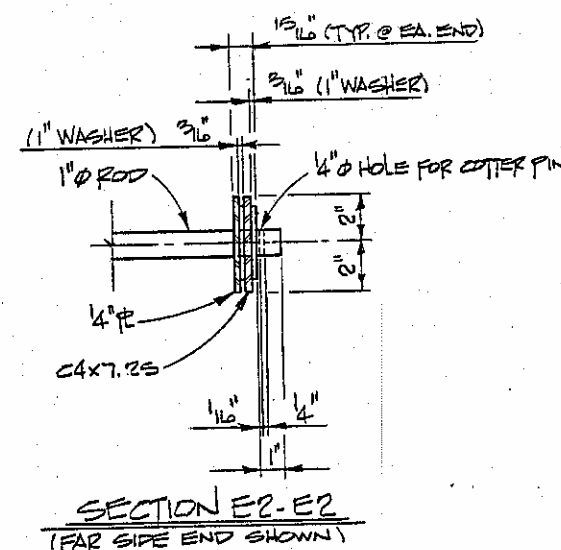
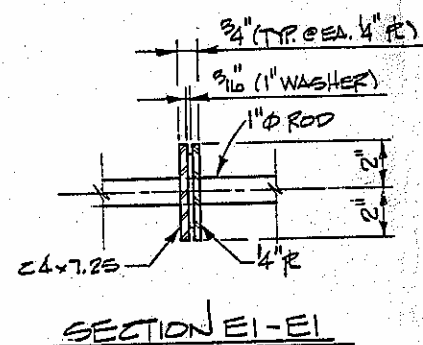
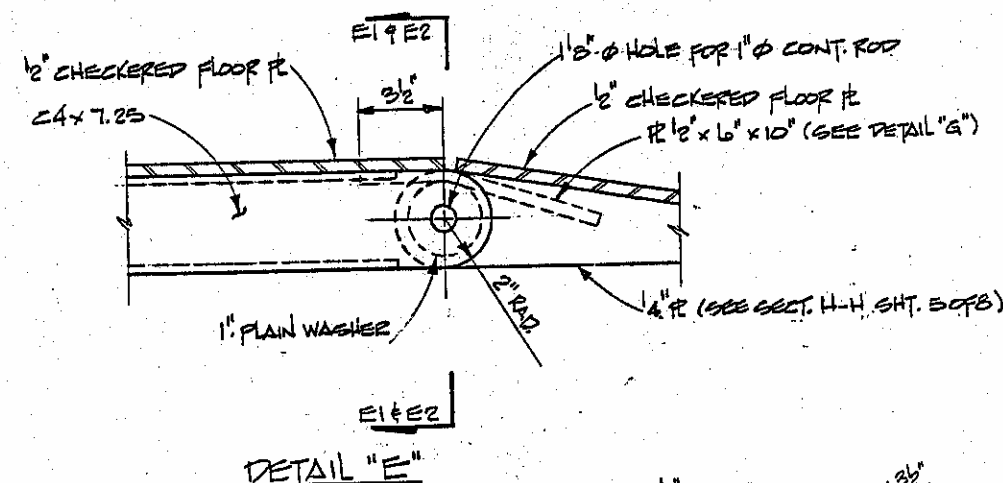
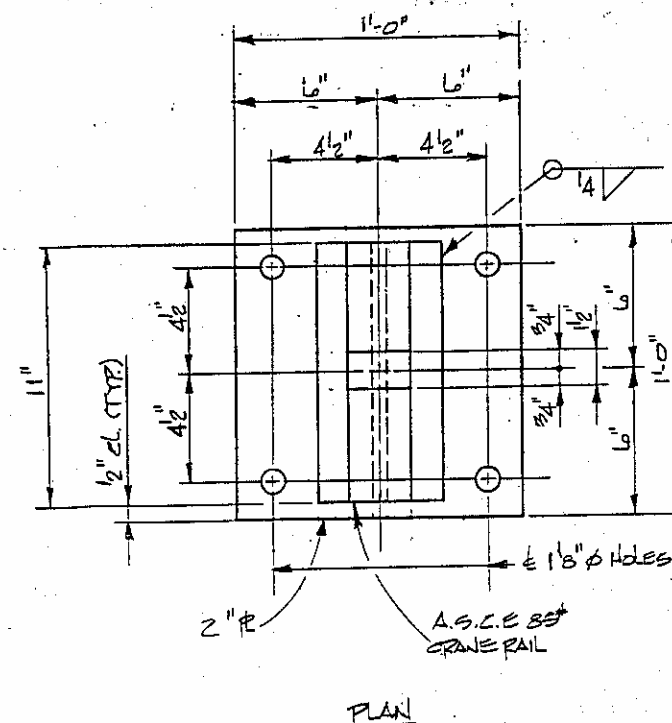
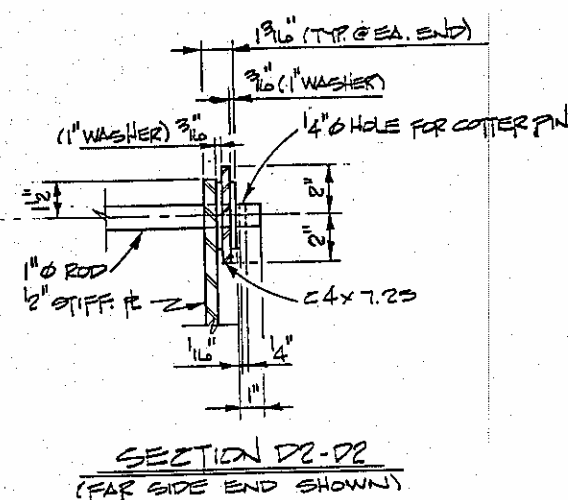
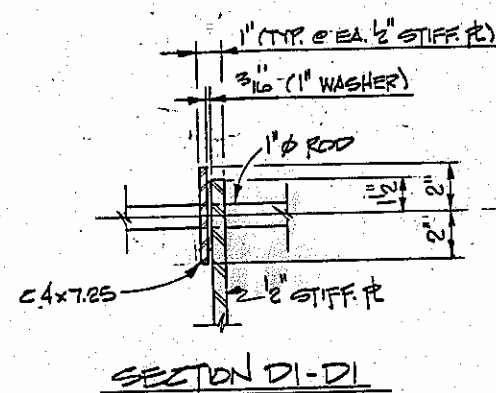
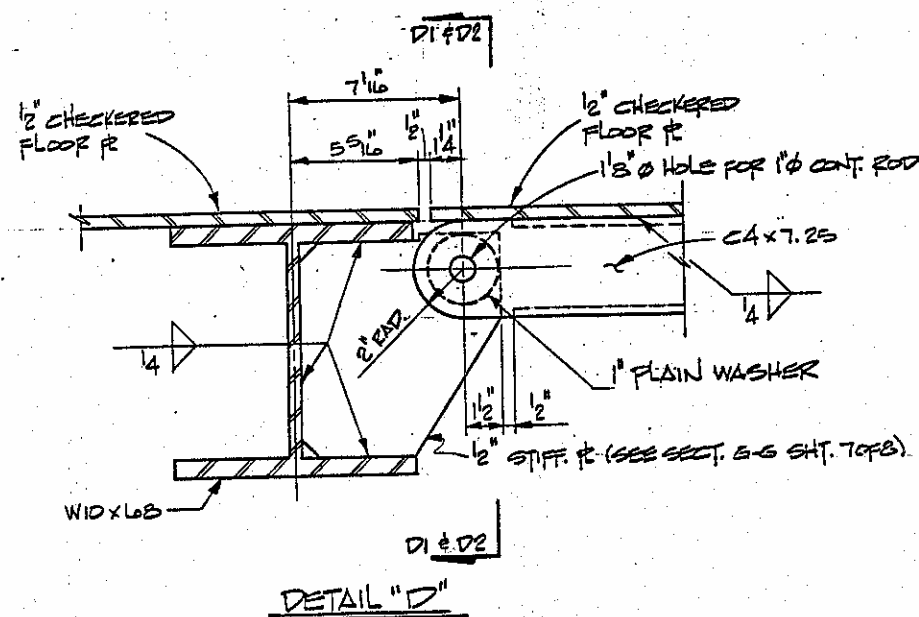
SHEET 2 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PAMLICO RIVER FERRY NORTH RAMP AND SOUTH RAMP					
SEPT 1992					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1	FAM	1-7-94	3		
2			4		

SHEET NO. 3-22
TOTAL SHEETS 23

DRAWN BY E.A. MUMMS DATE 9-1-92
CHECKED BY W.D. CRUTCHER DATE 9-9-92

Rev. No. 1 Added Half 3" Pipe in Section C-C
By: FAM VBY PEK



PROJECT NO. S-100-0-1
BEAUFORT COUNTY

STATION: 10+00.0 T-SR.
10+00.0 T-NR.

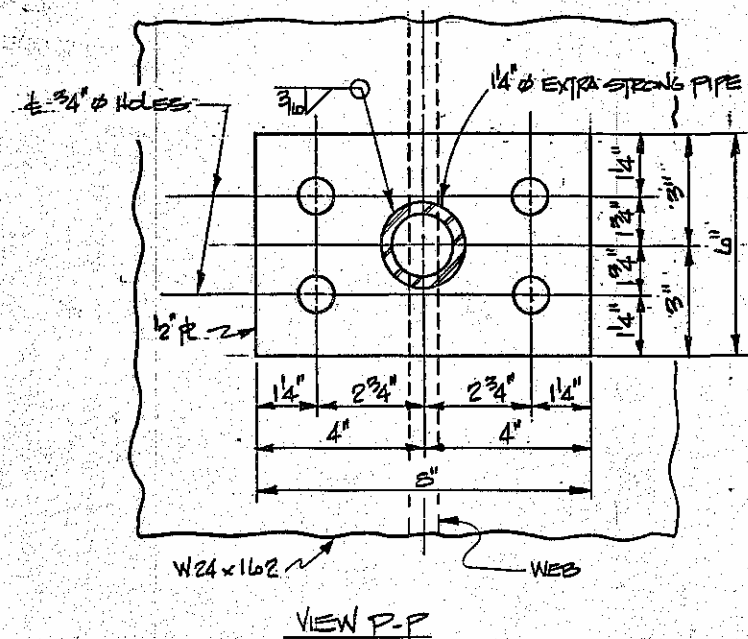
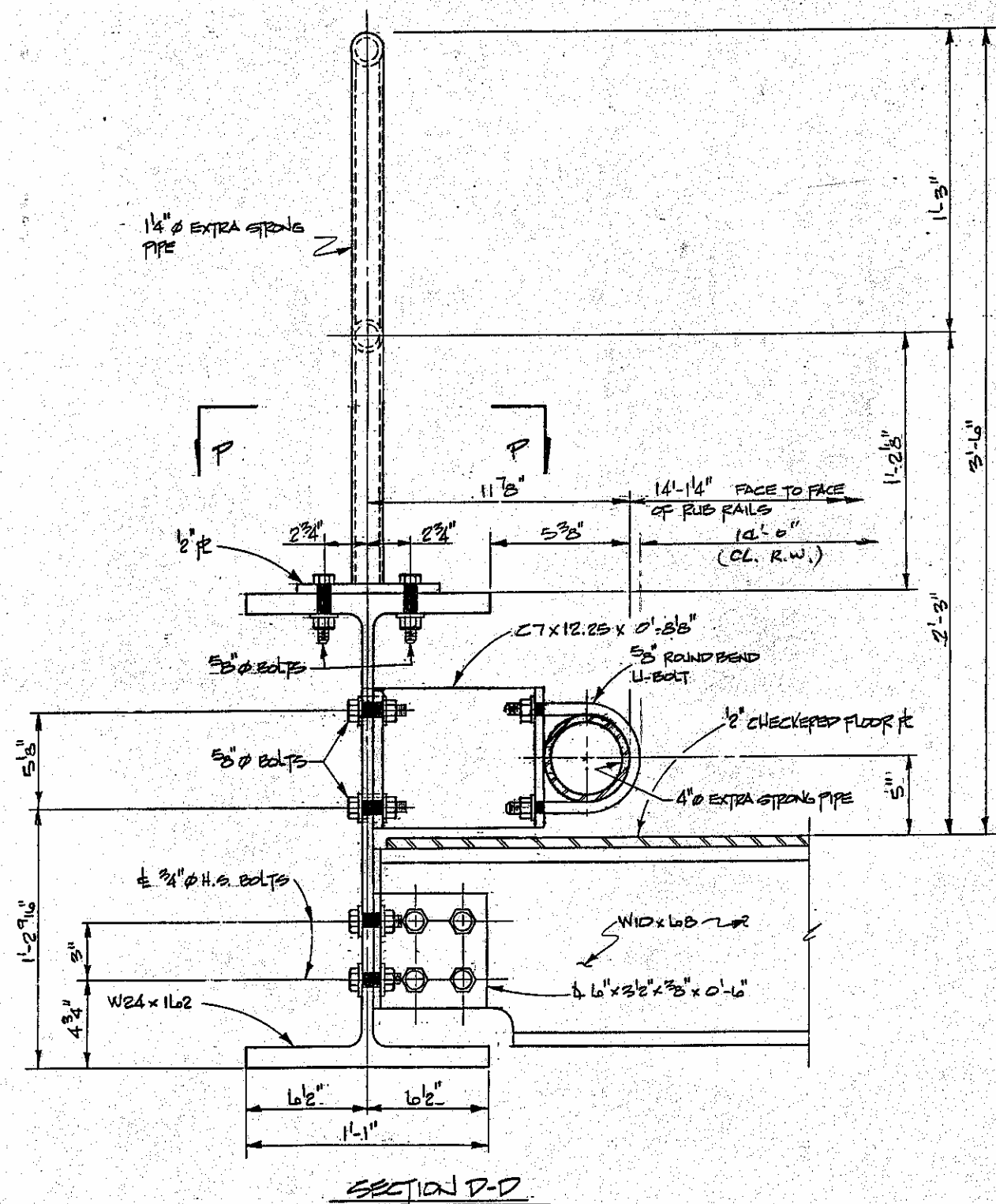
SHEET 3 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PAMLICO RIVER FERRY
NORTH RAMP AND SOUTH
RAMP

REVISIONS						SHEET NO. S-21
NO.	BY	DATE	NO.	BY	DATE	
1	FAM	1-7-94	3			TOTAL SHEETS 28
2			4			

Rev. No. 1: Added Detail for Placement of End Plate at FB4. Drawn By: FAM V By: PEK

DRAWN BY: F.A. Mims DATE: 9-2-92
CHECKED BY: W.D. CUTCHER DATE: 9-4-92



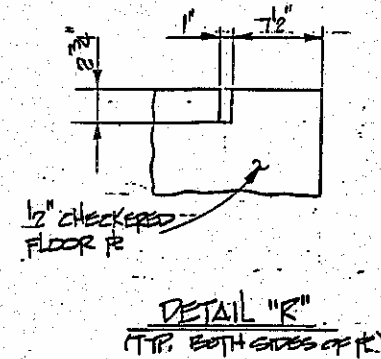
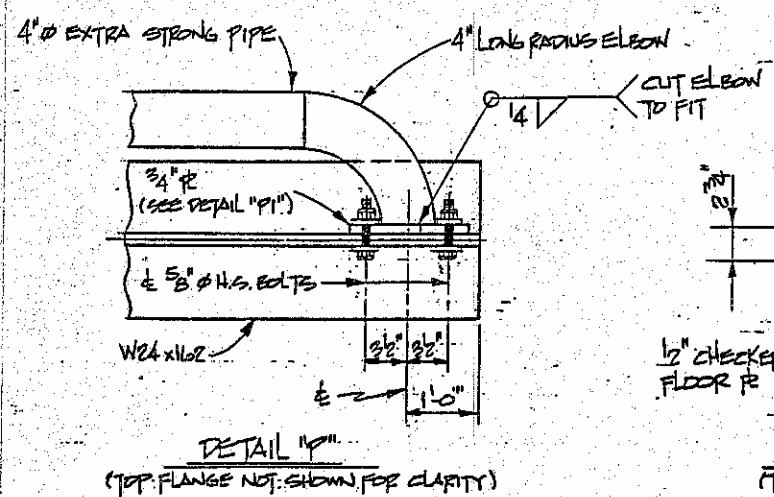
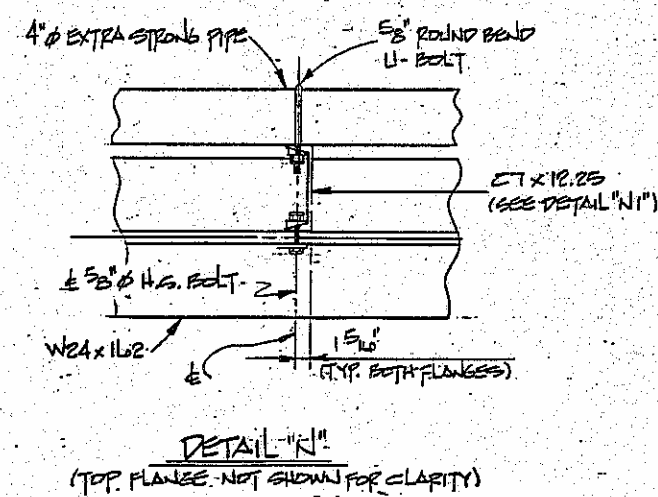
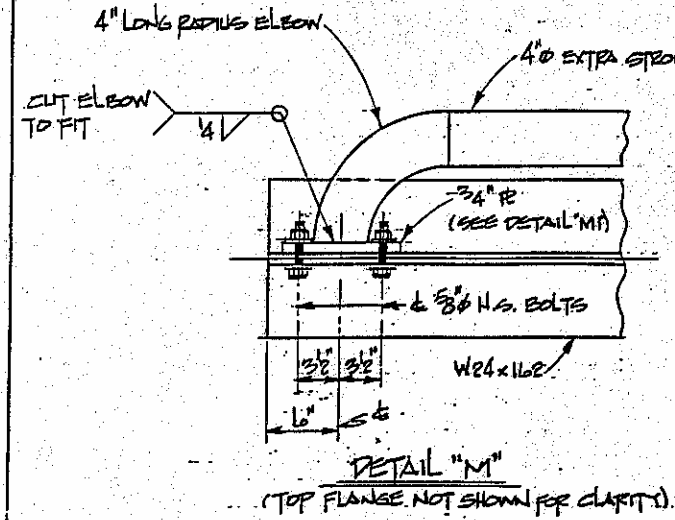
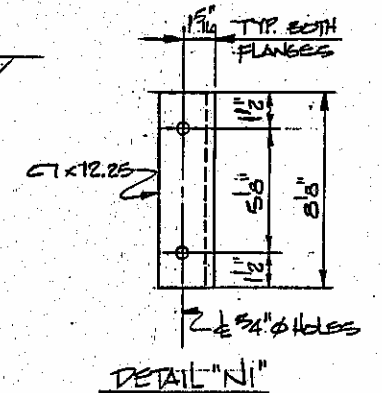
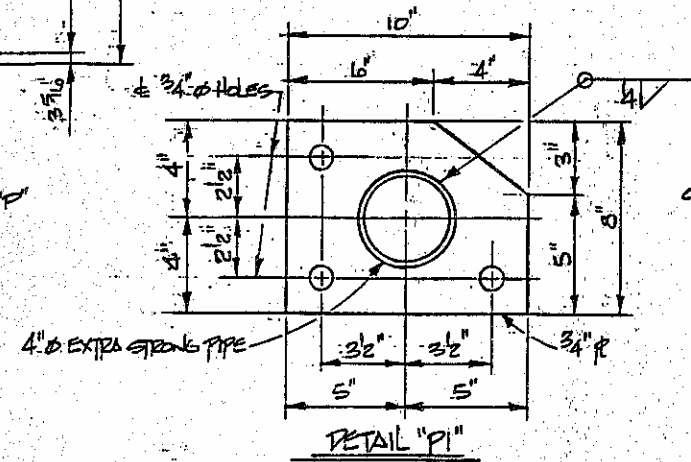
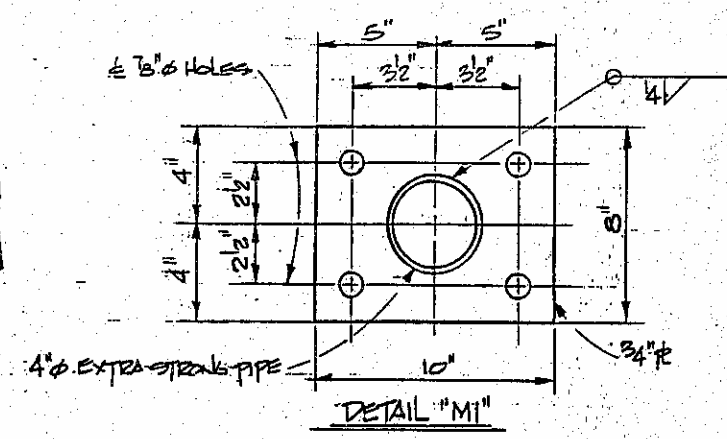
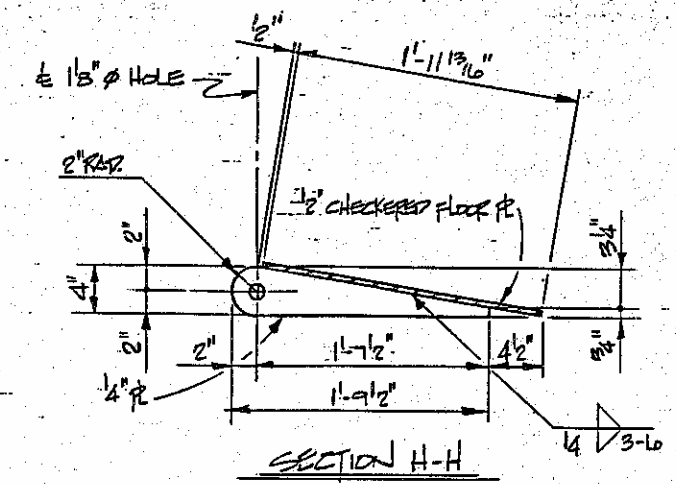
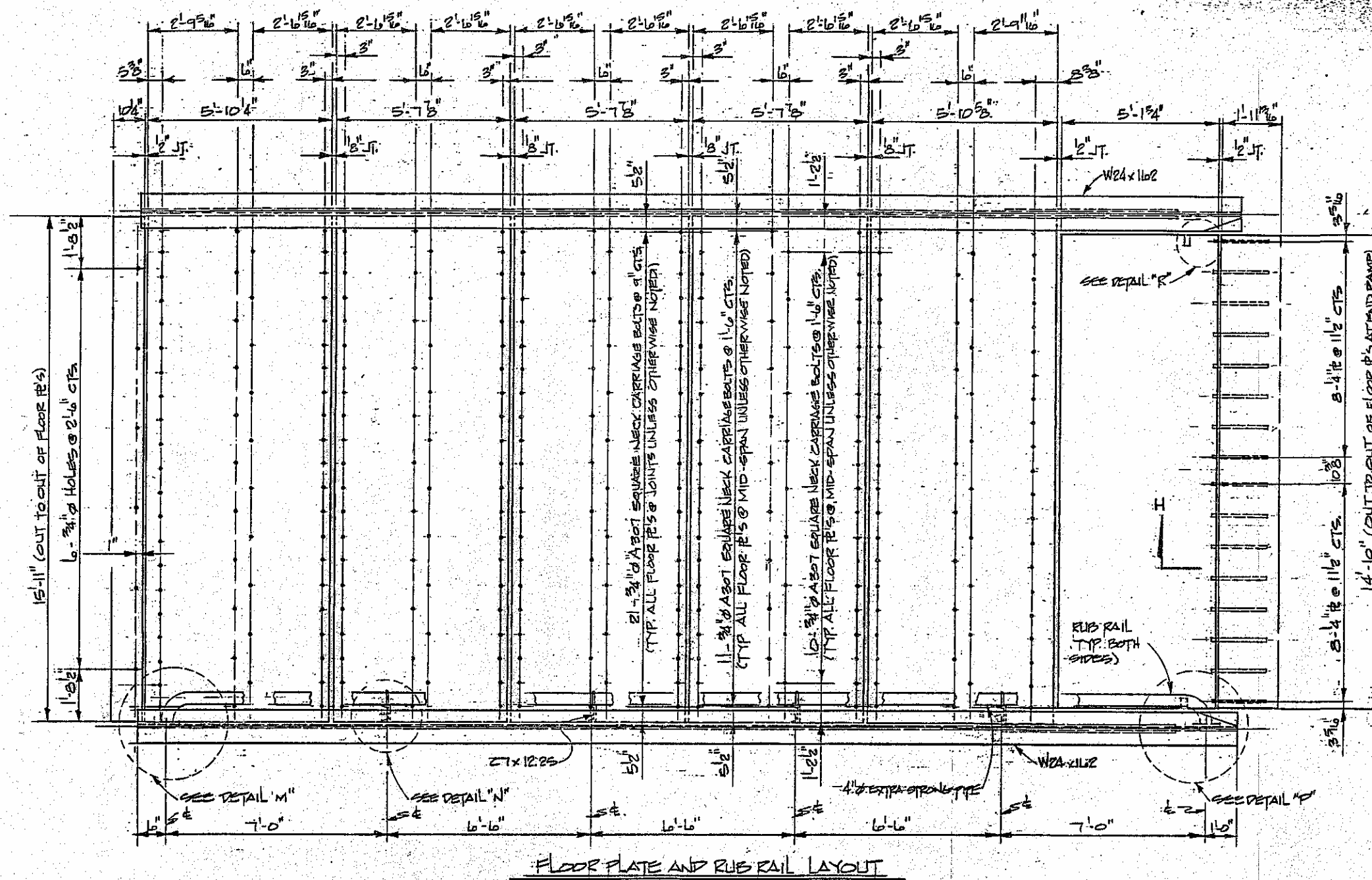
DRAWN BY F.A. MIMS DATE 9-2-92
 CHECKED BY W.D. CRITCHER DATE 9-4-92

PROJECT NO. 8.1150701
BEAUFORT COUNTY
 STATION: 10+00.0 -T-S.R.
10+00.0 -T-N.R.
 SHEET 4 OF 8

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PAMLICO RIVER FERRY
 NORTH RAMP AND SOUTH
 RAMP

SEPT. 1992

REVISIONS						SHEET NO. 5-22
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS 28
2			4			



PROJECT NO. 8.1150701
BEAUFORT COUNTY

BEAUFORT COUNTY

STATION: 10+00.0 T-S.R.
10+00.0 - T - N.R.

10+00.0 - T. N.R.

SHEET 5 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PAMLICO RIVER FERRY
NORTH RAMP AND SOUTH
RAMP

DEPARTMENT OF TRANSPORTATION

RALEIGH

PAMLICO RIVER FERRY
NORTH RAMP AND SOUTH
RAMP

NORTH RAMP AND SOUTH
RAMP

SEPT

1992

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS 28
2			4			

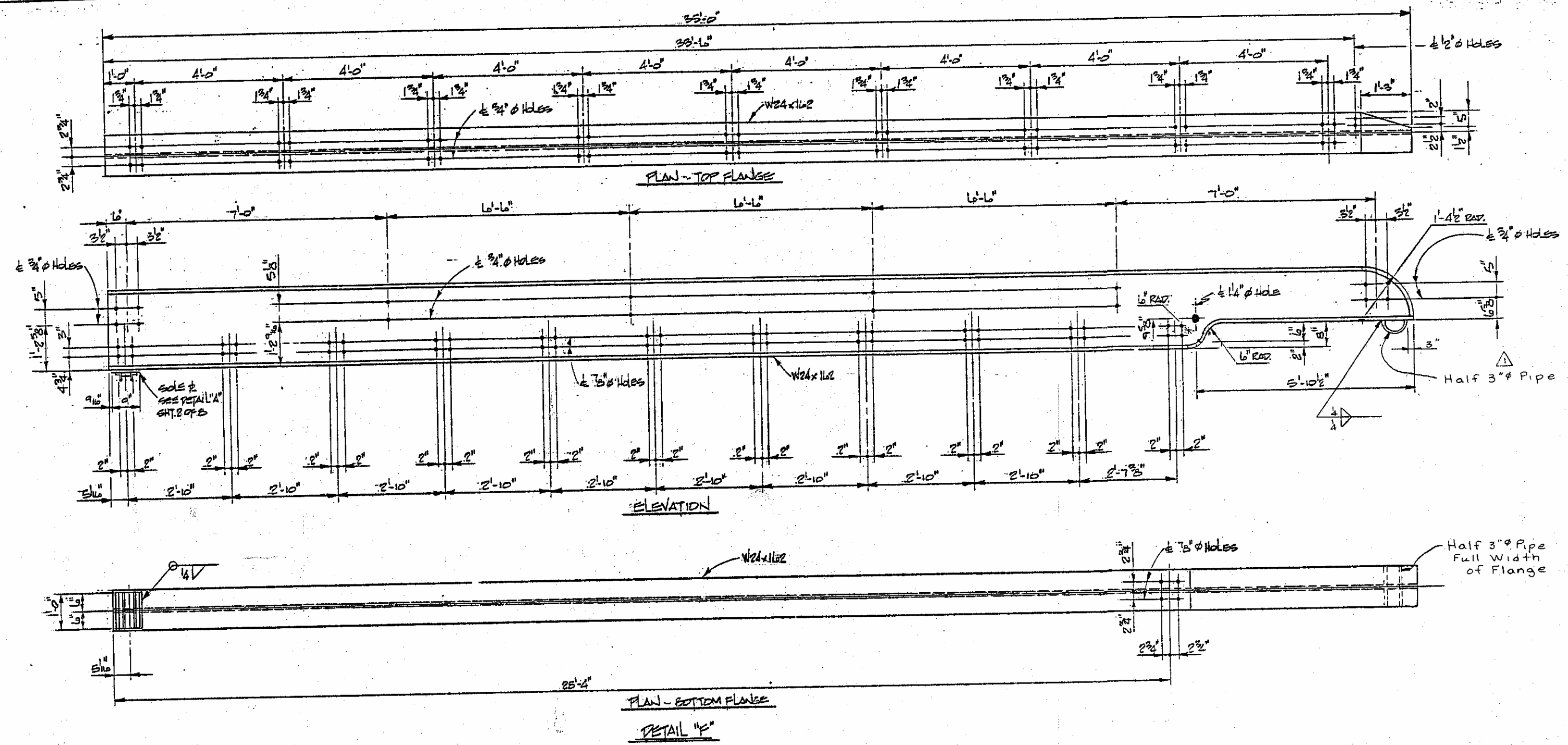
DRAWN BY F.A. MIMMS DATE 9-2-92
CHECKED BY W.D. CRUTCHER DATE 9-4-92

DATE 9-2-92
DATE 9-4-92

CHECKED BY W.D. CRUTCHER DATE 9-4-92

DATE 9-4-92

AP 47437



PROJECT NO. 8.1150701

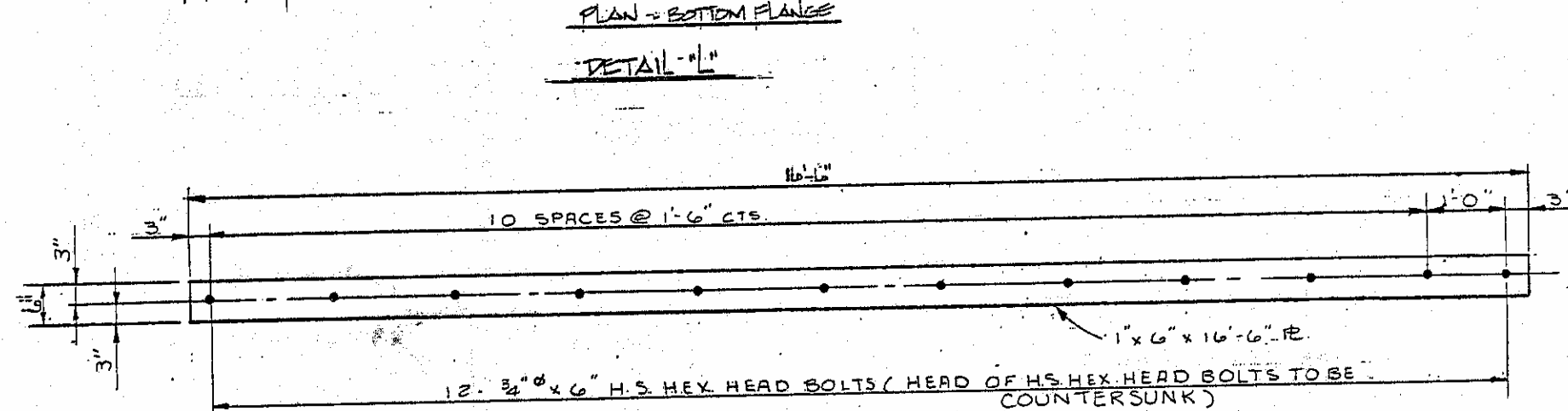
BEAUFORT COUNTY

STATION: 10+00.0 - T-SR.
10+00.0 - T-NR.

STATE OF NORTH CAROLINA					
DEPARTMENT OF TRANSPORTATION					
RALEIGH					
PAMLICO RIVER FERRY					
NORTH RAMP AND SOUTH RAMP					
SEPT 1992					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1	FAM	1-7-94	3		
2			4		
TOTAL SHEETS					28

DRAWN BY: F.A. MIMMS DATE: 3-1-92
CHECKED BY: W.D. CRUTCHER DATE: 9-4-92

Rev. No. 1. Added Half 3" Pipe to Elevation and Detail "F".
By: FAM / By: PEK



DETAIL - "L"

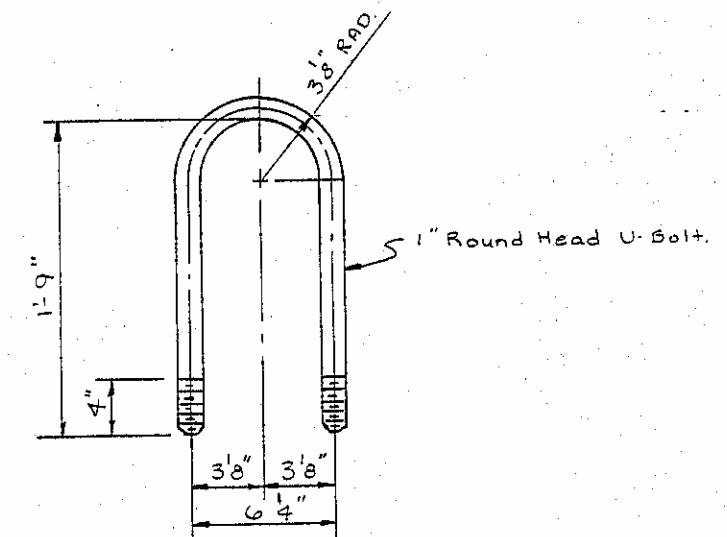
"PLAN

DETAIL - "R"

NOTE

THE CONTRACTOR SHALL USE AN ADHESIVE BONDING SYSTEM FOR ANCHORING THE 1" PLATE TO THE CORED SLABS. SEE SPECIAL PROVISIONS "FOR ADHESIVE ANCHORED ANCHOR BOLTS OR DOWELS". THE REQUIRED DESIGN OF THE 3" BOLT IS 12 KIPS. THE BOLTS SHALL BE COATED WITH A ZINC RICH ANCHOR AGENT SO THAT THE ANCHOR BOLTS CAN BE EASILY REMOVED IF NECESSARY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE AGENT DOES NOT REDUCE THE STRENGTH OF THE ANCHOR SYSTEM. TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

* Includes Floor R's, 4"Ø Extra Strong Pipe, Chains, Shackles And Bearings.



DETAIL OF U-BOLT FOR
LIFT AND BEAM

PROJECT NO. 8.1150701

BEAUFORT COUNTY

STATION 10+00.0 -T- S.R.
10+00.0 -T- N.R.

SHEET 3 of 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PAMLICO RIVER FERRY
NORTH RAMP AND SOUTH
RAMP

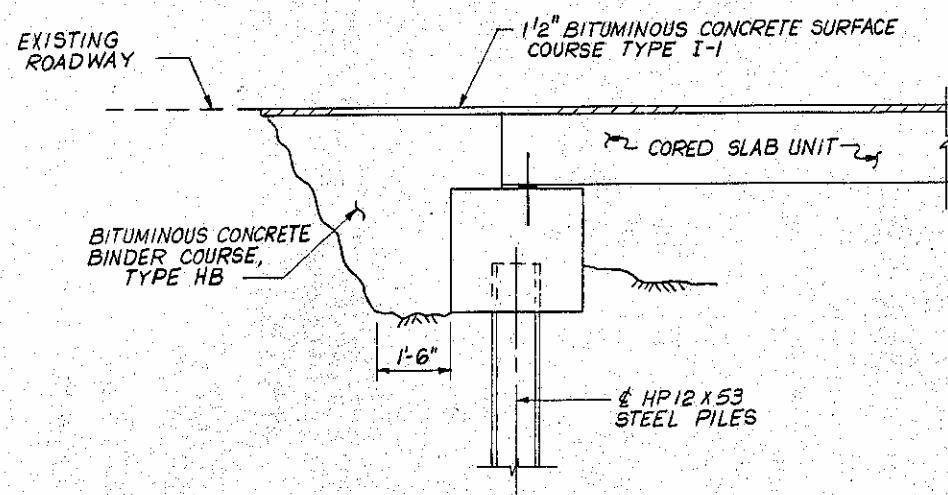
SEPT						1992	
REVISIONS						SHEET NO. 3	
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS 28	
1	FAM	10-7-94	23				
2			4				

DRAWN BY F. A. Mimms DATE 9-1-92
CHECKED BY WD CRUTCHER DATE 9-4-92

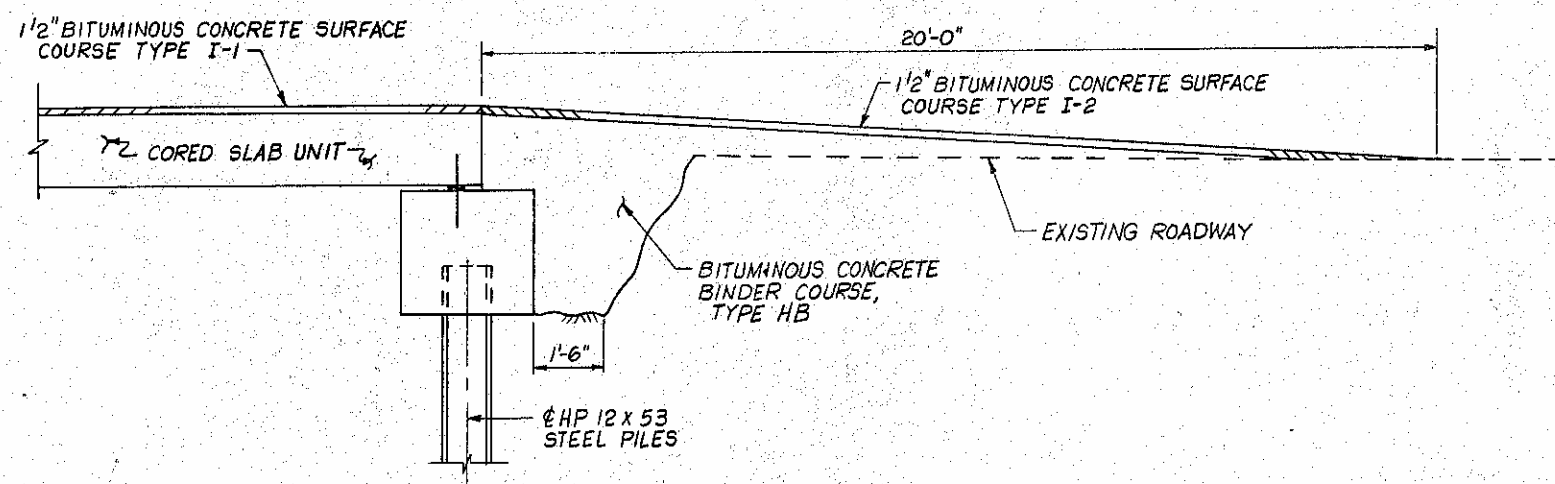
⚠ Rev. No. 1: Added 78" ϕ Holes in Top Flange and Deleted
78" ϕ Holes in Bottom Flange of HP12x53 in Detail "L"
BY: FAM J.BY: PEK

NOTES

THE ROADWAY APPROACHES LEADING UP TO THE CORED SLAB BRIDGES SHALL BE PLACED AS DIRECTED BY THE ENGINEER. FOR PAVEMENT REPAIR, SEE SPECIAL PROVISIONS.



NORTH RAMP



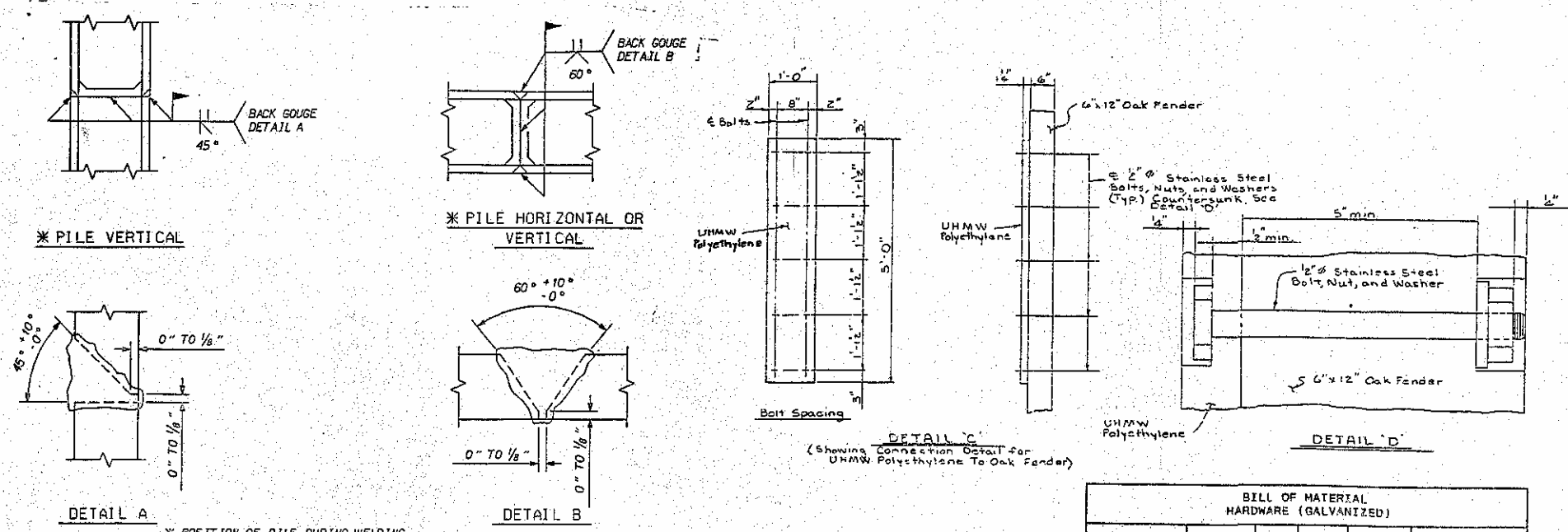
SOUTH RAMP

PROJECT No. 8.1150701
BEAUFORT COUNTY
STATION: 10+00-T-NR
10+00-T-SR

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PAMLICO RIVER BASIN
PAVEMENT REPAIR

DRAWN BY G.M. Patterson DATE 9/18/92
CHECKED BY R.D. KLAPPENBAUM DATE 9/18/92

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			S-27
2			4			
TOTAL SHEETS						28



BILL OF MATERIAL HARDWARE (GALVANIZED)					
	ITEM	NO.	SIZE	LENGTH	WEIGHT (APPROX. LBS)
NORTH RAMP	STAPLES	300	3/8"	5"	143
	CABLE	-	3/4"	830'	747
	CLAMPS	78	3/4"	-	74
	BOLTS	200	1/2"	6 1/2"	94
SOUTH RAMP	STAPLES	240	3/8"	5"	115
	CABLE	-	3/4"	860'	594
	CLAMPS	60	3/4"	-	57
	BOLTS	200	1/2"	6 1/2"	94
TOTAL					1,918

NOTES

TIMBER PILES SHALL BE INSTALLED TO HAVE A MINIMUM TIP ELEVATION OF -40.0 WITH TOP OF PILE ELEVATIONS AS SHOWN.

TIMBER PILES SHALL HAVE A MINIMUM BUTT CIRCUMFERENCE OF 44 INCHES AND TREATED WITH CHROMATED COPPER ARSENATE (CCA) TO MINIMUM RETENTION OF 2.5 POUNDS PER CUBIC FOOT.

HP 12 X 52 STEEL PILES SHALL BE INSTALLED TO HAVE A MINIMUM TIP ELEVATION OF -40.0 WITH TOP OF PILE ELEVATION AS SHOWN.

FOR PAINTING OF STEEL PILES. SEE SPECIAL PROVISIONS.

DOLPHIN PILES SHALL BE DRAWN TOGETHER AT THE TOP AND WRAPPED WITH SIX TURNS OF 3/4" WIRE ROPE AT ONE POINT. THE WIRE ROPE SHALL BE SECURED WITH 3/8" SQUARE STAPLES AND TWO CABLE CLAMPS AT EACH END.

THE 6" X 12" WHITE OAK FENDERS TO BE ATTACHED TO BOTH THE EXISTING AND PROPOSED DOLPHINS WITH 3/4" WIRE ROPE THROUGH THE OAK, OVER AND AROUND DOLPHINS AS SHOWN. THE 3/4" WIRE ROPE SHALL BE SECURED WITH 3/8" SQUARE STAPLES AND TWO CABLE CLAMPS AT THE ENDS.

WIRE ROPE USED FOR WRAPPING DOLPHINS AND INSTALLING OAK FENDERS SHALL CONFORM TO ASTM A603 CLASS B.

ALL HARDWARE SHALL BE GALVANIZED, UNLESS OTHERWISE NOTED.

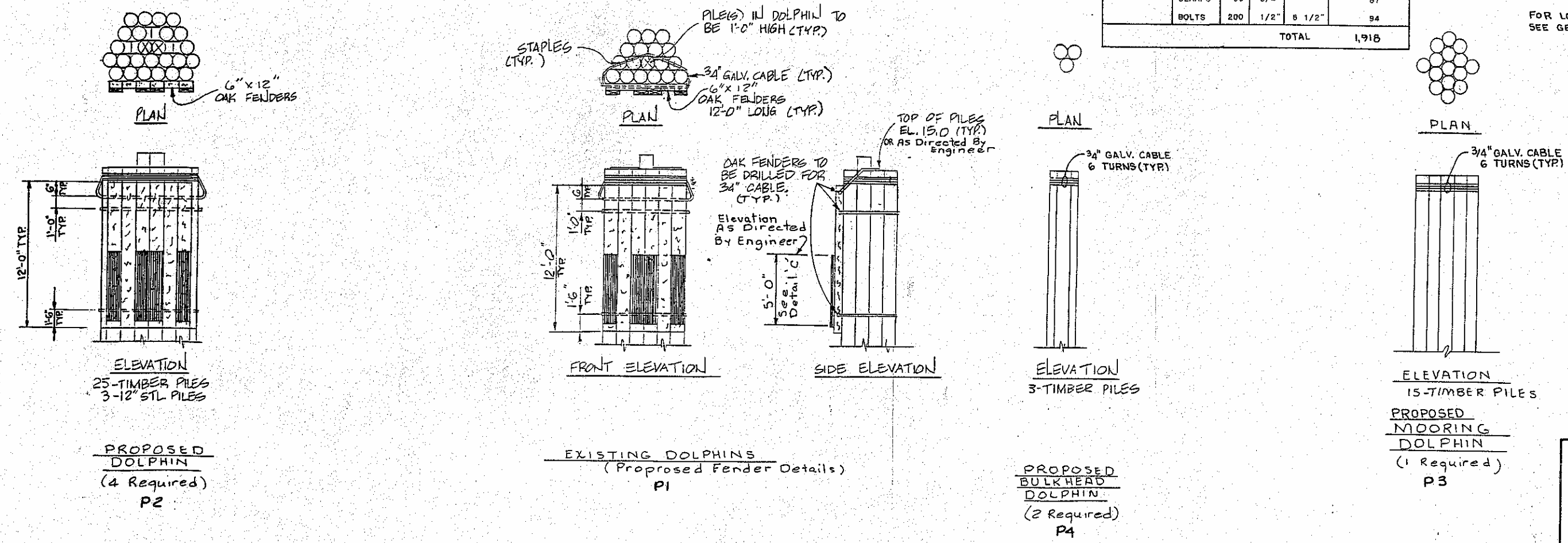
NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE FOR WIRE ROPE USED TO WRAP DOLPHINS AND INSTALLING OAK FENDERS. HARDWARE, TOOLS, EQUIPMENT, OR LABOR. THIS WORK AND MATERIALS SHALL BE INCLUDED IN THE CONTRACT UNIT BID PRICE FOR UNTREATED WHITE OAK TIMBER.

FOR UNTREATED WHITE OAK TIMBER, SEE SPECIAL PROVISIONS.

THE 6" X 12" OAK TIMBER FENDERS SHALL BE ALTERNATELY FACE AS SHOWN WITH 1 1/4" THICK X 12" WIDE X 5'-0" LONG ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE. SEE SPECIAL PROVISIONS.

NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE FOR HARDWARE, TOOLS, EQUIPMENT, OR LABOR FOR INSTALLING THE ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE. THIS WORK AND MATERIAL SHALL BE INCLUDED IN THE CONTRACT UNIT BID PRICE FOR ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE.

FOR LOCATION OF EXISTING AND PROPOSED DOLPHINS, SEE GENERAL DRAWING SHEETS.



PROJECT NO. 81150701

BEAUFORT COUNTY

STATION: 10+00.0 T-NR
10+00.0 T-SR

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PAMLICO RIVER FERRY
DOLPHIN LAYOUT FOR
NORTH SIDE RAMP AND
SOUTH SIDE RAMP

SEPT 1992

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

DRAWN BY E.P. HUMPHREYS
CHECKED BY M.N. BULLOCK
DATE 4-9-92
DATE 9-14-92

STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS - - - - -	A. A. S. H. T. O. (CURRENT)
LIVE LOAD - - - - -	SEE PLANS
IMPACT ALLOWANCE - - - - -	SEE A. A. S. H. T. O.
STRESS IN EXTREME FIBER OF	
STRUCTURAL STEEL - A. S. T. M. A36 GRADE - -	20,000 LBS. PER SQ. IN.
- A. S. T. M. A588 - - - - -	27,000 LBS. PER SQ. IN.
- A. S. T. M. A572, GRADE 50 - -	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION	
GRADE 60 - - - - -	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION - - - - -	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR - - - - -	SEE A. A. S. H. T. O.
STRUCTURAL TIMBER - TREATED OR	
UNTREATED - EXTREME FIBER STRESS - - - - -	1,000 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN	
OF TIMBER - - - - -	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH - - - - -	30 LBS. PER CU. FT.
	(MINIMUM)

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 1990 STANDARD SPECIFICATIONS "FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP; AND CLASS S SHALL BE USED FOR UNDERWATER FOOTING SEALS.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE. ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

FIVE SETS OF DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED WITH THE EXCEPTION OF #2 BARS WHICH MAY BE FABRICATED FROM COLD DRAWN STEEL WIRE. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE * Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

PLACEMENT OF BEAM OR GIRDER MEMBERS ON TRUCKS FOR HAULING SHALL BE DONE IN COMPLIANCE WITH LIMITS SHOWN ON SKETCHES PROVIDED TO THE MATERIALS AND TEST UNIT APPROVED BY THE STRUCTURE DESIGN UNIT DATED MAY 8, 1991. THESE SKETCHES PRIMARILY LIMIT THE UNSUPPORTED CANTILEVER LENGTH OF MEMBERS. WHEN THE CONTRACTOR WISHES TO PLACE MEMBERS ON TRUCKS NOT IN ACCORDANCE WITH THESE LIMITS, TO SHIP BY RAIL, TO ATTACH SHIPPING RESTRAINTS TO THE MEMBERS OR TO INVERT MEMBERS, HE SHALL SUBMIT A SKETCH FOR APPROVAL PRIOR TO SHIPPING. SEE ALSO ARTICLE 1072-11.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

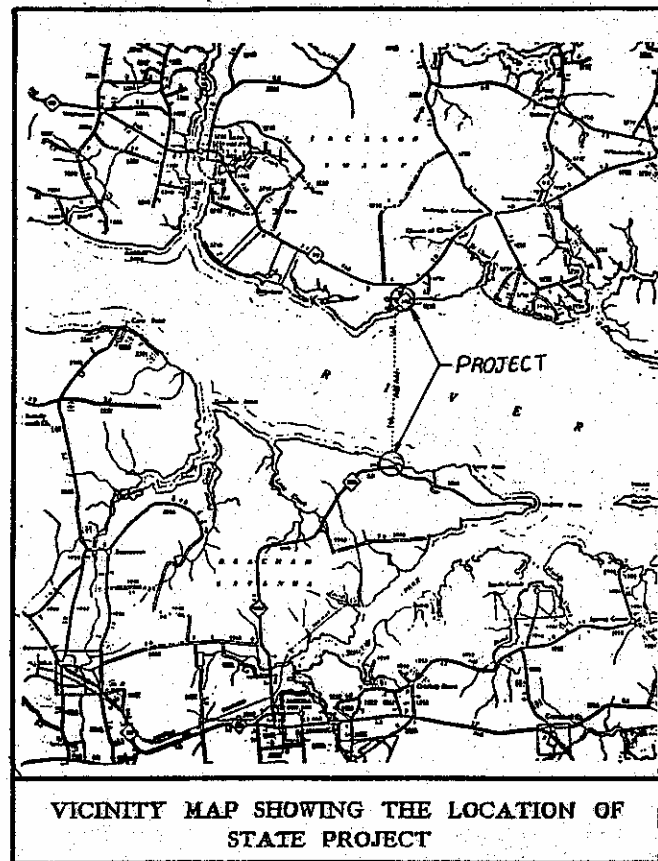
METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB. METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

PROJECT: 8.1150701

F-2800



VICINITY MAP SHOWING THE LOCATION OF STATE PROJECT

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BEAUFORT COUNTY

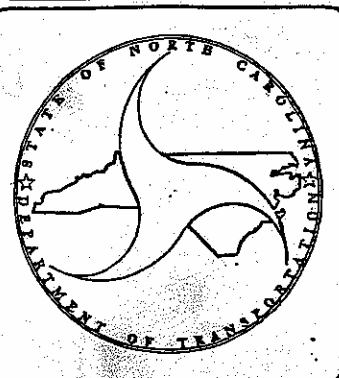
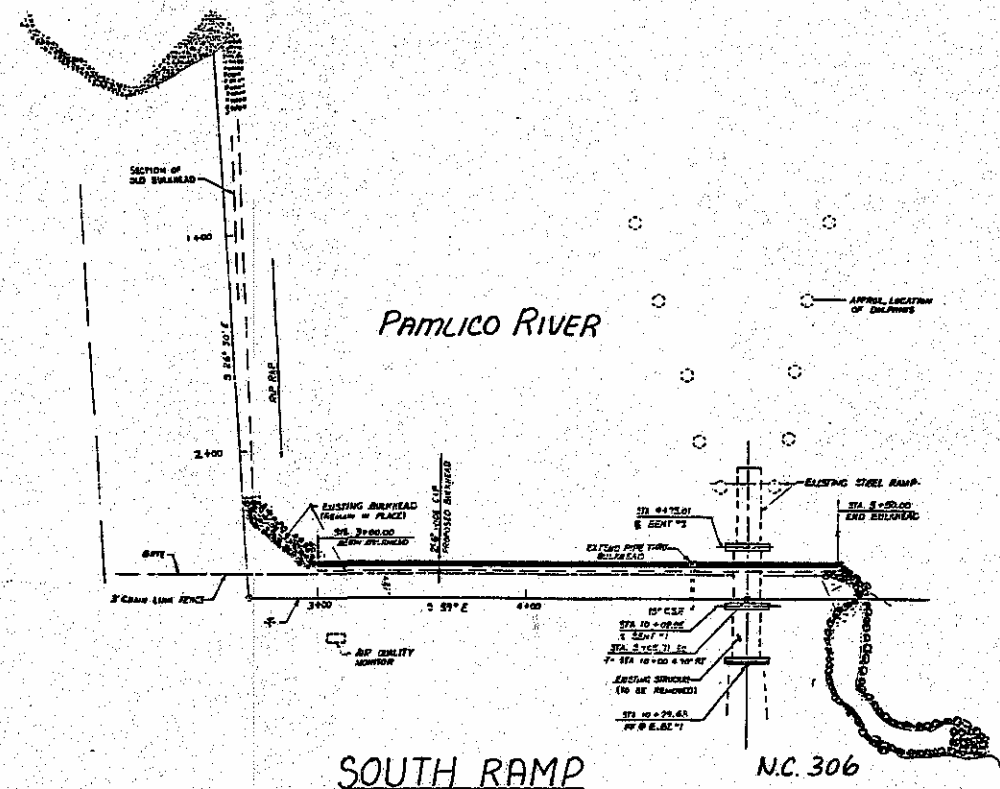
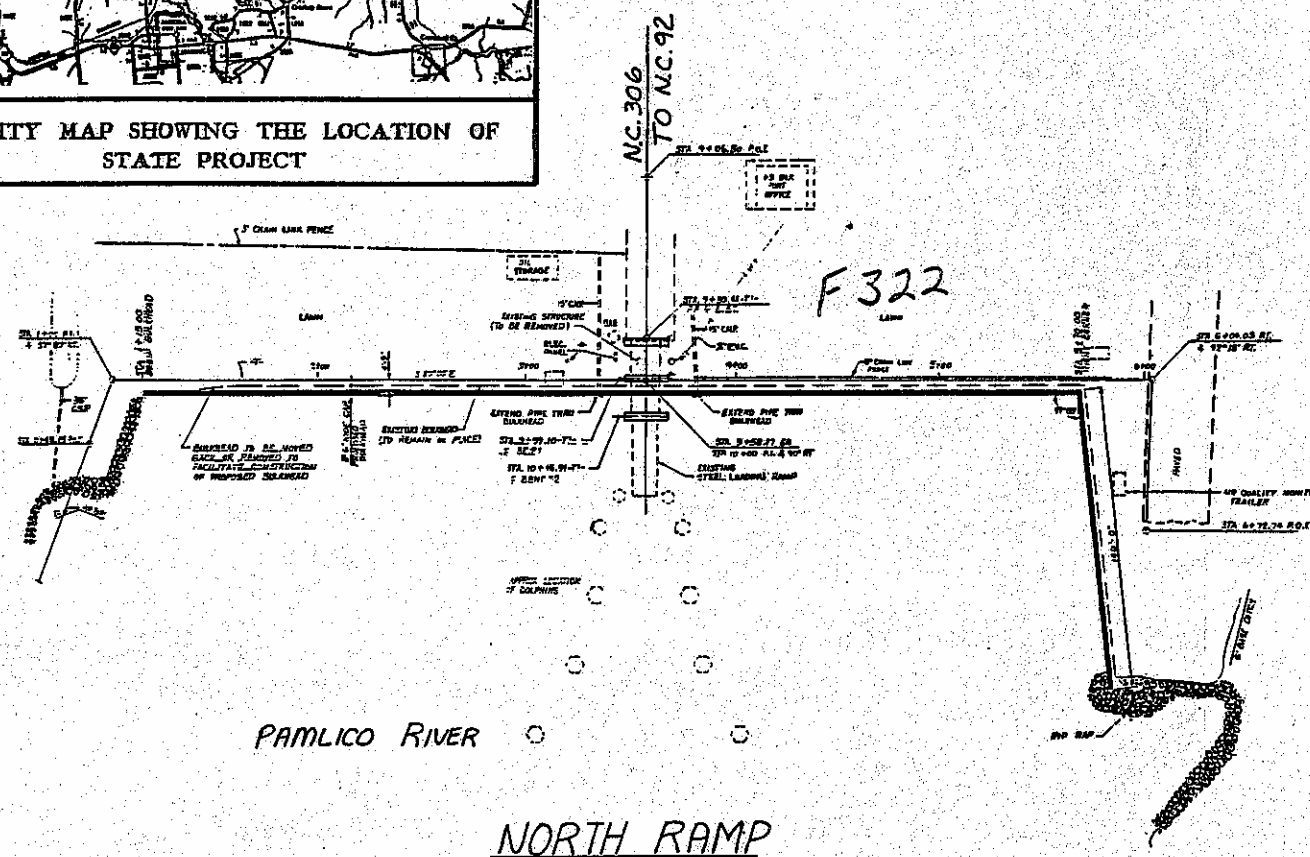
Substr. Info. for South Ramp Also

LOCATION : N.C. 306 AT PAMLICO RIVER FERRY

TYPE OF WORK : GRADING, PAVING, BULKHEAD REPLACEMENT,
RECONSTRUCTION OF FERRY RAMPS, AND STRUCTURES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	8.1150701		10
STATE PROJ. NO.	R.A. PROJECT NO.	DESCRIPTION	
8.1150701	FBDNHS-306(00D)	CONST.	
2.110013		P.E.	

STRUCTURE



Prepared in the Office of:

DIVISION OF HIGHWAYS

FOR STANDARD SPECIFICATIONS

STRUCTURE DESIGN UNIT

G. M. WHITE, P.E.
PROJECT ENGINEER

N. N. BULLOCK, P.E.
PROJECT DESIGN ENGINEER

LETTING DATE: APRIL 29, 1993

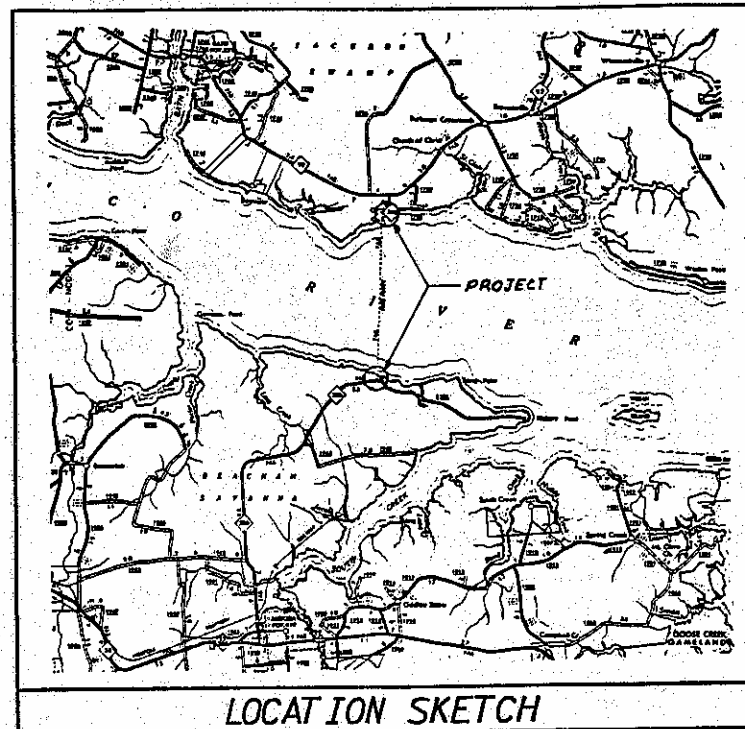
STRUCTURE DESIGN UNIT

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

DR. MORTON, P.E.
STATE HIGHWAY ENGINEER - DESIGN

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

44-92



ASSUMED LIVE LOAD = HS20-44.

ALL REINFORCING STEEL SHALL BE GRADE 60.

ALL STRUCTURAL STEEL SHALL BE ASTM A36.

FOR NOTIFICATION OF FERRY DIVISION. SEE SPECIAL PROVISIONS.

FOR CONCRETE COARSE AGGREGATE. SEE SPECIAL PROVISIONS.

STEEL SHEET PILING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A690.

CALCIUM NITRATE CORROSION INHIBITOR SHALL BE USED IN ALL CORED SLAB UNITS. SEE SPECIAL PROVISIONS.

FOR CORROSION PROTECTION OF 18" STEEL SHEET PILES AND HP 12 X 53 STEEL PILES. SEE SPECIAL PROVISIONS "PAINTING STEEL PILES."

THE COST FOR ALL LABOR, MATERIALS AND INCIDENTALS FOR ALTERING THE LIFT BENT AND COUNTERWEIGHT TO FIT THE PROPOSED RAMP SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR STRUCTURAL STEEL.

FOR EPOXY COATED REINFORCING STEEL. SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC BEARINGS. SEE SPECIAL PROVISIONS.

THE FINAL GRADE OF BACKFILL SHALL BE GRADED TO PROVIDE ADEQUATE DRAINAGE AS DIRECTED BY THE ENGINEER.

FOR 18" STEEL SHEET PILES AND HP 12 X 53 STEEL PILES. SEE SPECIAL PROVISIONS.

THE EXISTING 15" CMP'S AT THE NORTH RAMP SHALL EXTEND THRU THE PROPOSED BULKHEAD AS DIRECTED BY THE ENGINEER. THE COST OF EXTENDING THE 15" CMP, THE LABOR, MATERIALS AND INCIDENTALS SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR 18" STEEL SHEET PILES.

THE EXISTING STRUCTURES AT THE SOUTH RAMP CONSISTING OF THE STEEL LOADING RAMP, TWO 25'-0" TIMBER SPANS, TIMBER SUBSTRUCTURE, ANY DOLPHINS OR PILES THAT INTERFERE WITH THE CONSTRUCTION OF THE PROPOSED BULKHEAD, ANY PILES TO BE REMOVED NECESSARY FOR THE INSTALLATION OF THE PROPOSED RAMP, AND WHITE OAK FENDERS INCLUDING WIRE ROPE, STAPLES AND HARDWARE ATTACHING THE FENDERS TO THE DOLPHINS SHALL BE REMOVED AND SHALL BE PAID FOR AT THE LUMP SUM BID PRICE FOR REMOVAL OF EXISTING STRUCTURES AT STA. 10+00.00 -T- SOUTH RAMP.

THE EXISTING STRUCTURES AT THE NORTH RAMP CONSISTING OF THE STEEL LOADING RAMP, TWO 17'-0" TIMBER SPANS, TIMBER SUBSTRUCTURE, 40'-0" STEEL SHEET PILE PROP DEFLECTOR, ANY DOLPHINS OR PILES THAT INTERFERE WITH THE CONSTRUCTION OF THE PROPOSED BULKHEAD, ANY PILES TO BE REMOVED NECESSARY FOR THE INSTALLATION OF THE PROPOSED RAMP, AND WHITE OAK FENDERS INCLUDING WIRE ROPE, STAPLES AND HARDWARE ATTACHING THE FENDERS TO THE DOLPHINS SHALL BE REMOVED AND SHALL BE PAID FOR AT THE LUMP SUM BID PRICE FOR REMOVAL OF EXISTING STRUCTURES AT STA. 10+00.00 -T- NORTH RAMP.

BACKFILL BEHIND BULKHEAD SHALL BE OF SUITABLE MATERIAL AS DIRECTED BY THE ENGINEER. NO SEPARATE PAYMENT WILL BE MADE FOR THE ITEM. ALL MATERIALS, EQUIPMENT, OR LABOR FOR PLACING AND COMPACTING THIS MATERIAL SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR 18" STEEL SHEET PILES. SEE SPECIAL PROVISIONS.

THE EXISTING FENCE AS SHOWN ON THE GENERAL DRAWING SHALL BE REMOVED AND REPLACED AS DIRECTED BY THE ENGINEER. THE COST OF REMOVING AND REPLACING THE EXISTING FENCE SHALL BE INCLUDED IN THE SEVERAL PAY ITEMS.

TOTAL BILL OF MATERIAL FOR NORTH RAMP

	MOBILIZATION	REMOVAL OF EXISTING STRUCTURES @ STA. 10+00 T- NR	CLASS "A" CONCRETE	EPOXY COATED REINFORCING STEEL	STRUCTURAL STEEL	PAINTING STRUCTURAL STEEL	UNTREATED WHITE OAK TIMBER	TREATED TIMBER PILES		HP 12X53 STEEL PILES	PAINTING STEEL PILES	18" STEEL SHEET PILES	1 1/4" Ø GALVANIZED STEEL PIPE RAIL	ELASTOMERIC BEARINGS	FILTER FABRIC FOR RIP RAP	PLAIN RIP RAP CLASS II	3'-0" X 1'-6" PRESTRESSED CONCRETE CORED SLABS	PAVEMENT REPAIR	STEEL BM GUARDRAIL	ULTRA HIGH MOLECULAR WEIGHT POLYETHELENE	
	LUMP SUM	LUMP SUM	CU. YDS.	LBS.	APPROX. LBS.	LUMP SUM	MBF	NO.	LIN. FT.	NO.	LIN. FT.	LUMP SUM	SQ. FT.	LIN. FT.	LUMP SUM	SQ. YDS.	TONS	LIN. FT.	LUMP SUM	LIN. FT.	SQ. FT.
BULKHEAD			138.1	25,651								19,585.5			45	223					
DOLPHINS							4.32	77	4235	6	390									200	
LOADING RAMP					40,600									70							
SUPERSTRUCTURE																	210		69.6		
END BENT NO. 1			5.3	947						4	164										
BENT NO. 1			6.1	989						4	164										
BENT NO. 2			6.7	1122						4	204										
PROP WASH DEFLECTOR												1287									
TOTAL	LUMP SUM	LUMP SUM	156.2	28,709	40,600	LUMP SUM	4.32	77	4235	18	922	LUMP SUM	20,872.5	70	LUMP SUM	45	223	210	LUMP SUM	69.6	200

FOR MAINTENANCE OF TRAFFIC, SEE SPECIAL PROVISIONS.

THE COST OF THE PROPOSED 18" CMP AT THE SOUTH RAMP, THE REMOVAL OF THE EXISTING 15" CMP, ALL LABOR, MATERIALS, EQUIPMENT, AND ANY INCIDENTALS NECESSARY FOR THE INSTALLATION OF THE PIPE SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR 18" STEEL SHEET PILES.

TOTAL BILL OF MATERIAL FOR SOUTH RAMP

	MOBILIZATION	REMOVAL OF EXISTING STRUCTURES @ STA. 10+00 T-SR	CLASS "A" CONCRETE	EPOXY COATED REINFORCING STEEL	STRUCTURAL STEEL	PAINTING STRUCTURAL STEEL	UNTREATED WHITE OAK TIMBER	TREATED TIMBER PILES	HP 12X53 STEEL PILES	PAINTING STEEL PILES	18" STEEL SHEET PILES	1 1/4" Ø GALVANIZED STEEL PIPE RAIL	ELASTOMERIC BEARINGS	FILTER FABRIC FOR RIP RAP	PLAIN RIP RAP CLASS II	3'-0" X 1'-6" PRESTRESSED CONCRETE CORED SLABS	PAVEMENT REPAIR	STEEL BM GUARDRAIL	ULTRA HIGH MOLECULAR WEIGHT POLYETHELEN		
	LUMP SUM	LUMP SUM	CU. YDS.	LBS.	APPROX.LBS	LUMP SUM	MBF	NO.	LIN.FT.	NO.	LIN.FT.	LUMP SUM	SQ. FT.	LIN.FT.	LUMP SUM	SQ. YDS.	TONS	LIN. FT.	LUMP SUM	LIN.FT.	SQ. FT.
BULKHEAD			57.9	10,495								8,217			45	695					
DOLPHINS							4.32	56	3080	6	390									200	
LOADING RAMP					40,600								70								
SUPERSTRUCTURE																		317	94.6		
END BENT NO. 1			5.3	947						4	184										
BENT NO. 1			6.1	989						4	184										
BENT NO. 2			6.7	1122						4	208										
PROP WASH DEFLECTOR												1,287									
TOTAL	LUMP SUM	LUMP SUM	76.0	13,553	40,600	LUMP SUM	4.32	56	3080	18	966	LUMP SUM	9,504	70	LUMP SUM	45	695	317	LUMP SUM	94.6	200

PROJECT NO. 8.1150701

BEAUFORT COUNTY

STATION: 10+00.00 -T- NR
10+00.00 -T- SR

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

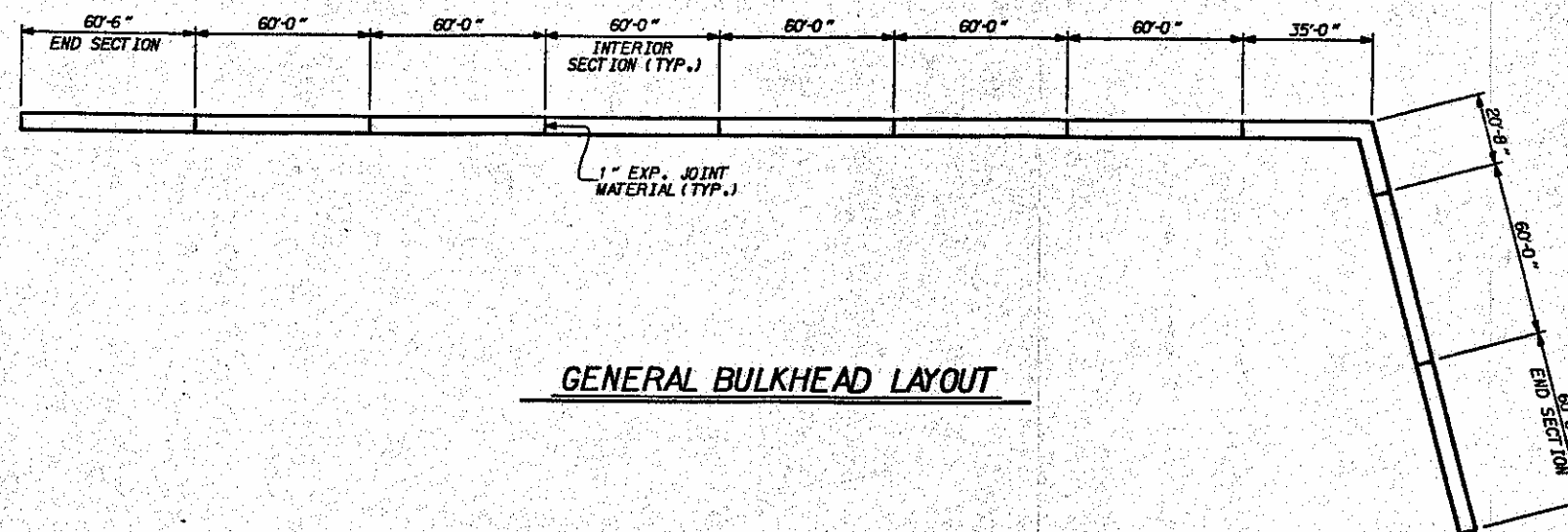
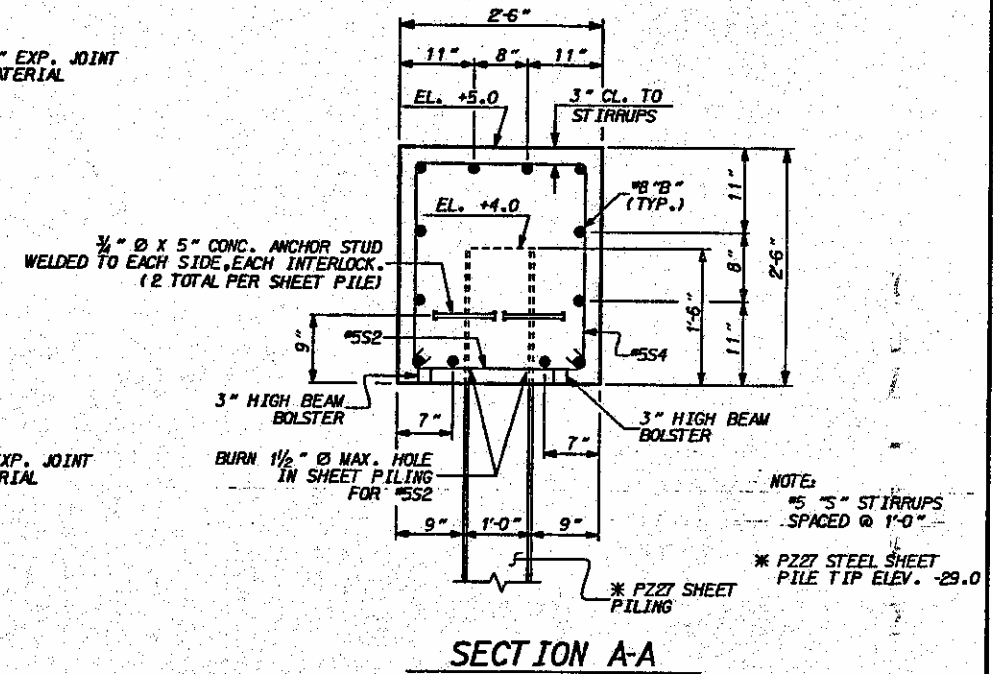
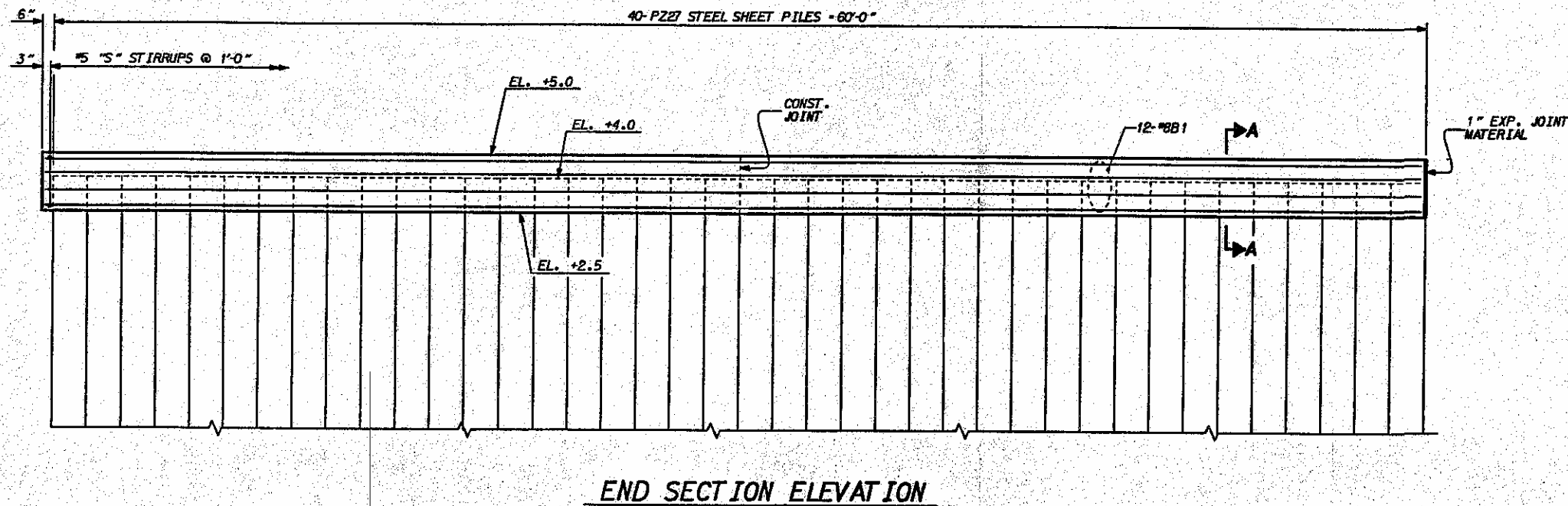
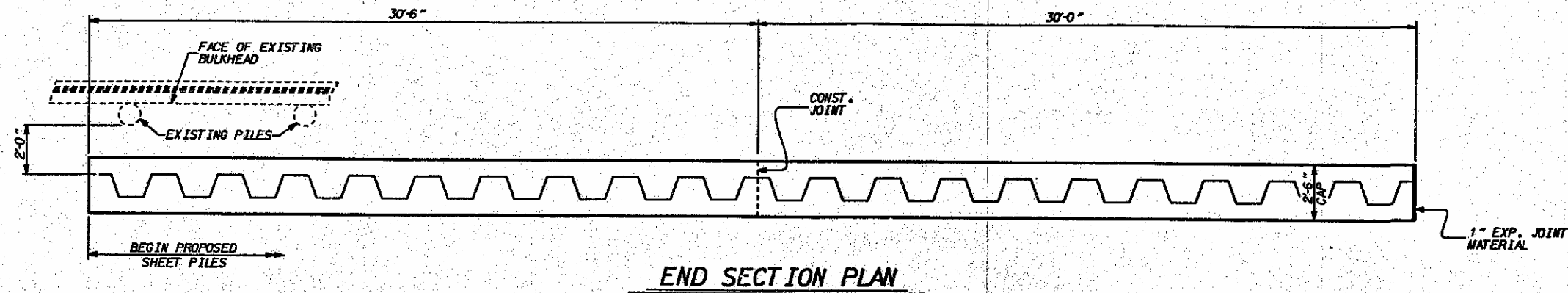
PAMLICO RIVER FERRY
BILL OF MATERIAL

REVISIONS				1992	
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
				SHEET NO.	5-3
				TOTAL SHEETS	28

DRAWN BY: W.D. CRUTCHER DATE: 09-92
CHECKED BY: B.D. KLAPPENBACH DATE: 9-14-92

11-SEP-1992 10:52
T:\11250701\FERRY\BILL.DWG
DSWEN

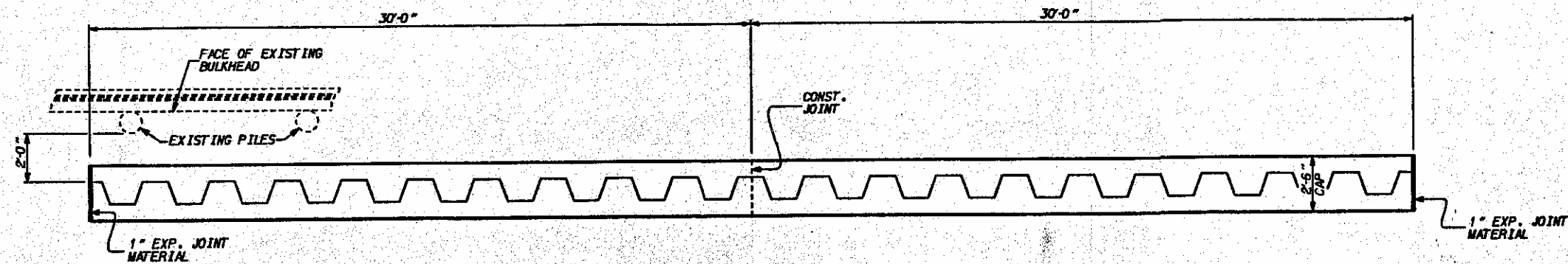
7/11/92 10:00 AM NORTH RAMP.DWG
W.D. CRUTCHER



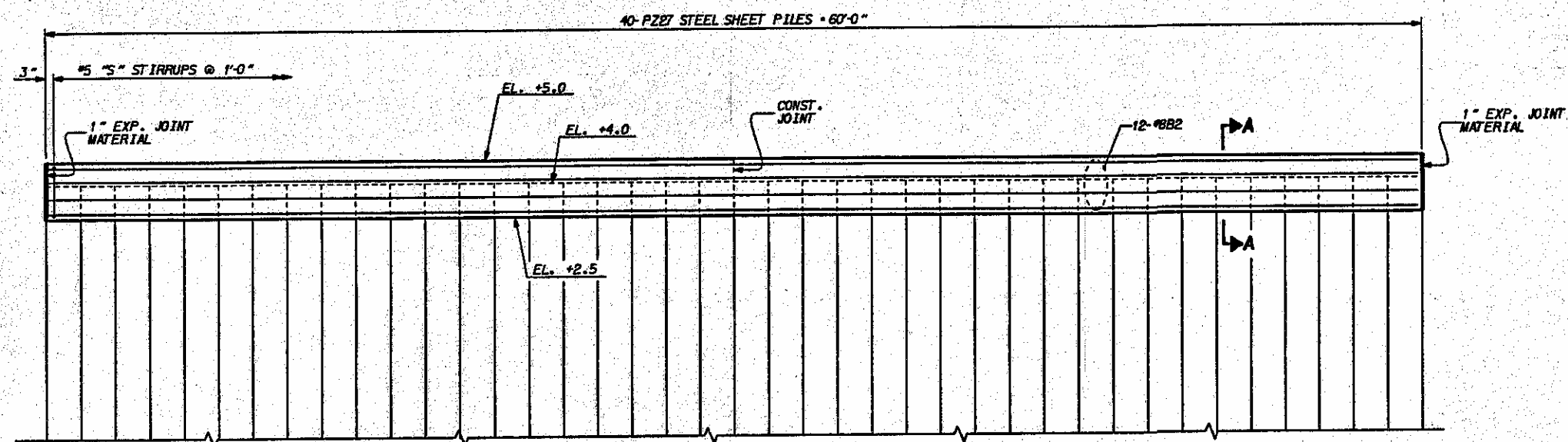
PROJECT NO. 8.1150701
BEAUFORT COUNTY
STATION: 10+00.00 -T- NR
SHEET 1 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PAMLICO RIVER FERRY NORTH RAMP BULKHEAD END SECTION (2 REQUIRED)					
AUGUST 1992					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					5-4
TOTAL SHEETS					28

DRAWN BY: W.D. CRUTCHER DATE: 08-92
CHECKED BY: William Ham DATE: 9/11/92



INTERIOR SECTION PLAN



INTERIOR SECTION ELEVATION

PROJECT NO. 8.1150701
BEAUFORT COUNTY
 STATION: 10+00.00 -T-NR

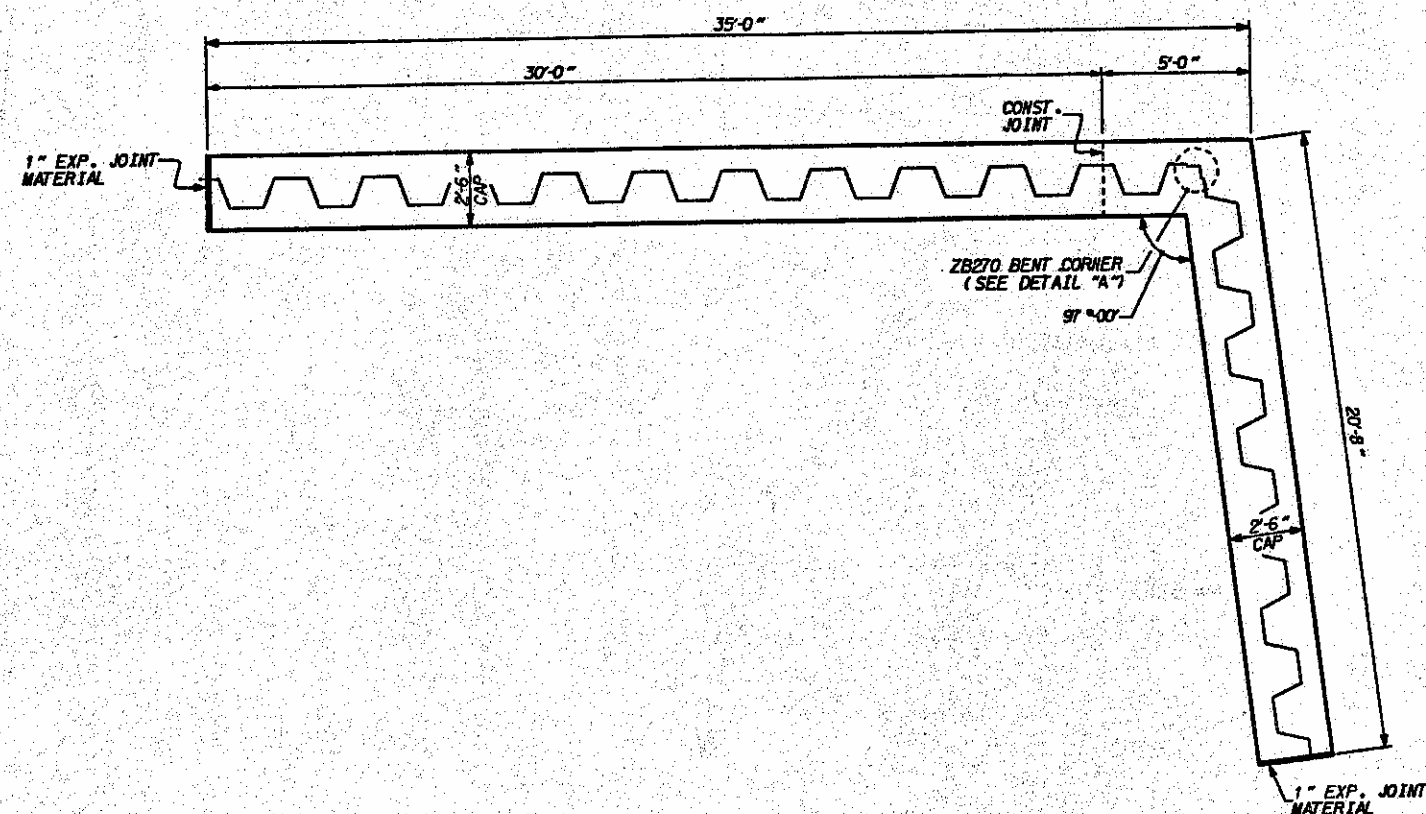
SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**PAMLICO RIVER FERRY
 NORTH RAMP
 BULKHEAD INTERIOR
 SECTIONS**

AUGUST (7 REQUIRED) 1992

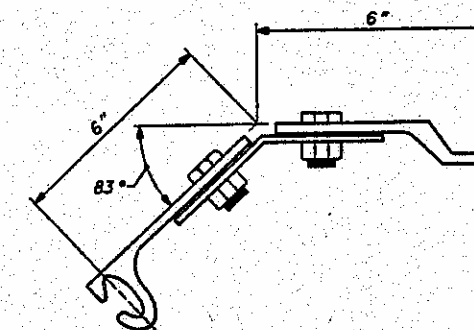
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-5
1			3			
2			4			28

DRAWN BY: W.D. CRUTCHER DATE: 08-92
 CHECKED BY: William Kern DATE: 7/1/92

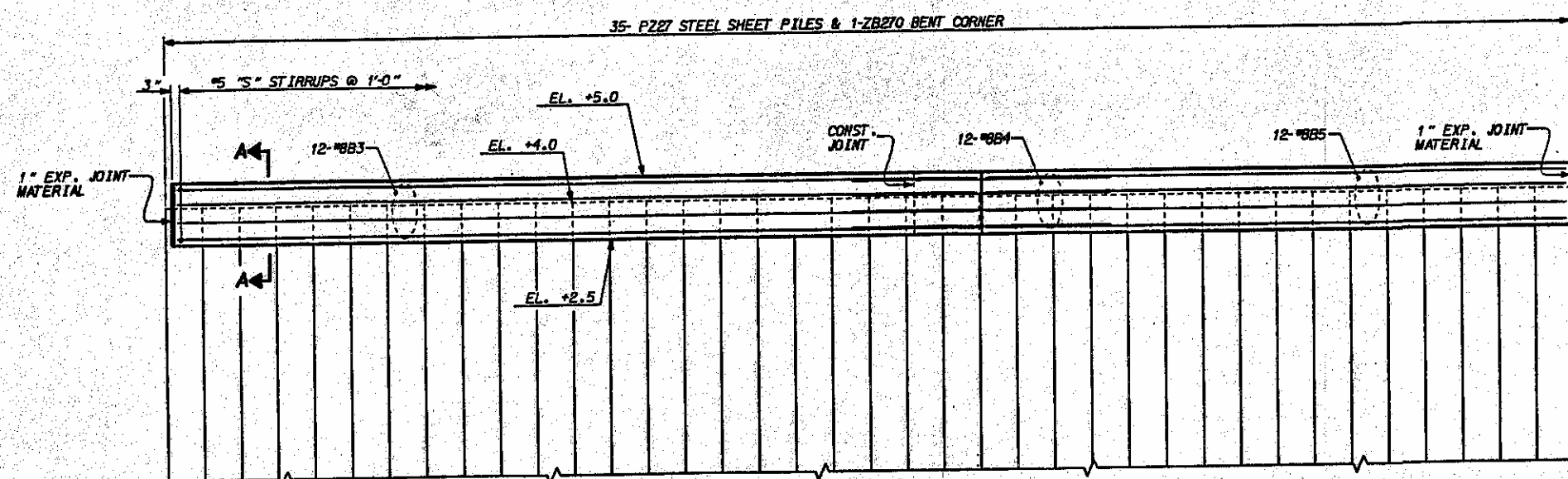


CORNER SECTION PLAN

BAR TYPES				BILL OF MATERIAL			
				BAR NO.	SIZE	TYPE	LENGTH
				B1	24	STR	60'-0
				B2	84	STR	59'-6
				B3	12	STR	34'-6
				B4	12	STR	18'-0
				B5	12	STR	20'-2
				S1	598	STR	6'-11
				S2	598	STR	2'-11
				REINFORCING STEEL			
				25,651			
				LBS.			
				CLASS A CONCRETE			
				138.1			
				CU. YDS.			
				* 1'-6" STEEL SHEET PILES			
				19,585.5			
				SQ. FT.			
				TOTAL NO. OF PZ27:			
				395			
				TOTAL NO. OF ZB270:			
				1			
				* PZ27 STEEL SHEET PILES			



DETAIL "A"
(SHOWING ZB270 BENT CORNER)



CORNER SECTION ELEVATION

PROJECT NO. 8.1150701
BEAUFORT COUNTY
 STATION: 10+00.00 -T-NR
 SHEET 3 OF 3

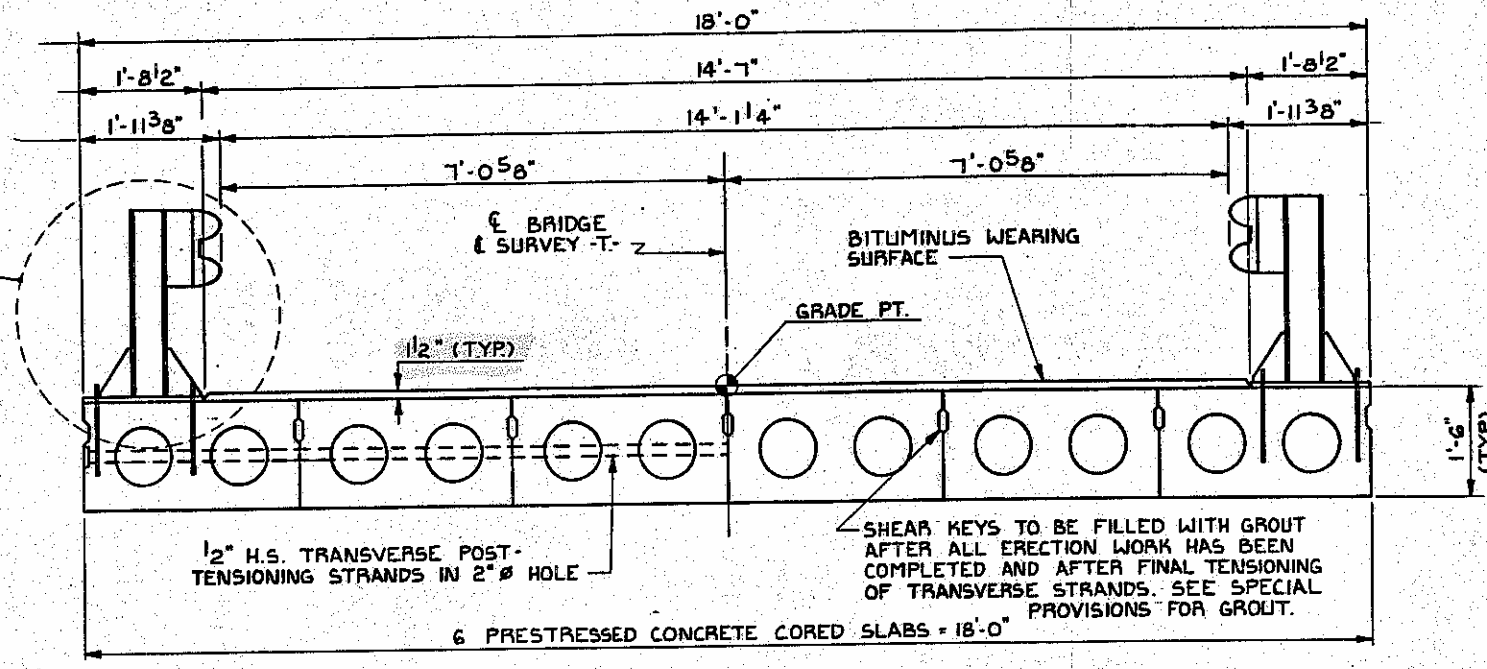
STATE OF NORTH CAROLINA					
DEPARTMENT OF TRANSPORTATION					
RALEIGH					
PAMLICO RIVER FERRY					
NORTH RAMP					
CORNER SECTION					
(1 REQUIRED)					
AUGUST 1992					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO.
					S-6
					TOTAL SHEETS
					28

DRAWN BY: W.D. CRUTCHER DATE: 08-92
 CHECKED BY: William K. Kim DATE: 9/1/92

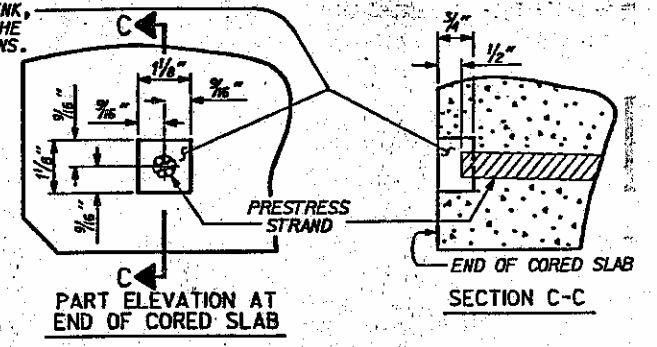
11-SEP-1992 08:38
 Z:\M205023\NORTH RAMP.DGN
 WCRUTCHER

FILL THE RECESS WITH A NON-SHRINK, NON-METALLIC GROUT APPROVED BY THE ENGINEER. SEE SPECIAL PROVISIONS.

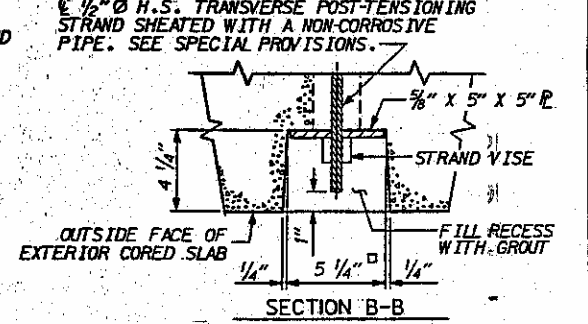
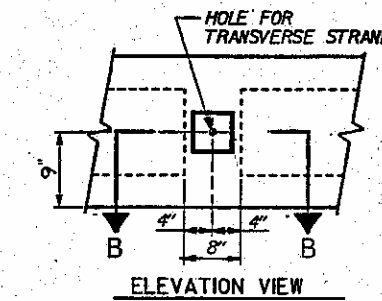
FOR DETAILS, SEE GUARDRAIL SHEET



TYPICAL SECTION



GRouted RECESS AT END OF PRETENSIONED STRAND-CORED SLABS

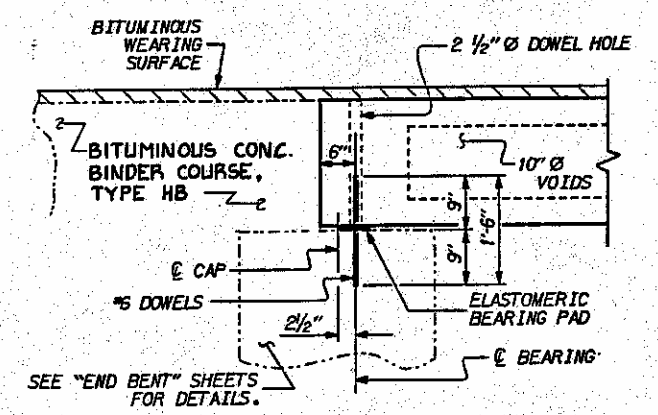


GRouted RECESS AT END OF POST-TENSIONED STRAND-CORED SLABS

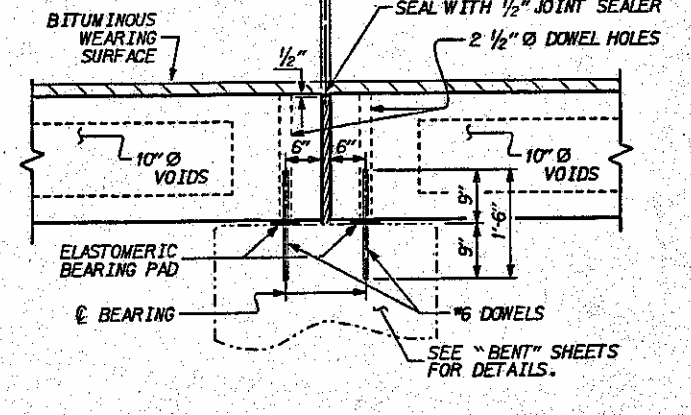
FIXED END

EXPANSION END

FIXED END

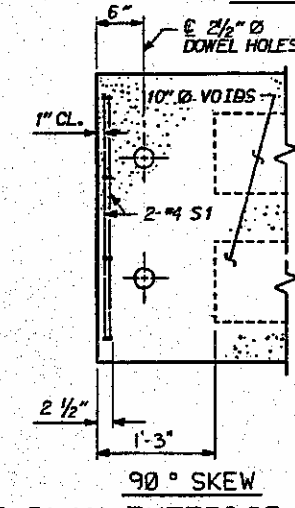


SECTION AT END BENT



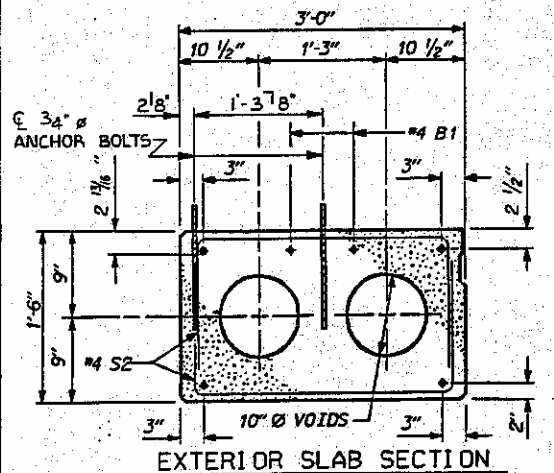
SECTION AT BENT

BOND SHALL BE BROKEN AT THESE STRANDS FOR A DISTANCE OF 4'-0" FROM END OF CORED SLAB UNIT.

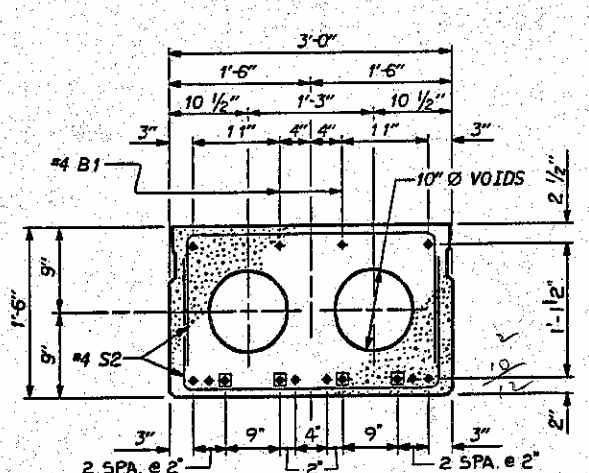


PART PLAN-EXTERIOR SECTION

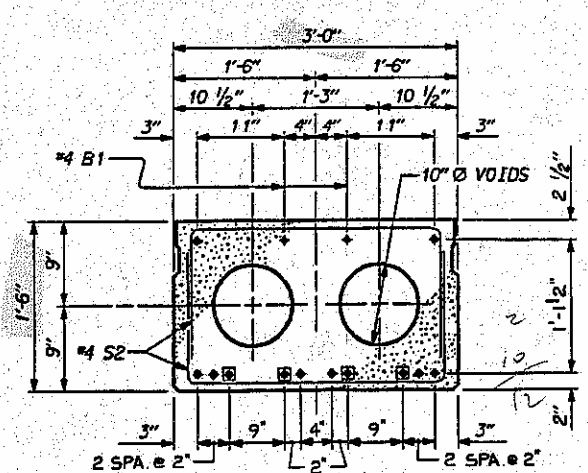
NOTE: EXTERIOR SECTION SHOWN-INTERIOR SECTION SIMILAR EXCEPT OMIT 3/4" ANCHOR BOLTS.



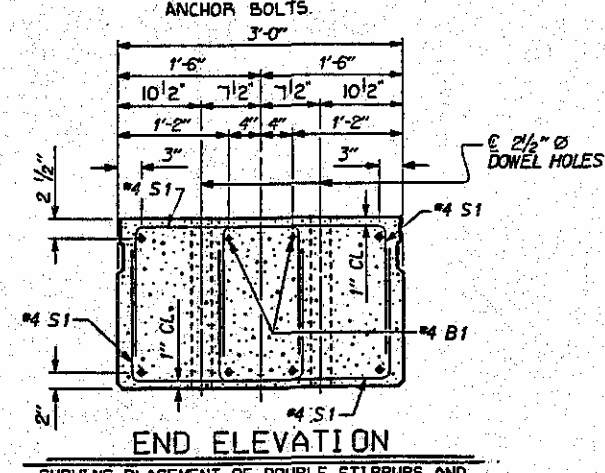
EXTERIOR SLAB SECTION
(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)



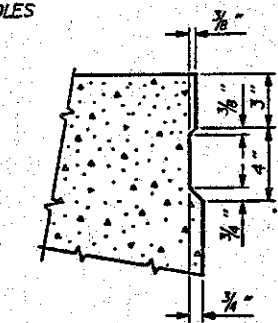
INTERIOR SLAB SECTION
1/2" STRESS RELIEVED STRAND LAYOUT



INTERIOR SLAB SECTION
1/2" LOW RELAXATION STRAND LAYOUT



END ELEVATION
SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES.
(STRAND LAYOUT NOT SHOWN.)
INTERIOR SLAB SECTION SHOWN-EXTERIOR SLAB SECTION SIMILAR EXCEPT SHEAR KEY LOCATION.



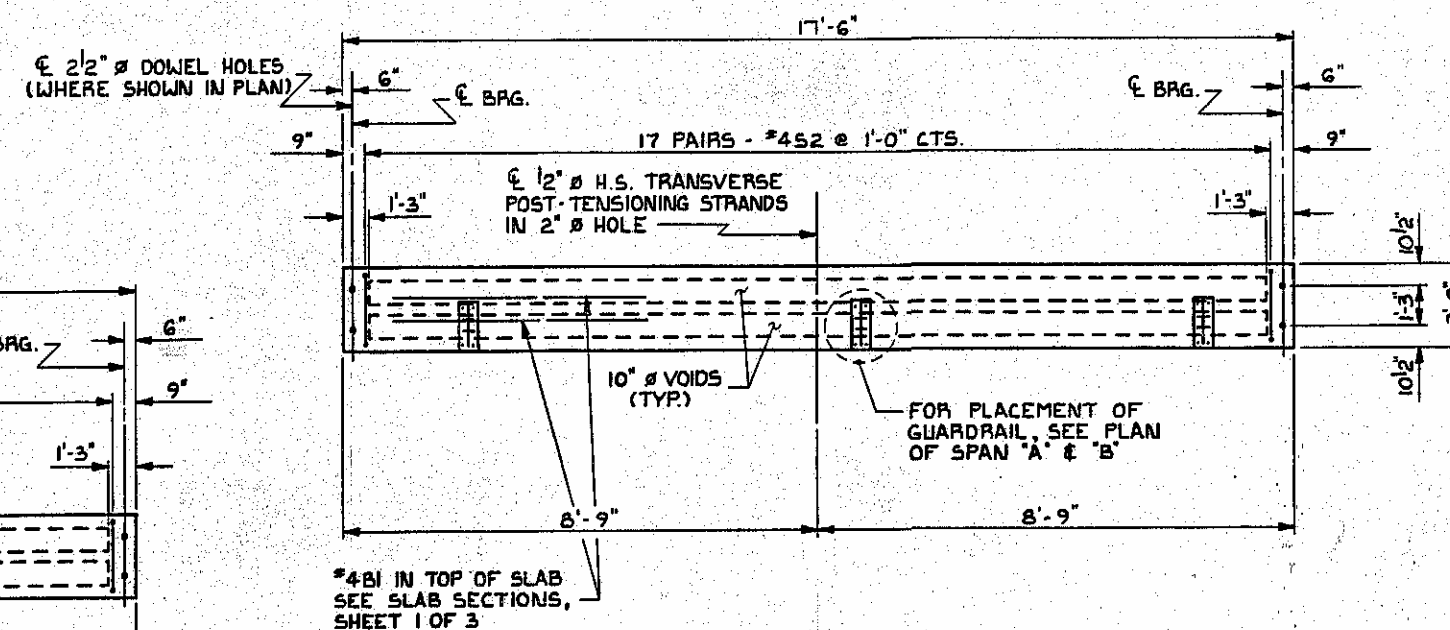
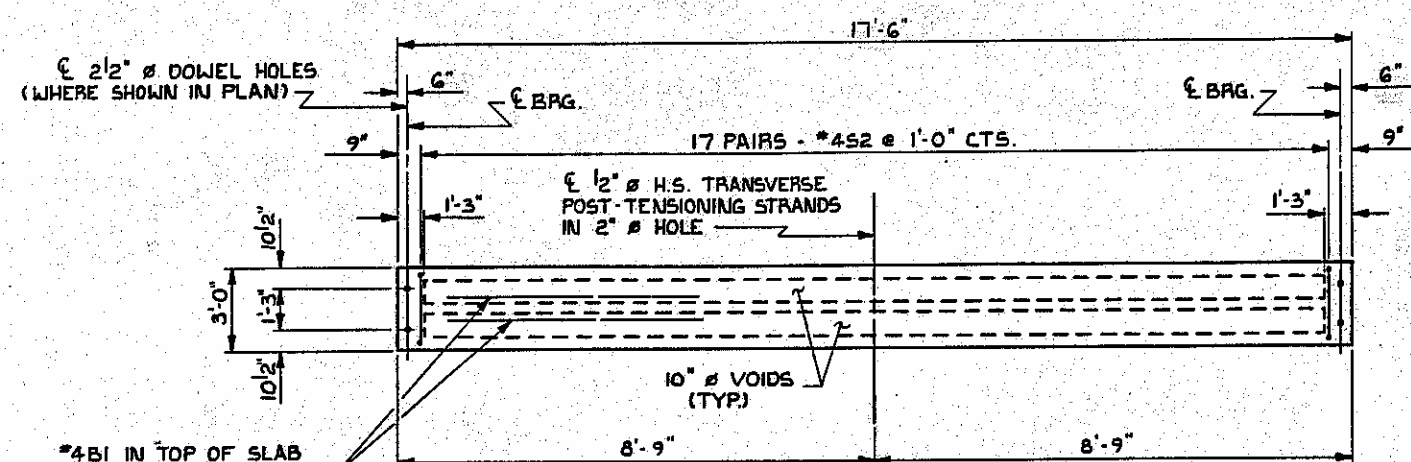
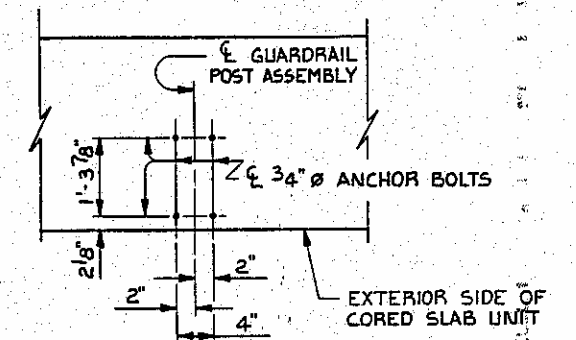
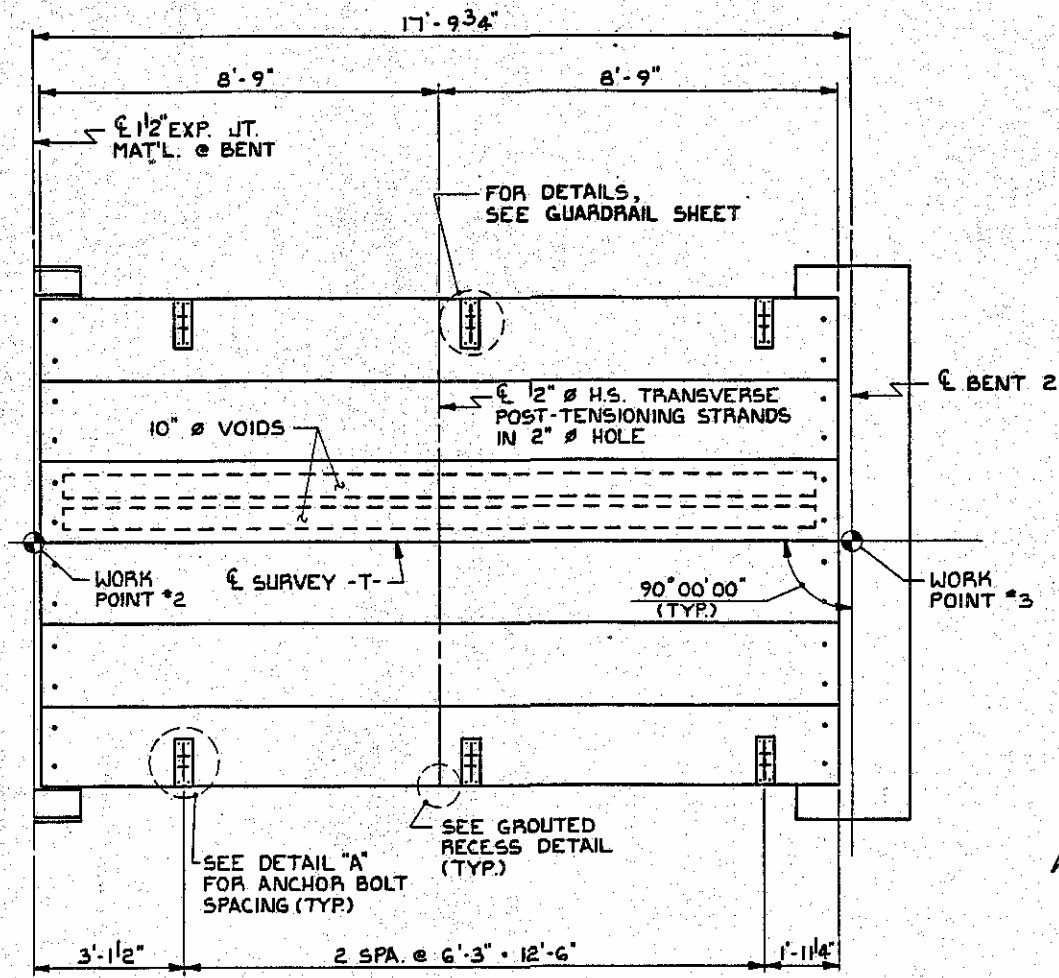
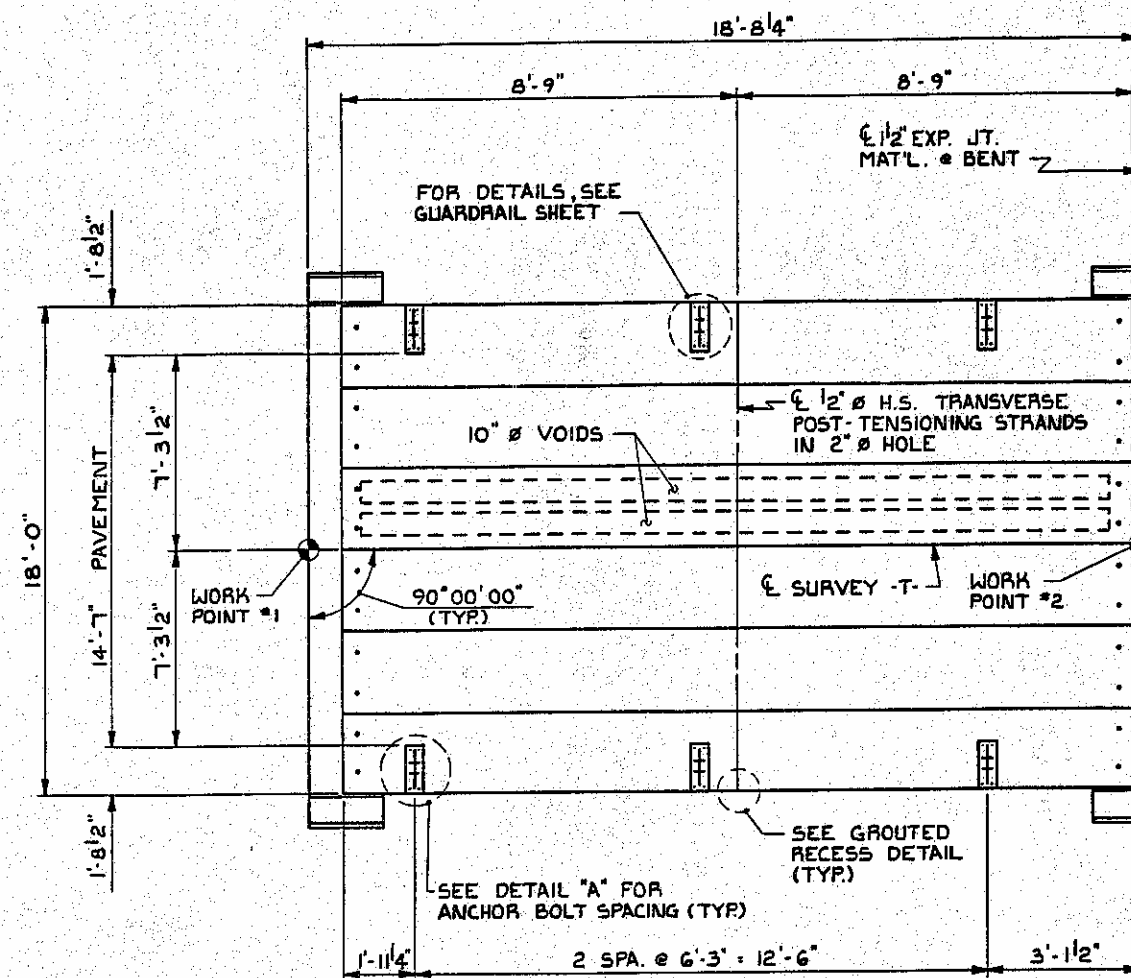
SHEAR KEY DETAIL
NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.

PROJECT NO. 8.1150701
BEAUFORT COUNTY
STATION: 10+00.00 T. N.R.
SHEET 10F 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD 3'-0" X 1'-6" PRESTRESSED CONCRETE CORED SLAB UNIT NORTH RAMP					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
					SHEET NO. 5-9 28

REVISED BY E.L.R. CHECKED BY G.R.P. 11-13-91
REVISED BY W.J.H. CHECKED BY C.R.K. 3-1-90
REVISED BY W.J.H. CHECKED BY F.C.J. 8-22-89
RECEIVED 8-22-89

ASSEMBLED BY: L.A. HALL	DATE: 9-3-92	SPECIAL
CHECKED BY: F.A. Mims	DATE: 9-11-92	
DRAWN BY: W.J. HARRIS	DATE: 4-31-89	STANDARD
CHECKED BY: F.C. JONES	DATE: 5-16-89	



PROJECT NO. 8.1150701

BEAUFORT COUNTY

STATION: 10 + 00.00 -T- N.R.

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

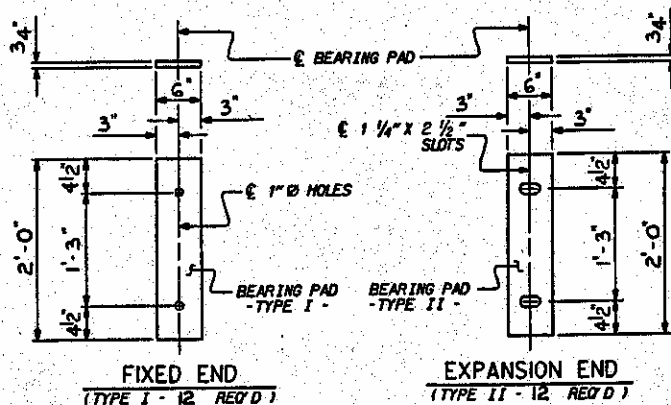
PLAN OF SPANS
CORED SLAB DETAILS
NORTH RAMP

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS 28
2			4			

7-23-92
DRAWN BY L. A. HALL DATE 9-8-92
CHECKED BY F. A. Mims DATE 7-11-92

REVISED BY E.L.R. CHECKED BY G.R.P. 11-13-91 R
REVISED BY E.L.R. CHECKED BY G.R.P. 10-1-90
REVISED BY W.J.H. CHECKED BY F.C.J. 3-1-90
REVISED BY W.J.H. CHECKED BY F.C.J. 9-22-89
REDRAWN 8-22-89

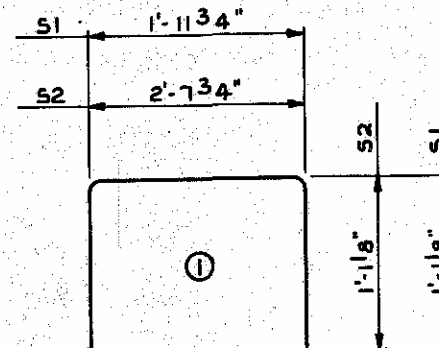
ASSEMBLED BY: L.A. HALL DATE: 2-8-92 SPECIAL
CHECKED BY: F.H. Mims DATE: 4-11-92
DRAWN BY: W.J. HARRIS DATE: 4-31-89 STANDARD
CHECKED BY: F.C. JONES DATE: 5-16-89



ELASTOMERIC BEARING DETAILS

GRADE 270 STRANDS		
	1/2" Ø S.R.	1/2" Ø L.R.
AREA (SQUARE INCHES)	0.153	0.153
ULTIMATE STRENGTH (LBS. PER STRAND)	41,300	41,300
APPLIED PRESTRESS (LBS. PER STRAND)	28,900	30,980

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR ONE CORED SLAB SECTION

BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT		INTERIOR UNIT	
				LENGTH	WEIGHT	LENGTH	WEIGHT
B1	2	#4	STR	17'-2"	23	17'-2"	23
S1	8	#4		4'-2"	22	4'-2"	22
S2	34	#4		4'-10"	110	4'-10"	110
REINFORCING STEEL				LBS.	155	LBS.	155
1/2" Ø S.R. STRANDS				No.	12	No.	12
1/2" Ø L.R. STRANDS				No.	12	No.	12

DEAD LOAD DEFLECTION AND CAMBER

	3'-0" x 1'-6"		3'-0" x 1'-9"	
	1/2" Ø S.R. STRAND	1/2" Ø L.R. STRAND	1/2" Ø S.R. STRAND	1/2" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	3/16" ↑	3/16" ↑	3/16" ↑	3/16" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD **	0" ↓	0" ↓	0" ↓	0" ↓
FINAL CAMBER	3/16" ↑	3/16" ↑	3/16" ↑	3/16" ↑

** INCLUDES FUTURE WEARING SURFACE

NOTES

THE CONTRACTOR MAY USE EITHER 1/2" DIA. STRESS RELIEVED OR 1/2" DIA. LOW RELAXATION STRANDS ACCORDING TO LAYOUTS SHOWN ON THIS SHEET.

THE SAME TYPE AND SAME SIZE STRANDS SHALL BE USED FOR ALL CORED SLAB UNITS IN THE STRUCTURE.

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE STRESS RELIEVED OR 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.

ALL REINFORCING STEEL CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

RECESSES FOR TRANSVERSE STRANDS SHALL BE CROUTED AFTER THE TENSIONING OF THE STRANDS.

THE 2 1/2" DIA. DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH GROUT. THE 2 1/2" DIA. DOWEL HOLES AT EXPANSION ENDS OF SLAB SECTIONS SHALL BE FILLED WITH HOT POURED RUBBER ASPHALT MATERIAL TO 1 1/2" ABOVE TOP OF DOWELS AND THEN FILLED WITH GROUT. FOR GROUT FOR PRESTRESSED CORED SLABS, SEE SPECIAL PROVISIONS.

THE HOT POURED RUBBER ASPHALT MATERIAL SHALL CONFORM TO THE REQUIREMENTS FOR JOINT SEALER, SEE STANDARD SPECIFICATIONS.

FOR PRESTRESSED CORED SLABS, SEE SPECIAL PROVISIONS.

FOR GROUT FOR ENDS OF PRESTRESSED CORED SLABS, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC BEARINGS, SEE SPECIAL PROVISIONS.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE 1/2" THICK EXPANSION JOINT MATERIAL IN THE JOINTS BETWEEN THE ENDS OF THE CORED SLAB

NOMINAL AND CAN BE EXPECTED TO VARY. THE CONTRACTOR MAY USE MORE THAN ONE LAYER OF EXPANSION JOINT MATERIAL, WITH A MINIMUM LAYER THICKNESS OF 3/8" TO PROVIDE THE THICKNESS REQUIRED.

WHEN CORED SLABS ARE CAST, A POSITIVE HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDEWAYS. THIS SYSTEM SHALL BE DESIGNED TO BE LEFT IN PLACE UNTIL THE CONCRETE HAS REACHED RELEASE STRENGTH. AT LEAST THREE WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 4000 PSI.

FOR EPOXY COATED REINFORCING STEEL, SEE SPECIAL PROVISIONS.

CALCIUM NITRATE CORROSION INHIBITOR SHALL BE USED IN ALL PRESTRESSED CONCRETE CORED SLAB UNITS. SEE SPECIAL PROVISIONS.

THE COST OF THE 3/4" Ø ANCHOR BOLTS SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR 3'-0" x 1'-6" PRESTRESSED CONCRETE CORED SLABS.

CORED SLABS REQUIRED

	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	4	17'-6"	70'-0"
INTERIOR C.S.	8	17'-6"	140'-0"
TOTAL	12		210'-0"

PROJECT NO. 8.1150701

BEAUFORT COUNTY

STATION: 10+00.00 - T - N.R.

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
3'-0" X 1'-6"
PRESTRESSED
CONCRETE CORED
SLAB UNIT
NORTH RAMP

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